

November 15, 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: L1159007
Samples Received: 11/08/2019
Project Number:
Description: Hells Gulch 26-6
Site: HG26-6
Report To: Robert Stockton
240 Mesa Avenue
Grand Junction, CO 81501

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



HG 26-6 L1159007-01 Solid

Collected by Robert Stockton
Collected date/time 11/07/19 11:10
Received date/time 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1376509	1	11/12/19 10:54	11/12/19 10:54	TRB	Mt. Juliet, TN
Calculated Results	WG1379516	1	11/13/19 07:30	11/14/19 18:25	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1378258	1	11/12/19 11:00	11/12/19 19:08	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1378591	1	11/11/19 17:22	11/11/19 19:42	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1378780	1	11/12/19 09:00	11/12/19 12:00	SL	Mt. Juliet, TN
Mercury by Method 7471A	WG1379134	1	11/12/19 13:33	11/12/19 19:47	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379516	1	11/13/19 07:30	11/14/19 18:25	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1380341	1	11/09/19 14:47	11/15/19 00:42	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1379169	1	11/12/19 21:55	11/14/19 03:49	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1379175	1	11/12/19 16:28	11/13/19 08:44	SHG	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

HG 26-6 L1159007-02 Solid

Collected by Robert Stockton
Collected date/time 11/07/19 11:10
Received date/time 11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1376509	1	11/12/19 10:56	11/12/19 10:56	TRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1379516	1	11/13/19 07:30	11/14/19 18:27	EL	Mt. Juliet, TN



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



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	14.4		1	11/12/2019 10:54	WG1376509

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	8.84		1.00	1	11/14/2019 18:25	WG1379516

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	ND		2.00	1	11/12/2019 19:08	WG1378258

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.34	T8	1	11/11/2019 19:42	WG1378591

Sample Narrative:

L1159007-01 WG1378591: 8.34 at 21.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2080		10.0	1	11/12/2019 12:00	WG1378780

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	11/12/2019 19:47	WG1379134

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.74		2.00	1	11/14/2019 18:25	WG1379516
Barium	888		0.500	1	11/14/2019 18:25	WG1379516
Cadmium	ND		0.500	1	11/14/2019 18:25	WG1379516
Chromium	8.84		1.00	1	11/14/2019 18:25	WG1379516
Copper	9.33		2.00	1	11/14/2019 18:25	WG1379516
Lead	5.88		0.500	1	11/14/2019 18:25	WG1379516
Nickel	14.5		2.00	1	11/14/2019 18:25	WG1379516
Selenium	ND		2.00	1	11/14/2019 18:25	WG1379516
Silver	ND		1.00	1	11/14/2019 18:25	WG1379516
Zinc	47.1		5.00	1	11/14/2019 18:25	WG1379516

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.0208		0.000500	1	11/15/2019 00:42	WG1380341
Toluene	0.0588		0.00500	1	11/15/2019 00:42	WG1380341
Ethylbenzene	0.00421		0.000500	1	11/15/2019 00:42	WG1380341
Total Xylene	0.0806		0.00150	1	11/15/2019 00:42	WG1380341
TPH (GC/FID) Low Fraction	1.23		0.100	1	11/15/2019 00:42	WG1380341



Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
(S) a,a,a-Trifluorotoluene(FID)	78.8		77.0-120		11/15/2019 00:42	WG1380341
(S) a,a,a-Trifluorotoluene(PID)	83.9		72.0-128		11/15/2019 00:42	WG1380341

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	6.37		4.00	1	11/14/2019 03:49	WG1379169
(S) o-Terphenyl	69.7		18.0-148		11/14/2019 03:49	WG1379169

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Acenaphthene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Acenaphthylene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Benzo(a)anthracene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Benzo(a)pyrene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Benzo(b)fluoranthene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Benzo(g,h,i)perylene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Benzo(k)fluoranthene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Chrysene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Dibenz(a,h)anthracene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Fluoranthene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Fluorene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Naphthalene	ND		0.0200	1	11/13/2019 08:44	WG1379175
Phenanthrene	ND		0.00600	1	11/13/2019 08:44	WG1379175
Pyrene	ND		0.00600	1	11/13/2019 08:44	WG1379175
1-Methylnaphthalene	ND		0.0200	1	11/13/2019 08:44	WG1379175
2-Methylnaphthalene	ND		0.0200	1	11/13/2019 08:44	WG1379175
2-Chloronaphthalene	ND		0.0200	1	11/13/2019 08:44	WG1379175
(S) p-Terphenyl-d14	82.0		23.0-120		11/13/2019 08:44	WG1379175
(S) Nitrobenzene-d5	78.1		14.0-149		11/13/2019 08:44	WG1379175
(S) 2-Fluorobiphenyl	77.4		34.0-125		11/13/2019 08:44	WG1379175



Calculated Results

Analyte	Result	<u>Qualifier</u>	Dilution	Analysis date / time	<u>Batch</u>
Sodium Adsorption Ratio	0.404		1	11/12/2019 10:56	WG1376509

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	<u>Qualifier</u>	RDL mg/kg	Dilution	Analysis date / time	<u>Batch</u>
Arsenic	3.46		2.00	1	11/14/2019 18:27	WG1379516

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Method Blank (MB)

(MB) R3471203-1 11/12/19 18:39

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1158731-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1158731-04 11/12/19 18:41 • (DUP) R3471203-3 11/12/19 18:42

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	U	0.000	1	0.000		20

L1159240-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159240-01 11/12/19 19:09 • (DUP) R3471203-8 11/12/19 19:10

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	3.12	3.06	1	1.83		20

Laboratory Control Sample (LCS)

(LCS) R3471203-2 11/12/19 18:39

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	23.6	98.3	80.0-120	

L1158915-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158915-01 11/12/19 19:05 • (MS) R3471203-4 11/12/19 19:06 • (MSD) R3471203-5 11/12/19 19:06

	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	%	%		%			%	%
Chromium,Hexavalent	20.0	11.2	14.7	13.1	17.5	9.65	1	75.0-125	J6	J6	11.3	20

Sample Narrative:

OS: Sample is a reducer

L1158915-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1158915-01 11/12/19 19:05 • (MS) R3471203-6 11/12/19 19:07

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Chromium,Hexavalent	684	11.2	520	76.0	50	75.0-125	

Sample Narrative:
OS: Sample is a reducer

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1159007-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159007-01 11/11/19 19:42 • (DUP) R3470775-2 11/11/19 19:42

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.34	8.26	1	0.964		1

Sample Narrative:

OS: 8.34 at 21.3C
DUP: 8.26 at 21C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1159166-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1159166-02 11/11/19 19:42 • (DUP) R3470775-3 11/11/19 19:42

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.61	7.69	1	1.05	J3	1

Sample Narrative:

OS: 7.61 at 19.4C
DUP: 7.69 at 19.5C

Laboratory Control Sample (LCS)

(LCS) R3470775-1 11/11/19 19:42

	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 18.3C

Method Blank (MB)

(MB) R3471168-1 11/12/19 12:00

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1157004-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157004-01 11/12/19 12:00 • (DUP) R3471168-3 11/12/19 12:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	2830	2890	1	2.17		20

L1157741-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157741-01 11/12/19 12:00 • (DUP) R3471168-4 11/12/19 12:00

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	11600	12200	1	5.03		20

Laboratory Control Sample (LCS)

(LCS) R3471168-2 11/12/19 12:00

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	475	472	99.4	85.0-115	



Method Blank (MB)

(MB) R3471225-1 11/12/19 18:43

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	0.00283	⬇	0.00280	0.0300

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3471225-2 11/12/19 18:46 • (LCSD) R3471225-3 11/12/19 18:48

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	%	%	%			%	%
Mercury	0.500	0.465	0.463	93.0	92.6	80.0-120			0.418	20

L1158921-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158921-01 11/12/19 18:51 • (MS) R3471225-4 11/12/19 18:53 • (MSD) R3471225-5 11/12/19 18:56

	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	%	%		%			%	%
Mercury	0.500	0.0198	0.440	0.455	84.0	87.0	1	75.0-125			3.38	20



Method Blank (MB)

(MB) R3472192-1 11/14/19 18:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.460	2.00
Barium	U		0.170	0.500
Cadmium	U		0.0700	0.500
Chromium	U		0.140	1.00
Copper	U		0.530	2.00
Lead	U		0.190	0.500
Nickel	U		0.490	2.00
Selenium	U		0.620	2.00
Silver	U		0.120	1.00
Zinc	U		0.590	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3472192-2 11/14/19 18:06 • (LCSD) R3472192-3 11/14/19 18:09

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 %
Arsenic	100	95.5	93.4	95.5	93.4	80.0-120			2.23	20
Barium	100	103	102	103	102	80.0-120			1.25	20
Cadmium	100	97.2	96.3	97.2	96.3	80.0-120			0.971	20
Chromium	100	97.6	96.6	97.6	96.6	80.0-120			0.973	20
Copper	100	99.1	98.3	99.1	98.3	80.0-120			0.848	20
Lead	100	97.5	96.1	97.5	96.1	80.0-120			1.42	20
Nickel	100	98.7	97.3	98.7	97.3	80.0-120			1.41	20
Selenium	100	98.7	97.3	98.7	97.3	80.0-120			1.36	20
Silver	20.0	17.8	17.6	88.9	87.9	80.0-120			1.08	20
Zinc	100	96.5	95.5	96.5	95.5	80.0-120			1.07	20

L1159222-41 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1159222-41 11/14/19 18:12 • (MS) R3472192-6 11/14/19 18:19 • (MSD) R3472192-7 11/14/19 18:22

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	0.695	83.0	91.5	82.3	90.8	1	75.0-125			9.75	20
Barium	100	4.34	96.8	106	92.5	102	1	75.0-125			9.02	20
Cadmium	100	U	85.3	93.7	85.3	93.7	1	75.0-125			9.32	20
Chromium	100	3.78	88.9	96.0	85.1	92.2	1	75.0-125			7.73	20
Copper	100	1.95	89.3	97.7	87.3	95.8	1	75.0-125			9.06	20
Lead	100	3.20	89.0	100	85.8	96.8	1	75.0-125			11.6	20
Nickel	100	0.837	86.8	94.8	86.0	94.0	1	75.0-125			8.77	20



[L1159007-01,02](#)

L1159222-41 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1159222-41 11/14/19 18:12 • (MS) R3472192-6 11/14/19 18:19 • (MSD) R3472192-7 11/14/19 18:22

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 %
Selenium	100	U	86.3	95.1	86.3	95.1	1	75.0-125			9.71	20
Silver	20.0	U	15.7	17.1	78.5	85.4	1	75.0-125			8.49	20
Zinc	100	7.62	93.3	104	85.7	96.8	1	75.0-125			11.3	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3472478-3 11/14/19 16:58

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	U		0.000150	0.00500
Ethylbenzene	0.000157	⬇	0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0244	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	93.7			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	95.3			72.0-128

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3472478-1 11/14/19 15:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0467	93.4	76.0-121	
Toluene	0.0500	0.0452	90.4	80.0-120	
Ethylbenzene	0.0500	0.0466	93.2	80.0-124	
Total Xylene	0.150	0.145	96.7	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			95.2	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			93.3	72.0-128	

Laboratory Control Sample (LCS)

(LCS) R3472478-2 11/14/19 16:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.17	94.0	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			102	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			98.6	72.0-128	



L1158320-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158320-01 11/14/19 20:35 • (MS) R3472478-4 11/15/19 02:46 • (MSD) R3472478-5 11/15/19 03:06

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 %
Benzene	7.40	0.0837	7.38	7.28	98.6	97.2	148	10.0-155			1.36	32
Toluene	7.40	0.0843	7.18	7.05	95.9	94.1	148	10.0-160			1.83	34
Ethylbenzene	7.40	0.142	7.45	7.39	98.8	97.9	148	10.0-160			0.809	32
Total Xylene	22.2	0.167	23.0	22.6	103	101	148	10.0-160			1.75	32
(S) a,a,a-Trifluorotoluene(FID)					92.5	92.7		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					93.9	91.8		72.0-128				

L1158320-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158320-01 11/14/19 20:35 • (MS) R3472478-6 11/15/19 03:27 • (MSD) R3472478-7 11/15/19 03:48

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 %
TPH (GC/FID) Low Fraction	814	U	890	872	103	101	148	10.0-151			2.04	28
(S) a,a,a-Trifluorotoluene(FID)					108	107		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					104	104		72.0-128				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3471321-1 11/13/19 01:28

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) High Fraction	U		0.769	4.00
(S) o-Terphenyl	68.3			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3471321-2 11/13/19 01:41

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	48.3	96.6	50.0-150	
(S) o-Terphenyl			76.3	18.0-148	

L1159022-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1159022-01 11/13/19 02:46 • (MS) R3471321-3 11/13/19 02:59 • (MSD) R3471321-4 11/13/19 03:12

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 %
TPH (GC/FID) High Fraction	50.0	ND	44.4	38.6	88.8	77.2	1	50.0-150			14.0	20
(S) o-Terphenyl					61.9	51.8		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3471280-2 11/12/19 23:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.000600	0.00600
Acenaphthene	U		0.000600	0.00600
Acenaphthylene	U		0.000600	0.00600
Benzo(a)anthracene	U		0.000600	0.00600
Benzo(a)pyrene	U		0.000600	0.00600
Benzo(b)fluoranthene	U		0.000600	0.00600
Benzo(g,h,i)perylene	U		0.000600	0.00600
Benzo(k)fluoranthene	U		0.000600	0.00600
Chrysene	U		0.000600	0.00600
Dibenz(a,h)anthracene	U		0.000600	0.00600
Fluoranthene	U		0.000600	0.00600
Fluorene	U		0.000600	0.00600
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600
Naphthalene	U		0.00200	0.0200
Phenanthrene	U		0.000600	0.00600
Pyrene	U		0.000600	0.00600
1-Methylnaphthalene	U		0.00200	0.0200
2-Methylnaphthalene	U		0.00200	0.0200
2-Chloronaphthalene	U		0.00200	0.0200
(S) Nitrobenzene-d5	96.0			14.0-149
(S) 2-Fluorobiphenyl	93.9			34.0-125
(S) p-Terphenyl-d14	97.2			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3471280-1 11/12/19 23:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0791	98.9	50.0-126	
Acenaphthene	0.0800	0.0731	91.4	50.0-120	
Acenaphthylene	0.0800	0.0756	94.5	50.0-120	
Benzo(a)anthracene	0.0800	0.0671	83.9	45.0-120	
Benzo(a)pyrene	0.0800	0.0634	79.3	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0622	77.8	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0609	76.1	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0782	97.8	49.0-125	
Chrysene	0.0800	0.0765	95.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0633	79.1	47.0-125	
Fluoranthene	0.0800	0.0781	97.6	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3471280-1 11/12/19 23:22

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Fluorene	0.0800	0.0718	89.8	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0642	80.3	46.0-125	
Naphthalene	0.0800	0.0671	83.9	50.0-120	
Phenanthrene	0.0800	0.0726	90.8	47.0-120	
Pyrene	0.0800	0.0720	90.0	43.0-123	
1-Methylnaphthalene	0.0800	0.0686	85.8	51.0-121	
2-Methylnaphthalene	0.0800	0.0669	83.6	50.0-120	
2-Chloronaphthalene	0.0800	0.0684	85.5	50.0-120	
(S) Nitrobenzene-d5			94.8	14.0-149	
(S) 2-Fluorobiphenyl			90.3	34.0-125	
(S) p-Terphenyl-d14			93.8	23.0-120	

L1158891-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158891-01 11/13/19 09:25 • (MS) R3471581-1 11/13/19 09:46 • (MSD) R3471581-2 11/13/19 10:07

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 %
Anthracene	0.0800	ND	0.0702	0.0585	87.8	73.1	1	10.0-145			18.2	30
Acenaphthene	0.0800	ND	0.0667	0.0630	83.4	78.8	1	14.0-127			5.71	27
Acenaphthylene	0.0800	ND	0.0710	0.0671	88.8	83.9	1	21.0-124			5.65	25
Benzo(a)anthracene	0.0800	0.00988	0.114	0.0754	130	81.9	1	10.0-139		J3	40.8	30
Benzo(a)pyrene	0.0800	0.00761	0.0876	0.0688	100	76.5	1	10.0-141			24.0	31
Benzo(b)fluoranthene	0.0800	0.0175	0.119	0.0756	127	72.6	1	10.0-140		J3	44.6	36
Benzo(g,h,i)perylene	0.0800	0.0116	0.0976	0.0770	107	81.8	1	10.0-140			23.6	33
Benzo(k)fluoranthene	0.0800	ND	0.0851	0.0660	106	82.5	1	10.0-137			25.3	31
Chrysene	0.0800	0.0158	0.143	0.0805	159	80.9	1	10.0-145	J5	J3	55.9	30
Dibenz(a,h)anthracene	0.0800	ND	0.0750	0.0676	93.8	84.5	1	10.0-132			10.4	31
Fluoranthene	0.0800	0.0366	0.242	0.102	257	81.8	1	10.0-153	J5	J3	81.4	33
Fluorene	0.0800	ND	0.0684	0.0650	85.5	81.3	1	11.0-130			5.10	29
Indeno(1,2,3-cd)pyrene	0.0800	0.00916	0.0919	0.0739	103	80.9	1	10.0-137			21.7	32
Naphthalene	0.0800	ND	0.0643	0.0615	80.4	76.9	1	10.0-135			4.45	27
Phenanthrene	0.0800	0.0238	0.122	0.0789	123	68.9	1	10.0-144		J3	42.9	31
Pyrene	0.0800	0.0239	0.182	0.0786	198	68.4	1	10.0-148	J5	J3	79.4	35
1-Methylnaphthalene	0.0800	ND	0.0685	0.0661	85.6	82.6	1	10.0-142			3.57	28
2-Methylnaphthalene	0.0800	ND	0.0663	0.0640	82.9	80.0	1	10.0-137			3.53	28
2-Chloronaphthalene	0.0800	ND	0.0666	0.0629	83.3	78.6	1	29.0-120			5.71	24
(S) Nitrobenzene-d5					83.6	82.7		14.0-149				
(S) 2-Fluorobiphenyl					92.7	89.0		34.0-125				
(S) p-Terphenyl-d14					90.9	90.2		23.0-120				

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

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

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		

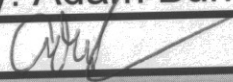
¹ Drinking Water ² Underground Storage Tanks ³ Aquatic Toxicity ⁴ Chemical/Microbiological ⁵ Mold ⁶ Wastewater n/a Accreditation not applicable

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:	ENTLONGSCO		L1159007
Cooler Received/Opened On:	11/8/19	Temperature:	1.2
Received By: Adam Burns			
Signature: 			
Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	/		
COC Signed / Accurate?		/	
Bottles arrive intact?		/ JW	/
Correct bottles used?		/	
Sufficient volume sent?		/	
If Applicable			
VOA Zero headspace?			
Preservation Correct / Checked?			

Troy Dunlap



Login #: L1159007	Client: ENTCONGICO	Date: 11/08/19	Evaluated by: Jeremy
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Non-Conformance (check applicable items)

Sample Integrity	Chain of Custody Clarification	If Broken Container:
Parameter(s) past holding time	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:
x Broken container:	Chain of Custody is missing	Date /Time:
x Sufficient sample remains		Temp./Cont. Rec./pH:
		Carrier:
		Tracking#

Login Comments: Received 1 of 4 8oz broken. Salvaged but possible cooler water contamination for HG 26-6 SP1 0-2".

Client informed by:	Call	Email	Voice Mail	Date:	Time:
TSR Initials: CMW	Client Contact:				

Please proceed without the possibly contaminated container. We should be fine with the 3 other 8ozs

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