

Laramie Energy - Grand Junction, CO

Sample Delivery Group: L1132569
Samples Received: 08/24/2019
Project Number:
Description: Hawxhurst 24-09 Spill Response

Report To: Stuart Hall
760 Horizon Dr., Ste. 101
Grand Junction, CO 81506

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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¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



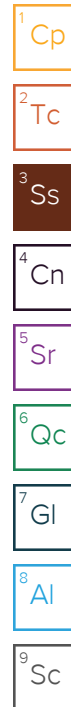
HAWX 24-09 SS1 L1132569-01 Solid

Collected by
Stuart Hall

Collected date/time
08/22/19 10:05

Received date/time
08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1335924	1	08/29/19 22:30	08/29/19 22:30	TRB	Mt. Juliet, TN
Calculated Results	WG1335833	1	08/27/19 19:15	08/28/19 11:24	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1334609	1	08/25/19 16:10	08/26/19 00:40	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1335771	1	08/28/19 12:13	08/28/19 19:41	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1335117	1	08/27/19 13:20	08/27/19 14:01	AKA	Mt. Juliet, TN
Mercury by Method 7471A	WG1335793	1	08/28/19 15:47	08/29/19 08:46	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1335833	1	08/27/19 19:15	08/28/19 11:24	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1337759	200	08/24/19 16:32	08/30/19 19:03	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1337507	100	08/30/19 08:37	08/31/19 11:24	DMW	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1337941	1	08/30/19 17:34	08/31/19 01:59	JNJ	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1337941	20	08/30/19 17:34	08/31/19 23:57	DMG	Mt. Juliet, TN



HAWX 24-09 SS2 L1132569-02 Solid

Collected by
Stuart Hall

Collected date/time
08/22/19 10:10

Received date/time
08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1335924	1	08/29/19 22:33	08/29/19 22:33	TRB	Mt. Juliet, TN
Calculated Results	WG1335833	1	08/27/19 19:15	08/28/19 11:27	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1334955	1	08/27/19 09:00	08/27/19 14:40	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1335771	1	08/28/19 12:13	08/28/19 19:41	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1335117	1	08/27/19 13:20	08/27/19 14:01	AKA	Mt. Juliet, TN
Mercury by Method 7471A	WG1335793	1	08/28/19 15:47	08/29/19 08:49	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1335833	1	08/27/19 19:15	08/28/19 11:27	EL	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015/8021	WG1337759	1	08/24/19 16:32	08/30/19 14:36	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1337507	1	08/30/19 08:37	08/31/19 06:03	DMW	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1337941	1	08/30/19 17:34	08/31/19 03:03	JNJ	Mt. Juliet, TN

HAWX 24-09 BG1 L1132569-03 Solid

Collected by
Stuart Hall

Collected date/time
08/22/19 11:30

Received date/time
08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Total Solids by Method 2540 G-2011	WG1337881	1	08/31/19 09:07	08/31/19 09:17	KBC	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1335833	1	08/27/19 19:15	08/28/19 11:30	EL	Mt. Juliet, TN

HAWX 24-09 E SW SS1 L1132569-04 Solid

Collected by
Stuart Hall

Collected date/time
08/22/19 11:00

Received date/time
08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1335924	1	08/29/19 22:36	08/29/19 22:36	TRB	Mt. Juliet, TN
Calculated Results	WG1335833	1	08/27/19 19:15	08/28/19 11:38	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1334609	1	08/25/19 16:10	08/26/19 00:42	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1335771	1	08/28/19 12:13	08/28/19 19:41	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1335117	1	08/27/19 13:20	08/27/19 14:01	AKA	Mt. Juliet, TN
Mercury by Method 7471A	WG1335793	1	08/28/19 15:47	08/29/19 08:36	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1335833	1	08/27/19 19:15	08/28/19 11:38	EL	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1337941	1	08/30/19 17:34	08/31/19 03:24	JNJ	Mt. Juliet, TN

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



HAWX 24-09 E SW SS1 L1132569-05 Solid

				Collected by Stuart Hall	Collected date/time 08/22/19 11:00	Received date/time 08/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015/8021	WG1335680	1	08/24/19 16:32	08/27/19 18:36	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1334644	1	08/25/19 22:43	08/26/19 10:26	JDG	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

HAWX 24-09 BH SS2 L1132569-06 Solid

				Collected by Stuart Hall	Collected date/time 08/22/19 11:15	Received date/time 08/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1335924	1	08/29/19 22:39	08/29/19 22:39	TRB	Mt. Juliet, TN
Calculated Results	WG1335833	1	08/27/19 19:15	08/28/19 11:41	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1334609	1	08/25/19 16:10	08/26/19 00:42	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1335771	1	08/28/19 12:13	08/28/19 19:41	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1335117	1	08/27/19 13:20	08/27/19 14:01	AKA	Mt. Juliet, TN
Mercury by Method 7471A	WG1335793	1	08/28/19 15:47	08/29/19 08:51	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1335833	1	08/27/19 19:15	08/28/19 11:41	EL	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1337941	1	08/30/19 17:34	08/31/19 03:45	JNJ	Mt. Juliet, TN

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

HAWX 24-09 BH SS2 L1132569-07 Solid

				Collected by Stuart Hall	Collected date/time 08/22/19 11:15	Received date/time 08/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015/8021	WG1335680	1	08/24/19 16:32	08/27/19 18:56	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1334644	1	08/25/19 22:43	08/26/19 11:04	JDG	Mt. Juliet, TN

⁹ Sc

HAWX 24-09 N SW SS3 L1132569-08 Solid

				Collected by Stuart Hall	Collected date/time 08/22/19 11:25	Received date/time 08/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1335924	1	08/29/19 22:41	08/29/19 22:41	TRB	Mt. Juliet, TN
Calculated Results	WG1335833	1	08/27/19 19:15	08/28/19 11:44	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1334609	1	08/25/19 16:10	08/26/19 00:43	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1335771	1	08/28/19 12:13	08/28/19 19:41	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1335117	1	08/27/19 13:20	08/27/19 14:01	AKA	Mt. Juliet, TN
Mercury by Method 7471A	WG1335793	1	08/28/19 15:47	08/29/19 08:59	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1335833	1	08/27/19 19:15	08/28/19 11:44	EL	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1337941	1	08/30/19 17:34	08/31/19 04:06	JNJ	Mt. Juliet, TN

HAWX 24-09 N SW SS3 L1132569-09 Solid

				Collected by Stuart Hall	Collected date/time 08/22/19 11:25	Received date/time 08/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015/8021	WG1335680	1	08/24/19 16:32	08/27/19 19:17	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1334644	1	08/25/19 22:43	08/26/19 10:14	JDG	Mt. Juliet, TN

HAWX 24-09 S SW SS4 L1132569-10 Solid

				Collected by Stuart Hall	Collected date/time 08/22/19 11:35	Received date/time 08/24/19 08:45
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1335924	1	08/29/19 22:50	08/29/19 22:50	TRB	Mt. Juliet, TN
Calculated Results	WG1335833	1	08/27/19 19:15	08/28/19 11:47	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1334609	1	08/25/19 16:10	08/26/19 00:43	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1336192	1	08/28/19 14:27	08/28/19 20:58	ANP	Mt. Juliet, TN

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



HAWX 24-09 S SW SS4 L1132569-10 Solid

Collected by
Stuart Hall

Collected date/time
08/22/19 11:35

Received date/time
08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9050AMod	WG1335117	1	08/27/19 13:20	08/27/19 14:01	AKA	Mt. Juliet, TN
Mercury by Method 7471A	WG1335793	1	08/28/19 15:47	08/29/19 09:01	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1335833	1	08/27/19 19:15	08/28/19 11:47	EL	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1337941	1	08/30/19 17:34	08/31/19 04:28	JNJ	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

HAWX 24-09 S SW SS4 L1132569-11 Solid

Collected by
Stuart Hall

Collected date/time
08/22/19 11:35

Received date/time
08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015/8021	WG1335680	1	08/24/19 16:32	08/27/19 19:37	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1334644	1	08/25/19 22:43	08/26/19 10:51	JDG	Mt. Juliet, TN

HAWX 24-09 W SW SS5 L1132569-12 Solid

Collected by
Stuart Hall

Collected date/time
08/22/19 11:45

Received date/time
08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1335924	1	08/29/19 22:53	08/29/19 22:53	TRB	Mt. Juliet, TN
Calculated Results	WG1335833	1	08/27/19 19:15	08/28/19 11:49	EL	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1334609	1	08/25/19 16:10	08/26/19 00:45	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1336192	1	08/28/19 14:27	08/28/19 20:58	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1335117	1	08/27/19 13:20	08/27/19 14:01	AKA	Mt. Juliet, TN
Mercury by Method 7471A	WG1335793	1	08/28/19 15:47	08/29/19 09:04	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1335833	1	08/27/19 19:15	08/28/19 11:49	EL	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1337941	1	08/30/19 17:34	08/31/19 04:49	JNJ	Mt. Juliet, TN

HAWX 24-09 W SW SS5 L1132569-13 Solid

Collected by
Stuart Hall

Collected date/time
08/22/19 11:45

Received date/time
08/24/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015/8021	WG1335680	1	08/24/19 16:32	08/27/19 19:58	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1334644	1	08/25/19 22:43	08/26/19 11:29	JDG	Mt. Juliet, TN

ACCOUNT:

Laramie Energy - Grand Junction, CO

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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



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	65.3		1	08/29/2019 22:30	WG1335924

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	15.7		1.00	1	08/28/2019 11:24	WG1335833

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	08/26/2019 00:40	WG1334609

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.29	T8	1	08/28/2019 19:41	WG1335771

Sample Narrative:

L1132569-01 WG1335771: 8.29 at 21.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	8290		10.0	1	08/27/2019 14:01	WG1335117

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	08/29/2019 08:46	WG1335793

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.44		2.00	1	08/28/2019 11:24	WG1335833
Barium	2260		0.500	1	08/28/2019 11:24	WG1335833
Cadmium	ND		0.500	1	08/28/2019 11:24	WG1335833
Chromium	15.7		1.00	1	08/28/2019 11:24	WG1335833
Copper	15.6		2.00	1	08/28/2019 11:24	WG1335833
Lead	8.13		0.500	1	08/28/2019 11:24	WG1335833
Nickel	18.8		2.00	1	08/28/2019 11:24	WG1335833
Selenium	ND		2.00	1	08/28/2019 11:24	WG1335833
Silver	ND		1.00	1	08/28/2019 11:24	WG1335833
Zinc	38.1		5.00	1	08/28/2019 11:24	WG1335833

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	2.76		0.100	200	08/30/2019 19:03	WG1337759
Toluene	13.1		1.00	200	08/30/2019 19:03	WG1337759
Ethylbenzene	3.92		0.100	200	08/30/2019 19:03	WG1337759
Total Xylene	77.8		0.300	200	08/30/2019 19:03	WG1337759
TPH (GC/FID) Low Fraction	1240		20.0	200	08/30/2019 19:03	WG1337759



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)	85.5		77.0-120		08/30/2019 19:03	WG1337759
(S) a,a,a-Trifluorotoluene(PID)	97.8		72.0-128		08/30/2019 19:03	WG1337759

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	11000		400	100	08/31/2019 11:24	WG1337507
(S) o-Terphenyl	0.000	J7	18.0-148		08/31/2019 11:24	WG1337507

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	08/31/2019 01:59	WG1337941
Acenaphthene	0.365		0.120	20	08/31/2019 23:57	WG1337941
Acenaphthylene	ND		0.120	20	08/31/2019 23:57	WG1337941
Benzo(a)anthracene	ND		0.00600	1	08/31/2019 01:59	WG1337941
Benzo(a)pyrene	ND		0.00600	1	08/31/2019 01:59	WG1337941
Benzo(b)fluoranthene	ND		0.00600	1	08/31/2019 01:59	WG1337941
Benzo(g,h,i)perylene	ND		0.00600	1	08/31/2019 01:59	WG1337941
Benzo(k)fluoranthene	ND		0.00600	1	08/31/2019 01:59	WG1337941
Chrysene	ND		0.00600	1	08/31/2019 01:59	WG1337941
Dibenz(a,h)anthracene	0.0320		0.00600	1	08/31/2019 01:59	WG1337941
Fluoranthene	ND		0.00600	1	08/31/2019 01:59	WG1337941
Fluorene	1.03		0.120	20	08/31/2019 23:57	WG1337941
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/31/2019 01:59	WG1337941
Naphthalene	7.14		0.400	20	08/31/2019 23:57	WG1337941
Phenanthrene	0.800	J3 V	0.00600	1	08/31/2019 01:59	WG1337941
Pyrene	0.0106		0.00600	1	08/31/2019 01:59	WG1337941
1-Methylnaphthalene	15.4		0.400	20	08/31/2019 23:57	WG1337941
2-Methylnaphthalene	29.2		0.400	20	08/31/2019 23:57	WG1337941
2-Chloronaphthalene	ND		0.400	20	08/31/2019 23:57	WG1337941
(S) p-Terphenyl-d14	81.8		23.0-120		08/31/2019 01:59	WG1337941
(S) p-Terphenyl-d14	54.1	J7	23.0-120		08/31/2019 23:57	WG1337941
(S) Nitrobenzene-d5	7390	J7	14.0-149		08/31/2019 23:57	WG1337941
(S) Nitrobenzene-d5	0.000	J2	14.0-149		08/31/2019 01:59	WG1337941
(S) 2-Fluorobiphenyl	0.000	J2	34.0-125		08/31/2019 01:59	WG1337941
(S) 2-Fluorobiphenyl	61.7	J7	34.0-125		08/31/2019 23:57	WG1337941

Sample Narrative:

L1132569-01 WG1337941: IS/SURR failed on lower dilution.

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	35.6		1	08/29/2019 22:33	WG1335924

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	17.7		1.00	1	08/28/2019 11:27	WG1335833

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	08/27/2019 14:40	WG1334955

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.95	T8	1	08/28/2019 19:41	WG1335771

Sample Narrative:

L1132569-02 WG1335771: 7.95 at 21.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	6160		10.0	1	08/27/2019 14:01	WG1335117

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	08/29/2019 08:49	WG1335793

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.82		2.00	1	08/28/2019 11:27	WG1335833
Barium	2830		0.500	1	08/28/2019 11:27	WG1335833
Cadmium	ND		0.500	1	08/28/2019 11:27	WG1335833
Chromium	17.7		1.00	1	08/28/2019 11:27	WG1335833
Copper	19.3		2.00	1	08/28/2019 11:27	WG1335833
Lead	9.19		0.500	1	08/28/2019 11:27	WG1335833
Nickel	26.0		2.00	1	08/28/2019 11:27	WG1335833
Selenium	ND		2.00	1	08/28/2019 11:27	WG1335833
Silver	ND		1.00	1	08/28/2019 11:27	WG1335833
Zinc	46.6		5.00	1	08/28/2019 11:27	WG1335833

Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00211		0.000500	1	08/30/2019 14:36	WG1337759
Toluene	0.0155		0.00500	1	08/30/2019 14:36	WG1337759
Ethylbenzene	0.00590		0.000500	1	08/30/2019 14:36	WG1337759
Total Xylene	0.109		0.00150	1	08/30/2019 14:36	WG1337759
TPH (GC/FID) Low Fraction	3.28		0.100	1	08/30/2019 14:36	WG1337759

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



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)	91.5		77.0-120		08/30/2019 14:36	WG1337759
(S) a,a,a-Trifluorotoluene(PID)	94.3		72.0-128		08/30/2019 14:36	WG1337759

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	187		4.00	1	08/31/2019 06:03	WG1337507
(S) o-Terphenyl	78.8		18.0-148		08/31/2019 06:03	WG1337507

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	08/31/2019 03:03	WG1337941
Acenaphthene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Acenaphthylene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Benzo(a)anthracene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Benzo(a)pyrene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Benzo(b)fluoranthene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Benzo(g,h,i)perylene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Benzo(k)fluoranthene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Chrysene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Dibenz(a,h)anthracene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Fluoranthene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Fluorene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Naphthalene	0.0337		0.0200	1	08/31/2019 03:03	WG1337941
Phenanthrene	ND		0.00600	1	08/31/2019 03:03	WG1337941
Pyrene	ND		0.00600	1	08/31/2019 03:03	WG1337941
1-Methylnaphthalene	0.0459		0.0200	1	08/31/2019 03:03	WG1337941
2-Methylnaphthalene	0.102		0.0200	1	08/31/2019 03:03	WG1337941
2-Chloronaphthalene	ND		0.0200	1	08/31/2019 03:03	WG1337941
(S) p-Terphenyl-d14	57.1		23.0-120		08/31/2019 03:03	WG1337941
(S) Nitrobenzene-d5	74.9		14.0-149		08/31/2019 03:03	WG1337941
(S) 2-Fluorobiphenyl	58.9		34.0-125		08/31/2019 03:03	WG1337941

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Total Solids by Method 2540 G-2011

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Total Solids	93.1		1	08/31/2019 09:17	WG1337881

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic	3.42		2.00	1	08/28/2019 11:30	WG1335833

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.34		1	08/29/2019 22:36	WG1335924

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	16.4		1.00	1	08/28/2019 11:38	WG1335833

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	08/26/2019 00:42	WG1334609

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.24	T8	1	08/28/2019 19:41	WG1335771

Sample Narrative:

L1132569-04 WG1335771: 8.24 at 21.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	647		10.0	1	08/27/2019 14:01	WG1335117

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	08/29/2019 08:36	WG1335793

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.25		2.00	1	08/28/2019 11:38	WG1335833
Barium	194		0.500	1	08/28/2019 11:38	WG1335833
Cadmium	ND		0.500	1	08/28/2019 11:38	WG1335833
Chromium	16.4		1.00	1	08/28/2019 11:38	WG1335833
Copper	12.7		2.00	1	08/28/2019 11:38	WG1335833
Lead	8.72		0.500	1	08/28/2019 11:38	WG1335833
Nickel	17.3		2.00	1	08/28/2019 11:38	WG1335833
Selenium	ND		2.00	1	08/28/2019 11:38	WG1335833
Silver	ND		1.00	1	08/28/2019 11:38	WG1335833
Zinc	40.6		5.00	1	08/28/2019 11:38	WG1335833

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	08/31/2019 03:24	WG1337941
Acenaphthene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Acenaphthylene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Benzo(a)anthracene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Benzo(a)pyrene	ND		0.00600	1	08/31/2019 03:24	WG1337941

1	Cp
2	Tc
3	Ss
4	Cn
5	Sr
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
Benzo(b)fluoranthene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Benzo(g,h,i)perylene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Benzo(k)fluoranthene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Chrysene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Dibenz(a,h)anthracene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Fluoranthene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Fluorene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Naphthalene	0.0762		0.0200	1	08/31/2019 03:24	WG1337941
Phenanthrene	ND		0.00600	1	08/31/2019 03:24	WG1337941
Pyrene	ND		0.00600	1	08/31/2019 03:24	WG1337941
1-Methylnaphthalene	0.0248		0.0200	1	08/31/2019 03:24	WG1337941
2-Methylnaphthalene	0.0726		0.0200	1	08/31/2019 03:24	WG1337941
2-Chloronaphthalene	ND		0.0200	1	08/31/2019 03:24	WG1337941
(S) p-Terphenyl-d14	78.2		23.0-120		08/31/2019 03:24	WG1337941
(S) Nitrobenzene-d5	76.4		14.0-149		08/31/2019 03:24	WG1337941
(S) 2-Fluorobiphenyl	78.5		34.0-125		08/31/2019 03:24	WG1337941

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000952		0.000500	1	08/27/2019 18:36	WG1335680
Toluene	ND		0.00500	1	08/27/2019 18:36	WG1335680
Ethylbenzene	ND		0.000500	1	08/27/2019 18:36	WG1335680
Total Xylene	0.00614	<u>B</u>	0.00150	1	08/27/2019 18:36	WG1335680
TPH (GC/FID) Low Fraction	0.234	<u>B</u>	0.100	1	08/27/2019 18:36	WG1335680
(S) a,a,a-Trifluorotoluene(FID)	92.1		77.0-120		08/27/2019 18:36	WG1335680
(S) a,a,a-Trifluorotoluene(PID)	94.1		72.0-128		08/27/2019 18:36	WG1335680

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	4.26		4.00	1	08/26/2019 10:26	WG1334644
(S) o-Terphenyl	57.1		18.0-148		08/26/2019 10:26	WG1334644

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	27.0		1	08/29/2019 22:39	WG1335924

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	13.3		1.00	1	08/28/2019 11:41	WG1335833

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	08/26/2019 00:42	WG1334609

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.22	T8	1	08/28/2019 19:41	WG1335771

Sample Narrative:

L1132569-06 WG1335771: 8.22 at 21.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2290		10.0	1	08/27/2019 14:01	WG1335117

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	08/29/2019 08:51	WG1335793

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.13		2.00	1	08/28/2019 11:41	WG1335833
Barium	296		0.500	1	08/28/2019 11:41	WG1335833
Cadmium	ND		0.500	1	08/28/2019 11:41	WG1335833
Chromium	13.3		1.00	1	08/28/2019 11:41	WG1335833
Copper	9.81		2.00	1	08/28/2019 11:41	WG1335833
Lead	6.54		0.500	1	08/28/2019 11:41	WG1335833
Nickel	13.0		2.00	1	08/28/2019 11:41	WG1335833
Selenium	ND		2.00	1	08/28/2019 11:41	WG1335833
Silver	ND		1.00	1	08/28/2019 11:41	WG1335833
Zinc	29.3		5.00	1	08/28/2019 11:41	WG1335833

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	08/31/2019 03:45	WG1337941
Acenaphthene	ND		0.00600	1	08/31/2019 03:45	WG1337941
Acenaphthylene	ND		0.00600	1	08/31/2019 03:45	WG1337941
Benzo(a)anthracene	ND		0.00600	1	08/31/2019 03:45	WG1337941
Benzo(a)pyrene	ND		0.00600	1	08/31/2019 03:45	WG1337941



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzo(b)fluoranthene	ND		0.00600	1	08/31/2019 03:45	WG1337941
Benzo(g,h,i)perylene	ND		0.00600	1	08/31/2019 03:45	WG1337941
Benzo(k)fluoranthene	ND		0.00600	1	08/31/2019 03:45	WG1337941
Chrysene	ND		0.00600	1	08/31/2019 03:45	WG1337941
Dibenz(a,h)anthracene	ND		0.00600	1	08/31/2019 03:45	WG1337941
Fluoranthene	ND		0.00600	1	08/31/2019 03:45	WG1337941
Fluorene	0.0175		0.00600	1	08/31/2019 03:45	WG1337941
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/31/2019 03:45	WG1337941
Naphthalene	0.0985		0.0200	1	08/31/2019 03:45	WG1337941
Phenanthrene	0.00806		0.00600	1	08/31/2019 03:45	WG1337941
Pyrene	ND		0.00600	1	08/31/2019 03:45	WG1337941
1-Methylnaphthalene	0.186		0.0200	1	08/31/2019 03:45	WG1337941
2-Methylnaphthalene	0.188		0.0200	1	08/31/2019 03:45	WG1337941
2-Chloronaphthalene	ND		0.0200	1	08/31/2019 03:45	WG1337941
(S) p-Terphenyl-d14	86.3		23.0-120		08/31/2019 03:45	WG1337941
(S) Nitrobenzene-d5	140		14.0-149		08/31/2019 03:45	WG1337941
(S) 2-Fluorobiphenyl	84.0		34.0-125		08/31/2019 03:45	WG1337941

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00146		0.000500	1	08/27/2019 18:56	WG1335680
Toluene	0.00901		0.00500	1	08/27/2019 18:56	WG1335680
Ethylbenzene	ND		0.000500	1	08/27/2019 18:56	WG1335680
Total Xylene	0.0748		0.00150	1	08/27/2019 18:56	WG1335680
TPH (GC/FID) Low Fraction	2.97		0.100	1	08/27/2019 18:56	WG1335680
(S) a,a,a-Trifluorotoluene(FID)	91.5		77.0-120		08/27/2019 18:56	WG1335680
(S) a,a,a-Trifluorotoluene(PID)	94.0		72.0-128		08/27/2019 18:56	WG1335680

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	72.4		4.00	1	08/26/2019 11:04	WG1334644
(S) o-Terphenyl	34.9		18.0-148		08/26/2019 11:04	WG1334644

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	2.25		1	08/29/2019 22:41	WG1335924

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	16.6		1.00	1	08/28/2019 11:44	WG1335833

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	08/26/2019 00:43	WG1334609

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.44	T8	1	08/28/2019 19:41	WG1335771

Sample Narrative:

L1132569-08 WG1335771: 8.44 at 21.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	259		10.0	1	08/27/2019 14:01	WG1335117

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	08/29/2019 08:59	WG1335793

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.51		2.00	1	08/28/2019 11:44	WG1335833
Barium	178		0.500	1	08/28/2019 11:44	WG1335833
Cadmium	ND		0.500	1	08/28/2019 11:44	WG1335833
Chromium	16.6		1.00	1	08/28/2019 11:44	WG1335833
Copper	11.7		2.00	1	08/28/2019 11:44	WG1335833
Lead	8.82		0.500	1	08/28/2019 11:44	WG1335833
Nickel	15.6		2.00	1	08/28/2019 11:44	WG1335833
Selenium	ND		2.00	1	08/28/2019 11:44	WG1335833
Silver	ND		1.00	1	08/28/2019 11:44	WG1335833
Zinc	38.5		5.00	1	08/28/2019 11:44	WG1335833

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	08/31/2019 04:06	WG1337941
Acenaphthene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Acenaphthylene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Benzo(a)anthracene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Benzo(a)pyrene	ND		0.00600	1	08/31/2019 04:06	WG1337941

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



Collected date/time: 08/22/19 11:25

L1132569

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzo(b)fluoranthene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Benzo(g,h,i)perylene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Benzo(k)fluoranthene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Chrysene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Dibenz(a,h)anthracene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Fluoranthene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Fluorene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Naphthalene	0.0395		0.0200	1	08/31/2019 04:06	WG1337941
Phenanthrene	ND		0.00600	1	08/31/2019 04:06	WG1337941
Pyrene	ND		0.00600	1	08/31/2019 04:06	WG1337941
1-Methylnaphthalene	ND		0.0200	1	08/31/2019 04:06	WG1337941
2-Methylnaphthalene	ND		0.0200	1	08/31/2019 04:06	WG1337941
2-Chloronaphthalene	ND		0.0200	1	08/31/2019 04:06	WG1337941
(S) p-Terphenyl-d14	75.4		23.0-120		08/31/2019 04:06	WG1337941
(S) Nitrobenzene-d5	77.8		14.0-149		08/31/2019 04:06	WG1337941
(S) 2-Fluorobiphenyl	78.5		34.0-125		08/31/2019 04:06	WG1337941

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00109		0.000500	1	08/27/2019 19:17	WG1335680
Toluene	ND		0.00500	1	08/27/2019 19:17	WG1335680
Ethylbenzene	ND		0.000500	1	08/27/2019 19:17	WG1335680
Total Xylene	0.00672	<u>B</u>	0.00150	1	08/27/2019 19:17	WG1335680
TPH (GC/FID) Low Fraction	0.205	<u>B</u>	0.100	1	08/27/2019 19:17	WG1335680
(S) a,a,a-Trifluorotoluene(FID)	91.8		77.0-120		08/27/2019 19:17	WG1335680
(S) a,a,a-Trifluorotoluene(PID)	93.8		72.0-128		08/27/2019 19:17	WG1335680

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	ND		4.00	1	08/26/2019 10:14	WG1334644
(S) o-Terphenyl	59.3		18.0-148		08/26/2019 10:14	WG1334644

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	1.25		1	08/29/2019 22:50	WG1335924

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	21.8		1.00	1	08/28/2019 11:47	WG1335833

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	08/26/2019 00:43	WG1334609

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.12	T8	1	08/28/2019 20:58	WG1336192

Sample Narrative:

L1132569-10 WG1336192: 8.12 at 22.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	317		10.0	1	08/27/2019 14:01	WG1335117

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	08/29/2019 09:01	WG1335793

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.91		2.00	1	08/28/2019 11:47	WG1335833
Barium	354		0.500	1	08/28/2019 11:47	WG1335833
Cadmium	ND		0.500	1	08/28/2019 11:47	WG1335833
Chromium	21.8		1.00	1	08/28/2019 11:47	WG1335833
Copper	13.9		2.00	1	08/28/2019 11:47	WG1335833
Lead	9.40		0.500	1	08/28/2019 11:47	WG1335833
Nickel	21.4		2.00	1	08/28/2019 11:47	WG1335833
Selenium	ND		2.00	1	08/28/2019 11:47	WG1335833
Silver	ND		1.00	1	08/28/2019 11:47	WG1335833
Zinc	45.7		5.00	1	08/28/2019 11:47	WG1335833

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	08/31/2019 04:28	WG1337941
Acenaphthene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Acenaphthylene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Benzo(a)anthracene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Benzo(a)pyrene	ND		0.00600	1	08/31/2019 04:28	WG1337941



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzo(b)fluoranthene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Benzo(g,h,i)perylene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Benzo(k)fluoranthene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Chrysene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Dibenz(a,h)anthracene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Fluoranthene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Fluorene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Naphthalene	0.0870		0.0200	1	08/31/2019 04:28	WG1337941
Phenanthrene	ND		0.00600	1	08/31/2019 04:28	WG1337941
Pyrene	ND		0.00600	1	08/31/2019 04:28	WG1337941
1-Methylnaphthalene	0.0487		0.0200	1	08/31/2019 04:28	WG1337941
2-Methylnaphthalene	0.104		0.0200	1	08/31/2019 04:28	WG1337941
2-Chloronaphthalene	ND		0.0200	1	08/31/2019 04:28	WG1337941
(S) p-Terphenyl-d14	74.5		23.0-120		08/31/2019 04:28	WG1337941
(S) Nitrobenzene-d5	81.8		14.0-149		08/31/2019 04:28	WG1337941
(S) 2-Fluorobiphenyl	75.6		34.0-125		08/31/2019 04:28	WG1337941

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000785		0.000500	1	08/27/2019 19:37	WG1335680
Toluene	ND		0.00500	1	08/27/2019 19:37	WG1335680
Ethylbenzene	ND		0.000500	1	08/27/2019 19:37	WG1335680
Total Xylene	0.0121		0.00150	1	08/27/2019 19:37	WG1335680
TPH (GC/FID) Low Fraction	0.457		0.100	1	08/27/2019 19:37	WG1335680
(S) a,a,a-Trifluorotoluene(FID)	91.8		77.0-120		08/27/2019 19:37	WG1335680
(S) a,a,a-Trifluorotoluene(PID)	93.7		72.0-128		08/27/2019 19:37	WG1335680

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	9.78		4.00	1	08/26/2019 10:51	WG1334644
(S) o-Terphenyl	62.2		18.0-148		08/26/2019 10:51	WG1334644

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	1.38		1	08/29/2019 22:53	WG1335924

Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	19.9		1.00	1	08/28/2019 11:49	WG1335833

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	08/26/2019 00:45	WG1334609

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.33	T8	1	08/28/2019 20:58	WG1336192

Sample Narrative:

L1132569-12 WG1336192: 8.33 at 23.1C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	268		10.0	1	08/27/2019 14:01	WG1335117

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	08/29/2019 09:04	WG1335793

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.52		2.00	1	08/28/2019 11:49	WG1335833
Barium	352		0.500	1	08/28/2019 11:49	WG1335833
Cadmium	ND		0.500	1	08/28/2019 11:49	WG1335833
Chromium	19.9		1.00	1	08/28/2019 11:49	WG1335833
Copper	13.0		2.00	1	08/28/2019 11:49	WG1335833
Lead	14.5		0.500	1	08/28/2019 11:49	WG1335833
Nickel	40.6		2.00	1	08/28/2019 11:49	WG1335833
Selenium	ND		2.00	1	08/28/2019 11:49	WG1335833
Silver	ND		1.00	1	08/28/2019 11:49	WG1335833
Zinc	40.9		5.00	1	08/28/2019 11:49	WG1335833

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	08/31/2019 04:49	WG1337941
Acenaphthene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Acenaphthylene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Benzo(a)anthracene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Benzo(a)pyrene	ND		0.00600	1	08/31/2019 04:49	WG1337941

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



Collected date/time: 08/22/19 11:45

L1132569

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzo(b)fluoranthene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Benzo(g,h,i)perylene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Benzo(k)fluoranthene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Chrysene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Dibenz(a,h)anthracene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Fluoranthene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Fluorene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Naphthalene	ND		0.0200	1	08/31/2019 04:49	WG1337941
Phenanthrene	ND		0.00600	1	08/31/2019 04:49	WG1337941
Pyrene	ND		0.00600	1	08/31/2019 04:49	WG1337941
1-Methylnaphthalene	ND		0.0200	1	08/31/2019 04:49	WG1337941
2-Methylnaphthalene	ND		0.0200	1	08/31/2019 04:49	WG1337941
2-Chloronaphthalene	ND		0.0200	1	08/31/2019 04:49	WG1337941
(S) p-Terphenyl-d14	70.9		23.0-120		08/31/2019 04:49	WG1337941
(S) Nitrobenzene-d5	78.9		14.0-149		08/31/2019 04:49	WG1337941
(S) 2-Fluorobiphenyl	73.7		34.0-125		08/31/2019 04:49	WG1337941

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Volatile Organic Compounds (GC) by Method 8015/8021

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.000822		0.000500	1	08/27/2019 19:58	WG1335680
Toluene	ND	J3	0.00500	1	08/27/2019 19:58	WG1335680
Ethylbenzene	ND	J3	0.000500	1	08/27/2019 19:58	WG1335680
Total Xylene	0.00991	J3 J6	0.00150	1	08/27/2019 19:58	WG1335680
TPH (GC/FID) Low Fraction	0.150	B	0.100	1	08/27/2019 19:58	WG1335680
(S) a,a,a-Trifluorotoluene(FID)	91.4		77.0-120		08/27/2019 19:58	WG1335680
(S) a,a,a-Trifluorotoluene(PID)	93.7		72.0-128		08/27/2019 19:58	WG1335680

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	11.8		4.00	1	08/26/2019 11:29	WG1334644
(S) o-Terphenyl	51.9		18.0-148		08/26/2019 11:29	WG1334644

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc



Total Solids by Method 2540 G-2011

L1132569-03

Method Blank (MB)

(MB) R3446785-1 08/31/19 09:17

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	%		%	%
Total Solids	0.00100			

Cp

 ${}^{99\text{Tc}}$

Ss

$$C_n$$
⁸⁷Sr

Qc

L1132568-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1132568-04 08/31/19 09:17 • (DUP) R3446785-3 08/31/19 09:17

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	%	%		%		%
Total Solids	95.4	95.5	1	0.0627		10

GI

 ${}^3\text{Al}$

Sc

Laboratory Control Sample (LCS)

(LCS) R3446785-2 08/31/19 09:17

Analyte	Spike Amount %	LCS Result %	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Total Solids	50.0	50.0	100	85.0-115	



Method Blank (MB)

(MB) R3444035-1 08/26/19 00:22

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

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1132118-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1132118-04 08/26/19 00:24 • (DUP) R3444035-3 08/26/19 00:25

	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	1.80	1.74	1	3.62	⌵	20

L1132753-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1132753-01 08/26/19 00:45 • (DUP) R3444035-8 08/26/19 00:47

	Original Result (dry)	DUP Result (dry)	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Chromium,Hexavalent	1.28	1.53	1	17.9	⌵	20

Laboratory Control Sample (LCS)

(LCS) R3444035-2 08/26/19 00:23

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	21.4	89.1	80.0-120	

L1132118-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132118-05 08/26/19 00:25 • (MS) R3444035-4 08/26/19 00:27 • (MSD) R3444035-5 08/26/19 00:30

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MSD Result (dry)	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	23.3	U	21.0	21.7	90.2	93.2	1	75.0-125			3.23	20



L1132118-05 Original Sample (OS) • Matrix Spike (MS)

(OS) L1132118-05 08/26/19 00:25 • (MS) R3444035-6 08/26/19 00:31

	Spike Amount (dry)	Original Result (dry)	MS Result (dry)	MS Rec.	Dilution	Rec. Limits	<u>MS Qualifier</u>
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	760	U	1010	132	50	75.0-125	<u>J5</u>

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3444659-1 08/27/19 14:38				
	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

L1132659-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1132659-04 08/27/19 14:43 • (DUP) R3444659-7 08/27/19 14:44						
	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

Laboratory Control Sample (LCS)

(LCS) R3444659-2 08/27/19 14:38					
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	23.4	97.4	80.0-120	

L1132659-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132659-03 08/27/19 14:41 • (MS) R3444659-3 08/27/19 14:42 • (MSD) R3444659-4 08/27/19 14:42												
	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	U	4.24	3.44	21.2	17.2	1	75.0-125	J6	J3 J6	20.8	20

L1132659-03 Original Sample (OS) • Matrix Spike (MS)

(OS) L1132659-03 08/27/19 14:41 • (MS) R3444659-5 08/27/19 14:42							
	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	643	U	302	47.0	50	75.0-125	J6

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1132542-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1132542-03 08/28/19 19:41 • (DUP) R3445223-2 08/28/19 19:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	5.10	5.13	1	0.587		1

Sample Narrative:
OS: 5.1 at 21.9C
DUP: 5.13 at 21.8C

L1133302-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1133302-06 08/28/19 19:41 • (DUP) R3445223-3 08/28/19 19:41

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.86	7.85	1	0.127		1

Sample Narrative:
OS: 7.86 at 21.6C
DUP: 7.85 at 21.6C

Laboratory Control Sample (LCS)

(LCS) R3445223-1 08/28/19 19:41

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.97	99.7	99.0-101	

Sample Narrative:
LCS: 9.97 at 21.2C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



L1132569-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1132569-10 08/28/19 20:58 • (DUP) R3445246-2 08/28/19 20:58

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.12	8.13	1	0.123		1

Sample Narrative:

OS: 8.12 at 22.7C

DUP: 8.13 at 23.1C

L1133337-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1133337-03 08/28/19 20:58 • (DUP) R3445246-3 08/28/19 20:58

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	10.5	10.6	1	0.853		1

Sample Narrative:

OS: 10.5 at 22.9C

DUP: 10.59 at 22.7C

Laboratory Control Sample (LCS)

(LCS) R3445246-1 08/28/19 20:58

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.95	99.5	99.0-101	

Sample Narrative:

LCS: 9.95 at 22.3C



Method Blank (MB)

(MB) R3444600-1 08/27/19 14:01

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	umhos/cm		umhos/cm	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

L1132535-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1132535-01 08/27/19 14:01 • (DUP) R3444600-3 08/27/19 14:01

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	1170	1170	1	0.684		20

L1132569-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1132569-12 08/27/19 14:01 • (DUP) R3444600-4 08/27/19 14:01

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	268	269	1	0.410		20

Laboratory Control Sample (LCS)

(LCS) R3444600-2 08/27/19 14:01

	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) R3445365-1 08/29/19 08:28

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) R3445365-2 08/29/19 08:31 • (LCSD) R3445365-3 08/29/19 08:33

	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	0.522	0.524	104	105	80.0-120			0.260	20

L1132569-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132569-04 08/29/19 08:36 • (MS) R3445365-4 08/29/19 08:38 • (MSD) R3445365-5 08/29/19 08:41

	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	ND	0.545	0.521	108	103	1	75.0-125			4.51	20



Method Blank (MB)

(MB) R3445281-1 08/28/19 10:31

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) R3445281-2 08/28/19 10:33 • (LCSD) R3445281-3 08/28/19 10:36

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	88.9	91.5	88.9	91.5	80.0-120			2.89	20
Barium	100	97.3	101	97.3	101	80.0-120			3.59	20
Cadmium	100	90.0	93.4	90.0	93.4	80.0-120			3.76	20
Chromium	100	94.0	98.0	94.0	98.0	80.0-120			4.22	20
Copper	100	94.1	98.2	94.1	98.2	80.0-120			4.33	20
Lead	100	92.2	95.5	92.2	95.5	80.0-120			3.57	20
Nickel	100	96.3	99.7	96.3	99.7	80.0-120			3.45	20
Selenium	100	88.2	90.3	88.2	90.3	80.0-120			2.37	20
Silver	20.0	17.0	17.7	84.9	88.6	80.0-120			4.23	20
Zinc	100	91.1	94.0	91.1	94.0	80.0-120			3.08	20

L1132009-22 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132009-22 08/28/19 10:39 • (MS) R3445281-6 08/28/19 10:47 • (MSD) R3445281-7 08/28/19 10:50

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	4.25	86.0	86.0	81.7	81.8	1	75.0-125			0.0660	20
Barium	100	193	276	273	83.0	79.8	1	75.0-125			1.18	20
Cadmium	100	0.268	88.3	88.7	88.0	88.4	1	75.0-125			0.408	20
Chromium	100	38.6	132	141	93.9	102	1	75.0-125			6.17	20
Copper	100	27.1	124	126	96.4	98.7	1	75.0-125			1.79	20
Lead	100	7.01	99.6	99.6	92.6	92.6	1	75.0-125			0.0109	20
Nickel	100	51.5	149	153	97.7	101	1	75.0-125			2.31	20



L1132009-22 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132009-22 08/28/19 10:39 • (MS) R3445281-6 08/28/19 10:47 • (MSD) R3445281-7 08/28/19 10:50

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	83.3	84.1	83.3	84.1	1	75.0-125			0.956	20
Silver	20.0	U	16.5	16.5	82.5	82.5	1	75.0-125			0.0522	20
Zinc	100	52.7	137	141	84.6	88.0	1	75.0-125			2.45	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3444952-3 08/27/19 16:11

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000201	⌵	0.000150	0.00500
Ethylbenzene	U		0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0292	⌵	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	94.0			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	96.8			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) R3444952-1 08/27/19 15:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0431	86.3	76.0-121	
Toluene	0.0500	0.0426	85.2	80.0-120	
Ethylbenzene	0.0500	0.0456	91.1	80.0-124	
Total Xylene	0.150	0.134	89.4	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			94.6	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			97.4	72.0-128	

Laboratory Control Sample (LCS)

(LCS) R3444952-2 08/27/19 15:30

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.92	108	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			109	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			106	72.0-128	



[L1132569-05,07,09,11,13](#)

L1132569-13 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132569-13 08/27/19 19:58 • (MS) R3444952-4 08/28/19 01:05 • (MSD) R3444952-5 08/28/19 01:53

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	0.0500	0.000822	0.0342	0.0248	66.7	47.9	1	10.0-155			31.8	32
Toluene	0.0500	ND	0.0294	0.0193	57.2	37.0	1	10.0-160		J3	41.4	34
Ethylbenzene	0.0500	ND	0.0265	0.0164	52.0	31.9	1	10.0-160		J3	46.9	32
Total Xylene	0.150	0.00991	0.0851	0.0575	50.1	31.7	1	10.0-160	J6	J3 J6	38.7	32
(S) a,a,a-Trifluorotoluene(FID)					92.5	92.0		77.0-120				
(S) a,a,a-Trifluorotoluene(PID)					94.2	94.2		72.0-128				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3446665-3 08/30/19 13:55

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000120	0.000500
Toluene	0.000178	└	0.000150	0.00500
Ethylbenzene	0.000247	└	0.000110	0.000500
Total Xylene	U		0.000460	0.00150
TPH (GC/FID) Low Fraction	0.0355	└	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	95.8			77.0-120
(S) a,a,a-Trifluorotoluene(PID)	98.3			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) R3446665-1 08/30/19 12:53

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.0500	0.0477	95.3	76.0-121	
Toluene	0.0500	0.0473	94.6	80.0-120	
Ethylbenzene	0.0500	0.0502	100	80.0-124	
Total Xylene	0.150	0.147	98.1	37.0-160	
(S) a,a,a-Trifluorotoluene(FID)			95.6	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			97.0	72.0-128	

Laboratory Control Sample (LCS)

(LCS) R3446665-2 08/30/19 13:14

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.66	103	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			108	77.0-120	
(S) a,a,a-Trifluorotoluene(PID)			109	72.0-128	



Method Blank (MB)

(MB) R3444301-1 08/26/19 09:23

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	70.7			18.0-148

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3444301-2 08/26/19 09:35

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	32.6	65.2	50.0-150	
(S) o-Terphenyl			72.5	18.0-148	

Method Blank (MB)

(MB) R3446224-1 08/31/19 02:16

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	77.3			18.0-148

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3446224-2 08/31/19 02:28

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	37.6	75.2	50.0-150	
(S) o-Terphenyl			92.3	18.0-148	

L1132558-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132558-09 08/31/19 04:35 • (MS) R3446224-3 08/31/19 04:10 • (MSD) R3446224-4 08/31/19 04:22

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 %
TPH (GC/FID) High Fraction	50.0	ND	37.6	36.1	75.2	72.2	1	50.0-150			4.07	20
(S) o-Terphenyl					69.8	68.3		18.0-148				

Method Blank (MB)

(MB) R3446228-2 08/31/19 01:38

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	72.4			14.0-149
(S) 2-Fluorobiphenyl	83.2			34.0-125
(S) p-Terphenyl-d14	83.8			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3446228-1 08/31/19 01:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0540	67.5	50.0-126	
Acenaphthene	0.0800	0.0562	70.3	50.0-120	
Acenaphthylene	0.0800	0.0595	74.4	50.0-120	
Benzo(a)anthracene	0.0800	0.0540	67.5	45.0-120	
Benzo(a)pyrene	0.0800	0.0577	72.1	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0565	70.6	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0569	71.1	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0599	74.9	49.0-125	
Chrysene	0.0800	0.0583	72.9	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0581	72.6	47.0-125	
Fluoranthene	0.0800	0.0579	72.4	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3446228-1 08/31/19 01:17

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0556	69.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0586	73.3	46.0-125	
Naphthalene	0.0800	0.0516	64.5	50.0-120	
Phenanthrene	0.0800	0.0526	65.8	47.0-120	
Pyrene	0.0800	0.0577	72.1	43.0-123	
1-Methylnaphthalene	0.0800	0.0569	71.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0544	68.0	50.0-120	
2-Chloronaphthalene	0.0800	0.0517	64.6	50.0-120	
(S) Nitrobenzene-d5			67.6	14.0-149	
(S) 2-Fluorobiphenyl			70.7	34.0-125	
(S) p-Terphenyl-d14			66.5	23.0-120	

L1132569-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1132569-01 08/31/19 01:59 • (MS) R3446228-3 08/31/19 02:20 • (MSD) R3446228-4 08/31/19 02:42

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 %
Anthracene	0.0800	ND	0.0879	0.0975	110	122	1	10.0-145			10.4	30
Acenaphthene	0.0800	ND	0.0592	0.0552	74.0	69.0	1	14.0-127			6.99	27
Acenaphthylene	0.0800	ND	ND	ND	0.000	0.000	1	21.0-124	J6	J6	0.000	25
Benzo(a)anthracene	0.0800	ND	0.0650	0.0661	81.3	82.6	1	10.0-139			1.68	30
Benzo(a)pyrene	0.0800	ND	0.0644	0.0648	80.5	81.0	1	10.0-141			0.619	31
Benzo(b)fluoranthene	0.0800	ND	0.0635	0.0634	79.4	79.3	1	10.0-140			0.158	36
Benzo(g,h,i)perylene	0.0800	ND	0.0630	0.0639	78.8	79.9	1	10.0-140			1.42	33
Benzo(k)fluoranthene	0.0800	ND	0.0647	0.0644	80.9	80.5	1	10.0-137			0.465	31
Chrysene	0.0800	ND	0.0614	0.0622	76.8	77.8	1	10.0-145			1.29	30
Dibenz(a,h)anthracene	0.0800	0.0320	0.0661	0.0692	42.6	46.5	1	10.0-132			4.58	31
Fluoranthene	0.0800	ND	0.0719	0.0698	89.9	87.3	1	10.0-153			2.96	33
Fluorene	0.0800	ND	0.380	0.510	475	638	1	11.0-130	J5	J3 J5	29.2	29
Indeno(1,2,3-cd)pyrene	0.0800	ND	0.0649	0.0664	81.1	83.0	1	10.0-137			2.28	32
Naphthalene	0.0800	ND	1.70	2.36	2130	2950	1	10.0-135	J5	J3 J5	32.5	27
Phenanthrene	0.0800	0.800	0.279	0.391	0.000	0.000	1	10.0-144	V	J3 V	33.4	31
Pyrene	0.0800	0.0106	0.0675	0.0691	71.1	73.1	1	10.0-148			2.34	35
1-Methylnaphthalene	0.0800	ND	5.11	9.05	6390	11300	1	10.0-142	E J5	E J3 J5	55.6	28
2-Methylnaphthalene	0.0800	ND	8.51	16.1	10600	20100	1	10.0-137	E J5	E J3 J5	61.7	28
2-Chloronaphthalene	0.0800	ND	ND	ND	0.000	0.000	1	29.0-120	J6	J6	0.000	24
(S) Nitrobenzene-d5					0.000	0.000		14.0-149	J2	J2		
(S) 2-Fluorobiphenyl					88.1	88.0		34.0-125				
(S) p-Terphenyl-d14					76.6	73.0		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

(dry)	Results are reported based on the dry weight of the sample. [this will only be present on a dry report basis for soils].
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.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
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.
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.
J7	Surrogate recovery cannot be used for control limit evaluation due to dilution.
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.



Entrada Consulting Group 330 Grand Avenue, Unit C Grand Junction, CO 81501				Billing Information:				Analysis / Container / Preservative										Chain of Custody Page ____ of ____											
				<i>Direct Bill</i> <i>Larsonic Energy</i>														 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859											
Report to:				Email To:				<div style="display: flex; justify-content: space-between;"> <div> Stuart Hall shall@entradainc.com </div> <div>  </div> </div> <div style="border: 1px solid black; padding: 5px; margin-top: 10px;"> L # <i>21132569</i> J145 </div> <div> Acctnum: Template: Prelogin: TSR: PB: Shipped Via: </div>																					
Project Description:				City/State Collected:														<div style="display: flex; justify-content: space-between;"> <div> Hawxhurst 24-09 Spill Response Collbran, CO </div> <div> COGCC Table 910-1-5 Day Turn Arsenic only- 5 Day turn COGCC Table 910-1-48 Hr Rush </div> </div>											
Phone: (970) 712-7329		Client Project #		Lab Project #																									
Fax:		Site/Facility ID #		P.O. #																									
Collected by (print):		Site/Facility ID #		P.O. #																									
Collected by (signature):		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input checked="" type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day		Quote #		Date Results Needed		No. of Cntrs																					
Immediately Packed on Ice N ___ Y <input checked="" type="checkbox"/>																													
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time											Remarks	Sample # (lab only)											
HAWX 24-09 SS1	Grab	SS	0-6"	8/22/19	1005	2	X											01											
HAWX 24-09 SS2	Grab	SS	0-6"	8/22/19	1010	2	X											02											
HAWX 24-09 BG1	Grab	SS	12"	8/22/19	1130	1	X											03											
HAWX 24-09 E SW SS1	Grab	SS	4.5'	8/23/19	1100	2	X											04/09											
HAWX 24-09 BH SS2	Grab	SS	7.5'	8/23/19	1115	2	X											06/07											
HAWX 24-09 N SW SS3	Grab	SS	6.5'	8/23/19	1125	2	X											08/09											
HAWX 24-09 S SW SS4	Grab	SS	4.5'	8/23/19	1135	2	X											10/11											
HAWX 24-09 W SW SS5	Grab	SS	4'	8/23/19	1145	2	X																						
<div style="display: flex; justify-content: space-between;"> <div> * Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other _____ </div> <div> Remarks: Please rush GRO/DRO/BTEX only </div> <div> Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier </div> <div> Tracking # <i>6194 4950 8012</i> </div> <div> pH _____ Temp _____ Flow _____ Other _____ </div> <div> Sample Receipt Checklist COC Seal Present/Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If Applicable VOA Zero Headspace: <input type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input type="checkbox"/> Y <input type="checkbox"/> N RAD SCREEN: <0.5 mR/hr </div> </div>																													
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Trip Blank Received: Yes/No		HCL / MeOH TBR Bottles Received: <i>15</i> Temp: <i>43.8°F</i> <i>2.8±0.2</i>										If preservation required by Login: Date/Time											
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Temp: <i>43.8°F</i>																							
Relinquished by: (Signature)		Date:	Time:	Received for lab by: (Signature)		Date:												Time:	Hold:	Condition:									
						<i>8/24/19</i>		<i>8:45</i>		<i>OK</i>																			