

April 25, 2023

Revised Report

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Caerus Oil and Gas

Sample Delivery Group: L1575406

Samples Received: 01/12/2023

Project Number:

Description: 909J

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

Entire Report Reviewed By:



Chris Ward  
Project Manager

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

Pace Analytical National

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

# TABLE OF CONTENTS

<b>Cp: Cover Page</b>	1
<b>Tc: Table of Contents</b>	2
<b>Ss: Sample Summary</b>	3
<b>Cn: Case Narrative</b>	4
<b>Sr: Sample Results</b>	5
RD11-15069-WMFK L1575406-01	5
RN2-07204-ILES L1575406-02	7
RJ2-09415-WMFK L1575406-03	9
<b>Qc: Quality Control Summary</b>	11
Gravimetric Analysis by Method 2540 C-2011	11
Gravimetric Analysis by Method 2540 D-2015	12
Wet Chemistry by Method 2320 B-2011	13
Wet Chemistry by Method 365.4	15
Wet Chemistry by Method 9040C	16
Wet Chemistry by Method 9050A	17
Wet Chemistry by Method 9056A	18
Metals (ICP) by Method 6010B	20
Volatile Organic Compounds (GC) by Method 8015D/GRO	21
Volatile Organic Compounds (GC/MS) by Method 8260B	22
Semi-Volatile Organic Compounds (GC) by Method 8015M	23
<b>Gl: Glossary of Terms</b>	24
<b>Al: Accreditations &amp; Locations</b>	25
<b>Sc: Sample Chain of Custody</b>	26

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

# SAMPLE SUMMARY

## RD11-15069-WMFK L1575406-01 GW

Collected by: Will Harmon  
 Collected date/time: 01/11/23 09:15  
 Received date/time: 01/12/23 08:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2044211	1	04/19/23 06:10	04/19/23 09:22	MMF	Mt. Juliet, TN
Gravimetric Analysis by Method 2540 D-2015	WG1989245	1	01/16/23 09:35	01/16/23 13:17	TDW	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1989822	1	01/17/23 15:46	01/17/23 15:46	ARD	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1988891	1	01/13/23 14:48	01/14/23 17:22	LDT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1988654	1	01/14/23 10:30	01/14/23 10:30	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1988580	1	01/18/23 11:00	01/18/23 11:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1987703	10	01/13/23 03:02	01/13/23 03:02	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1987703	100	01/13/23 07:32	01/13/23 07:32	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1987798	1	01/13/23 08:08	01/13/23 19:29	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1987798	10	01/13/23 08:08	01/13/23 19:26	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1988388	1000	01/13/23 20:14	01/13/23 20:14	JTO	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1988342	1000	01/13/23 18:39	01/13/23 18:39	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1987965	1	01/13/23 07:57	01/13/23 23:47	MWS	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1987965	10	01/13/23 07:57	01/14/23 17:46	DMG	Mt. Juliet, TN

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

## RN2-07204-ILES L1575406-02 GW

Collected by: Will Harmon  
 Collected date/time: 01/11/23 10:00  
 Received date/time: 01/12/23 08:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2044211	1	04/19/23 06:10	04/19/23 09:22	MMF	Mt. Juliet, TN
Gravimetric Analysis by Method 2540 D-2015	WG1989245	1	01/16/23 09:35	01/16/23 13:17	TDW	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1989822	1	01/17/23 15:51	01/17/23 15:51	ARD	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1988891	1	01/13/23 14:48	01/14/23 17:23	LDT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1988654	1	01/14/23 10:30	01/14/23 10:30	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1988580	1	01/18/23 11:00	01/18/23 11:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1987703	10	01/13/23 03:17	01/13/23 03:17	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1987703	100	01/13/23 07:48	01/13/23 07:48	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1987798	1	01/13/23 08:08	01/13/23 19:35	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1987798	10	01/13/23 08:08	01/13/23 19:32	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1988388	2000	01/13/23 20:36	01/13/23 20:36	JTO	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1988342	2000	01/13/23 19:01	01/13/23 19:01	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1987965	1	01/13/23 07:57	01/14/23 00:33	MWS	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1987965	5	01/13/23 07:57	01/14/23 15:28	DMG	Mt. Juliet, TN

## RJ2-09415-WMFK L1575406-03 GW

Collected by: Will Harmon  
 Collected date/time: 01/11/23 11:50  
 Received date/time: 01/12/23 08:40

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG2044211	1	04/19/23 06:10	04/19/23 09:22	MMF	Mt. Juliet, TN
Gravimetric Analysis by Method 2540 D-2015	WG1989245	1	01/16/23 09:35	01/16/23 13:17	TDW	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1989822	1	01/17/23 15:56	01/17/23 15:56	ARD	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1988891	1	01/13/23 14:48	01/14/23 17:25	LDT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1988654	1	01/14/23 10:30	01/14/23 10:30	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1988580	1	01/18/23 11:00	01/18/23 11:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1987703	10	01/13/23 03:33	01/13/23 03:33	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1987703	100	01/13/23 08:04	01/13/23 08:04	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1987798	1	01/13/23 08:08	01/13/23 19:41	KMG	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1987798	10	01/13/23 08:08	01/13/23 19:38	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1988388	2000	01/13/23 20:58	01/13/23 20:58	JTO	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1988342	2000	01/13/23 19:23	01/13/23 19:23	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1987965	40	01/13/23 07:57	01/14/23 19:18	DMG	Mt. Juliet, TN

# CASE NARRATIVE

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



Chris Ward  
Project Manager



## Report Revision History

---

Level II Report - Version 1: 01/19/23 12:32

## Project Narrative

---

Added TDS

## Sample Delivery Group (SDG) Narrative

---

**pH outside of method requirement.**

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
<a href="#">L1575406-01</a>	<a href="#">RD11-15069-WMFK</a>	8015M
<a href="#">L1575406-02</a>	<a href="#">RN2-07204-ILES</a>	8015M
<a href="#">L1575406-03</a>	<a href="#">RJ2-09415-WMFK</a>	8015M

## Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	13600	<u>Q</u>	400	1	04/19/2023 09:22	<a href="#">WG2044211</a>

## Gravimetric Analysis by Method 2540 D-2015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Suspended Solids	214	<u>J3</u>	35.7	1	01/16/2023 13:17	<a href="#">WG1989245</a>

## Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1060		8.45	20.0	1	01/17/2023 15:46	<a href="#">WG1989822</a>
Alkalinity,Bicarbonate	1060		8.45	20.0	1	01/17/2023 15:46	<a href="#">WG1989822</a>
Alkalinity,Carbonate	U		8.45	20.0	1	01/17/2023 15:46	<a href="#">WG1989822</a>

## Sample Narrative:

L1575406-01 WG1989822: Endpoint pH 4.5 Headspace

## Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.422		0.0350	0.100	1	01/14/2023 17:22	<a href="#">WG1988891</a>

## Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.68	<u>T8</u>	1	01/14/2023 10:30	<a href="#">WG1988654</a>

## Sample Narrative:

L1575406-01 WG1988654: 6.68 at 19C

## Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	25400		10.0	1	01/18/2023 11:00	<a href="#">WG1988580</a>

## Sample Narrative:

L1575406-01 WG1988580: at 25C

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Bromide	65.3		3.53	10.0	10	01/13/2023 03:02	<a href="#">WG1987703</a>
Chloride	8770		37.9	100	100	01/13/2023 07:32	<a href="#">WG1987703</a>
Fluoride	1.30	<u>J</u>	0.640	1.50	10	01/13/2023 03:02	<a href="#">WG1987703</a>
Nitrate as (N)	0.525	<u>J</u>	0.480	1.00	10	01/13/2023 03:02	<a href="#">WG1987703</a>
Nitrite as (N)	U		0.420	1.00	10	01/13/2023 03:02	<a href="#">WG1987703</a>
Sulfate	11.9	<u>J</u>	5.94	50.0	10	01/13/2023 03:02	<a href="#">WG1987703</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	41.4		0.000736	0.00500	1	01/13/2023 19:29	<a href="#">WG1987798</a>
Boron	11.1		0.0200	0.200	1	01/13/2023 19:29	<a href="#">WG1987798</a>
Calcium	68.1		0.0793	1.00	1	01/13/2023 19:29	<a href="#">WG1987798</a>
Iron	66.4		0.0180	0.100	1	01/13/2023 19:29	<a href="#">WG1987798</a>
Magnesium	8.86		0.0853	1.00	1	01/13/2023 19:29	<a href="#">WG1987798</a>
Manganese	0.665		0.000934	0.0100	1	01/13/2023 19:29	<a href="#">WG1987798</a>
Potassium	61.2		0.261	2.00	1	01/13/2023 19:29	<a href="#">WG1987798</a>
Selenium	U		0.00735	0.0100	1	01/13/2023 19:29	<a href="#">WG1987798</a>
Sodium	5650		5.04	30.0	10	01/13/2023 19:26	<a href="#">WG1987798</a>
Strontium	29.0		0.00640	0.100	10	01/13/2023 19:26	<a href="#">WG1987798</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	179		31.4	100	1000	01/13/2023 20:14	<a href="#">WG1988388</a>
(S) a,a,a-Trifluorotoluene(FID)	108			78.0-120		01/13/2023 20:14	<a href="#">WG1988388</a>

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	9.62		0.0941	1.00	1000	01/13/2023 18:39	<a href="#">WG1988342</a>
Toluene	29.4		0.278	1.00	1000	01/13/2023 18:39	<a href="#">WG1988342</a>
Ethylbenzene	1.02		0.137	1.00	1000	01/13/2023 18:39	<a href="#">WG1988342</a>
Xylenes, Total	14.5		0.174	3.00	1000	01/13/2023 18:39	<a href="#">WG1988342</a>
Naphthalene	U		1.00	5.00	1000	01/13/2023 18:39	<a href="#">WG1988342</a>
(S) Toluene-d8	99.8			80.0-120		01/13/2023 18:39	<a href="#">WG1988342</a>
(S) 4-Bromofluorobenzene	101			77.0-126		01/13/2023 18:39	<a href="#">WG1988342</a>
(S) 1,2-Dichloroethane-d4	116			70.0-130		01/13/2023 18:39	<a href="#">WG1988342</a>

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	45.2		0.222	1.00	10	01/14/2023 17:46	<a href="#">WG1987965</a>
C28-C36 Motor Oil Range	0.830		0.0118	0.100	1	01/13/2023 23:47	<a href="#">WG1987965</a>
(S) o-Terphenyl	46.5	<u>J2</u>		52.0-156		01/13/2023 23:47	<a href="#">WG1987965</a>
(S) o-Terphenyl	138			52.0-156		01/14/2023 17:46	<a href="#">WG1987965</a>

## Sample Narrative:

L1575406-01 WG1987965: Surrogate failure due to matrix interference

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	12100	Q	400	1	04/19/2023 09:22	WG2044211

Gravimetric Analysis by Method 2540 D-2015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Suspended Solids	243		35.7	1	01/16/2023 13:17	WG1989245

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1210		8.45	20.0	1	01/17/2023 15:51	WG1989822
Alkalinity,Bicarbonate	1210		8.45	20.0	1	01/17/2023 15:51	WG1989822
Alkalinity,Carbonate	U		8.45	20.0	1	01/17/2023 15:51	WG1989822

Sample Narrative:

L1575406-02 WG1989822: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.339		0.0350	0.100	1	01/14/2023 17:23	WG1988891

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.82	T8	1	01/14/2023 10:30	WG1988654

Sample Narrative:

L1575406-02 WG1988654: 6.82 at 19.2C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	21600		10.0	1	01/18/2023 11:00	WG1988580

Sample Narrative:

L1575406-02 WG1988580: at 25C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Bromide	54.7		3.53	10.0	10	01/13/2023 03:17	WG1987703
Chloride	6520		37.9	100	100	01/13/2023 07:48	WG1987703
Fluoride	1.47	J	0.640	1.50	10	01/13/2023 03:17	WG1987703
Nitrate as (N)	U		0.480	1.00	10	01/13/2023 03:17	WG1987703
Nitrite as (N)	U		0.420	1.00	10	01/13/2023 03:17	WG1987703
Sulfate	6.00	J	5.94	50.0	10	01/13/2023 03:17	WG1987703



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	71.9		0.00736	0.0500	10	01/13/2023 19:32	<a href="#">WG1987798</a>
Boron	6.84		0.0200	0.200	1	01/13/2023 19:35	<a href="#">WG1987798</a>
Calcium	135		0.0793	1.00	1	01/13/2023 19:35	<a href="#">WG1987798</a>
Iron	87.6		0.0180	0.100	1	01/13/2023 19:35	<a href="#">WG1987798</a>
Magnesium	20.5		0.0853	1.00	1	01/13/2023 19:35	<a href="#">WG1987798</a>
Manganese	1.21		0.000934	0.0100	1	01/13/2023 19:35	<a href="#">WG1987798</a>
Potassium	88.3		0.261	2.00	1	01/13/2023 19:35	<a href="#">WG1987798</a>
Selenium	U		0.00735	0.0100	1	01/13/2023 19:35	<a href="#">WG1987798</a>
Sodium	4710		5.04	30.0	10	01/13/2023 19:32	<a href="#">WG1987798</a>
Strontium	45.5		0.00640	0.100	10	01/13/2023 19:32	<a href="#">WG1987798</a>

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

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	258		62.8	200	2000	01/13/2023 20:36	<a href="#">WG1988388</a>
(S) a,a,a-Trifluorotoluene(FID)	109			78.0-120		01/13/2023 20:36	<a href="#">WG1988388</a>

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	14.3		0.188	2.00	2000	01/13/2023 19:01	<a href="#">WG1988342</a>
Toluene	38.2		0.556	2.00	2000	01/13/2023 19:01	<a href="#">WG1988342</a>
Ethylbenzene	1.53	J	0.274	2.00	2000	01/13/2023 19:01	<a href="#">WG1988342</a>
Xylenes, Total	23.0		0.348	6.00	2000	01/13/2023 19:01	<a href="#">WG1988342</a>
Naphthalene	U		2.00	10.0	2000	01/13/2023 19:01	<a href="#">WG1988342</a>
(S) Toluene-d8	99.1			80.0-120		01/13/2023 19:01	<a href="#">WG1988342</a>
(S) 4-Bromofluorobenzene	98.5			77.0-126		01/13/2023 19:01	<a href="#">WG1988342</a>
(S) 1,2-Dichloroethane-d4	115			70.0-130		01/13/2023 19:01	<a href="#">WG1988342</a>

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	15.9		0.111	0.500	5	01/14/2023 15:28	<a href="#">WG1987965</a>
C28-C36 Motor Oil Range	0.0983	J	0.0118	0.100	1	01/14/2023 00:33	<a href="#">WG1987965</a>
(S) o-Terphenyl	22.4	J2		52.0-156		01/14/2023 00:33	<a href="#">WG1987965</a>
(S) o-Terphenyl	96.8			52.0-156		01/14/2023 15:28	<a href="#">WG1987965</a>

Sample Narrative:

L1575406-02 WG1987965: Surrogate failure due to matrix interference

Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	11600	Q	400	1	04/19/2023 09:22	WG2044211

Gravimetric Analysis by Method 2540 D-2015

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Suspended Solids	135		31.3	1	01/16/2023 13:17	WG1989245

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Alkalinity	669		8.45	20.0	1	01/17/2023 15:56	WG1989822
Alkalinity,Bicarbonate	669		8.45	20.0	1	01/17/2023 15:56	WG1989822
Alkalinity,Carbonate	U		8.45	20.0	1	01/17/2023 15:56	WG1989822

Sample Narrative:

L1575406-03 WG1989822: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.426		0.0350	0.100	1	01/14/2023 17:25	WG1988891

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.45	T8	1	01/14/2023 10:30	WG1988654

Sample Narrative:

L1575406-03 WG1988654: 7.45 at 19C

Wet Chemistry by Method 9050A

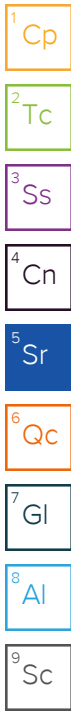
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	22700		10.0	1	01/18/2023 11:00	WG1988580

Sample Narrative:

L1575406-03 WG1988580: at 25C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Bromide	63.3		3.53	10.0	10	01/13/2023 03:33	WG1987703
Chloride	7140		37.9	100	100	01/13/2023 08:04	WG1987703
Fluoride	0.839	J	0.640	1.50	10	01/13/2023 03:33	WG1987703
Nitrate as (N)	U		0.480	1.00	10	01/13/2023 03:33	WG1987703
Nitrite as (N)	U		0.420	1.00	10	01/13/2023 03:33	WG1987703
Sulfate	U		5.94	50.0	10	01/13/2023 03:33	WG1987703



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	67.1		0.00736	0.0500	10	01/13/2023 19:38	<a href="#">WG1987798</a>
Boron	2.40		0.0200	0.200	1	01/13/2023 19:41	<a href="#">WG1987798</a>
Calcium	95.7		0.0793	1.00	1	01/13/2023 19:41	<a href="#">WG1987798</a>
Iron	46.7		0.0180	0.100	1	01/13/2023 19:41	<a href="#">WG1987798</a>
Magnesium	13.3		0.0853	1.00	1	01/13/2023 19:41	<a href="#">WG1987798</a>
Manganese	0.475		0.000934	0.0100	1	01/13/2023 19:41	<a href="#">WG1987798</a>
Potassium	66.2		0.261	2.00	1	01/13/2023 19:41	<a href="#">WG1987798</a>
Selenium	U		0.00735	0.0100	1	01/13/2023 19:41	<a href="#">WG1987798</a>
Sodium	4850		5.04	30.0	10	01/13/2023 19:38	<a href="#">WG1987798</a>
Strontium	34.9		0.00640	0.100	10	01/13/2023 19:38	<a href="#">WG1987798</a>

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

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	326		62.8	200	2000	01/13/2023 20:58	<a href="#">WG1988388</a>
(S) a,a,a-Trifluorotoluene(FID)	106			78.0-120		01/13/2023 20:58	<a href="#">WG1988388</a>

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	27.9		0.188	2.00	2000	01/13/2023 19:23	<a href="#">WG1988342</a>
Toluene	46.5		0.556	2.00	2000	01/13/2023 19:23	<a href="#">WG1988342</a>
Ethylbenzene	1.56	J	0.274	2.00	2000	01/13/2023 19:23	<a href="#">WG1988342</a>
Xylenes, Total	20.8		0.348	6.00	2000	01/13/2023 19:23	<a href="#">WG1988342</a>
Naphthalene	U		2.00	10.0	2000	01/13/2023 19:23	<a href="#">WG1988342</a>
(S) Toluene-d8	100			80.0-120		01/13/2023 19:23	<a href="#">WG1988342</a>
(S) 4-Bromofluorobenzene	101			77.0-126		01/13/2023 19:23	<a href="#">WG1988342</a>
(S) 1,2-Dichloroethane-d4	116			70.0-130		01/13/2023 19:23	<a href="#">WG1988342</a>

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	160		0.888	4.00	40	01/14/2023 19:18	<a href="#">WG1987965</a>
C28-C36 Motor Oil Range	U		0.472	4.00	40	01/14/2023 19:18	<a href="#">WG1987965</a>
(S) o-Terphenyl	0.000	J7		52.0-156		01/14/2023 19:18	<a href="#">WG1987965</a>

Sample Narrative:

L1575406-03 WG1987965: Cannot run at lower dilution due to viscosity of extract

Method Blank (MB)

(MB) R3915585-1 04/19/23 09:22

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Dissolved Solids	U		10.0	10.0

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

L157514-01 Original Sample (OS) • Duplicate (DUP)

(OS) L157514-01 04/19/23 09:22 • (DUP) R3915585-3 04/19/23 09:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	9760	10300	1	5.58	J3	5

<sup>4</sup>Cn

<sup>5</sup>Sr

L1574963-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1574963-01 04/19/23 09:22 • (DUP) R3915585-4 04/19/23 09:22

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Dissolved Solids	11900	13500	1	12.3	J3	5

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

Laboratory Control Sample (LCS)

(LCS) R3915585-2 04/19/23 09:22

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Dissolved Solids	8800	7720	87.7	77.3-123	

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3881546-1 01/16/23 13:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Suspended Solids	U		2.50	2.50

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

L1575406-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1575406-01 01/16/23 13:17 • (DUP) R3881546-3 01/16/23 13:17

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Suspended Solids	214	244	1	13.1	J3	5

<sup>4</sup>Cn

<sup>5</sup>Sr

L1575406-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1575406-02 01/16/23 13:17 • (DUP) R3881546-4 01/16/23 13:17

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Suspended Solids	243	253	1	4.03		5

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

Laboratory Control Sample (LCS)

(LCS) R3881546-2 01/16/23 13:17

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Suspended Solids	773	868	112	85.7-114	

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3881966-2 01/17/23 13:00

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	U		8.45	20.0
Alkalinity,Bicarbonate	U		8.45	20.0
Alkalinity,Carbonate	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1573351-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1573351-01 01/17/23 13:51 • (DUP) R3881966-3 01/17/23 13:55

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	545	546	1	0.0640		20
Alkalinity,Bicarbonate	545	546	1	0.0640		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1575637-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1575637-02 01/17/23 16:30 • (DUP) R3881966-4 01/17/23 16:35

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	93.4	94.1	1	0.780		20
Alkalinity,Bicarbonate	93.4	94.1	1	0.780		20
Alkalinity,Carbonate	U	U	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5



Laboratory Control Sample (LCS)

(LCS) R3881966-1 01/17/23 12:50

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Alkalinity	100	102	102	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3881065-1 01/14/23 16:59

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Phosphorus,Total	U		0.0350	0.100

1 Cp

2 Tc

3 Ss

L1575065-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1575065-01 01/14/23 17:16 • (DUP) R3881065-3 01/14/23 17:17

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Phosphorus,Total	1.85	1.84	1	0.542		20

4 Cn

5 Sr

Laboratory Control Sample (LCS)

(LCS) R3881065-2 01/14/23 17:00

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Phosphorus,Total	2.47	2.34	94.7	83.2-116	

6 Qc

7 Gl

8 Al

L1575065-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1575065-01 01/14/23 17:16 • (MS) R3881065-4 01/14/23 17:18 • (MSD) R3881065-5 01/14/23 17:19

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Phosphorus,Total	2.50	1.85	4.23	4.22	95.2	94.8	1	90.0-110			0.237	20

9 Sc

L1575268-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1575268-02 01/14/23 10:30 • (DUP) R3881022-2 01/14/23 10:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.55	6.57	1	0.305		1

Sample Narrative:

OS: 6.55 at 19C  
DUP: 6.57 at 19.2C

L1575590-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1575590-01 01/14/23 10:30 • (DUP) R3881022-3 01/14/23 10:30

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.85	7.82	1	0.383		1

Sample Narrative:

OS: 7.85 at 19.3C  
DUP: 7.82 at 19.2C

Laboratory Control Sample (LCS)

(LCS) R3881022-1 01/14/23 10:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	su	su	%	%	
pH	10.0	9.90	99.0	99.0-101	

Sample Narrative:

LCS: 9.9 at 19.9C

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3882095-1 01/18/23 11:00

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

L1574311-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1574311-03 01/18/23 11:00 • (DUP) R3882095-3 01/18/23 11:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits
Specific Conductance	ND	ND	1	0.000		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1575939-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1575939-02 01/18/23 11:00 • (DUP) R3882095-4 01/18/23 11:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits
Specific Conductance	33300	33300	1	0.000		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3882095-2 01/18/23 11:00

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

Sample Narrative:

LCS: at 25C

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

Method Blank (MB)

(MB) R3880832-1 01/12/23 23:33

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Bromide	U		0.353	1.00
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Nitrate	U		0.0480	0.100
Nitrite	U		0.0420	0.100
Sulfate	U		0.594	5.00

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

L1575421-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1575421-01 01/13/23 04:05 • (DUP) R3880832-6 01/13/23 04:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	6.29	6.28	10	0.280	U	15
Chloride	30100	30000	10	0.216	FE	15
Fluoride	U	0.661	10	200	U P1	15
Nitrate	52.6	52.8	10	0.265		15
Nitrite	16.0	15.8	10	1.63		15
Sulfate	5310	5300	10	0.144	FE	15

L1575301-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1575301-10 01/13/23 10:59 • (DUP) R3880832-11 01/13/23 11:15

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Chloride	260	258	5	0.834		15
Nitrate	U	U	5	0.000		15
Sulfate	210	210	5	0.293		15

Laboratory Control Sample (LCS)

(LCS) R3880832-2 01/12/23 23:49

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Bromide	40.0	39.1	97.8	80.0-120	
Chloride	40.0	40.3	101	80.0-120	
Fluoride	8.00	8.37	105	80.0-120	
Nitrate	8.00	7.74	96.8	80.0-120	

Laboratory Control Sample (LCS)

(LCS) R3880832-2 01/12/23 23:49

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Nitrite	8.00	8.45	106	80.0-120	
Sulfate	40.0	41.9	105	80.0-120	

L1575421-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1575421-01 01/13/23 04:05 • (MS) R3880832-7 01/13/23 04:37 • (MSD) R3880832-8 01/13/23 04:53

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Bromide	50.0	6.29	47.1	46.4	81.5	80.2	10	80.0-120			1.36	15
Chloride	50.0	30100	28900	28800	0.000	0.000	10	80.0-120	<u>E V</u>	<u>E V</u>	0.357	15
Fluoride	5.00	U	3.96	3.94	79.3	78.7	10	80.0-120	<u>J6</u>	<u>J6</u>	0.689	15
Nitrate	5.00	52.6	54.9	55.8	46.0	64.3	10	80.0-120	<u>V</u>	<u>V</u>	1.66	15
Nitrite	5.00	16.0	20.3	20.3	85.5	85.7	10	80.0-120			0.0360	15
Sulfate	50.0	5310	5130	5150	0.000	0.000	10	80.0-120	<u>E V</u>	<u>E V</u>	0.439	15

L1575301-10 Original Sample (OS) • Matrix Spike (MS)

(OS) L1575301-10 01/13/23 10:59 • (MS) R3880832-12 01/13/23 11:31

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Chloride	50.0	260	298	75.1	5	80.0-120	<u>V</u>
Nitrate	5.00	U	4.30	86.0	5	80.0-120	
Sulfate	50.0	210	251	82.7	5	80.0-120	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3880970-1 01/13/23 22:17

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Barium	U		0.000736	0.00500
Boron	U		0.0200	0.200
Calcium	U		0.0793	1.00
Iron	U		0.0180	0.100
Magnesium	U		0.0853	1.00
Manganese	U		0.000934	0.0100
Potassium	0.410	U	0.261	2.00
Selenium	U		0.00735	0.0100
Sodium	U		0.504	3.00
Strontium	U		0.000640	0.0100

1  
Cp

2  
Tc

3  
Ss

4  
Cn

5  
Sr

6  
Qc

7  
Gl

8  
Al

9  
Sc

Laboratory Control Sample (LCS)

(LCS) R3880970-2 01/13/23 22:20

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Barium	1.00	0.970	97.0	80.0-120	
Boron	1.00	0.938	93.8	80.0-120	
Calcium	10.0	9.51	95.1	80.0-120	
Iron	10.0	9.64	96.4	80.0-120	
Magnesium	10.0	9.07	90.7	80.0-120	
Manganese	1.00	0.877	87.7	80.0-120	
Potassium	10.0	9.47	94.7	80.0-120	
Selenium	1.00	0.964	96.4	80.0-120	
Sodium	10.0	9.39	93.9	80.0-120	
Strontium	1.00	0.938	93.8	80.0-120	

L1575421-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1575421-01 01/13/23 18:53 • (MS) R3880972-9 01/13/23 18:59 • (MSD) R3880972-10 01/13/23 19:02

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Barium	1.00	0.0340	0.958	0.947	92.4	91.3	1	75.0-125			1.20	20
Boron	1.00	1.10	1.99	1.98	89.2	88.2	1	75.0-125			0.513	20
Calcium	10.0	946	942	932	0.000	0.000	1	75.0-125	U	U	1.05	20
Iron	10.0	1.53	10.6	10.4	90.7	88.6	1	75.0-125			1.98	20
Manganese	1.00	2.32	3.13	3.11	80.6	78.5	1	75.0-125			0.657	20
Potassium	10.0	44.2	55.0	54.8	108	106	1	75.0-125			0.305	20

Method Blank (MB)

(MB) R3881419-2 01/13/23 12:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH (GC/FID) Low Fraction	U		0.0314	0.100
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)	104			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3881419-1 01/13/23 11:17

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.88	107	72.0-127	
<sup>(S)</sup> a,a,a-Trifluorotoluene(FID)			102	78.0-120	

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

Method Blank (MB)

(MB) R3881642-2 01/13/23 10:04

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
Ethylbenzene	U		0.000137	0.00100
Xylenes, Total	U		0.000174	0.00300
Naphthalene	U		0.00100	0.00500
(S) Toluene-d8	99.6			80.0-120
(S) 4-Bromofluorobenzene	97.4			77.0-126
(S) 1,2-Dichloroethane-d4	116			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3881642-1 01/13/23 09:21

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Benzene	0.00500	0.00477	95.4	70.0-123	
Toluene	0.00500	0.00450	90.0	79.0-120	
Ethylbenzene	0.00500	0.00427	85.4	79.0-123	
Xylenes, Total	0.0150	0.0131	87.3	79.0-123	
Naphthalene	0.00500	0.00518	104	54.0-135	
(S) Toluene-d8			95.8	80.0-120	
(S) 4-Bromofluorobenzene			95.5	77.0-126	
(S) 1,2-Dichloroethane-d4			119	70.0-130	

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3881035-1 01/13/23 19:34

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
C10-C28 Diesel Range	U		0.0222	0.100
C28-C36 Motor Oil Range	U		0.0118	0.100
(S) o-Terphenyl	92.1			52.0-156

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

(LCS) R3881035-2 01/13/23 19:57 • (LCSD) R3881035-3 01/13/23 20:20

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 %
C10-C28 Diesel Range	1.43	1.39	1.47	97.2	103	50.0-150			5.59	20
(S) o-Terphenyl				114	118	52.0-156				

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

# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

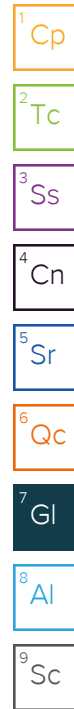
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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

### Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
Q	Sample was prepared and/or analyzed past holding time as defined in the method. Concentrations should be considered minimum values.
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

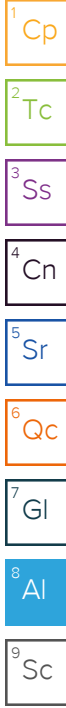
## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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 <sup>1</sup>	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1,6</sup>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1,4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	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 <sup>5</sup>	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA–Crypto	TN00003		

<sup>1</sup> Drinking Water <sup>2</sup> Underground Storage Tanks <sup>3</sup> Aquatic Toxicity <sup>4</sup> Chemical/Microbiological <sup>5</sup> Mold <sup>6</sup> 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.



Company Name/Address:  
**Caerus Oil and Gas**  
 143 Diamond Avenue  
 Parachute, CO 81635

Billing Information:  
 Accounts Payable  
 1001 17th St., Ste. 1600  
 Denver, CO 80202

Pres  
 Chk

Analysis / Container / Preservative

Chain of Custody Page \_\_\_ of \_\_\_

Report to:  
**Brett Middleton**

Email To:  
 JJanicek@caerusoilandgas.com; brollins@caerus

Project Description: **9095**

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

Please Circle:  
 PT  AD CT ET

Phone: **970-285-2653**

Client Project #

Lab Project #

Collected by (print):  
**Will Harmon**

Site/Facility ID #

P.O. #

Collected by (signature):

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

Quote #  
 Date Results Needed  
**ASAP**

Immediately Packed on Ice N \_\_\_ Y  X

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs
RD11-15069-WMFK	6 grab	GW	Surface	1/11/23	0915	17
RN2-07204-ILES	6 grab	GW	Surface	1/11/23	1000	17
RS2-09415-WMFK	6 grab	GW	Surface	1/11/23	1150	17
		GW				17
		GW				17
		GW				17
		GW				17
		GW				17
		GW				17
		GW				17
		GW				17

ALK,ALKB1,ALKCA 250mlHDPE-NoPres	Br,Cl,F,SO4 250mlHDPE-NoPres	DRONMLVI 40mlAmb-HCl-BT	GRO 40mlAmb HCl	PT 250mlHDPE-H2SO4	RA-226/228 1L-HDPE-Add-HNO3	SPCON 250mlHDPE-NoPres	TDS 1L-HDPE NoPres	TSS 1L-HDPE NoPres	Total Metals 250mlHDPE-HNO3
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X
X	X	X	X	X	X	X	X	X	X

**Pace**  
 PEOPLE ADVANCING SCIENCE

**MT JULIET, TN**  
 12065 Lebanon Rd Mount Juliet, TN 37122  
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

SDG # **U573406**

Table # **B005**

Acct #

Template # **215555**

Prelogin: **P963757**  
 PM: 824 - Chris Ward

PB:

Shipped Via: **FedEX Ground**

Remarks | Sample # (lab only)

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

Remarks: **Metals - Ba,B,Ca,Fe,K,Mg,Mn,Na,Se,Sr**

pH \_\_\_\_\_ Temp \_\_\_\_\_  
 Flow \_\_\_\_\_ Other \_\_\_\_\_

Sample Receipt Checklist

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

Relinquished by: (Signature) 	Date: <b>1/11/23</b>	Time: <b>1700</b>	Received by: (Signature) 	Trip Blank Received: <input checked="" type="checkbox"/> Yes / <input type="checkbox"/> No HCl/ MeOH TBR
Relinquished by: (Signature) 	Date: <b>1/11/23</b>	Time: <b>1730</b>	Received by: (Signature) 	Temp: _____ °C Bottles Received: <b>49</b>
Relinquished by: (Signature) 	Date: _____	Time: _____	Received for lab by: (Signature) 	Date: <b>1-12-23</b> Time: <b>8:40</b> Hold: _____ Condition: <b>NCF / OK</b>

Samples returned via: UPS FedEx Courier	Tracking #
--	------------

Company Name/Address: **Caerus Oil and Gas**  
 143 Diamond Avenue  
 Parachute, CO 81635

Billing Information:  
 Accounts Payable  
 1001 17th St., Ste. 1600  
 Denver, CO 80202

Report to: **Brett Middleton**  
 Email To: **JJanicek@caerusoilandgas.com; brollins@caerus**

Project Description: **909J** City/State Collected: **Parachute, CO** Please Circle: PT  CT ET

Phone: **970-285-2653** Client Project # Lab Project #



**MT JULIET, TN**  
 12065 Lebanon Rd Mount Juliet, TN 37122  
 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: <https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

Collected by (print): **Will Harmon** Site/Facility ID # P.O. #

Collected by (signature): *[Signature]* **Rush?** (Lab MUST Be Notified)  
 Same Day  Five Day  
 Next Day  5 Day (Rad Only)  
 Two Day  10 Day (Rad Only)  
 Three Day

Quote # **ASAP** Date Results Needed

Immediately Packed on Ice N  Y  No. of Cntrs

Sample ID Comp/Grab Matrix \* Depth Date Time

V8260BTEXN 40mIAmb-HCl  
 V8260BTEXN 40mIAmb-HCl-Bik  
 pH 125mIHDPE-NoPres

SDG # **L1575406**

Table #

Acctnum: **CAERUSPCO**  
 Template: **T215555**  
 Prelogin: **P963757**  
 PM: **824 - Chris Ward**  
 PB:

Shipped Via: **FedEX Ground**

Remarks Sample # (lab only)

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cntrs	V8260BTEXN 40mIAmb-HCl	V8260BTEXN 40mIAmb-HCl-Bik	pH 125mIHDPE-NoPres									
RD11-15069-WMFK	Grab	GW	Surface	1/11/23	0915	17	X	X	X									-01
RN2-07204-ILES	Grab	GW	Surface	1/11/23	1000	17	X	X	X									-02
RJ2-09415-WMFK	Grab	GW	Surface	1/11/23	1150	17	X		X									-03
		GW				17	X		X									
		GW				17	X		X									
		GW				17	X		X									
		GW				17	X		X									
		GW				17	X		X									
		GW				17	X		X									

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

Remarks: **Metals - Ba,B,Ca,Fe,K,Mg,Mn,Na,Se,Sr**

Samples returned via:  UPS  FedEx  Courier Tracking #

Relinquished by: (Signature) *[Signature]* Date: **1/11/23** Time: **1700** Received by: (Signature) *[Signature]* Trip Blank Received: Yes/No HCL/MeOH TBR

Relinquished by: (Signature) *[Signature]* Date: **1/11/23** Time: **1730** Received by: (Signature) Temp: °C Bottles Received: If preservation required by Login: Date/Time

Relinquished by: (Signature) Date: Time: Received for lab by: (Signature) Date: **1-12-23** Time: **8:40** Hold: Condition: **NCF / OK**

**Sample Receipt Checklist**

COC Seal Present/Intact:  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

L1575400

Tracking Numbers		Temperature
6126 6537 5147		61A2 4.820=4.8
6126 6537 5105		61A2 2.440=2.4