

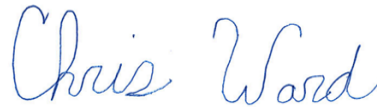
# ANALYTICAL REPORT

August 27, 2018

## Entrada Consulting Group

Sample Delivery Group: L1018631  
Samples Received: 08/17/2018  
Project Number:  
Description: Pond 4 Monitoring Wells  
  
Report To: Stuart Hall  
240 Mesa Avenue  
Grand Junction, CO 81501

Entire Report Reviewed By:



Chris Ward  
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace National is performed per guidance provided in laboratory standard operating procedures: 060302, 060303, and 060304.



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# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



## MW3 L1018631-01 GW

Collected by  
Tim Dobransky

Collected date/time  
08/16/18 10:40

Received date/time  
08/17/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1156365	1	08/23/18 15:43	08/23/18 15:43	GB
Wet Chemistry by Method 9040C	WG1154862	1	08/20/18 15:41	08/20/18 15:41	ITB
Wet Chemistry by Method 9050A	WG1153998	1	08/17/18 20:39	08/17/18 20:39	MZ
Wet Chemistry by Method 9056A	WG1153832	1	08/18/18 08:51	08/18/18 08:51	MAJ
Metals (ICP) by Method 6010B	WG1153982	1	08/18/18 08:45	08/18/18 12:16	WBD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1154425	1	08/19/18 10:02	08/19/18 10:02	BMB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1154140	1	08/18/18 13:49	08/18/18 13:49	BMB
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1154024	1	08/18/18 01:16	08/19/18 13:24	SHG

<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

## MW1 L1018631-02 GW

Collected by  
Tim Dobransky

Collected date/time  
08/16/18 11:30

Received date/time  
08/17/18 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Wet Chemistry by Method 2320 B-2011	WG1156365	1	08/23/18 15:50	08/23/18 15:50	GB
Wet Chemistry by Method 9040C	WG1154862	1	08/20/18 15:41	08/20/18 15:41	ITB
Wet Chemistry by Method 9050A	WG1153998	1	08/17/18 20:39	08/17/18 20:39	MZ
Wet Chemistry by Method 9056A	WG1153832	1	08/18/18 09:28	08/18/18 09:28	MAJ
Metals (ICP) by Method 6010B	WG1153982	1	08/18/18 08:45	08/18/18 12:19	WBD
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1154425	1	08/19/18 10:25	08/19/18 10:25	BMB
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1154140	1	08/18/18 14:09	08/18/18 14:09	BMB
Semi-Volatile Organic Compounds (GC) by Method 3511/8015	WG1154024	3	08/18/18 01:16	08/18/18 12:15	SHG



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

<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



## Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	253		20.0	1	08/23/2018 15:43	<a href="#">WG1156365</a>

## Sample Narrative:

L1018631-01 WG1156365: Endpoint pH 4.5 HEADSPACE

## Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.77	<a href="#">T8</a>	1	08/20/2018 15:41	<a href="#">WG1154862</a>

## Sample Narrative:

L1018631-01 WG1154862: 7.77 at 12.4C

## Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	631		10.0	1	08/17/2018 20:39	<a href="#">WG1153998</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	08/18/2018 08:51	<a href="#">WG1153832</a>
Chloride	21.8		1.00	1	08/18/2018 08:51	<a href="#">WG1153832</a>
Fluoride	0.264		0.100	1	08/18/2018 08:51	<a href="#">WG1153832</a>
Nitrate as (N)	0.868		0.100	1	08/18/2018 08:51	<a href="#">WG1153832</a>
Nitrite as (N)	ND		0.100	1	08/18/2018 08:51	<a href="#">WG1153832</a>
Sulfate	46.6		5.00	1	08/18/2018 08:51	<a href="#">WG1153832</a>

## Metals (ICP) by Method 6010B

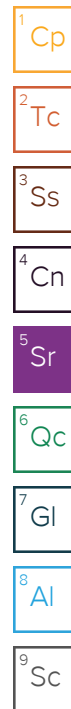
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium,Dissolved	74.6		1.00	1	08/18/2018 12:16	<a href="#">WG1153982</a>
Iron,Dissolved	ND		0.100	1	08/18/2018 12:16	<a href="#">WG1153982</a>
Magnesium,Dissolved	14.7		1.00	1	08/18/2018 12:16	<a href="#">WG1153982</a>
Manganese,Dissolved	ND		0.0100	1	08/18/2018 12:16	<a href="#">WG1153982</a>
Potassium,Dissolved	2.62		1.00	1	08/18/2018 12:16	<a href="#">WG1153982</a>
Selenium,Dissolved	0.0106		0.0100	1	08/18/2018 12:16	<a href="#">WG1153982</a>
Sodium,Dissolved	48.1		1.00	1	08/18/2018 12:16	<a href="#">WG1153982</a>

## 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	08/19/2018 10:02	<a href="#">WG1154425</a>
(S) a,a,a-Trifluorotoluene(FID)	98.6		77.0-122		08/19/2018 10:02	<a href="#">WG1154425</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	08/18/2018 13:49	<a href="#">WG1154140</a>
Toluene	ND		0.00100	1	08/18/2018 13:49	<a href="#">WG1154140</a>
Ethylbenzene	ND		0.00100	1	08/18/2018 13:49	<a href="#">WG1154140</a>
Total Xylenes	ND		0.00300	1	08/18/2018 13:49	<a href="#">WG1154140</a>
(S) Toluene-d8	100		80.0-120		08/18/2018 13:49	<a href="#">WG1154140</a>





Collected date/time: 08/16/18 10:40

L1018631

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

Analyte	Result mg/l	<u>Qualifier</u>	RDL mg/l	Dilution	Analysis date / time	<u>Batch</u>
(S) Dibromofluoromethane	94.7		76.0-123		08/18/2018 13:49	<a href="#">WG1154140</a>
(S) a,a,a-Trifluorotoluene	102		80.0-120		08/18/2018 13:49	<a href="#">WG1154140</a>
(S) 4-Bromofluorobenzene	99.8		80.0-120		08/18/2018 13:49	<a href="#">WG1154140</a>

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

Analyte	Result mg/l	<u>Qualifier</u>	RDL mg/l	Dilution	Analysis date / time	<u>Batch</u>
TPH (GC/FID) High Fraction	ND		0.100	1	08/19/2018 13:24	<a href="#">WG1154024</a>
(S) o-Terphenyl	97.5		31.0-160		08/19/2018 13:24	<a href="#">WG1154024</a>

<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



## Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	351		20.0	1	08/23/2018 15:50	<a href="#">WG1156365</a>

## Sample Narrative:

L1018631-02 WG1156365: Endpoint pH 4.5 HEADSPACE

## Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.69	<a href="#">T8</a>	1	08/20/2018 15:41	<a href="#">WG1154862</a>

## Sample Narrative:

L1018631-02 WG1154862: 7.69 at 13.3C

## Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	741		10.0	1	08/17/2018 20:39	<a href="#">WG1153998</a>

## Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	08/18/2018 09:28	<a href="#">WG1153832</a>
Chloride	11.8		1.00	1	08/18/2018 09:28	<a href="#">WG1153832</a>
Fluoride	0.276		0.100	1	08/18/2018 09:28	<a href="#">WG1153832</a>
Nitrate as (N)	2.82		0.100	1	08/18/2018 09:28	<a href="#">WG1153832</a>
Nitrite as (N)	ND		0.100	1	08/18/2018 09:28	<a href="#">WG1153832</a>
Sulfate	22.2		5.00	1	08/18/2018 09:28	<a href="#">WG1153832</a>

## Metals (ICP) by Method 6010B

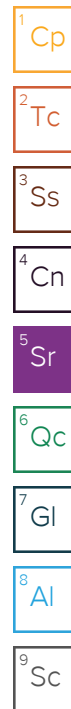
Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Calcium,Dissolved	75.8		1.00	1	08/18/2018 12:19	<a href="#">WG1153982</a>
Iron,Dissolved	ND		0.100	1	08/18/2018 12:19	<a href="#">WG1153982</a>
Magnesium,Dissolved	11.0		1.00	1	08/18/2018 12:19	<a href="#">WG1153982</a>
Manganese,Dissolved	ND		0.0100	1	08/18/2018 12:19	<a href="#">WG1153982</a>
Potassium,Dissolved	2.71		1.00	1	08/18/2018 12:19	<a href="#">WG1153982</a>
Selenium,Dissolved	ND		0.0100	1	08/18/2018 12:19	<a href="#">WG1153982</a>
Sodium,Dissolved	84.9		1.00	1	08/18/2018 12:19	<a href="#">WG1153982</a>

## 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	08/19/2018 10:25	<a href="#">WG1154425</a>
(S) a,a,a-Trifluorotoluene(FID)	98.5		77.0-122		08/19/2018 10:25	<a href="#">WG1154425</a>

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	08/18/2018 14:09	<a href="#">WG1154140</a>
Toluene	ND		0.00100	1	08/18/2018 14:09	<a href="#">WG1154140</a>
Ethylbenzene	ND		0.00100	1	08/18/2018 14:09	<a href="#">WG1154140</a>
Total Xylenes	ND		0.00300	1	08/18/2018 14:09	<a href="#">WG1154140</a>
(S) Toluene-d8	98.7		80.0-120		08/18/2018 14:09	<a href="#">WG1154140</a>





Collected date/time: 08/16/18 11:30

L1018631

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
(S) Dibromofluoromethane	94.2		76.0-123		08/18/2018 14:09	<a href="#">WG1154140</a>
(S) a,a,a-Trifluorotoluene	98.9		80.0-120		08/18/2018 14:09	<a href="#">WG1154140</a>
(S) 4-Bromofluorobenzene	99.8		80.0-120		08/18/2018 14:09	<a href="#">WG1154140</a>

## 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	ND		0.300	3	08/18/2018 12:15	<a href="#">WG1154024</a>
(S) o-Terphenyl	86.5		31.0-160		08/18/2018 12:15	<a href="#">WG1154024</a>

<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) R3336257-1 08/23/18 14:01

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Alkalinity	3.61	⬇	2.71	20.0

Sample Narrative:  
BLANK: Endpoint pH 4.5

L1017906-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1017906-01 08/23/18 14:12 • (DUP) R3336257-2 08/23/18 14:21

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Alkalinity	120	120	1	0.0186		20

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

L1018805-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1018805-01 08/23/18 15:57 • (DUP) R3336257-4 08/23/18 16:04

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Alkalinity	314	314	1	0.0470		20

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

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

(LCS) R3336257-3 08/23/18 15:33 • (LCSD) R3336257-5 08/23/18 16:50

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Alkalinity	100	115	103	115	103	85.0-115			11.0	20

Sample Narrative:  
LCS: Endpoint pH 4.5  
LCSD: Endpoint pH 4.5

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1018504-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1018504-01 08/20/18 15:41 • (DUP) R3335066-3 08/20/18 15:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.08	8.07	1	0.124		1

Sample Narrative:  
OS: 8.08 at 12.8C  
DUP: 8.07 at 12.4C

<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

L1018961-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1018961-03 08/20/18 15:41 • (DUP) R3335066-4 08/20/18 15:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	5.84	5.83	1	0.171		1

Sample Narrative:  
OS: 5.84 at 19.1C  
DUP: 5.83 at 19.2C

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

(LCS) R3335066-1 08/20/18 15:41 • (LCSD) R3335066-2 08/20/18 15:41

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	su	su	su	%	%	%			%	%
pH	10.0	9.99	10.0	99.9	100	99.0-101			0.200	1

Sample Narrative:  
LCS: 9.99 at 19.1C  
LCSD: 10.01 at 19.1C



Method Blank (MB)

(MB) R3334663-1 08/17/18 20:39

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

<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

L1018193-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1018193-01 08/17/18 20:39 • (DUP) R3334663-4 08/17/18 20:39

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	647	640	1	1.09		20

L1018631-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1018631-02 08/17/18 20:39 • (DUP) R3334663-5 08/17/18 20:39

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	741	749	1	1.07		20

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

(LCS) R3334663-2 08/17/18 20:39 • (LCSD) R3334663-3 08/17/18 20:39

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCSD Result umhos/cm	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Specific Conductance	877	872	879	99.4	100	85.0-115			0.800	20



Method Blank (MB)

(MB) R3335110-1 08/17/18 10:56

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

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

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

(LCS) R3335110-2 08/17/18 11:14 • (LCSD) R3335110-3 08/17/18 11:32

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 %
Bromide	40.0	39.6	39.7	99.0	99.2	80.0-120			0.219	15
Chloride	40.0	39.0	39.1	97.5	97.6	80.0-120			0.193	15
Fluoride	8.00	7.88	7.90	98.5	98.8	80.0-120			0.331	15
Nitrate	8.00	8.04	8.06	101	101	80.0-120			0.184	15
Nitrite	8.00	7.90	7.93	98.8	99.1	80.0-120			0.286	15
Sulfate	40.0	39.8	39.9	99.6	99.7	80.0-120			0.123	15

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3334765-1 08/18/18 11:35

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Calcium,Dissolved	U		0.0463	1.00
Iron,Dissolved	U		0.0141	0.100
Magnesium,Dissolved	U		0.0111	1.00
Manganese,Dissolved	U		0.00120	0.0100
Potassium,Dissolved	0.203	U	0.102	1.00
Selenium,Dissolved	U		0.00740	0.0100
Sodium,Dissolved	0.145	U	0.0985	1.00

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

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

(LCS) R3334765-2 08/18/18 11:37 • (LCSD) R3334765-3 08/18/18 11:40

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 %
Calcium,Dissolved	10.0	10.2	10.1	102	101	80.0-120			1.37	20
Iron,Dissolved	10.0	10.1	9.97	101	99.7	80.0-120			0.959	20
Magnesium,Dissolved	10.0	10.4	10.3	104	103	80.0-120			0.656	20
Manganese,Dissolved	1.00	0.996	0.986	99.6	98.6	80.0-120			0.967	20
Potassium,Dissolved	10.0	10.2	9.99	102	99.9	80.0-120			1.58	20
Selenium,Dissolved	1.00	0.985	0.984	98.5	98.4	80.0-120			0.0666	20
Sodium,Dissolved	10.0	10.2	10.1	102	101	80.0-120			0.998	20

L1018551-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1018551-04 08/18/18 11:42 • (MS) R3334765-5 08/18/18 11:47 • (MSD) R3334765-6 08/18/18 11:50

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 %
Calcium,Dissolved	10.0	U	9.92	10.1	99.2	101	1	75.0-125			1.87	20
Iron,Dissolved	10.0	U	9.83	10.0	98.3	100	1	75.0-125			1.97	20
Magnesium,Dissolved	10.0	U	10.3	10.5	103	105	1	75.0-125			1.32	20
Manganese,Dissolved	1.00	U	0.970	0.986	97.0	98.6	1	75.0-125			1.66	20
Potassium,Dissolved	10.0	0.204	9.82	10.0	96.2	98.4	1	75.0-125			2.25	20
Selenium,Dissolved	1.00	U	0.973	0.981	97.3	98.1	1	75.0-125			0.875	20
Sodium,Dissolved	10.0	0.314	10.1	10.3	98.2	99.7	1	75.0-125			1.48	20

Method Blank (MB)

(MB) R3335465-3 08/19/18 05:25

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH (GC/FID) Low Fraction	U		0.0314	0.100
(S) a,a,a-Trifluorotoluene(FID)	98.3			77.0-122

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

(LCS) R3335465-1 08/19/18 03:52 • (LCSD) R3335465-2 08/19/18 04:39

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) Low Fraction	5.50	6.23	6.03	113	110	71.0-136			3.28	20
(S) a,a,a-Trifluorotoluene(FID)				105	105	77.0-122				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3335139-3 08/18/18 10:40

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	101			80.0-120
(S) Dibromofluoromethane	94.5			76.0-123
(S) a,a,a-Trifluorotoluene	101			80.0-120
(S) 4-Bromofluorobenzene	101			80.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3335139-1 08/18/18 09:22 • (LCSD) R3335139-2 08/18/18 09:42

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 %
Benzene	0.0250	0.0251	0.0252	101	101	69.0-123			0.404	20
Ethylbenzene	0.0250	0.0264	0.0269	106	108	77.0-120			1.88	20
Toluene	0.0250	0.0259	0.0262	104	105	77.0-120			1.27	20
Xylenes, Total	0.0750	0.0786	0.0797	105	106	77.0-120			1.39	20
(S) Toluene-d8				98.2	100	80.0-120				
(S) Dibromofluoromethane				94.2	93.7	76.0-123				
(S) a,a,a-Trifluorotoluene				99.4	98.5	80.0-120				
(S) 4-Bromofluorobenzene				101	98.3	80.0-120				

L1018508-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1018508-01 08/18/18 12:49 • (MS) R3335139-4 08/18/18 18:23 • (MSD) R3335139-5 08/18/18 18:43

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 %
Benzene	0.0250	U	0.0212	0.0181	84.6	72.6	1	34.0-147			15.4	20
Ethylbenzene	0.0250	U	0.0233	0.0200	93.2	80.0	1	42.0-147			15.3	20
Toluene	0.0250	U	0.0222	0.0190	88.7	75.9	1	42.0-141			15.6	20
Xylenes, Total	0.0750	U	0.0692	0.0591	92.3	78.8	1	41.0-148			15.7	20
(S) Toluene-d8					99.9	100		80.0-120				
(S) Dibromofluoromethane					97.4	96.5		76.0-123				
(S) a,a,a-Trifluorotoluene					98.7	98.7		80.0-120				
(S) 4-Bromofluorobenzene					98.3	98.5		80.0-120				

Method Blank (MB)

(MB) R3334799-1 08/18/18 09:18

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH (GC/FID) High Fraction	0.0481	⬇	0.0247	0.100
(S) o-Terphenyl	102			31.0-160

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

(LCS) R3334799-2 08/18/18 09:36 • (LCSD) R3334799-3 08/18/18 09:53

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	1.46	1.53	97.3	102	50.0-150			4.68	20
(S) o-Terphenyl				127	121	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.

### 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.
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.
T8	Sample(s) received past/too close to holding time expiration.

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 <sup>1</sup>	n/a
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>	90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1 4</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas <sup>5</sup>	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

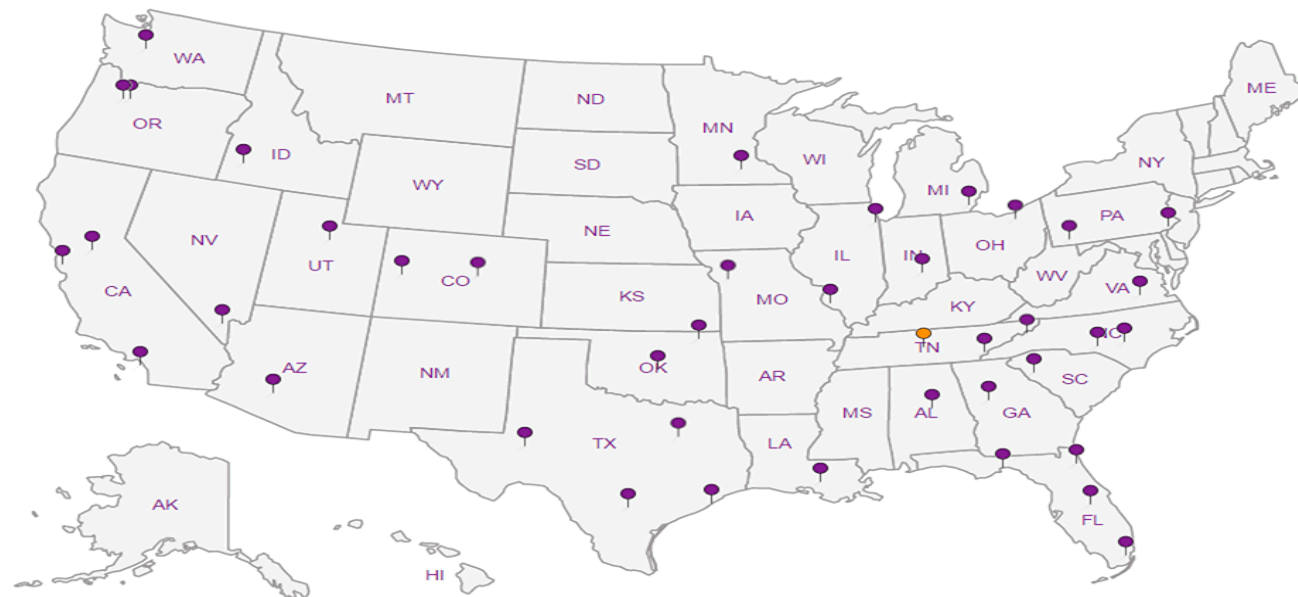
## Third Party Federal Accreditations

A2LA – ISO 17025	1461.01	AIHA-LAP, LLC EMLAP	100789
A2LA – ISO 17025 <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

## Our Locations

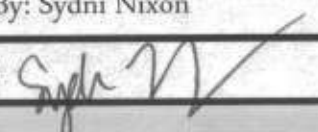
Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.





## Pace Analytical National Center for Testing & Innovation

### Cooler Receipt Form

Client:	SDG#	LID18631	
Cooler Received/Opened On: 8/17/18	Temperature:	2.2	
Received By: Sydni Nixon			
Signature: 			
<b>Receipt Check List</b>	<b>NP</b>	<b>Yes</b>	<b>No</b>
COC Seal Present / Intact?	/		
COC Signed / Accurate?		/	
Bottles arrive intact?		/	
Correct bottles used?		/	
Sufficient volume sent?		/	
If Applicable			
VOA Zero headspace?		/	
Preservation Correct / Checked?		/	

**Katie Ingram**



Login #:11018631	Client: ENTCONGICO	Date:08/17/18	Evaluated by:Myra "Katie" Ingram
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**Non-Conformance (check applicable items)**

Sample Integrity	Chain of Custody Clarification	
Parameter(s) past holding time	X Login Clarification Needed	<b>If Broken Container:</b>
Improper temperature	Chain of custody is incomplete	Insufficient packing material around container
Improper container type	Please specify Metals requested.	Insufficient packing material inside cooler
Improper preservation	Please specify TCLP requested.	Improper handling by carrier (FedEx / UPS / Courte
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.	<b>If no Chain of Custody:</b>
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:**

Received a 250mlHDPE-HNO3 with no designation on the chain. The client is requesting dissolved metals, but this container does not appear to be filtered

Client informed by:	X	Call	Email	Voice Mail	Date: 8/17/18	Time: 1543
TSR Initials: CMW	Client Contact: Stuart Hall					

**Login Instructions:**

Please dispose of this container. It was sampled in error