


August 29, 2018

## Absaroka Energy & Environmental - WY

Sample Delivery Group: L1021087  
Samples Received: 08/28/2018  
Project Number: SDE COLARADO SPILL S  
Description:  
Site: 455404  
Report To: Max Moran  
112 High St  
Buffalo, WY 82834

Entire Report Reviewed By:



Chris Ward  
Project Manager

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



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<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

# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



## SDE\_SS\_M\_09 L1021087-01 Solid

Collected by  
Maxwell Moran

Collected date/time  
08/24/18 13:30

Received date/time  
08/28/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1158272	1	08/28/18 13:09	08/29/18 09:41	TRB
Calculated Results	WG1158598	1	08/28/18 17:27	08/29/18 04:02	TRB
Wet Chemistry by Method 3060A/7196A	WG1158270	1	08/28/18 12:03	08/28/18 17:57	ITB
Wet Chemistry by Method 9045D	WG1158176	1	08/28/18 12:45	08/28/18 16:00	AJG
Wet Chemistry by Method 9050AMod	WG1157721	1	08/28/18 13:46	08/28/18 15:00	TH
Mercury by Method 7471A	WG1158391	1	08/28/18 12:55	08/29/18 09:35	ABL
Metals (ICP) by Method 6010B	WG1158598	1	08/28/18 17:27	08/29/18 04:02	TRB
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1158632	1	08/28/18 11:38	08/28/18 19:59	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1158510	1	08/28/18 11:38	08/28/18 15:50	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1158382	1	08/28/18 18:02	08/28/18 22:17	DMW
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1158445	1	08/28/18 22:17	08/29/18 03:22	DMG

<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

## SDE\_SS\_M\_17 L1021087-02 Solid

Collected by  
Maxwell Moran

Collected date/time  
08/24/18 13:40

Received date/time  
08/28/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1158272	1	08/28/18 13:09	08/29/18 09:43	TRB
Calculated Results	WG1158598	1	08/28/18 17:27	08/29/18 04:27	TRB
Wet Chemistry by Method 3060A/7196A	WG1158270	1	08/28/18 12:03	08/28/18 17:57	ITB
Wet Chemistry by Method 9045D	WG1158176	1	08/28/18 12:45	08/28/18 16:00	AJG
Wet Chemistry by Method 9050AMod	WG1157721	1	08/28/18 13:46	08/28/18 15:00	TH
Mercury by Method 7471A	WG1158391	1	08/28/18 12:55	08/29/18 09:37	ABL
Metals (ICP) by Method 6010B	WG1158598	1	08/28/18 17:27	08/29/18 04:27	TRB
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1158632	1	08/28/18 11:38	08/28/18 20:20	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1158510	1	08/28/18 11:38	08/28/18 16:08	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1158382	1	08/28/18 18:02	08/28/18 23:13	DMW
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1158445	1	08/28/18 22:17	08/29/18 03:42	DMG

## SDE\_SS\_M\_25 L1021087-03 Solid

Collected by  
Maxwell Moran

Collected date/time  
08/24/18 13:50

Received date/time  
08/28/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1158272	1	08/28/18 13:09	08/29/18 09:46	TRB
Calculated Results	WG1158598	1	08/28/18 17:27	08/29/18 04:29	TRB
Wet Chemistry by Method 3060A/7196A	WG1158270	1	08/28/18 12:03	08/28/18 17:58	ITB
Wet Chemistry by Method 9045D	WG1158176	1	08/28/18 12:45	08/28/18 16:00	AJG
Wet Chemistry by Method 9050AMod	WG1157721	1	08/28/18 13:46	08/28/18 15:00	TH
Mercury by Method 7471A	WG1158391	1	08/28/18 12:55	08/29/18 09:40	ABL
Metals (ICP) by Method 6010B	WG1158598	1	08/28/18 17:27	08/29/18 04:29	TRB
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1158632	1	08/28/18 11:38	08/28/18 20:41	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1158510	1	08/28/18 11:38	08/28/18 16:27	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1158382	1	08/28/18 18:02	08/28/18 23:24	DMW
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1158445	1	08/28/18 22:17	08/29/18 04:03	DMG

## SDE\_SS\_M\_46 L1021087-04 Solid

Collected by  
Maxwell Moran

Collected date/time  
08/24/18 14:00

Received date/time  
08/28/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1158272	1	08/28/18 13:09	08/29/18 09:48	TRB
Calculated Results	WG1158598	1	08/28/18 17:27	08/29/18 04:32	TRB
Wet Chemistry by Method 3060A/7196A	WG1158270	1	08/28/18 12:03	08/28/18 17:58	ITB
Wet Chemistry by Method 9045D	WG1158176	1	08/28/18 12:45	08/28/18 16:00	AJG
Wet Chemistry by Method 9050AMod	WG1157721	1	08/28/18 13:46	08/28/18 15:00	TH

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# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



## SDE\_SS\_M\_46 L1021087-04 Solid

Collected by  
Maxwell Moran

Collected date/time  
08/24/18 14:00

Received date/time  
08/28/18 08:45

<sup>1</sup> Cp

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Mercury by Method 7471A	WG1158391	1	08/28/18 12:55	08/29/18 09:48	ABL
Metals (ICP) by Method 6010B	WG1158598	1	08/28/18 17:27	08/29/18 04:32	TRB
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1158632	1	08/28/18 11:38	08/28/18 21:03	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1158510	1	08/28/18 11:38	08/28/18 16:45	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1158382	1	08/28/18 18:02	08/28/18 23:34	DMW
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1158445	1	08/28/18 22:17	08/29/18 04:24	DMG

<sup>2</sup> Tc

<sup>3</sup> Ss

<sup>4</sup> Cn

<sup>5</sup> Sr

## SDE\_SS\_M\_58 L1021087-05 Solid

Collected by  
Maxwell Moran

Collected date/time  
08/24/18 14:10

Received date/time  
08/28/18 08:45

<sup>6</sup> Qc

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1158272	1	08/28/18 13:09	08/29/18 09:51	TRB
Calculated Results	WG1158598	1	08/28/18 17:27	08/29/18 04:34	TRB
Wet Chemistry by Method 3060A/7196A	WG1158270	1	08/28/18 12:03	08/28/18 17:58	ITB
Wet Chemistry by Method 9045D	WG1158176	1	08/28/18 12:45	08/28/18 16:00	AJG
Wet Chemistry by Method 9050AMod	WG1157721	1	08/28/18 13:46	08/28/18 15:00	TH
Mercury by Method 7471A	WG1158391	1	08/28/18 12:55	08/29/18 09:50	ABL
Metals (ICP) by Method 6010B	WG1158598	1	08/28/18 17:27	08/29/18 04:34	TRB
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1158632	1	08/28/18 11:38	08/28/18 21:24	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1158510	1	08/28/18 11:38	08/28/18 17:03	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1158382	1	08/28/18 18:02	08/28/18 23:46	DMW
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1158445	1	08/28/18 22:17	08/29/18 04:45	DMG

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

## SDE\_SS\_M\_44 L1021087-06 Solid

Collected by  
Maxwell Moran

Collected date/time  
08/24/18 14:20

Received date/time  
08/28/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1158272	1	08/28/18 13:09	08/29/18 09:54	TRB
Calculated Results	WG1158598	1	08/28/18 17:27	08/29/18 04:37	TRB
Wet Chemistry by Method 3060A/7196A	WG1158270	1	08/28/18 12:03	08/28/18 17:59	ITB
Wet Chemistry by Method 9045D	WG1158176	1	08/28/18 12:45	08/28/18 16:00	AJG
Wet Chemistry by Method 9050AMod	WG1157721	1	08/28/18 13:46	08/28/18 15:00	TH
Mercury by Method 7471A	WG1158391	1	08/28/18 12:55	08/29/18 09:53	ABL
Metals (ICP) by Method 6010B	WG1158598	1	08/28/18 17:27	08/29/18 04:37	TRB
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1158632	1	08/28/18 11:38	08/28/18 21:45	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1158510	1	08/28/18 11:38	08/28/18 17:22	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1158382	1	08/28/18 18:02	08/28/18 23:57	DMW
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1158445	1	08/28/18 22:17	08/29/18 05:06	DMG

## SDE\_SS\_M\_45 L1021087-07 Solid

Collected by  
Maxwell Moran

Collected date/time  
08/24/18 14:50

Received date/time  
08/28/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1158272	1	08/28/18 13:09	08/29/18 10:20	TRB
Calculated Results	WG1158598	1	08/28/18 17:27	08/29/18 04:40	TRB
Wet Chemistry by Method 3060A/7196A	WG1158270	1	08/28/18 12:03	08/28/18 17:59	ITB
Wet Chemistry by Method 9045D	WG1158176	1	08/28/18 12:45	08/28/18 16:00	AJG
Wet Chemistry by Method 9050AMod	WG1157721	1	08/28/18 13:46	08/28/18 15:00	TH
Mercury by Method 7471A	WG1158391	1	08/28/18 12:55	08/29/18 09:55	ABL
Metals (ICP) by Method 6010B	WG1158598	1	08/28/18 17:27	08/29/18 04:40	TRB
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1158632	1	08/28/18 11:38	08/28/18 22:07	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1158510	1	08/28/18 11:38	08/28/18 17:40	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1158382	1	08/28/18 18:02	08/29/18 00:08	DMW

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# SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



SDE\_SS\_M\_45 L1021087-07 Solid

Collected by  
Maxwell Moran

Collected date/time  
08/24/18 14:50

Received date/time  
08/28/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1158445	1	08/28/18 22:17	08/29/18 05:26	DMG

<sup>1</sup> Cp

<sup>2</sup> Tc

<sup>3</sup> Ss

SDE\_SS\_M\_31 L1021087-08 Solid

Collected by  
Maxwell Moran

Collected date/time  
08/24/18 15:15

Received date/time  
08/28/18 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst
Calculated Results	WG1158272	1	08/28/18 13:09	08/29/18 10:22	TRB
Calculated Results	WG1158598	1	08/28/18 17:27	08/29/18 04:42	TRB
Wet Chemistry by Method 3060A/7196A	WG1158270	1	08/28/18 12:03	08/28/18 18:01	ITB
Wet Chemistry by Method 9045D	WG1158176	1	08/28/18 12:45	08/28/18 16:00	AJG
Wet Chemistry by Method 9050AMod	WG1157721	1	08/28/18 13:46	08/28/18 15:00	TH
Mercury by Method 7471A	WG1158391	1	08/28/18 12:55	08/29/18 09:58	ABL
Metals (ICP) by Method 6010B	WG1158598	1	08/28/18 17:27	08/29/18 04:42	TRB
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1158632	1	08/28/18 11:38	08/28/18 22:28	DWR
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1158510	1	08/28/18 11:38	08/28/18 17:58	JHH
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1158382	1	08/28/18 18:02	08/29/18 00:18	DMW
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1158445	1	08/28/18 22:17	08/29/18 05:47	DMG

<sup>4</sup> Cn

<sup>5</sup> Sr

<sup>6</sup> Qc

<sup>7</sup> Gl

<sup>8</sup> Al

<sup>9</sup> Sc

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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

<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	1.13		1	08/29/2018 09:41	WG1158272

## Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	10.0		0.140	1.00	1	08/29/2018 04:02	<a href="#">WG1158598</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	08/28/2018 17:57	<a href="#">WG1158270</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.09	<u>T8</u>	1	08/28/2018 16:00	<a href="#">WG1158176</a>

## Sample Narrative:

L1021087-01 WG1158176: 8.09 at 23.5C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	80.5		10.0	1	08/28/2018 15:00	<a href="#">WG1157721</a>

## Mercury by Method 7471A

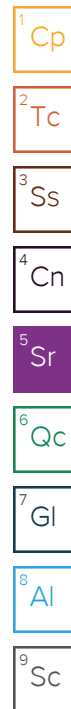
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.00605	<u>J</u>	0.00280	0.0200	1	08/29/2018 09:35	<a href="#">WG1158391</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	U		0.650	2.00	1	08/29/2018 04:02	<a href="#">WG1158598</a>
Barium	412	<u>V</u>	0.170	0.500	1	08/29/2018 04:02	<a href="#">WG1158598</a>
Boron	U	<u>O1</u>	1.26	10.0	1	08/29/2018 04:02	<a href="#">WG1158598</a>
Cadmium	0.193	<u>J</u>	0.0700	0.500	1	08/29/2018 04:02	<a href="#">WG1158598</a>
Chromium	10.0		0.140	1.00	1	08/29/2018 04:02	<a href="#">WG1158598</a>
Copper	13.2		0.530	2.00	1	08/29/2018 04:02	<a href="#">WG1158598</a>
Lead	8.68		0.190	0.500	1	08/29/2018 04:02	<a href="#">WG1158598</a>
Nickel	16.0		0.490	2.00	1	08/29/2018 04:02	<a href="#">WG1158598</a>
Selenium	0.969	<u>J</u>	0.740	2.00	1	08/29/2018 04:02	<a href="#">WG1158598</a>
Silver	U	<u>O1</u>	0.280	1.00	1	08/29/2018 04:02	<a href="#">WG1158598</a>
Zinc	32.3		0.590	5.00	1	08/29/2018 04:02	<a href="#">WG1158598</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	08/28/2018 19:59	<a href="#">WG1158632</a>
(S) a,a,a-Trifluorotoluene(FID)	102			77.0-120		08/28/2018 19:59	<a href="#">WG1158632</a>







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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000400	0.00100	1	08/28/2018 15:50	<a href="#">WG1158510</a>
Toluene	U		0.00125	0.00500	1	08/28/2018 15:50	<a href="#">WG1158510</a>
Ethylbenzene	U		0.000530	0.00250	1	08/28/2018 15:50	<a href="#">WG1158510</a>
Total Xylenes	U		0.00478	0.00650	1	08/28/2018 15:50	<a href="#">WG1158510</a>
(S) Toluene-d8	105			75.0-131		08/28/2018 15:50	<a href="#">WG1158510</a>
(S) Dibromofluoromethane	90.2			65.0-129		08/28/2018 15:50	<a href="#">WG1158510</a>
(S) a,a,a-Trifluorotoluene	102			80.0-120		08/28/2018 15:50	<a href="#">WG1158510</a>
(S) 4-Bromofluorobenzene	106			67.0-138		08/28/2018 15:50	<a href="#">WG1158510</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	3.90	U	0.769	4.00	1	08/28/2018 22:17	<a href="#">WG1158382</a>
(S) o-Terphenyl	53.0			18.0-148		08/28/2018 22:17	<a href="#">WG1158382</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Acenaphthene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Acenaphthylene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Benzo(a)anthracene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Benzo(a)pyrene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Benzo(b)fluoranthene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Benzo(g,h,i)perylene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Benzo(k)fluoranthene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Chrysene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Dibenz(a,h)anthracene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Fluoranthene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Fluorene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Naphthalene	U		0.00200	0.0200	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Phenanthrene	0.00108	U	0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
Pyrene	U		0.000600	0.00600	1	08/29/2018 03:22	<a href="#">WG1158445</a>
1-Methylnaphthalene	U		0.00200	0.0200	1	08/29/2018 03:22	<a href="#">WG1158445</a>
2-Methylnaphthalene	U		0.00200	0.0200	1	08/29/2018 03:22	<a href="#">WG1158445</a>
2-Chloronaphthalene	U		0.00200	0.0200	1	08/29/2018 03:22	<a href="#">WG1158445</a>
(S) p-Terphenyl-d14	73.5			23.0-120		08/29/2018 03:22	<a href="#">WG1158445</a>
(S) Nitrobenzene-d5	76.8			14.0-149		08/29/2018 03:22	<a href="#">WG1158445</a>
(S) 2-Fluorobiphenyl	73.7			34.0-125		08/29/2018 03:22	<a href="#">WG1158445</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	2.58		1	08/29/2018 09:43	WG1158272

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	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	14.0		0.140	1.00	1	08/29/2018 04:27	<a href="#">WG1158598</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	08/28/2018 17:57	<a href="#">WG1158270</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.03	<a href="#">T8</a>	1	08/28/2018 16:00	<a href="#">WG1158176</a>

## Sample Narrative:

L1021087-02 WG1158176: 8.03 at 23.1C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	154		10.0	1	08/28/2018 15:00	<a href="#">WG1157721</a>

## Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.00884	<a href="#">J</a>	0.00280	0.0200	1	08/29/2018 09:37	<a href="#">WG1158391</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	0.823	<a href="#">J</a>	0.650	2.00	1	08/29/2018 04:27	<a href="#">WG1158598</a>
Barium	698		0.170	0.500	1	08/29/2018 04:27	<a href="#">WG1158598</a>
Boron	U		1.26	10.0	1	08/29/2018 04:27	<a href="#">WG1158598</a>
Cadmium	U		0.0700	0.500	1	08/29/2018 04:27	<a href="#">WG1158598</a>
Chromium	14.0		0.140	1.00	1	08/29/2018 04:27	<a href="#">WG1158598</a>
Copper	15.6		0.530	2.00	1	08/29/2018 04:27	<a href="#">WG1158598</a>
Lead	6.09		0.190	0.500	1	08/29/2018 04:27	<a href="#">WG1158598</a>
Nickel	11.4		0.490	2.00	1	08/29/2018 04:27	<a href="#">WG1158598</a>
Selenium	U		0.740	2.00	1	08/29/2018 04:27	<a href="#">WG1158598</a>
Silver	U		0.280	1.00	1	08/29/2018 04:27	<a href="#">WG1158598</a>
Zinc	36.3		0.590	5.00	1	08/29/2018 04:27	<a href="#">WG1158598</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	08/28/2018 20:20	<a href="#">WG1158632</a>
(S) a,a,a-Trifluorotoluene(FID)	102			77.0-120		08/28/2018 20:20	<a href="#">WG1158632</a>



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000400	0.00100	1	08/28/2018 16:08	<a href="#">WG1158510</a>
Toluene	U		0.00125	0.00500	1	08/28/2018 16:08	<a href="#">WG1158510</a>
Ethylbenzene	U		0.000530	0.00250	1	08/28/2018 16:08	<a href="#">WG1158510</a>
Total Xylenes	U		0.00478	0.00650	1	08/28/2018 16:08	<a href="#">WG1158510</a>
(S) Toluene-d8	106			75.0-131		08/28/2018 16:08	<a href="#">WG1158510</a>
(S) Dibromofluoromethane	95.1			65.0-129		08/28/2018 16:08	<a href="#">WG1158510</a>
(S) a,a,a-Trifluorotoluene	100			80.0-120		08/28/2018 16:08	<a href="#">WG1158510</a>
(S) 4-Bromofluorobenzene	109			67.0-138		08/28/2018 16:08	<a href="#">WG1158510</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	22.4	<u>J3</u>	0.769	4.00	1	08/28/2018 23:13	<a href="#">WG1158382</a>
(S) o-Terphenyl	48.5			18.0-148		08/28/2018 23:13	<a href="#">WG1158382</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Acenaphthene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Acenaphthylene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Benzo(a)anthracene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Benzo(a)pyrene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Benzo(b)fluoranthene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Benzo(g,h,i)perylene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Benzo(k)fluoranthene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Chrysene	0.00104	<u>I</u>	0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Dibenz(a,h)anthracene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Fluoranthene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Fluorene	0.00118	<u>I</u>	0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Naphthalene	U		0.00200	0.0200	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Phenanthrene	0.00453	<u>I</u>	0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
Pyrene	0.00129	<u>I</u>	0.000600	0.00600	1	08/29/2018 03:42	<a href="#">WG1158445</a>
1-Methylnaphthalene	0.00258	<u>I</u>	0.00200	0.0200	1	08/29/2018 03:42	<a href="#">WG1158445</a>
2-Methylnaphthalene	0.00262	<u>I</u>	0.00200	0.0200	1	08/29/2018 03:42	<a href="#">WG1158445</a>
2-Chloronaphthalene	U		0.00200	0.0200	1	08/29/2018 03:42	<a href="#">WG1158445</a>
(S) p-Terphenyl-d14	58.6			23.0-120		08/29/2018 03:42	<a href="#">WG1158445</a>
(S) Nitrobenzene-d5	75.0			14.0-149		08/29/2018 03:42	<a href="#">WG1158445</a>
(S) 2-Fluorobiphenyl	61.9			34.0-125		08/29/2018 03:42	<a href="#">WG1158445</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	0.209		1	08/29/2018 09:46	WG1158272

## Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	10.2		0.140	1.00	1	08/29/2018 04:29	<a href="#">WG1158598</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	08/28/2018 17:58	<a href="#">WG1158270</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.53	<a href="#">T8</a>	1	08/28/2018 16:00	<a href="#">WG1158176</a>

## Sample Narrative:

L1021087-03 WG1158176: 7.53 at 23.3C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	33.2		10.0	1	08/28/2018 15:00	<a href="#">WG1157721</a>

## Mercury by Method 7471A

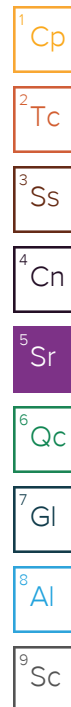
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.00468	<a href="#">J</a>	0.00280	0.0200	1	08/29/2018 09:40	<a href="#">WG1158391</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	U		0.650	2.00	1	08/29/2018 04:29	<a href="#">WG1158598</a>
Barium	128		0.170	0.500	1	08/29/2018 04:29	<a href="#">WG1158598</a>
Boron	U		1.26	10.0	1	08/29/2018 04:29	<a href="#">WG1158598</a>
Cadmium	0.158	<a href="#">J</a>	0.0700	0.500	1	08/29/2018 04:29	<a href="#">WG1158598</a>
Chromium	10.2		0.140	1.00	1	08/29/2018 04:29	<a href="#">WG1158598</a>
Copper	10.4		0.530	2.00	1	08/29/2018 04:29	<a href="#">WG1158598</a>
Lead	6.32		0.190	0.500	1	08/29/2018 04:29	<a href="#">WG1158598</a>
Nickel	10.1		0.490	2.00	1	08/29/2018 04:29	<a href="#">WG1158598</a>
Selenium	0.894	<a href="#">J</a>	0.740	2.00	1	08/29/2018 04:29	<a href="#">WG1158598</a>
Silver	U		0.280	1.00	1	08/29/2018 04:29	<a href="#">WG1158598</a>
Zinc	26.3		0.590	5.00	1	08/29/2018 04:29	<a href="#">WG1158598</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	08/28/2018 20:41	<a href="#">WG1158632</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	102			77.0-120		08/28/2018 20:41	<a href="#">WG1158632</a>





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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000400	0.00100	1	08/28/2018 16:27	<a href="#">WG1158510</a>
Toluene	U		0.00125	0.00500	1	08/28/2018 16:27	<a href="#">WG1158510</a>
Ethylbenzene	U		0.000530	0.00250	1	08/28/2018 16:27	<a href="#">WG1158510</a>
Total Xylenes	U		0.00478	0.00650	1	08/28/2018 16:27	<a href="#">WG1158510</a>
(S) Toluene-d8	106			75.0-131		08/28/2018 16:27	<a href="#">WG1158510</a>
(S) Dibromofluoromethane	94.4			65.0-129		08/28/2018 16:27	<a href="#">WG1158510</a>
(S) a,a,a-Trifluorotoluene	101			80.0-120		08/28/2018 16:27	<a href="#">WG1158510</a>
(S) 4-Bromofluorobenzene	107			67.0-138		08/28/2018 16:27	<a href="#">WG1158510</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	U	<u>J3</u>	0.769	4.00	1	08/28/2018 23:24	<a href="#">WG1158382</a>
(S) o-Terphenyl	43.0			18.0-148		08/28/2018 23:24	<a href="#">WG1158382</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Acenaphthene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Acenaphthylene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Benzo(a)anthracene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Benzo(a)pyrene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Benzo(b)fluoranthene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Benzo(g,h,i)perylene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Benzo(k)fluoranthene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Chrysene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Dibenz(a,h)anthracene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Fluoranthene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Fluorene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Naphthalene	U		0.00200	0.0200	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Phenanthrene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
Pyrene	U		0.000600	0.00600	1	08/29/2018 04:03	<a href="#">WG1158445</a>
1-Methylnaphthalene	U		0.00200	0.0200	1	08/29/2018 04:03	<a href="#">WG1158445</a>
2-Methylnaphthalene	U		0.00200	0.0200	1	08/29/2018 04:03	<a href="#">WG1158445</a>
2-Chloronaphthalene	U		0.00200	0.0200	1	08/29/2018 04:03	<a href="#">WG1158445</a>
(S) p-Terphenyl-d14	71.2			23.0-120		08/29/2018 04:03	<a href="#">WG1158445</a>
(S) Nitrobenzene-d5	77.3			14.0-149		08/29/2018 04:03	<a href="#">WG1158445</a>
(S) 2-Fluorobiphenyl	71.6			34.0-125		08/29/2018 04:03	<a href="#">WG1158445</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	0.342		1	08/29/2018 09:48	WG1158272

## Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	11.1		0.140	1.00	1	08/29/2018 04:32	<a href="#">WG1158598</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	08/28/2018 17:58	<a href="#">WG1158270</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.75	<a href="#">T8</a>	1	08/28/2018 16:00	<a href="#">WG1158176</a>

## Sample Narrative:

L1021087-04 WG1158176: 7.75 at 23C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	402		10.0	1	08/28/2018 15:00	<a href="#">WG1157721</a>

## Mercury by Method 7471A

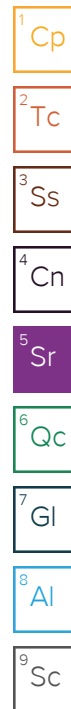
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.00957	<a href="#">J</a>	0.00280	0.0200	1	08/29/2018 09:48	<a href="#">WG1158391</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	1.77	<a href="#">J</a>	0.650	2.00	1	08/29/2018 04:32	<a href="#">WG1158598</a>
Barium	366		0.170	0.500	1	08/29/2018 04:32	<a href="#">WG1158598</a>
Boron	U		1.26	10.0	1	08/29/2018 04:32	<a href="#">WG1158598</a>
Cadmium	0.233	<a href="#">J</a>	0.0700	0.500	1	08/29/2018 04:32	<a href="#">WG1158598</a>
Chromium	11.1		0.140	1.00	1	08/29/2018 04:32	<a href="#">WG1158598</a>
Copper	11.6		0.530	2.00	1	08/29/2018 04:32	<a href="#">WG1158598</a>
Lead	7.25		0.190	0.500	1	08/29/2018 04:32	<a href="#">WG1158598</a>
Nickel	11.7		0.490	2.00	1	08/29/2018 04:32	<a href="#">WG1158598</a>
Selenium	U		0.740	2.00	1	08/29/2018 04:32	<a href="#">WG1158598</a>
Silver	U		0.280	1.00	1	08/29/2018 04:32	<a href="#">WG1158598</a>
Zinc	37.4		0.590	5.00	1	08/29/2018 04:32	<a href="#">WG1158598</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.812		0.0217	0.100	1	08/28/2018 21:03	<a href="#">WG1158632</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	101			77.0-120		08/28/2018 21:03	<a href="#">WG1158632</a>





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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000400	0.00100	1	08/28/2018 16:45	<a href="#">WG1158510</a>
Toluene	U		0.00125	0.00500	1	08/28/2018 16:45	<a href="#">WG1158510</a>
Ethylbenzene	U		0.000530	0.00250	1	08/28/2018 16:45	<a href="#">WG1158510</a>
Total Xylenes	0.00615	J	0.00478	0.00650	1	08/28/2018 16:45	<a href="#">WG1158510</a>
(S) Toluene-d8	105			75.0-131		08/28/2018 16:45	<a href="#">WG1158510</a>
(S) Dibromofluoromethane	96.4			65.0-129		08/28/2018 16:45	<a href="#">WG1158510</a>
(S) a,a,a-Trifluorotoluene	101			80.0-120		08/28/2018 16:45	<a href="#">WG1158510</a>
(S) 4-Bromofluorobenzene	108			67.0-138		08/28/2018 16:45	<a href="#">WG1158510</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	19.6	J3	0.769	4.00	1	08/28/2018 23:34	<a href="#">WG1158382</a>
(S) o-Terphenyl	43.5			18.0-148		08/28/2018 23:34	<a href="#">WG1158382</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Acenaphthene	0.000674	J	0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Acenaphthylene	U		0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Benzo(a)anthracene	U		0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Benzo(a)pyrene	U		0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Benzo(b)fluoranthene	0.000732	J	0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Benzo(g,h,i)perylene	U		0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Benzo(k)fluoranthene	U		0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Chrysene	0.00104	J	0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Dibenz(a,h)anthracene	U		0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Fluoranthene	0.000806	J	0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Fluorene	0.00211	J	0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Naphthalene	U		0.00200	0.0200	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Phenanthrene	0.00506	J	0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
Pyrene	0.00105	J	0.000600	0.00600	1	08/29/2018 04:24	<a href="#">WG1158445</a>
1-Methylnaphthalene	0.00590	J	0.00200	0.0200	1	08/29/2018 04:24	<a href="#">WG1158445</a>
2-Methylnaphthalene	0.00380	J	0.00200	0.0200	1	08/29/2018 04:24	<a href="#">WG1158445</a>
2-Chloronaphthalene	U		0.00200	0.0200	1	08/29/2018 04:24	<a href="#">WG1158445</a>
(S) p-Terphenyl-d14	70.2			23.0-120		08/29/2018 04:24	<a href="#">WG1158445</a>
(S) Nitrobenzene-d5	76.5			14.0-149		08/29/2018 04:24	<a href="#">WG1158445</a>
(S) 2-Fluorobiphenyl	70.2			34.0-125		08/29/2018 04:24	<a href="#">WG1158445</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	1.77		1	08/29/2018 09:51	WG1158272

## Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	14.3		0.140	1.00	1	08/29/2018 04:34	<a href="#">WG1158598</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	08/28/2018 17:58	<a href="#">WG1158270</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.00	<a href="#">T8</a>	1	08/28/2018 16:00	<a href="#">WG1158176</a>

## Sample Narrative:

L1021087-05 WG1158176: 8 at 23.3C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	217		10.0	1	08/28/2018 15:00	<a href="#">WG1157721</a>

## Mercury by Method 7471A

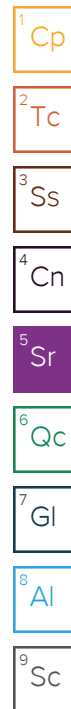
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.00558	<a href="#">J</a>	0.00280	0.0200	1	08/29/2018 09:50	<a href="#">WG1158391</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	1.62	<a href="#">J</a>	0.650	2.00	1	08/29/2018 04:34	<a href="#">WG1158598</a>
Barium	1300		0.170	0.500	1	08/29/2018 04:34	<a href="#">WG1158598</a>
Boron	U		1.26	10.0	1	08/29/2018 04:34	<a href="#">WG1158598</a>
Cadmium	U		0.0700	0.500	1	08/29/2018 04:34	<a href="#">WG1158598</a>
Chromium	14.3		0.140	1.00	1	08/29/2018 04:34	<a href="#">WG1158598</a>
Copper	14.5		0.530	2.00	1	08/29/2018 04:34	<a href="#">WG1158598</a>
Lead	7.06		0.190	0.500	1	08/29/2018 04:34	<a href="#">WG1158598</a>
Nickel	11.0		0.490	2.00	1	08/29/2018 04:34	<a href="#">WG1158598</a>
Selenium	U		0.740	2.00	1	08/29/2018 04:34	<a href="#">WG1158598</a>
Silver	U		0.280	1.00	1	08/29/2018 04:34	<a href="#">WG1158598</a>
Zinc	45.4		0.590	5.00	1	08/29/2018 04:34	<a href="#">WG1158598</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0348	<a href="#">J</a>	0.0217	0.100	1	08/28/2018 21:24	<a href="#">WG1158632</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	101			77.0-120		08/28/2018 21:24	<a href="#">WG1158632</a>







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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000400	0.00100	1	08/28/2018 17:03	<a href="#">WG1158510</a>
Toluene	U		0.00125	0.00500	1	08/28/2018 17:03	<a href="#">WG1158510</a>
Ethylbenzene	U		0.000530	0.00250	1	08/28/2018 17:03	<a href="#">WG1158510</a>
Total Xylenes	U		0.00478	0.00650	1	08/28/2018 17:03	<a href="#">WG1158510</a>
(S) Toluene-d8	103			75.0-131		08/28/2018 17:03	<a href="#">WG1158510</a>
(S) Dibromofluoromethane	96.5			65.0-129		08/28/2018 17:03	<a href="#">WG1158510</a>
(S) a,a,a-Trifluorotoluene	102			80.0-120		08/28/2018 17:03	<a href="#">WG1158510</a>
(S) 4-Bromofluorobenzene	103			67.0-138		08/28/2018 17:03	<a href="#">WG1158510</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	16.3	<u>J3</u>	0.769	4.00	1	08/28/2018 23:46	<a href="#">WG1158382</a>
(S) o-Terphenyl	50.5			18.0-148		08/28/2018 23:46	<a href="#">WG1158382</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Acenaphthene	0.000692	<u>J</u>	0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Acenaphthylene	U		0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Benzo(a)anthracene	0.000697	<u>J</u>	0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Benzo(a)pyrene	0.000675	<u>J</u>	0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Benzo(b)fluoranthene	0.00145	<u>J</u>	0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Benzo(g,h,i)perylene	0.000887	<u>J</u>	0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Benzo(k)fluoranthene	U		0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Chrysene	0.00137	<u>J</u>	0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Dibenz(a,h)anthracene	U		0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Fluoranthene	U		0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Fluorene	0.00163	<u>J</u>	0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Naphthalene	U		0.00200	0.0200	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Phenanthrene	0.00600	<u>J</u>	0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
Pyrene	0.00194	<u>J</u>	0.000600	0.00600	1	08/29/2018 04:45	<a href="#">WG1158445</a>
1-Methylnaphthalene	0.00662	<u>J</u>	0.00200	0.0200	1	08/29/2018 04:45	<a href="#">WG1158445</a>
2-Methylnaphthalene	0.00626	<u>J</u>	0.00200	0.0200	1	08/29/2018 04:45	<a href="#">WG1158445</a>
2-Chloronaphthalene	U		0.00200	0.0200	1	08/29/2018 04:45	<a href="#">WG1158445</a>
(S) p-Terphenyl-d14	74.3			23.0-120		08/29/2018 04:45	<a href="#">WG1158445</a>
(S) Nitrobenzene-d5	77.5			14.0-149		08/29/2018 04:45	<a href="#">WG1158445</a>
(S) 2-Fluorobiphenyl	74.3			34.0-125		08/29/2018 04:45	<a href="#">WG1158445</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	0.876		1	08/29/2018 09:54	WG1158272

## Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	7.55		0.140	1.00	1	08/29/2018 04:37	<a href="#">WG1158598</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	08/28/2018 17:59	<a href="#">WG1158270</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.25	<u>T8</u>	1	08/28/2018 16:00	<a href="#">WG1158176</a>

## Sample Narrative:

L1021087-06 WG1158176: 8.25 at 23C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	138		10.0	1	08/28/2018 15:00	<a href="#">WG1157721</a>

## Mercury by Method 7471A

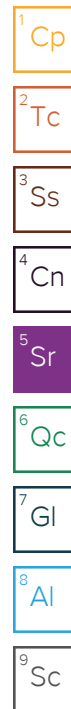
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.00399	<u>J</u>	0.00280	0.0200	1	08/29/2018 09:53	<a href="#">WG1158391</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	1.61	<u>J</u>	0.650	2.00	1	08/29/2018 04:37	<a href="#">WG1158598</a>
Barium	857		0.170	0.500	1	08/29/2018 04:37	<a href="#">WG1158598</a>
Boron	U		1.26	10.0	1	08/29/2018 04:37	<a href="#">WG1158598</a>
Cadmium	0.0808	<u>J</u>	0.0700	0.500	1	08/29/2018 04:37	<a href="#">WG1158598</a>
Chromium	7.55		0.140	1.00	1	08/29/2018 04:37	<a href="#">WG1158598</a>
Copper	8.80		0.530	2.00	1	08/29/2018 04:37	<a href="#">WG1158598</a>
Lead	5.36		0.190	0.500	1	08/29/2018 04:37	<a href="#">WG1158598</a>
Nickel	8.77		0.490	2.00	1	08/29/2018 04:37	<a href="#">WG1158598</a>
Selenium	U		0.740	2.00	1	08/29/2018 04:37	<a href="#">WG1158598</a>
Silver	U		0.280	1.00	1	08/29/2018 04:37	<a href="#">WG1158598</a>
Zinc	24.6		0.590	5.00	1	08/29/2018 04:37	<a href="#">WG1158598</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	08/28/2018 21:45	<a href="#">WG1158632</a>
(S) a,a,a-Trifluorotoluene(FID)	102			77.0-120		08/28/2018 21:45	<a href="#">WG1158632</a>





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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000400	0.00100	1	08/28/2018 17:22	<a href="#">WG1158510</a>
Toluene	U		0.00125	0.00500	1	08/28/2018 17:22	<a href="#">WG1158510</a>
Ethylbenzene	U		0.000530	0.00250	1	08/28/2018 17:22	<a href="#">WG1158510</a>
Total Xylenes	U		0.00478	0.00650	1	08/28/2018 17:22	<a href="#">WG1158510</a>
(S) Toluene-d8	109			75.0-131		08/28/2018 17:22	<a href="#">WG1158510</a>
(S) Dibromofluoromethane	91.5			65.0-129		08/28/2018 17:22	<a href="#">WG1158510</a>
(S) a,a,a-Trifluorotoluene	100			80.0-120		08/28/2018 17:22	<a href="#">WG1158510</a>
(S) 4-Bromofluorobenzene	104			67.0-138		08/28/2018 17:22	<a href="#">WG1158510</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	U	<u>J3</u>	0.769	4.00	1	08/28/2018 23:57	<a href="#">WG1158382</a>
(S) o-Terphenyl	50.3			18.0-148		08/28/2018 23:57	<a href="#">WG1158382</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Acenaphthene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Acenaphthylene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Benzo(a)anthracene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Benzo(a)pyrene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Benzo(b)fluoranthene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Benzo(g,h,i)perylene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Benzo(k)fluoranthene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Chrysene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Dibenz(a,h)anthracene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Fluoranthene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Fluorene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Naphthalene	U		0.00200	0.0200	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Phenanthrene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
Pyrene	U		0.000600	0.00600	1	08/29/2018 05:06	<a href="#">WG1158445</a>
1-Methylnaphthalene	U		0.00200	0.0200	1	08/29/2018 05:06	<a href="#">WG1158445</a>
2-Methylnaphthalene	U		0.00200	0.0200	1	08/29/2018 05:06	<a href="#">WG1158445</a>
2-Chloronaphthalene	U		0.00200	0.0200	1	08/29/2018 05:06	<a href="#">WG1158445</a>
(S) p-Terphenyl-d14	53.4			23.0-120		08/29/2018 05:06	<a href="#">WG1158445</a>
(S) Nitrobenzene-d5	77.0			14.0-149		08/29/2018 05:06	<a href="#">WG1158445</a>
(S) 2-Fluorobiphenyl	53.2			34.0-125		08/29/2018 05:06	<a href="#">WG1158445</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	0.928		1	08/29/2018 10:20	WG1158272

## Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	4.98		0.140	1.00	1	08/29/2018 04:40	<a href="#">WG1158598</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	08/28/2018 17:59	<a href="#">WG1158270</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.84	<a href="#">T8</a>	1	08/28/2018 16:00	<a href="#">WG1158176</a>

## Sample Narrative:

L1021087-07 WG1158176: 7.84 at 22.9C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	946		10.0	1	08/28/2018 15:00	<a href="#">WG1157721</a>

## Mercury by Method 7471A

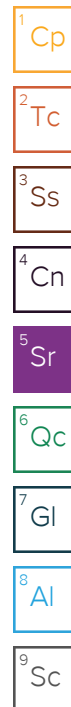
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	U		0.00280	0.0200	1	08/29/2018 09:55	<a href="#">WG1158391</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	U		0.650	2.00	1	08/29/2018 04:40	<a href="#">WG1158598</a>
Barium	129		0.170	0.500	1	08/29/2018 04:40	<a href="#">WG1158598</a>
Boron	U		1.26	10.0	1	08/29/2018 04:40	<a href="#">WG1158598</a>
Cadmium	0.0893	<a href="#">J</a>	0.0700	0.500	1	08/29/2018 04:40	<a href="#">WG1158598</a>
Chromium	4.98		0.140	1.00	1	08/29/2018 04:40	<a href="#">WG1158598</a>
Copper	6.94		0.530	2.00	1	08/29/2018 04:40	<a href="#">WG1158598</a>
Lead	3.55		0.190	0.500	1	08/29/2018 04:40	<a href="#">WG1158598</a>
Nickel	4.86		0.490	2.00	1	08/29/2018 04:40	<a href="#">WG1158598</a>
Selenium	U		0.740	2.00	1	08/29/2018 04:40	<a href="#">WG1158598</a>
Silver	U		0.280	1.00	1	08/29/2018 04:40	<a href="#">WG1158598</a>
Zinc	17.7		0.590	5.00	1	08/29/2018 04:40	<a href="#">WG1158598</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	08/28/2018 22:07	<a href="#">WG1158632</a>
(S) a,a,a-Trifluorotoluene(FID)	102			77.0-120		08/28/2018 22:07	<a href="#">WG1158632</a>





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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000400	0.00100	1	08/28/2018 17:40	<a href="#">WG1158510</a>
Toluene	U		0.00125	0.00500	1	08/28/2018 17:40	<a href="#">WG1158510</a>
Ethylbenzene	U		0.000530	0.00250	1	08/28/2018 17:40	<a href="#">WG1158510</a>
Total Xylenes	U		0.00478	0.00650	1	08/28/2018 17:40	<a href="#">WG1158510</a>
(S) Toluene-d8	103			75.0-131		08/28/2018 17:40	<a href="#">WG1158510</a>
(S) Dibromofluoromethane	93.2			65.0-129		08/28/2018 17:40	<a href="#">WG1158510</a>
(S) a,a,a-Trifluorotoluene	102			80.0-120		08/28/2018 17:40	<a href="#">WG1158510</a>
(S) 4-Bromofluorobenzene	103			67.0-138		08/28/2018 17:40	<a href="#">WG1158510</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	U	<u>J3</u>	0.769	4.00	1	08/29/2018 00:08	<a href="#">WG1158382</a>
(S) o-Terphenyl	49.4			18.0-148		08/29/2018 00:08	<a href="#">WG1158382</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Acenaphthene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Acenaphthylene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Benzo(a)anthracene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Benzo(a)pyrene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Benzo(b)fluoranthene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Benzo(g,h,i)perylene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Benzo(k)fluoranthene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Chrysene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Dibenz(a,h)anthracene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Fluoranthene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Fluorene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Naphthalene	U		0.00200	0.0200	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Phenanthrene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
Pyrene	U		0.000600	0.00600	1	08/29/2018 05:26	<a href="#">WG1158445</a>
1-Methylnaphthalene	U		0.00200	0.0200	1	08/29/2018 05:26	<a href="#">WG1158445</a>
2-Methylnaphthalene	U		0.00200	0.0200	1	08/29/2018 05:26	<a href="#">WG1158445</a>
2-Chloronaphthalene	U		0.00200	0.0200	1	08/29/2018 05:26	<a href="#">WG1158445</a>
(S) p-Terphenyl-d14	59.0			23.0-120		08/29/2018 05:26	<a href="#">WG1158445</a>
(S) Nitrobenzene-d5	73.8			14.0-149		08/29/2018 05:26	<a href="#">WG1158445</a>
(S) 2-Fluorobiphenyl	58.8			34.0-125		08/29/2018 05:26	<a href="#">WG1158445</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	0.367		1	08/29/2018 10:22	WG1158272

## Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	6.35		0.140	1.00	1	08/29/2018 04:42	<a href="#">WG1158598</a>

## Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	08/28/2018 18:01	<a href="#">WG1158270</a>

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.14	<a href="#">T8</a>	1	08/28/2018 16:00	<a href="#">WG1158176</a>

## Sample Narrative:

L1021087-08 WG1158176: 8.14 at 22.8C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	88.2		10.0	1	08/28/2018 15:00	<a href="#">WG1157721</a>

## Mercury by Method 7471A

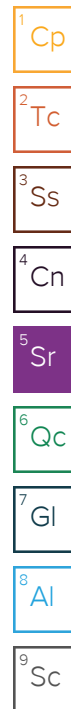
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	U		0.00280	0.0200	1	08/29/2018 09:58	<a href="#">WG1158391</a>

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	U		0.650	2.00	1	08/29/2018 04:42	<a href="#">WG1158598</a>
Barium	60.8		0.170	0.500	1	08/29/2018 04:42	<a href="#">WG1158598</a>
Boron	U		1.26	10.0	1	08/29/2018 04:42	<a href="#">WG1158598</a>
Cadmium	U		0.0700	0.500	1	08/29/2018 04:42	<a href="#">WG1158598</a>
Chromium	6.35		0.140	1.00	1	08/29/2018 04:42	<a href="#">WG1158598</a>
Copper	4.93		0.530	2.00	1	08/29/2018 04:42	<a href="#">WG1158598</a>
Lead	3.94		0.190	0.500	1	08/29/2018 04:42	<a href="#">WG1158598</a>
Nickel	4.10		0.490	2.00	1	08/29/2018 04:42	<a href="#">WG1158598</a>
Selenium	U		0.740	2.00	1	08/29/2018 04:42	<a href="#">WG1158598</a>
Silver	U		0.280	1.00	1	08/29/2018 04:42	<a href="#">WG1158598</a>
Zinc	22.4		0.590	5.00	1	08/29/2018 04:42	<a href="#">WG1158598</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	U		0.0217	0.100	1	08/28/2018 22:28	<a href="#">WG1158632</a>
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	102			77.0-120		08/28/2018 22:28	<a href="#">WG1158632</a>





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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000400	0.00100	1	08/28/2018 17:58	<a href="#">WG1158510</a>
Toluene	U		0.00125	0.00500	1	08/28/2018 17:58	<a href="#">WG1158510</a>
Ethylbenzene	U		0.000530	0.00250	1	08/28/2018 17:58	<a href="#">WG1158510</a>
Total Xylenes	U		0.00478	0.00650	1	08/28/2018 17:58	<a href="#">WG1158510</a>
(S) Toluene-d8	104			75.0-131		08/28/2018 17:58	<a href="#">WG1158510</a>
(S) Dibromofluoromethane	92.3			65.0-129		08/28/2018 17:58	<a href="#">WG1158510</a>
(S) a,a,a-Trifluorotoluene	99.2			80.0-120		08/28/2018 17:58	<a href="#">WG1158510</a>
(S) 4-Bromofluorobenzene	105			67.0-138		08/28/2018 17:58	<a href="#">WG1158510</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) High Fraction	U	<u>J3</u>	0.769	4.00	1	08/29/2018 00:18	<a href="#">WG1158382</a>
(S) o-Terphenyl	62.2			18.0-148		08/29/2018 00:18	<a href="#">WG1158382</a>

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Acenaphthene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Acenaphthylene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Benzo(a)anthracene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Benzo(a)pyrene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Benzo(b)fluoranthene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Benzo(g,h,i)perylene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Benzo(k)fluoranthene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Chrysene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Dibenz(a,h)anthracene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Fluoranthene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Fluorene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Indeno(1,2,3-cd)pyrene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Naphthalene	U		0.00200	0.0200	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Phenanthrene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
Pyrene	U		0.000600	0.00600	1	08/29/2018 05:47	<a href="#">WG1158445</a>
1-Methylnaphthalene	U		0.00200	0.0200	1	08/29/2018 05:47	<a href="#">WG1158445</a>
2-Methylnaphthalene	U		0.00200	0.0200	1	08/29/2018 05:47	<a href="#">WG1158445</a>
2-Chloronaphthalene	U		0.00200	0.0200	1	08/29/2018 05:47	<a href="#">WG1158445</a>
(S) p-Terphenyl-d14	60.8			23.0-120		08/29/2018 05:47	<a href="#">WG1158445</a>
(S) Nitrobenzene-d5	69.8			14.0-149		08/29/2018 05:47	<a href="#">WG1158445</a>
(S) 2-Fluorobiphenyl	50.8			34.0-125		08/29/2018 05:47	<a href="#">WG1158445</a>

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





Method Blank (MB)

(MB) R3337407-1 08/28/18 17:50

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

<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

L1020807-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1020807-01 08/28/18 17:51 • (DUP) R3337407-4 08/28/18 17:52

	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

L1021087-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1021087-07 08/28/18 17:59 • (DUP) R3337407-5 08/28/18 18:00

	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) • Laboratory Control Sample Duplicate (LCSD)

(LCS) R3337407-2 08/28/18 17:50 • (LCSD) R3337407-3 08/28/18 17:51

	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	%	%	%			%	%
Chromium,Hexavalent	24.0	22.2	22.1	92.7	92.2	80.0-120			0.541	20

L1021087-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1021087-08 08/28/18 18:01 • (MS) R3337407-6 08/28/18 18:01 • (MSD) R3337407-7 08/28/18 18:02

	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	17.8	18.3	89.2	91.4	1	75.0-125			2.44	20

L1021087-08 Original Sample (OS) • Matrix Spike (MS)

(OS) L1021087-08 08/28/18 18:01 • (MS) R3337407-8 08/28/18 18:03

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	656	U	515	78.5	50	75.0-125	



L1020431-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1020431-06 08/28/18 16:00 • (DUP) R3337478-3 08/28/18 16:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.96	6.98	1	0.287		1

Sample Narrative:

OS: 6.96 at 24.2C  
DUP: 6.98 at 23.8C



L1021087-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1021087-08 08/28/18 16:00 • (DUP) R3337478-4 08/28/18 16:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.14	8.13	1	0.123		1

Sample Narrative:

OS: 8.14 at 22.8C  
DUP: 8.13 at 22.7C

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

(LCS) R3337478-1 08/28/18 16:00 • (LCSD) R3337478-2 08/28/18 16:00

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	su	su	su	%	%	%			%	%
pH	10.0	9.95	9.99	99.5	99.9	99.0-101			0.401	1

Sample Narrative:

LCS: 9.95 at 21.1C  
LCSD: 9.99 at 21.1C

Method Blank (MB)

(MB) R3337319-1 08/28/18 15:00

	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

L1020779-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1020779-01 08/28/18 15:00 • (DUP) R3337319-4 08/28/18 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	1060	1050	1	0.948		20

L1021087-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1021087-08 08/28/18 15:00 • (DUP) R3337319-5 08/28/18 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	88.2	88.0	1	0.227		20

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

(LCS) R3337319-2 08/28/18 15:00 • (LCSD) R3337319-3 08/28/18 15:00

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
Analyte	umhos/cm	umhos/cm	umhos/cm	%	%	%			%	%
Specific Conductance	1090	1080	1080	99.4	99.3	85.0-115			0.0924	20



Method Blank (MB)

(MB) R3337583-1 08/29/18 08:59

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.00280	0.0200

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

(LCS) R3337583-2 08/29/18 09:02 • (LCSD) R3337583-3 08/29/18 09:04

	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	0.300	0.283	0.290	94.3	96.7	80.0-120			2.58	20

L1020089-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1020089-05 08/29/18 09:07 • (MS) R3337583-4 08/29/18 09:17 • (MSD) R3337583-5 08/29/18 09:20

	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	%	%		%			%	%
Mercury	0.416	U	0.415	0.400	99.8	96.0	1	75.0-125			3.81	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3337456-1 08/29/18 03:50

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.650	2.00
Barium	U		0.170	0.500
Boron	U		1.26	10.0
Cadmium	U		0.0700	0.500
Chromium	U		0.140	1.00
Copper	U		0.530	2.00
Lead	0.212	J	0.190	0.500
Nickel	U		0.490	2.00
Selenium	U		0.740	2.00
Silver	U		0.280	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) R3337456-2 08/29/18 03:52 • (LCSD) R3337456-3 08/29/18 03:55

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	99.8	95.5	99.8	95.5	80.0-120			4.41	20
Barium	100	105	99.9	105	99.9	80.0-120			5.32	20
Boron	100	94.5	90.7	94.5	90.7	80.0-120			4.05	20
Cadmium	100	98.7	93.7	98.7	93.7	80.0-120			5.21	20
Chromium	100	101	96.0	101	96.0	80.0-120			5.23	20
Copper	100	99.6	95.0	99.6	95.0	80.0-120			4.80	20
Lead	100	99.5	94.1	99.5	94.1	80.0-120			5.50	20
Nickel	100	98.1	92.9	98.1	92.9	80.0-120			5.38	20
Selenium	100	98.6	94.3	98.6	94.3	80.0-120			4.51	20
Silver	20.0	19.5	18.4	97.6	91.9	80.0-120			6.10	20
Zinc	100	98.6	93.3	98.6	93.3	80.0-120			5.51	20

L1021087-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1021087-01 08/29/18 04:02 • (MS) R3337456-6 08/29/18 04:09 • (MSD) R3337456-7 08/29/18 04:12

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	U	97.2	96.5	97.2	96.5	1	75.0-125			0.684	20
Barium	100	412	620	703	208	291	1	75.0-125	V	V	12.6	20
Boron	100	U	90.6	86.1	90.6	86.1	1	75.0-125			5.08	20
Cadmium	100	0.193	98.3	97.0	98.1	96.8	1	75.0-125			1.30	20
Chromium	100	10.0	110	110	100	100	1	75.0-125			0.0407	20



[L1021087-01,02,03,04,05,06,07,08](#)

L1021087-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1021087-01 08/29/18 04:02 • (MS) R3337456-6 08/29/18 04:09 • (MSD) R3337456-7 08/29/18 04:12

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Copper	100	13.2	113	113	99.8	99.5	1	75.0-125			0.217	20
Lead	100	8.68	105	105	96.4	96.1	1	75.0-125			0.269	20
Nickel	100	16.0	108	109	92.4	92.6	1	75.0-125			0.139	20
Selenium	100	0.969	93.2	93.9	92.2	92.9	1	75.0-125			0.803	20
Silver	20.0	U	19.4	19.0	96.9	95.2	1	75.0-125			1.78	20
Zinc	100	32.3	125	130	92.3	97.7	1	75.0-125			4.22	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) R3337468-3 08/28/18 11:42

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U		0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	103			77.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3337468-1 08/28/18 10:38 • (LCSD) R3337468-2 08/28/18 10:59

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	5.38	5.42	97.8	98.6	72.0-127			0.815	20
(S) a,a,a-Trifluorotoluene(FID)				93.9	94.0	77.0-120				

L1021091-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1021091-02 08/29/18 06:19 • (MS) R3337468-4 08/29/18 06:41 • (MSD) R3337468-5 08/29/18 07:02

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	0.798	90.9	92.0	65.5	66.3	25	10.0-151			1.20	28
(S) a,a,a-Trifluorotoluene(FID)					105	106		77.0-120				





Method Blank (MB)

(MB) R3337366-3 08/28/18 11:51

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
Toluene	U		0.00125	0.00500
Xylenes, Total	U		0.00478	0.00650
(S) Toluene-d8	105			75.0-131
(S) Dibromofluoromethane	93.7			65.0-129
(S) a,a,a-Trifluorotoluene	98.5			80.0-120
(S) 4-Bromofluorobenzene	105			67.0-138

<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) R3337366-1 08/28/18 10:36 • (LCSD) R3337366-2 08/28/18 10:55

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 %
Benzene	0.125	0.120	0.122	95.8	97.4	70.0-123			1.69	20
Ethylbenzene	0.125	0.137	0.135	110	108	74.0-126			1.45	20
Toluene	0.125	0.132	0.131	106	105	75.0-121			0.683	20
Xylenes, Total	0.375	0.405	0.394	108	105	72.0-127			2.75	20
(S) Toluene-d8				111	107	75.0-131				
(S) Dibromofluoromethane				93.0	95.8	65.0-129				
(S) a,a,a-Trifluorotoluene				104	106	80.0-120				
(S) 4-Bromofluorobenzene				103	108	67.0-138				

L1021109-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1021109-06 08/28/18 19:49 • (MS) R3337366-4 08/28/18 20:26 • (MSD) R3337366-5 08/28/18 22:16

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	ND	0.0811	0.0483	64.9	38.6	1	10.0-149		J3	50.7	37
Ethylbenzene	0.125	ND	0.0893	0.0517	71.4	41.4	1	10.0-160		J3	53.3	38
Toluene	0.125	ND	0.0868	0.0515	69.5	41.2	1	10.0-156		J3	51.2	38
Xylenes, Total	0.375	ND	0.268	0.160	71.5	42.6	1	10.0-160		J3	50.6	38
(S) Toluene-d8					102	105		75.0-131				
(S) Dibromofluoromethane					90.0	92.5		65.0-129				
(S) a,a,a-Trifluorotoluene					100	101		80.0-120				
(S) 4-Bromofluorobenzene					104	103		67.0-138				



Method Blank (MB)

(MB) R3337530-1 08/28/18 21:45

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	47.7			18.0-148

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3337530-2 08/28/18 21:55 • (LCSD) R3337530-3 08/28/18 22:06

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) High Fraction	50.0	28.1	36.7	56.2	73.4	50.0-150		J3	26.5	20
(S) o-Terphenyl				61.9	79.3	18.0-148				

L1021087-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1021087-01 08/28/18 22:17 • (MS) R3337530-4 08/28/18 22:28 • (MSD) R3337530-5 08/28/18 22:40

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	3.90	29.2	31.4	50.6	55.0	1	50.0-150			7.26	20
(S) o-Terphenyl					63.2	67.9		18.0-148				

Method Blank (MB)

(MB) R3337471-3 08/29/18 02:55

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	86.6			14.0-149
(S) 2-Fluorobiphenyl	84.2			34.0-125
(S) p-Terphenyl-d14	93.3			23.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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

(LCS) R3337471-1 08/29/18 02:14 • (LCSD) R3337471-2 08/29/18 02:34

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 %
Anthracene	0.0800	0.0701	0.0628	87.6	78.5	50.0-126			11.0	20
Acenaphthene	0.0800	0.0683	0.0687	85.4	85.9	50.0-120			0.584	20
Acenaphthylene	0.0800	0.0672	0.0669	84.0	83.6	50.0-120			0.447	20
Benzo(a)anthracene	0.0800	0.0697	0.0694	87.1	86.8	45.0-120			0.431	20
Benzo(a)pyrene	0.0800	0.0556	0.0537	69.5	67.1	42.0-120			3.48	20
Benzo(b)fluoranthene	0.0800	0.0715	0.0717	89.4	89.6	42.0-121			0.279	20
Benzo(g,h,i)perylene	0.0800	0.0648	0.0649	81.0	81.1	45.0-125			0.154	20
Benzo(k)fluoranthene	0.0800	0.0703	0.0703	87.9	87.9	49.0-125			0.000	20
Chrysene	0.0800	0.0746	0.0752	93.3	94.0	49.0-122			0.801	20
Dibenz(a,h)anthracene	0.0800	0.0630	0.0638	78.8	79.8	47.0-125			1.26	20
Fluoranthene	0.0800	0.0696	0.0692	87.0	86.5	49.0-129			0.576	20

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

(LCS) R3337471-1 08/29/18 02:14 • (LCSD) R3337471-2 08/29/18 02:34

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 %
Fluorene	0.0800	0.0657	0.0657	82.1	82.1	49.0-120			0.000	20
Indeno(1,2,3-cd)pyrene	0.0800	0.0646	0.0648	80.7	81.0	46.0-125			0.309	20
Naphthalene	0.0800	0.0578	0.0586	72.3	73.3	50.0-120			1.37	20
Phenanthrene	0.0800	0.0687	0.0691	85.9	86.4	47.0-120			0.581	20
Pyrene	0.0800	0.0732	0.0734	91.5	91.8	43.0-123			0.273	20
1-Methylnaphthalene	0.0800	0.0660	0.0669	82.5	83.6	51.0-121			1.35	20
2-Methylnaphthalene	0.0800	0.0624	0.0632	78.0	79.0	50.0-120			1.27	20
2-Chloronaphthalene	0.0800	0.0666	0.0673	83.3	84.1	50.0-120			1.05	20
(S) Nitrobenzene-d5				87.4	90.4	14.0-149				
(S) 2-Fluorobiphenyl				83.9	84.9	34.0-125				
(S) p-Terphenyl-d14				86.6	87.8	23.0-120				

L1017948-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1017948-03 08/29/18 07:31 • (MS) R3337471-4 08/29/18 07:52 • (MSD) R3337471-5 08/29/18 08:13

Analyte	Spike Amount (dry) mg/kg	Original Result (dry) mg/kg	MS Result (dry) mg/kg	MSD Result (dry) mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Anthracene	0.0927	U	0.355	0.477	383	506	1	10.0-145	J5	J5	29.3	30
Acenaphthene	0.0927	0.178	0.240	0.290	67.0	119	1	14.0-127			18.9	27
Acenaphthylene	0.0927	U	0.117	0.133	127	141	1	21.0-124	J5	J5	12.1	25
Benzo(a)anthracene	0.0927	0.00730	0.0753	0.0794	73.3	76.5	1	10.0-139			5.26	30
Benzo(a)pyrene	0.0927	0.00398	0.0668	0.0703	67.7	70.4	1	10.0-141			5.06	31
Benzo(b)fluoranthene	0.0927	0.00821	0.0718	0.0766	68.6	72.6	1	10.0-140			6.44	36
Benzo(g,h,i)perylene	0.0927	0.00336	0.0700	0.0730	71.9	74.0	1	10.0-140			4.18	33
Benzo(k)fluoranthene	0.0927	0.00189	0.0629	0.0658	65.7	67.9	1	10.0-137			4.64	31
Chrysene	0.0927	0.00618	0.0802	0.0883	79.8	87.2	1	10.0-145			9.65	30
Dibenz(a,h)anthracene	0.0927	0.000762	0.0615	0.0647	65.5	67.8	1	10.0-132			4.92	31
Fluoranthene	0.0927	0.0619	0.131	0.158	75.0	102	1	10.0-153			18.2	33
Fluorene	0.0927	0.251	0.319	0.391	73.5	148	1	11.0-130		J5	20.2	29
Indeno(1,2,3-cd)pyrene	0.0927	0.00240	0.0660	0.0693	68.5	71.1	1	10.0-137			4.95	32
Naphthalene	0.0927	0.192	0.298	0.362	113	180	1	10.0-135		J5	19.6	27
Phenanthrene	0.0927	0.892	1.04	1.34	165	475	1	10.0-144	V	V	24.7	31
Pyrene	0.0927	0.134	0.213	0.251	85.1	124	1	10.0-148			16.5	35
1-Methylnaphthalene	0.0927	0.936	1.19	1.57	274	669	1	10.0-142	V	V	27.2	28
2-Methylnaphthalene	0.0927	1.08	1.37	1.76	320	721	1	10.0-137	V	V	24.4	28
2-Chloronaphthalene	0.0927	U	0.0526	0.0549	56.7	58.2	1	29.0-120			4.23	24
(S) Nitrobenzene-d5					92.2	108		14.0-149				
(S) 2-Fluorobiphenyl					62.8	68.8		34.0-125				
(S) p-Terphenyl-d14					67.5	69.7		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.

### 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.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
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 <sup>1</sup>	n/a
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina <sup>1</sup>	DW21704
Georgia	NELAP	North Carolina <sup>3</sup>	41
Georgia <sup>1</sup>	923	North Dakota	R-140
Idaho	TN00003	Ohio–VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky <sup>1 6</sup>	90010	South Carolina	84004
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1 4</sup>	2006
Louisiana <sup>1</sup>	LA180010	Texas	T 104704245-17-14
Maine	TN0002	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

## Third Party Federal Accreditations

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

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

## Our Locations

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

