

Caerus Oil and Gas

Sample Delivery Group: L1512916
Samples Received: 07/08/2022
Project Number:
Description: RA11 Flowline Investigation
Site: RA11 PAD
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

20220707-RA11-POR @ 7FT L1512916-01 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 08:10

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1897275	1	07/28/22 08:41	07/28/22 08:41	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1899797	1	07/24/22 18:00	07/26/22 19:27	ERP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1893469	1	07/12/22 13:00	07/12/22 15:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1897843	1	07/21/22 03:31	07/21/22 07:51	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1897160	1	07/19/22 02:46	07/19/22 15:52	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1897256	1	07/26/22 18:43	08/02/22 20:48	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1897159	5	07/19/22 02:48	07/19/22 14:43	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1897547	1	07/20/22 11:20	07/20/22 12:39	MGF	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1894735	1	07/08/22 16:36	07/13/22 21:18	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1895195	1	07/15/22 08:54	07/16/22 11:03	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1894485	1	07/13/22 17:26	07/14/22 22:05	AGW	Mt. Juliet, TN



20220707-RA11-PH01 @ 7FT L1512916-02 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 09:00

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1897275	1	07/28/22 08:44	07/28/22 08:44	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1899797	1	07/24/22 18:00	07/26/22 19:33	ERP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1893495	1	07/12/22 10:00	07/12/22 12:12	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1897843	1	07/21/22 03:31	07/21/22 07:51	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1897160	1	07/19/22 02:46	07/19/22 15:54	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1897256	2	07/26/22 18:43	08/02/22 20:51	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1897159	5	07/19/22 02:48	07/19/22 14:47	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1892819	1	07/08/22 16:36	07/11/22 16:44	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1894823	1	07/08/22 16:36	07/17/22 19:20	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1895195	1	07/15/22 08:54	07/16/22 13:34	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1894485	1	07/13/22 17:26	07/14/22 22:23	AGW	Mt. Juliet, TN

20220707-RA11-PH02 @ 5FT L1512916-03 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 09:20

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1897275	1	07/28/22 08:47	07/28/22 08:47	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1899797	1	07/24/22 18:00	07/26/22 19:58	ERP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1893065	1	07/11/22 14:00	07/11/22 16:53	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1897843	1	07/21/22 03:31	07/21/22 07:51	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1897160	1	07/19/22 02:46	07/19/22 15:57	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1897256	1	07/26/22 18:43	08/02/22 20:54	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1897159	5	07/19/22 02:48	07/19/22 14:50	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1892819	1	07/08/22 16:36	07/11/22 17:07	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1894823	1	07/08/22 16:36	07/17/22 19:39	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1895195	1	07/15/22 08:54	07/16/22 11:17	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1894485	1	07/13/22 17:26	07/14/22 22:40	AGW	Mt. Juliet, TN

20220707-RA11-PH03 @ 5FT L1512916-04 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 09:45

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1897275	1	07/28/22 08:50	07/28/22 08:50	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1899797	1	07/24/22 18:00	07/26/22 20:04	ERP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1893469	1	07/12/22 13:00	07/12/22 15:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1897843	1	07/21/22 03:31	07/21/22 07:51	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1897160	1	07/19/22 02:46	07/19/22 16:00	ZSA	Mt. Juliet, TN

SAMPLE SUMMARY

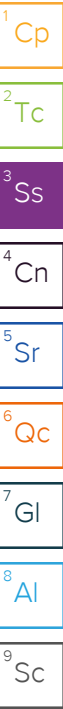
20220707-RA11-PH03 @ 5FT L1512916-04 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 09:45

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1897256	1	07/26/22 18:43	08/02/22 20:56	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1897159	5	07/19/22 02:48	07/19/22 15:00	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1892819	1	07/08/22 16:36	07/11/22 17:30	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1894823	1	07/08/22 16:36	07/17/22 19:58	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1895195	1	07/15/22 08:54	07/16/22 12:53	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1894485	1	07/13/22 17:26	07/15/22 03:08	AGW	Mt. Juliet, TN



20220707-RA11-PH05 @ 6FT L1512916-05 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 10:45

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1897275	1	07/28/22 08:53	07/28/22 08:53	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1899797	1	07/24/22 18:00	07/26/22 20:09	ERP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1894176	1	07/13/22 09:00	07/13/22 11:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1897843	1	07/21/22 03:31	07/21/22 07:51	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1897160	1	07/19/22 02:46	07/19/22 16:02	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1897256	1	07/26/22 18:43	08/02/22 20:59	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1897159	5	07/19/22 02:48	07/19/22 15:03	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1892819	1	07/08/22 16:36	07/11/22 17:52	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1894823	1	07/08/22 16:36	07/17/22 20:17	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1895195	1	07/15/22 08:54	07/16/22 12:12	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1894485	1	07/13/22 17:26	07/14/22 22:58	AGW	Mt. Juliet, TN

20220707-RA11-PH06 @ 6FT L1512916-06 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 11:10

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1897275	1	07/28/22 08:56	07/28/22 08:56	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1899797	1	07/24/22 18:00	07/26/22 20:14	ERP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1893469	1	07/12/22 13:00	07/12/22 15:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1897843	1	07/21/22 03:31	07/21/22 07:51	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1897160	1	07/19/22 02:46	07/19/22 16:10	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1897256	1	07/26/22 18:43	08/02/22 21:02	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1897159	5	07/19/22 02:48	07/19/22 15:07	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1892819	1	07/08/22 16:36	07/11/22 18:15	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1894823	1	07/08/22 16:36	07/17/22 20:36	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1896745	1	07/08/22 16:36	07/18/22 14:05	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1895195	1	07/15/22 08:54	07/16/22 11:31	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1894485	1	07/13/22 17:26	07/14/22 23:16	AGW	Mt. Juliet, TN

20220707-RA11-PH07 @ 9FT L1512916-07 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 11:50

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1897275	1	07/28/22 08:59	07/28/22 08:59	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1899797	1	07/24/22 18:00	07/26/22 20:30	ERP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1893469	1	07/12/22 13:00	07/12/22 15:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1897843	1	07/21/22 03:31	07/21/22 07:51	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1897160	1	07/19/22 02:46	07/19/22 16:13	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1897256	1	07/26/22 18:43	08/02/22 21:05	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1897159	5	07/19/22 02:48	07/19/22 15:10	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1892819	1	07/08/22 16:36	07/11/22 18:38	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1894823	1	07/08/22 16:36	07/17/22 20:55	DWR	Mt. Juliet, TN

SAMPLE SUMMARY

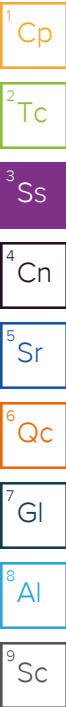
20220707-RA11-PH07 @ 9FT L1512916-07 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 11:50

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1895195	1	07/15/22 08:54	07/16/22 11:44	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1894485	1	07/13/22 17:26	07/14/22 23:34	AGW	Mt. Juliet, TN



20220707-RA11-PH08 @ 5FT L1512916-08 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 12:10

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1897275	1	07/28/22 09:02	07/28/22 09:02	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1899797	1	07/24/22 18:00	07/26/22 20:35	ERP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1893469	1	07/12/22 13:00	07/12/22 15:00	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1897843	1	07/21/22 03:31	07/21/22 07:51	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1897160	1	07/19/22 02:46	07/19/22 16:15	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1897256	1	07/26/22 18:43	08/02/22 21:13	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1897159	5	07/19/22 02:48	07/19/22 15:13	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1893460	1	07/08/22 16:36	07/13/22 09:19	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1894823	1	07/08/22 16:36	07/17/22 21:14	DWR	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1896745	1	07/08/22 16:36	07/18/22 13:46	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1895195	1	07/15/22 08:54	07/16/22 11:58	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1894485	1	07/13/22 17:26	07/14/22 23:52	AGW	Mt. Juliet, TN

20220707-RA11-PH09 @ 5FT L1512916-09 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 12:30

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1897275	1	07/28/22 09:05	07/28/22 09:05	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1899797	1	07/24/22 18:00	07/26/22 20:40	ERP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1893495	1	07/12/22 10:00	07/12/22 12:12	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1897843	1	07/21/22 03:31	07/21/22 07:51	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1897160	1	07/19/22 02:46	07/19/22 16:18	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1897256	1	07/26/22 18:43	08/02/22 21:15	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1897159	5	07/19/22 02:48	07/19/22 15:17	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1893460	1	07/08/22 16:36	07/13/22 09:42	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1894823	1	07/08/22 16:36	07/17/22 21:33	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1895195	1	07/15/22 08:54	07/16/22 12:39	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1894485	1	07/13/22 17:26	07/15/22 00:09	AGW	Mt. Juliet, TN

20220707-RA11-PH10 @ 5FT L1512916-10 Solid

Collected by
Jordan Veith

Collected date/time
07/07/22 12:45

Received date/time
07/08/22 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Calculated Results	WG1897275	1	07/28/22 09:15	07/28/22 09:15	CCE	Mt. Juliet, TN
Wet Chemistry by Method 7199	WG1899797	1	07/24/22 18:00	07/26/22 20:45	ERP	Mt. Juliet, TN
Wet Chemistry by Method 9045D	WG1894176	1	07/13/22 09:00	07/13/22 11:00	GI	Mt. Juliet, TN
Wet Chemistry by Method 9050AMod	WG1897843	1	07/21/22 03:31	07/21/22 07:51	ARD	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1897160	1	07/19/22 02:46	07/19/22 16:21	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B-NE493 Ch 2	WG1897256	1	07/26/22 18:43	08/02/22 21:18	KMG	Mt. Juliet, TN
Metals (ICPMS) by Method 6020	WG1897159	5	07/19/22 02:48	07/19/22 15:20	JPD	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1893460	1	07/08/22 16:36	07/13/22 11:14	ACG	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1894823	1	07/08/22 16:36	07/17/22 21:52	DWR	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1895195	1	07/15/22 08:54	07/16/22 12:26	JAS	Mt. Juliet, TN
Semi Volatile Organic Compounds (GC/MS) by Method 8270C-SIM	WG1894485	1	07/13/22 17:26	07/15/22 00:27	AGW	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.



Chris Ward
Project Manager



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	10.9		1	07/28/2022 08:41	WG1897275

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/26/2022 19:27	WG1899797

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.00	T8	1	07/12/2022 15:00	WG1893469

Sample Narrative:

L1512916-01 WG1893469: 9 at 23.8C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	523		10.0	1	07/21/2022 07:51	WG1897843

Sample Narrative:

L1512916-01 WG1897843: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	98.3		0.0852	0.500	1	07/19/2022 15:52	WG1897160
Cadmium	0.495	J	0.0471	0.500	1	07/19/2022 15:52	WG1897160
Copper	11.0		0.400	2.00	1	07/19/2022 15:52	WG1897160
Lead	9.66		0.208	0.500	1	07/19/2022 15:52	WG1897160
Nickel	15.9		0.132	2.00	1	07/19/2022 15:52	WG1897160
Selenium	U		0.764	2.00	1	07/19/2022 15:52	WG1897160
Silver	U		0.127	1.00	1	07/19/2022 15:52	WG1897160
Zinc	54.3		0.832	5.00	1	07/19/2022 15:52	WG1897160

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	0.285		0.0167	0.200	1	08/02/2022 20:48	WG1897256

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.04		0.100	1.00	5	07/19/2022 14:43	WG1897159

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0531	J	0.0217	0.100	1	07/20/2022 12:39	WG1897547
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	98.7			77.0-120		07/20/2022 12:39	WG1897547

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

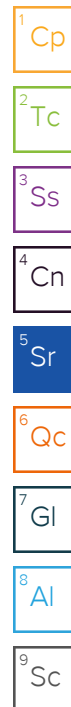
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/13/2022 21:18	WG1894735
Toluene	0.00197	<u>U</u>	0.00130	0.00500	1	07/13/2022 21:18	WG1894735
Ethylbenzene	U		0.000737	0.00250	1	07/13/2022 21:18	WG1894735
Xylenes, Total	0.00175	<u>U</u>	0.000880	0.00650	1	07/13/2022 21:18	WG1894735
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/13/2022 21:18	WG1894735
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/13/2022 21:18	WG1894735
(S) Toluene-d8	108			75.0-131		07/13/2022 21:18	WG1894735
(S) 4-Bromofluorobenzene	98.0			67.0-138		07/13/2022 21:18	WG1894735
(S) 1,2-Dichloroethane-d4	101			70.0-130		07/13/2022 21:18	WG1894735

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	07/16/2022 11:03	WG1895195
C28-C36 Motor Oil Range	0.915	<u>U</u>	0.274	4.00	1	07/16/2022 11:03	WG1895195
(S) o-Terphenyl	60.4			18.0-148		07/16/2022 11:03	WG1895195

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
Acenaphthene	U		0.00209	0.00600	1	07/14/2022 22:05	WG1894485
Anthracene	U		0.00230	0.00600	1	07/14/2022 22:05	WG1894485
Benzo(a)anthracene	U		0.00173	0.00600	1	07/14/2022 22:05	WG1894485
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/14/2022 22:05	WG1894485
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/14/2022 22:05	WG1894485
Benzo(a)pyrene	U		0.00179	0.00600	1	07/14/2022 22:05	WG1894485
Chrysene	U		0.00232	0.00600	1	07/14/2022 22:05	WG1894485
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/14/2022 22:05	WG1894485
Fluoranthene	U		0.00227	0.00600	1	07/14/2022 22:05	WG1894485
Fluorene	U		0.00205	0.00600	1	07/14/2022 22:05	WG1894485
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/14/2022 22:05	WG1894485
1-Methylnaphthalene	U		0.00449	0.0200	1	07/14/2022 22:05	WG1894485
2-Methylnaphthalene	U		0.00427	0.0200	1	07/14/2022 22:05	WG1894485
Naphthalene	U		0.00408	0.0200	1	07/14/2022 22:05	WG1894485
Pyrene	U		0.00200	0.00600	1	07/14/2022 22:05	WG1894485
(S) p-Terphenyl-d14	79.7			23.0-120		07/14/2022 22:05	WG1894485
(S) Nitrobenzene-d5	73.7			14.0-149		07/14/2022 22:05	WG1894485
(S) 2-Fluorobiphenyl	67.0			34.0-125		07/14/2022 22:05	WG1894485



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	19.9		1	07/28/2022 08:44	WG1897275

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U	J6	0.255	1.00	1	07/26/2022 19:33	WG1899797

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.51	T8	1	07/12/2022 12:12	WG1893495

Sample Narrative:

L1512916-02 WG1893495: 9.51 at 24.9C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1000		10.0	1	07/21/2022 07:51	WG1897843

Sample Narrative:

L1512916-02 WG1897843: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	1600		0.0852	0.500	1	07/19/2022 15:54	WG1897160
Cadmium	0.446	J	0.0471	0.500	1	07/19/2022 15:54	WG1897160
Copper	12.8		0.400	2.00	1	07/19/2022 15:54	WG1897160
Lead	10.4		0.208	0.500	1	07/19/2022 15:54	WG1897160
Nickel	13.9		0.132	2.00	1	07/19/2022 15:54	WG1897160
Selenium	U		0.764	2.00	1	07/19/2022 15:54	WG1897160
Silver	U		0.127	1.00	1	07/19/2022 15:54	WG1897160
Zinc	47.2		0.832	5.00	1	07/19/2022 15:54	WG1897160

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

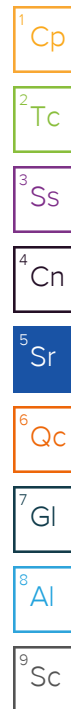
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.257	J	0.0334	0.400	2	08/02/2022 20:51	WG1897256

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	8.39		0.100	1.00	5	07/19/2022 14:47	WG1897159

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	4.39		0.0217	0.100	1	07/11/2022 16:44	WG1892819
(S) a,a,a-Trifluorotoluene(FID)	92.4			77.0-120		07/11/2022 16:44	WG1892819



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	0.000575	U	0.000467	0.00100	1	07/17/2022 19:20	WG1894823
Toluene	0.00143	U	0.00130	0.00500	1	07/17/2022 19:20	WG1894823
Ethylbenzene	0.00328		0.000737	0.00250	1	07/17/2022 19:20	WG1894823
Xylenes, Total	0.00403	U	0.000880	0.00650	1	07/17/2022 19:20	WG1894823
1,2,4-Trimethylbenzene	0.0107		0.00158	0.00500	1	07/17/2022 19:20	WG1894823
1,3,5-Trimethylbenzene	0.133		0.00200	0.00500	1	07/17/2022 19:20	WG1894823
(S) Toluene-d8	106			75.0-131		07/17/2022 19:20	WG1894823
(S) 4-Bromofluorobenzene	106			67.0-138		07/17/2022 19:20	WG1894823
(S) 1,2-Dichloroethane-d4	95.6			70.0-130		07/17/2022 19:20	WG1894823

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	102		1.61	4.00	1	07/16/2022 13:34	WG1895195
C28-C36 Motor Oil Range	7.37		0.274	4.00	1	07/16/2022 13:34	WG1895195
(S) o-Terphenyl	62.4			18.0-148		07/16/2022 13:34	WG1895195

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
Acenaphthene	U		0.00209	0.00600	1	07/14/2022 22:23	WG1894485
Anthracene	U		0.00230	0.00600	1	07/14/2022 22:23	WG1894485
Benzo(a)anthracene	U		0.00173	0.00600	1	07/14/2022 22:23	WG1894485
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/14/2022 22:23	WG1894485
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/14/2022 22:23	WG1894485
Benzo(a)pyrene	U		0.00179	0.00600	1	07/14/2022 22:23	WG1894485
Chrysene	U		0.00232	0.00600	1	07/14/2022 22:23	WG1894485
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/14/2022 22:23	WG1894485
Fluoranthene	U		0.00227	0.00600	1	07/14/2022 22:23	WG1894485
Fluorene	0.00590	U	0.00205	0.00600	1	07/14/2022 22:23	WG1894485
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/14/2022 22:23	WG1894485
1-Methylnaphthalene	0.0131	U	0.00449	0.0200	1	07/14/2022 22:23	WG1894485
2-Methylnaphthalene	0.0476		0.00427	0.0200	1	07/14/2022 22:23	WG1894485
Naphthalene	0.00867	U	0.00408	0.0200	1	07/14/2022 22:23	WG1894485
Pyrene	U		0.00200	0.00600	1	07/14/2022 22:23	WG1894485
(S) p-Terphenyl-d14	72.7			23.0-120		07/14/2022 22:23	WG1894485
(S) Nitrobenzene-d5	86.4			14.0-149		07/14/2022 22:23	WG1894485
(S) 2-Fluorobiphenyl	48.7			34.0-125		07/14/2022 22:23	WG1894485

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	17.3		1	07/28/2022 08:47	WG1897275

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/26/2022 19:58	WG1899797

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	9.04	T8	1	07/11/2022 16:53	WG1893065

Sample Narrative:

L1512916-03 WG1893065: 9.04 at 23C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	779		10.0	1	07/21/2022 07:51	WG1897843

Sample Narrative:

L1512916-03 WG1897843: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	84.1		0.0852	0.500	1	07/19/2022 15:57	WG1897160
Cadmium	0.617		0.0471	0.500	1	07/19/2022 15:57	WG1897160
Copper	9.52		0.400	2.00	1	07/19/2022 15:57	WG1897160
Lead	9.75		0.208	0.500	1	07/19/2022 15:57	WG1897160
Nickel	12.3		0.132	2.00	1	07/19/2022 15:57	WG1897160
Selenium	U		0.764	2.00	1	07/19/2022 15:57	WG1897160
Silver	U		0.127	1.00	1	07/19/2022 15:57	WG1897160
Zinc	40.9		0.832	5.00	1	07/19/2022 15:57	WG1897160

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	0.251		0.0167	0.200	1	08/02/2022 20:54	WG1897256

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	3.75		0.100	1.00	5	07/19/2022 14:50	WG1897159

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	4.55		0.0217	0.100	1	07/11/2022 17:07	WG1892819
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	90.7			77.0-120		07/11/2022 17:07	WG1892819



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	0.0111		0.000467	0.00100	1	07/17/2022 19:39	WG1894823
Toluene	0.0274		0.00130	0.00500	1	07/17/2022 19:39	WG1894823
Ethylbenzene	0.0145		0.000737	0.00250	1	07/17/2022 19:39	WG1894823
Xylenes, Total	0.203		0.000880	0.00650	1	07/17/2022 19:39	WG1894823
1,2,4-Trimethylbenzene	0.0373		0.00158	0.00500	1	07/17/2022 19:39	WG1894823
1,3,5-Trimethylbenzene	0.0383		0.00200	0.00500	1	07/17/2022 19:39	WG1894823
(S) Toluene-d8	107			75.0-131		07/17/2022 19:39	WG1894823
(S) 4-Bromofluorobenzene	103			67.0-138		07/17/2022 19:39	WG1894823
(S) 1,2-Dichloroethane-d4	90.1			70.0-130		07/17/2022 19:39	WG1894823

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	3.18	J	1.61	4.00	1	07/16/2022 11:17	WG1895195
C28-C36 Motor Oil Range	0.553	J	0.274	4.00	1	07/16/2022 11:17	WG1895195
(S) o-Terphenyl	75.2			18.0-148		07/16/2022 11:17	WG1895195

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
Acenaphthene	U		0.00209	0.00600	1	07/14/2022 22:40	WG1894485
Anthracene	U		0.00230	0.00600	1	07/14/2022 22:40	WG1894485
Benzo(a)anthracene	U		0.00173	0.00600	1	07/14/2022 22:40	WG1894485
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/14/2022 22:40	WG1894485
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/14/2022 22:40	WG1894485
Benzo(a)pyrene	U		0.00179	0.00600	1	07/14/2022 22:40	WG1894485
Chrysene	U		0.00232	0.00600	1	07/14/2022 22:40	WG1894485
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/14/2022 22:40	WG1894485
Fluoranthene	U		0.00227	0.00600	1	07/14/2022 22:40	WG1894485
Fluorene	U		0.00205	0.00600	1	07/14/2022 22:40	WG1894485
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/14/2022 22:40	WG1894485
1-Methylnaphthalene	U		0.00449	0.0200	1	07/14/2022 22:40	WG1894485
2-Methylnaphthalene	U		0.00427	0.0200	1	07/14/2022 22:40	WG1894485
Naphthalene	U		0.00408	0.0200	1	07/14/2022 22:40	WG1894485
Pyrene	U		0.00200	0.00600	1	07/14/2022 22:40	WG1894485
(S) p-Terphenyl-d14	85.2			23.0-120		07/14/2022 22:40	WG1894485
(S) Nitrobenzene-d5	75.8			14.0-149		07/14/2022 22:40	WG1894485
(S) 2-Fluorobiphenyl	64.5			34.0-125		07/14/2022 22:40	WG1894485

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	21.0		1	07/28/2022 08:50	WG1897275

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	0.283	J	0.255	1.00	1	07/26/2022 20:04	WG1899797

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.62	T8	1	07/12/2022 15:00	WG1893469

Sample Narrative:

L1512916-04 WG1893469: 8.62 at 23.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1770		10.0	1	07/21/2022 07:51	WG1897843

Sample Narrative:

L1512916-04 WG1897843: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	1730		0.0852	0.500	1	07/19/2022 16:00	WG1897160
Cadmium	0.454	J	0.0471	0.500	1	07/19/2022 16:00	WG1897160
Copper	14.5		0.400	2.00	1	07/19/2022 16:00	WG1897160
Lead	12.3		0.208	0.500	1	07/19/2022 16:00	WG1897160
Nickel	16.6		0.132	2.00	1	07/19/2022 16:00	WG1897160
Selenium	U		0.764	2.00	1	07/19/2022 16:00	WG1897160
Silver	U		0.127	1.00	1	07/19/2022 16:00	WG1897160
Zinc	53.4		0.832	5.00	1	07/19/2022 16:00	WG1897160

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

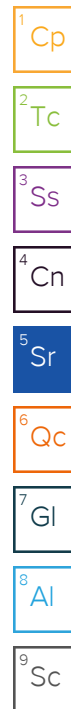
Analyte	Result mg/l	Qualifier	MDL mg/l	RDL mg/l	Dilution	Analysis date / time	Batch
Hot Water Sol. Boron	0.261		0.0167	0.200	1	08/02/2022 20:56	WG1897256

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	7.79		0.100	1.00	5	07/19/2022 15:00	WG1897159

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	7.47		0.0217	0.100	1	07/11/2022 17:30	WG1892819
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	84.2			77.0-120		07/11/2022 17:30	WG1892819



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	0.00131		0.000467	0.00100	1	07/17/2022 19:58	WG1894823
Toluene	0.00265	J	0.00130	0.00500	1	07/17/2022 19:58	WG1894823
Ethylbenzene	0.0573		0.000737	0.00250	1	07/17/2022 19:58	WG1894823
Xylenes, Total	0.0321		0.000880	0.00650	1	07/17/2022 19:58	WG1894823
1,2,4-Trimethylbenzene	0.561		0.00158	0.00500	1	07/17/2022 19:58	WG1894823
1,3,5-Trimethylbenzene	1.63		0.00200	0.00500	1	07/17/2022 19:58	WG1894823
(S) Toluene-d8	105			75.0-131		07/17/2022 19:58	WG1894823
(S) 4-Bromofluorobenzene	106			67.0-138		07/17/2022 19:58	WG1894823
(S) 1,2-Dichloroethane-d4	94.4			70.0-130		07/17/2022 19:58	WG1894823

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

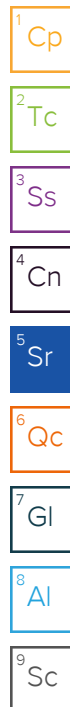
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	106	J3 J5	1.61	4.00	1	07/16/2022 12:53	WG1895195
C28-C36 Motor Oil Range	7.92		0.274	4.00	1	07/16/2022 12:53	WG1895195
(S) o-Terphenyl	58.0			18.0-148		07/16/2022 12:53	WG1895195

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
Acenaphthene	0.0120		0.00209	0.00600	1	07/15/2022 03:08	WG1894485
Anthracene	U		0.00230	0.00600	1	07/15/2022 03:08	WG1894485
Benzo(a)anthracene	U		0.00173	0.00600	1	07/15/2022 03:08	WG1894485
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/15/2022 03:08	WG1894485
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/15/2022 03:08	WG1894485
Benzo(a)pyrene	U		0.00179	0.00600	1	07/15/2022 03:08	WG1894485
Chrysene	U		0.00232	0.00600	1	07/15/2022 03:08	WG1894485
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/15/2022 03:08	WG1894485
Fluoranthene	U		0.00227	0.00600	1	07/15/2022 03:08	WG1894485
Fluorene	0.0402		0.00205	0.00600	1	07/15/2022 03:08	WG1894485
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/15/2022 03:08	WG1894485
1-Methylnaphthalene	0.187		0.00449	0.0200	1	07/15/2022 03:08	WG1894485
2-Methylnaphthalene	0.392		0.00427	0.0200	1	07/15/2022 03:08	WG1894485
Naphthalene	0.110		0.00408	0.0200	1	07/15/2022 03:08	WG1894485
Pyrene	0.00552	J	0.00200	0.00600	1	07/15/2022 03:08	WG1894485
(S) p-Terphenyl-d14	82.4			23.0-120		07/15/2022 03:08	WG1894485
(S) Nitrobenzene-d5	166	J1		14.0-149		07/15/2022 03:08	WG1894485
(S) 2-Fluorobiphenyl	59.2			34.0-125		07/15/2022 03:08	WG1894485

Sample Narrative:

L1512916-04 WG1894485: Surrogate failure due to matrix interference



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	13.9		1	07/28/2022 08:53	WG1897275

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/26/2022 20:09	WG1899797

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.96	T8	1	07/13/2022 11:00	WG1894176

Sample Narrative:

L1512916-05 WG1894176: 8.96 at 24.4C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	1050		10.0	1	07/21/2022 07:51	WG1897843

Sample Narrative:

L1512916-05 WG1897843: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	307		0.0852	0.500	1	07/19/2022 16:02	WG1897160
Cadmium	0.517		0.0471	0.500	1	07/19/2022 16:02	WG1897160
Copper	13.3		0.400	2.00	1	07/19/2022 16:02	WG1897160
Lead	9.60		0.208	0.500	1	07/19/2022 16:02	WG1897160
Nickel	15.2		0.132	2.00	1	07/19/2022 16:02	WG1897160
Selenium	U		0.764	2.00	1	07/19/2022 16:02	WG1897160
Silver	U		0.127	1.00	1	07/19/2022 16:02	WG1897160
Zinc	51.6		0.832	5.00	1	07/19/2022 16:02	WG1897160

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	0.157	J	0.0167	0.200	1	08/02/2022 20:59	WG1897256

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	6.86		0.100	1.00	5	07/19/2022 15:03	WG1897159

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	7.04		0.0217	0.100	1	07/11/2022 17:52	WG1892819
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	95.7			77.0-120		07/11/2022 17:52	WG1892819

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	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/17/2022 20:17	WG1894823
Toluene	U		0.00130	0.00500	1	07/17/2022 20:17	WG1894823
Ethylbenzene	0.0148		0.000737	0.00250	1	07/17/2022 20:17	WG1894823
Xylenes, Total	0.0577		0.000880	0.00650	1	07/17/2022 20:17	WG1894823
1,2,4-Trimethylbenzene	0.385		0.00158	0.00500	1	07/17/2022 20:17	WG1894823
1,3,5-Trimethylbenzene	0.0344		0.00200	0.00500	1	07/17/2022 20:17	WG1894823
(S) Toluene-d8	107			75.0-131		07/17/2022 20:17	WG1894823
(S) 4-Bromofluorobenzene	107			67.0-138		07/17/2022 20:17	WG1894823
(S) 1,2-Dichloroethane-d4	90.5			70.0-130		07/17/2022 20:17	WG1894823

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	28.6		1.61	4.00	1	07/16/2022 12:12	WG1895195
C28-C36 Motor Oil Range	2.13	J	0.274	4.00	1	07/16/2022 12:12	WG1895195
(S) o-Terphenyl	66.4			18.0-148		07/16/2022 12:12	WG1895195

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
Acenaphthene	U		0.00209	0.00600	1	07/14/2022 22:58	WG1894485
Anthracene	U		0.00230	0.00600	1	07/14/2022 22:58	WG1894485
Benzo(a)anthracene	U		0.00173	0.00600	1	07/14/2022 22:58	WG1894485
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/14/2022 22:58	WG1894485
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/14/2022 22:58	WG1894485
Benzo(a)pyrene	U		0.00179	0.00600	1	07/14/2022 22:58	WG1894485
Chrysene	U		0.00232	0.00600	1	07/14/2022 22:58	WG1894485
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/14/2022 22:58	WG1894485
Fluoranthene	U		0.00227	0.00600	1	07/14/2022 22:58	WG1894485
Fluorene	0.00657		0.00205	0.00600	1	07/14/2022 22:58	WG1894485
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/14/2022 22:58	WG1894485
1-Methylnaphthalene	0.00739	J	0.00449	0.0200	1	07/14/2022 22:58	WG1894485
2-Methylnaphthalene	0.0124	J	0.00427	0.0200	1	07/14/2022 22:58	WG1894485
Naphthalene	U		0.00408	0.0200	1	07/14/2022 22:58	WG1894485
Pyrene	U		0.00200	0.00600	1	07/14/2022 22:58	WG1894485
(S) p-Terphenyl-d14	93.8			23.0-120		07/14/2022 22:58	WG1894485
(S) Nitrobenzene-d5	104			14.0-149		07/14/2022 22:58	WG1894485
(S) 2-Fluorobiphenyl	72.8			34.0-125		07/14/2022 22:58	WG1894485

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.17		1	07/28/2022 08:56	WG1897275

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/26/2022 20:14	WG1899797

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.22	T8	1	07/12/2022 15:00	WG1893469

Sample Narrative:

L1512916-06 WG1893469: 8.22 at 23.5C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	296		10.0	1	07/21/2022 07:51	WG1897843

Sample Narrative:

L1512916-06 WG1897843: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	134		0.0852	0.500	1	07/19/2022 16:10	WG1897160
Cadmium	0.406	J	0.0471	0.500	1	07/19/2022 16:10	WG1897160
Copper	12.0		0.400	2.00	1	07/19/2022 16:10	WG1897160
Lead	11.0		0.208	0.500	1	07/19/2022 16:10	WG1897160
Nickel	14.4		0.132	2.00	1	07/19/2022 16:10	WG1897160
Selenium	U		0.764	2.00	1	07/19/2022 16:10	WG1897160
Silver	U		0.127	1.00	1	07/19/2022 16:10	WG1897160
Zinc	49.1		0.832	5.00	1	07/19/2022 16:10	WG1897160

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	0.261		0.0167	0.200	1	08/02/2022 21:02	WG1897256

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	9.63		0.100	1.00	5	07/19/2022 15:07	WG1897159

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0552	J	0.0217	0.100	1	07/11/2022 18:15	WG1892819
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.2			77.0-120		07/11/2022 18:15	WG1892819

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

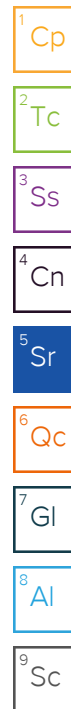
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/17/2022 20:36	WG1894823
Toluene	U		0.00130	0.00500	1	07/17/2022 20:36	WG1894823
Ethylbenzene	U		0.000737	0.00250	1	07/17/2022 20:36	WG1894823
Xylenes, Total	0.00456	J	0.000880	0.00650	1	07/18/2022 14:05	WG1896745
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/18/2022 14:05	WG1896745
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/17/2022 20:36	WG1894823
(S) Toluene-d8	108			75.0-131		07/17/2022 20:36	WG1894823
(S) Toluene-d8	108			75.0-131		07/18/2022 14:05	WG1896745
(S) 4-Bromofluorobenzene	104			67.0-138		07/17/2022 20:36	WG1894823
(S) 4-Bromofluorobenzene	104			67.0-138		07/18/2022 14:05	WG1896745
(S) 1,2-Dichloroethane-d4	93.2			70.0-130		07/17/2022 20:36	WG1894823
(S) 1,2-Dichloroethane-d4	98.8			70.0-130		07/18/2022 14:05	WG1896745

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	07/16/2022 11:31	WG1895195
C28-C36 Motor Oil Range	1.13	J	0.274	4.00	1	07/16/2022 11:31	WG1895195
(S) o-Terphenyl	55.4			18.0-148		07/16/2022 11:31	WG1895195

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
Acenaphthene	U		0.00209	0.00600	1	07/14/2022 23:16	WG1894485
Anthracene	U		0.00230	0.00600	1	07/14/2022 23:16	WG1894485
Benzo(a)anthracene	U		0.00173	0.00600	1	07/14/2022 23:16	WG1894485
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/14/2022 23:16	WG1894485
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/14/2022 23:16	WG1894485
Benzo(a)pyrene	U		0.00179	0.00600	1	07/14/2022 23:16	WG1894485
Chrysene	U		0.00232	0.00600	1	07/14/2022 23:16	WG1894485
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/14/2022 23:16	WG1894485
Fluoranthene	U		0.00227	0.00600	1	07/14/2022 23:16	WG1894485
Fluorene	U		0.00205	0.00600	1	07/14/2022 23:16	WG1894485
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/14/2022 23:16	WG1894485
1-Methylnaphthalene	U		0.00449	0.0200	1	07/14/2022 23:16	WG1894485
2-Methylnaphthalene	U		0.00427	0.0200	1	07/14/2022 23:16	WG1894485
Naphthalene	U		0.00408	0.0200	1	07/14/2022 23:16	WG1894485
Pyrene	U		0.00200	0.00600	1	07/14/2022 23:16	WG1894485
(S) p-Terphenyl-d14	87.0			23.0-120		07/14/2022 23:16	WG1894485
(S) Nitrobenzene-d5	72.0			14.0-149		07/14/2022 23:16	WG1894485
(S) 2-Fluorobiphenyl	59.5			34.0-125		07/14/2022 23:16	WG1894485



Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	0.998		1	07/28/2022 08:59	WG1897275

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/26/2022 20:30	WG1899797

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.31	T8	1	07/12/2022 15:00	WG1893469

Sample Narrative:
L1512916-07 WG1893469: 8.31 at 23.7C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	233		10.0	1	07/21/2022 07:51	WG1897843

Sample Narrative:
L1512916-07 WG1897843: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	75.5		0.0852	0.500	1	07/19/2022 16:13	WG1897160
Cadmium	0.610		0.0471	0.500	1	07/19/2022 16:13	WG1897160
Copper	26.0		0.400	2.00	1	07/19/2022 16:13	WG1897160
Lead	22.3		0.208	0.500	1	07/19/2022 16:13	WG1897160
Nickel	14.9		0.132	2.00	1	07/19/2022 16:13	WG1897160
Selenium	6.26		0.764	2.00	1	07/19/2022 16:13	WG1897160
Silver	U		0.127	1.00	1	07/19/2022 16:13	WG1897160
Zinc	71.8		0.832	5.00	1	07/19/2022 16:13	WG1897160

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	0.206		0.0167	0.200	1	08/02/2022 21:05	WG1897256

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	17.0		0.100	1.00	5	07/19/2022 15:10	WG1897159

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	4.09		0.0217	0.100	1	07/11/2022 18:38	WG1892819
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	94.3			77.0-120		07/11/2022 18:38	WG1892819

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	0.0652		0.000467	0.00100	1	07/17/2022 20:55	WG1894823
Toluene	0.244		0.00130	0.00500	1	07/17/2022 20:55	WG1894823
Ethylbenzene	0.0266		0.000737	0.00250	1	07/17/2022 20:55	WG1894823
Xylenes, Total	0.551		0.000880	0.00650	1	07/17/2022 20:55	WG1894823
1,2,4-Trimethylbenzene	0.0798		0.00158	0.00500	1	07/17/2022 20:55	WG1894823
1,3,5-Trimethylbenzene	0.0779		0.00200	0.00500	1	07/17/2022 20:55	WG1894823
(S) Toluene-d8	106			75.0-131		07/17/2022 20:55	WG1894823
(S) 4-Bromofluorobenzene	102			67.0-138		07/17/2022 20:55	WG1894823
(S) 1,2-Dichloroethane-d4	91.5			70.0-130		07/17/2022 20:55	WG1894823

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	5.54		1.61	4.00	1	07/16/2022 11:44	WG1895195
C28-C36 Motor Oil Range	0.285	J	0.274	4.00	1	07/16/2022 11:44	WG1895195
(S) o-Terphenyl	63.2			18.0-148		07/16/2022 11:44	WG1895195

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
Acenaphthene	U		0.00209	0.00600	1	07/14/2022 23:34	WG1894485
Anthracene	U		0.00230	0.00600	1	07/14/2022 23:34	WG1894485
Benzo(a)anthracene	U		0.00173	0.00600	1	07/14/2022 23:34	WG1894485
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/14/2022 23:34	WG1894485
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/14/2022 23:34	WG1894485
Benzo(a)pyrene	U		0.00179	0.00600	1	07/14/2022 23:34	WG1894485
Chrysene	U		0.00232	0.00600	1	07/14/2022 23:34	WG1894485
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/14/2022 23:34	WG1894485
Fluoranthene	U		0.00227	0.00600	1	07/14/2022 23:34	WG1894485
Fluorene	U		0.00205	0.00600	1	07/14/2022 23:34	WG1894485
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/14/2022 23:34	WG1894485
1-Methylnaphthalene	0.00735	J	0.00449	0.0200	1	07/14/2022 23:34	WG1894485
2-Methylnaphthalene	0.0230		0.00427	0.0200	1	07/14/2022 23:34	WG1894485
Naphthalene	0.0100	J	0.00408	0.0200	1	07/14/2022 23:34	WG1894485
Pyrene	U		0.00200	0.00600	1	07/14/2022 23:34	WG1894485
(S) p-Terphenyl-d14	86.5			23.0-120		07/14/2022 23:34	WG1894485
(S) Nitrobenzene-d5	83.0			14.0-149		07/14/2022 23:34	WG1894485
(S) 2-Fluorobiphenyl	68.8			34.0-125		07/14/2022 23:34	WG1894485

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	0.579		1	07/28/2022 09:02	WG1897275

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/26/2022 20:35	WG1899797

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.71	T8	1	07/12/2022 15:00	WG1893469

Sample Narrative:

L1512916-08 WG1893469: 8.71 at 23.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	322		10.0	1	07/21/2022 07:51	WG1897843

Sample Narrative:

L1512916-08 WG1897843: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	127		0.0852	0.500	1	07/19/2022 16:15	WG1897160
Cadmium	0.403	J	0.0471	0.500	1	07/19/2022 16:15	WG1897160
Copper	12.4		0.400	2.00	1	07/19/2022 16:15	WG1897160
Lead	10.9		0.208	0.500	1	07/19/2022 16:15	WG1897160
Nickel	16.1		0.132	2.00	1	07/19/2022 16:15	WG1897160
Selenium	U		0.764	2.00	1	07/19/2022 16:15	WG1897160
Silver	U		0.127	1.00	1	07/19/2022 16:15	WG1897160
Zinc	54.3		0.832	5.00	1	07/19/2022 16:15	WG1897160

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	0.292		0.0167	0.200	1	08/02/2022 21:13	WG1897256

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	5.97		0.100	1.00	5	07/19/2022 15:13	WG1897159

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0574	J	0.0217	0.100	1	07/13/2022 09:19	WG1893460
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	97.1			77.0-120		07/13/2022 09:19	WG1893460

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

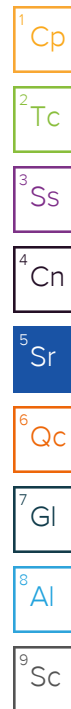
Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/18/2022 13:46	WG1896745
Toluene	0.00222	U	0.00130	0.00500	1	07/18/2022 13:46	WG1896745
Ethylbenzene	U		0.000737	0.00250	1	07/17/2022 21:14	WG1894823
Xylenes, Total	0.00460	U	0.000880	0.00650	1	07/18/2022 13:46	WG1896745
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/17/2022 21:14	WG1894823
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/17/2022 21:14	WG1894823
(S) Toluene-d8	107			75.0-131		07/17/2022 21:14	WG1894823
(S) Toluene-d8	105			75.0-131		07/18/2022 13:46	WG1896745
(S) 4-Bromofluorobenzene	102			67.0-138		07/17/2022 21:14	WG1894823
(S) 4-Bromofluorobenzene	106			67.0-138		07/18/2022 13:46	WG1896745
(S) 1,2-Dichloroethane-d4	89.0			70.0-130		07/17/2022 21:14	WG1894823
(S) 1,2-Dichloroethane-d4	102			70.0-130		07/18/2022 13:46	WG1896745

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	07/16/2022 11:58	WG1895195
C28-C36 Motor Oil Range	1.11	U	0.274	4.00	1	07/16/2022 11:58	WG1895195
(S) o-Terphenyl	69.1			18.0-148		07/16/2022 11:58	WG1895195

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
Acenaphthene	U		0.00209	0.00600	1	07/14/2022 23:52	WG1894485
Anthracene	U		0.00230	0.00600	1	07/14/2022 23:52	WG1894485
Benzo(a)anthracene	U		0.00173	0.00600	1	07/14/2022 23:52	WG1894485
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/14/2022 23:52	WG1894485
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/14/2022 23:52	WG1894485
Benzo(a)pyrene	U		0.00179	0.00600	1	07/14/2022 23:52	WG1894485
Chrysene	U		0.00232	0.00600	1	07/14/2022 23:52	WG1894485
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/14/2022 23:52	WG1894485
Fluoranthene	U		0.00227	0.00600	1	07/14/2022 23:52	WG1894485
Fluorene	U		0.00205	0.00600	1	07/14/2022 23:52	WG1894485
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/14/2022 23:52	WG1894485
1-Methylnaphthalene	U		0.00449	0.0200	1	07/14/2022 23:52	WG1894485
2-Methylnaphthalene	U		0.00427	0.0200	1	07/14/2022 23:52	WG1894485
Naphthalene	U		0.00408	0.0200	1	07/14/2022 23:52	WG1894485
Pyrene	U		0.00200	0.00600	1	07/14/2022 23:52	WG1894485
(S) p-Terphenyl-d14	79.8			23.0-120		07/14/2022 23:52	WG1894485
(S) Nitrobenzene-d5	69.6			14.0-149		07/14/2022 23:52	WG1894485
(S) 2-Fluorobiphenyl	60.7			34.0-125		07/14/2022 23:52	WG1894485



Calculated Results

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	SAR				
Sodium Adsorption Ratio	0.631		1	07/28/2022 09:05	WG1897275

Wet Chemistry by Method 7199

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Hexavalent Chromium	0.309	J	0.255	1.00	1	07/26/2022 20:40	WG1899797

Wet Chemistry by Method 9045D

	Result	Qualifier	Dilution	Analysis date / time	Batch
Analyte	pH				
pH	8.34	T8	1	07/12/2022 12:12	WG1893495

Sample Narrative:

L1512916-09 WG1893495: 8.34 at 24.5C

Wet Chemistry by Method 9050AMod

	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Analyte	umhos/cm		umhos/cm			
Specific Conductance	206		10.0	1	07/21/2022 07:51	WG1897843

Sample Narrative:

L1512916-09 WG1897843: at 25C

Metals (ICP) by Method 6010B

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Barium	185		0.0852	0.500	1	07/19/2022 16:18	WG1897160
Cadmium	0.367	J	0.0471	0.500	1	07/19/2022 16:18	WG1897160
Copper	13.0		0.400	2.00	1	07/19/2022 16:18	WG1897160
Lead	11.1		0.208	0.500	1	07/19/2022 16:18	WG1897160
Nickel	15.3		0.132	2.00	1	07/19/2022 16:18	WG1897160
Selenium	U		0.764	2.00	1	07/19/2022 16:18	WG1897160
Silver	U		0.127	1.00	1	07/19/2022 16:18	WG1897160
Zinc	53.9		0.832	5.00	1	07/19/2022 16:18	WG1897160

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	0.271		0.0167	0.200	1	08/02/2022 21:15	WG1897256

Metals (ICPMS) by Method 6020

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
Arsenic	4.65		0.100	1.00	5	07/19/2022 15:17	WG1897159

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

	Result	Qualifier	MDL	RDL	Dilution	Analysis date / time	Batch
Analyte	mg/kg		mg/kg	mg/kg			
TPH (GC/FID) Low Fraction	0.0312	J	0.0217	0.100	1	07/13/2022 09:42	WG1893460
(S) a,a,a-Trifluorotoluene(FID)	96.6			77.0-120		07/13/2022 09:42	WG1893460

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

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	07/17/2022 21:33	WG1894823
Toluene	U		0.00130	0.00500	1	07/17/2022 21:33	WG1894823
Ethylbenzene	U		0.000737	0.00250	1	07/17/2022 21:33	WG1894823
Xylenes, Total	U		0.000880	0.00650	1	07/17/2022 21:33	WG1894823
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/17/2022 21:33	WG1894823
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/17/2022 21:33	WG1894823
(S) Toluene-d8	108			75.0-131		07/17/2022 21:33	WG1894823
(S) 4-Bromofluorobenzene	103			67.0-138		07/17/2022 21:33	WG1894823
(S) 1,2-Dichloroethane-d4	93.6			70.0-130		07/17/2022 21:33	WG1894823

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	07/16/2022 12:39	WG1895195
C28-C36 Motor Oil Range	1.76	J	0.274	4.00	1	07/16/2022 12:39	WG1895195
(S) o-Terphenyl	59.6			18.0-148		07/16/2022 12:39	WG1895195

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
Acenaphthene	U		0.00209	0.00600	1	07/15/2022 00:09	WG1894485
Anthracene	U		0.00230	0.00600	1	07/15/2022 00:09	WG1894485
Benzo(a)anthracene	U		0.00173	0.00600	1	07/15/2022 00:09	WG1894485
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/15/2022 00:09	WG1894485
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/15/2022 00:09	WG1894485
Benzo(a)pyrene	U		0.00179	0.00600	1	07/15/2022 00:09	WG1894485
Chrysene	U		0.00232	0.00600	1	07/15/2022 00:09	WG1894485
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/15/2022 00:09	WG1894485
Fluoranthene	U		0.00227	0.00600	1	07/15/2022 00:09	WG1894485
Fluorene	U		0.00205	0.00600	1	07/15/2022 00:09	WG1894485
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/15/2022 00:09	WG1894485
1-Methylnaphthalene	U		0.00449	0.0200	1	07/15/2022 00:09	WG1894485
2-Methylnaphthalene	U		0.00427	0.0200	1	07/15/2022 00:09	WG1894485
Naphthalene	U		0.00408	0.0200	1	07/15/2022 00:09	WG1894485
Pyrene	U		0.00200	0.00600	1	07/15/2022 00:09	WG1894485
(S) p-Terphenyl-d14	99.6			23.0-120		07/15/2022 00:09	WG1894485
(S) Nitrobenzene-d5	87.4			14.0-149		07/15/2022 00:09	WG1894485
(S) 2-Fluorobiphenyl	80.3			34.0-125		07/15/2022 00:09	WG1894485

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Calculated Results

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
Sodium Adsorption Ratio	1.19		1	07/28/2022 09:15	WG1897275

Wet Chemistry by Method 7199

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Hexavalent Chromium	U		0.255	1.00	1	07/26/2022 20:45	WG1899797

Wet Chemistry by Method 9045D

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.56	T8	1	07/13/2022 11:00	WG1894176

Sample Narrative:

L1512916-10 WG1894176: 8.56 at 24.6C

Wet Chemistry by Method 9050AMod

Analyte	Result umhos/cm	Qualifier	RDL umhos/cm	Dilution	Analysis date / time	Batch
Specific Conductance	234		10.0	1	07/21/2022 07:51	WG1897843

Sample Narrative:

L1512916-10 WG1897843: at 25C

Metals (ICP) by Method 6010B

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Barium	160		0.0852	0.500	1	07/19/2022 16:21	WG1897160
Cadmium	0.552		0.0471	0.500	1	07/19/2022 16:21	WG1897160
Copper	11.8		0.400	2.00	1	07/19/2022 16:21	WG1897160
Lead	9.09		0.208	0.500	1	07/19/2022 16:21	WG1897160
Nickel	14.1		0.132	2.00	1	07/19/2022 16:21	WG1897160
Selenium	U		0.764	2.00	1	07/19/2022 16:21	WG1897160
Silver	U		0.127	1.00	1	07/19/2022 16:21	WG1897160
Zinc	47.6		0.832	5.00	1	07/19/2022 16:21	WG1897160

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	0.277		0.0167	0.200	1	08/02/2022 21:18	WG1897256

Metals (ICPMS) by Method 6020

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Arsenic	4.09		0.100	1.00	5	07/19/2022 15:20	WG1897159

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	0.0560	J	0.0217	0.100	1	07/13/2022 11:14	WG1893460
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	96.8			77.0-120		07/13/2022 11:14	WG1893460

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	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
Benzene	U		0.000467	0.00100	1	07/17/2022 21:52	WG1894823
Toluene	U		0.00130	0.00500	1	07/17/2022 21:52	WG1894823
Ethylbenzene	U		0.000737	0.00250	1	07/17/2022 21:52	WG1894823
Xylenes, Total	0.00320	J	0.000880	0.00650	1	07/17/2022 21:52	WG1894823
1,2,4-Trimethylbenzene	U		0.00158	0.00500	1	07/17/2022 21:52	WG1894823
1,3,5-Trimethylbenzene	U		0.00200	0.00500	1	07/17/2022 21:52	WG1894823
(S) Toluene-d8	108			75.0-131		07/17/2022 21:52	WG1894823
(S) 4-Bromofluorobenzene	102			67.0-138		07/17/2022 21:52	WG1894823
(S) 1,2-Dichloroethane-d4	94.9			70.0-130		07/17/2022 21:52	WG1894823

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

Analyte	Result mg/kg	Qualifier	MDL mg/kg	RDL mg/kg	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	U		1.61	4.00	1	07/16/2022 12:26	WG1895195
C28-C36 Motor Oil Range	1.62	J	0.274	4.00	1	07/16/2022 12:26	WG1895195
(S) o-Terphenyl	80.9			18.0-148		07/16/2022 12:26	WG1895195

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
Acenaphthene	U		0.00209	0.00600	1	07/15/2022 00:27	WG1894485
Anthracene	0.00281	J	0.00230	0.00600	1	07/15/2022 00:27	WG1894485
Benzo(a)anthracene	0.00204	J	0.00173	0.00600	1	07/15/2022 00:27	WG1894485
Benzo(b)fluoranthene	U		0.00153	0.00600	1	07/15/2022 00:27	WG1894485
Benzo(k)fluoranthene	U		0.00215	0.00600	1	07/15/2022 00:27	WG1894485
Benzo(a)pyrene	U		0.00179	0.00600	1	07/15/2022 00:27	WG1894485
Chrysene	U		0.00232	0.00600	1	07/15/2022 00:27	WG1894485
Dibenz(a,h)anthracene	U		0.00172	0.00600	1	07/15/2022 00:27	WG1894485
Fluoranthene	0.00892		0.00227	0.00600	1	07/15/2022 00:27	WG1894485
Fluorene	U		0.00205	0.00600	1	07/15/2022 00:27	WG1894485
Indeno(1,2,3-cd)pyrene	U		0.00181	0.00600	1	07/15/2022 00:27	WG1894485
1-Methylnaphthalene	U		0.00449	0.0200	1	07/15/2022 00:27	WG1894485
2-Methylnaphthalene	U		0.00427	0.0200	1	07/15/2022 00:27	WG1894485
Naphthalene	U		0.00408	0.0200	1	07/15/2022 00:27	WG1894485
Pyrene	0.00609		0.00200	0.00600	1	07/15/2022 00:27	WG1894485
(S) p-Terphenyl-d14	105			23.0-120		07/15/2022 00:27	WG1894485
(S) Nitrobenzene-d5	85.8			14.0-149		07/15/2022 00:27	WG1894485
(S) 2-Fluorobiphenyl	83.2			34.0-125		07/15/2022 00:27	WG1894485

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3819636-1 07/26/22 18:25

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

L1512429-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1512429-01 07/26/22 18:56 • (DUP) R3819636-3 07/26/22 19:01

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

L1512921-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1512921-03 07/26/22 21:01 • (DUP) R3819636-8 07/26/22 21:06

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/kg	mg/kg		%		%
Hexavalent Chromium	0.599	0.552	1	8.20	⬇	20

Laboratory Control Sample (LCS)

(LCS) R3819636-2 07/26/22 18:30

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Hexavalent Chromium	10.0	10.0	100	80.0-120	

L1512916-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1512916-02 07/26/22 19:33 • (MS) R3819636-5 07/26/22 19:43 • (MSD) R3819636-6 07/26/22 19:48

	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	%	%		%			%	%
Hexavalent Chromium	20.0	U	15.1	14.9	75.5	74.7	1	75.0-125		J6	1.07	20

L1512916-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1512916-02 07/26/22 19:33 • (MS) R3819636-7 07/26/22 19:53

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/kg	mg/kg	mg/kg	%		%	
Hexavalent Chromium	672	U	631	93.9	50	75.0-125	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

L1512921-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1512921-03 07/11/22 16:53 • (DUP) R3813340-2 07/11/22 16:53

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.23	8.25	1	0.243		1

Sample Narrative:

OS: 8.23 at 23C

DUP: 8.25 at 23.2C

L1513243-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1513243-05 07/11/22 16:53 • (DUP) R3813340-3 07/11/22 16:53

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	su	su		%		%
pH	8.09	8.13	1	0.493		1

Sample Narrative:

OS: 8.09 at 22.9C

DUP: 8.13 at 23C

Laboratory Control Sample (LCS)

(LCS) R3813340-1 07/11/22 16:53

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.90	99.0	99.0-101	

Sample Narrative:

LCS: 9.9 at 23.2C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1511319-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1511319-02 07/12/22 15:00 • (DUP) R3813760-2 07/12/22 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.99	7.98	1	0.125		1

Sample Narrative:

OS: 7.99 at 24.1C

DUP: 7.98 at 24.2C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1511718-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1511718-01 07/12/22 15:00 • (DUP) R3813760-3 07/12/22 15:00

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.11	8.12	1	0.123		1

Sample Narrative:

OS: 8.11 at 24.1C

DUP: 8.12 at 23.6C

Laboratory Control Sample (LCS)

(LCS) R3813760-1 07/12/22 15:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	su	su	%	%	
pH	10.0	9.90	99.0	99.0-101	

Sample Narrative:

LCS: 9.9 at 23.6C

L1512950-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1512950-03 07/12/22 12:12 • (DUP) R3813609-2 07/12/22 12:12

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.11	8.13	1	0.246		1

Sample Narrative:

OS: 8.11 at 23.8C

DUP: 8.13 at 24C

Laboratory Control Sample (LCS)

(LCS) R3813609-1 07/12/22 12:12

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.91	99.1	99.0-101	

Sample Narrative:

LCS: 9.91 at 24C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1512916-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1512916-05 07/13/22 11:00 • (DUP) R3814187-2 07/13/22 11:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.96	8.93	1	0.335		1

Sample Narrative:

OS: 8.96 at 24.4C

DUP: 8.93 at 24.4C

L1512916-10 Original Sample (OS) • Duplicate (DUP)

(OS) L1512916-10 07/13/22 11:00 • (DUP) R3814187-3 07/13/22 11:00

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	pH	su		%		%
pH	8.56	8.54	1	0.234		1

Sample Narrative:

OS: 8.56 at 24.6C

DUP: 8.54 at 25C

Laboratory Control Sample (LCS)

(LCS) R3814187-1 07/13/22 11:00

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	<u>LCS Qualifier</u>
Analyte	su	su	%	%	
pH	10.0	9.92	99.2	99.0-101	

Sample Narrative:

LCS: 9.92 at 23.1C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3817496-1 07/21/22 07:51

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

L1512916-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1512916-01 07/21/22 07:51 • (DUP) R3817496-3 07/21/22 07:51

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	523	563	1	7.37		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1512920-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1512920-03 07/21/22 07:51 • (DUP) R3817496-4 07/21/22 07:51

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	390	435	1	10.9		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3817496-2 07/21/22 07:51

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	286	282	98.6	85.0-115	

Sample Narrative:

LCS: at 25C



Method Blank (MB)

(MB) R3816832-1 07/19/22 15:06

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
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) R3816832-2 07/19/22 15:09

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Barium	100	100	100	80.0-120	
Cadmium	100	96.4	96.4	80.0-120	
Copper	100	97.5	97.5	80.0-120	
Lead	100	96.1	96.1	80.0-120	
Nickel	100	96.6	96.6	80.0-120	
Selenium	100	97.2	97.2	80.0-120	
Silver	20.0	18.5	92.6	80.0-120	
Zinc	100	94.8	94.8	80.0-120	

L1511319-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511319-01 07/19/22 15:12 • (MS) R3816832-5 07/19/22 15:19 • (MSD) R3816832-6 07/19/22 15:22

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 %
Barium	100	129	217	218	87.2	88.8	1	75.0-125			0.759	20
Cadmium	100	0.250	85.5	85.7	85.3	85.4	1	75.0-125			0.187	20
Copper	100	12.9	101	101	88.1	88.6	1	75.0-125			0.460	20
Lead	100	9.45	93.7	94.1	84.3	84.6	1	75.0-125			0.363	20
Nickel	100	12.9	98.7	99.2	85.9	86.3	1	75.0-125			0.410	20
Selenium	100	U	84.8	84.5	84.8	84.5	1	75.0-125			0.301	20
Silver	20.0	U	16.3	16.5	81.6	82.4	1	75.0-125			0.940	20
Zinc	100	41.7	123	123	80.8	81.5	1	75.0-125			0.519	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3821919-1 08/02/22 20:40

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) R3821919-2 08/02/22 20:43 • (LCSD) R3821919-3 08/02/22 20:45

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	1.08	1.07	108	107	80.0-120			0.672	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3816703-1 07/19/22 13:40

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

Laboratory Control Sample (LCS)

(LCS) R3816703-2 07/19/22 13:43

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/kg	mg/kg	%	%	
Arsenic	100	97.0	97.0	80.0-120	

L1511319-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1511319-01 07/19/22 13:47 • (MS) R3816703-5 07/19/22 13:57 • (MSD) R3816703-6 07/19/22 14:00

	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	%	%		%			%	%
Arsenic	100	3.63	85.9	90.0	82.3	86.3	5	75.0-125			4.60	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3816029-2 07/11/22 08:16

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)	96.4			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3816029-1 07/11/22 06:55

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	3.98	72.4	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			96.3	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3814907-2 07/13/22 06:11

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)	97.2			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3814907-1 07/13/22 05:26

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.23	95.1	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			101	77.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3817216-2 07/20/22 04:35

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)	99.1			77.0-120

Laboratory Control Sample (LCS)

(LCS) R3817216-1 07/20/22 03:49

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	4.54	82.5	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			100	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) R3814940-2 07/13/22 19:05

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	102			75.0-131
(S) 4-Bromofluorobenzene	94.1			67.0-138
(S) 1,2-Dichloroethane-d4	108			70.0-130

Laboratory Control Sample (LCS)

(LCS) R3814940-1 07/13/22 18:08

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.125	0.109	87.2	70.0-123	
Toluene	0.125	0.104	83.2	75.0-121	
Ethylbenzene	0.125	0.105	84.0	74.0-126	
Xylenes, Total	0.375	0.311	82.9	72.0-127	
1,2,4-Trimethylbenzene	0.125	0.0996	79.7	70.0-126	
1,3,5-Trimethylbenzene	0.125	0.107	85.6	73.0-127	
(S) Toluene-d8			100	75.0-131	
(S) 4-Bromofluorobenzene			98.3	67.0-138	
(S) 1,2-Dichloroethane-d4			107	70.0-130	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3815968-2 07/17/22 13:45

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Ethylbenzene	U		0.000737	0.00250
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
1,3,5-Trimethylbenzene	U		0.00200	0.00500
(S) Toluene-d8	108			75.0-131
(S) 4-Bromofluorobenzene	98.3			67.0-138
(S) 1,2-Dichloroethane-d4	91.2			70.0-130

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

(LCS) R3815968-1 07/17/22 12:09 • (LCSD) R3815968-3 07/17/22 15:05

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	0.128	0.131	102	105	70.0-123			2.32	20
Toluene	0.125	0.141	0.136	113	109	75.0-121			3.61	20
Ethylbenzene	0.125	0.135	0.135	108	108	74.0-126			0.000	20
Xylenes, Total	0.375	0.423	0.426	113	114	72.0-127			0.707	20
1,2,4-Trimethylbenzene	0.125	0.137	0.135	110	108	70.0-126			1.47	20
1,3,5-Trimethylbenzene	0.125	0.132	0.129	106	103	73.0-127			2.30	20
(S) Toluene-d8				108	103	75.0-131				
(S) 4-Bromofluorobenzene				103	107	67.0-138				
(S) 1,2-Dichloroethane-d4				101	102	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3816666-3 07/18/22 13:14

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Benzene	U		0.000467	0.00100
Toluene	U		0.00130	0.00500
Xylenes, Total	U		0.000880	0.00650
1,2,4-Trimethylbenzene	U		0.00158	0.00500
(S) Toluene-d8	107			75.0-131
(S) 4-Bromofluorobenzene	111			67.0-138
(S) 1,2-Dichloroethane-d4	106			70.0-130

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

(LCS) R3816666-1 07/18/22 12:18 • (LCSD) R3816666-2 07/18/22 12:37

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	0.115	0.114	92.0	91.2	70.0-123			0.873	20
Toluene	0.125	0.119	0.123	95.2	98.4	75.0-121			3.31	20
Xylenes, Total	0.375	0.383	0.401	102	107	72.0-127			4.59	20
1,2,4-Trimethylbenzene	0.125	0.122	0.124	97.6	99.2	70.0-126			1.63	20
(S) Toluene-d8				106	107	75.0-131				
(S) 4-Bromofluorobenzene				103	106	67.0-138				
(S) 1,2-Dichloroethane-d4				105	102	70.0-130				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3815699-1 07/16/22 06:03

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-C36 Motor Oil Range	U		0.274	4.00
(S) o-Terphenyl	62.9			18.0-148

Laboratory Control Sample (LCS)

(LCS) R3815699-2 07/16/22 06:16

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
C10-C28 Diesel Range	50.0	32.6	65.2	50.0-150	
(S) o-Terphenyl			79.4	18.0-148	

L1512916-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1512916-04 07/16/22 12:53 • (MS) R3815703-1 07/16/22 13:07 • (MSD) R3815703-2 07/16/22 13:20

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	50.0	106	142	221	72.0	230	1	50.0-150		J3 J5	43.5	20
(S) o-Terphenyl					59.2	73.0		18.0-148				

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3815373-2 07/14/22 20:36

Analyte	MB Result mg/kg	MB Qualifier	MB MDL mg/kg	MB RDL mg/kg
Acenaphthene	U		0.00209	0.00600
Anthracene	U		0.00230	0.00600
Benzo(a)anthracene	U		0.00173	0.00600
Benzo(b)fluoranthene	U		0.00153	0.00600
Benzo(k)fluoranthene	U		0.00215	0.00600
Benzo(a)pyrene	U		0.00179	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
1-Methylnaphthalene	U		0.00449	0.0200
2-Methylnaphthalene	U		0.00427	0.0200
Naphthalene	U		0.00408	0.0200
Pyrene	U		0.00200	0.00600
(S) p-Terphenyl-d14	120			23.0-120
(S) Nitrobenzene-d5	81.8			14.0-149
(S) 2-Fluorobiphenyl	88.6			34.0-125

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3815373-1 07/14/22 20:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	LCS Qualifier
Acenaphthene	0.0800	0.0678	84.8	50.0-120	
Anthracene	0.0800	0.0623	77.9	50.0-126	
Benzo(a)anthracene	0.0800	0.0641	80.1	45.0-120	
Benzo(b)fluoranthene	0.0800	0.0749	93.6	42.0-121	
Benzo(k)fluoranthene	0.0800	0.0731	91.4	49.0-125	
Benzo(a)pyrene	0.0800	0.0589	73.6	42.0-120	
Chrysene	0.0800	0.0704	88.0	49.0-122	
Dibenz(a,h)anthracene	0.0800	0.0763	95.4	47.0-125	
Fluoranthene	0.0800	0.0677	84.6	49.0-129	
Fluorene	0.0800	0.0692	86.5	49.0-120	
Indeno(1,2,3-cd)pyrene	0.0800	0.0724	90.5	46.0-125	
1-Methylnaphthalene	0.0800	0.0690	86.3	51.0-121	
2-Methylnaphthalene	0.0800	0.0648	81.0	50.0-120	
Naphthalene	0.0800	0.0700	87.5	50.0-120	
Pyrene	0.0800	0.0707	88.4	43.0-123	

Laboratory Control Sample (LCS)

(LCS) R3815373-1 07/14/22 20:18

Analyte	Spike Amount mg/kg	LCS Result mg/kg	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
(S) p-Terphenyl-d14			119	23.0-120	
(S) Nitrobenzene-d5			91.4	14.0-149	
(S) 2-Fluorobiphenyl			93.9	34.0-125	

L1512921-05 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1512921-05 07/15/22 01:38 • (MS) R3815373-3 07/15/22 01:56 • (MSD) R3815373-4 07/15/22 02:14

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 %
Acenaphthene	0.0788	U	0.0560	0.0523	71.1	66.4	1	14.0-127			6.83	27
Anthracene	0.0788	U	0.0565	0.0505	71.7	64.1	1	10.0-145			11.2	30
Benzo(a)anthracene	0.0788	U	0.0576	0.0527	73.1	66.9	1	10.0-139			8.88	30
Benzo(b)fluoranthene	0.0788	U	0.0537	0.0499	68.1	63.3	1	10.0-140			7.34	36
Benzo(k)fluoranthene	0.0788	U	0.0555	0.0501	70.4	63.6	1	10.0-137			10.2	31
Benzo(a)pyrene	0.0788	U	0.0574	0.0529	72.8	67.1	1	10.0-141			8.16	31
Chrysene	0.0788	U	0.0574	0.0530	72.8	67.3	1	10.0-145			7.97	30
Dibenz(a,h)anthracene	0.0788	U	0.0552	0.0508	70.1	64.5	1	10.0-132			8.30	31
Fluoranthene	0.0788	U	0.0596	0.0542	75.6	68.8	1	10.0-153			9.49	33
Fluorene	0.0788	U	0.0572	0.0528	72.6	67.0	1	11.0-130			8.00	29
Indeno(1,2,3-cd)pyrene	0.0788	U	0.0560	0.0510	71.1	64.7	1	10.0-137			9.35	32
1-Methylnaphthalene	0.0788	U	0.0595	0.0554	75.5	70.3	1	10.0-142			7.14	28
2-Methylnaphthalene	0.0788	U	0.0584	0.0534	74.1	67.8	1	10.0-137			8.94	28
Naphthalene	0.0788	U	0.0580	0.0539	73.6	68.4	1	10.0-135			7.33	27
Pyrene	0.0788	U	0.0574	0.0522	72.8	66.2	1	10.0-148			9.49	35
(S) p-Terphenyl-d14					89.4	89.0		23.0-120				
(S) Nitrobenzene-d5					82.1	70.0		14.0-149				
(S) 2-Fluorobiphenyl					73.6	73.1		34.0-125				

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

Qualifier Description

J	The identification of the analyte is acceptable; the reported value is an estimate.
J1	Surrogate recovery limits have been exceeded; values are outside upper control limits.
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.

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

ACCREDITATIONS & LOCATIONS

Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN000032021-1
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey--NELAP	TN002
California	2932	New Mexico 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 and Gas 143 Diamond Avenue Parachute, CO 81635						Billing Information: SAME AS LEFT						Pres Chk		Analysis / Container / Preservative										Chain of Custody Page ____ of ____							
Report to: Jake Janicek						Email To: jjanicek@caerusoilandgas.com																		Pace Analytical® National Center for Testing & Innovation							
Project Description: RAII Flowline Investigation						City/State Collected: Piceance Crk, CO						Please Circle: PT MI CT ET												12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859							
Phone: (970) 778-2314						Client Project #						Lab Project # CAERUSCO-KLEIN												SDG # U512916 B159							
Collected by (print): Jordan Veith						Site/Facility ID # RAII Pad						P.O. # A												Acctnum:							
Collected by (signature): 						Rush? (Lab MUST Be Notified) ____ Same Day ____ Five Day ____ Next Day ____ 5 Day (Rad Only) ____ Two Day ____ 10 Day (Rad Only) ____ Three Day						Quote #												Template:							
Immediately Packed on Ice N ____ Y <input checked="" type="checkbox"/> X						Date Results Needed Standard TAT						No. of Cntrs												Prelogin:							
Sample ID						Comp/Grab		Matrix*		Depth		Date		Time												PM:					
20220707 - RAIL - PH01 @ 7ft						Grab		SS		7'		7/7/22		8:10		Z		X												PB:	
20220707 - RAIL - PH01 @ 7ft						Grab		SS		7'		7/7/22		9:00		Z		X												Shipped Via:	
20220707 - RAIL - PH02 @ 5ft						Grab		SS		5'		7/7/22		9:20		Z		X												Remarks	
20220707 - RAIL - PH03 @ 5ft						Grab		SS		5'		7/7/22		9:45		Z		X												Sample # (lab only)	
20220707 - RAIL - PH05 @ 6ft						Grab		SS		6'		7/7/22		10:45		Z		X													
20220707 - RAIL - PH06 @ 6ft						Grab		SS		6'		7/7/22		11:10		Z		X													
20220707 - RAIL - PH07 @ 9ft						Grab		SS		9'		7/7/22		11:50		Z		X													
20220707 - RAIL - PH08 @ 5ft						Grab		SS		5'		7/7/22		12:10		Z		X													
20220707 - RAIL - PH09 @ 5ft						Grab		SS		5'		7/7/22		12:30		Z		X													
20220707 - RAIL - PH10 @ 5ft						Grab		SS		5'		7/7/22		12:45		Z		X													
* Matrix: SS - Soil AIR - Air F - Filter GW - Groundwater B - Bioassay WW - WasteWater DW - Drinking Water OT - Other						Remarks: <div>Samples returned via: ____ UPS ____ FedEx ____ Courier</div>						Tracking # 5755 8084 8355						pH ____ Temp ____ Flow ____ Other ____						Sample Receipt Checklist COC Seal Present/Intact: ____ NP ____ Y ____ N ____ COC Signed/Accurate: ____ Y ____ N ____ Bottles arrive intact: ____ Y ____ N ____ Correct bottles used: ____ Y ____ N ____ Sufficient volume sent: ____ Y ____ N ____ If Applicable VOA Zero Headspace: ____ Y ____ N ____ Preservation Correct/Checked: ____ Y ____ N ____ RAD Screen <0.5 mR/hr: ____ Y ____ N ____							
Relinquished by: (Signature) 						Date: 7/7/22		Time: 17:00		Received by: (Signature) 						Trip Blank Received: Yes / No No HCL / MeOH TBR						If preservation required by Login: Date/Time									
Relinquished by: (Signature) 						Date: 7/7/22		Time: 1730		Received by: (Signature) 						Temp: °C Bottles Received: DRA7 4.7+0=4.7 28															
Relinquished by: (Signature)						Date:		Time:		Received for lab by: (Signature) 						Date:		Time:		Hold:		Condition: NCF / OK									