

October 22, 2019

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Entrada Consulting Group

Sample Delivery Group: L1149401
Samples Received: 10/12/2019
Project Number:
Description: 604-41-32 Spill Response

Report To: Stuart Hall
240 Mesa Avenue
Grand Junction, CO 81501

Entire Report Reviewed By:

Chris Ward

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.





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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



2011011-604-41-32WS L1149401-01 GW

Collected by
Chance Holder

Collected date/time
10/11/19 12:30

Received date/time
10/12/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1362194	1	10/13/19 11:11	10/13/19 11:57	TH	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1365100	1	10/19/19 18:01	10/19/19 18:01	LEB	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1364763	1	10/17/19 21:28	10/21/19 16:16	JER	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1362670	1	10/14/19 23:50	10/14/19 23:50	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1363944	1	10/16/19 21:43	10/16/19 21:43	AKA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1362323	1	10/15/19 11:49	10/15/19 11:49	JD	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1362323	500	10/15/19 10:39	10/15/19 10:39	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1363327	1	10/16/19 08:49	10/16/19 21:17	EL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1363327	10	10/16/19 08:49	10/17/19 03:38	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1364751	100	10/17/19 16:50	10/17/19 16:50	JAH	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8021	WG1363835	1	10/16/19 22:28	10/16/19 22:28	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1363317	10	10/15/19 17:32	10/17/19 19:02	SHG	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

ACCOUNT:

Entrada Consulting Group

PROJECT:

SDG:

L1149401

DATE/TIME:

10/22/19 14:54

PAGE:

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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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	16900		400	1	10/13/2019 11:57	WG1362194

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1060		20.0	1	10/19/2019 18:01	WG1365100

Sample Narrative:

L1149401-01 WG1365100: Endpoint pH 4.5

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Phosphorus, Total	0.221		0.100	1	10/21/2019 16:16	WG1364763

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.84	T8	1	10/14/2019 23:50	WG1362670

Sample Narrative:

L1149401-01 WG1362670: 6.84 at 17.6C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	26600		10.0	1	10/16/2019 21:43	WG1363944

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	78.0		1.00	1	10/15/2019 11:49	WG1362323
Chloride	9770		500	500	10/15/2019 10:39	WG1362323
Fluoride	ND		0.100	1	10/15/2019 11:49	WG1362323
Nitrate as (N)	ND	T8	0.100	1	10/15/2019 11:49	WG1362323
Nitrite as (N)	ND	T8	0.100	1	10/15/2019 11:49	WG1362323
Sulfate	5.96		5.00	1	10/15/2019 11:49	WG1362323

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	33.9		0.00500	1	10/16/2019 21:17	WG1363327
Boron	6.58		0.200	1	10/16/2019 21:17	WG1363327
Calcium	180		1.00	1	10/16/2019 21:17	WG1363327
Iron	44.1		0.100	1	10/16/2019 21:17	WG1363327
Magnesium	19.4		1.00	1	10/16/2019 21:17	WG1363327
Manganese	1.10		0.0100	1	10/16/2019 21:17	WG1363327
Potassium	67.5		1.00	1	10/16/2019 21:17	WG1363327
Selenium	ND		0.0100	1	10/16/2019 21:17	WG1363327
Sodium	5920		10.0	10	10/17/2019 03:38	WG1363327
Strontium	19.6		0.100	10	10/17/2019 03:38	WG1363327



Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	3.92		0.0500	100	10/17/2019 16:50	WG1364751
Toluene	5.49		0.100	100	10/17/2019 16:50	WG1364751
Ethylbenzene	0.189		0.000500	1	10/16/2019 22:28	WG1363835
Total Xylene	3.47		0.150	100	10/17/2019 16:50	WG1364751
TPH (GC/FID) Low Fraction	38.4	<u>B</u>	10.0	100	10/17/2019 16:50	WG1364751
(S) a,a,a-Trifluorotoluene(FID)	92.3		78.0-120		10/16/2019 22:28	WG1363835
(S) a,a,a-Trifluorotoluene(FID)	107		78.0-120		10/17/2019 16:50	WG1364751
(S) a,a,a-Trifluorotoluene(PID)	123		79.0-125		10/16/2019 22:28	WG1363835
(S) a,a,a-Trifluorotoluene(PID)	99.2		79.0-125		10/17/2019 16:50	WG1364751

Semi-Volatile Organic Compounds (GC) by Method 3511/8015

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	79.9		1.00	10	10/17/2019 19:02	WG1363317
(S) o-Terphenyl	0.000	<u>J2</u>	31.0-160		10/17/2019 19:02	WG1363317

Sample Narrative:

L1149401-01 WG1363317: 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) R3460809-1 10/13/19 11:57

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		2.82	10.0

L1149219-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1149219-03 10/13/19 11:57 • (DUP) R3460809-3 10/13/19 11:57

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	2170	2660	1	20.3	<u>J3</u>	5

Laboratory Control Sample (LCS)

(LCS) R3460809-2 10/13/19 11:57

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	8800	8550	97.2	85.0-115	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3462775-1 10/19/19 11:13

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Alkalinity	4.33	⬇	2.71	20.0

Sample Narrative:
BLANK: Endpoint pH 4.5

L1147285-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147285-01 10/19/19 12:25 • (DUP) R3462775-3 10/19/19 12:34

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Alkalinity	100	93.7	1	6.64		20

Sample Narrative:
OS: Endpoint pH 4.5 HEADSPACE
DUP: Endpoint pH 4.5

L1149401-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149401-01 10/19/19 18:01 • (DUP) R3462775-6 10/19/19 18:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Alkalinity	1060	1080	1	1.63		20

Sample Narrative:
OS: Endpoint pH 4.5
DUP: Endpoint pH 4.5

Laboratory Control Sample (LCS)

(LCS) R3462775-5 10/19/19 13:33

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Alkalinity	100	98.3	98.3	85.0-115	

Sample Narrative:
LCS: Endpoint pH 4.5

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Method Blank (MB)

(MB) R3463353-1 10/21/19 16:01

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1149541-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149541-01 10/21/19 16:17 • (DUP) R3463353-5 10/21/19 16:19

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Phosphorus,Total	ND	0.0925	1	0.000		20

L1149667-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149667-01 10/21/19 16:32 • (DUP) R3463353-7 10/21/19 16:33

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Phosphorus,Total	2.56	2.62	1	2.32		20

Laboratory Control Sample (LCS)

(LCS) R3463353-2 10/21/19 16:02

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Phosphorus,Total	2.00	1.86	93.0	90.0-110	

L1148903-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148903-01 10/21/19 16:05 • (MS) R3463353-3 10/21/19 16:06 • (MSD) R3463353-4 10/21/19 16:07

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Phosphorus,Total	2.50	2.88	4.59	4.83	68.4	78.0	1	90.0-110	J6	J6	5.10	20

L1149543-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1149543-01 10/21/19 16:20 • (MS) R3463353-6 10/21/19 16:21

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Phosphorus,Total	2.50	ND	2.16	84.6	1	90.0-110	J6



L1149219-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149219-01 10/14/19 23:50 • (DUP) R3460974-2 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.92	7.92	1	0.000		1

Sample Narrative:

OS: 7.92 at 18.9C

DUP: 7.92 at 19.1C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1149219-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1149219-02 10/14/19 23:50 • (DUP) R3460974-3 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.48	7.45	1	0.402		1

Sample Narrative:

OS: 7.48 at 18.5C

DUP: 7.45 at 18.5C

L1149219-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1149219-03 10/14/19 23:50 • (DUP) R3460974-4 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.24	7.24	1	0.000		1

Sample Narrative:

OS: 7.24 at 18.3C

DUP: 7.24 at 18.3C

L1149219-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1149219-04 10/14/19 23:50 • (DUP) R3460974-5 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.47	7.50	1	0.401		1

Sample Narrative:



L1149219-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1149219-04 10/14/19 23:50 • (DUP) R3460974-5 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
OS: 7.47 at 18.5C						
DUP: 7.5 at 18.4C						

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1149289-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149289-01 10/14/19 23:50 • (DUP) R3460974-6 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.82	7.81	1	0.128		1

Sample Narrative:

OS: 7.82 at 18.9C

DUP: 7.81 at 18.8C

L1149291-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149291-01 10/14/19 23:50 • (DUP) R3460974-7 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.37	7.35	1	0.272		1

Sample Narrative:

OS: 7.37 at 18.2C

DUP: 7.35 at 18.7C

L1149337-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149337-01 10/14/19 23:50 • (DUP) R3460974-8 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.21	8.21	1	0.000		1

Sample Narrative:

OS: 8.21 at 18C

DUP: 8.21 at 18.1C



L1149338-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149338-01 10/14/19 23:50 • (DUP) R3460974-9 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.57	7.55	1	0.265		1

Sample Narrative:

OS: 7.57 at 17.6C

DUP: 7.55 at 17.7C



L1149348-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149348-01 10/14/19 23:50 • (DUP) R3460974-10 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.53	7.50	1	0.399		1

Sample Narrative:

OS: 7.53 at 16.8C

DUP: 7.5 at 17C

L1149401-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149401-01 10/14/19 23:50 • (DUP) R3460974-11 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.84	6.78	1	0.881		1

Sample Narrative:

OS: 6.84 at 17.6C

DUP: 6.78 at 17.8C

L1149482-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1149482-02 10/14/19 23:50 • (DUP) R3460974-12 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.97	6.95	1	0.287		1

Sample Narrative:



L1149482-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1149482-02 10/14/19 23:50 • (DUP) R3460974-12 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
OS: 6.97 at 16C						
DUP: 6.95 at 15.5C						

¹Cp

²Tc

³Ss

⁴Cn

L1149482-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1149482-04 10/14/19 23:50 • (DUP) R3460974-13 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.12	7.10	1	0.281		1

⁵Sr

⁶Qc

Sample Narrative:

OS: 7.12 at 16C

DUP: 7.1 at 15.6C

⁷Gl

⁸Al

L1149482-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1149482-06 10/14/19 23:50 • (DUP) R3460974-14 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.86	6.85	1	0.146		1

⁹Sc

Sample Narrative:

OS: 6.86 at 16.2C

DUP: 6.85 at 16.3C

L1149482-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1149482-08 10/14/19 23:50 • (DUP) R3460974-15 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	<1	<1	1	0.000		1

Sample Narrative:

OS: 0.82 at 16.8C

DUP: 0.82 at 16.4C



L1149482-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1149482-10 10/14/19 23:50 • (DUP) R3460974-16 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.70	6.70	1	0.000		1

Sample Narrative:

OS: 6.7 at 16.3C

DUP: 6.7 at 16C



L1149648-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149648-01 10/14/19 23:50 • (DUP) R3460974-17 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.87	7.86	1	0.127		1

Sample Narrative:

OS: 7.87 at 16C

DUP: 7.86 at 15.6C

L1149648-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1149648-02 10/14/19 23:50 • (DUP) R3460974-18 10/14/19 23:50

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.87	7.91	1	0.507		1

Sample Narrative:

OS: 7.87 at 16.4C

DUP: 7.91 at 16.9C

Laboratory Control Sample (LCS)

(LCS) R3460974-1 10/14/19 23:50

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.94	99.4	99.0-101	

Sample Narrative:

LCS: 9.94 at 19.1C



Method Blank (MB)

(MB) R3461804-1 10/16/19 21:43

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1149446-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1149446-01 10/16/19 21:43 • (DUP) R3461804-3 10/16/19 21:43

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	33000	32800	1	0.608		20

L1150215-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1150215-01 10/16/19 21:43 • (DUP) R3461804-4 10/16/19 21:43

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	2660	2670	1	0.338		20

Laboratory Control Sample (LCS)

(LCS) R3461804-2 10/16/19 21:43

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	umhos/cm	umhos/cm	%	%	
Specific Conductance	393	395	101	85.0-115	

Method Blank (MB)

(MB) R3461133-1 10/14/19 20:26

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.0790	1.00
Chloride	U		0.0519	1.00
Fluoride	U		0.00990	0.100
Nitrate	U		0.0227	0.100
Nitrite	U		0.0277	0.100
Sulfate	U		0.0774	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1147736-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1147736-01 10/14/19 21:50 • (DUP) R3461133-3 10/14/19 22:07

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.000	1	0.000		15
Chloride	ND	0.314	1	0.000		15
Nitrate	0.454	0.515	1	12.7		15
Nitrite	ND	0.000	1	0.000		15
Sulfate	ND	0.000	1	0.000		15

L1148486-19 Original Sample (OS) • Duplicate (DUP)

(OS) L1148486-19 10/15/19 09:28 • (DUP) R3461133-6 10/15/19 09:46

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.000	1	0.000		15
Chloride	ND	0.000	1	200	P1	15
Nitrate	ND	0.000	1	0.000		15
Nitrite	ND	0.000	1	0.000		15
Sulfate	ND	0.000	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3461133-2 10/14/19 20:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	38.8	97.0	80.0-120	
Chloride	40.0	39.0	97.6	80.0-120	
Fluoride	8.00	8.03	100	80.0-120	



Laboratory Control Sample (LCS)

(LCS) R3461133-2 10/14/19 20:44

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Nitrate	8.00	7.97	99.6	80.0-120	
Nitrite	8.00	7.93	99.2	80.0-120	
Sulfate	40.0	39.1	97.8	80.0-120	

L1147736-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1147736-01 10/14/19 21:50 • (MS) R3461133-4 10/14/19 22:25 • (MSD) R3461133-5 10/14/19 22:42

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	ND	43.9	45.6	87.8	91.1	1	80.0-120			3.74	15
Chloride	50.0	ND	46.5	46.8	92.2	92.7	1	80.0-120			0.588	15
Nitrate	5.00	0.454	5.03	5.29	91.5	96.7	1	80.0-120			5.04	15
Nitrite	5.00	ND	4.74	4.83	94.7	96.7	1	80.0-120			2.05	15
Sulfate	50.0	ND	45.5	46.0	91.0	92.1	1	80.0-120			1.19	15

L1148486-19 Original Sample (OS) • Matrix Spike (MS)

(OS) L1148486-19 10/15/19 09:28 • (MS) R3461133-7 10/15/19 10:04

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Bromide	50.0	ND	47.3	94.6	1	80.0-120	
Chloride	50.0	ND	50.1	100	1	80.0-120	
Nitrate	5.00	ND	4.84	96.9	1	80.0-120	
Nitrite	5.00	ND	5.11	102	1	80.0-120	
Sulfate	50.0	ND	49.1	98.2	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3461844-1 10/16/19 20:40

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Barium	U		0.00170	0.00500
Boron	U		0.0126	0.200
Calcium	U		0.0463	1.00
Iron	U		0.0141	0.100
Magnesium	0.0218	J	0.0111	1.00
Manganese	U		0.00120	0.0100
Potassium	U		0.102	1.00
Selenium	U		0.00740	0.0100
Sodium	U		0.0985	1.00
Strontium	U		0.00170	0.0100

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3461844-2 10/16/19 20:42 • (LCSD) R3461844-3 10/16/19 20:45

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 %
Barium	1.00	1.01	0.997	101	99.7	80.0-120			1.08	20
Boron	1.00	0.982	0.982	98.2	98.2	80.0-120			0.0717	20
Calcium	10.0	9.92	9.87	99.2	98.7	80.0-120			0.472	20
Iron	10.0	10.1	10.0	101	100	80.0-120			0.621	20
Magnesium	10.0	9.96	9.89	99.6	98.9	80.0-120			0.661	20
Manganese	1.00	0.998	0.994	99.8	99.4	80.0-120			0.428	20
Potassium	10.0	9.82	9.73	98.2	97.3	80.0-120			0.894	20
Selenium	1.00	0.952	0.948	95.2	94.8	80.0-120			0.417	20
Sodium	10.0	9.97	9.92	99.7	99.2	80.0-120			0.467	20
Strontium	1.00	0.968	0.969	96.8	96.9	80.0-120			0.0639	20

L1148902-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148902-01 10/16/19 20:47 • (MS) R3461844-5 10/16/19 20:53 • (MSD) R3461844-6 10/16/19 20:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Barium	1.00	1.47	2.40	2.40	93.4	92.7	1	75.0-125			0.309	20
Boron	1.00	0.0781	1.04	1.05	96.0	97.1	1	75.0-125			1.07	20
Calcium	10.0	104	112	111	77.9	65.8	1	75.0-125		V	1.09	20
Iron	10.0	0.509	10.2	10.2	96.5	96.5	1	75.0-125			0.0490	20
Magnesium	10.0	30.9	39.1	39.3	81.9	83.2	1	75.0-125			0.334	20
Manganese	1.00	1.25	2.16	2.13	90.4	88.2	1	75.0-125			1.02	20
Potassium	10.0	3.77	13.2	13.2	94.8	94.4	1	75.0-125			0.303	20

L1148902-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1148902-01 10/16/19 20:47 • (MS) R3461844-5 10/16/19 20:53 • (MSD) R3461844-6 10/16/19 20:55

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Selenium	1.00	U	0.992	0.986	99.2	98.6	1	75.0-125			0.587	20
Sodium	10.0	28.5	37.0	37.1	84.6	85.7	1	75.0-125			0.302	20
Strontium	1.00	1.02	1.98	1.95	96.2	93.3	1	75.0-125			1.44	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3462479-3 10/17/19 10:59

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000190	0.000500
Toluene	U		0.000412	0.00100
Total Xylene	U		0.000510	0.00150
TPH (GC/FID) Low Fraction	0.0415	J	0.0314	0.100
(S) a,a,a-Trifluorotoluene(FID)	107			78.0-120
(S) a,a,a-Trifluorotoluene(PID)	99.2			79.0-125

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

Laboratory Control Sample (LCS)

(LCS) R3462479-1 10/17/19 09:47

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0478	95.6	77.0-122	
Toluene	0.0500	0.0473	94.6	80.0-121	
Total Xylene	0.150	0.156	104	47.0-154	
(S) a,a,a-Trifluorotoluene(FID)			107	78.0-120	
(S) a,a,a-Trifluorotoluene(PID)			99.1	79.0-125	

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3462479-2 10/17/19 10:11

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.54	101	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			83.1	78.0-120	
(S) a,a,a-Trifluorotoluene(PID)			105	79.0-125	



Method Blank (MB)

(MB) R3462082-3 10/16/19 11:37

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Ethylbenzene	U		0.000160	0.000500
(S) a,a,a-Trifluorotoluene(PID)	98.6			79.0-125
(S) a,a,a-Trifluorotoluene(FID)	104			78.0-120

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3462082-1 10/16/19 10:30

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Ethylbenzene	0.0500	0.0469	93.8	80.0-123	
(S) a,a,a-Trifluorotoluene(PID)			98.6	79.0-125	
(S) a,a,a-Trifluorotoluene(FID)			103	78.0-120	

L1149289-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1149289-01 10/16/19 20:33 • (MS) R3462082-4 10/16/19 22:50 • (MSD) R3462082-5 10/16/19 23:15

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Ethylbenzene	0.0500	ND	0.0528	0.0512	106	102	1	22.0-149			3.08	21
(S) a,a,a-Trifluorotoluene(FID)					104	103		78.0-120				
(S) a,a,a-Trifluorotoluene(PID)					99.1	101		79.0-125				



Method Blank (MB)

(MB) R3461500-1 10/16/19 03:17

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH (GC/FID) High Fraction	U		0.0247	0.100
(S) o-Terphenyl	90.5			31.0-160

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

(LCS) R3461500-2 10/16/19 03:43 • (LCSD) R3461500-3 10/16/19 04:10

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 %
TPH (GC/FID) High Fraction	1.50	1.80	1.73	120	115	50.0-150			3.97	20
(S) o-Terphenyl				96.5	96.5	31.0-160				

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier Description

B	The same analyte is found in the associated blank.
J	The identification of the analyte is acceptable; the reported value is an estimate.
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.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

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

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

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

Third Party Federal Accreditations

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

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

Our Locations

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

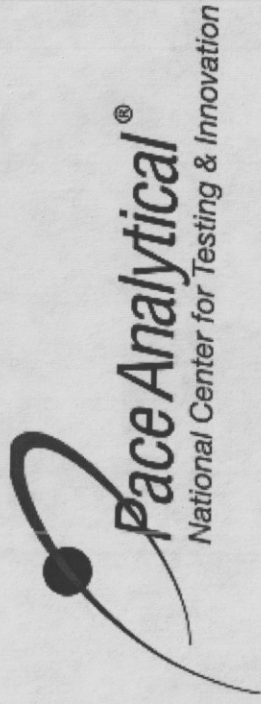


Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: <i>ENTCONGTCO</i>	<i>1149401</i>	
Cooler Received/Opened On: <i>10/12/19</i> <i>8:45</i> Temperature: <i>0.8</i>		
Received By: <i>Willie Taylor</i>		
Signature: <i>Willie Taylor</i>		

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	/		
COC Signed / Accurate?		/	
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?		/	
If Applicable			
VOA Zero headspace?		/	
Preservation Correct / Checked?		/	

Matt Shacklock



Login #: L1149401	Client: ENTCONGICP	Date:	Evaluated by:
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Non-Conformance (check applicable items)

Sample Integrity	Chain of Custody Clarification	If Broken Container:
Parameter(s) past holding time	X Login Clarification Needed	
Temperature not in range	Chain of custody is incomplete	Insufficient packing material around container
Improper container type	Please specify Metals requested.	Insufficient packing material inside cooler
pH not in range.	Please specify TCLP requested.	Improper handling by carrier (FedEx / UPS / Courier)
Insufficient sample volume.	Received additional samples not listed on coc.	Sample was frozen
Sample is biphasic.	Sample ids on containers do not match ids on coc	Container lid not intact
Vials received with headspace.	Trip Blank not received.	If no Chain of Custody:
Broken container	Client did not "X" analysis.	Received by:
Broken container:	Chain of Custody is missing	Date/Time:
Sufficient sample remains		Temp./Cont. Rec./pH:
		Carrier:
		Tracking#

Login Comments: Please clarify "St"

Received a microbiology container no tests listed on COC that it could be. Is it just an extra container?

Client informed by:	<input checked="" type="checkbox"/> Call	<input type="checkbox"/> Email	<input type="checkbox"/> Voice Mail	Date: 10/14/19	Time: 0942
TSR Initials: CMW	Client Contact: Stuart Hall				

Login Instructions:

SRICP please

It is an extra container. Please dispose of it