

Quandary Consultants

Sample Delivery Group: L1477351
Samples Received: 03/31/2022
Project Number:
Description: Verdad County Line

Report To: Asher Weinberg
55 E. 4th Avenue
Denver, CO 80203

Entire Report Reviewed By:



Chris Ward
Project Manager

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

SAMPLE SUMMARY

MW-3 L1477351-01 GW

Collected by
Erin Bailey

Collected date/time
03/30/22 09:26

Received date/time
03/31/22 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1841851	1	04/01/22 11:09	04/01/22 14:18	MMF	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1843141	1	04/05/22 09:56	04/05/22 09:56	ARD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1841803	1	04/02/22 00:36	04/02/22 00:36	RAF	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1841803	5	04/02/22 01:30	04/02/22 01:30	RAF	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1844360	1	04/06/22 20:17	04/08/22 04:21	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1842188	1	04/03/22 22:50	04/03/22 22:50	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1843963	1	04/06/22 16:55	04/06/22 16:55	CMS	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1842412	1	04/03/22 02:33	04/03/22 02:33	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1842508	1	04/04/22 08:14	04/06/22 09:35	DMG	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



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Dissolved Solids	922000		20000	1	04/01/2022 14:18	WG1841851

Wet Chemistry by Method 2320 B-2011

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Alkalinity	321000		20000	1	04/05/2022 09:56	WG1843141
Alkalinity,Bicarbonate	321000		20000	1	04/05/2022 09:56	WG1843141
Alkalinity,Carbonate	ND		20000	1	04/05/2022 09:56	WG1843141

Sample Narrative:

L1477351-01 WG1843141: Endpoint pH 4.5 headspace

Wet Chemistry by Method 9056A

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Bromide	ND		1000	1	04/02/2022 00:36	WG1841803
Chloride	193000		5000	5	04/02/2022 01:30	WG1841803
Fluoride	1960		150	1	04/02/2022 00:36	WG1841803
Sulfate	190000		25000	5	04/02/2022 01:30	WG1841803

Metals (ICP) by Method 6010B

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Calcium	137000		1000	1	04/08/2022 04:21	WG1844360
Magnesium	41700		1000	1	04/08/2022 04:21	WG1844360
Potassium	4080		2000	1	04/08/2022 04:21	WG1844360
Sodium	123000		3000	1	04/08/2022 04:21	WG1844360

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

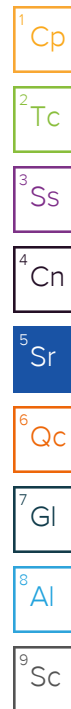
Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	ND		100	1	04/03/2022 22:50	WG1842188
(S) a,a,a-Trifluorotoluene(FID)	97.2		78.0-120		04/03/2022 22:50	WG1842188

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Methane	ND		10.0	1	04/06/2022 16:55	WG1843963
Ethane	ND		13.0	1	04/06/2022 16:55	WG1843963
Propane	ND		19.0	1	04/06/2022 16:55	WG1843963

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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
Benzene	ND		1.00	1	04/03/2022 02:33	WG1842412
Toluene	ND		1.00	1	04/03/2022 02:33	WG1842412
Ethylbenzene	ND		1.00	1	04/03/2022 02:33	WG1842412
Total Xylenes	ND		3.00	1	04/03/2022 02:33	WG1842412
(S) Toluene-d8	105		80.0-120		04/03/2022 02:33	WG1842412
(S) 4-Bromofluorobenzene	104		77.0-126		04/03/2022 02:33	WG1842412
(S) 1,2-Dichloroethane-d4	104		70.0-130		04/03/2022 02:33	WG1842412



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

Analyte	Result ug/l	Qualifier	RDL ug/l	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	ND		100	1	04/06/2022 09:35	WG1842508
C28-C36 Motor Oil Range	ND		100	1	04/06/2022 09:35	WG1842508
(S) o-Terphenyl	84.2		52.0-156		04/06/2022 09:35	WG1842508

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3777363-1 04/01/22 14:18

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Dissolved Solids	U		10000	10000

L1477319-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1477319-01 04/01/22 14:18 • (DUP) R3777363-3 04/01/22 14:18

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	818000	836000	1	2.18		5

L1477351-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1477351-01 04/01/22 14:18 • (DUP) R3777363-4 04/01/22 14:18

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Dissolved Solids	922000	936000	1	1.51		5

Laboratory Control Sample (LCS)

(LCS) R3777363-2 04/01/22 14:18

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Dissolved Solids	8800000	8510000	96.7	77.4-123	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3777919-2 04/05/22 08:14

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Alkalinity	U		8450	20000
Alkalinity,Bicarbonate	U		8450	20000
Alkalinity,Carbonate	U		8450	20000

Sample Narrative:

BLANK: Endpoint pH 4.5

L1476869-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1476869-03 04/05/22 08:20 • (DUP) R3777919-3 04/05/22 08:31

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	575000	565000	1	1.71		20
Alkalinity,Bicarbonate	575000	565000	1	1.71		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5

L1477325-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1477325-07 04/05/22 09:38 • (DUP) R3777919-4 04/05/22 09:42

Analyte	Original Result ug/l	DUP Result ug/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	344000	348000	1	1.10		20
Alkalinity,Bicarbonate	344000	348000	1	1.10		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 headspace

DUP: Endpoint pH 4.5



Laboratory Control Sample (LCS)

(LCS) R3777919-1 04/05/22 08:09

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Alkalinity	100000	108000	108	90.0-110	

Sample Narrative:
LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3776876-1 04/01/22 10:44

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Bromide	U		353	1000
Chloride	U		379	1000
Fluoride	U		64.0	150
Sulfate	U		594	5000

L1477319-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1477319-07 04/01/22 15:56 • (DUP) R3776876-3 04/01/22 16:14

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Bromide	ND	ND	1	0.000		15
Chloride	36700	36600	1	0.273		15
Fluoride	342	338	1	1.32		15
Sulfate	ND	ND	1	1.19		15

L1477320-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1477320-01 04/01/22 20:43 • (DUP) R3776876-7 04/01/22 21:01

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Bromide	ND	ND	1	0.000		15
Chloride	15800	15900	1	0.141		15
Fluoride	687	687	1	0.0146		15
Sulfate	11000	11100	1	1.03		15

Laboratory Control Sample (LCS)

(LCS) R3776876-2 04/01/22 11:02

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	ug/l	ug/l	%	%	
Bromide	40000	38800	97.0	80.0-120	
Chloride	40000	39500	98.8	80.0-120	
Fluoride	8000	8110	101	80.0-120	
Sulfate	40000	39700	99.3	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1477319-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1477319-07 04/01/22 15:56 • (MS) R3776876-5 04/01/22 17:08 • (MSD) R3776876-6 04/01/22 17:26

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50000	ND	49200	49200	98.4	98.4	1	80.0-120			0.0307	15
Chloride	50000	36700	86500	87500	99.6	102	1	80.0-120			1.12	15
Fluoride	5000	342	5340	5370	100	100	1	80.0-120			0.463	15
Sulfate	50000	ND	53500	53500	101	101	1	80.0-120			0.129	15

L1477320-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1477320-01 04/01/22 20:43 • (MS) R3776876-8 04/01/22 21:55 • (MSD) R3776876-9 04/01/22 22:13

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Bromide	50000	ND	49500	50100	99.0	100	1	80.0-120			1.25	15
Chloride	50000	15800	66700	67800	102	104	1	80.0-120			1.56	15
Fluoride	5000	687	5730	5860	101	103	1	80.0-120			2.17	15
Sulfate	50000	11000	62800	63600	104	105	1	80.0-120			1.31	15

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3778852-1 04/08/22 04:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Calcium	U		79.3	1000
Magnesium	U		85.3	1000
Potassium	U		261	2000
Sodium	U		504	3000

Laboratory Control Sample (LCS)

(LCS) R3778852-2 04/08/22 04:43

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Calcium	10000	9820	98.2	80.0-120	
Magnesium	10000	9860	98.6	80.0-120	
Potassium	10000	9630	96.3	80.0-120	
Sodium	10000	9990	99.9	80.0-120	

L1477346-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1477346-01 04/08/22 04:46 • (MS) R3778852-4 04/08/22 04:51 • (MSD) R3778852-5 04/08/22 04:53

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Calcium	10000	128000	136000	136000	83.0	86.6	1	75.0-125			0.260	20
Magnesium	10000	72700	80600	81000	78.4	82.7	1	75.0-125			0.534	20
Potassium	10000	4240	13400	13500	91.8	92.7	1	75.0-125			0.684	20
Sodium	10000	181000	186000	187000	49.8	66.1	1	75.0-125	V	V	0.875	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3777814-2 04/03/22 19:40

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
TPH (GC/FID) Low Fraction	40.1	⬇	31.4	100
(S) a,a,a-Trifluorotoluene(FID)	96.9			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3777814-1 04/03/22 18:01

Analyte	Spike Amount ug/l	LCS Result ug/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5500	6050	110	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			105	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) R3778325-2 04/06/22 15:37

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	ug/l		ug/l	ug/l
Methane	U		2.91	10.0
Ethane	U		4.07	13.0
Propane	U		5.48	19.0

L1477346-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1477346-01 04/06/22 16:48 • (DUP) R3778325-3 04/06/22 16:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Methane	ND	ND	1	0.000		20
Ethane	ND	ND	1	0.000		20
Propane	ND	ND	1	0.000		20

L1477457-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1477457-08 04/06/22 17:39 • (DUP) R3778325-4 04/06/22 17:44

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	ug/l	ug/l		%		%
Methane	3560	3730	1	4.66		20
Ethane	ND	ND	1	0.000		20
Propane	ND	ND	1	0.000		20

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

(LCS) R3778325-1 04/06/22 15:32 • (LCSD) R3778325-7 04/06/22 18:00

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	ug/l	ug/l	ug/l	%	%	%			%	%
Methane	67.8	68.8	68.1	101	100	85.0-115			1.02	20
Ethane	129	113	118	87.6	91.5	85.0-115			4.33	20
Propane	186	167	175	89.8	94.1	85.0-115			4.68	20

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

L1477325-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1477325-07 04/06/22 16:39 • (MS) R3778325-5 04/06/22 17:48 • (MSD) R3778325-6 04/06/22 17:56

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Methane	67.8	ND	71.9	72.9	106	108	1	50.0-150			1.38	20
Ethane	129	ND	121	124	93.8	96.1	1	50.0-150			2.45	20
Propane	186	ND	178	183	95.7	98.4	1	50.0-150			2.77	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3777796-2 04/02/22 20:30

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
Benzene	U		0.0941	1.00
Toluene	U		0.278	1.00
Ethylbenzene	U		0.137	1.00
Xylenes, Total	U		0.174	3.00
(S) Toluene-d8	105			80.0-120
(S) 4-Bromofluorobenzene	104			77.0-126
(S) 1,2-Dichloroethane-d4	107			70.0-130

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

(LCS) R3777796-1 04/02/22 19:52 • (LCSD) R3777796-3 04/02/22 21:45

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	4.47	4.02	89.4	80.4	70.0-123			10.6	20
Toluene	5.00	5.00	4.77	100	95.4	79.0-120			4.71	20
Ethylbenzene	5.00	4.99	4.62	99.8	92.4	79.0-123			7.70	20
Xylenes, Total	15.0	14.6	14.7	97.3	98.0	79.0-123			0.683	20
(S) Toluene-d8				103	108	80.0-120				
(S) 4-Bromofluorobenzene				102	95.6	77.0-126				
(S) 1,2-Dichloroethane-d4				102	86.3	70.0-130				

L1477325-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1477325-07 04/03/22 01:17 • (MS) R3777796-4 04/03/22 04:26 • (MSD) R3777796-5 04/03/22 04:44

Analyte	Spike Amount ug/l	Original Result ug/l	MS Result ug/l	MSD Result ug/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	5.00	ND	4.61	5.70	92.2	114	1	17.0-158			21.1	27
Toluene	5.00	ND	4.90	6.24	98.0	125	1	26.0-154			24.1	28
Ethylbenzene	5.00	ND	4.73	6.09	94.6	122	1	30.0-155			25.1	27
Xylenes, Total	15.0	ND	14.0	18.3	93.3	122	1	29.0-154			26.6	28
(S) Toluene-d8					101	102		80.0-120				
(S) 4-Bromofluorobenzene					99.9	102		77.0-126				
(S) 1,2-Dichloroethane-d4					105	106		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3777988-1 04/05/22 15:42

Analyte	MB Result ug/l	MB Qualifier	MB MDL ug/l	MB RDL ug/l
C10-C28 Diesel Range	U		22.2	100
C28-C36 Motor Oil Range	U		11.8	100
(S) o-Terphenyl	86.5			52.0-156

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

(LCS) R3777988-2 04/05/22 16:08 • (LCSD) R3777988-3 04/05/22 16:34

Analyte	Spike Amount ug/l	LCS Result ug/l	LCSD Result ug/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
C10-C28 Diesel Range	1500	1600	1570	107	105	50.0-150			1.89	20
(S) o-Terphenyl				109	111	52.0-156				

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.

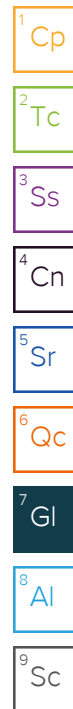
Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. 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.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	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.



