



**Nicholson GeoSolutions LLC**

3433 East Lake Drive  
Centennial, CO 80121

June 1, 2021

Mr. Jon Armstrong  
Berry Petroleum Company  
5201 Truxtun Avenue #100  
Bakersfield, CA 90399

**Subject: J-15 Pipeline 1<sup>st</sup> Spill Spoils Landfarm Final Discrete Sampling Results**

Dear Jon:

Nicholson GeoSolutions LLC conducted final discrete soil sampling of the spoils landfarm on the J-15 well pad in the Garden Gulch area, Garfield County, Colorado on May 8<sup>th</sup>, 2021. The sampling was conducted in accordance with the new COGCC Series 900 Rules that are in effect as of January 15, 2021.

This landfarm contained an estimated 200 cubic yards of material and averaged about 12 inches deep at the time of sampling. Four discrete soil samples were collected. The locations of the samples are shown on Figure 1. These samples were analyzed for the Table 915-1 list of parameters including Total Volatile Petroleum Hydrocarbons (TVPH – gasoline range), Total Extractable Petroleum Hydrocarbons (TEPH – diesel and motor oil range), BTEX (benzene, toluene, ethylbenzene, and xylenes), sodium adsorption ratio (SAR), pH, conductivity, metals, PAHs, and selected VOCs (1,2,4-trimethylbenzene, 1,3,5-trimethylbenzene, and naphthalene).

Table 1 provides a summary of the analytical results for the four samples. The laboratory report is contained in Appendix A. All results were below the Table 915-1 standards except for arsenic. Arsenic ranged from 2.10 mg/kg to 2.80 mg/kg, within the range of natural background concentrations in soils of the Garden Gulch area (Nicholson 2014).

Based on the sample results, remediation of the landfarm is now complete. Since all SAR pH, and conductivity values are below the Table 915-1 standards, this material does not need to be buried and can be used for general site purposes pending COGCC approval.

Nicholson GeoSolutions LLC

A handwritten signature in blue ink that reads "DK Nicholson". The signature is fluid and cursive, with the initials "DK" being prominent.

David K. Nicholson, P.G.  
Principal Geologist

#### Reference

Nicholson GeoSolutions LLC, 2014, Analysis of Background Arsenic Concentrations for the Garden Gulch, Old Mountain, and Long Ridge Areas, Garfield County, Colorado. Prepared for Berry Petroleum Company, February 24, 2014

**Table 1 J15 1st Spill Spoils Landfarm Sample Results – May 8, 2021**

		Sample ID			
Parameter	Table 915-1 Standards	J15-1	J15-2	J15-3	J15-4
Contaminants of Concern					
TVPH – gasoline range	500 <sup>1</sup>	<0.1	<0.1	<0.101	<0.1
TEPH – diesel/motor oil range		22.21	19.36	61.0	33.3
Soil Suitability for Reclamation					
sp. conductance (mmhos/cm)	<4	0.454	0.617	0.508	0.615
SAR (ratio)	<6	4.97	4.20	4.24	4.75
pH (standard units)	6-8.3	8.12	7.98	8.00	8.02
boron (hot water extract)	2.0	<1.0	0.302	0.297	<1.0
Organic Compounds in Soils					
benzene	1.2	<0.001	<0.001	<0.001	<0.001
toluene	490	<0.005	<0.005	<0.005	<0.005
ethylbenzene	5.8	<0.0025	<0.0025	<0.0025	<0.0025
xylenes	58	<0.0065	<0.0065	<0.0065	<0.0065
1,2,4-trimethylbenzene	30	<0.005	<0.005	<0.005	<0.005
1,3,5-trimethylbenzene	27	<0.005	<0.005	<0.005	<0.005
acenaphthene	360	<0.006	<0.006	<0.006	<0.006
anthracene	1800	<0.006	<0.006	<0.006	<0.006
benzo(a)anthracene	1.1	<0.006	<0.006	<0.006	<0.006
benzo(b)flouranthene	1.1	<0.006	<0.006	<0.006	<0.006
benzo(k)flouranthene	11	<0.006	<0.006	<0.006	<0.006
benzo(a)pyrene	0.11	<0.006	<0.006	<0.006	<0.006
chrysene	110	<0.006	<0.006	<0.006	<0.006
dibenz(a,h)anthracene	0.11	<0.006	<0.006	<0.006	<0.006
fluoranthene	240	<0.006	<0.006	<0.006	<0.006
flourene	240	<0.006	<0.006	<0.006	<0.006
indeno(1,2,3-cd)pyrene	1.1	<0.006	<0.006	<0.006	<0.006
1-methylnaphthalene	18	<0.02	<0.02	<0.02	<0.02
2-methylnaphthalene	24	<0.02	<0.02	<0.02	<0.02
naphthalene	2	<0.02	<0.02	<0.02	<0.02
pyrene	180	<0.006	<0.006	<0.006	<0.006
Metals in Soils					
arsenic	0.68	2.47	2.47	2.10	2.80
barium	15,000	312	356	395	495
cadmium	71	<0.5	<0.5	<0.5	<0.5
chromium VI	0.3	<2.0	<2.0	<2.0	<2.0
copper	3,100	15.9	15.8	16.5	15.9
lead	400	11.7	11.7	11.3	12.0
nickel	1,500	20.6	19.6	19.7	19.3
selenium	390	<2	<2	<2	<2
silver	390	<1	<1	<1	<1
zinc	23,000	46.3	43.1	46.1	48.3

<sup>1</sup>The standard is 500 for the combined total of TVPH and TEPH NA = not analyzed

Values in bold type exceed standards

All units and standards in mg/kg except where indicated



Figure 1

May  
2021

GeoSolutions  
NICHOLSON

### Legend

- Final Discrete Confirmation Sample
- Landfarm Perimeter

0 30 60 120 Feet 1" = 65'

**Berry Petroleum Company**

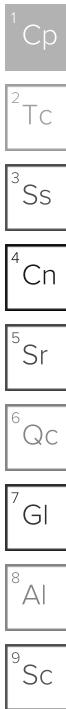
Long Ridge J15  
Landfarm Final Discrete  
Confirmation Samples

**APPENDIX A**  
**Laboratory Report**



# ANALYTICAL REPORT

May 27, 2021



## Berry Petroleum - Denver, CO

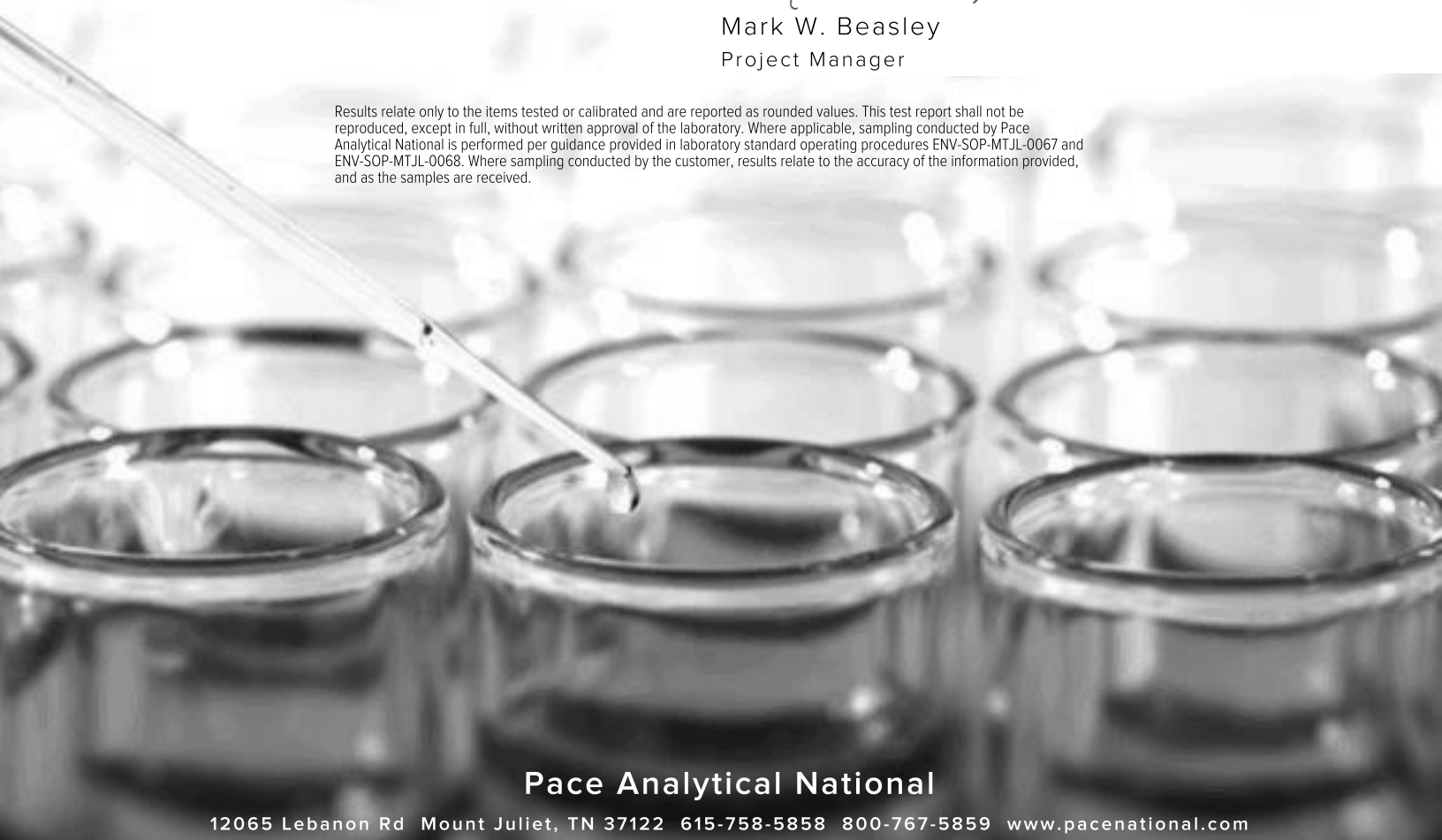
Sample Delivery Group: L1351085  
Samples Received: 05/11/2021  
Project Number:  
Description: J15 Spill

Report To: Dave Nicholson  
3433 E. Lake Dr  
Centennial, CO 80121

Entire Report Reviewed By:

Mark W. Beasley  
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.



**Pace Analytical National**

12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 [www.pacenational.com](http://www.pacenational.com)

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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

J15-1 L1351085-01 Solid

Collected by  
DK Nicholson

Collected date/time  
05/08/21 09:30

Received date/time  
05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669026	1	05/26/21 13:57	05/26/21 13:57	KMG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1670701	1	05/14/21 12:48	05/15/21 15:21	BJD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1672335	1	05/18/21 07:50	05/18/21 10:20	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1669177	1	05/18/21 03:18	05/18/21 08:08	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1671421	1	05/18/21 13:36	05/20/21 08:19	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1669024	5	05/20/21 14:43	05/21/21 22:36	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1670226	1	05/12/21 23:21	05/14/21 12:33	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1670942	1	05/12/21 23:21	05/15/21 05:07	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1671584	1	05/12/21 23:21	05/16/21 23:19	JHH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1671476	1	05/16/21 05:35	05/18/21 13:38	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1671063	1	05/15/21 04:15	05/15/21 12:34	LEA	Mt. Juliet, TN

J15-2 L1351085-02 Solid

Collected by  
DK Nicholson

Collected date/time  
05/08/21 09:40

Received date/time  
05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669026	1	05/26/21 13:59	05/26/21 13:59	KMG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1670701	1	05/14/21 12:48	05/15/21 15:26	BJD	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1672335	1	05/18/21 07:50	05/18/21 10:20	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1669177	1	05/18/21 03:18	05/18/21 08:08	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1671421	1	05/18/21 13:36	05/20/21 08:28	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1669024	1	05/20/21 14:43	05/21/21 22:39	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1670226	1	05/12/21 23:21	05/14/21 12:55	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1670942	1	05/12/21 23:21	05/15/21 05:26	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1671476	1	05/16/21 05:35	05/18/21 01:39	TJD	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1671063	1	05/15/21 04:15	05/15/21 12:54	LEA	Mt. Juliet, TN

J15-3 L1351085-03 Solid

Collected by  
DK Nicholson

Collected date/time  
05/08/21 09:50

Received date/time  
05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669026	1	05/26/21 14:02	05/26/21 14:02	KMG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1671320	1	05/16/21 19:16	05/18/21 21:57	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1672335	1	05/18/21 07:50	05/18/21 10:20	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1669177	1	05/18/21 03:18	05/18/21 08:08	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1671421	1	05/18/21 13:36	05/20/21 08:31	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1669024	1	05/20/21 14:43	05/21/21 22:47	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1670226	1.01	05/12/21 23:21	05/14/21 13:17	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1670942	1	05/12/21 23:21	05/15/21 05:45	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1671600	1	05/16/21 16:41	05/17/21 22:34	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1671063	1	05/15/21 04:15	05/15/21 13:14	LEA	Mt. Juliet, TN

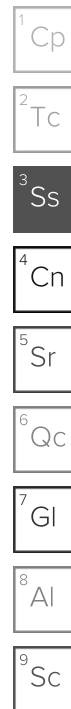
J15-4 L1351085-04 Solid

Collected by  
DK Nicholson

Collected date/time  
05/08/21 10:00

Received date/time  
05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1669026	1	05/26/21 14:05	05/26/21 14:05	KMG	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1671320	1	05/16/21 19:16	05/18/21 21:57	KPS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1672335	1	05/18/21 07:50	05/18/21 10:20	ARM	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1669177	1	05/18/21 03:18	05/18/21 08:08	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1671421	1	05/18/21 13:36	05/20/21 08:34	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1669024	5	05/20/21 14:43	05/21/21 22:50	KMG	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1670226	1	05/12/21 23:21	05/14/21 13:39	BMB	Mt. Juliet, TN



ACCOUNT:

Berry Petroleum - Denver, CO

PROJECT:

SDG:

L1351085

DATE/TIME:

05/27/21 11:21

PAGE:

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# SAMPLE SUMMARY

J15-4 L1351085-04 Solid

Collected by  
DK Nicholson

Collected date/time  
05/08/21 10:00

Received date/time  
05/11/21 10:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1670942	1	05/12/21 23:21	05/15/21 06:04	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1671600	1	05/16/21 16:41	05/18/21 14:30	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1671063	1	05/15/21 04:15	05/15/21 13:34	LEA	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

# CASE NARRATIVE

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.



Mark W. Beasley  
Project Manager

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

## Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	4.97		1	05/26/2021 13:57	WG1669026

## 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	05/15/2021 15:21	WG1670701

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.12	T8	1	05/18/2021 10:20	WG1672335

## Sample Narrative:

L1351085-01 WG1672335: 8.12 at 22.6C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	454		10.0	1	05/18/2021 08:08	WG1669177

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.47		2.00	1	05/20/2021 08:19	WG1671421
Barium	312		0.500	1	05/20/2021 08:19	WG1671421
Cadmium	ND		0.500	1	05/20/2021 08:19	WG1671421
Copper	15.9		2.00	1	05/20/2021 08:19	WG1671421
Lead	11.7		0.500	1	05/20/2021 08:19	WG1671421
Nickel	20.6		2.00	1	05/20/2021 08:19	WG1671421
Selenium	ND		2.00	1	05/20/2021 08:19	WG1671421
Silver	ND		1.00	1	05/20/2021 08:19	WG1671421
Zinc	46.3		5.00	1	05/20/2021 08:19	WG1671421

## Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		1.00	5	05/21/2021 22:36	WG1669024

## 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	ND		0.100	1	05/14/2021 12:33	WG1670226
(S) a,a,a-Trifluorotoluene(FID)	91.7		77.0-120		05/14/2021 12:33	WG1670226

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	05/15/2021 05:07	WG1670942
Acrylonitrile	ND		0.0125	1	05/15/2021 05:07	WG1670942
Benzene	ND		0.00100	1	05/15/2021 05:07	WG1670942
Bromobenzene	ND		0.0125	1	05/15/2021 05:07	WG1670942
Bromodichloromethane	ND		0.00250	1	05/15/2021 05:07	WG1670942

<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

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Bromoform	ND		0.0250	1	05/15/2021 05:07	WG1670942
Bromomethane	ND		0.0125	1	05/15/2021 05:07	WG1670942
n-Butylbenzene	ND		0.0125	1	05/15/2021 05:07	WG1670942
sec-Butylbenzene	ND		0.0125	1	05/15/2021 05:07	WG1670942
tert-Butylbenzene	ND		0.00500	1	05/15/2021 05:07	WG1670942
Carbon tetrachloride	ND		0.00500	1	05/15/2021 05:07	WG1670942
Chlorobenzene	ND		0.00250	1	05/15/2021 05:07	WG1670942
Chlorodibromomethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
Chloroethane	ND		0.00500	1	05/15/2021 05:07	WG1670942
Chloroform	ND		0.00250	1	05/15/2021 05:07	WG1670942
Chloromethane	ND		0.0125	1	05/15/2021 05:07	WG1670942
2-Chlorotoluene	ND		0.00250	1	05/15/2021 05:07	WG1670942
4-Chlorotoluene	ND	J4	0.00500	1	05/15/2021 05:07	WG1670942
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	05/15/2021 05:07	WG1670942
1,2-Dibromoethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
Dibromomethane	ND		0.00500	1	05/15/2021 05:07	WG1670942
1,2-Dichlorobenzene	ND		0.00500	1	05/15/2021 05:07	WG1670942
1,3-Dichlorobenzene	ND		0.00500	1	05/15/2021 05:07	WG1670942
1,4-Dichlorobenzene	ND		0.00500	1	05/15/2021 05:07	WG1670942
Dichlorodifluoromethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
1,1-Dichloroethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
1,2-Dichloroethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
1,1-Dichloroethene	ND		0.00250	1	05/15/2021 05:07	WG1670942
cis-1,2-Dichloroethene	ND		0.00250	1	05/15/2021 05:07	WG1670942
trans-1,2-Dichloroethene	ND		0.00500	1	05/15/2021 05:07	WG1670942
1,2-Dichloropropane	ND		0.00500	1	05/15/2021 05:07	WG1670942
1,1-Dichloropropene	ND		0.00250	1	05/15/2021 05:07	WG1670942
1,3-Dichloropropane	ND		0.00500	1	05/15/2021 05:07	WG1670942
cis-1,3-Dichloropropene	ND		0.00250	1	05/15/2021 05:07	WG1670942
trans-1,3-Dichloropropene	ND		0.00500	1	05/15/2021 05:07	WG1670942
2,2-Dichloropropane	ND		0.00250	1	05/15/2021 05:07	WG1670942
Di-isopropyl ether	ND		0.00100	1	05/15/2021 05:07	WG1670942
Ethylbenzene	ND		0.00250	1	05/15/2021 05:07	WG1670942
Hexachloro-1,3-butadiene	ND		0.0250	1	05/15/2021 05:07	WG1670942
Isopropylbenzene	ND		0.00250	1	05/15/2021 05:07	WG1670942
p-Isopropyltoluene	ND		0.00500	1	05/15/2021 05:07	WG1670942
2-Butanone (MEK)	ND		0.100	1	05/15/2021 05:07	WG1670942
Methylene Chloride	ND		0.0250	1	05/15/2021 05:07	WG1670942
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	05/15/2021 05:07	WG1670942
Methyl tert-butyl ether	ND		0.00100	1	05/15/2021 05:07	WG1670942
Naphthalene	ND		0.0125	1	05/16/2021 23:19	WG1671584
n-Propylbenzene	ND		0.00500	1	05/15/2021 05:07	WG1670942
Styrene	ND		0.0125	1	05/15/2021 05:07	WG1670942
1,1,1,2-Tetrachloroethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
1,1,2,2-Tetrachloroethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
Tetrachloroethene	ND		0.00250	1	05/15/2021 05:07	WG1670942
Toluene	ND		0.00500	1	05/15/2021 05:07	WG1670942
1,2,3-Trichlorobenzene	ND		0.0125	1	05/15/2021 05:07	WG1670942
1,2,4-Trichlorobenzene	ND		0.0125	1	05/15/2021 05:07	WG1670942
1,1,1-Trichloroethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
1,1,2-Trichloroethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
Trichloroethene	ND		0.00100	1	05/15/2021 05:07	WG1670942
Trichlorofluoromethane	ND		0.00250	1	05/15/2021 05:07	WG1670942
1,2,3-Trichloropropane	ND		0.0125	1	05/15/2021 05:07	WG1670942
1,2,4-Trimethylbenzene	ND		0.00500	1	05/15/2021 05:07	WG1670942

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trimethylbenzene	ND	J4	0.00500	1	05/15/2021 05:07	WG1670942
1,3,5-Trimethylbenzene	ND		0.00500	1	05/15/2021 05:07	WG1670942
Vinyl chloride	ND		0.00250	1	05/15/2021 05:07	WG1670942
Xylenes, Total	ND		0.00650	1	05/15/2021 05:07	WG1670942
(S) Toluene-d8	104		75.0-131		05/15/2021 05:07	WG1670942
(S) Toluene-d8	110		75.0-131		05/16/2021 23:19	WG1671584
(S) 4-Bromofluorobenzene	102		67.0-138		05/15/2021 05:07	WG1670942
(S) 4-Bromofluorobenzene	97.6		67.0-138		05/16/2021 23:19	WG1671584
(S) 1,2-Dichloroethane-d4	94.8		70.0-130		05/15/2021 05:07	WG1670942
(S) 1,2-Dichloroethane-d4	111		70.0-130		05/16/2021 23:19	WG1671584

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	13.3		4.00	1	05/18/2021 13:38	WG1671476
C28-C36 Motor Oil Range	8.91		4.00	1	05/18/2021 13:38	WG1671476
(S) o-Terphenyl	57.6		18.0-148		05/18/2021 13:38	WG1671476

## 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	05/15/2021 12:34	WG1671063
Acenaphthene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Acenaphthylene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Benzo(a)anthracene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Benzo(a)pyrene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Benzo(b)fluoranthene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Benzo(g,h,i)perylene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Benzo(k)fluoranthene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Chrysene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Dibenz(a,h)anthracene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Fluoranthene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Fluorene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Naphthalene	ND		0.0200	1	05/15/2021 12:34	WG1671063
Phenanthrene	ND		0.00600	1	05/15/2021 12:34	WG1671063
Pyrene	ND		0.00600	1	05/15/2021 12:34	WG1671063
1-Methylnaphthalene	ND		0.0200	1	05/15/2021 12:34	WG1671063
2-Methylnaphthalene	ND		0.0200	1	05/15/2021 12:34	WG1671063
2-Chloronaphthalene	ND		0.0200	1	05/15/2021 12:34	WG1671063
(S) p-Terphenyl-d14	78.7		23.0-120		05/15/2021 12:34	WG1671063
(S) Nitrobenzene-d5	56.6		14.0-149		05/15/2021 12:34	WG1671063
(S) 2-Fluorobiphenyl	68.1		34.0-125		05/15/2021 12:34	WG1671063

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	4.20		1	05/26/2021 13:59	WG1669026

## 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	05/15/2021 15:26	WG1670701

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.98	T8	1	05/18/2021 10:20	WG1672335

## Sample Narrative:

L1351085-02 WG1672335: 7.98 at 22.7C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	617		10.0	1	05/18/2021 08:08	WG1669177

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.47		2.00	1	05/20/2021 08:28	WG1671421
Barium	356		0.500	1	05/20/2021 08:28	WG1671421
Cadmium	ND		0.500	1	05/20/2021 08:28	WG1671421
Copper	15.8		2.00	1	05/20/2021 08:28	WG1671421
Lead	11.7		0.500	1	05/20/2021 08:28	WG1671421
Nickel	19.6		2.00	1	05/20/2021 08:28	WG1671421
Selenium	ND		2.00	1	05/20/2021 08:28	WG1671421
Silver	ND		1.00	1	05/20/2021 08:28	WG1671421
Zinc	43.1		5.00	1	05/20/2021 08:28	WG1671421

## Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.302		0.200	1	05/21/2021 22:39	WG1669024

## 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	ND		0.100	1	05/14/2021 12:55	WG1670226
(S) a,a,a-Trifluorotoluene(FID)	91.9		77.0-120		05/14/2021 12:55	WG1670226

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	05/15/2021 05:26	WG1670942
Acrylonitrile	ND		0.0125	1	05/15/2021 05:26	WG1670942
Benzene	ND		0.00100	1	05/15/2021 05:26	WG1670942
Bromobenzene	ND		0.0125	1	05/15/2021 05:26	WG1670942
Bromodichloromethane	ND		0.00250	1	05/15/2021 05:26	WG1670942

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Bromoform	ND		0.0250	1	05/15/2021 05:26	WG1670942
Bromomethane	ND		0.0125	1	05/15/2021 05:26	WG1670942
n-Butylbenzene	ND		0.0125	1	05/15/2021 05:26	WG1670942
sec-Butylbenzene	ND		0.0125	1	05/15/2021 05:26	WG1670942
tert-Butylbenzene	ND		0.00500	1	05/15/2021 05:26	WG1670942
Carbon tetrachloride	ND		0.00500	1	05/15/2021 05:26	WG1670942
Chlorobenzene	ND		0.00250	1	05/15/2021 05:26	WG1670942
Chlorodibromomethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
Chloroethane	ND		0.00500	1	05/15/2021 05:26	WG1670942
Chloroform	ND		0.00250	1	05/15/2021 05:26	WG1670942
Chloromethane	ND		0.0125	1	05/15/2021 05:26	WG1670942
2-Chlorotoluene	ND		0.00250	1	05/15/2021 05:26	WG1670942
4-Chlorotoluene	ND	J4	0.00500	1	05/15/2021 05:26	WG1670942
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	05/15/2021 05:26	WG1670942
1,2-Dibromoethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
Dibromomethane	ND		0.00500	1	05/15/2021 05:26	WG1670942
1,2-Dichlorobenzene	ND		0.00500	1	05/15/2021 05:26	WG1670942
1,3-Dichlorobenzene	ND		0.00500	1	05/15/2021 05:26	WG1670942
1,4-Dichlorobenzene	ND		0.00500	1	05/15/2021 05:26	WG1670942
Dichlorodifluoromethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
1,1-Dichloroethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
1,2-Dichloroethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
1,1-Dichloroethene	ND		0.00250	1	05/15/2021 05:26	WG1670942
cis-1,2-Dichloroethene	ND		0.00250	1	05/15/2021 05:26	WG1670942
trans-1,2-Dichloroethene	ND		0.00500	1	05/15/2021 05:26	WG1670942
1,2-Dichloropropane	ND		0.00500	1	05/15/2021 05:26	WG1670942
1,1-Dichloropropene	ND		0.00250	1	05/15/2021 05:26	WG1670942
1,3-Dichloropropane	ND		0.00500	1	05/15/2021 05:26	WG1670942
cis-1,3-Dichloropropene	ND		0.00250	1	05/15/2021 05:26	WG1670942
trans-1,3-Dichloropropene	ND		0.00500	1	05/15/2021 05:26	WG1670942
2,2-Dichloropropane	ND		0.00250	1	05/15/2021 05:26	WG1670942
Di-isopropyl ether	ND		0.00100	1	05/15/2021 05:26	WG1670942
Ethylbenzene	ND		0.00250	1	05/15/2021 05:26	WG1670942
Hexachloro-1,3-butadiene	ND		0.0250	1	05/15/2021 05:26	WG1670942
Isopropylbenzene	ND		0.00250	1	05/15/2021 05:26	WG1670942
p-Isopropyltoluene	ND		0.00500	1	05/15/2021 05:26	WG1670942
2-Butanone (MEK)	ND		0.100	1	05/15/2021 05:26	WG1670942
Methylene Chloride	ND		0.0250	1	05/15/2021 05:26	WG1670942
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	05/15/2021 05:26	WG1670942
Methyl tert-butyl ether	ND		0.00100	1	05/15/2021 05:26	WG1670942
Naphthalene	ND		0.0125	1	05/15/2021 05:26	WG1670942
n-Propylbenzene	ND		0.00500	1	05/15/2021 05:26	WG1670942
Styrene	ND		0.0125	1	05/15/2021 05:26	WG1670942
1,1,1,2-Tetrachloroethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
1,1,2,2-Tetrachloroethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
Tetrachloroethene	ND		0.00250	1	05/15/2021 05:26	WG1670942
Toluene	ND		0.00500	1	05/15/2021 05:26	WG1670942
1,2,3-Trichlorobenzene	ND		0.0125	1	05/15/2021 05:26	WG1670942
1,2,4-Trichlorobenzene	ND		0.0125	1	05/15/2021 05:26	WG1670942
1,1,1-Trichloroethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
1,1,2-Trichloroethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
Trichloroethene	ND		0.00100	1	05/15/2021 05:26	WG1670942
Trichlorofluoromethane	ND		0.00250	1	05/15/2021 05:26	WG1670942
1,2,3-Trichloropropane	ND		0.0125	1	05/15/2021 05:26	WG1670942
1,2,4-Trimethylbenzene	ND		0.00500	1	05/15/2021 05:26	WG1670942

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trimethylbenzene	ND	J4	0.00500	1	05/15/2021 05:26	WG1670942
1,3,5-Trimethylbenzene	ND		0.00500	1	05/15/2021 05:26	WG1670942
Vinyl chloride	ND		0.00250	1	05/15/2021 05:26	WG1670942
Xylenes, Total	ND		0.00650	1	05/15/2021 05:26	WG1670942
(S) Toluene-d8	105		75.0-131		05/15/2021 05:26	WG1670942
(S) 4-Bromofluorobenzene	102		67.0-138		05/15/2021 05:26	WG1670942
(S) 1,2-Dichloroethane-d4	94.3		70.0-130		05/15/2021 05:26	WG1670942

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	12.6		4.00	1	05/18/2021 01:39	WG1671476
C28-C36 Motor Oil Range	6.76		4.00	1	05/18/2021 01:39	WG1671476
(S) o-Terphenyl	76.7		18.0-148		05/18/2021 01:39	WG1671476

## 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	05/15/2021 12:54	WG1671063
Acenaphthene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Acenaphthylene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Benzo(a)anthracene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Benzo(a)pyrene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Benzo(b)fluoranthene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Benzo(g,h,i)perylene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Benzo(k)fluoranthene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Chrysene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Dibenz(a,h)anthracene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Fluoranthene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Fluorene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Naphthalene	ND		0.0200	1	05/15/2021 12:54	WG1671063
Phenanthrene	ND		0.00600	1	05/15/2021 12:54	WG1671063
Pyrene	ND		0.00600	1	05/15/2021 12:54	WG1671063
1-Methylnaphthalene	ND		0.0200	1	05/15/2021 12:54	WG1671063
2-Methylnaphthalene	ND		0.0200	1	05/15/2021 12:54	WG1671063
2-Chloronaphthalene	ND		0.0200	1	05/15/2021 12:54	WG1671063
(S) p-Terphenyl-d14	80.6		23.0-120		05/15/2021 12:54	WG1671063
(S) Nitrobenzene-d5	51.7		14.0-149		05/15/2021 12:54	WG1671063
(S) 2-Fluorobiphenyl	65.6		34.0-125		05/15/2021 12:54	WG1671063

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	4.24		1	05/26/2021 14:02	WG1669026

## 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	05/18/2021 21:57	WG1671320

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.00	T8	1	05/18/2021 10:20	WG1672335

## Sample Narrative:

L1351085-03 WG1672335: 8 at 22.7C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	508		10.0	1	05/18/2021 08:08	WG1669177

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.10		2.00	1	05/20/2021 08:31	WG1671421
Barium	395		0.500	1	05/20/2021 08:31	WG1671421
Cadmium	ND		0.500	1	05/20/2021 08:31	WG1671421
Copper	16.5		2.00	1	05/20/2021 08:31	WG1671421
Lead	11.3		0.500	1	05/20/2021 08:31	WG1671421
Nickel	19.7		2.00	1	05/20/2021 08:31	WG1671421
Selenium	ND		2.00	1	05/20/2021 08:31	WG1671421
Silver	ND		1.00	1	05/20/2021 08:31	WG1671421
Zinc	46.1		5.00	1	05/20/2021 08:31	WG1671421

## Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.297		0.200	1	05/21/2021 22:47	WG1669024

## 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	ND		0.101	1.01	05/14/2021 13:17	WG1670226
(S) a,a,a-Trifluorotoluene(FID)	91.8		77.0-120		05/14/2021 13:17	WG1670226

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	05/15/2021 05:45	WG1670942
Acrylonitrile	ND		0.0125	1	05/15/2021 05:45	WG1670942
Benzene	ND		0.00100	1	05/15/2021 05:45	WG1670942
Bromobenzene	ND		0.0125	1	05/15/2021 05:45	WG1670942
Bromodichloromethane	ND		0.00250	1	05/15/2021 05:45	WG1670942

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Bromoform	ND		0.0250	1	05/15/2021 05:45	WG1670942
Bromomethane	ND		0.0125	1	05/15/2021 05:45	WG1670942
n-Butylbenzene	ND		0.0125	1	05/15/2021 05:45	WG1670942
sec-Butylbenzene	ND		0.0125	1	05/15/2021 05:45	WG1670942
tert-Butylbenzene	ND		0.00500	1	05/15/2021 05:45	WG1670942
Carbon tetrachloride	ND		0.00500	1	05/15/2021 05:45	WG1670942
Chlorobenzene	ND		0.00250	1	05/15/2021 05:45	WG1670942
Chlorodibromomethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
Chloroethane	ND		0.00500	1	05/15/2021 05:45	WG1670942
Chloroform	ND		0.00250	1	05/15/2021 05:45	WG1670942
Chloromethane	ND		0.0125	1	05/15/2021 05:45	WG1670942
2-Chlorotoluene	ND		0.00250	1	05/15/2021 05:45	WG1670942
4-Chlorotoluene	ND	J4	0.00500	1	05/15/2021 05:45	WG1670942
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	05/15/2021 05:45	WG1670942
1,2-Dibromoethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
Dibromomethane	ND		0.00500	1	05/15/2021 05:45	WG1670942
1,2-Dichlorobenzene	ND		0.00500	1	05/15/2021 05:45	WG1670942
1,3-Dichlorobenzene	ND		0.00500	1	05/15/2021 05:45	WG1670942
1,4-Dichlorobenzene	ND		0.00500	1	05/15/2021 05:45	WG1670942
Dichlorodifluoromethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
1,1-Dichloroethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
1,2-Dichloroethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
1,1-Dichloroethene	ND		0.00250	1	05/15/2021 05:45	WG1670942
cis-1,2-Dichloroethene	ND		0.00250	1	05/15/2021 05:45	WG1670942
trans-1,2-Dichloroethene	ND		0.00500	1	05/15/2021 05:45	WG1670942
1,2-Dichloropropane	ND		0.00500	1	05/15/2021 05:45	WG1670942
1,1-Dichloropropene	ND		0.00250	1	05/15/2021 05:45	WG1670942
1,3-Dichloropropane	ND		0.00500	1	05/15/2021 05:45	WG1670942
cis-1,3-Dichloropropene	ND		0.00250	1	05/15/2021 05:45	WG1670942
trans-1,3-Dichloropropene	ND		0.00500	1	05/15/2021 05:45	WG1670942
2,2-Dichloropropane	ND		0.00250	1	05/15/2021 05:45	WG1670942
Di-isopropyl ether	ND		0.00100	1	05/15/2021 05:45	WG1670942
Ethylbenzene	ND		0.00250	1	05/15/2021 05:45	WG1670942
Hexachloro-1,3-butadiene	ND		0.0250	1	05/15/2021 05:45	WG1670942
Isopropylbenzene	ND		0.00250	1	05/15/2021 05:45	WG1670942
p-Isopropyltoluene	ND		0.00500	1	05/15/2021 05:45	WG1670942
2-Butanone (MEK)	ND		0.100	1	05/15/2021 05:45	WG1670942
Methylene Chloride	ND		0.0250	1	05/15/2021 05:45	WG1670942
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	05/15/2021 05:45	WG1670942
Methyl tert-butyl ether	ND		0.00100	1	05/15/2021 05:45	WG1670942
Naphthalene	ND		0.0125	1	05/15/2021 05:45	WG1670942
n-Propylbenzene	ND		0.00500	1	05/15/2021 05:45	WG1670942
Styrene	ND		0.0125	1	05/15/2021 05:45	WG1670942
1,1,1,2-Tetrachloroethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
1,1,2,2-Tetrachloroethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
Tetrachloroethene	ND		0.00250	1	05/15/2021 05:45	WG1670942
Toluene	ND		0.00500	1	05/15/2021 05:45	WG1670942
1,2,3-Trichlorobenzene	ND		0.0125	1	05/15/2021 05:45	WG1670942
1,2,4-Trichlorobenzene	ND		0.0125	1	05/15/2021 05:45	WG1670942
1,1,1-Trichloroethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
1,1,2-Trichloroethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
Trichloroethene	ND		0.00100	1	05/15/2021 05:45	WG1670942
Trichlorofluoromethane	ND		0.00250	1	05/15/2021 05:45	WG1670942
1,2,3-Trichloropropane	ND		0.0125	1	05/15/2021 05:45	WG1670942
1,2,4-Trimethylbenzene	ND		0.00500	1	05/15/2021 05:45	WG1670942

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trimethylbenzene	ND	J4	0.00500	1	05/15/2021 05:45	WG1670942
1,3,5-Trimethylbenzene	ND		0.00500	1	05/15/2021 05:45	WG1670942
Vinyl chloride	ND		0.00250	1	05/15/2021 05:45	WG1670942
Xylenes, Total	ND		0.00650	1	05/15/2021 05:45	WG1670942
(S) Toluene-d8	105		75.0-131		05/15/2021 05:45	WG1670942
(S) 4-Bromofluorobenzene	103		67.0-138		05/15/2021 05:45	WG1670942
(S) 1,2-Dichloroethane-d4	95.6		70.0-130		05/15/2021 05:45	WG1670942

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	28.2		4.00	1	05/17/2021 22:34	WG1671600
C28-C36 Motor Oil Range	32.8		4.00	1	05/17/2021 22:34	WG1671600
(S) o-Terphenyl	39.0		18.0-148		05/17/2021 22:34	WG1671600

## 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	05/15/2021 13:14	WG1671063
Acenaphthene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Acenaphthylene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Benzo(a)anthracene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Benzo(a)pyrene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Benzo(b)fluoranthene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Benzo(g,h,i)perylene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Benzo(k)fluoranthene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Chrysene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Dibenz(a,h)anthracene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Fluoranthene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Fluorene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Naphthalene	ND		0.0200	1	05/15/2021 13:14	WG1671063
Phenanthrene	ND		0.00600	1	05/15/2021 13:14	WG1671063
Pyrene	ND		0.00600	1	05/15/2021 13:14	WG1671063
1-Methylnaphthalene	ND		0.0200	1	05/15/2021 13:14	WG1671063
2-Methylnaphthalene	ND		0.0200	1	05/15/2021 13:14	WG1671063
2-Chloronaphthalene	ND		0.0200	1	05/15/2021 13:14	WG1671063
(S) p-Terphenyl-d14	85.3		23.0-120		05/15/2021 13:14	WG1671063
(S) Nitrobenzene-d5	57.8		14.0-149		05/15/2021 13:14	WG1671063
(S) 2-Fluorobiphenyl	70.5		34.0-125		05/15/2021 13:14	WG1671063

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	4.75		1	05/26/2021 14:05	WG1669026

## 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	05/18/2021 21:57	WG1671320

## Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.02	T8	1	05/18/2021 10:20	WG1672335

## Sample Narrative:

L1351085-04 WG1672335: 8.02 at 22.6C

## Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	615		10.0	1	05/18/2021 08:08	WG1669177

## Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	2.80		2.00	1	05/20/2021 08:34	WG1671421
Barium	495		0.500	1	05/20/2021 08:34	WG1671421
Cadmium	ND		0.500	1	05/20/2021 08:34	WG1671421
Copper	15.9		2.00	1	05/20/2021 08:34	WG1671421
Lead	12.0		0.500	1	05/20/2021 08:34	WG1671421
Nickel	19.3		2.00	1	05/20/2021 08:34	WG1671421
Selenium	ND		2.00	1	05/20/2021 08:34	WG1671421
Silver	ND		1.00	1	05/20/2021 08:34	WG1671421
Zinc	48.3		5.00	1	05/20/2021 08:34	WG1671421

## Metals (ICP) by Method 6010B-NE493 Ch 2

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	ND		1.00	5	05/21/2021 22:50	WG1669024

## 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	ND		0.100	1	05/14/2021 13:39	WG1670226
(S) a,a,a-Trifluorotoluene(FID)	92.5		77.0-120		05/14/2021 13:39	WG1670226

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Acetone	ND		0.0500	1	05/15/2021 06:04	WG1670942
Acrylonitrile	ND		0.0125	1	05/15/2021 06:04	WG1670942
Benzene	ND	J3	0.00100	1	05/15/2021 06:04	WG1670942
Bromobenzene	ND		0.0125	1	05/15/2021 06:04	WG1670942
Bromodichloromethane	ND		0.00250	1	05/15/2021 06:04	WG1670942

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Bromoform	ND		0.0250	1	05/15/2021 06:04	WG1670942
Bromomethane	ND	J3	0.0125	1	05/15/2021 06:04	WG1670942
n-Butylbenzene	ND		0.0125	1	05/15/2021 06:04	WG1670942
sec-Butylbenzene	ND	J3	0.0125	1	05/15/2021 06:04	WG1670942
tert-Butylbenzene	ND	J3	0.00500	1	05/15/2021 06:04	WG1670942
Carbon tetrachloride	ND	J3	0.00500	1	05/15/2021 06:04	WG1670942
Chlorobenzene	ND		0.00250	1	05/15/2021 06:04	WG1670942
Chlorodibromomethane	ND		0.00250	1	05/15/2021 06:04	WG1670942
Chloroethane	ND	J3	0.00500	1	05/15/2021 06:04	WG1670942
Chloroform	ND		0.00250	1	05/15/2021 06:04	WG1670942
Chloromethane	ND	J3	0.0125	1	05/15/2021 06:04	WG1670942
2-Chlorotoluene	ND		0.00250	1	05/15/2021 06:04	WG1670942
4-Chlorotoluene	ND	J4	0.00500	1	05/15/2021 06:04	WG1670942
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	05/15/2021 06:04	WG1670942
1,2-Dibromoethane	ND		0.00250	1	05/15/2021 06:04	WG1670942
Dibromomethane	ND		0.00500	1	05/15/2021 06:04	WG1670942
1,2-Dichlorobenzene	ND		0.00500	1	05/15/2021 06:04	WG1670942
1,3-Dichlorobenzene	ND		0.00500	1	05/15/2021 06:04	WG1670942
1,4-Dichlorobenzene	ND		0.00500	1	05/15/2021 06:04	WG1670942
Dichlorodifluoromethane	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
1,1-Dichloroethane	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
1,2-Dichloroethane	ND		0.00250	1	05/15/2021 06:04	WG1670942
1,1-Dichloroethene	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
cis-1,2-Dichloroethene	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
trans-1,2-Dichloroethene	ND	J3	0.00500	1	05/15/2021 06:04	WG1670942
1,2-Dichloropropane	ND		0.00500	1	05/15/2021 06:04	WG1670942
1,1-Dichloropropene	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
1,3-Dichloropropane	ND		0.00500	1	05/15/2021 06:04	WG1670942
cis-1,3-Dichloropropene	ND		0.00250	1	05/15/2021 06:04	WG1670942
trans-1,3-Dichloropropene	ND		0.00500	1	05/15/2021 06:04	WG1670942
2,2-Dichloropropane	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
Di-isopropyl ether	ND		0.00100	1	05/15/2021 06:04	WG1670942
Ethylbenzene	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
Hexachloro-1,3-butadiene	ND		0.0250	1	05/15/2021 06:04	WG1670942
Isopropylbenzene	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
p-Isopropyltoluene	ND		0.00500	1	05/15/2021 06:04	WG1670942
2-Butanone (MEK)	ND		0.100	1	05/15/2021 06:04	WG1670942
Methylene Chloride	ND		0.0250	1	05/15/2021 06:04	WG1670942
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	05/15/2021 06:04	WG1670942
Methyl tert-butyl ether	ND		0.00100	1	05/15/2021 06:04	WG1670942
Naphthalene	ND		0.0125	1	05/15/2021 06:04	WG1670942
n-Propylbenzene	ND	J3	0.00500	1	05/15/2021 06:04	WG1670942
Styrene	ND		0.0125	1	05/15/2021 06:04	WG1670942
1,1,1,2-Tetrachloroethane	ND		0.00250	1	05/15/2021 06:04	WG1670942
1,1,2,2-Tetrachloroethane	ND		0.00250	1	05/15/2021 06:04	WG1670942
1,1,2-Trichlorotrifluoroethane	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
Tetrachloroethene	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
Toluene	ND	J3	0.00500	1	05/15/2021 06:04	WG1670942
1,2,3-Trichlorobenzene	ND		0.0125	1	05/15/2021 06:04	WG1670942
1,2,4-Trichlorobenzene	ND		0.0125	1	05/15/2021 06:04	WG1670942
1,1,1-Trichloroethane	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
1,1,2-Trichloroethane	ND		0.00250	1	05/15/2021 06:04	WG1670942
Trichloroethene	ND	J3	0.00100	1	05/15/2021 06:04	WG1670942
Trichlorofluoromethane	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
1,2,3-Trichloropropane	ND		0.0125	1	05/15/2021 06:04	WG1670942
1,2,4-Trimethylbenzene	ND		0.00500	1	05/15/2021 06:04	WG1670942

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,2,3-Trimethylbenzene	ND	J4	0.00500	1	05/15/2021 06:04	WG1670942
1,3,5-Trimethylbenzene	ND		0.00500	1	05/15/2021 06:04	WG1670942
Vinyl chloride	ND	J3	0.00250	1	05/15/2021 06:04	WG1670942
Xylenes, Total	ND		0.00650	1	05/15/2021 06:04	WG1670942
(S) Toluene-d8	104		75.0-131		05/15/2021 06:04	WG1670942
(S) 4-Bromofluorobenzene	99.9		67.0-138		05/15/2021 06:04	WG1670942
(S) 1,2-Dichloroethane-d4	94.8		70.0-130		05/15/2021 06:04	WG1670942

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	18.4		4.00	1	05/18/2021 14:30	WG1671600
C28-C36 Motor Oil Range	14.9		4.00	1	05/18/2021 14:30	WG1671600
(S) o-Terphenyl	46.3		18.0-148		05/18/2021 14:30	WG1671600

## 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	05/15/2021 13:34	WG1671063
Acenaphthene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Acenaphthylene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Benzo(a)anthracene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Benzo(a)pyrene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Benzo(b)fluoranthene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Benzo(g,h,i)perylene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Benzo(k)fluoranthene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Chrysene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Dibenz(a,h)anthracene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Fluoranthene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Fluorene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Naphthalene	ND		0.0200	1	05/15/2021 13:34	WG1671063
Phenanthrene	ND		0.00600	1	05/15/2021 13:34	WG1671063
Pyrene	ND		0.00600	1	05/15/2021 13:34	WG1671063
1-Methylnaphthalene	ND		0.0200	1	05/15/2021 13:34	WG1671063
2-Methylnaphthalene	ND		0.0200	1	05/15/2021 13:34	WG1671063
2-Chloronaphthalene	ND		0.0200	1	05/15/2021 13:34	WG1671063
(S) p-Terphenyl-d14	78.9		23.0-120		05/15/2021 13:34	WG1671063
(S) Nitrobenzene-d5	54.0		14.0-149		05/15/2021 13:34	WG1671063
(S) 2-Fluorobiphenyl	66.3		34.0-125		05/15/2021 13:34	WG1671063

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3654859-1 05/15/21 14:47				
Analyte	MB Result mg/kg	<u>MB Qualifier</u>	MB MDL mg/kg	MB RDL mg/kg
Chromium,Hexavalent	U	0.640	2.00	

L1350393-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1350393-05 05/15/21 14:50 • (DUP) R3654859-3 05/15/21 14:59				
Analyte	Original Result mg/kg	DUP Result mg/kg	<u>DUP Qualifier</u>	DUP RPD Limits %
Chromium,Hexavalent	ND	ND	1 0.000	20

L1351085-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1351085-02 05/15/21 15:26 • (DUP) R3654859-8 05/15/21 15:27				
Analyte	Original Result mg/kg	DUP Result mg/kg	<u>DUP Qualifier</u>	DUP RPD Limits %
Chromium,Hexavalent	ND	ND	1 0.000	20

Laboratory Control Sample (LCS)

(LCS) R3654859-2 05/15/21 14:48				
Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	<u>LCS Qualifier</u>
Chromium,Hexavalent	24.0	22.7	94.4	80.0-120

L1350393-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1350393-06 05/15/21 15:00 • (MS) R3654859-4 05/15/21 15:01 • (MSD) R3654859-5 05/15/21 15:01												
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 %
Chromium,Hexavalent	20.0	ND	2.38	ND	11.9	8.62	1	75.0-125	J6	J3 J6	31.8	20

L1350393-06 Original Sample (OS) • Matrix Spike (MS)

(OS) L1350393-06 05/15/21 15:00 • (MS) R3654859-6 05/15/21 15:04					
Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	<u>MS Qualifier</u>
Chromium,Hexavalent	623	ND	515	82.7	50 75.0-125

Method Blank (MB)

(MB) R3656116-1 05/18/21 21:54				
	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Chromium,Hexavalent	U		0.640	2.00

L1351250-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1351250-02 05/18/21 21:59 • (DUP) R3656116-8 05/18/21 21:59				
	Original Result	DUP Result	Dilution	DUP RPD
Analyte	mg/kg	mg/kg		%
Chromium,Hexavalent	ND	ND	1	0.000
				DUP RPD Limits
				%
				20

Laboratory Control Sample (LCS)

(LCS) R3656116-2 05/18/21 21:54				
	Spike Amount	LCS Result	LCS Rec.	Rec. Limits
Analyte	mg/kg	mg/kg	%	%
Chromium,Hexavalent	24.0	25.9	108	80.0-120

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L1351085-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1351085-01 05/18/21 10:20 • (DUP) R3655804-2 05/18/21 10:20

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
pH	8.12	8.11	1	0.123		1

Sample Narrative:

OS: 8.12 at 22.6C  
DUP: 8.11 at 22.7C

L1351256-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1351256-01 05/18/21 10:20 • (DUP) R3655804-3 05/18/21 10:20

Analyte	Original Result su	DUP Result su	Dilution	DUP RPD %	<u>DUP Qualifier</u>	DUP RPD Limits %
pH	8.07	8.06	1	0.124		1

Sample Narrative:

OS: 8.07 at 22.6C  
DUP: 8.06 at 22.5C

Laboratory Control Sample (LCS)

(LCS) R3655804-1 05/18/21 10:20

Analyte	Spike Amount su	LCS Result su	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
pH	10.0	10.1	101	99.0-101	

Sample Narrative:

LCS: 10.07 at 22.2C

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3655625-1 05/18/21 08:08				
Analyte	MB Result umhos/cm	<u>MB Qualifier</u>	MB MDL umhos/cm	MB RDL umhos/cm
Specific Conductance	U		10.0	10.0

L1351085-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1351085-01 05/18/21 08:08 • (DUP) R3655625-3 05/18/21 08:08				
Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %
Specific Conductance	454	440	1	3.13
				DUP RPD Limits %
				20

L1351256-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1351256-01 05/18/21 08:08 • (DUP) R3655625-4 05/18/21 08:08				
Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %
Specific Conductance	244	247	1	1.55
				DUP RPD Limits %
				20

Laboratory Control Sample (LCS)

(LCS) R3655625-2 05/18/21 08:08				
Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %
Specific Conductance	268	273	102	85.0-115
				<u>LCS Qualifier</u>

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3657045-1 05/20/21 07:53

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.518	2.00
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Copper	U		0.400	2.00
Lead	U		0.208	0.500
Nickel	U		0.132	2.00
Selenium	U		0.764	2.00
Silver	U		0.127	1.00
Zinc	U		0.832	5.00

Laboratory Control Sample (LCS)

(LCS) R3657045-2 05/20/21 07:56

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	97.2	97.2	80.0-120	
Barium	100	98.2	98.2	80.0-120	
Cadmium	100	94.9	94.9	80.0-120	
Copper	100	95.7	95.7	80.0-120	
Lead	100	96.0	96.0	80.0-120	
Nickel	100	98.8	98.8	80.0-120	
Selenium	100	95.4	95.4	80.0-120	
Silver	20.0	18.4	92.0	80.0-120	
Zinc	100	96.9	96.9	80.0-120	

L1352401-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1352401-01 05/20/21 07:59 • (MS) R3657045-5 05/20/21 08:08 • (MSD) R3657045-6 05/20/21 08:11

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	11.4	101	100	89.8	88.7	1	75.0-125			1.03	20
Barium	100	1000	451	859	0.000	0.000	1	75.0-125	V	J3 V	62.3	20
Cadmium	100	ND	91.7	88.9	91.5	88.7	1	75.0-125			3.07	20
Copper	100	15.4	111	105	95.2	89.5	1	75.0-125			5.24	20
Lead	100	20.5	109	103	88.2	82.7	1	75.0-125			5.24	20
Nickel	100	23.7	121	120	97.0	96.6	1	75.0-125			0.352	20
Selenium	100	ND	87.4	85.4	87.4	85.4	1	75.0-125			2.33	20
Silver	20.0	ND	18.3	17.5	91.5	87.4	1	75.0-125			4.53	20
Zinc	100	62.3	149	150	86.6	87.8	1	75.0-125			0.858	20

Method Blank (MB)

(MB) R3657861-1 05/21/21 22:14					
Analyte	MB Result mg/l	<u>MB Qualifier</u>	MB MDL mg/l	MB RDL mg/l	
Hot Water Sol. Boron	U		0.0167	0.200	

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

(LCS) R3657861-2 05/21/21 22:17 • (LCSD) R3657861-3 05/21/21 22:20									
Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD Limits %
Hot Water Sol. Boron	1.00	0.970	0.959	97.0	95.9	80.0-120		1.12	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3655948-2 05/14/21 05:12				
Analyte	MB Result mg/kg	<u>MB Qualifier</u>	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	U	0.0217	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	98.1			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3655948-1 05/14/21 04:28				
Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %
TPH (GC/FID) Low Fraction	5.50	6.15	112	72.0-127
(S) a,a,a-Trifluorotoluene(FID)		116		77.0-120

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

Method Blank (MB)

(MB) R3655014-2 05/14/21 21:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acetone	U		0.0365	0.0500
Acrylonitrile	U		0.00361	0.0125
Benzene	U		0.000467	0.00100
Bromobenzene	U		0.000900	0.0125
Bromodichloromethane	U		0.000725	0.00250
Bromoform	U		0.00117	0.0250
Bromomethane	U		0.00197	0.0125
n-Butylbenzene	U		0.00525	0.0125
sec-Butylbenzene	U		0.00288	0.0125
tert-Butylbenzene	U		0.00195	0.00500
Carbon tetrachloride	U		0.000898	0.00500
Chlorobenzene	U		0.000210	0.00250
Chlorodibromomethane	U		0.000612	0.00250
Chloroethane	U		0.00170	0.00500
Chloroform	U		0.00103	0.00250
Chloromethane	U		0.00435	0.0125
2-Chlorotoluene	U		0.000865	0.00250
4-Chlorotoluene	U		0.000450	0.00500
1,2-Dibromo-3-Chloropropane	U		0.00390	0.0250
1,2-Dibromoethane	U		0.000648	0.00250
Dibromomethane	U		0.000750	0.00500
1,2-Dichlorobenzene	U		0.000425	0.00500
1,3-Dichlorobenzene	U		0.000600	0.00500
1,4-Dichlorobenzene	U		0.000700	0.00500
Dichlorodifluoromethane	U		0.00161	0.00250
1,1-Dichloroethane	U		0.000491	0.00250
1,2-Dichloroethane	U		0.000649	0.00250
1,1-Dichloroethene	U		0.000606	0.00250
cis-1,2-Dichloroethene	U		0.000734	0.00250
trans-1,2-Dichloroethene	U		0.00104	0.00500
1,2-Dichloropropane	U		0.00142	0.00500
1,1-Dichloropropene	U		0.000809	0.00250
1,3-Dichloropropane	U		0.000501	0.00500
cis-1,3-Dichloropropene	U		0.000757	0.00250
trans-1,3-Dichloropropene	U		0.00114	0.00500
2,2-Dichloropropane	U		0.00138	0.00250
Di-isopropyl ether	U		0.000410	0.00100
Ethylbenzene	U		0.000737	0.00250
Hexachloro-1,3-butadiene	U		0.00600	0.0250
Isopropylbenzene	U		0.000425	0.00250

Method Blank (MB)

(MB) R3655014-2 05/14/21 21:01

Analyte	MB Result mg/kg	<u>MB Qualifier</u>	MB MDL mg/kg	MB RDL mg/kg
p-Isopropyltoluene	U		0.00255	0.00500
2-Butanone (MEK)	U		0.0635	0.100
Methylene Chloride	U		0.00664	0.0250
4-Methyl-2-pentanone (MIBK)	U		0.00228	0.0250
Methyl tert-butyl ether	U		0.000350	0.00100
Naphthalene	U		0.00488	0.0125
n-Propylbenzene	U		0.000950	0.00500
Styrene	U		0.000229	0.0125
1,1,1,2-Tetrachloroethane	U		0.000948	0.00250
1,1,2,2-Tetrachloroethane	U		0.000695	0.00250
Tetrachloroethene	U		0.000896	0.00250
Toluene	U		0.00130	0.00500
1,1,2-Trichlorotrifluoroethane	U		0.000754	0.00250
1,2,3-Trichlorobenzene	U		0.00733	0.0125
1,2,4-Trichlorobenzene	U		0.00440	0.0125
1,1,1-Trichloroethane	U		0.000923	0.00250
1,1,2-Trichloroethane	U		0.000597	0.00250
Trichloroethene	U		0.000584	0.00100
Trichlorofluoromethane	U		0.000827	0.00250
1,2,3-Trichloropropane	U		0.00162	0.0125
1,2,3-Trimethylbenzene	U		0.00158	0.00500
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
Vinyl chloride	U		0.00116	0.00250
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	103			75.0-131
(S) 4-Bromofluorobenzene	103			67.0-138
(S) 1,2-Dichloroethane-d4	101			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3655014-1 05/14/21 20:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Acetone	0.625	0.665	106	10.0-160	
Acrylonitrile	0.625	0.608	97.3	45.0-153	
Benzene	0.125	0.125	100	70.0-123	
Bromobenzene	0.125	0.119	95.2	73.0-121	
Bromodichloromethane	0.125	0.110	88.0	73.0-121	

Laboratory Control Sample (LCS)

(LCS) R3655014-1 05/14/21 20:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromoform	0.125	0.127	102	64.0-132	1Cp
Bromomethane	0.125	0.135	108	56.0-147	
n-Butylbenzene	0.125	0.107	85.6	68.0-135	
sec-Butylbenzene	0.125	0.109	87.2	74.0-130	2Tc
tert-Butylbenzene	0.125	0.108	86.4	75.0-127	
Carbon tetrachloride	0.125	0.132	106	66.0-128	3Ss
Chlorobenzene	0.125	0.120	96.0	76.0-128	4Cn
Chlorodibromomethane	0.125	0.124	99.2	74.0-127	
Chloroethane	0.125	0.106	84.8	61.0-134	5Sr
Chloroform	0.125	0.115	92.0	72.0-123	
Chloromethane	0.125	0.127	102	51.0-138	6Qc
2-Chlorotoluene	0.125	0.115	92.0	75.0-124	
4-Chlorotoluene	0.125	0.0866	69.3	75.0-124	7Gl
1,2-Dibromo-3-Chloropropane	0.125	0.118	94.4	59.0-130	
1,2-Dibromoethane	0.125	0.122	97.6	74.0-128	8Al
Dibromomethane	0.125	0.128	102	75.0-122	
1,2-Dichlorobenzene	0.125	0.117	93.6	76.0-124	9Sc
1,3-Dichlorobenzene	0.125	0.112	89.6	76.0-125	
1,4-Dichlorobenzene	0.125	0.111	88.8	77.0-121	
Dichlorodifluoromethane	0.125	0.112	89.6	43.0-156	
1,1-Dichloroethane	0.125	0.121	96.8	70.0-127	
1,2-Dichloroethane	0.125	0.116	92.8	65.0-131	
1,1-Dichloroethene	0.125	0.120	96.0	65.0-131	
cis-1,2-Dichloroethene	0.125	0.123	98.4	73.0-125	
trans-1,2-Dichloroethene	0.125	0.120	96.0	71.0-125	
1,2-Dichloropropane	0.125	0.120	96.0	74.0-125	
1,1-Dichloropropene	0.125	0.121	96.8	73.0-125	
1,3-Dichloropropane	0.125	0.121	96.8	80.0-125	
cis-1,3-Dichloropropene	0.125	0.119	95.2	76.0-127	
trans-1,3-Dichloropropene	0.125	0.116	92.8	73.0-127	
2,2-Dichloropropane	0.125	0.136	109	59.0-135	
Di-isopropyl ether	0.125	0.116	92.8	60.0-136	
Ethylbenzene	0.125	0.122	97.6	74.0-126	
Hexachloro-1,3-butadiene	0.125	0.128	102	57.0-150	
Isopropylbenzene	0.125	0.121	96.8	72.0-127	
p-Isopropyltoluene	0.125	0.111	88.8	72.0-133	
2-Butanone (MEK)	0.625	0.616	98.6	30.0-160	
Methylene Chloride	0.125	0.117	93.6	68.0-123	
4-Methyl-2-pentanone (MIBK)	0.625	0.625	100	56.0-143	
Methyl tert-butyl ether	0.125	0.116	92.8	66.0-132	



Laboratory Control Sample (LCS)

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

(LCS) R3655014-1 05/14/21 20:04									
Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>				
Naphthalene	0.125	0.110	88.0	59.0-130					
n-Propylbenzene	0.125	0.105	84.0	74.0-126					
Styrene	0.125	0.117	93.6	72.0-127					
1,1,1,2-Tetrachloroethane	0.125	0.137	110	74.0-129					
1,1,2,2-Tetrachloroethane	0.125	0.100	80.0	68.0-128					
Tetrachloroethene	0.125	0.134	107	70.0-136					
Toluene	0.125	0.120	96.0	75.0-121					
1,1,2-Trichlorotrifluoroethane	0.125	0.138	110	61.0-139					
1,2,3-Trichlorobenzene	0.125	0.118	94.4	59.0-139					
1,2,4-Trichlorobenzene	0.125	0.122	97.6	62.0-137					
1,1,1-Trichloroethane	0.125	0.125	100	69.0-126					
1,1,2-Trichloroethane	0.125	0.122	97.6	78.0-123					
Trichloroethene	0.125	0.132	106	76.0-126					
Trichlorofluoromethane	0.125	0.122	97.6	61.0-142					
1,2,3-Trichloropropane	0.125	0.112	89.6	67.0-129					
1,2,3-Trimethylbenzene	0.125	0.0834	66.7	74.0-124	<u>J4</u>				
1,2,4-Trimethylbenzene	0.125	0.105	84.0	70.0-126					
1,3,5-Trimethylbenzene	0.125	0.109	87.2	73.0-127					
Vinyl chloride	0.125	0.122	97.6	63.0-134					
Xylenes, Total	0.375	0.362	96.5	72.0-127					
(S) Toluene-d8			101	75.0-131					
(S) 4-Bromofluorobenzene			104	67.0-138					
(S) 1,2-Dichloroethane-d4			102	70.0-130					

L1351085-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1351085-04 05/15/21 06:04 • (MS) R3655014-3 05/15/21 07:01 • (MSD) R3655014-4 05/15/21 07:19												
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 %
Acetone	0.625	ND	0.410	0.371	65.6	59.4	1	10.0-160			9.99	40
Acrylonitrile	0.625	ND	0.536	0.496	85.8	79.4	1	10.0-160			7.75	40
Benzene	0.125	ND	0.0496	0.0767	39.7	61.4	1	10.0-149		J3	42.9	37
Bromobenzene	0.125	ND	0.0702	0.0849	56.2	67.9	1	10.0-156			19.0	38
Bromodichloromethane	0.125	ND	0.0584	0.0755	46.7	60.4	1	10.0-143			25.5	37
Bromoform	0.125	ND	0.0942	0.0963	75.4	77.0	1	10.0-146			2.20	36
Bromomethane	0.125	ND	0.0258	0.0462	20.6	37.0	1	10.0-149		J3	56.7	38
n-Butylbenzene	0.125	ND	0.0495	0.0717	39.6	57.4	1	10.0-160			36.6	40
sec-Butylbenzene	0.125	ND	0.0492	0.0777	39.4	62.2	1	10.0-159		J3	44.9	39
tert-Butylbenzene	0.125	ND	0.0485	0.0780	38.8	62.4	1	10.0-156		J3	46.6	39

L1351085-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1351085-04 05/15/21 06:04 • (MS) R3655014-3 05/15/21 07:01 • (MSD) R3655014-4 05/15/21 07:19

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 %	
									MS	Qualifier	MSD	Qualifier		RPD	Limits
Carbon tetrachloride	0.125	ND	0.0426	0.0789	34.1	63.1	1	10.0-145			J3		59.8	37	Cp
Chlorobenzene	0.125	ND	0.0570	0.0791	45.6	63.3	1	10.0-152					32.5	39	Tc
Chlorodibromomethane	0.125	ND	0.0805	0.0900	64.4	72.0	1	10.0-146					11.1	37	Ss
Chloroethane	0.125	ND	0.0182	0.0338	14.6	27.0	1	10.0-146			J3		60.0	40	Cn
Chloroform	0.125	ND	0.0514	0.0736	41.1	58.9	1	10.0-146					35.5	37	Sr
Chloromethane	0.125	ND	0.0355	0.0643	28.4	51.4	1	10.0-159			J3		57.7	37	Qc
2-Chlorotoluene	0.125	ND	0.0584	0.0819	46.7	65.5	1	10.0-159					33.5	38	Gl
4-Chlorotoluene	0.125	ND	0.0518	0.0719	41.4	57.5	1	10.0-155					32.5	39	Al
1,2-Dibromo-3-Chloropropane	0.125	ND	0.100	0.0876	80.0	70.1	1	10.0-151					13.2	39	Sc
1,2-Dibromoethane	0.125	ND	0.0900	0.0948	72.0	75.8	1	10.0-148					5.19	34	
Dibromomethane	0.125	ND	0.0765	0.0854	61.2	68.3	1	10.0-147					11.0	35	
1,2-Dichlorobenzene	0.125	ND	0.0716	0.0850	57.3	68.0	1	10.0-155					17.1	37	
1,3-Dichlorobenzene	0.125	ND	0.0604	0.0781	48.3	62.5	1	10.0-153					25.6	38	
1,4-Dichlorobenzene	0.125	ND	0.0626	0.0794	50.1	63.5	1	10.0-151					23.7	38	
Dichlorodifluoromethane	0.125	ND	0.0348	0.0767	27.8	61.4	1	10.0-160			J3		75.2	35	
1,1-Dichloroethane	0.125	ND	0.0482	0.0778	38.6	62.2	1	10.0-147			J3		47.0	37	
1,2-Dichloroethane	0.125	ND	0.0699	0.0795	55.9	63.6	1	10.0-148					12.9	35	
1,1-Dichloroethene	0.125	ND	0.0322	0.0619	25.8	49.5	1	10.0-155			J3		63.1	37	
cis-1,2-Dichloroethene	0.125	ND	0.0535	0.0797	42.8	63.8	1	10.0-149			J3		39.3	37	
trans-1,2-Dichloroethene	0.125	ND	0.0374	0.0652	29.9	52.2	1	10.0-150			J3		54.2	37	
1,2-Dichloropropane	0.125	ND	0.0651	0.0779	52.1	62.3	1	10.0-148					17.9	37	
1,1-Dichloropropene	0.125	ND	0.0370	0.0691	29.6	55.3	1	10.0-153			J3		60.5	35	
1,3-Dichloropropane	0.125	ND	0.0849	0.0925	67.9	74.0	1	10.0-154					8.57	35	
cis-1,3-Dichloropropene	0.125	ND	0.0638	0.0787	51.0	63.0	1	10.0-151					20.9	37	
trans-1,3-Dichloropropene	0.125	ND	0.0725	0.0878	58.0	70.2	1	10.0-148					19.1	37	
2,2-Dichloropropane	0.125	ND	0.0303	0.0559	24.2	44.7	1	10.0-138			J3		59.4	36	
Di-Isopropyl ether	0.125	ND	0.0652	0.0826	52.2	66.1	1	10.0-147					23.5	36	
Ethylbenzene	0.125	ND	0.0515	0.0762	41.2	61.0	1	10.0-160			J3		38.7	38	
Hexachloro-1,3-butadiene	0.125	ND	0.0747	0.103	59.8	82.4	1	10.0-160					31.9	40	
Isopropylbenzene	0.125	ND	0.0471	0.0750	37.7	60.0	1	10.0-155			J3		45.7	38	
p-Isopropyltoluene	0.125	ND	0.0512	0.0761	41.0	60.9	1	10.0-160					39.1	40	
2-Butanone (MEK)	0.625	ND	0.512	0.502	81.9	80.3	1	10.0-160					1.97	40	
Methylene Chloride	0.125	ND	0.0573	0.0761	45.8	60.9	1	10.0-141					28.2	37	
4-Methyl-2-pentanone (MIBK)	0.625	ND	0.539	0.529	86.2	84.6	1	10.0-160					1.87	35	
Methyl tert-butyl ether	0.125	ND	0.0906	0.0934	72.5	74.7	1	11.0-147					3.04	35	
Naphthalene	0.125	ND	0.0816	0.0886	65.3	70.9	1	10.0-160					8.23	36	
n-Propylbenzene	0.125	ND	0.0448	0.0705	35.8	56.4	1	10.0-158			J3		44.6	38	
Styrene	0.125	ND	0.0558	0.0747	44.6	59.8	1	10.0-160					29.0	40	
1,1,1,2-Tetrachloroethane	0.125	ND	0.0697	0.0868	55.8	69.4	1	10.0-149					21.9	39	
1,1,2,2-Tetrachloroethane	0.125	ND	0.0867	0.0909	69.4	72.7	1	10.0-160					4.73	35	

L1351085-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1351085-04 05/15/21 06:04 • (MS) R3655014-3 05/15/21 07:01 • (MSD) R3655014-4 05/15/21 07:19

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 %
Tetrachloroethene	0.125	ND	0.0443	0.0785	35.4	62.8	1	10.0-156		J3	55.7	39
Toluene	0.125	ND	0.0531	0.0784	42.5	62.7	1	10.0-156		J3	38.5	38
1,1,2-Trichlorotrifluoroethane	0.125	ND	0.0367	0.0773	29.4	61.8	1	10.0-160		J3	71.2	36
1,2,3-Trichlorobenzene	0.125	ND	0.0767	0.0885	61.4	70.8	1	10.0-160			14.3	40
1,2,4-Trichlorobenzene	0.125	ND	0.0783	0.0919	62.6	73.5	1	10.0-160			16.0	40
1,1,1-Trichloroethane	0.125	ND	0.0409	0.0767	32.7	61.4	1	10.0-144		J3	60.9	35
1,1,2-Trichloroethane	0.125	ND	0.0845	0.0948	67.6	75.8	1	10.0-160			11.5	35
Trichloroethene	0.125	ND	0.0522	0.0815	41.8	65.2	1	10.0-156		J3	43.8	38
Trichlorofluoromethane	0.125	ND	0.0255	0.0531	20.4	42.5	1	10.0-160		J3	70.2	40
1,2,3-Trichloropropane	0.125	ND	0.105	0.101	84.0	80.8	1	10.0-156			3.88	35
1,2,3-Trimethylbenzene	0.125	ND	0.0443	0.0591	35.4	47.3	1	10.0-160			28.6	36
1,2,4-Trimethylbenzene	0.125	ND	0.0530	0.0744	42.4	59.5	1	10.0-160			33.6	36
1,3,5-Trimethylbenzene	0.125	ND	0.0517	0.0749	41.4	59.9	1	10.0-160			36.7	38
Vinyl chloride	0.125	ND	0.0316	0.0622	25.3	49.8	1	10.0-160		J3	65.2	37
Xylenes, Total	0.375	ND	0.160	0.235	42.7	62.7	1	10.0-160			38.0	38
(S) Toluene-d8				105		104		75.0-131				
(S) 4-Bromofluorobenzene				100		99.5		67.0-138				
(S) 1,2-Dichloroethane-d4				95.6		96.3		70.0-130				

Method Blank (MB)

(MB) R3655197-2 05/16/21 22:44					
Analyte	MB Result mg/kg	<u>MB Qualifier</u>	MB MDL mg/kg	MB RDL mg/kg	
Naphthalene	U		0.00488	0.0125	
(S) Toluene-d8	110			75.0-131	
(S) 4-Bromofluorobenzene	91.8			67.0-138	
(S) 1,2-Dichloroethane-d4	106			70.0-130	

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

(LCS) R3655197-1 05/16/21 21:48 • (LCSD) R3655197-3 05/17/21 08:12											
Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits %	
Naphthalene	0.125	0.121	0.105	96.8	84.0	59.0-130			14.2	20	
(S) Toluene-d8				107	109	75.0-131					
(S) 4-Bromofluorobenzene				93.8	93.9	67.0-138					
(S) 1,2-Dichloroethane-d4				112	113	70.0-130					

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3655172-1 05/16/21 12:59					
Analyte	MB Result mg/kg	<u>MB Qualifier</u>	MB MDL mg/kg	MB RDL mg/kg	
C10-C28 Diesel Range	U	1.61	4.00	4.00	
C28-C36 Motor Oil Range	U	0.274	4.00	4.00	
(S) o-Terphenyl	56.6		18.0-148		

Laboratory Control Sample (LCS)

(LCS) R3655172-2 05/16/21 13:12					
Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
C10-C28 Diesel Range	50.0	32.6	65.2	50.0-150	
(S) o-Terphenyl		63.4	18.0-148		

L1350931-10 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1350931-10 05/17/21 21:24 • (MS) R3655598-1 05/17/21 21:37 • (MSD) R3655598-2 05/17/21 21:49											
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 Limits %
C10-C28 Diesel Range	49.5	ND	51.2	49.2	103	99.4	1	50.0-150		3.98	20
(S) o-Terphenyl			85.2	77.0	18.0-148						

Method Blank (MB)

(MB) R3655585-1 05/17/21 18:00				
Analyte	MB Result mg/kg	<u>MB Qualifier</u>	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U	1.61	4.00	4.00
C28-C36 Motor Oil Range	U	0.274	4.00	4.00
(S) o-Terphenyl	76.1		18.0-148	

Laboratory Control Sample (LCS)

(LCS) R3655585-2 05/17/21 18:13				
Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %
C10-C28 Diesel Range	50.0	39.1	78.2	50.0-150
(S) o-Terphenyl		65.3	18.0-148	

Method Blank (MB)

(MB) R3655098-2 05/15/21 12:14

Analyte	MB Result mg/kg	<u>MB Qualifier</u>	MB MDL mg/kg	MB RDL mg/kg
Anthracene	U		0.00230	0.00600
Acenaphthene	U		0.00209	0.00600
Acenaphthylene	U		0.00216	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(a)pyrene	U		0.00179	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(g,h,i)perylene	U		0.00177	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Chrysene	U		0.00232	0.00600
Dibenz(a,h)anthracene	U		0.00172	0.00600
Fluoranthene	U		0.00227	0.00600
Fluorene	U		0.00205	0.00600
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600
Naphthalene	U		0.00408	0.0200
Phenanthrene	U		0.00231	0.00600
Pyrene	U		0.00200	0.00600
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
2-Chloronaphthalene	U		0.00466	0.0200
(S) Nitrobenzene-d5	62.2			14.0-149
(S) 2-Fluorobiphenyl	84.2			34.0-125
(S) p-Terphenyl-d14	106			23.0-120

Laboratory Control Sample (LCS)

(LCS) R3655098-1 05/15/21 11:54

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Anthracene	0.0800	0.0693	86.6	50.0-126	
Acenaphthene	0.0800	0.0754	94.3	50.0-120	
Acenaphthylene	0.0800	0.0780	97.5	50.0-120	
Benzo(a)anthracene	0.0800	0.0714	89.3	45.0-120	
Benzo(a)pyrene	0.0800	0.0586	73.3	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0696	87.0	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0724	90.5	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0703	87.9	49.0-125	
Chrysene	0.0800	0.0752	94.0	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0733	91.6	47.0-125	
Fluoranthene	0.0800	0.0800	100	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3655098-1 05/15/21 11:54										<div><div>1</div>Cp</div>
Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>					<div><div>2</div>Tc</div>
Fluorene	0.0800	0.0820	103	49.0-120						<div><div>3</div>Ss</div>
Indeno(1,2,3-cd)pyrene	0.0800	0.0722	90.3	46.0-125						<div><div>4</div>Cn</div>
Naphthalene	0.0800	0.0715	89.4	50.0-120						<div><div>5</div>Sr</div>
Phenanthrene	0.0800	0.0738	92.3	47.0-120						<div><div>6</div>Qc</div>
Pyrene	0.0800	0.0708	88.5	43.0-123						<div><div>7</div>Gl</div>
1-Methylnaphthalene	0.0800	0.0831	104	51.0-121						<div><div>8</div>Al</div>
2-Methylnaphthalene	0.0800	0.0749	93.6	50.0-120						<div><div>9</div>Sc</div>
2-Chloronaphthalene	0.0800	0.0714	89.3	50.0-120						
(S) Nitrobenzene-d5		75.3		14.0-149						
(S) 2-Fluorobiphenyl		91.7		34.0-125						
(S) p-Terphenyl-d14		107		23.0-120						

L1351087-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1351087-06 05/15/21 15:33 • (MS) R3655098-3 05/15/21 15:53 • (MSD) R3655098-4 05/15/21 16:12												
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 %
Anthracene	0.0772	ND	0.0584	0.0576	75.6	74.6	1	10.0-145			1.38	30
Acenaphthene	0.0772	ND	0.0680	0.0654	88.1	84.7	1	14.0-127			3.90	27
Acenaphthylene	0.0772	ND	0.0677	0.0656	87.7	85.0	1	21.0-124			3.15	25
Benzo(a)anthracene	0.0772	ND	0.0587	0.0574	76.0	74.4	1	10.0-139			2.24	30
Benzo(a)pyrene	0.0772	ND	0.0621	0.0617	80.4	79.9	1	10.0-141			0.646	31
Benzo(b)fluoranthene	0.0772	ND	0.0614	0.0630	79.5	81.6	1	10.0-140			2.57	36
Benzo(g,h,i)perylene	0.0772	ND	0.0665	0.0656	86.1	85.0	1	10.0-140			1.36	33
Benzo(k)fluoranthene	0.0772	ND	0.0627	0.0609	81.2	78.9	1	10.0-137			2.91	31
Chrysene	0.0772	ND	0.0668	0.0670	86.5	86.8	1	10.0-145			0.299	30
Dibenz(a,h)anthracene	0.0772	ND	0.0626	0.0621	81.1	80.4	1	10.0-132			0.802	31
Fluoranthene	0.0772	ND	0.0728	0.0712	94.3	92.2	1	10.0-153			2.22	33
Fluorene	0.0772	ND	0.0715	0.0746	92.6	96.6	1	11.0-130			4.24	29
Indeno(1,2,3-cd)pyrene	0.0772	ND	0.0587	0.0603	76.0	78.1	1	10.0-137			2.69	32
Naphthalene	0.0772	ND	0.0655	0.0644	84.8	83.4	1	10.0-135			1.69	27
Phenanthrene	0.0772	ND	0.0653	0.0638	84.6	82.6	1	10.0-144			2.32	31
Pyrene	0.0772	ND	0.0637	0.0638	82.5	82.6	1	10.0-148			0.157	35
1-Methylnaphthalene	0.0772	ND	0.0766	0.0757	99.2	98.1	1	10.0-142			1.18	28
2-Methylnaphthalene	0.0772	ND	0.0654	0.0642	84.7	83.2	1	10.0-137			1.85	28
2-Chloronaphthalene	0.0772	ND	0.0601	0.0585	77.8	75.8	1	29.0-120			2.70	24
(S) Nitrobenzene-d5					56.8	58.4		14.0-149				
(S) 2-Fluorobiphenyl					81.9	83.9		34.0-125				
(S) p-Terphenyl-d14					97.9	100		23.0-120				



# GLOSSARY OF TERMS

## Guide to Reading and Understanding Your Laboratory Report

The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

Results Disclaimer - Information that may be provided by the customer, and contained within this report, include Permit Limits, Project Name, Sample ID, Sample Matrix, Sample Preservation, Field Blanks, Field Spikes, Field Duplicates, On-Site Data, Sampling Collection Dates/Times, and Sampling Location. Results relate to the accuracy of this information provided, and as the samples are received.

## Abbreviations and Definitions

MDL	Method Detection Limit.
ND	Not detected at the Reporting Limit (or MDL where applicable).
RDL	Reported Detection Limit.
Rec.	Recovery.
RPD	Relative Percent Difference.
SDG	Sample Delivery Group.
(S)	Surrogate (Surrogate Standard) - Analytes added to every blank, sample, Laboratory Control Sample/Duplicate and Matrix Spike/Duplicate; used to evaluate analytical efficiency by measuring recovery. Surrogates are not expected to be detected in all environmental media.
U	Not detected at the Reporting Limit (or MDL where applicable).
Analyte	The name of the particular compound or analysis performed. Some Analyses and Methods will have multiple analytes reported.
Dilution	If the sample matrix contains an interfering material, the sample preparation volume or weight values differ from the standard, or if concentrations of analytes in the sample are higher than the highest limit of concentration that the laboratory can accurately report, the sample may be diluted for analysis. If a value different than 1 is used in this field, the result reported has already been corrected for this factor.
Limits	These are the target % recovery ranges or % difference value that the laboratory has historically determined as normal for the method and analyte being reported. Successful QC Sample analysis will target all analytes recovered or duplicated within these ranges.
Original Sample	The non-spiked sample in the prep batch used to determine the Relative Percent Difference (RPD) from a quality control sample. The Original Sample may not be included within the reported SDG.
Qualifier	This column provides a letter and/or number designation that corresponds to additional information concerning the result reported. If a Qualifier is present, a definition per Qualifier is provided within the Glossary and Definitions page and potentially a discussion of possible implications of the Qualifier in the Case Narrative if applicable.
Result	The actual analytical final result (corrected for any sample specific characteristics) reported for your sample. If there was no measurable result returned for a specific analyte, the result in this column may state "ND" (Not Detected) or "BDL" (Below Detectable Levels). The information in the results column should always be accompanied by either an MDL (Method Detection Limit) or RDL (Reporting Detection Limit) that defines the lowest value that the laboratory could detect or report for this analyte.
Uncertainty (Radiochemistry)	Confidence level of 2 sigma.
Case Narrative (Cn)	A brief discussion about the included sample results, including a discussion of any non-conformances to protocol observed either at sample receipt by the laboratory from the field or during the analytical process. If present, there will be a section in the Case Narrative to discuss the meaning of any data qualifiers used in the report.
Quality Control Summary (Qc)	This section of the report includes the results of the laboratory quality control analyses required by procedure or analytical methods to assist in evaluating the validity of the results reported for your samples. These analyses are not being performed on your samples typically, but on laboratory generated material.
Sample Chain of Custody (Sc)	This is the document created in the field when your samples were initially collected. This is used to verify the time and date of collection, the person collecting the samples, and the analyses that the laboratory is requested to perform. This chain of custody also documents all persons (excluding commercial shippers) that have had control or possession of the samples from the time of collection until delivery to the laboratory for analysis.
Sample Results (Sr)	This section of your report will provide the results of all testing performed on your samples. These results are provided by sample ID and are separated by the analyses performed on each sample. The header line of each analysis section for each sample will provide the name and method number for the analysis reported.
Sample Summary (Ss)	This section of the Analytical Report defines the specific analyses performed for each sample ID, including the dates and times of preparation and/or analysis.

Qualifier	Description
J3	The associated batch QC was outside the established quality control range for precision.
J4	The associated batch QC was outside the established quality control range for accuracy.
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.
V	The sample concentration is too high to evaluate accurate spike recoveries.

<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

# ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico <sup>1</sup>	TN00003
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>	KY90010	South Carolina	84004002
Kentucky <sup>2</sup>	16	South Dakota	n/a
Louisiana	AI30792	Tennessee <sup>1 4</sup>	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas <sup>5</sup>	LAB0152
Maryland	324	Utah	TN000032021-11
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	110033
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	998093910
Montana	CERT0086	Wyoming	A2LA
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

\* 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 Analytical.

