

**Energy and Carbon Management Commission**

Sample Delivery Group: L1827154  
Samples Received: 02/15/2025  
Project Number:  
Description: Cosslett A9  
Site: CASSLETT A9  
Report To: Alexander Ahmadian  
1120 Lincoln St.  
Suite 801  
Denver, CO 80203

Entire Report Reviewed By:



Shane Gambill  
Project Manager

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**Pace Analytical National**12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 [mydata.pacelabs.com](https://mydata.pacelabs.com)

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<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

STOCKPILE-01 L1827154-01 Solid

Collected by  
Alexander  
Ahmadian

Collected date/time  
02/13/25 12:20

Received date/time  
02/15/25 08:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG2453983	1	02/19/25 14:36	02/19/25 14:36	RLS	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG2450090	1	02/16/25 16:37	02/17/25 05:41	VSS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG2454721	1	02/20/25 08:59	02/20/25 10:57	BJM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG2454726	1	02/20/25 09:01	02/20/25 11:30	BMD	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG2453988	1	02/19/25 16:33	02/19/25 18:26	MAP	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG2452455	5	02/15/25 11:46	02/16/25 18:49	LD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG2452932	1	02/15/25 10:19	02/16/25 19:29	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG2452479	1	02/15/25 10:19	02/15/25 13:18	JAH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG2452669	10	02/16/25 07:27	02/17/25 11:59	NH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG2452670	1	02/16/25 07:31	02/16/25 15:10	NJK	Mt. Juliet, TN

<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

ACCOUNT:

Energy and Carbon Management Commission

PROJECT:

SDG:

L1827154

DATE/TIME:

02/20/25 16:43

PAGE:

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# 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.



Shane Gambill  
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	5.23		1	02/19/2025 14:36	WG2453983

1  
Cp

2  
Tc

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	02/17/2025 05:41	<a href="#">WG2450090</a>

3  
Ss

4  
Cn

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.94	<a href="#">T8</a>	1	02/20/2025 10:57	<a href="#">WG2454721</a>

5  
Sr

6  
Qc

Sample Narrative:

L1827154-01 WG2454721: 7.94 at 20.5C

7  
Gl

8  
Al

Wet Chemistry by Method 9050AMod

Analyte	Result	Units	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	2010	umhos/cm		10.0	1	02/20/2025 11:30	<a href="#">WG2454726</a>

9  
Sc

Sample Narrative:

L1827154-01 WG2454726: at 25C

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.757		0.200	1	02/19/2025 18:26	<a href="#">WG2453988</a>

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.79	<a href="#">O1</a>	1.00	5	02/16/2025 18:49	<a href="#">WG2452455</a>
Barium	166	<a href="#">O1</a>	2.50	5	02/16/2025 18:49	<a href="#">WG2452455</a>
Cadmium	ND		1.00	5	02/16/2025 18:49	<a href="#">WG2452455</a>
Copper	13.9		5.00	5	02/16/2025 18:49	<a href="#">WG2452455</a>
Lead	11.8		2.00	5	02/16/2025 18:49	<a href="#">WG2452455</a>
Nickel	15.2	<a href="#">O1</a>	2.50	5	02/16/2025 18:49	<a href="#">WG2452455</a>
Selenium	ND		2.50	5	02/16/2025 18:49	<a href="#">WG2452455</a>
Silver	ND		0.500	5	02/16/2025 18:49	<a href="#">WG2452455</a>
Zinc	55.0		25.0	5	02/16/2025 18:49	<a href="#">WG2452455</a>

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	3.28		0.100	1	02/16/2025 19:29	<a href="#">WG2452932</a>
(S) a,a,a-Trifluorotoluene(FID)	93.8		77.0-120		02/16/2025 19:29	<a href="#">WG2452932</a>

## STOCKPILE-01

Collected date/time: 02/13/25 12:20

## SAMPLE RESULTS - 01

L1827154

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00106		0.00100	1	02/15/2025 13:18	<a href="#">WG2452479</a>
Toluene	ND		0.00500	1	02/15/2025 13:18	<a href="#">WG2452479</a>
Ethylbenzene	0.0124		0.00250	1	02/15/2025 13:18	<a href="#">WG2452479</a>
Xylenes, Total	0.0844		0.00650	1	02/15/2025 13:18	<a href="#">WG2452479</a>
1,2,4-Trimethylbenzene	0.383		0.00500	1	02/15/2025 13:18	<a href="#">WG2452479</a>
1,3,5-Trimethylbenzene	0.141		0.00500	1	02/15/2025 13:18	<a href="#">WG2452479</a>
(S) Toluene-d8	98.6		75.0-131		02/15/2025 13:18	<a href="#">WG2452479</a>
(S) 4-Bromofluorobenzene	115		67.0-138		02/15/2025 13:18	<a href="#">WG2452479</a>
(S) 1,2-Dichloroethane-d4	105		70.0-130		02/15/2025 13:18	<a href="#">WG2452479</a>

## 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	410	<u>V</u>	40.0	10	02/17/2025 11:59	<a href="#">WG2452669</a>
C28-C36 Motor Oil Range	268		40.0	10	02/17/2025 11:59	<a href="#">WG2452669</a>
(S) o-Terphenyl	95.1		18.0-148		02/17/2025 11:59	<a href="#">WG2452669</a>

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acenaphthene	0.136		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Anthracene	ND		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Benzo(a)anthracene	ND		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Benzo(b)fluoranthene	0.0152		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Benzo(k)fluoranthene	ND		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Benzo(a)pyrene	0.00770		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Chrysene	0.0365		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Dibenz(a,h)anthracene	ND		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Fluoranthene	0.0549		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Fluorene	0.599		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
1-Methylnaphthalene	1.99		0.0200	1	02/16/2025 15:10	<a href="#">WG2452670</a>
2-Methylnaphthalene	2.92		0.0200	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Naphthalene	1.10		0.0200	1	02/16/2025 15:10	<a href="#">WG2452670</a>
Pyrene	0.0430		0.00600	1	02/16/2025 15:10	<a href="#">WG2452670</a>
(S) p-Terphenyl-d14	68.9		23.0-120		02/16/2025 15:10	<a href="#">WG2452670</a>
(S) Nitrobenzene-d5	0.000	<u>J2</u>	14.0-149		02/16/2025 15:10	<a href="#">WG2452670</a>
(S) 2-Fluorobiphenyl	84.2		34.0-125		02/16/2025 15:10	<a href="#">WG2452670</a>

## Sample Narrative:

L1827154-01 WG2452670: Surrogate failure due to matrix interference

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R4177224-1 02/17/25 00:16

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

L1826308-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1826308-01 02/17/25 02:53 • (DUP) R4177224-7 02/17/25 03:04

	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

L1826590-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1826590-04 02/17/25 03:46 • (DUP) R4177224-8 02/17/25 03:56

	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) R4177224-2 02/17/25 00:26

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.3	103	80.0-120	

L1825450-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1825450-02 02/17/25 00:47 • (MS) R4177224-3 02/17/25 00:58 • (MSD) R4177224-4 02/17/25 01:08

	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	18.0	19.7	89.8	98.5	1	75.0-125			9.22	20

L1825450-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1825450-02 02/17/25 00:47 • (MS) R4177224-5 02/17/25 01:19

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	641	ND	736	115	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1827159-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1827159-01 02/20/25 10:57 • (DUP) R4178476-2 02/20/25 10:57

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	7.11	7.10	1	0.141		1

Sample Narrative:

OS: 7.11 at 20.7C

DUP: 7.1 at 20.7C

Laboratory Control Sample (LCS)

(LCS) R4178476-1 02/20/25 10:57

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.99	99.9	99.0-101	

Sample Narrative:

LCS: 9.99 at 19.6C

<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) R4178492-1 02/20/25 11:30

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

L1827159-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1827159-02 02/20/25 11:30 • (DUP) R4178492-3 02/20/25 11:30

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	208	210	1	1.10		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R4178492-2 02/20/25 11:30

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	1130	1150	102	85.0-115	

Sample Narrative:

LCS: at 25C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4178324-1 02/19/25 18:21

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) R4178324-2 02/19/25 18:23 • (LCSD) R4178324-3 02/19/25 18:25

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	1.08	1.10	108	110	80.0-120			1.64	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R4177177-1 02/16/25 18:43

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00
Barium	U		0.152	2.50
Cadmium	U		0.0855	1.00
Copper	U		0.133	5.00
Lead	U		0.0990	2.00
Nickel	U		0.197	2.50
Selenium	U		0.180	2.50
Silver	U		0.0865	0.500
Zinc	U		0.740	25.0

Laboratory Control Sample (LCS)

(LCS) R4177177-2 02/16/25 18:46

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	103	103	80.0-120	
Barium	100	106	106	80.0-120	
Cadmium	100	104	104	80.0-120	
Copper	100	106	106	80.0-120	
Lead	100	103	103	80.0-120	
Nickel	100	106	106	80.0-120	
Selenium	100	105	105	80.0-120	
Silver	20.0	20.4	102	80.0-120	
Zinc	100	103	103	80.0-120	

L1827154-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1827154-01 02/16/25 18:49 • (MS) R4177177-5 02/16/25 18:59 • (MSD) R4177177-6 02/16/25 19:03

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	5.79	95.5	92.4	89.8	86.6	5	75.0-125			3.34	20
Barium	100	166	283	271	116	105	5	75.0-125			4.07	20
Cadmium	100	ND	89.4	84.7	89.2	84.5	5	75.0-125			5.39	20
Copper	100	13.9	106	101	91.8	86.9	5	75.0-125			4.70	20
Lead	100	11.8	101	97.5	88.9	85.7	5	75.0-125			3.27	20
Nickel	100	15.2	106	103	90.5	87.4	5	75.0-125			3.06	20
Selenium	100	ND	92.6	88.0	91.7	87.1	5	75.0-125			5.12	20
Silver	20.0	ND	17.8	17.1	89.0	85.5	5	75.0-125			3.96	20
Zinc	100	55.0	144	142	89.4	87.3	5	75.0-125			1.48	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4177235-2 02/16/25 18:23

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0818	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	96.5			77.0-120

Laboratory Control Sample (LCS)

(LCS) R4177235-1 02/16/25 17:38

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.00	5.29	106	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			106	77.0-120	

<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) R4177132-3 02/15/25 11:11

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	97.2			75.0-131
(S) 4-Bromofluorobenzene	96.3			67.0-138
(S) 1,2-Dichloroethane-d4	101			70.0-130

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

(LCS) R4177132-1 02/15/25 09:36 • (LCSD) R4177132-2 02/15/25 09:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.118	0.112	94.4	89.6	70.0-123			5.22	20
Toluene	0.125	0.115	0.110	92.0	88.0	75.0-121			4.44	20
Ethylbenzene	0.125	0.114	0.114	91.2	91.2	74.0-126			0.000	20
Xylenes, Total	0.375	0.347	0.346	92.5	92.3	72.0-127			0.289	20
1,2,4-Trimethylbenzene	0.125	0.122	0.116	97.6	92.8	70.0-126			5.04	20
1,3,5-Trimethylbenzene	0.125	0.120	0.117	96.0	93.6	73.0-127			2.53	20
(S) Toluene-d8				95.9	95.9	75.0-131				
(S) 4-Bromofluorobenzene				96.7	99.1	67.0-138				
(S) 1,2-Dichloroethane-d4				112	109	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4177351-1 02/17/25 10:54

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

Laboratory Control Sample (LCS)

(LCS) R4177351-2 02/17/25 11:07

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	40.8	81.6	50.0-150	
(S) o-Terphenyl			82.4	18.0-148	

L1827154-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1827154-01 02/17/25 11:59 • (MS) R4177351-3 02/17/25 12:12 • (MSD) R4177351-4 02/17/25 12:25

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	48.9	410	2070	1900	3390	3050	10	50.0-150	V	V	8.56	20
(S) o-Terphenyl					224	220		18.0-148	J1	J1		

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R4177168-2 02/16/25 14:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	85.1			23.0-120
(S) Nitrobenzene-d5	95.3			14.0-149
(S) 2-Fluorobiphenyl	87.5			34.0-125

1  
Cp

2  
Tc

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Ss

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Cn

5  
Sr

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Qc

7  
Gl

8  
Al

9  
Sc

Laboratory Control Sample (LCS)

(LCS) R4177168-1 02/16/25 14:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0632	79.0	50.0-120	
Anthracene	0.0800	0.0659	82.4	50.0-126	
Benzo(a)anthracene	0.0800	0.0685	85.6	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0636	79.5	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0608	76.0	49.0-125	
Benzo(a)pyrene	0.0800	0.0516	64.5	42.0-120	
Chrysene	0.0800	0.0671	83.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0672	84.0	47.0-125	
Fluoranthene	0.0800	0.0712	89.0	49.0-129	
Fluorene	0.0800	0.0721	90.1	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0688	86.0	46.0-125	
1-Methylnaphthalene	0.0800	0.0705	88.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0687	85.9	50.0-120	
Naphthalene	0.0800	0.0660	82.5	50.0-120	
Pyrene	0.0800	0.0674	84.3	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R4177168-1 02/16/25 14:31

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			82.7	23.0-120	
(S) Nitrobenzene-d5			97.8	14.0-149	
(S) 2-Fluorobiphenyl			85.9	34.0-125	

L1826689-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1826689-04 02/16/25 17:47 • (MS) R4177168-3 02/16/25 18:06 • (MSD) R4177168-4 02/16/25 18:26

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Acenaphthene	0.0768	ND	0.0547	0.0551	71.2	72.5	1	14.0-127			0.729	27
Anthracene	0.0768	ND	0.0584	0.0573	76.0	75.4	1	10.0-145			1.90	30
Benzo(a)anthracene	0.0768	ND	0.0600	0.0603	78.1	79.3	1	10.0-139			0.499	30
Benzo(b)fluoranthene	0.0768	ND	0.0518	0.0538	67.4	70.8	1	10.0-140			3.79	36
Benzo(k)fluoranthene	0.0768	ND	0.0488	0.0500	63.5	65.8	1	10.0-137			2.43	31
Benzo(a)pyrene	0.0768	ND	0.0530	0.0535	69.0	70.4	1	10.0-141			0.939	31
Chrysene	0.0768	ND	0.0573	0.0572	74.6	75.3	1	10.0-145			0.175	30
Dibenz(a,h)anthracene	0.0768	ND	0.0568	0.0572	74.0	75.3	1	10.0-132			0.702	31
Fluoranthene	0.0768	ND	0.0601	0.0616	78.3	81.1	1	10.0-153			2.47	33
Fluorene	0.0768	ND	0.0621	0.0619	80.9	81.4	1	11.0-130			0.323	29
Indeno(1,2,3-cd)pyrene	0.0768	ND	0.0578	0.0593	75.3	78.0	1	10.0-137			2.56	32
1-Methylnaphthalene	0.0768	ND	0.0597	0.0608	77.7	80.0	1	10.0-142			1.83	28
2-Methylnaphthalene	0.0768	ND	0.0587	0.0589	76.4	77.5	1	10.0-137			0.340	28
Naphthalene	0.0768	ND	0.0559	0.0557	72.8	73.3	1	10.0-135			0.358	27
Pyrene	0.0768	ND	0.0551	0.0574	71.7	75.5	1	10.0-148			4.09	35
(S) p-Terphenyl-d14					72.3	48.0		23.0-120				
(S) Nitrobenzene-d5					92.1	63.6		14.0-149				
(S) 2-Fluorobiphenyl					78.3	55.1		34.0-125				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

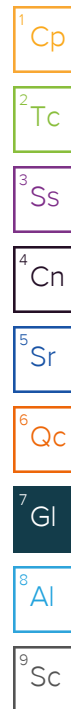
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



# ACCREDITATIONS & LOCATIONS

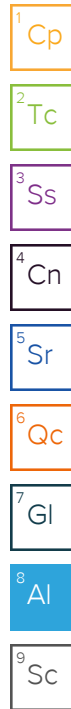
## Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



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