



Nicholson GeoSolutions LLC

3433 East Lake Drive
Centennial, CO 80121

October 26, 2021

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

Subject: O-36B Landfarm Final Discrete Sampling Results

Dear Jon:

Nicholson GeoSolutions LLC conducted final discrete soil sampling of the landfarms on the O-36B well pad in the Garden Gulch area, Garfield County, Colorado on September 26th, 2021. The sampling was conducted in accordance with the former COGCC Series 900 Rules that were in effect when remediation of the landfarm began in 2009.

These landfarms have been extensively tilled. The final landfarms contained an estimated 1,850 cubic yards of material and averaged about 12 inches deep at the time of sampling. Nine discrete soil samples were collected. The locations of the samples are shown on Figure 1. All samples were analyzed for the Table 910-1 list of parameters. The Table 910-1 list includes 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 naphthalene.

Table 1 provides a summary of the analytical results for the nine samples. The laboratory report is contained in Appendix A. TPH slightly exceeded the standard of 500 mg/kg for three samples (O36B-3, O36B-4, and O36B-5). Arsenic ranged from 7.62 mg/kg to 11.7 mg/kg, within the range of natural background concentrations for the Garden Gulch area (Nicholson 2014). Conductivity exceeded the Table 910-1 standard for eight of the nine samples. In addition, pH and boron exceeded the standards for one sample each.

Based on the sample results, additional remediation of the O-36B landfarm is necessary.

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 O-36B Landfarm Sample Results – September 26, 2021

		Sample ID				
Parameter	Table 910-1 Standards	O36B-1	O36B-2	O36B-3	O36B-4	O36B-5
Contaminants of Concern (mg/kg)						
TVPH – gasoline range	500 ¹	0.14	1.91	1.61	0.129	0.147
TEPH – diesel/motor oil range		332.2	385	500.7	507.0	555.0
Soil Suitability for Reclamation						
sp. conductance (mmhos/cm)	<4	6.73	7.23	7.02	6.86	4.84
SAR (ratio)	<12	8.43	9.10	6.60	7.67	9.50
pH (standard units)	6-9	7.89	7.92	8.35	7.90	8.71
boron (hot water extract)	2.0	1.77	1.91	1.61	2.03	1.10
Organic Compounds in Soils (mg/kg)						
benzene	0.17	0.0039	0.00418	0.00428	0.00338	0.00303
toluene	85	0.0231	0.0312	0.0235	0.0198	0.0179
ethylbenzene	100	0.00748	0.00805	0.00865	0.0081	0.00543
xylenes	175	0.0549	0.0543	0.0555	0.055	0.0411
acenaphthene	1,000	0.0193	0.00632	0.0174	0.0198	0.0188
anthracene	1,000	0.00723	<0.006	0.00653	0.00742	<0.006
benzo(a)anthracene	0.22	<0.006	<0.006	<0.006	<0.006	<0.006
benzo(b)flouranthene	0.22	<0.006	<0.006	<0.006	<0.006	<0.006
benzo(k)flouranthene	2.2	<0.006	<0.006	<0.006	<0.006	<0.006
benzo(a)pyrene	0.022	<0.006	<0.006	<0.006	<0.006	<0.006
chrysene	22	0.00911	<0.006	<0.006	0.00751	0.00797
dibenz(a,h)anthracene	0.022	<0.006	<0.006	<0.006	<0.006	<0.006
fluoranthene	1,000	0.00658	<0.006	0.00694	0.00895	0.00724
fluorene	1,000	0.0178	<0.006	0.0109	<0.006	0.0179
indeno(1,2,3-cd)pyrene	0.22	<0.006	<0.006	<0.006	<0.006	<0.006
naphthalene	23	0.22	0.0706	0.13	0.166	0.177
pyrene	1,000	0.0652	0.024	0.0608	0.111	0.0694
Metals in Soils (mg/kg)						
arsenic	0.39	9.0	11.7	7.62	10.2	8.20
barium	15,000	7,910	7,790	7,520	7,340	7,400
cadmium	70	<0.5	0.626	0.56	0.586	<0.5
chromium VI	23	<1	<1	<1	<1	<1
copper	3,100	19.7	23.3	17.0	20.1	15.4
lead	400	18.7	19.2	18.6	18.9	16.9
nickel	1,600	15.9	17.7	13.1	15.7	12.3
selenium	390	<2.0	<2.0	<2.0	<2.0	2.02
silver	390	<1.0	<1.0	<1.0	<1.0	<1.0
zinc	23,000	66.1	72.4	63.4	66.9	54.9

¹The standard is 500 mg/kg for the combined total of TVPH and TEPH

Values in bold type exceed standards

Table 1 O-36B Landfarm Sample Results – September 26, 2021

		Sample ID			
Parameter	Table 910-1 Standards	O36B-6	O36B-7	O36B-8	O36B-9
Contaminants of Concern (mg/kg)					
TVPH – gasoline range	500 ¹	0.1662	<0.1	0.134	0.119
TEPH – diesel/motor oil range		357	345.5	227.1	193.7
Soil Suitability for Reclamation					
sp. conductance (mmhos/cm)	<4	2.13	5.47	5.37	5.68
SAR (ratio)	<12	7.74	9.12	8.25	8.26
pH (standard units)	6-9	9.61	8.69	8.16	8.15
boron (hot water extract)	2.0	0.843	0.962	1.32	1.36
Organic Compounds in Soils (mg/kg)					
benzene	0.17	0.00225	<0.001	0.00205	<0.001
toluene	85	0.0131	<0.005	0.0117	<0.005
ethylbenzene	100	0.00423	<0.0025	0.0042	<0.0025
xylene	175	0.0301	0.00893	0.0267	0.0141
1,2,4-trimethylbenzene	1,000	0.0152	<0.005	0.0139	0.00583
1,3,5-trimethylbenzene	1,000	<0.005	<0.005	0.0055	<0.005
acenaphthene	0.22	0.0075	0.0219	<0.006	<0.006
anthracene	0.22	<0.006	0.00845	<0.006	<0.006
benzo(a)anthracene	2.2	<0.006	<0.006	<0.006	<0.006
benzo(b)fluoranthene	0.022	<0.006	<0.006	<0.006	<0.006
benzo(k)fluoranthene	22	<0.006	<0.006	<0.006	<0.006
benzo(a)pyrene	0.022	<0.006	<0.006	<0.006	<0.006
chrysene	1,000	<0.006	0.00632	<0.006	<0.006
dibenz(a,h)anthracene	1,000	<0.006	<0.006	<0.006	<0.006
fluoranthene	0.22	<0.006	0.00792	<0.006	<0.006
flourene	23	<0.006	0.0142	<0.006	<0.006
indeno(1,2,3-cd)pyrene	1,000	<0.006	<0.006	<0.006	<0.006
1-methylnaphthalene	0.17	0.0463	0.181	0.0482	0.0521
2-methylnaphthalene	85	0.107	0.453	0.128	0.119
naphthalene	100	0.0432	0.170	0.0564	0.0455
pyrene	175	0.0255	0.0769	0.021	0.0189
Metals in Soils (mg/kg)					
arsenic	0.39	8.70	9.86	8.64	8.57
barium	15,000	6,930	6,290	8,160	3,700
cadmium	70	<0.5	0.547	<0.5	0.68
chromium VI	23	<1	<1	<1	<1
copper	3,100	17.4	18.6	18.3	16.6
lead	400	15.5	17.6	17.1	16.8
nickel	1,600	13.4	15.4	14.5	13.8
selenium	390	<2.0	<2.0	<2.0	2.09
silver	390	<1.0	<1.0	<1.0	<1.0
zinc	23,000	55.5	64.0	60.8	58.7

¹The standard is 500 mg/kg for the combined total of TVPH and TEPH

Values in bold type exceed standards

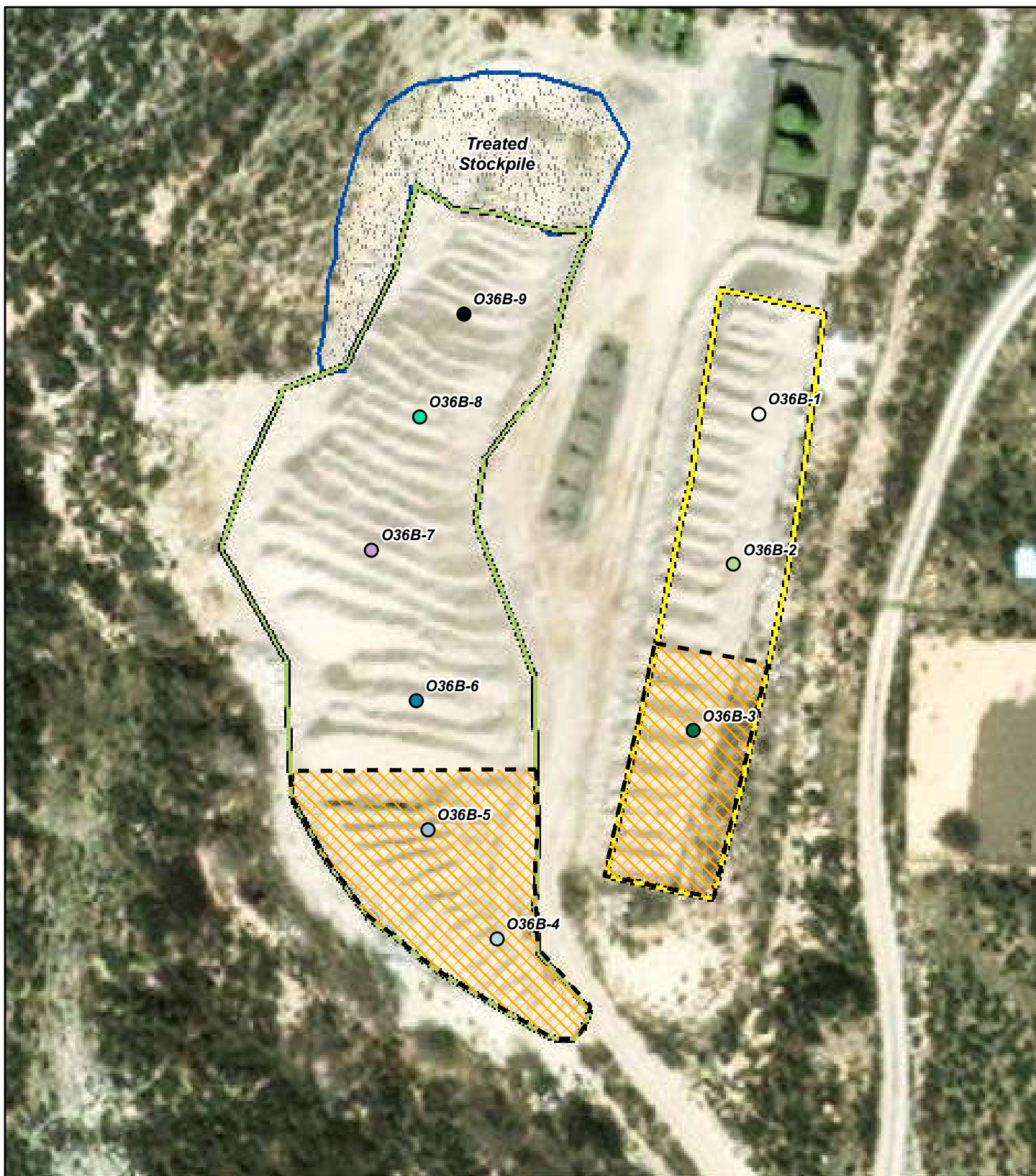


Figure 1

September
2021

GeoSolutions
NICHOLSON

Legend

- Area Needing Further Treatment
- East Treatment Cell
- West Treatment Cell
- Stockpile

0 37.5 75 Feet

1" = 60'

Berry Petroleum Company

O-36B
Final Discrete
Soil Samples

APPENDIX A
Laboratory Report

Berry Petroleum - Denver, CO

Sample Delivery Group: L1410197

Samples Received: 09/28/2021

Project Number:

Description:

Report To: Dave Nicholson
4950 S Yosemite St, #F2-123
Greenwood Village, CO 80111

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 National12065 Lebanon Rd Mount Juliet, TN 37122 615-758-5858 800-767-5859 www.pacenational.com

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

SAMPLE SUMMARY

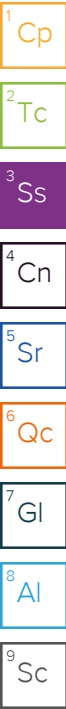
036B-1 L1410197-01 Solid

Collected by
DK

Collected date/time
09/26/21 08:30

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1749767	1	10/07/21 01:18	10/07/21 01:18	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1751280	1	10/06/21 17:00	10/08/21 18:49	GB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1752176	1	10/06/21 14:00	10/06/21 16:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1750673	1	10/03/21 15:44	10/03/21 19:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	1	10/04/21 18:59	10/08/21 07:04	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	5	10/04/21 18:59	10/08/21 09:19	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1749760	1	10/04/21 17:48	10/06/21 23:18	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1751368	1.01	09/30/21 16:09	10/06/21 11:49	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1750409	1	09/30/21 16:09	10/02/21 11:29	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	1	10/08/21 03:50	10/08/21 20:19	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1753490	1	10/08/21 08:56	10/09/21 15:07	AAT	Mt. Juliet, TN



036B-2 L1410197-02 Solid

Collected by
DK

Collected date/time
09/26/21 08:40

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1749767	1	10/07/21 01:20	10/07/21 01:20	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1751280	1	10/06/21 17:00	10/08/21 19:26	GB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1752176	1	10/06/21 14:00	10/06/21 16:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1750673	1	10/03/21 15:44	10/03/21 19:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	1	10/04/21 18:59	10/08/21 07:07	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	5	10/04/21 18:59	10/08/21 09:22	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1749760	1	10/04/21 17:48	10/06/21 23:21	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1751368	1	09/30/21 16:09	10/06/21 12:44	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1750409	1	09/30/21 16:09	10/02/21 11:49	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	1	10/08/21 03:50	10/08/21 20:32	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1753490	1	10/08/21 08:56	10/09/21 12:29	AAT	Mt. Juliet, TN

036B-3 L1410197-03 Solid

Collected by
DK

Collected date/time
09/26/21 08:50

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1751105	1	10/06/21 12:25	10/06/21 12:25	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1751280	1	10/06/21 17:00	10/08/21 19:31	GB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1752176	1	10/06/21 14:00	10/06/21 16:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1750673	1	10/03/21 15:44	10/03/21 19:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	1	10/04/21 18:59	10/08/21 06:27	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	5	10/04/21 18:59	10/08/21 09:16	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1751104	1	10/05/21 15:12	10/07/21 00:18	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1751368	1.01	09/30/21 16:09	10/06/21 13:07	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1750409	1	09/30/21 16:09	10/02/21 12:08	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	1	10/08/21 03:50	10/08/21 21:54	JN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	5	10/08/21 03:50	10/10/21 11:07	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1753490	1	10/08/21 08:56	10/09/21 13:48	AAT	Mt. Juliet, TN

036B-4 L1410197-04 Solid

Collected by
DK

Collected date/time
09/26/21 09:00

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1751105	1	10/06/21 12:28	10/06/21 12:28	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1751280	1	10/06/21 17:00	10/08/21 19:36	GB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1752176	1	10/06/21 14:00	10/06/21 16:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1750673	1	10/03/21 15:44	10/03/21 19:12	AMH	Mt. Juliet, TN

SAMPLE SUMMARY

036B-4 L1410197-04 Solid

Collected by
DK

Collected date/time
09/26/21 09:00

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B	WG1750787	1	10/04/21 18:59	10/08/21 07:10	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	5	10/04/21 18:59	10/08/21 09:24	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1751104	1	10/06/21 06:38	10/07/21 00:21	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1751368	1	09/30/21 16:09	10/06/21 13:29	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1750409	1	09/30/21 16:09	10/02/21 12:28	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	1	10/08/21 03:50	10/08/21 20:46	JN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	5	10/08/21 03:50	10/10/21 10:13	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1753490	1	10/08/21 08:56	10/09/21 14:08	AAT	Mt. Juliet, TN



036B-5 L1410197-05 Solid

Collected by
DK

Collected date/time
09/26/21 09:10

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1749767	1	10/07/21 01:23	10/07/21 01:23	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1751280	1	10/06/21 17:00	10/08/21 19:41	GB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1752176	1	10/06/21 14:00	10/06/21 16:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1750673	1	10/03/21 15:44	10/03/21 19:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	1	10/04/21 18:59	10/08/21 07:13	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	5	10/04/21 18:59	10/08/21 09:27	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1749760	1	10/04/21 17:48	10/06/21 23:24	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1751368	1	09/30/21 16:09	10/06/21 13:51	BMB	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1750409	1	09/30/21 16:09	10/02/21 12:47	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	1	10/08/21 03:50	10/08/21 21:00	JN	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	5	10/08/21 03:50	10/10/21 10:40	CAG	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1753490	1	10/08/21 08:56	10/09/21 14:27	AAT	Mt. Juliet, TN

036B-6 L1410197-06 Solid

Collected by
DK

Collected date/time
09/26/21 09:20

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1749767	1	10/07/21 01:26	10/07/21 01:26	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1751280	1	10/06/21 17:00	10/08/21 19:46	GB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1752176	1	10/06/21 14:00	10/06/21 16:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1750673	1	10/03/21 15:44	10/03/21 19:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	1	10/04/21 18:59	10/08/21 07:16	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	5	10/04/21 18:59	10/08/21 09:30	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1749760	1	10/04/21 17:48	10/06/21 23:27	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1752504	1	09/30/21 16:09	10/09/21 17:40	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1750409	1	09/30/21 16:09	10/02/21 13:07	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	1	10/08/21 03:50	10/08/21 19:38	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1753490	1	10/08/21 08:56	10/09/21 12:49	AAT	Mt. Juliet, TN

036B-7 L1410197-07 Solid

Collected by
DK

Collected date/time
09/26/21 09:30

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1749767	1	10/07/21 01:29	10/07/21 01:29	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1751280	1	10/06/21 17:00	10/08/21 19:52	GB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1752176	1	10/06/21 14:00	10/06/21 16:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1750673	1	10/03/21 15:44	10/03/21 19:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	1	10/04/21 18:59	10/08/21 07:19	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	5	10/04/21 18:59	10/08/21 09:32	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1749760	1	10/04/21 17:48	10/06/21 23:31	CCE	Mt. Juliet, TN

SAMPLE SUMMARY

036B-7 L1410197-07 Solid

Collected by
DK

Collected date/time
09/26/21 09:30

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1752504	1	09/30/21 16:09	10/09/21 18:04	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1750409	1	09/30/21 16:09	10/02/21 13:26	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	1	10/08/21 03:50	10/08/21 21:13	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1753490	1	10/08/21 08:56	10/09/21 14:47	AAT	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

036B-8 L1410197-08 Solid

Collected by
DK

Collected date/time
09/26/21 09:40

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1749767	1	10/07/21 01:32	10/07/21 01:32	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1751280	1	10/06/21 17:00	10/08/21 19:57	GB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1752177	1	10/06/21 14:00	10/06/21 16:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1750673	1	10/03/21 15:44	10/03/21 19:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	1	10/04/21 18:59	10/08/21 07:22	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	5	10/04/21 18:59	10/08/21 09:40	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1749760	1	10/04/21 17:48	10/06/21 23:34	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1752504	1.01	09/30/21 16:09	10/09/21 18:28	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1750409	1	09/30/21 16:09	10/02/21 13:46	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	1	10/08/21 03:50	10/08/21 19:52	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1753490	1	10/08/21 08:56	10/09/21 11:50	AAT	Mt. Juliet, TN

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

036B-9 L1410197-09 Solid

Collected by
DK

Collected date/time
09/26/21 09:50

Received date/time
09/28/21 09:30

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1749767	1	10/07/21 01:34	10/07/21 01:34	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1751280	1	10/06/21 17:00	10/08/21 20:02	GB	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1752177	1	10/06/21 14:00	10/06/21 16:00	AW	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1750673	1	10/03/21 15:44	10/03/21 19:12	AMH	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1750787	1	10/04/21 18:59	10/08/21 06:13	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1749760	1	10/04/21 17:48	10/06/21 23:37	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1752504	1	09/30/21 16:09	10/09/21 18:52	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1750409	1	09/30/21 16:09	10/02/21 14:06	BMB	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015	WG1752948	1	10/08/21 03:50	10/08/21 20:05	JN	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1753490	1	10/08/21 08:56	10/09/21 12:09	AAT	Mt. Juliet, TN

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



036B-1

Collected date/time: 09/26/21 08:30

SAMPLE RESULTS - 01

L1410197

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	8.43		1	10/07/2021 01:18	WG1749767

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	10/08/2021 18:49	WG1751280

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.89	T8	1	10/06/2021 16:00	WG1752176

Sample Narrative:

L1410197-01 WG1752176: 7.89 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	6730		10.0	1	10/03/2021 19:12	WG1750673

Sample Narrative:

L1410197-01 WG1750673: at 25C

Metals (ICP) by Method 6010B

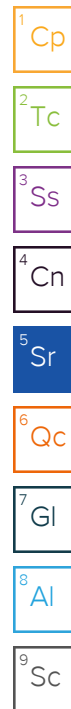
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.00		2.00	1	10/08/2021 07:04	WG1750787
Barium	7910		2.50	5	10/08/2021 09:19	WG1750787
Cadmium	ND		0.500	1	10/08/2021 07:04	WG1750787
Copper	19.7		2.00	1	10/08/2021 07:04	WG1750787
Lead	18.7		0.500	1	10/08/2021 07:04	WG1750787
Nickel	15.9		2.00	1	10/08/2021 07:04	WG1750787
Selenium	ND		2.00	1	10/08/2021 07:04	WG1750787
Silver	ND		1.00	1	10/08/2021 07:04	WG1750787
Zinc	66.1		5.00	1	10/08/2021 07:04	WG1750787

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	1.77		0.200	1	10/06/2021 23:18	WG1749760

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.140	B	0.101	1.01	10/06/2021 11:49	WG1751368
(S) a,a,a-Trifluorotoluene(FID)	93.9		77.0-120		10/06/2021 11:49	WG1751368



036B-1

SAMPLE RESULTS - 01

Collected date/time: 09/26/21 08:30

L1410197

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	10/02/2021 11:29	WG1750409
Acrylonitrile	ND		0.0125	1	10/02/2021 11:29	WG1750409
Benzene	0.00390		0.00100	1	10/02/2021 11:29	WG1750409
Bromobenzene	ND		0.0125	1	10/02/2021 11:29	WG1750409
Bromodichloromethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
Bromoform	ND		0.0250	1	10/02/2021 11:29	WG1750409
Bromomethane	ND		0.0125	1	10/02/2021 11:29	WG1750409
n-Butylbenzene	ND		0.0125	1	10/02/2021 11:29	WG1750409
sec-Butylbenzene	ND		0.0125	1	10/02/2021 11:29	WG1750409
tert-Butylbenzene	ND		0.00500	1	10/02/2021 11:29	WG1750409
Carbon tetrachloride	ND		0.00500	1	10/02/2021 11:29	WG1750409
Chlorobenzene	ND		0.00250	1	10/02/2021 11:29	WG1750409
Chlorodibromomethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
Chloroethane	ND		0.00500	1	10/02/2021 11:29	WG1750409
Chloroform	ND		0.00250	1	10/02/2021 11:29	WG1750409
Chloromethane	ND		0.0125	1	10/02/2021 11:29	WG1750409
2-Chlorotoluene	ND		0.00250	1	10/02/2021 11:29	WG1750409
4-Chlorotoluene	ND		0.00500	1	10/02/2021 11:29	WG1750409
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	10/02/2021 11:29	WG1750409
1,2-Dibromoethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
Dibromomethane	ND		0.00500	1	10/02/2021 11:29	WG1750409
1,2-Dichlorobenzene	ND		0.00500	1	10/02/2021 11:29	WG1750409
1,3-Dichlorobenzene	ND		0.00500	1	10/02/2021 11:29	WG1750409
1,4-Dichlorobenzene	ND		0.00500	1	10/02/2021 11:29	WG1750409
Dichlorodifluoromethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
1,1-Dichloroethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
1,2-Dichloroethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
1,1-Dichloroethene	ND		0.00250	1	10/02/2021 11:29	WG1750409
cis-1,2-Dichloroethene	ND		0.00250	1	10/02/2021 11:29	WG1750409
trans-1,2-Dichloroethene	ND		0.00500	1	10/02/2021 11:29	WG1750409
1,2-Dichloropropane	ND		0.00500	1	10/02/2021 11:29	WG1750409
1,1-Dichloropropene	ND		0.00250	1	10/02/2021 11:29	WG1750409
1,3-Dichloropropane	ND		0.00500	1	10/02/2021 11:29	WG1750409
cis-1,3-Dichloropropene	ND		0.00250	1	10/02/2021 11:29	WG1750409
trans-1,3-Dichloropropene	ND		0.00500	1	10/02/2021 11:29	WG1750409
2,2-Dichloropropane	ND		0.00250	1	10/02/2021 11:29	WG1750409
Di-isopropyl ether	ND		0.00100	1	10/02/2021 11:29	WG1750409
Ethylbenzene	0.00748		0.00250	1	10/02/2021 11:29	WG1750409
Hexachloro-1,3-butadiene	ND		0.0250	1	10/02/2021 11:29	WG1750409
Isopropylbenzene	ND		0.00250	1	10/02/2021 11:29	WG1750409
p-Isopropyltoluene	ND		0.00500	1	10/02/2021 11:29	WG1750409
2-Butanone (MEK)	ND		0.100	1	10/02/2021 11:29	WG1750409
Methylene Chloride	ND		0.0250	1	10/02/2021 11:29	WG1750409
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	10/02/2021 11:29	WG1750409
Methyl tert-butyl ether	ND		0.00100	1	10/02/2021 11:29	WG1750409
Naphthalene	ND		0.0125	1	10/02/2021 11:29	WG1750409
n-Propylbenzene	0.00755		0.00500	1	10/02/2021 11:29	WG1750409
Styrene	ND		0.0125	1	10/02/2021 11:29	WG1750409
1,1,1,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
1,1,2,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
Tetrachloroethene	ND		0.00250	1	10/02/2021 11:29	WG1750409
Toluene	0.0231		0.00500	1	10/02/2021 11:29	WG1750409
1,2,3-Trichlorobenzene	ND		0.0125	1	10/02/2021 11:29	WG1750409
1,2,4-Trichlorobenzene	ND		0.0125	1	10/02/2021 11:29	WG1750409
1,1,1-Trichloroethane	ND		0.00250	1	10/02/2021 11:29	WG1750409

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

ACCOUNT:

Berry Petroleum - Denver, CO

PROJECT:

SDG:

L1410197

DATE/TIME:

10/12/21 08:37

PAGE:

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036B-1

SAMPLE RESULTS - 01

Collected date/time: 09/26/21 08:30

L1410197

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichloroethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
Trichloroethene	ND		0.00100	1	10/02/2021 11:29	WG1750409
Trichlorofluoromethane	ND		0.00250	1	10/02/2021 11:29	WG1750409
1,2,3-Trichloropropane	ND		0.0125	1	10/02/2021 11:29	WG1750409
1,2,4-Trimethylbenzene	0.0270		0.00500	1	10/02/2021 11:29	WG1750409
1,2,3-Trimethylbenzene	0.0105		0.00500	1	10/02/2021 11:29	WG1750409
1,3,5-Trimethylbenzene	0.0103		0.00500	1	10/02/2021 11:29	WG1750409
Vinyl chloride	ND		0.00250	1	10/02/2021 11:29	WG1750409
Xylenes, Total	0.0549		0.00650	1	10/02/2021 11:29	WG1750409
(S) Toluene-d8	108		75.0-131		10/02/2021 11:29	WG1750409
(S) 4-Bromofluorobenzene	86.6		67.0-138		10/02/2021 11:29	WG1750409
(S) 1,2-Dichloroethane-d4	92.2		70.0-130		10/02/2021 11:29	WG1750409

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	253		4.00	1	10/08/2021 20:19	WG1752948
C28-C40 Oil Range	79.2		4.00	1	10/08/2021 20:19	WG1752948
(S) o-Terphenyl	51.1		18.0-148		10/08/2021 20:19	WG1752948

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00723		0.00600	1	10/09/2021 15:07	WG1753490
Acenaphthene	0.0193		0.00600	1	10/09/2021 15:07	WG1753490
Acenaphthylene	ND		0.00600	1	10/09/2021 15:07	WG1753490
Benzo(a)anthracene	ND		0.00600	1	10/09/2021 15:07	WG1753490
Benzo(a)pyrene	ND		0.00600	1	10/09/2021 15:07	WG1753490
Benzo(b)fluoranthene	ND		0.00600	1	10/09/2021 15:07	WG1753490
Benzo(g,h,i)perylene	ND		0.00600	1	10/09/2021 15:07	WG1753490
Benzo(k)fluoranthene	ND		0.00600	1	10/09/2021 15:07	WG1753490
Chrysene	0.00911		0.00600	1	10/09/2021 15:07	WG1753490
Dibenz(a,h)anthracene	ND		0.00600	1	10/09/2021 15:07	WG1753490
Fluoranthene	0.00658		0.00600	1	10/09/2021 15:07	WG1753490
Fluorene	0.0178		0.00600	1	10/09/2021 15:07	WG1753490
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/09/2021 15:07	WG1753490
Naphthalene	0.220		0.0200	1	10/09/2021 15:07	WG1753490
Phenanthrene	0.118		0.00600	1	10/09/2021 15:07	WG1753490
Pyrene	0.0652		0.00600	1	10/09/2021 15:07	WG1753490
1-Methylnaphthalene	0.239		0.0200	1	10/09/2021 15:07	WG1753490
2-Methylnaphthalene	0.618		0.0200	1	10/09/2021 15:07	WG1753490
2-Chloronaphthalene	ND		0.0200	1	10/09/2021 15:07	WG1753490
(S) p-Terphenyl-d14	93.7		23.0-120		10/09/2021 15:07	WG1753490
(S) Nitrobenzene-d5	85.2		14.0-149		10/09/2021 15:07	WG1753490
(S) 2-Fluorobiphenyl	71.3		34.0-125		10/09/2021 15:07	WG1753490

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	9.10		1	10/07/2021 01:20	WG1749767

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	10/08/2021 19:26	WG1751280

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.92	T8	1	10/06/2021 16:00	WG1752176

Sample Narrative:

L1410197-02 WG1752176: 7.92 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	7230		10.0	1	10/03/2021 19:12	WG1750673

Sample Narrative:

L1410197-02 WG1750673: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	11.7		2.00	1	10/08/2021 07:07	WG1750787
Barium	7790		2.50	5	10/08/2021 09:22	WG1750787
Cadmium	0.626		0.500	1	10/08/2021 07:07	WG1750787
Copper	23.3		2.00	1	10/08/2021 07:07	WG1750787
Lead	19.2		0.500	1	10/08/2021 07:07	WG1750787
Nickel	17.7		2.00	1	10/08/2021 07:07	WG1750787
Selenium	ND		2.00	1	10/08/2021 07:07	WG1750787
Silver	ND		1.00	1	10/08/2021 07:07	WG1750787
Zinc	72.4		5.00	1	10/08/2021 07:07	WG1750787

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	1.91		0.200	1	10/06/2021 23:21	WG1749760

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.137	B	0.100	1	10/06/2021 12:44	WG1751368
(S) a,a,a-Trifluorotoluene(FID)	91.2		77.0-120		10/06/2021 12:44	WG1751368

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
Acetone	ND		0.0500	1	10/02/2021 11:49	WG1750409
Acrylonitrile	ND		0.0125	1	10/02/2021 11:49	WG1750409
Benzene	0.00418		0.00100	1	10/02/2021 11:49	WG1750409
Bromobenzene	ND		0.0125	1	10/02/2021 11:49	WG1750409
Bromodichloromethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
Bromoform	ND		0.0250	1	10/02/2021 11:49	WG1750409
Bromomethane	ND		0.0125	1	10/02/2021 11:49	WG1750409
n-Butylbenzene	ND		0.0125	1	10/02/2021 11:49	WG1750409
sec-Butylbenzene	ND		0.0125	1	10/02/2021 11:49	WG1750409
tert-Butylbenzene	ND		0.00500	1	10/02/2021 11:49	WG1750409
Carbon tetrachloride	ND		0.00500	1	10/02/2021 11:49	WG1750409
Chlorobenzene	ND		0.00250	1	10/02/2021 11:49	WG1750409
Chlorodibromomethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
Chloroethane	ND		0.00500	1	10/02/2021 11:49	WG1750409
Chloroform	ND		0.00250	1	10/02/2021 11:49	WG1750409
Chloromethane	ND		0.0125	1	10/02/2021 11:49	WG1750409
2-Chlorotoluene	ND		0.00250	1	10/02/2021 11:49	WG1750409
4-Chlorotoluene	ND		0.00500	1	10/02/2021 11:49	WG1750409
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	10/02/2021 11:49	WG1750409
1,2-Dibromoethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
Dibromomethane	ND		0.00500	1	10/02/2021 11:49	WG1750409
1,2-Dichlorobenzene	ND		0.00500	1	10/02/2021 11:49	WG1750409
1,3-Dichlorobenzene	ND		0.00500	1	10/02/2021 11:49	WG1750409
1,4-Dichlorobenzene	ND		0.00500	1	10/02/2021 11:49	WG1750409
Dichlorodifluoromethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
1,1-Dichloroethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
1,2-Dichloroethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
1,1-Dichloroethene	ND		0.00250	1	10/02/2021 11:49	WG1750409
cis-1,2-Dichloroethene	ND		0.00250	1	10/02/2021 11:49	WG1750409
trans-1,2-Dichloroethene	ND		0.00500	1	10/02/2021 11:49	WG1750409
1,2-Dichloropropane	ND		0.00500	1	10/02/2021 11:49	WG1750409
1,1-Dichloropropene	ND		0.00250	1	10/02/2021 11:49	WG1750409
1,3-Dichloropropane	ND		0.00500	1	10/02/2021 11:49	WG1750409
cis-1,3-Dichloropropene	ND		0.00250	1	10/02/2021 11:49	WG1750409
trans-1,3-Dichloropropene	ND		0.00500	1	10/02/2021 11:49	WG1750409
2,2-Dichloropropane	ND		0.00250	1	10/02/2021 11:49	WG1750409
Di-isopropyl ether	ND		0.00100	1	10/02/2021 11:49	WG1750409
Ethylbenzene	0.00805		0.00250	1	10/02/2021 11:49	WG1750409
Hexachloro-1,3-butadiene	ND		0.0250	1	10/02/2021 11:49	WG1750409
Isopropylbenzene	ND		0.00250	1	10/02/2021 11:49	WG1750409
p-Isopropyltoluene	ND		0.00500	1	10/02/2021 11:49	WG1750409
2-Butanone (MEK)	ND		0.100	1	10/02/2021 11:49	WG1750409
Methylene Chloride	ND		0.0250	1	10/02/2021 11:49	WG1750409
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	10/02/2021 11:49	WG1750409
Methyl tert-butyl ether	ND		0.00100	1	10/02/2021 11:49	WG1750409
Naphthalene	ND		0.0125	1	10/02/2021 11:49	WG1750409
n-Propylbenzene	0.00590		0.00500	1	10/02/2021 11:49	WG1750409
Styrene	ND		0.0125	1	10/02/2021 11:49	WG1750409
1,1,1,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
1,1,2,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
Tetrachloroethene	ND		0.00250	1	10/02/2021 11:49	WG1750409
Toluene	0.0312		0.00500	1	10/02/2021 11:49	WG1750409
1,2,3-Trichlorobenzene	ND		0.0125	1	10/02/2021 11:49	WG1750409
1,2,4-Trichlorobenzene	ND		0.0125	1	10/02/2021 11:49	WG1750409
1,1,1-Trichloroethane	ND		0.00250	1	10/02/2021 11:49	WG1750409

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
1,1,2-Trichloroethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
Trichloroethene	ND		0.00100	1	10/02/2021 11:49	WG1750409
Trichlorofluoromethane	ND		0.00250	1	10/02/2021 11:49	WG1750409
1,2,3-Trichloropropane	ND		0.0125	1	10/02/2021 11:49	WG1750409
1,2,4-Trimethylbenzene	0.0236		0.00500	1	10/02/2021 11:49	WG1750409
1,2,3-Trimethylbenzene	0.00728		0.00500	1	10/02/2021 11:49	WG1750409
1,3,5-Trimethylbenzene	0.00908		0.00500	1	10/02/2021 11:49	WG1750409
Vinyl chloride	ND		0.00250	1	10/02/2021 11:49	WG1750409
Xylenes, Total	0.0543		0.00650	1	10/02/2021 11:49	WG1750409
(S) Toluene-d8	104		75.0-131		10/02/2021 11:49	WG1750409
(S) 4-Bromofluorobenzene	88.3		67.0-138		10/02/2021 11:49	WG1750409
(S) 1,2-Dichloroethane-d4	92.9		70.0-130		10/02/2021 11:49	WG1750409

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	265		4.00	1	10/08/2021 20:32	WG1752948
C28-C40 Oil Range	120		4.00	1	10/08/2021 20:32	WG1752948
(S) o-Terphenyl	43.9		18.0-148		10/08/2021 20:32	WG1752948

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	10/09/2021 12:29	WG1753490
Acenaphthene	0.00632		0.00600	1	10/09/2021 12:29	WG1753490
Acenaphthylene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Benzo(a)anthracene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Benzo(a)pyrene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Benzo(b)fluoranthene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Benzo(g,h,i)perylene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Benzo(k)fluoranthene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Chrysene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Dibenz(a,h)anthracene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Fluoranthene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Fluorene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/09/2021 12:29	WG1753490
Naphthalene	0.0706		0.0200	1	10/09/2021 12:29	WG1753490
Phenanthrene	0.0399		0.00600	1	10/09/2021 12:29	WG1753490
Pyrene	0.0240		0.00600	1	10/09/2021 12:29	WG1753490
1-Methylnaphthalene	0.0776		0.0200	1	10/09/2021 12:29	WG1753490
2-Methylnaphthalene	0.195		0.0200	1	10/09/2021 12:29	WG1753490
2-Chloronaphthalene	ND		0.0200	1	10/09/2021 12:29	WG1753490
(S) p-Terphenyl-d14	72.1		23.0-120		10/09/2021 12:29	WG1753490
(S) Nitrobenzene-d5	59.3		14.0-149		10/09/2021 12:29	WG1753490
(S) 2-Fluorobiphenyl	55.6		34.0-125		10/09/2021 12:29	WG1753490

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	6.60		1	10/06/2021 12:25	WG1751105

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	10/08/2021 19:31	WG1751280

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.35	T8	1	10/06/2021 16:00	WG1752176

Sample Narrative:

L1410197-03 WG1752176: 8.35 at 20.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	7020		10.0	1	10/03/2021 19:12	WG1750673

Sample Narrative:

L1410197-03 WG1750673: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.62		2.00	1	10/08/2021 06:27	WG1750787
Barium	7520		2.50	5	10/08/2021 09:16	WG1750787
Cadmium	0.560		0.500	1	10/08/2021 06:27	WG1750787
Copper	17.0		2.00	1	10/08/2021 06:27	WG1750787
Lead	18.6		0.500	1	10/08/2021 06:27	WG1750787
Nickel	13.1		2.00	1	10/08/2021 06:27	WG1750787
Selenium	ND		2.00	1	10/08/2021 06:27	WG1750787
Silver	ND		1.00	1	10/08/2021 06:27	WG1750787
Zinc	63.4	J6	5.00	1	10/08/2021 06:27	WG1750787

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	1.61		0.200	1	10/07/2021 00:18	WG1751104

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.161	B	0.101	1.01	10/06/2021 13:07	WG1751368
(S) a,a,a-Trifluorotoluene(FID)	91.3		77.0-120		10/06/2021 13:07	WG1751368

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
Acetone	ND		0.0500	1	10/02/2021 12:08	WG1750409
Acrylonitrile	ND		0.0125	1	10/02/2021 12:08	WG1750409
Benzene	0.00428		0.00100	1	10/02/2021 12:08	WG1750409
Bromobenzene	ND		0.0125	1	10/02/2021 12:08	WG1750409
Bromodichloromethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
Bromoform	ND		0.0250	1	10/02/2021 12:08	WG1750409
Bromomethane	ND		0.0125	1	10/02/2021 12:08	WG1750409
n-Butylbenzene	ND		0.0125	1	10/02/2021 12:08	WG1750409
sec-Butylbenzene	ND		0.0125	1	10/02/2021 12:08	WG1750409
tert-Butylbenzene	ND		0.00500	1	10/02/2021 12:08	WG1750409
Carbon tetrachloride	ND		0.00500	1	10/02/2021 12:08	WG1750409
Chlorobenzene	ND		0.00250	1	10/02/2021 12:08	WG1750409
Chlorodibromomethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
Chloroethane	ND		0.00500	1	10/02/2021 12:08	WG1750409
Chloroform	ND		0.00250	1	10/02/2021 12:08	WG1750409
Chloromethane	ND		0.0125	1	10/02/2021 12:08	WG1750409
2-Chlorotoluene	ND		0.00250	1	10/02/2021 12:08	WG1750409
4-Chlorotoluene	ND		0.00500	1	10/02/2021 12:08	WG1750409
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	10/02/2021 12:08	WG1750409
1,2-Dibromoethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
Dibromomethane	ND		0.00500	1	10/02/2021 12:08	WG1750409
1,2-Dichlorobenzene	ND		0.00500	1	10/02/2021 12:08	WG1750409
1,3-Dichlorobenzene	ND		0.00500	1	10/02/2021 12:08	WG1750409
1,4-Dichlorobenzene	ND		0.00500	1	10/02/2021 12:08	WG1750409
Dichlorodifluoromethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
1,1-Dichloroethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
1,2-Dichloroethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
1,1-Dichloroethene	ND		0.00250	1	10/02/2021 12:08	WG1750409
cis-1,2-Dichloroethene	ND		0.00250	1	10/02/2021 12:08	WG1750409
trans-1,2-Dichloroethene	ND		0.00500	1	10/02/2021 12:08	WG1750409
1,2-Dichloropropane	ND		0.00500	1	10/02/2021 12:08	WG1750409
1,1-Dichloropropene	ND		0.00250	1	10/02/2021 12:08	WG1750409
1,3-Dichloropropane	ND		0.00500	1	10/02/2021 12:08	WG1750409
cis-1,3-Dichloropropene	ND		0.00250	1	10/02/2021 12:08	WG1750409
trans-1,3-Dichloropropene	ND		0.00500	1	10/02/2021 12:08	WG1750409
2,2-Dichloropropane	ND		0.00250	1	10/02/2021 12:08	WG1750409
Di-isopropyl ether	ND		0.00100	1	10/02/2021 12:08	WG1750409
Ethylbenzene	0.00865		0.00250	1	10/02/2021 12:08	WG1750409
Hexachloro-1,3-butadiene	ND		0.0250	1	10/02/2021 12:08	WG1750409
Isopropylbenzene	ND		0.00250	1	10/02/2021 12:08	WG1750409
p-Isopropyltoluene	ND		0.00500	1	10/02/2021 12:08	WG1750409
2-Butanone (MEK)	ND		0.100	1	10/02/2021 12:08	WG1750409
Methylene Chloride	ND		0.0250	1	10/02/2021 12:08	WG1750409
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	10/02/2021 12:08	WG1750409
Methyl tert-butyl ether	ND		0.00100	1	10/02/2021 12:08	WG1750409
Naphthalene	ND		0.0125	1	10/02/2021 12:08	WG1750409
n-Propylbenzene	0.00725		0.00500	1	10/02/2021 12:08	WG1750409
Styrene	ND		0.0125	1	10/02/2021 12:08	WG1750409
1,1,1,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
1,1,2,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
Tetrachloroethene	ND		0.00250	1	10/02/2021 12:08	WG1750409
Toluene	0.0235		0.00500	1	10/02/2021 12:08	WG1750409
1,2,3-Trichlorobenzene	ND		0.0125	1	10/02/2021 12:08	WG1750409
1,2,4-Trichlorobenzene	ND		0.0125	1	10/02/2021 12:08	WG1750409
1,1,1-Trichloroethane	ND		0.00250	1	10/02/2021 12:08	WG1750409

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
1,1,2-Trichloroethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
Trichloroethene	ND		0.00100	1	10/02/2021 12:08	WG1750409
Trichlorofluoromethane	ND		0.00250	1	10/02/2021 12:08	WG1750409
1,2,3-Trichloropropane	ND		0.0125	1	10/02/2021 12:08	WG1750409
1,2,4-Trimethylbenzene	0.0249		0.00500	1	10/02/2021 12:08	WG1750409
1,2,3-Trimethylbenzene	0.0116		0.00500	1	10/02/2021 12:08	WG1750409
1,3,5-Trimethylbenzene	0.00833		0.00500	1	10/02/2021 12:08	WG1750409
Vinyl chloride	ND		0.00250	1	10/02/2021 12:08	WG1750409
Xylenes, Total	0.0555		0.00650	1	10/02/2021 12:08	WG1750409
(S) Toluene-d8	104		75.0-131		10/02/2021 12:08	WG1750409
(S) 4-Bromofluorobenzene	88.9		67.0-138		10/02/2021 12:08	WG1750409
(S) 1,2-Dichloroethane-d4	96.3		70.0-130		10/02/2021 12:08	WG1750409

Semi-Volatile Organic Compounds (GC) by Method 8015

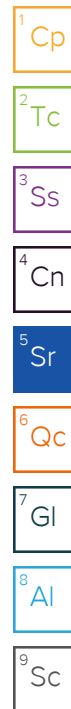
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	411		20.0	5	10/10/2021 11:07	WG1752948
C28-C40 Oil Range	89.7		4.00	1	10/08/2021 21:54	WG1752948
(S) o-Terphenyl	65.8		18.0-148		10/10/2021 11:07	WG1752948
(S) o-Terphenyl	0.000	J2	18.0-148		10/08/2021 21:54	WG1752948

Sample Narrative:

L1410197-03 WG1752948: Surrogate failure due to matrix interference

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00653		0.00600	1	10/09/2021 13:48	WG1753490
Acenaphthene	0.0174		0.00600	1	10/09/2021 13:48	WG1753490
Acenaphthylene	ND		0.00600	1	10/09/2021 13:48	WG1753490
Benzo(a)anthracene	ND		0.00600	1	10/09/2021 13:48	WG1753490
Benzo(a)pyrene	ND		0.00600	1	10/09/2021 13:48	WG1753490
Benzo(b)fluoranthene	ND		0.00600	1	10/09/2021 13:48	WG1753490
Benzo(g,h,i)perylene	ND		0.00600	1	10/09/2021 13:48	WG1753490
Benzo(k)fluoranthene	ND		0.00600	1	10/09/2021 13:48	WG1753490
Chrysene	ND		0.00600	1	10/09/2021 13:48	WG1753490
Dibenz(a,h)anthracene	ND		0.00600	1	10/09/2021 13:48	WG1753490
Fluoranthene	0.00694		0.00600	1	10/09/2021 13:48	WG1753490
Fluorene	0.0109		0.00600	1	10/09/2021 13:48	WG1753490
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/09/2021 13:48	WG1753490
Naphthalene	0.130		0.0200	1	10/09/2021 13:48	WG1753490
Phenanthrene	0.0771		0.00600	1	10/09/2021 13:48	WG1753490
Pyrene	0.0608		0.00600	1	10/09/2021 13:48	WG1753490
1-Methylnaphthalene	0.139		0.0200	1	10/09/2021 13:48	WG1753490
2-Methylnaphthalene	0.354		0.0200	1	10/09/2021 13:48	WG1753490
2-Chloronaphthalene	ND		0.0200	1	10/09/2021 13:48	WG1753490
(S) p-Terphenyl-d14	94.5		23.0-120		10/09/2021 13:48	WG1753490
(S) Nitrobenzene-d5	86.6		14.0-149		10/09/2021 13:48	WG1753490
(S) 2-Fluorobiphenyl	76.2		34.0-125		10/09/2021 13:48	WG1753490



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	7.67		1	10/06/2021 12:28	WG1751105

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	10/08/2021 19:36	WG1751280

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	7.90	T8	1	10/06/2021 16:00	WG1752176

Sample Narrative:

L1410197-04 WG1752176: 7.9 at 20.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	6860		10.0	1	10/03/2021 19:12	WG1750673

Sample Narrative:

L1410197-04 WG1750673: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	10.2		2.00	1	10/08/2021 07:10	WG1750787
Barium	7340		2.50	5	10/08/2021 09:24	WG1750787
Cadmium	0.586		0.500	1	10/08/2021 07:10	WG1750787
Copper	20.1		2.00	1	10/08/2021 07:10	WG1750787
Lead	18.9		0.500	1	10/08/2021 07:10	WG1750787
Nickel	15.7		2.00	1	10/08/2021 07:10	WG1750787
Selenium	ND		2.00	1	10/08/2021 07:10	WG1750787
Silver	ND		1.00	1	10/08/2021 07:10	WG1750787
Zinc	66.9		5.00	1	10/08/2021 07:10	WG1750787

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	2.03		0.200	1	10/07/2021 00:21	WG1751104

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.129	B	0.100	1	10/06/2021 13:29	WG1751368
(S) a,a,a-Trifluorotoluene(FID)	93.5		77.0-120		10/06/2021 13:29	WG1751368

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
Acetone	ND		0.0500	1	10/02/2021 12:28	WG1750409
Acrylonitrile	ND		0.0125	1	10/02/2021 12:28	WG1750409
Benzene	0.00338		0.00100	1	10/02/2021 12:28	WG1750409
Bromobenzene	ND		0.0125	1	10/02/2021 12:28	WG1750409
Bromodichloromethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
Bromoform	ND		0.0250	1	10/02/2021 12:28	WG1750409
Bromomethane	ND		0.0125	1	10/02/2021 12:28	WG1750409
n-Butylbenzene	ND		0.0125	1	10/02/2021 12:28	WG1750409
sec-Butylbenzene	ND		0.0125	1	10/02/2021 12:28	WG1750409
tert-Butylbenzene	ND		0.00500	1	10/02/2021 12:28	WG1750409
Carbon tetrachloride	ND		0.00500	1	10/02/2021 12:28	WG1750409
Chlorobenzene	ND		0.00250	1	10/02/2021 12:28	WG1750409
Chlorodibromomethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
Chloroethane	ND		0.00500	1	10/02/2021 12:28	WG1750409
Chloroform	ND		0.00250	1	10/02/2021 12:28	WG1750409
Chloromethane	ND		0.0125	1	10/02/2021 12:28	WG1750409
2-Chlorotoluene	ND		0.00250	1	10/02/2021 12:28	WG1750409
4-Chlorotoluene	ND		0.00500	1	10/02/2021 12:28	WG1750409
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	10/02/2021 12:28	WG1750409
1,2-Dibromoethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
Dibromomethane	ND		0.00500	1	10/02/2021 12:28	WG1750409
1,2-Dichlorobenzene	ND		0.00500	1	10/02/2021 12:28	WG1750409
1,3-Dichlorobenzene	ND		0.00500	1	10/02/2021 12:28	WG1750409
1,4-Dichlorobenzene	ND		0.00500	1	10/02/2021 12:28	WG1750409
Dichlorodifluoromethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
1,1-Dichloroethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
1,2-Dichloroethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
1,1-Dichloroethene	ND		0.00250	1	10/02/2021 12:28	WG1750409
cis-1,2-Dichloroethene	ND		0.00250	1	10/02/2021 12:28	WG1750409
trans-1,2-Dichloroethene	ND		0.00500	1	10/02/2021 12:28	WG1750409
1,2-Dichloropropane	ND		0.00500	1	10/02/2021 12:28	WG1750409
1,1-Dichloropropene	ND		0.00250	1	10/02/2021 12:28	WG1750409
1,3-Dichloropropane	ND		0.00500	1	10/02/2021 12:28	WG1750409
cis-1,3-Dichloropropene	ND		0.00250	1	10/02/2021 12:28	WG1750409
trans-1,3-Dichloropropene	ND		0.00500	1	10/02/2021 12:28	WG1750409
2,2-Dichloropropane	ND		0.00250	1	10/02/2021 12:28	WG1750409
Di-isopropyl ether	ND		0.00100	1	10/02/2021 12:28	WG1750409
Ethylbenzene	0.00810		0.00250	1	10/02/2021 12:28	WG1750409
Hexachloro-1,3-butadiene	ND		0.0250	1	10/02/2021 12:28	WG1750409
Isopropylbenzene	ND		0.00250	1	10/02/2021 12:28	WG1750409
p-Isopropyltoluene	ND		0.00500	1	10/02/2021 12:28	WG1750409
2-Butanone (MEK)	ND		0.100	1	10/02/2021 12:28	WG1750409
Methylene Chloride	ND		0.0250	1	10/02/2021 12:28	WG1750409
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	10/02/2021 12:28	WG1750409
Methyl tert-butyl ether	ND		0.00100	1	10/02/2021 12:28	WG1750409
Naphthalene	ND		0.0125	1	10/02/2021 12:28	WG1750409
n-Propylbenzene	0.00705		0.00500	1	10/02/2021 12:28	WG1750409
Styrene	ND		0.0125	1	10/02/2021 12:28	WG1750409
1,1,1,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
1,1,2,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
Tetrachloroethene	ND		0.00250	1	10/02/2021 12:28	WG1750409
Toluene	0.0198		0.00500	1	10/02/2021 12:28	WG1750409
1,2,3-Trichlorobenzene	ND		0.0125	1	10/02/2021 12:28	WG1750409
1,2,4-Trichlorobenzene	ND		0.0125	1	10/02/2021 12:28	WG1750409
1,1,1-Trichloroethane	ND		0.00250	1	10/02/2021 12:28	WG1750409

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
1,1,2-Trichloroethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
Trichloroethene	ND		0.00100	1	10/02/2021 12:28	WG1750409
Trichlorofluoromethane	ND		0.00250	1	10/02/2021 12:28	WG1750409
1,2,3-Trichloropropane	ND		0.0125	1	10/02/2021 12:28	WG1750409
1,2,4-Trimethylbenzene	0.0278		0.00500	1	10/02/2021 12:28	WG1750409
1,2,3-Trimethylbenzene	0.0101		0.00500	1	10/02/2021 12:28	WG1750409
1,3,5-Trimethylbenzene	0.00940		0.00500	1	10/02/2021 12:28	WG1750409
Vinyl chloride	ND		0.00250	1	10/02/2021 12:28	WG1750409
Xylenes, Total	0.0550		0.00650	1	10/02/2021 12:28	WG1750409
(S) Toluene-d8	105		75.0-131		10/02/2021 12:28	WG1750409
(S) 4-Bromofluorobenzene	91.0		67.0-138		10/02/2021 12:28	WG1750409
(S) 1,2-Dichloroethane-d4	95.2		70.0-130		10/02/2021 12:28	WG1750409

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	392		20.0	5	10/10/2021 10:13	WG1752948
C28-C40 Oil Range	115		4.00	1	10/08/2021 20:46	WG1752948
(S) o-Terphenyl	64.0		18.0-148		10/10/2021 10:13	WG1752948
(S) o-Terphenyl	0.000	J2	18.0-148		10/08/2021 20:46	WG1752948

Sample Narrative:

L1410197-04 WG1752948: Surrogate failure due to matrix interference

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00742		0.00600	1	10/09/2021 14:08	WG1753490
Acenaphthene	0.0198		0.00600	1	10/09/2021 14:08	WG1753490
Acenaphthylene	ND		0.00600	1	10/09/2021 14:08	WG1753490
Benzo(a)anthracene	ND		0.00600	1	10/09/2021 14:08	WG1753490
Benzo(a)pyrene	ND		0.00600	1	10/09/2021 14:08	WG1753490
Benzo(b)fluoranthene	ND		0.00600	1	10/09/2021 14:08	WG1753490
Benzo(g,h,i)perylene	ND		0.00600	1	10/09/2021 14:08	WG1753490
Benzo(k)fluoranthene	ND		0.00600	1	10/09/2021 14:08	WG1753490
Chrysene	0.00751		0.00600	1	10/09/2021 14:08	WG1753490
Dibenz(a,h)anthracene	ND		0.00600	1	10/09/2021 14:08	WG1753490
Fluoranthene	0.00895		0.00600	1	10/09/2021 14:08	WG1753490
Fluorene	ND		0.00600	1	10/09/2021 14:08	WG1753490
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/09/2021 14:08	WG1753490
Naphthalene	0.166		0.0200	1	10/09/2021 14:08	WG1753490
Phenanthrene	0.106		0.00600	1	10/09/2021 14:08	WG1753490
Pyrene	0.111		0.00600	1	10/09/2021 14:08	WG1753490
1-Methylnaphthalene	0.182		0.0200	1	10/09/2021 14:08	WG1753490
2-Methylnaphthalene	0.469		0.0200	1	10/09/2021 14:08	WG1753490
2-Chloronaphthalene	ND		0.0200	1	10/09/2021 14:08	WG1753490
(S) p-Terphenyl-d14	98.2		23.0-120		10/09/2021 14:08	WG1753490
(S) Nitrobenzene-d5	83.9		14.0-149		10/09/2021 14:08	WG1753490
(S) 2-Fluorobiphenyl	75.9		34.0-125		10/09/2021 14:08	WG1753490

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	9.50		1	10/07/2021 01:23	WG1749767

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	10/08/2021 19:41	WG1751280

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.71	T8	1	10/06/2021 16:00	WG1752176

Sample Narrative:

L1410197-05 WG1752176: 8.71 at 20.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	4840		10.0	1	10/03/2021 19:12	WG1750673

Sample Narrative:

L1410197-05 WG1750673: at 25C

Metals (ICP) by Method 6010B

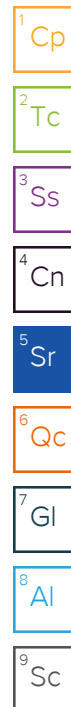
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.20		2.00	1	10/08/2021 07:13	WG1750787
Barium	7400		2.50	5	10/08/2021 09:27	WG1750787
Cadmium	ND		0.500	1	10/08/2021 07:13	WG1750787
Copper	15.4		2.00	1	10/08/2021 07:13	WG1750787
Lead	16.9		0.500	1	10/08/2021 07:13	WG1750787
Nickel	12.3		2.00	1	10/08/2021 07:13	WG1750787
Selenium	2.02		2.00	1	10/08/2021 07:13	WG1750787
Silver	ND		1.00	1	10/08/2021 07:13	WG1750787
Zinc	54.9		5.00	1	10/08/2021 07:13	WG1750787

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	1.10		0.200	1	10/06/2021 23:24	WG1749760

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.147	B	0.100	1	10/06/2021 13:51	WG1751368
(S) a,a,a-Trifluorotoluene(FID)	91.7		77.0-120		10/06/2021 13:51	WG1751368



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	10/02/2021 12:47	WG1750409
Acrylonitrile	ND		0.0125	1	10/02/2021 12:47	WG1750409
Benzene	0.00303		0.00100	1	10/02/2021 12:47	WG1750409
Bromobenzene	ND		0.0125	1	10/02/2021 12:47	WG1750409
Bromodichloromethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
Bromoform	ND		0.0250	1	10/02/2021 12:47	WG1750409
Bromomethane	ND		0.0125	1	10/02/2021 12:47	WG1750409
n-Butylbenzene	ND		0.0125	1	10/02/2021 12:47	WG1750409
sec-Butylbenzene	ND		0.0125	1	10/02/2021 12:47	WG1750409
tert-Butylbenzene	ND		0.00500	1	10/02/2021 12:47	WG1750409
Carbon tetrachloride	ND		0.00500	1	10/02/2021 12:47	WG1750409
Chlorobenzene	ND		0.00250	1	10/02/2021 12:47	WG1750409
Chlorodibromomethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
Chloroethane	ND		0.00500	1	10/02/2021 12:47	WG1750409
Chloroform	ND		0.00250	1	10/02/2021 12:47	WG1750409
Chloromethane	ND		0.0125	1	10/02/2021 12:47	WG1750409
2-Chlorotoluene	ND		0.00250	1	10/02/2021 12:47	WG1750409
4-Chlorotoluene	ND		0.00500	1	10/02/2021 12:47	WG1750409
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	10/02/2021 12:47	WG1750409
1,2-Dibromoethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
Dibromomethane	ND		0.00500	1	10/02/2021 12:47	WG1750409
1,2-Dichlorobenzene	ND		0.00500	1	10/02/2021 12:47	WG1750409
1,3-Dichlorobenzene	ND		0.00500	1	10/02/2021 12:47	WG1750409
1,4-Dichlorobenzene	ND		0.00500	1	10/02/2021 12:47	WG1750409
Dichlorodifluoromethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
1,1-Dichloroethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
1,2-Dichloroethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
1,1-Dichloroethene	ND		0.00250	1	10/02/2021 12:47	WG1750409
cis-1,2-Dichloroethene	ND		0.00250	1	10/02/2021 12:47	WG1750409
trans-1,2-Dichloroethene	ND		0.00500	1	10/02/2021 12:47	WG1750409
1,2-Dichloropropane	ND		0.00500	1	10/02/2021 12:47	WG1750409
1,1-Dichloropropene	ND		0.00250	1	10/02/2021 12:47	WG1750409
1,3-Dichloropropane	ND		0.00500	1	10/02/2021 12:47	WG1750409
cis-1,3-Dichloropropene	ND		0.00250	1	10/02/2021 12:47	WG1750409
trans-1,3-Dichloropropene	ND		0.00500	1	10/02/2021 12:47	WG1750409
2,2-Dichloropropane	ND		0.00250	1	10/02/2021 12:47	WG1750409
Di-isopropyl ether	ND		0.00100	1	10/02/2021 12:47	WG1750409
Ethylbenzene	0.00543		0.00250	1	10/02/2021 12:47	WG1750409
Hexachloro-1,3-butadiene	ND		0.0250	1	10/02/2021 12:47	WG1750409
Isopropylbenzene	ND		0.00250	1	10/02/2021 12:47	WG1750409
p-Isopropyltoluene	ND		0.00500	1	10/02/2021 12:47	WG1750409
2-Butanone (MEK)	ND		0.100	1	10/02/2021 12:47	WG1750409
Methylene Chloride	ND		0.0250	1	10/02/2021 12:47	WG1750409
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	10/02/2021 12:47	WG1750409
Methyl tert-butyl ether	ND		0.00100	1	10/02/2021 12:47	WG1750409
Naphthalene	ND		0.0125	1	10/02/2021 12:47	WG1750409
n-Propylbenzene	0.00543		0.00500	1	10/02/2021 12:47	WG1750409
Styrene	ND		0.0125	1	10/02/2021 12:47	WG1750409
1,1,1,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
1,1,2,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
Tetrachloroethene	ND		0.00250	1	10/02/2021 12:47	WG1750409
Toluene	0.0179		0.00500	1	10/02/2021 12:47	WG1750409
1,2,3-Trichlorobenzene	ND		0.0125	1	10/02/2021 12:47	WG1750409
1,2,4-Trichlorobenzene	ND		0.0125	1	10/02/2021 12:47	WG1750409
1,1,1-Trichloroethane	ND		0.00250	1	10/02/2021 12:47	WG1750409

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
1,1,2-Trichloroethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
Trichloroethene	ND		0.00100	1	10/02/2021 12:47	WG1750409
Trichlorofluoromethane	ND		0.00250	1	10/02/2021 12:47	WG1750409
1,2,3-Trichloropropane	ND		0.0125	1	10/02/2021 12:47	WG1750409
1,2,4-Trimethylbenzene	0.0199		0.00500	1	10/02/2021 12:47	WG1750409
1,2,3-Trimethylbenzene	0.00925		0.00500	1	10/02/2021 12:47	WG1750409
1,3,5-Trimethylbenzene	0.00528		0.00500	1	10/02/2021 12:47	WG1750409
Vinyl chloride	ND		0.00250	1	10/02/2021 12:47	WG1750409
Xylenes, Total	0.0411		0.00650	1	10/02/2021 12:47	WG1750409
(S) Toluene-d8	106		75.0-131		10/02/2021 12:47	WG1750409
(S) 4-Bromofluorobenzene	88.6		67.0-138		10/02/2021 12:47	WG1750409
(S) 1,2-Dichloroethane-d4	99.9		70.0-130		10/02/2021 12:47	WG1750409

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	421		20.0	5	10/10/2021 10:40	WG1752948
C28-C40 Oil Range	134		4.00	1	10/08/2021 21:00	WG1752948
(S) o-Terphenyl	56.0		18.0-148		10/10/2021 10:40	WG1752948
(S) o-Terphenyl	0.000	J2	18.0-148		10/08/2021 21:00	WG1752948

Sample Narrative:

L1410197-05 WG1752948: Surrogate failure due to matrix interference

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	10/09/2021 14:27	WG1753490
Acenaphthene	0.0188		0.00600	1	10/09/2021 14:27	WG1753490
Acenaphthylene	ND		0.00600	1	10/09/2021 14:27	WG1753490
Benzo(a)anthracene	ND		0.00600	1	10/09/2021 14:27	WG1753490
Benzo(a)pyrene	ND		0.00600	1	10/09/2021 14:27	WG1753490
Benzo(b)fluoranthene	ND		0.00600	1	10/09/2021 14:27	WG1753490
Benzo(g,h,i)perylene	ND		0.00600	1	10/09/2021 14:27	WG1753490
Benzo(k)fluoranthene	ND		0.00600	1	10/09/2021 14:27	WG1753490
Chrysene	0.00797		0.00600	1	10/09/2021 14:27	WG1753490
Dibenz(a,h)anthracene	ND		0.00600	1	10/09/2021 14:27	WG1753490
Fluoranthene	0.00724		0.00600	1	10/09/2021 14:27	WG1753490
Fluorene	0.0179		0.00600	1	10/09/2021 14:27	WG1753490
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/09/2021 14:27	WG1753490
Naphthalene	0.177		0.0200	1	10/09/2021 14:27	WG1753490
Phenanthrene	0.115		0.00600	1	10/09/2021 14:27	WG1753490
Pyrene	0.0694		0.00600	1	10/09/2021 14:27	WG1753490
1-Methylnaphthalene	0.199		0.0200	1	10/09/2021 14:27	WG1753490
2-Methylnaphthalene	0.519		0.0200	1	10/09/2021 14:27	WG1753490
2-Chloronaphthalene	ND		0.0200	1	10/09/2021 14:27	WG1753490
(S) p-Terphenyl-d14	82.0		23.0-120		10/09/2021 14:27	WG1753490
(S) Nitrobenzene-d5	75.5		14.0-149		10/09/2021 14:27	WG1753490
(S) 2-Fluorobiphenyl	64.4		34.0-125		10/09/2021 14:27	WG1753490

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	7.74		1	10/07/2021 01:26	WG1749767

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	10/08/2021 19:46	WG1751280

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	9.61	T8	1	10/06/2021 16:00	WG1752176

Sample Narrative:

L1410197-06 WG1752176: 9.61 at 20.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	2130		10.0	1	10/03/2021 19:12	WG1750673

Sample Narrative:

L1410197-06 WG1750673: at 25C

Metals (ICP) by Method 6010B

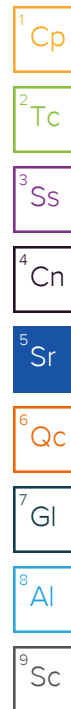
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.70		2.00	1	10/08/2021 07:16	WG1750787
Barium	6930		2.50	5	10/08/2021 09:30	WG1750787
Cadmium	ND		0.500	1	10/08/2021 07:16	WG1750787
Copper	17.4		2.00	1	10/08/2021 07:16	WG1750787
Lead	15.5		0.500	1	10/08/2021 07:16	WG1750787
Nickel	13.4		2.00	1	10/08/2021 07:16	WG1750787
Selenium	ND		2.00	1	10/08/2021 07:16	WG1750787
Silver	ND		1.00	1	10/08/2021 07:16	WG1750787
Zinc	55.5		5.00	1	10/08/2021 07:16	WG1750787

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	0.843		0.200	1	10/06/2021 23:27	WG1749760

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.162		0.100	1	10/09/2021 17:40	WG1752504
(S) a,a,a-Trifluorotoluene(FID)	96.1		77.0-120		10/09/2021 17:40	WG1752504



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	10/02/2021 13:07	WG1750409
Acrylonitrile	ND		0.0125	1	10/02/2021 13:07	WG1750409
Benzene	0.00225		0.00100	1	10/02/2021 13:07	WG1750409
Bromobenzene	ND		0.0125	1	10/02/2021 13:07	WG1750409
Bromodichloromethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
Bromoform	ND		0.0250	1	10/02/2021 13:07	WG1750409
Bromomethane	ND		0.0125	1	10/02/2021 13:07	WG1750409
n-Butylbenzene	ND		0.0125	1	10/02/2021 13:07	WG1750409
sec-Butylbenzene	ND		0.0125	1	10/02/2021 13:07	WG1750409
tert-Butylbenzene	ND		0.00500	1	10/02/2021 13:07	WG1750409
Carbon tetrachloride	ND		0.00500	1	10/02/2021 13:07	WG1750409
Chlorobenzene	ND		0.00250	1	10/02/2021 13:07	WG1750409
Chlorodibromomethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
Chloroethane	ND		0.00500	1	10/02/2021 13:07	WG1750409
Chloroform	ND		0.00250	1	10/02/2021 13:07	WG1750409
Chloromethane	ND		0.0125	1	10/02/2021 13:07	WG1750409
2-Chlorotoluene	ND		0.00250	1	10/02/2021 13:07	WG1750409
4-Chlorotoluene	ND		0.00500	1	10/02/2021 13:07	WG1750409
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	10/02/2021 13:07	WG1750409
1,2-Dibromoethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
Dibromomethane	ND		0.00500	1	10/02/2021 13:07	WG1750409
1,2-Dichlorobenzene	ND		0.00500	1	10/02/2021 13:07	WG1750409
1,3-Dichlorobenzene	ND		0.00500	1	10/02/2021 13:07	WG1750409
1,4-Dichlorobenzene	ND		0.00500	1	10/02/2021 13:07	WG1750409
Dichlorodifluoromethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
1,1-Dichloroethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
1,2-Dichloroethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
1,1-Dichloroethene	ND		0.00250	1	10/02/2021 13:07	WG1750409
cis-1,2-Dichloroethene	ND		0.00250	1	10/02/2021 13:07	WG1750409
trans-1,2-Dichloroethene	ND		0.00500	1	10/02/2021 13:07	WG1750409
1,2-Dichloropropane	ND		0.00500	1	10/02/2021 13:07	WG1750409
1,1-Dichloropropene	ND		0.00250	1	10/02/2021 13:07	WG1750409
1,3-Dichloropropane	ND		0.00500	1	10/02/2021 13:07	WG1750409
cis-1,3-Dichloropropene	ND		0.00250	1	10/02/2021 13:07	WG1750409
trans-1,3-Dichloropropene	ND		0.00500	1	10/02/2021 13:07	WG1750409
2,2-Dichloropropane	ND		0.00250	1	10/02/2021 13:07	WG1750409
Di-isopropyl ether	ND		0.00100	1	10/02/2021 13:07	WG1750409
Ethylbenzene	0.00423		0.00250	1	10/02/2021 13:07	WG1750409
Hexachloro-1,3-butadiene	ND		0.0250	1	10/02/2021 13:07	WG1750409
Isopropylbenzene	ND		0.00250	1	10/02/2021 13:07	WG1750409
p-Isopropyltoluene	ND		0.00500	1	10/02/2021 13:07	WG1750409
2-Butanone (MEK)	ND		0.100	1	10/02/2021 13:07	WG1750409
Methylene Chloride	ND		0.0250	1	10/02/2021 13:07	WG1750409
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	10/02/2021 13:07	WG1750409
Methyl tert-butyl ether	ND		0.00100	1	10/02/2021 13:07	WG1750409
Naphthalene	ND		0.0125	1	10/02/2021 13:07	WG1750409
n-Propylbenzene	ND		0.00500	1	10/02/2021 13:07	WG1750409
Styrene	ND		0.0125	1	10/02/2021 13:07	WG1750409
1,1,1,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
1,1,2,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
Tetrachloroethene	ND		0.00250	1	10/02/2021 13:07	WG1750409
Toluene	0.0131		0.00500	1	10/02/2021 13:07	WG1750409
1,2,3-Trichlorobenzene	ND		0.0125	1	10/02/2021 13:07	WG1750409
1,2,4-Trichlorobenzene	ND		0.0125	1	10/02/2021 13:07	WG1750409
1,1,1-Trichloroethane	ND		0.00250	1	10/02/2021 13:07	WG1750409

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
1,1,2-Trichloroethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
Trichloroethene	ND		0.00100	1	10/02/2021 13:07	WG1750409
Trichlorofluoromethane	ND		0.00250	1	10/02/2021 13:07	WG1750409
1,2,3-Trichloropropane	ND		0.0125	1	10/02/2021 13:07	WG1750409
1,2,4-Trimethylbenzene	0.0152		0.00500	1	10/02/2021 13:07	WG1750409
1,2,3-Trimethylbenzene	0.00650		0.00500	1	10/02/2021 13:07	WG1750409
1,3,5-Trimethylbenzene	ND		0.00500	1	10/02/2021 13:07	WG1750409
Vinyl chloride	ND		0.00250	1	10/02/2021 13:07	WG1750409
Xylenes, Total	0.0301		0.00650	1	10/02/2021 13:07	WG1750409
(S) Toluene-d8	104		75.0-131		10/02/2021 13:07	WG1750409
(S) 4-Bromofluorobenzene	87.8		67.0-138		10/02/2021 13:07	WG1750409
(S) 1,2-Dichloroethane-d4	100		70.0-130		10/02/2021 13:07	WG1750409

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	285		4.00	1	10/08/2021 19:38	WG1752948
C28-C40 Oil Range	72.0		4.00	1	10/08/2021 19:38	WG1752948
(S) o-Terphenyl	24.1		18.0-148		10/08/2021 19:38	WG1752948

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	10/09/2021 12:49	WG1753490
Acenaphthene	0.00750		0.00600	1	10/09/2021 12:49	WG1753490
Acenaphthylene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Benzo(a)anthracene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Benzo(a)pyrene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Benzo(b)fluoranthene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Benzo(g,h,i)perylene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Benzo(k)fluoranthene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Chrysene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Dibenz(a,h)anthracene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Fluoranthene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Fluorene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/09/2021 12:49	WG1753490
Naphthalene	0.0432		0.0200	1	10/09/2021 12:49	WG1753490
Phenanthrene	0.0311		0.00600	1	10/09/2021 12:49	WG1753490
Pyrene	0.0255		0.00600	1	10/09/2021 12:49	WG1753490
1-Methylnaphthalene	0.0463		0.0200	1	10/09/2021 12:49	WG1753490
2-Methylnaphthalene	0.107		0.0200	1	10/09/2021 12:49	WG1753490
2-Chloronaphthalene	ND		0.0200	1	10/09/2021 12:49	WG1753490
(S) p-Terphenyl-d14	89.5		23.0-120		10/09/2021 12:49	WG1753490
(S) Nitrobenzene-d5	74.2		14.0-149		10/09/2021 12:49	WG1753490
(S) 2-Fluorobiphenyl	69.0		34.0-125		10/09/2021 12:49	WG1753490

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	9.12		1	10/07/2021 01:29	WG1749767

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	10/08/2021 19:52	WG1751280

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.69	T8	1	10/06/2021 16:00	WG1752176

Sample Narrative:

L1410197-07 WG1752176: 8.69 at 20.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	5470		10.0	1	10/03/2021 19:12	WG1750673

Sample Narrative:

L1410197-07 WG1750673: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.86		2.00	1	10/08/2021 07:19	WG1750787
Barium	6290		2.50	5	10/08/2021 09:32	WG1750787
Cadmium	0.547		0.500	1	10/08/2021 07:19	WG1750787
Copper	18.6		2.00	1	10/08/2021 07:19	WG1750787
Lead	17.6		0.500	1	10/08/2021 07:19	WG1750787
Nickel	15.4		2.00	1	10/08/2021 07:19	WG1750787
Selenium	ND		2.00	1	10/08/2021 07:19	WG1750787
Silver	ND		1.00	1	10/08/2021 07:19	WG1750787
Zinc	64.0		5.00	1	10/08/2021 07:19	WG1750787

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	0.962		0.200	1	10/06/2021 23:31	WG1749760

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	10/09/2021 18:04	WG1752504
(S) a,a,a-Trifluorotoluene(FID)	95.8		77.0-120		10/09/2021 18:04	WG1752504

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
Acetone	ND		0.0500	1	10/02/2021 13:26	WG1750409
Acrylonitrile	ND		0.0125	1	10/02/2021 13:26	WG1750409
Benzene	ND		0.00100	1	10/02/2021 13:26	WG1750409
Bromobenzene	ND		0.0125	1	10/02/2021 13:26	WG1750409
Bromodichloromethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
Bromoform	ND		0.0250	1	10/02/2021 13:26	WG1750409
Bromomethane	ND		0.0125	1	10/02/2021 13:26	WG1750409
n-Butylbenzene	ND		0.0125	1	10/02/2021 13:26	WG1750409
sec-Butylbenzene	ND		0.0125	1	10/02/2021 13:26	WG1750409
tert-Butylbenzene	ND		0.00500	1	10/02/2021 13:26	WG1750409
Carbon tetrachloride	ND		0.00500	1	10/02/2021 13:26	WG1750409
Chlorobenzene	ND		0.00250	1	10/02/2021 13:26	WG1750409
Chlorodibromomethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
Chloroethane	ND		0.00500	1	10/02/2021 13:26	WG1750409
Chloroform	ND		0.00250	1	10/02/2021 13:26	WG1750409
Chloromethane	ND		0.0125	1	10/02/2021 13:26	WG1750409
2-Chlorotoluene	ND		0.00250	1	10/02/2021 13:26	WG1750409
4-Chlorotoluene	ND		0.00500	1	10/02/2021 13:26	WG1750409
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	10/02/2021 13:26	WG1750409
1,2-Dibromoethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
Dibromomethane	ND		0.00500	1	10/02/2021 13:26	WG1750409
1,2-Dichlorobenzene	ND		0.00500	1	10/02/2021 13:26	WG1750409
1,3-Dichlorobenzene	ND		0.00500	1	10/02/2021 13:26	WG1750409
1,4-Dichlorobenzene	ND		0.00500	1	10/02/2021 13:26	WG1750409
Dichlorodifluoromethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
1,1-Dichloroethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
1,2-Dichloroethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
1,1-Dichloroethene	ND		0.00250	1	10/02/2021 13:26	WG1750409
cis-1,2-Dichloroethene	ND		0.00250	1	10/02/2021 13:26	WG1750409
trans-1,2-Dichloroethene	ND		0.00500	1	10/02/2021 13:26	WG1750409
1,2-Dichloropropane	ND		0.00500	1	10/02/2021 13:26	WG1750409
1,1-Dichloropropene	ND		0.00250	1	10/02/2021 13:26	WG1750409
1,3-Dichloropropane	ND		0.00500	1	10/02/2021 13:26	WG1750409
cis-1,3-Dichloropropene	ND		0.00250	1	10/02/2021 13:26	WG1750409
trans-1,3-Dichloropropene	ND		0.00500	1	10/02/2021 13:26	WG1750409
2,2-Dichloropropane	ND		0.00250	1	10/02/2021 13:26	WG1750409
Di-isopropyl ether	ND		0.00100	1	10/02/2021 13:26	WG1750409
Ethylbenzene	ND		0.00250	1	10/02/2021 13:26	WG1750409
Hexachloro-1,3-butadiene	ND		0.0250	1	10/02/2021 13:26	WG1750409
Isopropylbenzene	ND		0.00250	1	10/02/2021 13:26	WG1750409
p-Isopropyltoluene	ND		0.00500	1	10/02/2021 13:26	WG1750409
2-Butanone (MEK)	ND		0.100	1	10/02/2021 13:26	WG1750409
Methylene Chloride	ND		0.0250	1	10/02/2021 13:26	WG1750409
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	10/02/2021 13:26	WG1750409
Methyl tert-butyl ether	ND		0.00100	1	10/02/2021 13:26	WG1750409
Naphthalene	ND		0.0125	1	10/02/2021 13:26	WG1750409
n-Propylbenzene	ND		0.00500	1	10/02/2021 13:26	WG1750409
Styrene	ND		0.0125	1	10/02/2021 13:26	WG1750409
1,1,1,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
1,1,2,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
Tetrachloroethene	ND		0.00250	1	10/02/2021 13:26	WG1750409
Toluene	ND		0.00500	1	10/02/2021 13:26	WG1750409
1,2,3-Trichlorobenzene	ND		0.0125	1	10/02/2021 13:26	WG1750409
1,2,4-Trichlorobenzene	ND		0.0125	1	10/02/2021 13:26	WG1750409
1,1,1-Trichloroethane	ND		0.00250	1	10/02/2021 13:26	WG1750409

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
1,1,2-Trichloroethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
Trichloroethene	ND		0.00100	1	10/02/2021 13:26	WG1750409
Trichlorofluoromethane	ND		0.00250	1	10/02/2021 13:26	WG1750409
1,2,3-Trichloropropane	ND		0.0125	1	10/02/2021 13:26	WG1750409
1,2,4-Trimethylbenzene	ND		0.00500	1	10/02/2021 13:26	WG1750409
1,2,3-Trimethylbenzene	ND		0.00500	1	10/02/2021 13:26	WG1750409
1,3,5-Trimethylbenzene	ND		0.00500	1	10/02/2021 13:26	WG1750409
Vinyl chloride	ND		0.00250	1	10/02/2021 13:26	WG1750409
Xylenes, Total	0.00893		0.00650	1	10/02/2021 13:26	WG1750409
(S) Toluene-d8	108		75.0-131		10/02/2021 13:26	WG1750409
(S) 4-Bromofluorobenzene	85.4		67.0-138		10/02/2021 13:26	WG1750409
(S) 1,2-Dichloroethane-d4	92.6		70.0-130		10/02/2021 13:26	WG1750409

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	261		4.00	1	10/08/2021 21:13	WG1752948
C28-C40 Oil Range	84.5		4.00	1	10/08/2021 21:13	WG1752948
(S) o-Terphenyl	0.000	J2	18.0-148		10/08/2021 21:13	WG1752948

Sample Narrative:

L1410197-07 WG1752948: Surrogate failure due to matrix interference

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	0.00845		0.00600	1	10/09/2021 14:47	WG1753490
Acenaphthene	0.0219		0.00600	1	10/09/2021 14:47	WG1753490
Acenaphthylene	ND		0.00600	1	10/09/2021 14:47	WG1753490
Benzo(a)anthracene	ND		0.00600	1	10/09/2021 14:47	WG1753490
Benzo(a)pyrene	ND		0.00600	1	10/09/2021 14:47	WG1753490
Benzo(b)fluoranthene	ND		0.00600	1	10/09/2021 14:47	WG1753490
Benzo(g,h,i)perylene	ND		0.00600	1	10/09/2021 14:47	WG1753490
Benzo(k)fluoranthene	ND		0.00600	1	10/09/2021 14:47	WG1753490
Chrysene	0.00632		0.00600	1	10/09/2021 14:47	WG1753490
Dibenz(a,h)anthracene	ND		0.00600	1	10/09/2021 14:47	WG1753490
Fluoranthene	0.00792		0.00600	1	10/09/2021 14:47	WG1753490
Fluorene	0.0142		0.00600	1	10/09/2021 14:47	WG1753490
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/09/2021 14:47	WG1753490
Naphthalene	0.170		0.0200	1	10/09/2021 14:47	WG1753490
Phenanthrene	0.0996		0.00600	1	10/09/2021 14:47	WG1753490
Pyrene	0.0769		0.00600	1	10/09/2021 14:47	WG1753490
1-Methylnaphthalene	0.181		0.0200	1	10/09/2021 14:47	WG1753490
2-Methylnaphthalene	0.453		0.0200	1	10/09/2021 14:47	WG1753490
2-Chloronaphthalene	ND		0.0200	1	10/09/2021 14:47	WG1753490
(S) p-Terphenyl-d14	101		23.0-120		10/09/2021 14:47	WG1753490
(S) Nitrobenzene-d5	90.9		14.0-149		10/09/2021 14:47	WG1753490
(S) 2-Fluorobiphenyl	81.5		34.0-125		10/09/2021 14:47	WG1753490

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	8.25		1	10/07/2021 01:32	WG1749767

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	10/08/2021 19:57	WG1751280

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.16	T8	1	10/06/2021 16:00	WG1752177

Sample Narrative:

L1410197-08 WG1752177: 8.16 at 20.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	5370		10.0	1	10/03/2021 19:12	WG1750673

Sample Narrative:

L1410197-08 WG1750673: at 25C

Metals (ICP) by Method 6010B

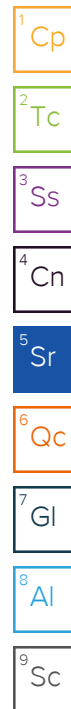
Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.64		2.00	1	10/08/2021 07:22	WG1750787
Barium	8160		2.50	5	10/08/2021 09:40	WG1750787
Cadmium	ND		0.500	1	10/08/2021 07:22	WG1750787
Copper	18.3		2.00	1	10/08/2021 07:22	WG1750787
Lead	17.1		0.500	1	10/08/2021 07:22	WG1750787
Nickel	14.5		2.00	1	10/08/2021 07:22	WG1750787
Selenium	ND		2.00	1	10/08/2021 07:22	WG1750787
Silver	ND		1.00	1	10/08/2021 07:22	WG1750787
Zinc	60.8		5.00	1	10/08/2021 07:22	WG1750787

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	1.32		0.200	1	10/06/2021 23:34	WG1749760

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.134		0.101	1.01	10/09/2021 18:28	WG1752504
(S) a,a,a-Trifluorotoluene(FID)	94.8		77.0-120		10/09/2021 18:28	WG1752504



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	10/02/2021 13:46	WG1750409
Acrylonitrile	ND		0.0125	1	10/02/2021 13:46	WG1750409
Benzene	0.00205		0.00100	1	10/02/2021 13:46	WG1750409
Bromobenzene	ND		0.0125	1	10/02/2021 13:46	WG1750409
Bromodichloromethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
Bromoform	ND		0.0250	1	10/02/2021 13:46	WG1750409
Bromomethane	ND		0.0125	1	10/02/2021 13:46	WG1750409
n-Butylbenzene	ND		0.0125	1	10/02/2021 13:46	WG1750409
sec-Butylbenzene	ND		0.0125	1	10/02/2021 13:46	WG1750409
tert-Butylbenzene	ND		0.00500	1	10/02/2021 13:46	WG1750409
Carbon tetrachloride	ND		0.00500	1	10/02/2021 13:46	WG1750409
Chlorobenzene	ND		0.00250	1	10/02/2021 13:46	WG1750409
Chlorodibromomethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
Chloroethane	ND		0.00500	1	10/02/2021 13:46	WG1750409
Chloroform	ND		0.00250	1	10/02/2021 13:46	WG1750409
Chloromethane	ND		0.0125	1	10/02/2021 13:46	WG1750409
2-Chlorotoluene	ND		0.00250	1	10/02/2021 13:46	WG1750409
4-Chlorotoluene	ND		0.00500	1	10/02/2021 13:46	WG1750409
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	10/02/2021 13:46	WG1750409
1,2-Dibromoethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
Dibromomethane	ND		0.00500	1	10/02/2021 13:46	WG1750409
1,2-Dichlorobenzene	ND		0.00500	1	10/02/2021 13:46	WG1750409
1,3-Dichlorobenzene	ND		0.00500	1	10/02/2021 13:46	WG1750409
1,4-Dichlorobenzene	ND		0.00500	1	10/02/2021 13:46	WG1750409
Dichlorodifluoromethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
1,1-Dichloroethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
1,2-Dichloroethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
1,1-Dichloroethene	ND		0.00250	1	10/02/2021 13:46	WG1750409
cis-1,2-Dichloroethene	ND		0.00250	1	10/02/2021 13:46	WG1750409
trans-1,2-Dichloroethene	ND		0.00500	1	10/02/2021 13:46	WG1750409
1,2-Dichloropropane	ND		0.00500	1	10/02/2021 13:46	WG1750409
1,1-Dichloropropene	ND		0.00250	1	10/02/2021 13:46	WG1750409
1,3-Dichloropropane	ND		0.00500	1	10/02/2021 13:46	WG1750409
cis-1,3-Dichloropropene	ND		0.00250	1	10/02/2021 13:46	WG1750409
trans-1,3-Dichloropropene	ND		0.00500	1	10/02/2021 13:46	WG1750409
2,2-Dichloropropane	ND		0.00250	1	10/02/2021 13:46	WG1750409
Di-isopropyl ether	ND		0.00100	1	10/02/2021 13:46	WG1750409
Ethylbenzene	0.00420		0.00250	1	10/02/2021 13:46	WG1750409
Hexachloro-1,3-butadiene	ND		0.0250	1	10/02/2021 13:46	WG1750409
Isopropylbenzene	ND		0.00250	1	10/02/2021 13:46	WG1750409
p-Isopropyltoluene	ND		0.00500	1	10/02/2021 13:46	WG1750409
2-Butanone (MEK)	ND		0.100	1	10/02/2021 13:46	WG1750409
Methylene Chloride	ND		0.0250	1	10/02/2021 13:46	WG1750409
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	10/02/2021 13:46	WG1750409
Methyl tert-butyl ether	ND		0.00100	1	10/02/2021 13:46	WG1750409
Naphthalene	ND		0.0125	1	10/02/2021 13:46	WG1750409
n-Propylbenzene	ND		0.00500	1	10/02/2021 13:46	WG1750409
Styrene	ND		0.0125	1	10/02/2021 13:46	WG1750409
1,1,1,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
1,1,2,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
Tetrachloroethene	ND		0.00250	1	10/02/2021 13:46	WG1750409
Toluene	0.0117		0.00500	1	10/02/2021 13:46	WG1750409
1,2,3-Trichlorobenzene	ND		0.0125	1	10/02/2021 13:46	WG1750409
1,2,4-Trichlorobenzene	ND		0.0125	1	10/02/2021 13:46	WG1750409
1,1,1-Trichloroethane	ND		0.00250	1	10/02/2021 13:46	WG1750409

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
1,1,2-Trichloroethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
Trichloroethene	ND		0.00100	1	10/02/2021 13:46	WG1750409
Trichlorofluoromethane	ND		0.00250	1	10/02/2021 13:46	WG1750409
1,2,3-Trichloropropane	ND		0.0125	1	10/02/2021 13:46	WG1750409
1,2,4-Trimethylbenzene	0.0139		0.00500	1	10/02/2021 13:46	WG1750409
1,2,3-Trimethylbenzene	0.00638		0.00500	1	10/02/2021 13:46	WG1750409
1,3,5-Trimethylbenzene	0.00550		0.00500	1	10/02/2021 13:46	WG1750409
Vinyl chloride	ND		0.00250	1	10/02/2021 13:46	WG1750409
Xylenes, Total	0.0267		0.00650	1	10/02/2021 13:46	WG1750409
(S) Toluene-d8	106		75.0-131		10/02/2021 13:46	WG1750409
(S) 4-Bromofluorobenzene	87.2		67.0-138		10/02/2021 13:46	WG1750409
(S) 1,2-Dichloroethane-d4	96.0		70.0-130		10/02/2021 13:46	WG1750409

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	164		4.00	1	10/08/2021 19:52	WG1752948
C28-C40 Oil Range	63.1		4.00	1	10/08/2021 19:52	WG1752948
(S) o-Terphenyl	36.4		18.0-148		10/08/2021 19:52	WG1752948

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	10/09/2021 11:50	WG1753490
Acenaphthene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Acenaphthylene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Benzo(a)anthracene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Benzo(a)pyrene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Benzo(b)fluoranthene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Benzo(g,h,i)perylene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Benzo(k)fluoranthene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Chrysene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Dibenz(a,h)anthracene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Fluoranthene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Fluorene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/09/2021 11:50	WG1753490
Naphthalene	0.0564		0.0200	1	10/09/2021 11:50	WG1753490
Phenanthrene	0.0226		0.00600	1	10/09/2021 11:50	WG1753490
Pyrene	0.0210		0.00600	1	10/09/2021 11:50	WG1753490
1-Methylnaphthalene	0.0482		0.0200	1	10/09/2021 11:50	WG1753490
2-Methylnaphthalene	0.128		0.0200	1	10/09/2021 11:50	WG1753490
2-Chloronaphthalene	ND		0.0200	1	10/09/2021 11:50	WG1753490
(S) p-Terphenyl-d14	81.6		23.0-120		10/09/2021 11:50	WG1753490
(S) Nitrobenzene-d5	70.9		14.0-149		10/09/2021 11:50	WG1753490
(S) 2-Fluorobiphenyl	63.8		34.0-125		10/09/2021 11:50	WG1753490

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	8.26		1	10/07/2021 01:34	WG1749767

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	ND		1.00	1	10/08/2021 20:02	WG1751280

Wet Chemistry by Method 9045D

Analyte	Result su	Qualifier	Dilution	Analysis date / time	Batch
pH	8.15	T8	1	10/06/2021 16:00	WG1752177

Sample Narrative:

L1410197-09 WG1752177: 8.15 at 20.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	5680		10.0	1	10/03/2021 19:12	WG1750673

Sample Narrative:

L1410197-09 WG1750673: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.57		2.00	1	10/08/2021 06:13	WG1750787
Barium	3700		0.500	1	10/08/2021 06:13	WG1750787
Cadmium	0.680		0.500	1	10/08/2021 06:13	WG1750787
Copper	16.6		2.00	1	10/08/2021 06:13	WG1750787
Lead	16.8		0.500	1	10/08/2021 06:13	WG1750787
Nickel	13.8		2.00	1	10/08/2021 06:13	WG1750787
Selenium	2.09		2.00	1	10/08/2021 06:13	WG1750787
Silver	ND		1.00	1	10/08/2021 06:13	WG1750787
Zinc	58.7		5.00	1	10/08/2021 06:13	WG1750787

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	1.36		0.200	1	10/06/2021 23:37	WG1749760

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.119		0.100	1	10/09/2021 18:52	WG1752504
(S) a,a,a-Trifluorotoluene(FID)	95.3		77.0-120		10/09/2021 18:52	WG1752504

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
Acetone	ND		0.0500	1	10/02/2021 14:06	WG1750409
Acrylonitrile	ND		0.0125	1	10/02/2021 14:06	WG1750409
Benzene	ND		0.00100	1	10/02/2021 14:06	WG1750409
Bromobenzene	ND		0.0125	1	10/02/2021 14:06	WG1750409
Bromodichloromethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
Bromoform	ND		0.0250	1	10/02/2021 14:06	WG1750409
Bromomethane	ND		0.0125	1	10/02/2021 14:06	WG1750409
n-Butylbenzene	ND		0.0125	1	10/02/2021 14:06	WG1750409
sec-Butylbenzene	ND		0.0125	1	10/02/2021 14:06	WG1750409
tert-Butylbenzene	ND		0.00500	1	10/02/2021 14:06	WG1750409
Carbon tetrachloride	ND		0.00500	1	10/02/2021 14:06	WG1750409
Chlorobenzene	ND		0.00250	1	10/02/2021 14:06	WG1750409
Chlorodibromomethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
Chloroethane	ND		0.00500	1	10/02/2021 14:06	WG1750409
Chloroform	ND		0.00250	1	10/02/2021 14:06	WG1750409
Chloromethane	ND		0.0125	1	10/02/2021 14:06	WG1750409
2-Chlorotoluene	ND		0.00250	1	10/02/2021 14:06	WG1750409
4-Chlorotoluene	ND		0.00500	1	10/02/2021 14:06	WG1750409
1,2-Dibromo-3-Chloropropane	ND		0.0250	1	10/02/2021 14:06	WG1750409
1,2-Dibromoethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
Dibromomethane	ND		0.00500	1	10/02/2021 14:06	WG1750409
1,2-Dichlorobenzene	ND		0.00500	1	10/02/2021 14:06	WG1750409
1,3-Dichlorobenzene	ND		0.00500	1	10/02/2021 14:06	WG1750409
1,4-Dichlorobenzene	ND		0.00500	1	10/02/2021 14:06	WG1750409
Dichlorodifluoromethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
1,1-Dichloroethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
1,2-Dichloroethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
1,1-Dichloroethene	ND		0.00250	1	10/02/2021 14:06	WG1750409
cis-1,2-Dichloroethene	ND		0.00250	1	10/02/2021 14:06	WG1750409
trans-1,2-Dichloroethene	ND		0.00500	1	10/02/2021 14:06	WG1750409
1,2-Dichloropropane	ND		0.00500	1	10/02/2021 14:06	WG1750409
1,1-Dichloropropene	ND		0.00250	1	10/02/2021 14:06	WG1750409
1,3-Dichloropropane	ND		0.00500	1	10/02/2021 14:06	WG1750409
cis-1,3-Dichloropropene	ND		0.00250	1	10/02/2021 14:06	WG1750409
trans-1,3-Dichloropropene	ND		0.00500	1	10/02/2021 14:06	WG1750409
2,2-Dichloropropane	ND		0.00250	1	10/02/2021 14:06	WG1750409
Di-isopropyl ether	ND		0.00100	1	10/02/2021 14:06	WG1750409
Ethylbenzene	ND		0.00250	1	10/02/2021 14:06	WG1750409
Hexachloro-1,3-butadiene	ND		0.0250	1	10/02/2021 14:06	WG1750409
Isopropylbenzene	ND		0.00250	1	10/02/2021 14:06	WG1750409
p-Isopropyltoluene	ND		0.00500	1	10/02/2021 14:06	WG1750409
2-Butanone (MEK)	ND		0.100	1	10/02/2021 14:06	WG1750409
Methylene Chloride	ND		0.0250	1	10/02/2021 14:06	WG1750409
4-Methyl-2-pentanone (MIBK)	ND		0.0250	1	10/02/2021 14:06	WG1750409
Methyl tert-butyl ether	ND		0.00100	1	10/02/2021 14:06	WG1750409
Naphthalene	ND		0.0125	1	10/02/2021 14:06	WG1750409
n-Propylbenzene	ND		0.00500	1	10/02/2021 14:06	WG1750409
Styrene	ND		0.0125	1	10/02/2021 14:06	WG1750409
1,1,1,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
1,1,2,2-Tetrachloroethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
1,1,2-Trichlorotrifluoroethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
Tetrachloroethene	ND		0.00250	1	10/02/2021 14:06	WG1750409
Toluene	ND		0.00500	1	10/02/2021 14:06	WG1750409
1,2,3-Trichlorobenzene	ND		0.0125	1	10/02/2021 14:06	WG1750409
1,2,4-Trichlorobenzene	ND		0.0125	1	10/02/2021 14:06	WG1750409
1,1,1-Trichloroethane	ND		0.00250	1	10/02/2021 14:06	WG1750409

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

036B-9

SAMPLE RESULTS - 09

Collected date/time: 09/26/21 09:50

L1410197

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

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
1,1,2-Trichloroethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
Trichloroethene	ND		0.00100	1	10/02/2021 14:06	WG1750409
Trichlorofluoromethane	ND		0.00250	1	10/02/2021 14:06	WG1750409
1,2,3-Trichloropropane	ND		0.0125	1	10/02/2021 14:06	WG1750409
1,2,4-Trimethylbenzene	0.00583		0.00500	1	10/02/2021 14:06	WG1750409
1,2,3-Trimethylbenzene	ND		0.00500	1	10/02/2021 14:06	WG1750409
1,3,5-Trimethylbenzene	ND		0.00500	1	10/02/2021 14:06	WG1750409
Vinyl chloride	ND		0.00250	1	10/02/2021 14:06	WG1750409
Xylenes, Total	0.0141		0.00650	1	10/02/2021 14:06	WG1750409
(S) Toluene-d8	106		75.0-131		10/02/2021 14:06	WG1750409
(S) 4-Bromofluorobenzene	92.6		67.0-138		10/02/2021 14:06	WG1750409
(S) 1,2-Dichloroethane-d4	97.0		70.0-130		10/02/2021 14:06	WG1750409

Semi-Volatile Organic Compounds (GC) by Method 8015

Analyte	Result mg/kg	Qualifier	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	144		4.00	1	10/08/2021 20:05	WG1752948
C28-C40 Oil Range	49.7		4.00	1	10/08/2021 20:05	WG1752948
(S) o-Terphenyl	0.000	J2	18.0-148		10/08/2021 20:05	WG1752948

Sample Narrative:

L1410197-09 WG1752948: Surrogate failure due to matrix interference

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	10/09/2021 12:09	WG1753490
Acenaphthene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Acenaphthylene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Benzo(a)anthracene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Benzo(a)pyrene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Benzo(b)fluoranthene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Benzo(g,h,i)perylene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Benzo(k)fluoranthene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Chrysene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Dibenz(a,h)anthracene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Fluoranthene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Fluorene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Indeno(1,2,3-cd)pyrene	ND		0.00600	1	10/09/2021 12:09	WG1753490
Naphthalene	0.0455		0.0200	1	10/09/2021 12:09	WG1753490
Phenanthrene	0.0306		0.00600	1	10/09/2021 12:09	WG1753490
Pyrene	0.0189		0.00600	1	10/09/2021 12:09	WG1753490
1-Methylnaphthalene	0.0521		0.0200	1	10/09/2021 12:09	WG1753490
2-Methylnaphthalene	0.119		0.0200	1	10/09/2021 12:09	WG1753490
2-Chloronaphthalene	ND		0.0200	1	10/09/2021 12:09	WG1753490
(S) p-Terphenyl-d14	86.0		23.0-120		10/09/2021 12:09	WG1753490
(S) Nitrobenzene-d5	68.3		14.0-149		10/09/2021 12:09	WG1753490
(S) 2-Fluorobiphenyl	64.2		34.0-125		10/09/2021 12:09	WG1753490

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3714314-1 10/08/21 18:08

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Hexavalent Chromium	U		0.255	1.00

L1410191-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1410191-07 10/08/21 18:21 • (DUP) R3714314-3 10/08/21 18:29

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

L1410909-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1410909-02 10/08/21 20:23 • (DUP) R3714314-8 10/08/21 20:28

Analyte	Original Result mg/kg	DUP Result mg/kg	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Hexavalent Chromium	ND	ND	1	2.87		20

Laboratory Control Sample (LCS)

(LCS) R3714314-2 10/08/21 18:13

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Hexavalent Chromium	10.0	11.4	114	80.0-120	

L1410197-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1410197-01 10/08/21 18:49 • (MS) R3714314-4 10/08/21 18:55 • (MSD) R3714314-5 10/08/21 19:00

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 %
Hexavalent Chromium	20.0	ND	17.5	17.5	87.5	87.6	1	75.0-125			0.214	20

L1410197-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1410197-01 10/08/21 18:49 • (MS) R3714314-6 10/08/21 19:15

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MS Rec. %	Dilution	Rec. Limits %	MS Qualifier
Hexavalent Chromium	638	ND	609	95.4	50	75.0-125	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1410191-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1410191-03 10/06/21 16:00 • (DUP) R3713232-2 10/06/21 16:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.91	8.95	1	0.448		1

Sample Narrative:

OS: 8.91 at 21.2C

DUP: 8.95 at 21.3C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1410197-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1410197-07 10/06/21 16:00 • (DUP) R3713232-3 10/06/21 16:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.69	8.69	1	0.000		1

Sample Narrative:

OS: 8.69 at 20.9C

DUP: 8.69 at 20.9C

Laboratory Control Sample (LCS)

(LCS) R3713232-1 10/06/21 16:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.98	99.8	99.0-101	

Sample Narrative:

LCS: 9.98 at 20.8C

L1410790-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1410790-06 10/06/21 16:00 • (DUP) R3713251-4 10/06/21 16:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	9.27	9.26	1	0.108		1

Sample Narrative:

OS: 9.27 at 20.3C

DUP: 9.26 at 20.6C

Laboratory Control Sample (LCS)

(LCS) R3713251-1 10/06/21 16:00

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

Sample Narrative:

LCS: 10.02 at 20.5C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3711836-1 10/03/21 19:12

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

Sample Narrative:

BLANK: at 25C

L1410197-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1410197-07 10/03/21 19:12 • (DUP) R3711836-3 10/03/21 19:12

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	5470	5710	1	4.29		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1410205-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1410205-02 10/03/21 19:12 • (DUP) R3711836-4 10/03/21 19:12

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	458	494	1	7.56		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3711836-2 10/03/21 19:12

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	268	271	101	85.0-115	

Sample Narrative:

LCS: at 25C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3713965-1 10/08/21 06:21

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) R3713965-2 10/08/21 06:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	95.2	95.2	80.0-120	
Barium	100	102	102	80.0-120	
Cadmium	100	96.9	96.9	80.0-120	
Copper	100	101	101	80.0-120	
Lead	100	96.8	96.8	80.0-120	
Nickel	100	99.0	99.0	80.0-120	
Selenium	100	100	100	80.0-120	
Silver	20.0	17.7	88.3	80.0-120	
Zinc	100	95.2	95.2	80.0-120	

L1410197-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1410197-03 10/08/21 06:27 • (MS) R3713965-5 10/08/21 06:35 • (MSD) R3713965-6 10/08/21 06:38

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	7.62	90.2	92.5	82.6	84.9	1	75.0-125			2.52	20
Barium	100	5810	5680	5710	0.000	0.000	1	75.0-125	E V	E V	0.687	20
Cadmium	100	0.560	85.8	87.4	85.2	86.8	1	75.0-125			1.86	20
Copper	100	17.0	102	105	85.2	87.9	1	75.0-125			2.65	20
Lead	100	18.6	99.1	101	80.5	82.5	1	75.0-125			1.96	20
Nickel	100	13.1	96.4	99.1	83.3	86.0	1	75.0-125			2.71	20
Selenium	100	ND	88.1	91.3	86.5	89.7	1	75.0-125			3.54	20
Silver	20.0	ND	17.2	17.5	85.8	87.3	1	75.0-125			1.66	20
Zinc	100	63.4	132	132	69.0	68.8	1	75.0-125	J6	J6	0.166	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3713385-1 10/06/21 22:37

Analyte	MB Result mg/l	MB Qualifier	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) R3713385-2 10/06/21 22:40 • (LCSD) R3713385-3 10/06/21 22:42

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.04	1.12	104	112	80.0-120			7.39	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3713386-1 10/07/21 00:09

Analyte	MB Result mg/l	MB Qualifier	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) R3713386-2 10/07/21 00:12 • (LCSD) R3713386-3 10/07/21 00:14

Analyte	Spike Amount mg/l	LCS Result mg/l	LCSD Result mg/l	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Hot Water Sol. Boron	1.00	1.03	0.970	103	97.0	80.0-120			6.23	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3713850-2 10/06/21 05:49

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
TPH (GC/FID) Low Fraction	0.0370	⬇	0.0217	0.100
(S) a,a,a-Trifluorotoluene(FID)	90.0			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3713850-1 10/06/21 05:01

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.16	93.8	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			105	77.0-120	

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3714598-3 10/09/21 16:53

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)	97.8			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3714598-2 10/09/21 16:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.34	97.1	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			104	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3714984-3 10/02/21 07:44

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3714984-3 10/02/21 07:44

Analyte	MB Result mg/kg	MB Qualifier	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	99.9			75.0-131
(S) 4-Bromofluorobenzene	93.5			67.0-138
(S) 1,2-Dichloroethane-d4	107			70.0-130

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

(LCS) R3714984-1 10/02/21 06:45 • (LCSD) R3714984-2 10/02/21 07:04

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 %
Acetone	0.625	0.669	0.698	107	112	10.0-160			4.24	31
Acrylonitrile	0.625	0.579	0.618	92.6	98.9	45.0-153			6.52	22
Benzene	0.125	0.120	0.119	96.0	95.2	70.0-123			0.837	20
Bromobenzene	0.125	0.117	0.119	93.6	95.2	73.0-121			1.69	20
Bromodichloromethane	0.125	0.118	0.120	94.4	96.0	73.0-121			1.68	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) R3714984-1 10/02/21 06:45 • (LCSD) R3714984-2 10/02/21 07:04

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 %
Bromoform	0.125	0.0963	0.101	77.0	80.8	64.0-132			4.76	20
Bromomethane	0.125	0.109	0.104	87.2	83.2	56.0-147			4.69	20
n-Butylbenzene	0.125	0.0961	0.104	76.9	83.2	68.0-135			7.90	20
sec-Butylbenzene	0.125	0.102	0.105	81.6	84.0	74.0-130			2.90	20
tert-Butylbenzene	0.125	0.103	0.108	82.4	86.4	75.0-127			4.74	20
Carbon tetrachloride	0.125	0.112	0.112	89.6	89.6	66.0-128			0.000	20
Chlorobenzene	0.125	0.110	0.114	88.0	91.2	76.0-128			3.57	20
Chlorodibromomethane	0.125	0.104	0.105	83.2	84.0	74.0-127			0.957	20
Chloroethane	0.125	0.105	0.102	84.0	81.6	61.0-134			2.90	20
Chloroform	0.125	0.118	0.117	94.4	93.6	72.0-123			0.851	20
Chloromethane	0.125	0.105	0.107	84.0	85.6	51.0-138			1.89	20
2-Chlorotoluene	0.125	0.112	0.114	89.6	91.2	75.0-124			1.77	20
4-Chlorotoluene	0.125	0.121	0.117	96.8	93.6	75.0-124			3.36	20
1,2-Dibromo-3-Chloropropane	0.125	0.0918	0.0840	73.4	67.2	59.0-130			8.87	20
1,2-Dibromoethane	0.125	0.108	0.109	86.4	87.2	74.0-128			0.922	20
Dibromomethane	0.125	0.118	0.115	94.4	92.0	75.0-122			2.58	20
1,2-Dichlorobenzene	0.125	0.115	0.114	92.0	91.2	76.0-124			0.873	20
1,3-Dichlorobenzene	0.125	0.111	0.112	88.8	89.6	76.0-125			0.897	20
1,4-Dichlorobenzene	0.125	0.110	0.116	88.0	92.8	77.0-121			5.31	20
Dichlorodifluoromethane	0.125	0.111	0.120	88.8	96.0	43.0-156			7.79	20
1,1-Dichloroethane	0.125	0.119	0.122	95.2	97.6	70.0-127			2.49	20
1,2-Dichloroethane	0.125	0.120	0.120	96.0	96.0	65.0-131			0.000	20
1,1-Dichloroethene	0.125	0.124	0.126	99.2	101	65.0-131			1.60	20
cis-1,2-Dichloroethene	0.125	0.119	0.119	95.2	95.2	73.0-125			0.000	20
trans-1,2-Dichloroethene	0.125	0.117	0.118	93.6	94.4	71.0-125			0.851	20
1,2-Dichloropropane	0.125	0.129	0.124	103	99.2	74.0-125			3.95	20
1,1-Dichloropropene	0.125	0.116	0.122	92.8	97.6	73.0-125			5.04	20
1,3-Dichloropropane	0.125	0.118	0.117	94.4	93.6	80.0-125			0.851	20
cis-1,3-Dichloropropene	0.125	0.120	0.121	96.0	96.8	76.0-127			0.830	20
trans-1,3-Dichloropropene	0.125	0.105	0.109	84.0	87.2	73.0-127			3.74	20
2,2-Dichloropropane	0.125	0.122	0.121	97.6	96.8	59.0-135			0.823	20
Di-isopropyl ether	0.125	0.125	0.122	100	97.6	60.0-136			2.43	20
Ethylbenzene	0.125	0.111	0.116	88.8	92.8	74.0-126			4.41	20
Hexachloro-1,3-butadiene	0.125	0.0720	0.0767	57.6	61.4	57.0-150			6.32	20
Isopropylbenzene	0.125	0.108	0.111	86.4	88.8	72.0-127			2.74	20
p-Isopropyltoluene	0.125	0.100	0.105	80.0	84.0	72.0-133			4.88	20
2-Butanone (MEK)	0.625	0.613	0.579	98.1	92.6	30.0-160			5.70	24
Methylene Chloride	0.125	0.122	0.121	97.6	96.8	68.0-123			0.823	20
4-Methyl-2-pentanone (MIBK)	0.625	0.622	0.617	99.5	98.7	56.0-143			0.807	20
Methyl tert-butyl ether	0.125	0.118	0.119	94.4	95.2	66.0-132			0.844	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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

(LCS) R3714984-1 10/02/21 06:45 • (LCSD) R3714984-2 10/02/21 07:04

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	0.0804	0.0785	64.3	62.8	59.0-130			2.39	20
n-Propylbenzene	0.125	0.118	0.123	94.4	98.4	74.0-126			4.15	20
Styrene	0.125	0.108	0.109	86.4	87.2	72.0-127			0.922	20
1,1,1,2-Tetrachloroethane	0.125	0.108	0.107	86.4	85.6	74.0-129			0.930	20
1,1,2,2-Tetrachloroethane	0.125	0.109	0.112	87.2	89.6	68.0-128			2.71	20
Tetrachloroethene	0.125	0.109	0.110	87.2	88.0	70.0-136			0.913	20
Toluene	0.125	0.109	0.111	87.2	88.8	75.0-121			1.82	20
1,1,2-Trichlorotrifluoroethane	0.125	0.109	0.112	87.2	89.6	61.0-139			2.71	20
1,2,3-Trichlorobenzene	0.125	0.0881	0.0880	70.5	70.4	59.0-139			0.114	20
1,2,4-Trichlorobenzene	0.125	0.0894	0.0903	71.5	72.2	62.0-137			1.00	20
1,1,1-Trichloroethane	0.125	0.117	0.118	93.6	94.4	69.0-126			0.851	20
1,1,2-Trichloroethane	0.125	0.116	0.114	92.8	91.2	78.0-123			1.74	20
Trichloroethene	0.125	0.124	0.127	99.2	102	76.0-126			2.39	20
Trichlorofluoromethane	0.125	0.111	0.106	88.8	84.8	61.0-142			4.61	20
1,2,3-Trichloropropane	0.125	0.123	0.118	98.4	94.4	67.0-129			4.15	20
1,2,3-Trimethylbenzene	0.125	0.109	0.111	87.2	88.8	74.0-124			1.82	20
1,2,4-Trimethylbenzene	0.125	0.108	0.112	86.4	89.6	70.0-126			3.64	20
1,3,5-Trimethylbenzene	0.125	0.106	0.109	84.8	87.2	73.0-127			2.79	20
Vinyl chloride	0.125	0.103	0.106	82.4	84.8	63.0-134			2.87	20
Xylenes, Total	0.375	0.329	0.321	87.7	85.6	72.0-127			2.46	20
(S) Toluene-d8				98.3	97.2	75.0-131				
(S) 4-Bromofluorobenzene				95.3	99.5	67.0-138				
(S) 1,2-Dichloroethane-d4				109	105	70.0-130				

L1410210-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1410210-05 10/02/21 15:43 • (MS) R3714984-4 10/02/21 16:02 • (MSD) R3714984-5 10/02/21 16:22

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Acetone	1.00	ND	0.687	0.854	68.7	85.4	1.6	10.0-160			21.7	40
Acrylonitrile	1.00	ND	0.673	0.874	67.3	87.4	1.6	10.0-160			26.0	40
Benzene	0.200	ND	0.130	0.0856	65.0	42.8	1.6	10.0-149		J3	41.2	37
Bromobenzene	0.200	ND	0.173	0.126	86.5	63.0	1.6	10.0-156			31.4	38
Bromodichloromethane	0.200	ND	0.143	0.117	71.5	58.5	1.6	10.0-143			20.0	37
Bromoform	0.200	ND	0.140	0.138	70.0	69.0	1.6	10.0-146			1.44	36
Bromomethane	0.200	ND	0.0800	0.0344	40.0	17.2	1.6	10.0-149		J3	79.7	38
n-Butylbenzene	0.200	ND	0.106	0.0686	53.0	34.3	1.6	10.0-160		J3	42.8	40
sec-Butylbenzene	0.200	ND	0.117	0.0683	58.5	34.2	1.6	10.0-159		J3	52.6	39
tert-Butylbenzene	0.200	ND	0.126	0.0708	63.0	35.4	1.6	10.0-156		J3	56.1	39

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

L1410210-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1410210-05 10/02/21 15:43 • (MS) R3714984-4 10/02/21 16:02 • (MSD) R3714984-5 10/02/21 16:22

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Carbon tetrachloride	0.200	ND	0.102	0.0538	51.0	26.9	1.6	10.0-145		J3	61.9	37
Chlorobenzene	0.200	ND	0.139	0.100	69.5	50.0	1.6	10.0-152			32.6	39
Chlorodibromomethane	0.200	ND	0.145	0.131	72.5	65.5	1.6	10.0-146			10.1	37
Chloroethane	0.200	ND	0.0561	0.0324	28.0	16.2	1.6	10.0-146		J3	53.6	40
Chloroform	0.200	ND	0.132	0.0930	66.0	46.5	1.6	10.0-146			34.7	37
Chloromethane	0.200	ND	0.0971	0.0588	48.5	29.4	1.6	10.0-159		J3	49.1	37
2-Chlorotoluene	0.200	ND	0.144	0.0923	72.0	46.1	1.6	10.0-159		J3	43.8	38
4-Chlorotoluene	0.200	ND	0.163	0.109	81.5	54.5	1.6	10.0-155		J3	39.7	39
1,2-Dibromo-3-Chloropropane	0.200	ND	0.133	0.156	66.5	78.0	1.6	10.0-151			15.9	39
1,2-Dibromoethane	0.200	ND	0.172	0.160	86.0	80.0	1.6	10.0-148			7.23	34
Dibromomethane	0.200	ND	0.155	0.149	77.5	74.5	1.6	10.0-147			3.95	35
1,2-Dichlorobenzene	0.200	ND	0.152	0.134	76.0	67.0	1.6	10.0-155			12.6	37
1,3-Dichlorobenzene	0.200	ND	0.144	0.113	72.0	56.5	1.6	10.0-153			24.1	38
1,4-Dichlorobenzene	0.200	ND	0.155	0.117	77.5	58.5	1.6	10.0-151			27.9	38
Dichlorodifluoromethane	0.200	ND	0.0980	0.0514	49.0	25.7	1.6	10.0-160		J3	62.4	35
1,1-Dichloroethane	0.200	ND	0.124	0.0817	62.0	40.8	1.6	10.0-147		J3	41.1	37
1,2-Dichloroethane	0.200	ND	0.157	0.139	78.5	69.5	1.6	10.0-148			12.2	35
1,1-Dichloroethene	0.200	ND	0.113	0.0444	56.5	22.2	1.6	10.0-155		J3	87.2	37
cis-1,2-Dichloroethene	0.200	ND	0.127	0.0896	63.5	44.8	1.6	10.0-149			34.5	37
trans-1,2-Dichloroethene	0.200	ND	0.117	0.0655	58.5	32.8	1.6	10.0-150		J3	56.4	37
1,2-Dichloropropane	0.200	ND	0.150	0.114	75.0	57.0	1.6	10.0-148			27.3	37
1,1-Dichloropropene	0.200	ND	0.119	0.0618	59.5	30.9	1.6	10.0-153		J3	63.3	35
1,3-Dichloropropane	0.200	ND	0.177	0.162	88.5	81.0	1.6	10.0-154			8.85	35
cis-1,3-Dichloropropene	0.200	ND	0.164	0.132	82.0	66.0	1.6	10.0-151			21.6	37
trans-1,3-Dichloropropene	0.200	ND	0.162	0.141	81.0	70.5	1.6	10.0-148			13.9	37
2,2-Dichloropropane	0.200	ND	0.109	0.0550	54.5	27.5	1.6	10.0-138		J3	65.9	36
Di-isopropyl ether	0.200	ND	0.146	0.119	73.0	59.5	1.6	10.0-147			20.4	36
Ethylbenzene	0.200	ND	0.124	0.0816	62.0	40.8	1.6	10.0-160		J3	41.2	38
Hexachloro-1,3-butadiene	0.200	ND	0.0835	0.0600	41.8	30.0	1.6	10.0-160			32.8	40
Isopropylbenzene	0.200	ND	0.109	0.0714	54.5	35.7	1.6	10.0-155		J3	41.7	38
p-Isopropyltoluene	0.200	ND	0.115	0.0689	57.5	34.4	1.6	10.0-160		J3	50.1	40
2-Butanone (MEK)	1.00	ND	1.07	1.01	107	101	1.6	10.0-160			5.77	40
Methylene Chloride	0.200	ND	0.144	0.0448	72.0	22.4	1.6	10.0-141		J3	105	37
4-Methyl-2-pentanone (MIBK)	1.00	ND	0.959	1.02	95.9	102	1.6	10.0-160			6.16	35
Methyl tert-butyl ether	0.200	ND	0.158	0.146	79.0	73.0	1.6	11.0-147			7.89	35
Naphthalene	0.200	ND	0.114	0.150	57.0	75.0	1.6	10.0-160			27.3	36
n-Propylbenzene	0.200	ND	0.142	0.0809	71.0	40.4	1.6	10.0-158		J3	54.8	38
Styrene	0.200	ND	0.131	0.100	65.5	50.0	1.6	10.0-160			26.8	40
1,1,1,2-Tetrachloroethane	0.200	ND	0.126	0.104	63.0	52.0	1.6	10.0-149			19.1	39
1,1,2,2-Tetrachloroethane	0.200	ND	0.198	0.180	99.0	90.0	1.6	10.0-160			9.52	35

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

L1410210-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1410210-05 10/02/21 15:43 • (MS) R3714984-4 10/02/21 16:02 • (MSD) R3714984-5 10/02/21 16:22

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Tetrachloroethene	0.200	ND	0.117	0.0688	58.5	34.4	1.6	10.0-156		J3	51.9	39
Toluene	0.200	ND	0.130	0.0843	65.0	42.1	1.6	10.0-156		J3	42.7	38
1,1,2-Trichlorotrifluoroethane	0.200	ND	0.104	0.0505	52.0	25.3	1.6	10.0-160		J3	69.3	36
1,2,3-Trichlorobenzene	0.200	ND	0.108	0.125	54.0	62.5	1.6	10.0-160			14.6	40
1,2,4-Trichlorobenzene	0.200	ND	0.102	0.107	51.0	53.5	1.6	10.0-160			4.78	40
1,1,1-Trichloroethane	0.200	ND	0.113	0.0537	56.5	26.9	1.6	10.0-144		J3	71.1	35
1,1,2-Trichloroethane	0.200	ND	0.177	0.165	88.5	82.5	1.6	10.0-160			7.02	35
Trichloroethene	0.200	ND	0.129	0.0782	64.5	39.1	1.6	10.0-156		J3	49.0	38
Trichlorofluoromethane	0.200	ND	0.0728	0.0372	36.4	18.6	1.6	10.0-160		J3	64.7	40
1,2,3-Trichloropropane	0.200	ND	0.221	0.198	111	99.0	1.6	10.0-156			11.0	35
1,2,3-Trimethylbenzene	0.200	ND	0.130	0.106	65.0	53.0	1.6	10.0-160			20.3	36
1,2,4-Trimethylbenzene	0.200	ND	0.132	0.0904	66.0	45.2	1.6	10.0-160		J3	37.4	36
1,3,5-Trimethylbenzene	0.200	ND	0.128	0.0778	64.0	38.9	1.6	10.0-160		J3	48.8	38
Vinyl chloride	0.200	ND	0.0922	0.0429	46.1	21.4	1.6	10.0-160		J3	73.0	37
Xylenes, Total	0.600	ND	0.356	0.244	59.3	40.7	1.6	10.0-160			37.3	38
(S) Toluene-d8					102	102		75.0-131				
(S) 4-Bromofluorobenzene					90.6	95.9		67.0-138				
(S) 1,2-Dichloroethane-d4					97.5	100		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3714161-1 10/08/21 10:10

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
C10-C28 Diesel Range	U		1.61	4.00
C28-C40 Oil Range	U		0.274	4.00
(S) o-Terphenyl	74.2			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3714161-2 10/08/21 10:24

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	39.1	78.2	50.0-150	
(S) o-Terphenyl			86.3	18.0-148	

L1410197-03 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1410197-03 10/08/21 21:54 • (MS) R3714161-3 10/08/21 22:07 • (MSD) R3714161-4 10/08/21 22:21

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 %
C10-C28 Diesel Range	48.6	385	497	539	230	317	1	50.0-150	E V	E V	8.11	20
(S) o-Terphenyl					0.000	0.000		18.0-148	J2	J2		

Sample Narrative:

OS: Surrogate failure due to matrix interference

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Method Blank (MB)

(MB) R3714555-2 10/09/21 07:54

Analyte	MB Result mg/kg	MB Qualifier	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	92.9			14.0-149
(S) 2-Fluorobiphenyl	89.2			34.0-125
(S) p-Terphenyl-d14	120			23.0-120

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3714555-1 10/09/21 07:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0499	62.4	50.0-126	
Acenaphthene	0.0800	0.0532	66.5	50.0-120	
Acenaphthylene	0.0800	0.0562	70.3	50.0-120	
Benzo(a)anthracene	0.0800	0.0509	63.6	45.0-120	
Benzo(a)pyrene	0.0800	0.0427	53.4	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0525	65.6	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0502	62.8	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0537	67.1	49.0-125	
Chrysene	0.0800	0.0533	66.6	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0486	60.8	47.0-125	
Fluoranthene	0.0800	0.0521	65.1	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3714555-1 10/09/21 07:34

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0526	65.8	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0468	58.5	46.0-125	
Naphthalene	0.0800	0.0524	65.5	50.0-120	
Phenanthrene	0.0800	0.0536	67.0	47.0-120	
Pyrene	0.0800	0.0577	72.1	43.0-123	
1-Methylnaphthalene	0.0800	0.0537	67.1	51.0-121	
2-Methylnaphthalene	0.0800	0.0495	61.9	50.0-120	
2-Chloronaphthalene	0.0800	0.0504	63.0	50.0-120	
(S) Nitrobenzene-d5			73.7	14.0-149	
(S) 2-Fluorobiphenyl			66.5	34.0-125	
(S) p-Terphenyl-d14			87.2	23.0-120	

L1410145-14 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1410145-14 10/09/21 10:31 • (MS) R3714555-3 10/09/21 10:51 • (MSD) R3714555-4 10/09/21 11:10

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	0.0756	ND	0.0661	0.0662	87.4	86.6	1	10.0-145			0.151	30
Acenaphthene	0.0756	ND	0.0574	0.0582	75.9	76.2	1	14.0-127			1.38	27
Acenaphthylene	0.0756	ND	0.0554	0.0583	73.3	76.3	1	21.0-124			5.10	25
Benzo(a)anthracene	0.0756	ND	0.0553	0.0567	73.1	74.2	1	10.0-139			2.50	30
Benzo(a)pyrene	0.0756	ND	0.0512	0.0535	67.7	70.0	1	10.0-141			4.39	31
Benzo(b)fluoranthene	0.0756	ND	0.0520	0.0535	68.8	70.0	1	10.0-140			2.84	36
Benzo(g,h,i)perylene	0.0756	ND	0.0492	0.0515	65.1	67.4	1	10.0-140			4.57	33
Benzo(k)fluoranthene	0.0756	ND	0.0496	0.0513	65.6	67.1	1	10.0-137			3.37	31
Chrysene	0.0756	ND	0.0550	0.0558	72.8	73.0	1	10.0-145			1.44	30
Dibenz(a,h)anthracene	0.0756	ND	0.0461	0.0486	61.0	63.6	1	10.0-132			5.28	31
Fluoranthene	0.0756	ND	0.0586	0.0600	77.5	78.5	1	10.0-153			2.36	33
Fluorene	0.0756	ND	0.0654	0.0648	82.3	80.7	1	11.0-130			0.922	29
Indeno(1,2,3-cd)pyrene	0.0756	ND	0.0469	0.0496	62.0	64.9	1	10.0-137			5.60	32
Naphthalene	0.0756	ND	0.149	0.128	173	144	1	10.0-135	J5	J5	15.2	27
Phenanthrene	0.0756	ND	0.0799	0.0772	98.4	93.9	1	10.0-144			3.44	31
Pyrene	0.0756	ND	0.0628	0.0634	80.1	80.1	1	10.0-148			0.951	35
1-Methylnaphthalene	0.0756	0.0267	0.162	0.147	179	157	1	10.0-142	J5	J5	9.71	28
2-Methylnaphthalene	0.0756	0.0427	0.236	0.203	256	210	1	10.0-137	J5	J5	15.0	28
2-Chloronaphthalene	0.0756	ND	0.0488	0.0503	64.6	65.8	1	29.0-120			3.03	24
(S) Nitrobenzene-d5					73.1	104		14.0-149				
(S) 2-Fluorobiphenyl					69.3	74.5		34.0-125				
(S) p-Terphenyl-d14					87.6	93.3		23.0-120				

Cp

Tc

Ss

Cn

Sr

Qc

Gl

Al

Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

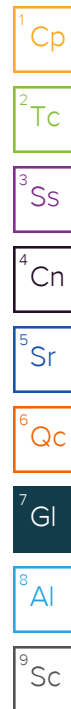
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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
B	The same analyte is found in the associated blank.
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J2	Surrogate recovery limits have been exceeded; values are outside lower control limits.
J3	The associated batch QC was outside the established quality control range for precision.
J5	The sample matrix interfered with the ability to make any accurate determination; spike value is high.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

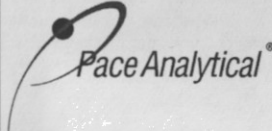
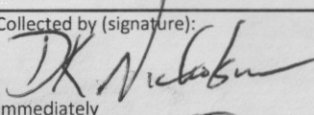
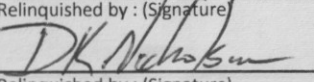
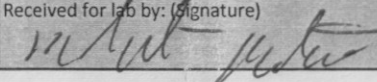
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Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina ¹	DW21704
Georgia	NELAP	North Carolina ³	41
Georgia ¹	923	North Dakota	R-140
Idaho	TN00003	Ohio--VAP	CL0069
Illinois	200008	Oklahoma	9915
Indiana	C-TN-01	Oregon	TN200002
Iowa	364	Pennsylvania	68-02979
Kansas	E-10277	Rhode Island	LA000356
Kentucky ^{1 6}	KY90010	South Carolina	84004002
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana	LA018	Texas	T104704245-20-18
Maine	TN00003	Texas ⁵	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 ⁵	1461.02	DOD	1461.01
Canada	1461.01	USDA	P330-15-00234
EPA--Crypto	TN00003		

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

* 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.



Company Name/Address: Berry Petroleum - Denver, CO 3433 E. Lake Dr Centennial, CO 80121				Billing Information: Christy Halsell 4028 West 4000 Street Roosevelt, UT 84066				Pres Chk		Analysis / Container / Preservative										Chain of Custody Page <u>1</u> of <u>1</u>	
Report to: Dave Nicholson				Email To: dknicholson@q.com																 <small>1206S Lebanon Rd Mount Juliet, TN 37122 Submitting a sample via this chain of custody constitutes acknowledgment and acceptance of the Pace Terms and Conditions found at: https://info.pacelabs.com/hubfs/pas-standard-terms.pdf</small>	
Project Description:		City/State Collected:		Please Circle: PT MT CT ET																	
Phone: 303-601-2023		Client Project #		Lab Project # BERPETDCO-NICHOLSON																	
Collected by (print):		Site/Facility ID #		P.O. #																	
Collected by (signature): 		Rush? (Lab MUST Be Notified) <input type="checkbox"/> Same Day <input type="checkbox"/> Five Day <input type="checkbox"/> Next Day <input type="checkbox"/> 5 Day (Rad Only) <input type="checkbox"/> Two Day <input type="checkbox"/> 10 Day (Rad Only) <input type="checkbox"/> Three Day		Quote #		Date Results Needed		No. of Cntrs													
Immediately Packed on Ice N <u>Y</u>												SDG # 1910197 A238		Acctnum: BERPETDCO Template: T195651 Prelogin: P874771 PM: 134 - Mark W. Beasley PB: SM 9/17/21							
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time	Cntrs	CR6IC 8ozClr-NoPres	DRO/ORO 8015 8ozClr-NoPres	GRO 8ozClr-NoPres	Hot Water Boron 8ozClr-NoPres	Metals, SAR 8ozClr-NoPres	SV8270PAHSIM 8ozClr-NoPres	V8260 8ozClr-NoPres	pH, SPCON 8ozClr-NoPres	Remarks	Sample # (lab only)				
036B-1		SS	9/26	0830	3	X	X	X	X	X	X	X	X	X	X	-01	-01				
036B-2		SS	9/26	0840	3	X	X	X	X	X	X	X	X	X	X	-02	-02				
036B-3		SS	9/26	0850	3	X	X	X	X	X	X	X	X	X	X	-03	-03				
036B-4		SS	9/26	0900	3	X	X	X	X	X	X	X	X	X	X	-04	-04				
036B-5		SS	9/26	0910	3	X	X	X	X	X	X	X	X	X	X	-05	-05				
036B-6		SS	9/26	0920	3	X	X	X	X	X	X	X	X	X	X	-06	-06				
036B-7		SS	9/26	0930	3	X	X	X	X	X	X	X	X	X	X	-07	-07				
036B-8		SS	9/26	0940	3	X	X	X	X	X	X	X	X	X	X	-08	-08				
036B-9		SS	9/26	0950	3	X	X	X	X	X	X	X	X	X	X	-09	-09				
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other _____		Remarks: Metals = Ag,As,Ba,Cd,Cu,Ni,Pb,Se,Zn										pH _____ Temp _____ Flow _____ Other _____		Sample Receipt Checklist COC Seal Present/Intact: <u>NP</u> <u>Y</u> <u>N</u> COC Signed/Accurate: <u>Y</u> <u>N</u> Bottles arrive intact: <u>Y</u> <u>N</u> Correct bottles used: <u>Y</u> <u>N</u> Sufficient volume sent: <u>Y</u> <u>N</u> If Applicable VOA Zero Headspace: <u>Y</u> <u>N</u> Preservation Correct/Checked: <u>Y</u> <u>N</u> RAD Screen <0.5 mR/hr: <u>Y</u> <u>N</u>							
Relinquished by: (Signature) 		Date: 9/27/21	Time: 1200	Received by: (Signature) FedEx		Trip Blank Received: Yes/No HCL / MeOH TBR		Tracking # 9883 0089 1887													
Relinquished by: (Signature)		Date:	Time:	Received by: (Signature)		Temp: 18°C Bottles Received: 30		If preservation required by Login: Date/Time													
Relinquished by: (Signature)		Date:	Time:	Received for lab by: (Signature) 		Date: 9/28/21 Time: 930		Hold: Condition: OK													