

Caerus Oil and Gas

Sample Delivery Group: L1437915
Samples Received: 12/03/2021
Project Number: HGPG
Description: Hatch Gulch Pig Launcher
Site: HGPG
Report To: Brett Middleton
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:



Chris Ward
Project Manager

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

SAMPLE SUMMARY

20211201-HATCHGULTCH(BG-1)@.5'-1' L1437915-01 Solid

Collected by
Korey Kennedy

Collected date/time
12/01/21 09:55

Received date/time
12/03/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1784355	1	12/09/21 19:06	12/09/21 19:06	CCE	Mt. Juliet, TN
Calculated Results	WG1785343	1	12/07/21 13:30	12/09/21 05:57	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1784664	1	12/06/21 15:26	12/08/21 13:13	BDS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1784353	1	12/06/21 09:00	12/06/21 10:53	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1784653	1	12/07/21 04:58	12/07/21 07:32	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1784925	1	12/06/21 14:26	12/08/21 10:06	MRW	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1785343	1	12/07/21 13:30	12/09/21 05:57	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1784349	1	12/08/21 12:13	12/09/21 20:31	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1786004	5	12/10/21 07:37	12/10/21 11:48	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1784988	1	12/04/21 17:53	12/07/21 02:34	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1785524	1	12/08/21 17:19	12/08/21 22:51	AGW	Mt. Juliet, TN



20211201-HATCHGULTCH(BG-1)@1'-1.5' L1437915-02 Solid

Collected by
Korey Kennedy

Collected date/time
12/01/21 10:00

Received date/time
12/03/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1784355	1	12/09/21 19:09	12/09/21 19:09	CCE	Mt. Juliet, TN
Calculated Results	WG1785343	1	12/07/21 13:30	12/09/21 06:00	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1784664	1	12/06/21 15:26	12/08/21 13:40	BDS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1784353	1	12/06/21 09:00	12/06/21 10:53	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1784653	1	12/07/21 04:58	12/07/21 07:32	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1784927	1	12/06/21 14:23	12/08/21 09:01	MRW	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1785343	1	12/07/21 13:30	12/09/21 06:00	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1784349	1	12/08/21 12:13	12/09/21 20:34	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1786004	5	12/10/21 07:37	12/10/21 12:04	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1784988	1	12/04/21 17:53	12/07/21 02:53	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1785524	1	12/08/21 17:19	12/09/21 04:46	AGW	Mt. Juliet, TN

20211201-HATCHGULTCH(BG-2)@.5'-1' L1437915-03 Solid

Collected by
Korey Kennedy

Collected date/time
12/01/21 13:25

Received date/time
12/03/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1784355	1	12/09/21 19:11	12/09/21 19:11	CCE	Mt. Juliet, TN
Calculated Results	WG1785343	1	12/07/21 13:30	12/09/21 06:08	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1784664	1	12/06/21 15:26	12/08/21 13:16	BDS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1784353	1	12/06/21 09:00	12/06/21 10:53	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1784653	1	12/07/21 04:58	12/07/21 07:32	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1784927	1	12/06/21 14:23	12/08/21 09:07	MRW	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1785343	1	12/07/21 13:30	12/09/21 06:08	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1784349	1	12/08/21 12:13	12/09/21 20:37	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1786004	5	12/10/21 07:37	12/10/21 12:07	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1784988	1	12/04/21 17:53	12/07/21 03:12	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1785524	1	12/08/21 17:19	12/09/21 03:17	AGW	Mt. Juliet, TN

20211201-HATCHGULTCH(BG-2)@1'-1.5' L1437915-04 Solid

Collected by
Korey Kennedy

Collected date/time
12/01/21 13:30

Received date/time
12/03/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1784355	1	12/09/21 19:14	12/09/21 19:14	CCE	Mt. Juliet, TN
Calculated Results	WG1785343	1	12/07/21 13:30	12/10/21 15:29	MRM	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1785229	1	12/10/21 03:55	12/10/21 15:29	MRM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1784375	1	12/06/21 14:00	12/06/21 15:17	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1784653	1	12/07/21 04:58	12/07/21 07:32	ARD	Mt. Juliet, TN

SAMPLE SUMMARY

20211201-HATCHGULTCH(BG-2)@1'-1.5' L1437915-04 Solid

Collected by
Korey Kennedy

Collected date/time
12/01/21 13:30

Received date/time
12/03/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Mercury by Method 7471A	WG1784465	1	12/05/21 13:48	12/06/21 17:02	MRW	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1785343	1	12/07/21 13:30	12/09/21 06:11	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1784349	1	12/08/21 12:13	12/09/21 20:39	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1786004	5	12/10/21 07:37	12/10/21 12:11	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1784988	1	12/04/21 17:53	12/07/21 03:31	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1785524	1	12/08/21 17:19	12/09/21 03:35	AGW	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

20211201-HATCHGULTCH(BG-3)@.5'-1' L1437915-05 Solid

Collected by
Korey Kennedy

Collected date/time
12/01/21 13:40

Received date/time
12/03/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1785343	1	12/07/21 13:30	12/09/21 06:13	CCE	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1784664	1	12/06/21 15:26	12/08/21 13:19	BDS	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1784353	1	12/06/21 09:00	12/06/21 10:53	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1784653	1	12/07/21 04:58	12/07/21 07:32	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1784465	1	12/05/21 13:48	12/06/21 17:04	MRW	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1785343	1	12/07/21 13:30	12/09/21 06:13	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1784349	50	12/08/21 12:13	12/09/21 20:42	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1786004	5	12/10/21 07:37	12/10/21 12:21	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1784988	1.99	12/04/21 17:53	12/07/21 03:50	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1785524	1	12/08/21 17:19	12/09/21 05:04	AGW	Mt. Juliet, TN

20211201-HATCHGULTCH(BG-3)@1'-1.5' L1437915-06 Solid

Collected by
Korey Kennedy

Collected date/time
12/01/21 13:45

Received date/time
12/03/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1784355	1	12/09/21 19:17	12/09/21 19:17	CCE	Mt. Juliet, TN
Calculated Results	WG1785343	1	12/07/21 13:30	12/10/21 15:39	MRM	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1785229	1	12/10/21 03:55	12/10/21 15:39	MRM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1784353	1	12/06/21 09:00	12/06/21 10:53	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1784653	1	12/07/21 04:58	12/07/21 07:32	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1784465	1	12/05/21 13:48	12/06/21 17:06	MRW	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1785343	1	12/07/21 13:30	12/09/21 06:16	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1784349	1	12/08/21 12:13	12/09/21 20:45	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1786004	5	12/10/21 07:37	12/10/21 12:24	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1784988	1	12/04/21 17:53	12/07/21 04:09	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1785524	1	12/08/21 17:19	12/09/21 03:53	AGW	Mt. Juliet, TN

20211201-HATCHGULTCH(BG-4)@.5'-1' L1437915-07 Solid

Collected by
Korey Kennedy

Collected date/time
12/01/21 13:50

Received date/time
12/03/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1784355	1	12/09/21 19:20	12/09/21 19:20	CCE	Mt. Juliet, TN
Calculated Results	WG1785343	1	12/07/21 13:30	12/10/21 15:48	MRM	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1785229	1	12/10/21 03:55	12/10/21 15:48	MRM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1784375	1	12/06/21 14:00	12/06/21 15:17	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1784653	1	12/07/21 04:58	12/07/21 07:32	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1784465	1	12/05/21 13:48	12/06/21 17:08	MRW	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1785343	1	12/07/21 13:30	12/09/21 05:06	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1784349	1	12/08/21 12:13	12/09/21 20:47	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1786004	5	12/10/21 07:37	12/10/21 12:27	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1784988	1	12/04/21 17:53	12/07/21 04:28	JAH	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1785524	1	12/08/21 17:19	12/09/21 04:11	AGW	Mt. Juliet, TN

SAMPLE SUMMARY

20211201-HATCHGULTCH(BG-4)@1'-1.5' L1437915-08 Solid

Collected by
Korey Kennedy

Collected date/time
12/01/21 13:55

Received date/time
12/03/21 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1784355	1	12/09/21 19:23	12/09/21 19:23	CCE	Mt. Juliet, TN
Calculated Results	WG1785343	1	12/07/21 13:30	12/10/21 15:52	MRM	Mt. Juliet, TN
Wet Chemistry by Method 3060A/7196A	WG1785229	1	12/10/21 03:55	12/10/21 15:52	MRM	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1784375	1	12/06/21 14:00	12/06/21 15:17	PSN	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1784653	1	12/07/21 04:58	12/07/21 07:32	ARD	Mt. Juliet, TN
Mercury by Method 7471A	WG1784465	1	12/05/21 13:48	12/06/21 17:10	MRW	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1785343	1	12/07/21 13:30	12/09/21 06:19	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1784349	1	12/08/21 12:13	12/09/21 20:55	CCE	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1786004	5	12/10/21 07:37	12/10/21 12:31	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1785502	1	12/04/21 17:53	12/08/21 03:42	BMB	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1785524	1	12/08/21 17:19	12/09/21 04:28	AGW	Mt. Juliet, TN

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

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.



Chris Ward
Project Manager

Project Narrative

L1437915-05 unable to be run for SAR due to the matrix.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.178		1	12/09/2021 19:06	WG1784355

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	36.0		0.133	1.00	1	12/09/2021 05:57	WG1785343

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	12/08/2021 13:13	WG1784664

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.61	T8	1	12/06/2021 10:53	WG1784353

Sample Narrative:
L1437915-01 WG1784353: 7.61 at 19.3C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	388		10.0	1	12/07/2021 07:32	WG1784653

Sample Narrative:
L1437915-01 WG1784653: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0229	J	0.0180	0.0400	1	12/08/2021 10:06	WG1784925

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	321		0.0852	0.500	1	12/09/2021 05:57	WG1785343
Cadmium	0.434	J	0.0471	0.500	1	12/09/2021 05:57	WG1785343
Chromium	36.0		0.133	1.00	1	12/09/2021 05:57	WG1785343
Copper	21.9		0.400	2.00	1	12/09/2021 05:57	WG1785343
Lead	15.6		0.208	0.500	1	12/09/2021 05:57	WG1785343
Nickel	29.7		0.132	2.00	1	12/09/2021 05:57	WG1785343
Selenium	U		0.764	2.00	1	12/09/2021 05:57	WG1785343
Silver	U		0.127	1.00	1	12/09/2021 05:57	WG1785343
Zinc	67.2		0.832	5.00	1	12/09/2021 05:57	WG1785343

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.37		0.0167	0.200	1	12/09/2021 20:31	WG1784349

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.46		0.100	1.00	5	12/10/2021 11:48	WG1786004

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	12/07/2021 02:34	WG1784988
Toluene	0.00298	B J	0.00130	0.00500	1	12/07/2021 02:34	WG1784988
Ethylbenzene	U		0.000737	0.00250	1	12/07/2021 02:34	WG1784988
Total Xylenes	0.00110	J	0.000880	0.00650	1	12/07/2021 02:34	WG1784988
(S) Toluene-d8	102			75.0-131		12/07/2021 02:34	WG1784988
(S) 4-Bromofluorobenzene	97.4			67.0-138		12/07/2021 02:34	WG1784988
(S) 1,2-Dichloroethane-d4	100			70.0-130		12/07/2021 02:34	WG1784988

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	12/08/2021 22:51	WG1785524
Acenaphthene	U		0.00209	0.00600	1	12/08/2021 22:51	WG1785524
Acenaphthylene	U		0.00216	0.00600	1	12/08/2021 22:51	WG1785524
Benzo(a)anthracene	U		0.00173	0.00600	1	12/08/2021 22:51	WG1785524
Benzo(a)pyrene	U		0.00179	0.00600	1	12/08/2021 22:51	WG1785524
Benzo(b)fluoranthene	U		0.00153	0.00600	1	12/08/2021 22:51	WG1785524
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	12/08/2021 22:51	WG1785524
Benzo(k)fluoranthene	U		0.00215	0.00600	1	12/08/2021 22:51	WG1785524
Chrysene	U		0.00232	0.00600	1	12/08/2021 22:51	WG1785524
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	12/08/2021 22:51	WG1785524
Fluoranthene	U		0.00227	0.00600	1	12/08/2021 22:51	WG1785524
Fluorene	U		0.00205	0.00600	1	12/08/2021 22:51	WG1785524
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	12/08/2021 22:51	WG1785524
Naphthalene	U		0.00408	0.0200	1	12/08/2021 22:51	WG1785524
Phenanthrene	U		0.00231	0.00600	1	12/08/2021 22:51	WG1785524
Pyrene	U		0.00200	0.00600	1	12/08/2021 22:51	WG1785524
1-Methylnaphthalene	U		0.00449	0.0200	1	12/08/2021 22:51	WG1785524
2-Methylnaphthalene	U		0.00427	0.0200	1	12/08/2021 22:51	WG1785524
2-Chloronaphthalene	U		0.00466	0.0200	1	12/08/2021 22:51	WG1785524
(S) p-Terphenyl-d14	73.2			23.0-120		12/08/2021 22:51	WG1785524
(S) Nitrobenzene-d5	59.1			14.0-149		12/08/2021 22:51	WG1785524
(S) 2-Fluorobiphenyl	68.2			34.0-125		12/08/2021 22:51	WG1785524

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	SAR				
Sodium Adsorption Ratio	0.215		1	12/09/2021 19:09	WG1784355

Calculated Results

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Chromium, Trivalent	33.5		0.133	1.00	1	12/09/2021 06:00	WG1785343

Wet Chemistry by Method 3060A/7196A

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Chromium, Hexavalent	U		0.640	2.00	1	12/08/2021 13:40	WG1784664

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	pH				
pH	7.48	T8	1	12/06/2021 10:53	WG1784353

Sample Narrative:

L1437915-02 WG1784353: 7.48 at 20C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	490		10.0	1	12/07/2021 07:32	WG1784653

Sample Narrative:

L1437915-02 WG1784653: at 25C

Mercury by Method 7471A

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Mercury	U		0.0180	0.0400	1	12/08/2021 09:01	WG1784927

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	246		0.0852	0.500	1	12/09/2021 06:00	WG1785343
Cadmium	0.414	J	0.0471	0.500	1	12/09/2021 06:00	WG1785343
Chromium	33.5		0.133	1.00	1	12/09/2021 06:00	WG1785343
Copper	18.0		0.400	2.00	1	12/09/2021 06:00	WG1785343
Lead	12.6		0.208	0.500	1	12/09/2021 06:00	WG1785343
Nickel	17.7		0.132	2.00	1	12/09/2021 06:00	WG1785343
Selenium	U		0.764	2.00	1	12/09/2021 06:00	WG1785343
Silver	U		0.127	1.00	1	12/09/2021 06:00	WG1785343
Zinc	55.7		0.832	5.00	1	12/09/2021 06:00	WG1785343

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

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/l		mg/l	mg/l			
Hot Water Sol. Boron	1.50		0.0167	0.200	1	12/09/2021 20:34	WG1784349

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.93		0.100	1.00	5	12/10/2021 12:04	WG1786004

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	12/07/2021 02:53	WG1784988
Toluene	0.00308	B J	0.00130	0.00500	1	12/07/2021 02:53	WG1784988
Ethylbenzene	U		0.000737	0.00250	1	12/07/2021 02:53	WG1784988
Total Xylenes	0.00133	J	0.000880	0.00650	1	12/07/2021 02:53	WG1784988
(S) Toluene-d8	102			75.0-131		12/07/2021 02:53	WG1784988
(S) 4-Bromofluorobenzene	99.6			67.0-138		12/07/2021 02:53	WG1784988
(S) 1,2-Dichloroethane-d4	100			70.0-130		12/07/2021 02:53	WG1784988

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	12/09/2021 04:46	WG1785524
Acenaphthene	U		0.00209	0.00600	1	12/09/2021 04:46	WG1785524
Acenaphthylene	U		0.00216	0.00600	1	12/09/2021 04:46	WG1785524
Benzo(a)anthracene	U		0.00173	0.00600	1	12/09/2021 04:46	WG1785524
Benzo(a)pyrene	U		0.00179	0.00600	1	12/09/2021 04:46	WG1785524
Benzo(b)fluoranthene	U		0.00153	0.00600	1	12/09/2021 04:46	WG1785524
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	12/09/2021 04:46	WG1785524
Benzo(k)fluoranthene	U		0.00215	0.00600	1	12/09/2021 04:46	WG1785524
Chrysene	U		0.00232	0.00600	1	12/09/2021 04:46	WG1785524
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	12/09/2021 04:46	WG1785524
Fluoranthene	U		0.00227	0.00600	1	12/09/2021 04:46	WG1785524
Fluorene	U		0.00205	0.00600	1	12/09/2021 04:46	WG1785524
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	12/09/2021 04:46	WG1785524
Naphthalene	U		0.00408	0.0200	1	12/09/2021 04:46	WG1785524
Phenanthrene	U		0.00231	0.00600	1	12/09/2021 04:46	WG1785524
Pyrene	U		0.00200	0.00600	1	12/09/2021 04:46	WG1785524
1-Methylnaphthalene	U		0.00449	0.0200	1	12/09/2021 04:46	WG1785524
2-Methylnaphthalene	U		0.00427	0.0200	1	12/09/2021 04:46	WG1785524
2-Chloronaphthalene	U		0.00466	0.0200	1	12/09/2021 04:46	WG1785524
(S) p-Terphenyl-d14	52.4			23.0-120		12/09/2021 04:46	WG1785524
(S) Nitrobenzene-d5	38.3			14.0-149		12/09/2021 04:46	WG1785524
(S) 2-Fluorobiphenyl	47.2			34.0-125		12/09/2021 04:46	WG1785524

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.244		1	12/09/2021 19:11	WG1784355

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	40.8		0.133	1.00	1	12/09/2021 06:08	WG1785343

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	12/08/2021 13:16	WG1784664

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.80	T8	1	12/06/2021 10:53	WG1784353

Sample Narrative:
L1437915-03 WG1784353: 7.8 at 19.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	163		10.0	1	12/07/2021 07:32	WG1784653

Sample Narrative:
L1437915-03 WG1784653: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	U		0.0180	0.0400	1	12/08/2021 09:07	WG1784927

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	189		0.0852	0.500	1	12/09/2021 06:08	WG1785343
Cadmium	0.179	J	0.0471	0.500	1	12/09/2021 06:08	WG1785343
Chromium	40.8		0.133	1.00	1	12/09/2021 06:08	WG1785343
Copper	10.6		0.400	2.00	1	12/09/2021 06:08	WG1785343
Lead	8.68		0.208	0.500	1	12/09/2021 06:08	WG1785343
Nickel	16.5		0.132	2.00	1	12/09/2021 06:08	WG1785343
Selenium	U		0.764	2.00	1	12/09/2021 06:08	WG1785343
Silver	U		0.127	1.00	1	12/09/2021 06:08	WG1785343
Zinc	40.1		0.832	5.00	1	12/09/2021 06:08	WG1785343

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.325		0.0167	0.200	1	12/09/2021 20:37	WG1784349

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.49		0.100	1.00	5	12/10/2021 12:07	WG1786004

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	12/07/2021 03:12	WG1784988
Toluene	0.00280	B J	0.00130	0.00500	1	12/07/2021 03:12	WG1784988
Ethylbenzene	U		0.000737	0.00250	1	12/07/2021 03:12	WG1784988
Total Xylenes	0.00128	J	0.000880	0.00650	1	12/07/2021 03:12	WG1784988
(S) Toluene-d8	99.2			75.0-131		12/07/2021 03:12	WG1784988
(S) 4-Bromofluorobenzene	96.9			67.0-138		12/07/2021 03:12	WG1784988
(S) 1,2-Dichloroethane-d4	98.4			70.0-130		12/07/2021 03:12	WG1784988

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	12/09/2021 03:17	WG1785524
Acenaphthene	U		0.00209	0.00600	1	12/09/2021 03:17	WG1785524
Acenaphthylene	U		0.00216	0.00600	1	12/09/2021 03:17	WG1785524
Benzo(a)anthracene	U		0.00173	0.00600	1	12/09/2021 03:17	WG1785524
Benzo(a)pyrene	U		0.00179	0.00600	1	12/09/2021 03:17	WG1785524
Benzo(b)fluoranthene	U		0.00153	0.00600	1	12/09/2021 03:17	WG1785524
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	12/09/2021 03:17	WG1785524
Benzo(k)fluoranthene	U		0.00215	0.00600	1	12/09/2021 03:17	WG1785524
Chrysene	U		0.00232	0.00600	1	12/09/2021 03:17	WG1785524
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	12/09/2021 03:17	WG1785524
Fluoranthene	U		0.00227	0.00600	1	12/09/2021 03:17	WG1785524
Fluorene	U		0.00205	0.00600	1	12/09/2021 03:17	WG1785524
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	12/09/2021 03:17	WG1785524
Naphthalene	U		0.00408	0.0200	1	12/09/2021 03:17	WG1785524
Phenanthrene	U		0.00231	0.00600	1	12/09/2021 03:17	WG1785524
Pyrene	U		0.00200	0.00600	1	12/09/2021 03:17	WG1785524
1-Methylnaphthalene	U		0.00449	0.0200	1	12/09/2021 03:17	WG1785524
2-Methylnaphthalene	U		0.00427	0.0200	1	12/09/2021 03:17	WG1785524
2-Chloronaphthalene	U		0.00466	0.0200	1	12/09/2021 03:17	WG1785524
(S) p-Terphenyl-d14	95.0			23.0-120		12/09/2021 03:17	WG1785524
(S) Nitrobenzene-d5	67.6			14.0-149		12/09/2021 03:17	WG1785524
(S) 2-Fluorobiphenyl	83.1			34.0-125		12/09/2021 03:17	WG1785524

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.180		1	12/09/2021 19:14	WG1784355

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Trivalent	44.0		0.133	1.00	1	12/10/2021 15:29	WG1785343

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	12/10/2021 15:29	WG1785229

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	8.15	T8	1	12/06/2021 15:17	WG1784375

Sample Narrative:

L1437915-04 WG1784375: 8.15 at 18.2C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	153		10.0	1	12/07/2021 07:32	WG1784653

Sample Narrative:

L1437915-04 WG1784653: at 25C

Mercury by Method 7471A

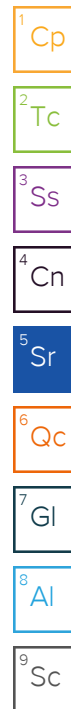
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0418		0.0180	0.0400	1	12/06/2021 17:02	WG1784465

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	189		0.0852	0.500	1	12/09/2021 06:11	WG1785343
Cadmium	0.257	J	0.0471	0.500	1	12/09/2021 06:11	WG1785343
Chromium	44.0		0.133	1.00	1	12/09/2021 06:11	WG1785343
Copper	12.6		0.400	2.00	1	12/09/2021 06:11	WG1785343
Lead	10.3		0.208	0.500	1	12/09/2021 06:11	WG1785343
Nickel	19.6		0.132	2.00	1	12/09/2021 06:11	WG1785343
Selenium	U		0.764	2.00	1	12/09/2021 06:11	WG1785343
Silver	U		0.127	1.00	1	12/09/2021 06:11	WG1785343
Zinc	47.6		0.832	5.00	1	12/09/2021 06:11	WG1785343

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.361		0.0167	0.200	1	12/09/2021 20:39	WG1784349



Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.00		0.100	1.00	5	12/10/2021 12:11	WG1786004

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	12/07/2021 03:31	WG1784988
Toluene	0.00288	B J	0.00130	0.00500	1	12/07/2021 03:31	WG1784988
Ethylbenzene	U		0.000737	0.00250	1	12/07/2021 03:31	WG1784988
Total Xylenes	0.00115	J	0.000880	0.00650	1	12/07/2021 03:31	WG1784988
(S) Toluene-d8	99.8			75.0-131		12/07/2021 03:31	WG1784988
(S) 4-Bromofluorobenzene	98.1			67.0-138		12/07/2021 03:31	WG1784988
(S) 1,2-Dichloroethane-d4	101			70.0-130		12/07/2021 03:31	WG1784988

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	12/09/2021 03:35	WG1785524
Acenaphthene	U		0.00209	0.00600	1	12/09/2021 03:35	WG1785524
Acenaphthylene	U		0.00216	0.00600	1	12/09/2021 03:35	WG1785524
Benzo(a)anthracene	U		0.00173	0.00600	1	12/09/2021 03:35	WG1785524
Benzo(a)pyrene	U		0.00179	0.00600	1	12/09/2021 03:35	WG1785524
Benzo(b)fluoranthene	U		0.00153	0.00600	1	12/09/2021 03:35	WG1785524
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	12/09/2021 03:35	WG1785524
Benzo(k)fluoranthene	U		0.00215	0.00600	1	12/09/2021 03:35	WG1785524
Chrysene	U		0.00232	0.00600	1	12/09/2021 03:35	WG1785524
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	12/09/2021 03:35	WG1785524
Fluoranthene	U		0.00227	0.00600	1	12/09/2021 03:35	WG1785524
Fluorene	U		0.00205	0.00600	1	12/09/2021 03:35	WG1785524
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	12/09/2021 03:35	WG1785524
Naphthalene	U		0.00408	0.0200	1	12/09/2021 03:35	WG1785524
Phenanthrene	U		0.00231	0.00600	1	12/09/2021 03:35	WG1785524
Pyrene	U		0.00200	0.00600	1	12/09/2021 03:35	WG1785524
1-Methylnaphthalene	U		0.00449	0.0200	1	12/09/2021 03:35	WG1785524
2-Methylnaphthalene	U		0.00427	0.0200	1	12/09/2021 03:35	WG1785524
2-Chloronaphthalene	U		0.00466	0.0200	1	12/09/2021 03:35	WG1785524
(S) p-Terphenyl-d14	86.0			23.0-120		12/09/2021 03:35	WG1785524
(S) Nitrobenzene-d5	59.5			14.0-149		12/09/2021 03:35	WG1785524
(S) 2-Fluorobiphenyl	74.2			34.0-125		12/09/2021 03:35	WG1785524

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Trivalent	30.7		0.133	1.00	1	12/09/2021 06:13	WG1785343

Wet Chemistry by Method 3060A/7196A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Chromium, Hexavalent	U		0.640	2.00	1	12/08/2021 13:19	WG1784664

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.10	T8	1	12/06/2021 10:53	WG1784353

Sample Narrative:

L1437915-05 WG1784353: 7.1 at 19.6C

Wet Chemistry by Method 9050AMod

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	868		10.0	1	12/07/2021 07:32	WG1784653

Sample Narrative:

L1437915-05 WG1784653: at 25C

Mercury by Method 7471A

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Mercury	0.0414		0.0180	0.0400	1	12/06/2021 17:04	WG1784465

Metals (ICP) by Method 6010B

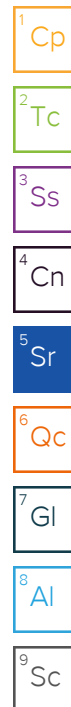
Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Barium	169		0.0852	0.500	1	12/09/2021 06:13	WG1785343
Cadmium	0.300	J	0.0471	0.500	1	12/09/2021 06:13	WG1785343
Chromium	30.7		0.133	1.00	1	12/09/2021 06:13	WG1785343
Copper	14.5		0.400	2.00	1	12/09/2021 06:13	WG1785343
Lead	9.94		0.208	0.500	1	12/09/2021 06:13	WG1785343
Nickel	13.2		0.132	2.00	1	12/09/2021 06:13	WG1785343
Selenium	U		0.764	2.00	1	12/09/2021 06:13	WG1785343
Silver	U		0.127	1.00	1	12/09/2021 06:13	WG1785343
Zinc	50.3		0.832	5.00	1	12/09/2021 06:13	WG1785343

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

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	1.04	J	0.835	10.0	50	12/09/2021 20:42	WG1784349

Metals (ICPMS) by Method 6020

Analyte	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Arsenic	2.73		0.100	1.00	5	12/10/2021 12:21	WG1786004



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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000929	0.00199	1.99	12/07/2021 03:50	WG1784988
Toluene	0.00552	BJ	0.00259	0.00995	1.99	12/07/2021 03:50	WG1784988
Ethylbenzene	U		0.00147	0.00498	1.99	12/07/2021 03:50	WG1784988
Total Xylenes	0.00274	J	0.00175	0.0129	1.99	12/07/2021 03:50	WG1784988
(S) Toluene-d8	98.1			75.0-131		12/07/2021 03:50	WG1784988
(S) 4-Bromofluorobenzene	102			67.0-138		12/07/2021 03:50	WG1784988
(S) 1,2-Dichloroethane-d4	112			70.0-130		12/07/2021 03:50	WG1784988

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	12/09/2021 05:04	WG1785524
Acenaphthene	U		0.00209	0.00600	1	12/09/2021 05:04	WG1785524
Acenaphthylene	U		0.00216	0.00600	1	12/09/2021 05:04	WG1785524
Benzo(a)anthracene	U		0.00173	0.00600	1	12/09/2021 05:04	WG1785524
Benzo(a)pyrene	U		0.00179	0.00600	1	12/09/2021 05:04	WG1785524
Benzo(b)fluoranthene	U		0.00153	0.00600	1	12/09/2021 05:04	WG1785524
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	12/09/2021 05:04	WG1785524
Benzo(k)fluoranthene	U		0.00215	0.00600	1	12/09/2021 05:04	WG1785524
Chrysene	U		0.00232	0.00600	1	12/09/2021 05:04	WG1785524
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	12/09/2021 05:04	WG1785524
Fluoranthene	0.00431	J	0.00227	0.00600	1	12/09/2021 05:04	WG1785524
Fluorene	U		0.00205	0.00600	1	12/09/2021 05:04	WG1785524
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	12/09/2021 05:04	WG1785524
Naphthalene	U		0.00408	0.0200	1	12/09/2021 05:04	WG1785524
Phenanthrene	U		0.00231	0.00600	1	12/09/2021 05:04	WG1785524
Pyrene	0.00263	J	0.00200	0.00600	1	12/09/2021 05:04	WG1785524
1-Methylnaphthalene	U		0.00449	0.0200	1	12/09/2021 05:04	WG1785524
2-Methylnaphthalene	U		0.00427	0.0200	1	12/09/2021 05:04	WG1785524
2-Chloronaphthalene	U		0.00466	0.0200	1	12/09/2021 05:04	WG1785524
(S) p-Terphenyl-d14	28.2			23.0-120		12/09/2021 05:04	WG1785524
(S) Nitrobenzene-d5	23.6			14.0-149		12/09/2021 05:04	WG1785524
(S) 2-Fluorobiphenyl	26.5	J2		34.0-125		12/09/2021 05:04	WG1785524

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.323		1	12/09/2021 19:17	WG1784355

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	40.5		0.133	1.00	1	12/10/2021 15:39	WG1785343

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U	J6 O1	0.640	2.00	1	12/10/2021 15:39	WG1785229

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.68	T8	1	12/06/2021 10:53	WG1784353

Sample Narrative:
L1437915-06 WG1784353: 7.68 at 19.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	269		10.0	1	12/07/2021 07:32	WG1784653

Sample Narrative:
L1437915-06 WG1784653: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0292	J	0.0180	0.0400	1	12/06/2021 17:06	WG1784465

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	227		0.0852	0.500	1	12/09/2021 06:16	WG1785343
Cadmium	0.285	J	0.0471	0.500	1	12/09/2021 06:16	WG1785343
Chromium	40.5		0.133	1.00	1	12/09/2021 06:16	WG1785343
Copper	13.4		0.400	2.00	1	12/09/2021 06:16	WG1785343
Lead	11.2		0.208	0.500	1	12/09/2021 06:16	WG1785343
Nickel	18.0		0.132	2.00	1	12/09/2021 06:16	WG1785343
Selenium	U		0.764	2.00	1	12/09/2021 06:16	WG1785343
Silver	U		0.127	1.00	1	12/09/2021 06:16	WG1785343
Zinc	49.2		0.832	5.00	1	12/09/2021 06:16	WG1785343

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.858		0.0167	0.200	1	12/09/2021 20:45	WG1784349

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.66		0.100	1.00	5	12/10/2021 12:24	WG1786004

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	12/07/2021 04:09	WG1784988
Toluene	0.00318	B J	0.00130	0.00500	1	12/07/2021 04:09	WG1784988
Ethylbenzene	U		0.000737	0.00250	1	12/07/2021 04:09	WG1784988
Total Xylenes	0.00120	J	0.000880	0.00650	1	12/07/2021 04:09	WG1784988
(S) Toluene-d8	102			75.0-131		12/07/2021 04:09	WG1784988
(S) 4-Bromofluorobenzene	99.4			67.0-138		12/07/2021 04:09	WG1784988
(S) 1,2-Dichloroethane-d4	111			70.0-130		12/07/2021 04:09	WG1784988

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	12/09/2021 03:53	WG1785524
Acenaphthene	U		0.00209	0.00600	1	12/09/2021 03:53	WG1785524
Acenaphthylene	U		0.00216	0.00600	1	12/09/2021 03:53	WG1785524
Benzo(a)anthracene	U		0.00173	0.00600	1	12/09/2021 03:53	WG1785524
Benzo(a)pyrene	U		0.00179	0.00600	1	12/09/2021 03:53	WG1785524
Benzo(b)fluoranthene	U		0.00153	0.00600	1	12/09/2021 03:53	WG1785524
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	12/09/2021 03:53	WG1785524
Benzo(k)fluoranthene	U		0.00215	0.00600	1	12/09/2021 03:53	WG1785524
Chrysene	U		0.00232	0.00600	1	12/09/2021 03:53	WG1785524
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	12/09/2021 03:53	WG1785524
Fluoranthene	0.00383	J	0.00227	0.00600	1	12/09/2021 03:53	WG1785524
Fluorene	U		0.00205	0.00600	1	12/09/2021 03:53	WG1785524
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	12/09/2021 03:53	WG1785524
Naphthalene	U		0.00408	0.0200	1	12/09/2021 03:53	WG1785524
Phenanthrene	U		0.00231	0.00600	1	12/09/2021 03:53	WG1785524
Pyrene	0.00230	J	0.00200	0.00600	1	12/09/2021 03:53	WG1785524
1-Methylnaphthalene	U		0.00449	0.0200	1	12/09/2021 03:53	WG1785524
2-Methylnaphthalene	U		0.00427	0.0200	1	12/09/2021 03:53	WG1785524
2-Chloronaphthalene	U		0.00466	0.0200	1	12/09/2021 03:53	WG1785524
(S) p-Terphenyl-d14	85.1			23.0-120		12/09/2021 03:53	WG1785524
(S) Nitrobenzene-d5	59.3			14.0-149		12/09/2021 03:53	WG1785524
(S) 2-Fluorobiphenyl	75.2			34.0-125		12/09/2021 03:53	WG1785524

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.398		1	12/09/2021 19:20	WG1784355

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	37.2		0.133	1.00	1	12/10/2021 15:48	WG1785343

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	12/10/2021 15:48	WG1785229

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.92	T8	1	12/06/2021 15:17	WG1784375

Sample Narrative:
L1437915-07 WG1784375: 7.92 at 19C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	166		10.0	1	12/07/2021 07:32	WG1784653

Sample Narrative:
L1437915-07 WG1784653: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0288	J	0.0180	0.0400	1	12/06/2021 17:08	WG1784465

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	235	J5 O1	0.0852	0.500	1	12/09/2021 05:06	WG1785343
Cadmium	0.235	J	0.0471	0.500	1	12/09/2021 05:06	WG1785343
Chromium	37.2	O1	0.133	1.00	1	12/09/2021 05:06	WG1785343
Copper	14.0		0.400	2.00	1	12/09/2021 05:06	WG1785343
Lead	14.2	O1	0.208	0.500	1	12/09/2021 05:06	WG1785343
Nickel	19.4	O1	0.132	2.00	1	12/09/2021 05:06	WG1785343
Selenium	0.872	J	0.764	2.00	1	12/09/2021 05:06	WG1785343
Silver	U		0.127	1.00	1	12/09/2021 05:06	WG1785343
Zinc	50.1	O1	0.832	5.00	1	12/09/2021 05:06	WG1785343

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.370		0.0167	0.200	1	12/09/2021 20:47	WG1784349

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.02		0.100	1.00	5	12/10/2021 12:27	WG1786004

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	12/07/2021 04:28	WG1784988
Toluene	0.00293	B J	0.00130	0.00500	1	12/07/2021 04:28	WG1784988
Ethylbenzene	U		0.000737	0.00250	1	12/07/2021 04:28	WG1784988
Total Xylenes	0.00143	J	0.000880	0.00650	1	12/07/2021 04:28	WG1784988
(S) Toluene-d8	102			75.0-131		12/07/2021 04:28	WG1784988
(S) 4-Bromofluorobenzene	99.3			67.0-138		12/07/2021 04:28	WG1784988
(S) 1,2-Dichloroethane-d4	105			70.0-130		12/07/2021 04:28	WG1784988

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	12/09/2021 04:11	WG1785524
Acenaphthene	U		0.00209	0.00600	1	12/09/2021 04:11	WG1785524
Acenaphthylene	U		0.00216	0.00600	1	12/09/2021 04:11	WG1785524
Benzo(a)anthracene	U		0.00173	0.00600	1	12/09/2021 04:11	WG1785524
Benzo(a)pyrene	U		0.00179	0.00600	1	12/09/2021 04:11	WG1785524
Benzo(b)fluoranthene	U		0.00153	0.00600	1	12/09/2021 04:11	WG1785524
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	12/09/2021 04:11	WG1785524
Benzo(k)fluoranthene	U		0.00215	0.00600	1	12/09/2021 04:11	WG1785524
Chrysene	U		0.00232	0.00600	1	12/09/2021 04:11	WG1785524
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	12/09/2021 04:11	WG1785524
Fluoranthene	U		0.00227	0.00600	1	12/09/2021 04:11	WG1785524
Fluorene	U		0.00205	0.00600	1	12/09/2021 04:11	WG1785524
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	12/09/2021 04:11	WG1785524
Naphthalene	U		0.00408	0.0200	1	12/09/2021 04:11	WG1785524
Phenanthrene	U		0.00231	0.00600	1	12/09/2021 04:11	WG1785524
Pyrene	U		0.00200	0.00600	1	12/09/2021 04:11	WG1785524
1-Methylnaphthalene	U		0.00449	0.0200	1	12/09/2021 04:11	WG1785524
2-Methylnaphthalene	U		0.00427	0.0200	1	12/09/2021 04:11	WG1785524
2-Chloronaphthalene	U		0.00466	0.0200	1	12/09/2021 04:11	WG1785524
(S) p-Terphenyl-d14	68.1			23.0-120		12/09/2021 04:11	WG1785524
(S) Nitrobenzene-d5	49.3			14.0-149		12/09/2021 04:11	WG1785524
(S) 2-Fluorobiphenyl	63.5			34.0-125		12/09/2021 04:11	WG1785524

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.385		1	12/09/2021 19:23	WG1784355

Calculated Results

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Trivalent	33.6		0.133	1.00	1	12/10/2021 15:52	WG1785343

Wet Chemistry by Method 3060A/7196A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Chromium,Hexavalent	U		0.640	2.00	1	12/10/2021 15:52	WG1785229

Wet Chemistry by Method 9045D

Analyte	Result pH	Qualifier	Dilution	Analysis date / time	Batch
pH	7.80	T8	1	12/06/2021 15:17	WG1784375

Sample Narrative:
L1437915-08 WG1784375: 7.8 at 18.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	208		10.0	1	12/07/2021 07:32	WG1784653

Sample Narrative:
L1437915-08 WG1784653: at 25C

Mercury by Method 7471A

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Mercury	0.0324	J	0.0180	0.0400	1	12/06/2021 17:10	WG1784465

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	201		0.0852	0.500	1	12/09/2021 06:19	WG1785343
Cadmium	0.224	J	0.0471	0.500	1	12/09/2021 06:19	WG1785343
Chromium	33.6		0.133	1.00	1	12/09/2021 06:19	WG1785343
Copper	12.7		0.400	2.00	1	12/09/2021 06:19	WG1785343
Lead	10.4		0.208	0.500	1	12/09/2021 06:19	WG1785343
Nickel	17.2		0.132	2.00	1	12/09/2021 06:19	WG1785343
Selenium	U		0.764	2.00	1	12/09/2021 06:19	WG1785343
Silver	U		0.127	1.00	1	12/09/2021 06:19	WG1785343
Zinc	46.6		0.832	5.00	1	12/09/2021 06:19	WG1785343

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

Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.401		0.0167	0.200	1	12/09/2021 20:55	WG1784349

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.98		0.100	1.00	5	12/10/2021 12:31	WG1786004

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	12/08/2021 03:42	WG1785502
Toluene	0.00330	U	0.00130	0.00500	1	12/08/2021 03:42	WG1785502
Ethylbenzene	U		0.000737	0.00250	1	12/08/2021 03:42	WG1785502
Total Xylenes	0.00113	U	0.000880	0.00650	1	12/08/2021 03:42	WG1785502
(S) Toluene-d8	103			75.0-131		12/08/2021 03:42	WG1785502
(S) 4-Bromofluorobenzene	97.1			67.0-138		12/08/2021 03:42	WG1785502
(S) 1,2-Dichloroethane-d4	98.9			70.0-130		12/08/2021 03:42	WG1785502

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Anthracene	U		0.00230	0.00600	1	12/09/2021 04:28	WG1785524
Acenaphthene	U		0.00209	0.00600	1	12/09/2021 04:28	WG1785524
Acenaphthylene	U		0.00216	0.00600	1	12/09/2021 04:28	WG1785524
Benzo(a)anthracene	U		0.00173	0.00600	1	12/09/2021 04:28	WG1785524
Benzo(a)pyrene	U		0.00179	0.00600	1	12/09/2021 04:28	WG1785524
Benzo(b)fluoranthene	U		0.00153	0.00600	1	12/09/2021 04:28	WG1785524
Benzo(g,h,i)perylene	U		0.00177	0.00600	1	12/09/2021 04:28	WG1785524
Benzo(k)fluoranthene	U		0.00215	0.00600	1	12/09/2021 04:28	WG1785524
Chrysene	U		0.00232	0.00600	1	12/09/2021 04:28	WG1785524
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	12/09/2021 04:28	WG1785524
Fluoranthene	U		0.00227	0.00600	1	12/09/2021 04:28	WG1785524
Fluorene	U		0.00205	0.00600	1	12/09/2021 04:28	WG1785524
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	12/09/2021 04:28	WG1785524
Naphthalene	U		0.00408	0.0200	1	12/09/2021 04:28	WG1785524
Phenanthrene	U		0.00231	0.00600	1	12/09/2021 04:28	WG1785524
Pyrene	U		0.00200	0.00600	1	12/09/2021 04:28	WG1785524
1-Methylnaphthalene	U		0.00449	0.0200	1	12/09/2021 04:28	WG1785524
2-Methylnaphthalene	U		0.00427	0.0200	1	12/09/2021 04:28	WG1785524
2-Chloronaphthalene	U		0.00466	0.0200	1	12/09/2021 04:28	WG1785524
(S) p-Terphenyl-d14	89.6			23.0-120		12/09/2021 04:28	WG1785524
(S) Nitrobenzene-d5	64.6			14.0-149		12/09/2021 04:28	WG1785524
(S) 2-Fluorobiphenyl	78.3			34.0-125		12/09/2021 04:28	WG1785524

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Method Blank (MB)

(MB) R3738590-1 12/08/21 12:49

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

L1437907-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1437907-05 12/08/21 12:54 • (DUP) R3738590-3 12/08/21 12:57

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

L1437915-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1437915-02 12/08/21 13:40 • (DUP) R3738590-8 12/08/21 13:40

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

Laboratory Control Sample (LCS)

(LCS) R3738590-2 12/08/21 12:50

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	25.2	105	80.0-120	

L1437907-09 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1437907-09 12/08/21 13:00 • (MS) R3738590-4 12/08/21 13:00 • (MSD) R3738590-5 12/08/21 13:01

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	U	13.1	15.9	65.3	79.6	1	75.0-125	J6		19.8	20

L1437907-09 Original Sample (OS) • Matrix Spike (MS)

(OS) L1437907-09 12/08/21 13:00 • (MS) R3738590-7 12/08/21 13:03

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Chromium,Hexavalent	633	U	875	138	50	75.0-125	J5

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3739527-1 12/10/21 15:24

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

L1437915-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1437915-04 12/10/21 15:29 • (DUP) R3739527-3 12/10/21 15:38

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

L1438289-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1438289-05 12/10/21 15:58 • (DUP) R3739527-8 12/10/21 15:58

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

Laboratory Control Sample (LCS)

(LCS) R3739527-2 12/10/21 15:25

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Chromium,Hexavalent	24.0	25.1	104	80.0-120	

L1437915-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1437915-06 12/10/21 15:39 • (MS) R3739527-4 12/10/21 15:42 • (MSD) R3739527-5 12/10/21 15:42

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Chromium,Hexavalent	20.0	U	1.92	1.84	9.59	9.19	1	75.0-125	J6	J6	4.21	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1437294-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1437294-03 12/06/21 10:53 • (DUP) R3737353-2 12/06/21 10:53

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.92	8.92	1	0.000		1

Sample Narrative:

OS: 8.92 at 19.3C

DUP: 8.92 at 19.6C

L1437306-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1437306-01 12/06/21 10:53 • (DUP) R3737353-3 12/06/21 10:53

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.66	7.71	1	0.651		1

Sample Narrative:

OS: 7.66 at 19.2C

DUP: 7.71 at 19.2C

Laboratory Control Sample (LCS)

(LCS) R3737353-1 12/06/21 10:53

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

Sample Narrative:

LCS: 10 at 19.1C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1437294-12 Original Sample (OS) • Duplicate (DUP)

(OS) L1437294-12 12/06/21 15:17 • (DUP) R3737512-2 12/06/21 15:17

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.28	8.30	1	0.241		1

Sample Narrative:

OS: 8.28 at 18.6C

DUP: 8.3 at 18.4C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1437294-21 Original Sample (OS) • Duplicate (DUP)

(OS) L1437294-21 12/06/21 15:17 • (DUP) R3737512-3 12/06/21 15:17

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.43	8.47	1	0.473		1

Sample Narrative:

OS: 8.43 at 18.4C

DUP: 8.47 at 18.7C

Laboratory Control Sample (LCS)

(LCS) R3737512-1 12/06/21 15:17

	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 18.2C

Method Blank (MB)

(MB) R3737719-1 12/07/21 07:32

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

L1437915-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1437915-04 12/07/21 07:32 • (DUP) R3737719-3 12/07/21 07:32

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	153	157	1	2.90		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1438085-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1438085-02 12/07/21 07:32 • (DUP) R3737719-4 12/07/21 07:32

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	10800	11200	1	3.19		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3737719-2 12/07/21 07:32

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3737709-1 12/06/21 16:16

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3737709-2 12/06/21 16:17

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.529	106	80.0-120	

L1437836-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1437836-01 12/06/21 16:19 • (MS) R3737709-3 12/06/21 16:21 • (MSD) R3737709-4 12/06/21 16:23

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	U	0.503	0.475	101	95.0	1	75.0-125			5.71	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3738333-1 12/08/21 09:15

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3738333-2 12/08/21 09:17

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.525	105	80.0-120	

L1437633-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1437633-01 12/08/21 09:19 • (MS) R3738333-3 12/08/21 09:21 • (MSD) R3738333-4 12/08/21 09:23

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	U	0.554	0.562	111	112	1	75.0-125			1.29	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3738366-1 12/08/21 08:20

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/kg		mg/kg	mg/kg
Mercury	U		0.0180	0.0400

Laboratory Control Sample (LCS)

(LCS) R3738366-2 12/08/21 08:22

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Mercury	0.500	0.514	103	80.0-120	

L1437916-20 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1437916-20 12/08/21 08:24 • (MS) R3738366-3 12/08/21 08:26 • (MSD) R3738366-4 12/08/21 08:28

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/kg	mg/kg	mg/kg	mg/kg	%	%		%			%	%
Mercury	0.500	U	0.649	0.556	130	111	1	75.0-125	J5		15.5	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3738909-1 12/09/21 05:01

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Barium	U		0.0852	0.500
Cadmium	U		0.0471	0.500
Chromium	U		0.133	1.00
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) R3738909-2 12/09/21 05:04

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	102	102	80.0-120	
Cadmium	100	99.0	99.0	80.0-120	
Chromium	100	99.0	99.0	80.0-120	
Copper	100	100	100	80.0-120	
Lead	100	98.8	98.8	80.0-120	
Nickel	100	100	100	80.0-120	
Selenium	100	98.4	98.4	80.0-120	
Silver	20.0	17.4	87.0	80.0-120	
Zinc	100	97.7	97.7	80.0-120	

L1437915-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1437915-07 12/09/21 05:06 • (MS) R3738909-5 12/09/21 05:15 • (MSD) R3738909-6 12/09/21 05:18

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 %
Barium	100	235	320	364	85.5	129	1	75.0-125		J5	12.7	20
Cadmium	100	0.235	96.6	93.3	96.4	93.0	1	75.0-125			3.53	20
Chromium	100	37.2	125	128	87.5	91.2	1	75.0-125			2.91	20
Copper	100	14.0	112	107	97.7	93.4	1	75.0-125			3.91	20
Lead	100	14.2	111	107	97.3	92.9	1	75.0-125			4.04	20
Nickel	100	19.4	120	119	100	99.5	1	75.0-125			0.811	20
Selenium	100	0.872	95.4	90.9	94.5	90.0	1	75.0-125			4.85	20
Silver	20.0	U	17.2	16.5	86.0	82.4	1	75.0-125			4.31	20
Zinc	100	50.1	136	134	86.3	84.3	1	75.0-125			1.42	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3739378-1 12/09/21 20:24

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) R3739378-2 12/09/21 20:26 • (LCSD) R3739378-3 12/09/21 20:29

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	0.995	103	99.5	80.0-120			3.00	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3739353-1 12/10/21 11:41

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Arsenic	U		0.100	1.00

Laboratory Control Sample (LCS)

(LCS) R3739353-2 12/10/21 11:44

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Arsenic	100	90.8	90.8	80.0-120	

L1437915-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1437915-01 12/10/21 11:48 • (MS) R3739353-5 12/10/21 11:58 • (MSD) R3739353-6 12/10/21 12:01

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Arsenic	100	6.46	95.6	96.1	89.1	89.7	5	75.0-125			0.615	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3737911-3 12/06/21 22:07

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	0.00130	U	0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	102			75.0-131
(S) 4-Bromofluorobenzene	99.4			67.0-138
(S) 1,2-Dichloroethane-d4	95.6			70.0-130

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

(LCS) R3737911-1 12/06/21 21:10 • (LCSD) R3737911-2 12/06/21 21:29

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.110	0.110	88.0	88.0	70.0-123			0.000	20
Ethylbenzene	0.125	0.113	0.116	90.4	92.8	74.0-126			2.62	20
Toluene	0.125	0.112	0.110	89.6	88.0	75.0-121			1.80	20
Xylenes, Total	0.375	0.333	0.326	88.8	86.9	72.0-127			2.12	20
(S) Toluene-d8				103	101	75.0-131				
(S) 4-Bromofluorobenzene				102	100	67.0-138				
(S) 1,2-Dichloroethane-d4				107	110	70.0-130				

L1436873-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1436873-01 12/06/21 22:26 • (MS) R3737911-4 12/07/21 04:47 • (MSD) R3737911-5 12/07/21 05:06

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.129	U	0.116	0.105	93.5	84.7	1	10.0-149			9.95	37
Ethylbenzene	0.129	U	0.119	0.111	96.0	89.5	1	10.0-160			6.96	38
Toluene	0.129	0.00163	0.119	0.111	94.7	88.2	1	10.0-156			6.96	38
Xylenes, Total	0.386	0.00151	0.352	0.331	94.2	88.6	1	10.0-160			6.15	38
(S) Toluene-d8					101	101		75.0-131				
(S) 4-Bromofluorobenzene					99.4	99.9		67.0-138				
(S) 1,2-Dichloroethane-d4					103	104		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3738689-3 12/08/21 03:04

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Ethylbenzene	U		0.000737	0.00250
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
(S) Toluene-d8	100			75.0-131
(S) 4-Bromofluorobenzene	103			67.0-138
(S) 1,2-Dichloroethane-d4	105			70.0-130

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

(LCS) R3738689-1 12/08/21 01:48 • (LCSD) R3738689-2 12/08/21 02:06

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCSD Result mg/kg	LCS Rec. %	LCSD Rec. %	Rec. Limits %	LCS Qualifier	LCSD Qualifier	RPD %	RPD Limits %
Benzene	0.125	0.112	0.117	89.6	93.6	70.0-123			4.37	20
Ethylbenzene	0.125	0.109	0.116	87.2	92.8	74.0-126			6.22	20
Toluene	0.125	0.108	0.112	86.4	89.6	75.0-121			3.64	20
Xylenes, Total	0.375	0.332	0.346	88.5	92.3	72.0-127			4.13	20
(S) Toluene-d8				97.4	99.1	75.0-131				
(S) 4-Bromofluorobenzene				101	103	67.0-138				
(S) 1,2-Dichloroethane-d4				109	107	70.0-130				

L1437918-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1437918-04 12/08/21 11:58 • (MS) R3738689-4 12/08/21 12:36 • (MSD) R3738689-5 12/08/21 12:55

Analyte	Spike Amount mg/kg	Original Result mg/kg	MS Result mg/kg	MSD Result mg/kg	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Benzene	0.990	0.0806	0.777	0.514	70.3	43.8	8	10.0-149		J3	40.7	37
Ethylbenzene	0.990	11.2	20.4	19.4	929	828	8	10.0-160	E V	V	5.03	38
Toluene	0.990	0.0915	0.891	0.594	80.8	50.8	8	10.0-156		J3	40.0	38
Xylenes, Total	2.97	47.4	82.2	77.9	1170	1030	8	10.0-160	V	V	5.37	38
(S) Toluene-d8					88.0	78.6		75.0-131				
(S) 4-Bromofluorobenzene					96.8	75.3		67.0-138				
(S) 1,2-Dichloroethane-d4					124	123		70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3738822-2 12/08/21 22:33

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	87.9			14.0-149
(S) 2-Fluorobiphenyl	103			34.0-125
(S) p-Terphenyl-d14	119			23.0-120

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3738822-1 12/08/21 22:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Anthracene	0.0800	0.0652	81.5	50.0-126	
Acenaphthene	0.0800	0.0684	85.5	50.0-120	
Acenaphthylene	0.0800	0.0692	86.5	50.0-120	
Benzo(a)anthracene	0.0800	0.0660	82.5	45.0-120	
Benzo(a)pyrene	0.0800	0.0599	74.9	42.0-120	
Benzo(b)fluoranthene	0.0800	0.0694	86.8	42.0-121	
Benzo(g,h,i)perylene	0.0800	0.0660	82.5	45.0-125	
Benzo(k)fluoranthene	0.0800	0.0696	87.0	49.0-125	
Chrysene	0.0800	0.0660	82.5	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0653	81.6	47.0-125	
Fluoranthene	0.0800	0.0652	81.5	49.0-129	

Laboratory Control Sample (LCS)

(LCS) R3738822-1 12/08/21 22:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Fluorene	0.0800	0.0645	80.6	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0688	86.0	46.0-125	
Naphthalene	0.0800	0.0577	72.1	50.0-120	
Phenanthrene	0.0800	0.0685	85.6	47.0-120	
Pyrene	0.0800	0.0661	82.6	43.0-123	
1-Methylnaphthalene	0.0800	0.0701	87.6	51.0-121	
2-Methylnaphthalene	0.0800	0.0665	83.1	50.0-120	
2-Chloronaphthalene	0.0800	0.0666	83.3	50.0-120	
(S) Nitrobenzene-d5			95.7	14.0-149	
(S) 2-Fluorobiphenyl			97.4	34.0-125	
(S) p-Terphenyl-d14			97.7	23.0-120	

L1437915-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1437915-01 12/08/21 22:51 • (MS) R3738822-3 12/08/21 23:09 • (MSD) R3738822-4 12/08/21 23:27

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	0.0768	U	0.0430	0.0409	56.0	53.3	1	10.0-145			5.01	30
Acenaphthene	0.0768	U	0.0436	0.0415	56.8	54.0	1	14.0-127			4.94	27
Acenaphthylene	0.0768	U	0.0431	0.0418	56.1	54.4	1	21.0-124			3.06	25
Benzo(a)anthracene	0.0768	U	0.0427	0.0411	55.6	53.5	1	10.0-139			3.82	30
Benzo(a)pyrene	0.0768	U	0.0459	0.0442	59.8	57.6	1	10.0-141			3.77	31
Benzo(b)fluoranthene	0.0768	U	0.0411	0.0393	53.5	51.2	1	10.0-140			4.48	36
Benzo(g,h,i)perylene	0.0768	U	0.0427	0.0411	55.6	53.5	1	10.0-140			3.82	33
Benzo(k)fluoranthene	0.0768	U	0.0393	0.0385	51.2	50.1	1	10.0-137			2.06	31
Chrysene	0.0768	U	0.0431	0.0409	56.1	53.3	1	10.0-145			5.24	30
Dibenz(a,h)anthracene	0.0768	U	0.0415	0.0400	54.0	52.1	1	10.0-132			3.68	31
Fluoranthene	0.0768	U	0.0433	0.0422	56.4	54.9	1	10.0-153			2.57	33
Fluorene	0.0768	U	0.0414	0.0398	53.9	51.8	1	11.0-130			3.94	29
Indeno(1,2,3-cd)pyrene	0.0768	U	0.0450	0.0432	58.6	56.3	1	10.0-137			4.08	32
Naphthalene	0.0768	U	0.0337	0.0321	43.9	41.8	1	10.0-135			4.86	27
Phenanthrene	0.0768	U	0.0437	0.0427	56.9	55.6	1	10.0-144			2.31	31
Pyrene	0.0768	U	0.0442	0.0416	57.6	54.2	1	10.0-148			6.06	35
1-Methylnaphthalene	0.0768	U	0.0469	0.0451	61.1	58.7	1	10.0-142			3.91	28
2-Methylnaphthalene	0.0768	U	0.0421	0.0399	54.8	52.0	1	10.0-137			5.37	28
2-Chloronaphthalene	0.0768	U	0.0289	0.0274	37.6	35.7	1	29.0-120			5.33	24
(S) Nitrobenzene-d5					52.7	47.1		14.0-149				
(S) 2-Fluorobiphenyl					59.6	55.9		34.0-125				
(S) p-Terphenyl-d14					62.2	58.8		23.0-120				

1

Cp

2

Tc

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Sr

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Qc

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Al

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Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

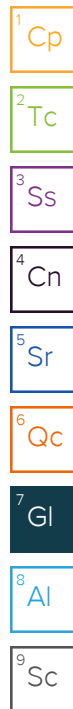
The information below is designed to better explain the various terms used in your report of analytical results from the Laboratory. This is not intended as a comprehensive explanation, and if you have additional questions please contact your project representative.

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.
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.
O1	The analyte failed the method required serial dilution test and/or subsequent post-spike criteria. These failures indicate matrix interference.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.



ACCREDITATIONS & LOCATIONS

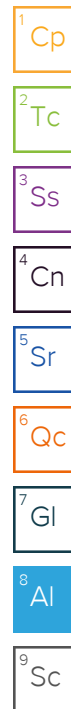
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122



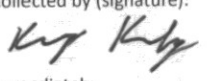
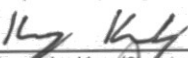
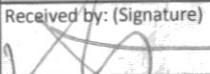
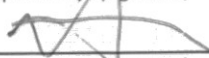
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Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico ¹	TN00003
Colorado	TN00003	New York	11742
Connecticut	PH-0197	North Carolina	Env375
Florida	E87487	North Carolina 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.



Caerus Oil & Gas LLC 143 Diamond Avenue Parachute, CO 81635 970-285-9606				Billing Information:				Analysis / Container / Preservative				Chain of Custody Page <u>1</u> of <u>1</u>			
				Same as above				Pres Chk				 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859			
Report to: bmiddleton@caerusoilandgas.com				Email To: bmiddleton@caerusoilandgas.com				<div style="display: flex; justify-content: space-between;"> <div> TPH- GRO/DRO BTEX TABLE 910- PAH's SAR, EC, pH TABLE 910- Metals </div> <div> </div> </div>				 L# 1437415 Ta H060 Acctnum: Template: Prelogin: TSR: PB: Shipped Via:			
Project Description: Hatch Gulch Pig Launcher				City/State Collected: Piceance, CO											
Phone:		Client Project #		Lab Project #											
Fax:		HGPG		HGPG											
Collected by (print): KOREY KENNEDY		Site/Facility ID # HGPG		P.O. # HGPG											
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									
Immediately Packed on Ice N <input type="checkbox"/> Y <input checked="" type="checkbox"/>				Standard TAT		No. of Cntrs									
Sample ID	Comp/Grab	Matrix *	Depth	Date	Time										
20211201-HATCH GULCH (BG-1) @ 0.5'-1'	G	SS	0.5'-1'	12/1/21	9:55	2		X	X	X	X				
20211201-HATCH GULCH (BG-1) @ 1'-1.5'	G	SS	1'-1.5'	↓	10:00	2		X	X	X	X				
20211201-HATCH GULCH (BG-2) @ 0.5'-1'	G	SS	0.5'-1'		13:25	2		X	X	X	X				
20211201-HATCH GULCH (BG-2) @ 1'-1.5'	G	SS	1'-1.5'		13:36	2		X	X	X	X				
20211201-HATCH GULCH (BG-3) @ 0.5'-1'	G	SS	0.5'-1'		13:40	2		X	X	X	X				
20211201-HATCH GULCH (BG-3) @ 1'-1.5'	G	SS	1'-1.5'		13:45	2		X	X	X	X				
20211201-HATCH GULCH (BG-4) @ 0.5'-1'	G	SS	0.5'-1'		13:50	2		X	X	X	X				
20211201-HATCH GULCH (BG-4) @ 1'-1.5'	G	SS	1'-1.5'		13:55	2		X	X	X	X				
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other				Remarks:				pH _____ Temp _____ Flow _____ Other _____				Sample Receipt Checklist COC Seal Present/Intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N COC Signed/Accurate: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Bottles arrive intact: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Correct bottles used: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Sufficient volume sent: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N If Applicable VOA Zero Headspace: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N Preservation Correct/Checked: <input checked="" type="checkbox"/> Y <input type="checkbox"/> N			
Samples returned via: <input type="checkbox"/> UPS <input type="checkbox"/> FedEx <input type="checkbox"/> Courier				Tracking #				5016 1232 0011 Trip Blank Received: Yes / No HCL / MeOH TBR				If preservation required by Login: Date/Time			
Relinquished by: (Signature) 		Date: 12/1/21		Time: 17:00		Received by: (Signature) 		Temp: 3.8-4.3°C		Bottles Received: 16		Hold:		Condition: NCF / OK	
Relinquished by: (Signature) 		Date: 12/2/21		Time: 1500		Received for lab by: (Signature) T. Robertson		Date: 12/3/21		Time: gae					