

Caerus Oil and Gas

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

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

Entire Report Reviewed By:



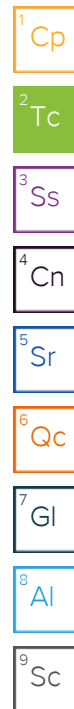
Chris Ward
Project Manager

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Pace Analytical National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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SAMPLE SUMMARY

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

Collected by
A. Smith

Collected date/time
06/20/22 15:20

Received date/time
06/22/22 09:00

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

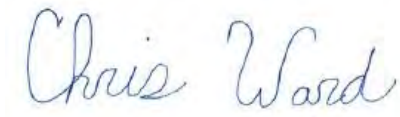
⁷Gl

⁸Al

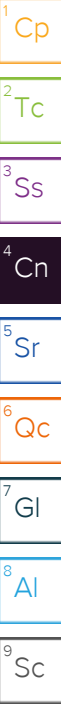
⁹Sc

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 | 0.0738 | | 1 | 07/14/2022 15:04 | WG1891382 |

Wet Chemistry by Method 7199

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

Wet Chemistry by Method 9045D

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

Sample Narrative:

L1507626-01 WG1888292: 8.66 at 23.6C

Wet Chemistry by Method 9050AMod

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

Sample Narrative:

L1507626-01 WG1885637: at 25C

Metals (ICP) by Method 6010B

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

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

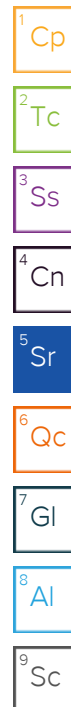
| Analyte | Result | Qualifier | RDL | Dilution | Analysis date / time | Batch |
|----------------------|--------|-----------|-------|----------|----------------------|---------------------------|
| Hot Water Sol. Boron | ND | | 0.200 | 1 | 07/15/2022 16:25 | WG1891380 |

Metals (ICPMS) by Method 6020

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

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

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



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

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

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

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

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

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

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

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

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

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

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

Laboratory Control Sample (LCS)

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

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

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

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

| | Spike Amount | Original Result | MS Result | MSD Result | MS Rec. | MSD Rec. | Dilution | Rec. Limits | MS Qualifier | MSD Qualifier | RPD | RPD Limits |
|---------------------|--------------|-----------------|-----------|------------|---------|----------|----------|-------------|--------------|---------------|------|------------|
| Analyte | mg/kg | mg/kg | mg/kg | mg/kg | % | % | | % | | | % | % |
| Hexavalent Chromium | 20.0 | ND | 15.3 | 14.5 | 76.3 | 72.6 | 1 | 75.0-125 | | J6 | 5.02 | 20 |

Sample Narrative:

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

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

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

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

| | Original Result | DUP Result | Dilution | DUP RPD | <u>DUP Qualifier</u> | DUP RPD Limits |
|---------|-----------------|------------|----------|---------|----------------------|----------------|
| Analyte | su | su | | % | | % |
| pH | 7.73 | 7.71 | 1 | 0.259 | | 1 |

Sample Narrative:

OS: 7.73 at 23.7C

DUP: 7.71 at 23.8C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

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

| | Original Result | DUP Result | Dilution | DUP RPD | <u>DUP Qualifier</u> | DUP RPD Limits |
|---------|-----------------|------------|----------|---------|----------------------|----------------|
| Analyte | su | su | | % | | % |
| pH | 8.68 | 8.67 | 1 | 0.115 | | 1 |

Sample Narrative:

OS: 8.68 at 23.7C

DUP: 8.67 at 23.8C

Laboratory Control Sample (LCS)

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

| | Spike Amount | LCS Result | LCS Rec. | Rec. Limits | <u>LCS Qualifier</u> |
|---------|--------------|------------|----------|-------------|----------------------|
| Analyte | su | su | % | % | |
| pH | 10.0 | 9.92 | 99.2 | 99.0-101 | |

Sample Narrative:

LCS: 9.92 at 23.3C

Method Blank (MB)

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

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

Sample Narrative:

BLANK: at 25C

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

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

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

Sample Narrative:

OS: at 25C

DUP: at 25C

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

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

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

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

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

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

Sample Narrative:

LCS: at 25C



Method Blank (MB)

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

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

Laboratory Control Sample (LCS)

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

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

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

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

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

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

| Analyte | MB Result mg/l | MB Qualifier | MB MDL mg/l | MB RDL mg/l |
|----------------------|-------------------|--------------|----------------|----------------|
| Hot Water Sol. Boron | U | | 0.0167 | 0.200 |

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

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

| Analyte | Spike Amount mg/l | LCS Result mg/l | LCSD Result mg/l | LCS Rec. % | LCSD Rec. % | Rec. Limits % | LCS Qualifier | LCSD Qualifier | RPD % | RPD Limits % |
|----------------------|----------------------|--------------------|---------------------|---------------|----------------|------------------|---------------|----------------|----------|-----------------|
| Hot Water Sol. Boron | 1.00 | 0.986 | 1.01 | 98.6 | 101 | 80.0-120 | | | 2.12 | 20 |

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

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

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

Laboratory Control Sample (LCS)

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

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

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

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

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

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

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

Laboratory Control Sample (LCS)

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

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

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

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

Laboratory Control Sample (LCS)

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

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

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

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

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

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

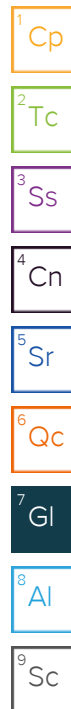
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location.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

Abbreviations and Definitions

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

Qualifier Description

| | |
|----|--|
| J | The identification of the analyte is acceptable; the reported value is an estimate. |
| J3 | The associated batch QC was outside the established quality control range for precision. |
| J5 | The sample matrix interfered with the ability to make any accurate determination; spike value is high. |
| J6 | The sample matrix interfered with the ability to make any accurate determination; spike value is low. |
| T8 | Sample(s) received past/too close to holding time expiration. |



ACCREDITATIONS & LOCATIONS

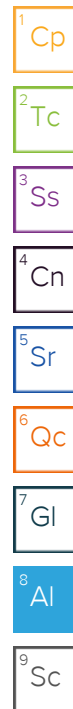
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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

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

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

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



| | |
|---|--------------------------|
| Trip Blank Received: Y N NA HCL MeOH TSP Other | |
| Non Conformance(s): YES / NO | Page: _____ of: _____ |