

## Laramie Energy - Grand Junction, CO

Sample Delivery Group: L1168890  
Samples Received: 12/10/2019  
Project Number:  
Description: Laramie Energy Hells Gulch 26-6  
  
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.





<b>Cp: Cover Page</b>	<b>1</b>
<b>Tc: Table of Contents</b>	<b>2</b>
<b>Ss: Sample Summary</b>	<b>3</b>
<b>Cn: Case Narrative</b>	<b>5</b>
<b>Sr: Sample Results</b>	<b>6</b>
SS1 L1168890-01	6
SS2 L1168890-02	8
SS3 L1168890-03	10
SS4 L1168890-04	12
SS5 L1168890-05	14
<b>Qc: Quality Control Summary</b>	<b>16</b>
Wet Chemistry by Method 3060A/7196A	16
Wet Chemistry by Method 9045D	17
Wet Chemistry by Method 9050AMod	18
Mercury by Method 7471A	19
Metals (ICP) by Method 6010B	20
Volatile Organic Compounds (GC) by Method 8015D/GRO	22
Volatile Organic Compounds (GC/MS) by Method 8260B	23
Semi-Volatile Organic Compounds (GC) by Method 8015	24
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	25
<b>Gl: Glossary of Terms</b>	<b>27</b>
<b>Al: Accreditations &amp; Locations</b>	<b>28</b>
<b>Sc: Sample Chain of Custody</b>	<b>29</b>



# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



## SS1 L1168890-01 Solid

Collected by  
Jessica Dilka

Collected date/time  
12/09/19 11:45

Received date/time  
12/10/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1394375	1	12/11/19 16:14	12/11/19 16:14	EL	Mt. Juliet, TN
Calculated Results	WG1394312	1	12/10/19 18:12	12/11/19 18:54	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1394486	1	12/11/19 08:06	12/11/19 18:54	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1394487	1	12/11/19 10:54	12/11/19 20:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1394663	1	12/11/19 14:56	12/11/19 16:34	MJA	Mt. Juliet, TN
Mercury by Method 7471A	WG1394301	1	12/10/19 17:37	12/10/19 20:23	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1394312	1	12/10/19 18:12	12/10/19 23:57	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1394249	1	12/10/19 15:39	12/11/19 13:58	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1394412	1	12/10/19 15:39	12/11/19 04:54	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1394333	1	12/10/19 20:40	12/11/19 06:32	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1394338	1	12/10/19 21:38	12/11/19 02:53	DMG	Mt. Juliet, TN

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

## SS2 L1168890-02 Solid

Collected by  
Jessica Dilka

Collected date/time  
12/09/19 11:50

Received date/time  
12/10/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1394375	1	12/11/19 16:17	12/11/19 16:17	EL	Mt. Juliet, TN
Calculated Results	WG1394312	1	12/10/19 18:12	12/11/19 18:55	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1394486	1	12/11/19 08:06	12/11/19 18:55	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1394487	1	12/11/19 10:54	12/11/19 20:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1394663	1	12/11/19 14:56	12/11/19 16:34	MJA	Mt. Juliet, TN
Mercury by Method 7471A	WG1394301	1	12/10/19 17:37	12/10/19 20:25	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1394312	1	12/10/19 18:12	12/11/19 00:05	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1394249	1	12/10/19 15:39	12/11/19 14:18	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1394412	1	12/10/19 15:39	12/11/19 05:13	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1394333	1	12/10/19 20:40	12/11/19 06:45	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1394338	1	12/10/19 21:38	12/11/19 03:15	DMG	Mt. Juliet, TN

## SS3 L1168890-03 Solid

Collected by  
Jessica Dilka

Collected date/time  
12/09/19 11:55

Received date/time  
12/10/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1394375	1	12/11/19 16:19	12/11/19 16:19	EL	Mt. Juliet, TN
Calculated Results	WG1394312	1	12/10/19 18:12	12/11/19 18:55	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1394486	1	12/11/19 08:06	12/11/19 18:55	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1394487	1	12/11/19 10:54	12/11/19 20:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1394663	1	12/11/19 14:56	12/11/19 16:34	MJA	Mt. Juliet, TN
Mercury by Method 7471A	WG1394301	1	12/10/19 17:37	12/10/19 20:27	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1394312	1	12/10/19 18:12	12/11/19 00:08	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1394249	1	12/10/19 15:39	12/11/19 14:39	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1394412	1	12/10/19 15:39	12/11/19 05:31	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1394333	1	12/10/19 20:40	12/11/19 06:58	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1394338	1	12/10/19 21:38	12/11/19 03:37	DMG	Mt. Juliet, TN

## SS4 L1168890-04 Solid

Collected by  
Jessica Dilka

Collected date/time  
12/09/19 12:00

Received date/time  
12/10/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1394375	1	12/11/19 16:22	12/11/19 16:22	EL	Mt. Juliet, TN
Calculated Results	WG1394312	1	12/10/19 18:12	12/11/19 18:56	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1394486	1	12/11/19 08:06	12/11/19 18:56	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1394487	1	12/11/19 10:54	12/11/19 20:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1394663	1	12/11/19 14:56	12/11/19 16:34	MJA	Mt. Juliet, TN

ACCOUNT:

Laramie Energy - Grand Junction, CO

PROJECT:

SDG:

L1168890

DATE/TIME:

12/12/19 16:03

PAGE:

3 of 29

# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



## SS4 L1168890-04 Solid

Collected by  
Jessica Dilka

Collected date/time  
12/09/19 12:00

Received date/time  
12/10/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7471A	WG1394301	1	12/10/19 17:37	12/10/19 19:54	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1394312	1	12/10/19 18:12	12/11/19 00:10	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1394249	1	12/10/19 15:39	12/11/19 14:59	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1394412	1	12/10/19 15:39	12/11/19 05:50	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1394333	1	12/10/19 20:40	12/11/19 07:11	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1394338	1	12/10/19 21:38	12/11/19 03:59	DMG	Mt. Juliet, TN

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

## SS5 L1168890-05 Solid

Collected by  
Jessica Dilka

Collected date/time  
12/09/19 12:05

Received date/time  
12/10/19 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1394375	1	12/11/19 16:25	12/11/19 16:25	EL	Mt. Juliet, TN
Calculated Results	WG1394312	1	12/10/19 18:12	12/11/19 18:56	JIC	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1394486	1	12/11/19 08:06	12/11/19 18:56	JIC	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1394487	1	12/11/19 10:54	12/11/19 20:00	MSP	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1394663	1	12/11/19 14:56	12/11/19 16:34	MJA	Mt. Juliet, TN
Mercury by Method 7471A	WG1394301	1	12/10/19 17:37	12/10/19 20:29	TCT	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1394312	1	12/10/19 18:12	12/11/19 00:13	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1394249	1	12/10/19 15:39	12/11/19 15:20	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1394412	1	12/10/19 15:39	12/11/19 06:09	ACG	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1394333	1	12/10/19 20:40	12/11/19 07:24	KME	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1394338	1	12/10/19 21:38	12/11/19 04:21	DMG	Mt. Juliet, TN

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

ACCOUNT:

Laramie Energy - Grand Junction, CO

PROJECT:

SDG:

L1168890

DATE/TIME:

12/12/19 16:03

PAGE:

4 of 29



All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.

Chris Ward  
Project Manager

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



## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	2.81		1	12/11/2019 16:14	WG1394375

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

## Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	17.5		1.00	1	12/11/2019 18:54	<a href="#">WG1394312</a>

## 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	12/11/2019 18:54	<a href="#">WG1394486</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.72	<a href="#">T8</a>	1	12/11/2019 20:00	<a href="#">WG1394487</a>

## Sample Narrative:

L1168890-01 WG1394487: 8.72 at 19C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	242		10.0	1	12/11/2019 16:34	<a href="#">WG1394663</a>

## Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	12/10/2019 20:23	<a href="#">WG1394301</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.97		2.00	1	12/10/2019 23:57	<a href="#">WG1394312</a>
Barium	147		0.500	1	12/10/2019 23:57	<a href="#">WG1394312</a>
Cadmium	ND		0.500	1	12/10/2019 23:57	<a href="#">WG1394312</a>
Chromium	17.5		1.00	1	12/10/2019 23:57	<a href="#">WG1394312</a>
Copper	10.9		2.00	1	12/10/2019 23:57	<a href="#">WG1394312</a>
Lead	11.2		0.500	1	12/10/2019 23:57	<a href="#">WG1394312</a>
Nickel	16.9		2.00	1	12/10/2019 23:57	<a href="#">WG1394312</a>
Selenium	ND		2.00	1	12/10/2019 23:57	<a href="#">WG1394312</a>
Silver	ND		1.00	1	12/10/2019 23:57	<a href="#">WG1394312</a>
Zinc	55.5		5.00	1	12/10/2019 23:57	<a href="#">WG1394312</a>

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.343		0.100	1	12/11/2019 13:58	<a href="#">WG1394249</a>
(S) a,a,a-Trifluorotoluene(FID)	95.4		77.0-120		12/11/2019 13:58	<a href="#">WG1394249</a>



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	12/11/2019 04:54	<a href="#">WG1394412</a>
Toluene	ND		0.00500	1	12/11/2019 04:54	<a href="#">WG1394412</a>
Ethylbenzene	ND		0.00250	1	12/11/2019 04:54	<a href="#">WG1394412</a>
Total Xylenes	ND		0.00650	1	12/11/2019 04:54	<a href="#">WG1394412</a>
Methyl tert-butyl ether	ND		0.00100	1	12/11/2019 04:54	<a href="#">WG1394412</a>
(S) Toluene-d8	101		75.0-131		12/11/2019 04:54	<a href="#">WG1394412</a>
(S) 4-Bromofluorobenzene	92.9		67.0-138		12/11/2019 04:54	<a href="#">WG1394412</a>
(S) 1,2-Dichloroethane-d4	104		70.0-130		12/11/2019 04:54	<a href="#">WG1394412</a>

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	ND		4.00	1	12/11/2019 06:32	<a href="#">WG1394333</a>
(S) o-Terphenyl	61.6		18.0-148		12/11/2019 06:32	<a href="#">WG1394333</a>

6 Qc

7 Gl

## 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	12/11/2019 02:53	<a href="#">WG1394338</a>
Acenaphthene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Acenaphthylene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Benzo(a)anthracene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Benzo(a)pyrene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Benzo(b)fluoranthene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Benzo(g,h,i)perylene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Benzo(k)fluoranthene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Chrysene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Dibenz(a,h)anthracene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Fluoranthene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Fluorene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Naphthalene	ND		0.0200	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Phenanthrene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
Pyrene	ND		0.00600	1	12/11/2019 02:53	<a href="#">WG1394338</a>
1-Methylnaphthalene	ND		0.0200	1	12/11/2019 02:53	<a href="#">WG1394338</a>
2-Methylnaphthalene	ND		0.0200	1	12/11/2019 02:53	<a href="#">WG1394338</a>
2-Chloronaphthalene	ND		0.0200	1	12/11/2019 02:53	<a href="#">WG1394338</a>
(S) p-Terphenyl-d14	86.0		23.0-120		12/11/2019 02:53	<a href="#">WG1394338</a>
(S) Nitrobenzene-d5	59.5		14.0-149		12/11/2019 02:53	<a href="#">WG1394338</a>
(S) 2-Fluorobiphenyl	63.9		34.0-125		12/11/2019 02:53	<a href="#">WG1394338</a>

8 Al

9 Sc



## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.07		1	12/11/2019 16:17	WG1394375

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	14.5		1.00	1	12/11/2019 18:55	<a href="#">WG1394312</a>

## 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	12/11/2019 18:55	<a href="#">WG1394486</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.91	<a href="#">T8</a>	1	12/11/2019 20:00	<a href="#">WG1394487</a>

## Sample Narrative:

L1168890-02 WG1394487: 8.91 at 19C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	260		10.0	1	12/11/2019 16:34	<a href="#">WG1394663</a>

## Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	12/10/2019 20:25	<a href="#">WG1394301</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.06		2.00	1	12/11/2019 00:05	<a href="#">WG1394312</a>
Barium	152		0.500	1	12/11/2019 00:05	<a href="#">WG1394312</a>
Cadmium	ND		0.500	1	12/11/2019 00:05	<a href="#">WG1394312</a>
Chromium	14.5		1.00	1	12/11/2019 00:05	<a href="#">WG1394312</a>
Copper	11.2		2.00	1	12/11/2019 00:05	<a href="#">WG1394312</a>
Lead	11.5		0.500	1	12/11/2019 00:05	<a href="#">WG1394312</a>
Nickel	16.6		2.00	1	12/11/2019 00:05	<a href="#">WG1394312</a>
Selenium	ND		2.00	1	12/11/2019 00:05	<a href="#">WG1394312</a>
Silver	ND		1.00	1	12/11/2019 00:05	<a href="#">WG1394312</a>
Zinc	55.1		5.00	1	12/11/2019 00:05	<a href="#">WG1394312</a>

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	4.33		0.100	1	12/11/2019 14:18	<a href="#">WG1394249</a>
(S) a,a,a-Trifluorotoluene(FID)	95.1		77.0-120		12/11/2019 14:18	<a href="#">WG1394249</a>





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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	12/11/2019 05:13	<a href="#">WG1394412</a>
Toluene	ND		0.00500	1	12/11/2019 05:13	<a href="#">WG1394412</a>
Ethylbenzene	ND		0.00250	1	12/11/2019 05:13	<a href="#">WG1394412</a>
Total Xylenes	0.00903		0.00650	1	12/11/2019 05:13	<a href="#">WG1394412</a>
Methyl tert-butyl ether	ND		0.00100	1	12/11/2019 05:13	<a href="#">WG1394412</a>
(S) Toluene-d8	102		75.0-131		12/11/2019 05:13	<a href="#">WG1394412</a>
(S) 4-Bromofluorobenzene	88.4		67.0-138		12/11/2019 05:13	<a href="#">WG1394412</a>
(S) 1,2-Dichloroethane-d4	102		70.0-130		12/11/2019 05:13	<a href="#">WG1394412</a>

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

## 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	12/11/2019 06:45	<a href="#">WG1394333</a>
(S) o-Terphenyl	61.9		18.0-148		12/11/2019 06:45	<a href="#">WG1394333</a>

## 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	12/11/2019 03:15	<a href="#">WG1394338</a>
Acenaphthene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Acenaphthylene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Benzo(a)anthracene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Benzo(a)pyrene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Benzo(b)fluoranthene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Benzo(g,h,i)perylene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Benzo(k)fluoranthene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Chrysene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Dibenz(a,h)anthracene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Fluoranthene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Fluorene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Naphthalene	ND		0.0200	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Phenanthrene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
Pyrene	ND		0.00600	1	12/11/2019 03:15	<a href="#">WG1394338</a>
1-Methylnaphthalene	ND		0.0200	1	12/11/2019 03:15	<a href="#">WG1394338</a>
2-Methylnaphthalene	ND		0.0200	1	12/11/2019 03:15	<a href="#">WG1394338</a>
2-Chloronaphthalene	ND		0.0200	1	12/11/2019 03:15	<a href="#">WG1394338</a>
(S) p-Terphenyl-d14	79.1		23.0-120		12/11/2019 03:15	<a href="#">WG1394338</a>
(S) Nitrobenzene-d5	65.7		14.0-149		12/11/2019 03:15	<a href="#">WG1394338</a>
(S) 2-Fluorobiphenyl	64.7		34.0-125		12/11/2019 03:15	<a href="#">WG1394338</a>



## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.394		1	12/11/2019 16:19	WG1394375

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

## Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	12.8		1.00	1	12/11/2019 18:55	<a href="#">WG1394312</a>

## 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	12/11/2019 18:55	<a href="#">WG1394486</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.45	<a href="#">T8</a>	1	12/11/2019 20:00	<a href="#">WG1394487</a>

## Sample Narrative:

L1168890-03 WG1394487: 7.45 at 18.7C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	229		10.0	1	12/11/2019 16:34	<a href="#">WG1394663</a>

## Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	12/10/2019 20:27	<a href="#">WG1394301</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.39		2.00	1	12/11/2019 00:08	<a href="#">WG1394312</a>
Barium	150		0.500	1	12/11/2019 00:08	<a href="#">WG1394312</a>
Cadmium	ND		0.500	1	12/11/2019 00:08	<a href="#">WG1394312</a>
Chromium	12.8		1.00	1	12/11/2019 00:08	<a href="#">WG1394312</a>
Copper	10.6		2.00	1	12/11/2019 00:08	<a href="#">WG1394312</a>
Lead	11.5		0.500	1	12/11/2019 00:08	<a href="#">WG1394312</a>
Nickel	16.0		2.00	1	12/11/2019 00:08	<a href="#">WG1394312</a>
Selenium	ND		2.00	1	12/11/2019 00:08	<a href="#">WG1394312</a>
Silver	ND		1.00	1	12/11/2019 00:08	<a href="#">WG1394312</a>
Zinc	48.6		5.00	1	12/11/2019 00:08	<a href="#">WG1394312</a>

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.945		0.100	1	12/11/2019 14:39	<a href="#">WG1394249</a>
(S) a,a,a-Trifluorotoluene(FID)	99.9		77.0-120		12/11/2019 14:39	<a href="#">WG1394249</a>



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	12/11/2019 05:31	<a href="#">WG1394412</a>
Toluene	0.00818		0.00500	1	12/11/2019 05:31	<a href="#">WG1394412</a>
Ethylbenzene	0.00428		0.00250	1	12/11/2019 05:31	<a href="#">WG1394412</a>
Total Xylenes	0.0868		0.00650	1	12/11/2019 05:31	<a href="#">WG1394412</a>
Methyl tert-butyl ether	ND		0.00100	1	12/11/2019 05:31	<a href="#">WG1394412</a>
(S) Toluene-d8	100		75.0-131		12/11/2019 05:31	<a href="#">WG1394412</a>
(S) 4-Bromofluorobenzene	90.3		67.0-138		12/11/2019 05:31	<a href="#">WG1394412</a>
(S) 1,2-Dichloroethane-d4	101		70.0-130		12/11/2019 05:31	<a href="#">WG1394412</a>

## 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	12/11/2019 06:58	<a href="#">WG1394333</a>
(S) o-Terphenyl	66.7		18.0-148		12/11/2019 06:58	<a href="#">WG1394333</a>

## 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	12/11/2019 03:37	<a href="#">WG1394338</a>
Acenaphthene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Acenaphthylene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Benzo(a)anthracene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Benzo(a)pyrene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Benzo(b)fluoranthene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Benzo(g,h,i)perylene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Benzo(k)fluoranthene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Chrysene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Dibenz(a,h)anthracene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Fluoranthene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Fluorene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Naphthalene	ND		0.0200	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Phenanthrene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
Pyrene	ND		0.00600	1	12/11/2019 03:37	<a href="#">WG1394338</a>
1-Methylnaphthalene	ND		0.0200	1	12/11/2019 03:37	<a href="#">WG1394338</a>
2-Methylnaphthalene	ND		0.0200	1	12/11/2019 03:37	<a href="#">WG1394338</a>
2-Chloronaphthalene	ND		0.0200	1	12/11/2019 03:37	<a href="#">WG1394338</a>
(S) p-Terphenyl-d14	71.0		23.0-120		12/11/2019 03:37	<a href="#">WG1394338</a>
(S) Nitrobenzene-d5	54.9		14.0-149		12/11/2019 03:37	<a href="#">WG1394338</a>
(S) 2-Fluorobiphenyl	54.9		34.0-125		12/11/2019 03:37	<a href="#">WG1394338</a>

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	0.621		1	12/11/2019 16:22	WG1394375

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

## Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	13.7		1.00	1	12/11/2019 18:56	<a href="#">WG1394312</a>

## 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	12/11/2019 18:56	<a href="#">WG1394486</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.39	<a href="#">T8</a>	1	12/11/2019 20:00	<a href="#">WG1394487</a>

## Sample Narrative:

L1168890-04 WG1394487: 7.39 at 18.7C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	492		10.0	1	12/11/2019 16:34	<a href="#">WG1394663</a>

## Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	12/10/2019 19:54	<a href="#">WG1394301</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.17		2.00	1	12/11/2019 00:10	<a href="#">WG1394312</a>
Barium	152		0.500	1	12/11/2019 00:10	<a href="#">WG1394312</a>
Cadmium	ND		0.500	1	12/11/2019 00:10	<a href="#">WG1394312</a>
Chromium	13.7		1.00	1	12/11/2019 00:10	<a href="#">WG1394312</a>
Copper	11.0		2.00	1	12/11/2019 00:10	<a href="#">WG1394312</a>
Lead	11.6		0.500	1	12/11/2019 00:10	<a href="#">WG1394312</a>
Nickel	16.2		2.00	1	12/11/2019 00:10	<a href="#">WG1394312</a>
Selenium	ND		2.00	1	12/11/2019 00:10	<a href="#">WG1394312</a>
Silver	ND		1.00	1	12/11/2019 00:10	<a href="#">WG1394312</a>
Zinc	50.0		5.00	1	12/11/2019 00:10	<a href="#">WG1394312</a>

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1.02		0.100	1	12/11/2019 14:59	<a href="#">WG1394249</a>
(S) a, a, a-Trifluorotoluene(FID)	103		77.0-120		12/11/2019 14:59	<a href="#">WG1394249</a>



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00260		0.00100	1	12/11/2019 05:50	<a href="#">WG1394412</a>
Toluene	0.0216		0.00500	1	12/11/2019 05:50	<a href="#">WG1394412</a>
Ethylbenzene	0.00993		0.00250	1	12/11/2019 05:50	<a href="#">WG1394412</a>
Total Xylenes	0.169		0.00650	1	12/11/2019 05:50	<a href="#">WG1394412</a>
Methyl tert-butyl ether	ND		0.00100	1	12/11/2019 05:50	<a href="#">WG1394412</a>
(S) Toluene-d8	98.3		75.0-131		12/11/2019 05:50	<a href="#">WG1394412</a>
(S) 4-Bromofluorobenzene	91.4		67.0-138		12/11/2019 05:50	<a href="#">WG1394412</a>
(S) 1,2-Dichloroethane-d4	106		70.0-130		12/11/2019 05:50	<a href="#">WG1394412</a>

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	ND		4.00	1	12/11/2019 07:11	<a href="#">WG1394333</a>
(S) o-Terphenyl	66.7		18.0-148		12/11/2019 07:11	<a href="#">WG1394333</a>

6 Qc

7 Gl

## 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	12/11/2019 03:59	<a href="#">WG1394338</a>
Acenaphthene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Acenaphthylene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Benzo(a)anthracene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Benzo(a)pyrene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Benzo(b)fluoranthene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Benzo(g,h,i)perylene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Benzo(k)fluoranthene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Chrysene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Dibenz(a,h)anthracene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Fluoranthene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Fluorene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Naphthalene	ND		0.0200	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Phenanthrene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
Pyrene	ND		0.00600	1	12/11/2019 03:59	<a href="#">WG1394338</a>
1-Methylnaphthalene	ND		0.0200	1	12/11/2019 03:59	<a href="#">WG1394338</a>
2-Methylnaphthalene	ND		0.0200	1	12/11/2019 03:59	<a href="#">WG1394338</a>
2-Chloronaphthalene	ND		0.0200	1	12/11/2019 03:59	<a href="#">WG1394338</a>
(S) p-Terphenyl-d14	80.4		23.0-120		12/11/2019 03:59	<a href="#">WG1394338</a>
(S) Nitrobenzene-d5	64.6		14.0-149		12/11/2019 03:59	<a href="#">WG1394338</a>
(S) 2-Fluorobiphenyl	59.3		34.0-125		12/11/2019 03:59	<a href="#">WG1394338</a>

8 Al

9 Sc



## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.69		1	12/11/2019 16:25	WG1394375

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

## Calculated Results

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	6.85		1.00	1	12/11/2019 18:56	<a href="#">WG1394312</a>

## 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	12/11/2019 18:56	<a href="#">WG1394486</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.80	<a href="#">T8</a>	1	12/11/2019 20:00	<a href="#">WG1394487</a>

## Sample Narrative:

L1168890-05 WG1394487: 8.8 at 18.6C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	250		10.0	1	12/11/2019 16:34	<a href="#">WG1394663</a>

## Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	ND		0.0300	1	12/10/2019 20:29	<a href="#">WG1394301</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.72		2.00	1	12/11/2019 00:13	<a href="#">WG1394312</a>
Barium	1170		0.500	1	12/11/2019 00:13	<a href="#">WG1394312</a>
Cadmium	ND		0.500	1	12/11/2019 00:13	<a href="#">WG1394312</a>
Chromium	6.85		1.00	1	12/11/2019 00:13	<a href="#">WG1394312</a>
Copper	9.57		2.00	1	12/11/2019 00:13	<a href="#">WG1394312</a>
Lead	5.72		0.500	1	12/11/2019 00:13	<a href="#">WG1394312</a>
Nickel	9.99		2.00	1	12/11/2019 00:13	<a href="#">WG1394312</a>
Selenium	ND		2.00	1	12/11/2019 00:13	<a href="#">WG1394312</a>
Silver	ND		1.00	1	12/11/2019 00:13	<a href="#">WG1394312</a>
Zinc	29.6		5.00	1	12/11/2019 00:13	<a href="#">WG1394312</a>

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	1.41		0.100	1	12/11/2019 15:20	<a href="#">WG1394249</a>
(S) a,a,a-Trifluorotoluene(FID)	94.8		77.0-120		12/11/2019 15:20	<a href="#">WG1394249</a>



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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	0.00150		0.00100	1	12/11/2019 06:09	<a href="#">WG1394412</a>
Toluene	ND		0.00500	1	12/11/2019 06:09	<a href="#">WG1394412</a>
Ethylbenzene	ND		0.00250	1	12/11/2019 06:09	<a href="#">WG1394412</a>
Total Xylenes	0.0167		0.00650	1	12/11/2019 06:09	<a href="#">WG1394412</a>
Methyl tert-butyl ether	ND		0.00100	1	12/11/2019 06:09	<a href="#">WG1394412</a>
(S) Toluene-d8	103		75.0-131		12/11/2019 06:09	<a href="#">WG1394412</a>
(S) 4-Bromofluorobenzene	90.1		67.0-138		12/11/2019 06:09	<a href="#">WG1394412</a>
(S) 1,2-Dichloroethane-d4	99.1		70.0-130		12/11/2019 06:09	<a href="#">WG1394412</a>

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	ND		4.00	1	12/11/2019 07:24	<a href="#">WG1394333</a>
(S) o-Terphenyl	64.0		18.0-148		12/11/2019 07:24	<a href="#">WG1394333</a>

6 Qc

7 Gl

## 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	12/11/2019 04:21	<a href="#">WG1394338</a>
Acenaphthene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Acenaphthylene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Benzo(a)anthracene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Benzo(a)pyrene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Benzo(b)fluoranthene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Benzo(g,h,i)perylene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Benzo(k)fluoranthene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Chrysene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Dibenz(a,h)anthracene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Fluoranthene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Fluorene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Naphthalene	ND		0.0200	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Phenanthrene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
Pyrene	ND		0.00600	1	12/11/2019 04:21	<a href="#">WG1394338</a>
1-Methylnaphthalene	ND		0.0200	1	12/11/2019 04:21	<a href="#">WG1394338</a>
2-Methylnaphthalene	ND		0.0200	1	12/11/2019 04:21	<a href="#">WG1394338</a>
2-Chloronaphthalene	ND		0.0200	1	12/11/2019 04:21	<a href="#">WG1394338</a>
(S) p-Terphenyl-d14	89.2		23.0-120		12/11/2019 04:21	<a href="#">WG1394338</a>
(S) Nitrobenzene-d5	52.4		14.0-149		12/11/2019 04:21	<a href="#">WG1394338</a>
(S) 2-Fluorobiphenyl	57.0		34.0-125		12/11/2019 04:21	<a href="#">WG1394338</a>

8 Al

9 Sc

Method Blank (MB)

(MB) R3481473-1 12/11/19 18:48

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

L1168698-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1168698-06 12/11/19 18:53 • (DUP) R3481473-7 12/11/19 18:54

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

L1168894-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1168894-01 12/11/19 18:56 • (DUP) R3481473-8 12/11/19 18:57

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

Laboratory Control Sample (LCS)

(LCS) R3481473-2 12/11/19 18:49

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	22.5	93.8	80.0-120	

L1168542-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1168542-02 12/11/19 18:50 • (MS) R3481473-3 12/11/19 18:51 • (MSD) R3481473-4 12/11/19 18:51

	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	ND	14.5	14.2	72.6	70.9	1	75.0-125	J6	J6	2.29	20

L1168542-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1168542-02 12/11/19 18:50 • (MS) R3481473-5 12/11/19 18:52

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	664	ND	597	90.0	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L1167624-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1167624-01 12/11/19 20:00 • (DUP) R3481490-2 12/11/19 20:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.33	8.41	1	0.956		1

Sample Narrative:  
OS: 8.33 at 19.1C  
DUP: 8.41 at 22.7C

L1168894-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1168894-01 12/11/19 20:00 • (DUP) R3481490-3 12/11/19 20:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.52	8.53	1	0.117		1

Sample Narrative:  
OS: 8.52 at 18.5C  
DUP: 8.53 at 18.9C

Laboratory Control Sample (LCS)

(LCS) R3481490-1 12/11/19 20:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	10.0	100	99.0-101	

Sample Narrative:  
LCS: 10.01 at 18.2C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Method Blank (MB)

(MB) R3481436-1 12/11/19 16:34

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

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

L1168542-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1168542-01 12/11/19 16:34 • (DUP) R3481436-3 12/11/19 16:34

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	18800	18500	1	1.82		20

<sup>7</sup>Gl

<sup>8</sup>Al

L1168894-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1168894-04 12/11/19 16:34 • (DUP) R3481436-4 12/11/19 16:34

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	191	180	1	5.83		20

<sup>9</sup>Sc

Laboratory Control Sample (LCS)

(LCS) R3481436-2 12/11/19 16:34

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	475	471	99.2	85.0-115	



Method Blank (MB)

(MB) R3481043-1 12/10/19 19:47

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

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc

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

(LCS) R3481043-2 12/10/19 19:50 • (LCSD) R3481043-3 12/10/19 19:52

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 %
Mercury	0.500	0.552	0.548	110	110	80.0-120			0.606	20

L1168890-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1168890-04 12/10/19 19:54 • (MS) R3481043-4 12/10/19 19:56 • (MSD) R3481043-5 12/10/19 19:58

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 %
Mercury	0.500	ND	0.506	0.497	96.1	94.1	1	75.0-125			1.91	20



Method Blank (MB)

(MB) R3481075-1 12/10/19 23:35

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

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

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

(LCS) R3481075-2 12/10/19 23:37 • (LCSD) R3481075-3 12/10/19 23:39

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	90.4	91.6	90.4	91.6	80.0-120			1.38	20
Barium	100	98.3	99.3	98.3	99.3	80.0-120			1.02	20
Cadmium	100	92.2	92.8	92.2	92.8	80.0-120			0.715	20
Chromium	100	94.5	93.7	94.5	93.7	80.0-120			0.854	20
Copper	100	94.1	93.4	94.1	93.4	80.0-120			0.716	20
Lead	100	91.6	92.9	91.6	92.9	80.0-120			1.44	20
Nickel	100	92.9	94.3	92.9	94.3	80.0-120			1.51	20
Selenium	100	90.9	92.5	90.9	92.5	80.0-120			1.77	20
Silver	20.0	17.7	17.6	88.6	88.0	80.0-120			0.702	20
Zinc	100	91.8	93.5	91.8	93.5	80.0-120			1.82	20

L1168887-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1168887-01 12/10/19 23:42 • (MS) R3481075-6 12/10/19 23:50 • (MSD) R3481075-7 12/10/19 23:52

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	U	87.1	91.7	87.1	91.7	1	75.0-125			5.07	20
Barium	100	3.01	99.6	104	96.6	101	1	75.0-125			4.70	20
Cadmium	100	U	90.3	94.3	90.3	94.3	1	75.0-125			4.24	20
Chromium	100	1.10	94.0	97.5	92.9	96.4	1	75.0-125			3.73	20
Copper	100	4.37	95.9	101	91.5	97.1	1	75.0-125			5.65	20
Lead	100	67.7	155	173	87.3	105	1	75.0-125			10.7	20
Nickel	100	U	93.0	97.3	93.0	97.3	1	75.0-125			4.51	20



L1168887-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1168887-01 12/10/19 23:42 • (MS) R3481075-6 12/10/19 23:50 • (MSD) R3481075-7 12/10/19 23:52

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	89.0	93.3	89.0	93.3	1	75.0-125			4.72	20
Silver	20.0	U	17.3	17.9	86.4	89.7	1	75.0-125			3.75	20
Zinc	100	2.18	93.4	98.1	91.2	95.9	1	75.0-125			4.86	20

<sup>1</sup>Cp

<sup>2</sup>Tc

<sup>3</sup>Ss

<sup>4</sup>Cn

<sup>5</sup>Sr

<sup>6</sup>Qc

<sup>7</sup>Gl

<sup>8</sup>Al

<sup>9</sup>Sc



Method Blank (MB)

(MB) R3481817-5 12/11/19 12:57

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0289	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	108			77.0-120

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) R3481817-3 12/11/19 11:56 • (LCSD) R3481817-4 12/11/19 12:16

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 %
TPH (GC/FID) Low Fraction	5.50	5.52	5.14	100	93.5	72.0-127			7.13	20
(S) a,a,a-Trifluorotoluene(FID)				113	112	77.0-120				

L1168516-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1168516-02 12/11/19 17:23 • (MS) R3481817-8 12/11/19 21:29 • (MSD) R3481817-9 12/11/19 21:50

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 %
TPH (GC/FID) Low Fraction	5.50	0.180	4.33	3.91	75.5	67.8	1	10.0-151			10.2	28
(S) a,a,a-Trifluorotoluene(FID)					106	106		77.0-120				



Method Blank (MB)

(MB) R3481315-2 12/11/19 01:07

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000400	0.00100
Ethylbenzene	U		0.000530	0.00250
Methyl tert-butyl ether	U		0.000295	0.00100
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	103			75.0-131
(S) 4-Bromofluorobenzene	87.8			67.0-138
(S) 1,2-Dichloroethane-d4	96.0			70.0-130

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

Laboratory Control Sample (LCS)

(LCS) R3481315-1 12/10/19 23:52

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.148	118	70.0-123	
Ethylbenzene	0.125	0.111	88.8	74.0-126	
Methyl tert-butyl ether	0.125	0.138	110	66.0-132	
Toluene	0.125	0.124	99.2	75.0-121	
Xylenes, Total	0.375	0.335	89.3	72.0-127	
(S) Toluene-d8			99.7	75.0-131	
(S) 4-Bromofluorobenzene			88.4	67.0-138	
(S) 1,2-Dichloroethane-d4			102	70.0-130	

L1168890-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1168890-05 12/11/19 06:09 • (MS) R3481315-3 12/11/19 08:39 • (MSD) R3481315-4 12/11/19 08:58

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	0.125	0.00150	0.164	0.177	130	140	1	10.0-149			7.62	37
Ethylbenzene	0.125	ND	0.131	0.134	105	107	1	10.0-160			2.26	38
Methyl tert-butyl ether	0.125	ND	0.126	0.129	101	103	1	11.0-147			2.35	35
Toluene	0.125	ND	0.148	0.153	118	122	1	10.0-156			3.32	38
Xylenes, Total	0.375	0.0167	0.516	0.556	133	144	1	10.0-160			7.46	38
(S) Toluene-d8					99.2	96.0		75.0-131				
(S) 4-Bromofluorobenzene					96.5	98.0		67.0-138				
(S) 1,2-Dichloroethane-d4					101	106		70.0-130				



Method Blank (MB)

(MB) R3481104-1 12/11/19 01:31

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	70.3			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3481104-2 12/11/19 01:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) High Fraction	50.0	44.7	89.4	50.0-150	
(S) o-Terphenyl			68.9	18.0-148	

L1168672-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1168672-06 12/11/19 02:04 • (MS) R3481104-3 12/11/19 02:17 • (MSD) R3481104-4 12/11/19 02:30

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	U	41.4	42.3	82.8	84.6	1	50.0-150			2.15	20
(S) o-Terphenyl					57.5	58.6		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3481137-2 12/11/19 00:40

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	63.3			14.0-149
(S) 2-Fluorobiphenyl	75.9			34.0-125
(S) p-Terphenyl-d14	93.4			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Laboratory Control Sample (LCS)

(LCS) R3481137-1 12/11/19 00:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0788	98.5	50.0-126	
Acenaphthene	0.0800	0.0609	76.1	50.0-120	
Acenaphthylene	0.0800	0.0627	78.4	50.0-120	
Benzo(a)anthracene	0.0800	0.0820	103	45.0-120	
Benzo(a)pyrene	0.0800	0.0720	90.0	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0758	94.8	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0822	103	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0800	100	49.0-125	
Chrysene	0.0800	0.0785	98.1	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0825	103	47.0-125	
Fluoranthene	0.0800	0.0787	98.4	49.0-129	



Laboratory Control Sample (LCS)

(LCS) R3481137-1 12/11/19 00:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Fluorene	0.0800	0.0692	86.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0842	105	46.0-125	
Naphthalene	0.0800	0.0532	66.5	50.0-120	
Phenanthrene	0.0800	0.0725	90.6	47.0-120	
Pyrene	0.0800	0.0780	97.5	43.0-123	
1-Methylnaphthalene	0.0800	0.0556	69.5	51.0-121	
2-Methylnaphthalene	0.0800	0.0536	67.0	50.0-120	
2-Chloronaphthalene	0.0800	0.0585	73.1	50.0-120	
(S) Nitrobenzene-d5			82.3	14.0-149	
(S) 2-Fluorobiphenyl			90.2	34.0-125	
(S) p-Terphenyl-d14			108	23.0-120	

L1168558-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1168558-05 12/11/19 14:36 • (MS) R3481276-1 12/11/19 14:57 • (MSD) R3481276-2 12/11/19 15:17

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	0.0725	0.0683	90.6	85.4	1	10.0-145			5.97	30
Acenaphthene	0.0800	ND	0.0485	0.0482	60.6	60.3	1	14.0-127			0.620	27
Acenaphthylene	0.0800	ND	0.0441	0.0432	55.1	54.0	1	21.0-124			2.06	25
Benzo(a)anthracene	0.0800	ND	0.0638	0.0578	79.8	72.3	1	10.0-139			9.87	30
Benzo(a)pyrene	0.0800	0.00633	0.0626	0.0560	70.3	62.1	1	10.0-141			11.1	31
Benzo(b)fluoranthene	0.0800	0.00765	0.0646	0.0565	71.2	61.1	1	10.0-140			13.4	36
Benzo(g,h,i)perylene	0.0800	0.0170	0.0616	0.0547	55.8	47.1	1	10.0-140			11.9	33
Benzo(k)fluoranthene	0.0800	ND	0.0563	0.0513	70.4	64.1	1	10.0-137			9.29	31
Chrysene	0.0800	ND	0.0668	0.0622	83.5	77.8	1	10.0-145			7.13	30
Dibenz(a,h)anthracene	0.0800	ND	0.0576	0.0506	72.0	63.3	1	10.0-132			12.9	31
Fluoranthene	0.0800	0.0258	0.0594	0.0550	42.0	36.5	1	10.0-153			7.69	33
Fluorene	0.0800	ND	0.0533	0.0537	66.6	67.1	1	11.0-130			0.748	29
Indeno(1,2,3-cd)pyrene	0.0800	0.00730	0.0583	0.0515	63.8	55.3	1	10.0-137			12.4	32
Naphthalene	0.0800	0.0207	0.0764	0.0894	69.6	85.9	1	10.0-135			15.7	27
Phenanthrene	0.0800	ND	0.0904	0.0926	113	116	1	10.0-144			2.40	31
Pyrene	0.0800	0.114	0.101	0.0967	0.000	0.000	1	10.0-148	J6	J6	4.35	35
1-Methylnaphthalene	0.0800	0.0261	0.0983	0.112	90.3	107	1	10.0-142			13.0	28
2-Methylnaphthalene	0.0800	0.0290	0.0994	0.128	88.0	124	1	10.0-137			25.2	28
2-Chloronaphthalene	0.0800	ND	0.0381	0.0381	47.6	47.6	1	29.0-120			0.000	24
(S) Nitrobenzene-d5					175	151		14.0-149	J1	J1		
(S) 2-Fluorobiphenyl					46.0	48.0		34.0-125				
(S) p-Terphenyl-d14					83.2	78.9		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

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
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 <sup>1</sup>	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1 6</sup>	90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1 4</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

## Third Party Federal Accreditations

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

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

## Our Locations

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



Entrada Consulting Group  
330 Grand Avenue, Unit C  
Grand Junction, CO 81501

Billing Information:

Pres  
Chk

Analysis / Container / Preservative

Chain of Custody Page 1 of 1



12065 Lebanon Rd  
Mount Juliet, TN 37122  
Phone: 615-758-5858  
Phone: 800-767-5859  
Fax: 615-758-5859



Report to:  
**Stuart Hall**

Email To:  
**shall@entradainc.com**

Project  
Description: **Laramie Energy Holdings Guichard Co**

City/State  
Collected: **CO**

Phone: **970-712-7329**  
Fax:

Client Project #

Lab Project #

Collected by (print):  
**Jessica Dilka**

Site/Facility ID #

P.O. #

Collected by (signature):

**Rush?** (Lab MUST Be Notified)

Quote #

Immediately  
Packed on Ice N ☐ Y ☒

Same Day ☐ Five Day ☐  
Next Day ☒ 5 Day (Rad Only) ☐  
Two Day ☐ 10 Day (Rad Only) ☐  
Three Day ☐

Date Results Needed

No.  
of  
Cnts

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cnts	TPH (GRO)	TPH (DRO)	BTEX	PAH *	Electrical Conductivity	SAR, pH	Metals *
SS1	G	SO	—	12/9/19	1145	2	X	X	X	X	X	X	X
SS2	↓	↓	↓	↓	1150	↓	X	X	X	X	X	X	X
SS3	↓	↓	↓	↓	1155	↓	X	X	X	X	X	X	X
SS4	↓	↓	↓	↓	1200	↓	X	X	X	X	X	X	X
SS5	G	SO	—	12/9/19	1205	2	X	X	X	X	X	X	X

\* Matrix:  
SS - Soil AIR - Air F - Filter  
GW - Groundwater B - Bioassay  
WW - Wastewater  
DW - Drinking Water  
OT - Other

Remarks:

**\*COGCC Table 910 PAH and Metals Lists**

Samples returned via:  
☐ UPS ☐ FedEx ☐ Courier

Tracking #

pH Temp

Flow Other

Sample Receipt Checklist

COC Seal Present/Intact: ☒ NP ☐ Y ☐ N  
COC Signed/Accurate: ☒ Y ☐ N  
Bottles arrive intact: ☒ Y ☐ N  
Correct bottles used: ☒ Y ☐ N  
Sufficient volume sent: ☒ Y ☐ N

If Applicable

VOA Zero Headspace: ☐ Y ☐ N  
Preservation Correct/Checked: ☒ Y ☐ N

**RAD SCREEN: <0.5 mR/hr**

Relinquished by: (Signature)

Date: 12/9/19 Time: 1700

Received by: (Signature)

Trip Blank Received: Yes ☒ No ☐  
HCL/ MeOH  
TBR

Relinquished by: (Signature)

Date: 12/9/19 Time: 1730

Received by: (Signature)

Temp: °C Bottles Received: 10  
1.7-1.1-1.6-2.2

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date: Time:

Received for lab by: (Signature)

Date: 12/10/19 Time: 9:00

Hold:

Condition:  
NCF / DW