

Caerus Oil and Gas

Sample Delivery Group: L1577830
Samples Received: 01/20/2023
Project Number:
Description: 909J

Report To: Blair Rollins
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:







Chris Ward
Project Manager

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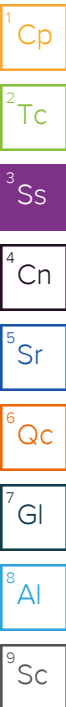
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SAMPLE SUMMARY

P5E-07114-ILES L1577830-01 GW

Collected by: Will Harmon
 Collected date/time: 01/19/23 11:00
 Received date/time: 01/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1993071	1	01/23/23 13:05	01/23/23 13:05	ARD	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1991876	20	01/24/23 23:11	01/24/23 23:11	JCS	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1994827	1	01/24/23 18:21	01/25/23 20:04	LDT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1992192	1	01/20/23 22:13	01/20/23 22:13	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1992307	1	01/21/23 10:50	01/21/23 10:50	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	10	01/21/23 04:23	01/21/23 04:23	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	100	01/21/23 08:45	01/21/23 08:45	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992220	1	01/21/23 08:34	01/22/23 19:27	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992220	5	01/21/23 08:34	01/23/23 15:23	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1992428	50	01/22/23 15:38	01/22/23 15:38	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1992496	50	01/21/23 21:49	01/21/23 21:49	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1994846	1000	01/26/23 04:36	01/26/23 04:36	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1992957	1	01/23/23 10:44	01/23/23 22:19	NH	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1992957	5	01/23/23 10:44	01/24/23 08:11	NH	Mt. Juliet, TN



E22NE-TANK-WMFK L1577830-02 GW

Collected by: Will Harmon
 Collected date/time: 01/19/23 10:00
 Received date/time: 01/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1993071	1	01/23/23 13:09	01/23/23 13:09	ARD	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1991876	20	01/24/23 23:12	01/24/23 23:12	JCS	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1994827	1	01/24/23 18:21	01/25/23 20:05	LDT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1992192	1	01/20/23 22:13	01/20/23 22:13	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1992307	1	01/21/23 10:50	01/21/23 10:50	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	10	01/21/23 04:36	01/21/23 04:36	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	100	01/21/23 08:57	01/21/23 08:57	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992220	1	01/21/23 08:34	01/22/23 18:16	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992220	5	01/21/23 08:34	01/23/23 15:17	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1992428	25	01/22/23 15:16	01/22/23 15:16	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1992496	25	01/21/23 22:09	01/21/23 22:09	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1994846	500	01/26/23 04:58	01/26/23 04:58	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1992957	1	01/23/23 10:44	01/23/23 22:41	NH	Mt. Juliet, TN

K7-08933-ILES L1577830-03 GW

Collected by: Will Harmon
 Collected date/time: 01/19/23 14:10
 Received date/time: 01/20/23 09:00

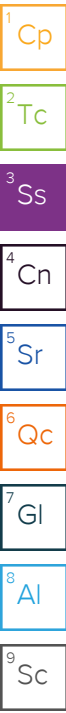
Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1993071	1	01/23/23 13:15	01/23/23 13:15	ARD	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1991876	20	01/24/23 23:14	01/24/23 23:14	JCS	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1994827	1	01/24/23 18:21	01/25/23 20:06	LDT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1992192	1	01/20/23 22:13	01/20/23 22:13	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1992307	1	01/21/23 10:50	01/21/23 10:50	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	10	01/21/23 04:48	01/21/23 04:48	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	100	01/21/23 09:10	01/21/23 09:10	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992220	1	01/21/23 08:34	01/22/23 18:19	ABL	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992220	10	01/21/23 08:34	01/23/23 15:20	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1992428	500	01/22/23 18:54	01/22/23 18:54	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1992496	500	01/21/23 22:30	01/21/23 22:30	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1992957	1	01/23/23 10:44	01/23/23 23:03	NH	Mt. Juliet, TN

SAMPLE SUMMARY

C29NE-TANK-WMFK L1577830-04 GW

Collected by: Will Harmon
 Collected date/time: 01/19/23 09:15
 Received date/time: 01/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1993071	5	01/23/23 13:50	01/23/23 13:50	ARD	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1991876	20	01/24/23 23:15	01/24/23 23:15	JCS	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1994827	1	01/24/23 18:21	01/25/23 20:07	LDT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1992192	1	01/20/23 22:13	01/20/23 22:13	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1992307	1	01/21/23 10:50	01/21/23 10:50	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	1	01/21/23 05:01	01/21/23 05:01	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	10	01/21/23 09:22	01/21/23 09:22	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992955	1	01/23/23 14:09	01/23/23 18:45	ZSA	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992955	5	01/23/23 14:09	01/24/23 07:24	CCE	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1992428	200	01/22/23 18:11	01/22/23 18:11	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1992496	200	01/21/23 22:50	01/21/23 22:50	JCP	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1992957	1	01/23/23 10:44	01/23/23 23:25	NH	Mt. Juliet, TN



K19CNE-13512-EMFK L1577830-05 GW

Collected by: Will Harmon
 Collected date/time: 01/19/23 08:20
 Received date/time: 01/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1993128	1	01/24/23 11:12	01/24/23 11:12	ARD	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1991876	20	01/24/23 23:16	01/24/23 23:16	JCS	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1994827	1	01/24/23 18:21	01/25/23 20:11	LDT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1992192	1	01/20/23 22:13	01/20/23 22:13	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1992307	1	01/21/23 10:50	01/21/23 10:50	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	10	01/21/23 05:38	01/21/23 05:38	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	100	01/21/23 09:35	01/21/23 09:35	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992955	10	01/23/23 14:09	01/24/23 07:27	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992955	10	01/23/23 14:09	01/24/23 18:07	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1992428	50	01/22/23 15:59	01/22/23 15:59	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1994846	500	01/26/23 05:19	01/26/23 05:19	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1992957	1	01/23/23 10:44	01/23/23 23:46	NH	Mt. Juliet, TN

B9W-07817-ILES L1577830-06 GW

Collected by: Will Harmon
 Collected date/time: 01/19/23 13:20
 Received date/time: 01/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1993128	1	01/24/23 11:16	01/24/23 11:16	ARD	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1991876	20	01/24/23 23:17	01/24/23 23:17	JCS	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1994827	1	01/24/23 18:21	01/25/23 20:13	LDT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1992192	1	01/20/23 22:13	01/20/23 22:13	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1992307	1	01/21/23 10:50	01/21/23 10:50	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	10	01/21/23 05:50	01/21/23 05:50	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	100	01/21/23 09:47	01/21/23 09:47	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992955	20	01/23/23 14:09	01/24/23 07:30	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992955	20	01/23/23 14:09	01/24/23 18:10	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1992428	100	01/22/23 17:27	01/22/23 17:27	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1992496	100	01/21/23 23:31	01/21/23 23:31	JCP	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1994846	1000	01/26/23 05:41	01/26/23 05:41	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1992957	1	01/23/23 10:44	01/24/23 00:08	NH	Mt. Juliet, TN

SAMPLE SUMMARY

K35-10307-WMFK L1577830-07 GW

Collected by: Will Harmon
 Collected date/time: 01/19/23 12:20
 Received date/time: 01/20/23 09:00

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 2320 B-2011	WG1993128	1	01/24/23 11:20	01/24/23 11:20	ARD	Mt. Juliet, TN
Wet Chemistry by Method 353.2	WG1991876	20	01/24/23 23:19	01/24/23 23:19	JCS	Mt. Juliet, TN
Wet Chemistry by Method 365.4	WG1994827	1	01/24/23 18:21	01/25/23 20:14	LDT	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1992192	1	01/20/23 22:13	01/20/23 22:13	KAD	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1992307	1	01/21/23 10:50	01/21/23 10:50	NTG	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	10	01/21/23 06:03	01/21/23 06:03	LBR	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1992225	100	01/21/23 10:00	01/21/23 10:00	LBR	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992955	10	01/23/23 14:09	01/24/23 07:33	CCE	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1992955	10	01/23/23 14:09	01/24/23 18:13	ZSA	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method 8015D/GRO	WG1992428	100	01/22/23 17:49	01/22/23 17:49	KSD	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1994846	1000	01/26/23 06:03	01/26/23 06:03	ADM	Mt. Juliet, TN
Semi-Volatile Organic Compounds (GC) by Method 8015M	WG1992957	1	01/23/23 10:44	01/24/23 00:52	NH	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

CASE NARRATIVE

All sample aliquots were received at the correct temperature, in the proper containers, with the appropriate preservatives, and within method specified holding times, unless qualified or notated within the report. Where applicable, all MDL (LOD) and RDL (LOQ) values reported for environmental samples have been corrected for the dilution factor used in the analysis. All Method and Batch Quality Control are within established criteria except where addressed in this case narrative, a non-conformance form or properly qualified within the sample results. By my digital signature below, I affirm to the best of my knowledge, all problems/anomalies observed by the laboratory as having the potential to affect the quality of the data have been identified by the laboratory, and no information or data have been knowingly withheld that would affect the quality of the data.



Chris Ward
Project Manager

Sample Delivery Group (SDG) Narrative

The following analysis were performed from an unpreserved, insufficiently or inadequately preserved sample.

<u>Lab Sample ID</u>	<u>Project Sample ID</u>	<u>Method</u>
L1577830-03	K7-08933-ILES	365.4, 353.2
L1577830-04	C29NE-TANK-WMFK	353.2, 365.4

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	491		20.0	1	01/23/2023 13:05	WG1993071
Alkalinity,Bicarbonate	491		20.0	1	01/23/2023 13:05	WG1993071
Alkalinity,Carbonate	ND		20.0	1	01/23/2023 13:05	WG1993071

Sample Narrative:

L1577830-01 WG1993071: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	ND		2.00	20	01/24/2023 23:11	WG1991876

Sample Narrative:

L1577830-01 WG1991876: Dilution due to matrix.

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Phosphorus>Total	4.07		0.100	1	01/25/2023 20:04	WG1994827

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.96	<u>T8</u>	1	01/20/2023 22:13	WG1992192

Sample Narrative:

L1577830-01 WG1992192: 6.96 at 18.5C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	14100		10.0	1	01/21/2023 10:50	WG1992307

Sample Narrative:

L1577830-01 WG1992307: at 25C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	30.1		10.0	10	01/21/2023 04:23	WG1992225
Chloride	4480		100	100	01/21/2023 08:45	WG1992225
Fluoride	ND		1.50	10	01/21/2023 04:23	WG1992225
Nitrate as (N)	ND		1.00	10	01/21/2023 04:23	WG1992225
Nitrite as (N)	ND		1.00	10	01/21/2023 04:23	WG1992225
Sulfate	ND		50.0	10	01/21/2023 04:23	WG1992225

Sample Narrative:

L1577830-01 WG1992225: Dilution due to matrix impact on instrumentation at lower dilution

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	27.7		0.00500	1	01/22/2023 19:27	WG1992220
Boron	0.701		0.200	1	01/22/2023 19:27	WG1992220
Calcium	261		1.00	1	01/22/2023 19:27	WG1992220
Iron	78.6		0.100	1	01/22/2023 19:27	WG1992220
Magnesium	12.4		1.00	1	01/22/2023 19:27	WG1992220
Manganese	1.55		0.0100	1	01/22/2023 19:27	WG1992220
Potassium	60.5		2.00	1	01/22/2023 19:27	WG1992220
Selenium	ND		0.0100	1	01/22/2023 19:27	WG1992220
Sodium	3070		15.0	5	01/23/2023 15:23	WG1992220
Strontium	42.2		0.0500	5	01/23/2023 15:23	WG1992220

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	177		5.00	50	01/22/2023 15:38	WG1992428
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	100		78.0-120		01/22/2023 15:38	WG1992428

7 Gl

8 Al

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	14.4		1.00	1000	01/26/2023 04:36	WG1994846
Toluene	27.2		1.00	1000	01/26/2023 04:36	WG1994846
Ethylbenzene	1.36		0.0500	50	01/21/2023 21:49	WG1992496
Xylenes, Total	17.9		0.150	50	01/21/2023 21:49	WG1992496
Naphthalene	ND		5.00	1000	01/26/2023 04:36	WG1994846
(S) Toluene-d8	97.9		80.0-120		01/21/2023 21:49	WG1992496
(S) Toluene-d8	96.1		80.0-120		01/26/2023 04:36	WG1994846
(S) 4-Bromofluorobenzene	95.6		77.0-126		01/21/2023 21:49	WG1992496
(S) 4-Bromofluorobenzene	100		77.0-126		01/26/2023 04:36	WG1994846
(S) 1,2-Dichloroethane-d4	95.7		70.0-130		01/21/2023 21:49	WG1992496
(S) 1,2-Dichloroethane-d4	108		70.0-130		01/26/2023 04:36	WG1994846

9 Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	31.7		0.500	5	01/24/2023 08:11	WG1992957
C28-C36 Motor Oil Range	0.966		0.100	1	01/23/2023 22:19	WG1992957
(S) <i>o</i> -Terphenyl	93.7		52.0-156		01/24/2023 08:11	WG1992957
(S) <i>o</i> -Terphenyl	57.4		52.0-156		01/23/2023 22:19	WG1992957

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Alkalinity	1800		20.0	1	01/23/2023 13:09	WG1993071
Alkalinity,Bicarbonate	1800		20.0	1	01/23/2023 13:09	WG1993071
Alkalinity,Carbonate	ND		20.0	1	01/23/2023 13:09	WG1993071

Sample Narrative:

L1577830-02 WG1993071: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Nitrate-Nitrite	ND		2.00	20	01/24/2023 23:12	WG1991876

Sample Narrative:

L1577830-02 WG1991876: Dilution due to matrix.

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Phosphorus,Total	0.221		0.100	1	01/25/2023 20:05	WG1994827

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis	Batch
	pH			date / time	
pH	8.00	T8	1	01/20/2023 22:13	WG1992192

Sample Narrative:

L1577830-02 WG1992192: 8 at 18.2C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	umhos/cm		umhos/cm		date / time	
Specific Conductance	13000		10.0	1	01/21/2023 10:50	WG1992307

Sample Narrative:

L1577830-02 WG1992307: at 25C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Bromide	28.3		10.0	10	01/21/2023 04:36	WG1992225
Chloride	3460		100	100	01/21/2023 08:57	WG1992225
Fluoride	ND		1.50	10	01/21/2023 04:36	WG1992225
Nitrate as (N)	ND		1.00	10	01/21/2023 04:36	WG1992225
Nitrite as (N)	ND		1.00	10	01/21/2023 04:36	WG1992225
Sulfate	ND		50.0	10	01/21/2023 04:36	WG1992225

Sample Narrative:

L1577830-02 WG1992225: Dilution due to matrix impact on instrumentation at lower dilution

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	22.2		0.00500	1	01/22/2023 18:16	WG1992220
Boron	2.14		0.200	1	01/22/2023 18:16	WG1992220
Calcium	48.8		1.00	1	01/22/2023 18:16	WG1992220
Iron	9.43		0.100	1	01/22/2023 18:16	WG1992220
Magnesium	6.10		1.00	1	01/22/2023 18:16	WG1992220
Manganese	0.116		0.0100	1	01/22/2023 18:16	WG1992220
Potassium	43.4		2.00	1	01/22/2023 18:16	WG1992220
Selenium	ND		0.0100	1	01/22/2023 18:16	WG1992220
Sodium	2940		15.0	5	01/23/2023 15:17	WG1992220
Strontium	12.4		0.0100	1	01/22/2023 18:16	WG1992220

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	124		2.50	25	01/22/2023 15:16	WG1992428
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	100		78.0-120		01/22/2023 15:16	WG1992428

7 Gl

8 Al

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	10.7		0.500	500	01/26/2023 04:58	WG1994846
Toluene	20.1		0.500	500	01/26/2023 04:58	WG1994846
Ethylbenzene	0.743		0.0250	25	01/21/2023 22:09	WG1992496
Xylenes, Total	10.3		0.0750	25	01/21/2023 22:09	WG1992496
Naphthalene	ND		2.50	500	01/26/2023 04:58	WG1994846
(S) Toluene-d8	102		80.0-120		01/21/2023 22:09	WG1992496
(S) Toluene-d8	96.6		80.0-120		01/26/2023 04:58	WG1994846
(S) 4-Bromofluorobenzene	94.6		77.0-126		01/21/2023 22:09	WG1992496
(S) 4-Bromofluorobenzene	102		77.0-126		01/26/2023 04:58	WG1994846
(S) 1,2-Dichloroethane-d4	92.8		70.0-130		01/21/2023 22:09	WG1992496
(S) 1,2-Dichloroethane-d4	109		70.0-130		01/26/2023 04:58	WG1994846

9 Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	3.90		0.100	1	01/23/2023 22:41	WG1992957
C28-C36 Motor Oil Range	0.268		0.100	1	01/23/2023 22:41	WG1992957
(S) <i>o</i> -Terphenyl	71.6		52.0-156		01/23/2023 22:41	WG1992957

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	1880		20.0	1	01/23/2023 13:15	WG1993071
Alkalinity,Bicarbonate	1880		20.0	1	01/23/2023 13:15	WG1993071
Alkalinity,Carbonate	ND		20.0	1	01/23/2023 13:15	WG1993071

Sample Narrative:

L1577830-03 WG1993071: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	ND		2.00	20	01/24/2023 23:14	WG1991876

Sample Narrative:

L1577830-03 WG1991876: Dilution due to matrix.

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Phosphorus>Total	0.185		0.100	1	01/25/2023 20:06	WG1994827

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.51	<u>T8</u>	1	01/20/2023 22:13	WG1992192

Sample Narrative:

L1577830-03 WG1992192: 7.51 at 19.2C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	24300		10.0	1	01/21/2023 10:50	WG1992307

Sample Narrative:

L1577830-03 WG1992307: at 25C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	62.6		10.0	10	01/21/2023 04:48	WG1992225
Chloride	7560		100	100	01/21/2023 09:10	WG1992225
Fluoride	1.74		1.50	10	01/21/2023 04:48	WG1992225
Nitrate as (N)	ND		1.00	10	01/21/2023 04:48	WG1992225
Nitrite as (N)	ND		1.00	10	01/21/2023 04:48	WG1992225
Sulfate	ND		50.0	10	01/21/2023 04:48	WG1992225

Sample Narrative:

L1577830-03 WG1992225: Dilution due to matrix impact on instrumentation at lower dilution



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Barium	48.7		0.00500	1	01/22/2023 18:19	WG1992220
Boron	4.87		0.200	1	01/22/2023 18:19	WG1992220
Calcium	56.5		1.00	1	01/22/2023 18:19	WG1992220
Iron	6.23		0.100	1	01/22/2023 18:19	WG1992220
Magnesium	12.8		1.00	1	01/22/2023 18:19	WG1992220
Manganese	0.0966		0.0100	1	01/22/2023 18:19	WG1992220
Potassium	143		2.00	1	01/22/2023 18:19	WG1992220
Selenium	0.0124		0.0100	1	01/22/2023 18:19	WG1992220
Sodium	5760		30.0	10	01/23/2023 15:20	WG1992220
Strontium	33.8		0.100	10	01/23/2023 15:20	WG1992220

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	149	<u>B</u>	50.0	500	01/22/2023 18:54	WG1992428
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	103		78.0-120		01/22/2023 18:54	WG1992428

7 Gl

8 Al

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	9.77		0.500	500	01/21/2023 22:30	WG1992496
Toluene	21.9		0.500	500	01/21/2023 22:30	WG1992496
Ethylbenzene	0.893		0.500	500	01/21/2023 22:30	WG1992496
Xylenes, Total	12.6		1.50	500	01/21/2023 22:30	WG1992496
Naphthalene	ND	<u>C4</u>	2.50	500	01/21/2023 22:30	WG1992496
(S) Toluene-d8	104		80.0-120		01/21/2023 22:30	WG1992496
(S) 4-Bromofluorobenzene	95.5		77.0-126		01/21/2023 22:30	WG1992496
(S) 1,2-Dichloroethane-d4	93.9		70.0-130		01/21/2023 22:30	WG1992496

9 Sc

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.00		0.100	1	01/23/2023 23:03	WG1992957
C28-C36 Motor Oil Range	0.497		0.100	1	01/23/2023 23:03	WG1992957
(S) <i>o</i> -Terphenyl	67.4		52.0-156		01/23/2023 23:03	WG1992957

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	6070		100	5	01/23/2023 13:50	WG1993071
Alkalinity,Bicarbonate	6070		100	5	01/23/2023 13:50	WG1993071
Alkalinity,Carbonate	ND		100	5	01/23/2023 13:50	WG1993071

Sample Narrative:

L1577830-04 WG1993071: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	ND		2.00	20	01/24/2023 23:15	WG1991876

Sample Narrative:

L1577830-04 WG1991876: Dilution due to matrix.

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Phosphorus>Total	0.234		0.100	1	01/25/2023 20:07	WG1994827

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.84	T8	1	01/20/2023 22:13	WG1992192

Sample Narrative:

L1577830-04 WG1992192: 7.84 at 18.5C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	14500		10.0	1	01/21/2023 10:50	WG1992307

Sample Narrative:

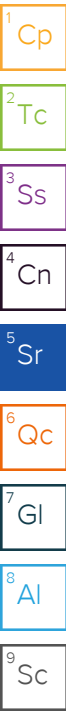
L1577830-04 WG1992307: at 25C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	6.52		1.00	1	01/21/2023 05:01	WG1992225
Chloride	1680		10.0	10	01/21/2023 09:22	WG1992225
Fluoride	2.83		1.50	10	01/21/2023 09:22	WG1992225
Nitrate as (N)	ND		0.100	1	01/21/2023 05:01	WG1992225
Nitrite as (N)	ND		0.100	1	01/21/2023 05:01	WG1992225
Sulfate	ND		5.00	1	01/21/2023 05:01	WG1992225

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	39.1		0.00500	1	01/23/2023 18:45	WG1992955
Boron	6.74		0.200	1	01/23/2023 18:45	WG1992955
Calcium	15.1		1.00	1	01/23/2023 18:45	WG1992955
Iron	2.50		0.100	1	01/23/2023 18:45	WG1992955



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Magnesium	1.43		1.00	1	01/23/2023 18:45	WG1992955
Manganese	0.0454		0.0100	1	01/23/2023 18:45	WG1992955
Potassium	55.9		2.00	1	01/23/2023 18:45	WG1992955
Selenium	ND		0.0100	1	01/23/2023 18:45	WG1992955
Sodium	4010		15.0	5	01/24/2023 07:24	WG1992955
Strontium	6.90		0.0100	1	01/23/2023 18:45	WG1992955

1 Cp
2 Tc
3 Ss
4 Cn

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	119		20.0	200	01/22/2023 18:11	WG1992428
(S) a,a,a-Trifluorotoluene(FID)	102		78.0-120		01/22/2023 18:11	WG1992428

5 Sr
6 Qc

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	7.15		0.200	200	01/21/2023 22:50	WG1992496
Toluene	22.7		0.200	200	01/21/2023 22:50	WG1992496
Ethylbenzene	0.771		0.200	200	01/21/2023 22:50	WG1992496
Xylenes, Total	11.5		0.600	200	01/21/2023 22:50	WG1992496
Naphthalene	ND	C4	1.00	200	01/21/2023 22:50	WG1992496
(S) Toluene-d8	101		80.0-120		01/21/2023 22:50	WG1992496
(S) 4-Bromofluorobenzene	93.9		77.0-126		01/21/2023 22:50	WG1992496
(S) 1,2-Dichloroethane-d4	91.5		70.0-130		01/21/2023 22:50	WG1992496

7 Gl
8 Al
9 Sc

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	8.09		0.100	1	01/23/2023 23:25	WG1992957
C28-C36 Motor Oil Range	1.74		0.100	1	01/23/2023 23:25	WG1992957
(S) o-Terphenyl	64.2		52.0-156		01/23/2023 23:25	WG1992957

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	298		20.0	1	01/24/2023 11:12	WG1993128
Alkalinity,Bicarbonate	298		20.0	1	01/24/2023 11:12	WG1993128
Alkalinity,Carbonate	ND		20.0	1	01/24/2023 11:12	WG1993128

Sample Narrative:

L1577830-05 WG1993128: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	ND		2.00	20	01/24/2023 23:16	WG1991876

Sample Narrative:

L1577830-05 WG1991876: Dilution due to matrix.

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.123		0.100	1	01/25/2023 20:11	WG1994827

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.82	<u>T8</u>	1	01/20/2023 22:13	WG1992192

Sample Narrative:

L1577830-05 WG1992192: 6.82 at 18.7C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	28100		10.0	1	01/21/2023 10:50	WG1992307

Sample Narrative:

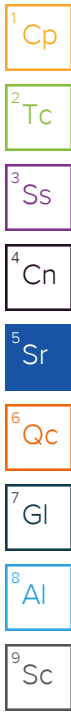
L1577830-05 WG1992307: at 25C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	40.2		10.0	10	01/21/2023 05:38	WG1992225
Chloride	9970		100	100	01/21/2023 09:35	WG1992225
Fluoride	ND		1.50	10	01/21/2023 05:38	WG1992225
Nitrate as (N)	ND		1.00	10	01/21/2023 05:38	WG1992225
Nitrite as (N)	ND		1.00	10	01/21/2023 05:38	WG1992225
Sulfate	ND		50.0	10	01/21/2023 05:38	WG1992225

Sample Narrative:

L1577830-05 WG1992225: Dilution due to matrix impact on instrumentation at lower dilution



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Barium	124		0.0500	10	01/24/2023 07:27	WG1992955
Boron	ND		2.00	10	01/24/2023 18:07	WG1992955
Calcium	896		10.0	10	01/24/2023 07:27	WG1992955
Iron	36.0		1.00	10	01/24/2023 07:27	WG1992955
Magnesium	30.7		10.0	10	01/24/2023 07:27	WG1992955
Manganese	1.14		0.100	10	01/24/2023 07:27	WG1992955
Potassium	52.8		20.0	10	01/24/2023 07:27	WG1992955
Selenium	ND		0.100	10	01/24/2023 07:27	WG1992955
Sodium	5070		30.0	10	01/24/2023 07:27	WG1992955
Strontium	134		0.100	10	01/24/2023 07:27	WG1992955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
TPH (GC/FID) Low Fraction	111		5.00	50	01/22/2023 15:59	WG1992428
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	100		78.0-120		01/22/2023 15:59	WG1992428

7 Gl

8 Al

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	11.8		0.500	500	01/26/2023 05:19	WG1994846
Toluene	18.5		0.500	500	01/26/2023 05:19	WG1994846
Ethylbenzene	0.510		0.500	500	01/26/2023 05:19	WG1994846
Xylenes, Total	6.82		1.50	500	01/26/2023 05:19	WG1994846
Naphthalene	ND		2.50	500	01/26/2023 05:19	WG1994846
(S) Toluene-d8	97.6		80.0-120		01/26/2023 05:19	WG1994846
(S) 4-Bromofluorobenzene	101		77.0-126		01/26/2023 05:19	WG1994846
(S) 1,2-Dichloroethane-d4	112		70.0-130		01/26/2023 05:19	WG1994846

9 Sc

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
C10-C28 Diesel Range	5.24		0.100	1	01/23/2023 23:46	WG1992957
C28-C36 Motor Oil Range	0.379		0.100	1	01/23/2023 23:46	WG1992957
(S) <i>o</i> -Terphenyl	69.5		52.0-156		01/23/2023 23:46	WG1992957

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	422		20.0	1	01/24/2023 11:16	WG1993128
Alkalinity,Bicarbonate	422		20.0	1	01/24/2023 11:16	WG1993128
Alkalinity,Carbonate	ND		20.0	1	01/24/2023 11:16	WG1993128

Sample Narrative:

L1577830-06 WG1993128: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	ND		2.00	20	01/24/2023 23:17	WG1991876

Sample Narrative:

L1577830-06 WG1991876: Dilution due to matrix.

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Phosphorus,Total	0.270		0.100	1	01/25/2023 20:13	WG1994827

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.47	<u>T8</u>	1	01/20/2023 22:13	WG1992192

Sample Narrative:

L1577830-06 WG1992192: 6.47 at 18.4C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	32300		10.0	1	01/21/2023 10:50	WG1992307

Sample Narrative:

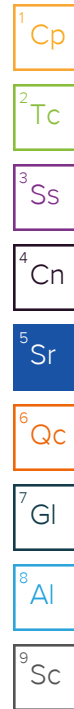
L1577830-06 WG1992307: at 25C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	55.6		10.0	10	01/21/2023 05:50	WG1992225
Chloride	11400		100	100	01/21/2023 09:47	WG1992225
Fluoride	ND		1.50	10	01/21/2023 05:50	WG1992225
Nitrate as (N)	ND		1.00	10	01/21/2023 05:50	WG1992225
Nitrite as (N)	ND		1.00	10	01/21/2023 05:50	WG1992225
Sulfate	ND		50.0	10	01/21/2023 05:50	WG1992225

Sample Narrative:

L1577830-06 WG1992225: Dilution due to matrix impact on instrumentation at lower dilution



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Barium	87.8		0.100	20	01/24/2023 07:30	WG1992955
Boron	ND		4.00	20	01/24/2023 18:10	WG1992955
Calcium	2040		20.0	20	01/24/2023 07:30	WG1992955
Iron	244		2.00	20	01/24/2023 07:30	WG1992955
Magnesium	22.3		20.0	20	01/24/2023 07:30	WG1992955
Manganese	4.75		0.200	20	01/24/2023 07:30	WG1992955
Potassium	129		40.0	20	01/24/2023 07:30	WG1992955
Selenium	ND		0.200	20	01/24/2023 07:30	WG1992955
Sodium	5080		60.0	20	01/24/2023 07:30	WG1992955
Strontium	182		0.200	20	01/24/2023 07:30	WG1992955

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
TPH (GC/FID) Low Fraction	238		10.0	100	01/22/2023 17:27	WG1992428
(S) <i>a, a, a</i> -Trifluorotoluene(FID)	101		78.0-120		01/22/2023 17:27	WG1992428

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Benzene	21.2		1.00	1000	01/26/2023 05:41	WG1994846
Toluene	40.5		1.00	1000	01/26/2023 05:41	WG1994846
Ethylbenzene	1.36		0.100	100	01/21/2023 23:31	WG1992496
Xylenes, Total	15.7		0.300	100	01/21/2023 23:31	WG1992496
Naphthalene	ND		5.00	1000	01/26/2023 05:41	WG1994846
(S) Toluene-d8	100		80.0-120		01/21/2023 23:31	WG1992496
(S) Toluene-d8	96.3		80.0-120		01/26/2023 05:41	WG1994846
(S) 4-Bromofluorobenzene	92.6		77.0-126		01/21/2023 23:31	WG1992496
(S) 4-Bromofluorobenzene	101		77.0-126		01/26/2023 05:41	WG1994846
(S) 1,2-Dichloroethane-d4	94.4		70.0-130		01/21/2023 23:31	WG1992496
(S) 1,2-Dichloroethane-d4	110		70.0-130		01/26/2023 05:41	WG1994846

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
C10-C28 Diesel Range	7.36		0.100	1	01/24/2023 00:08	WG1992957
C28-C36 Motor Oil Range	0.266		0.100	1	01/24/2023 00:08	WG1992957
(S) <i>o</i> -Terphenyl	73.2		52.0-156		01/24/2023 00:08	WG1992957

Wet Chemistry by Method 2320 B-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Alkalinity	380		20.0	1	01/24/2023 11:20	WG1993128
Alkalinity,Bicarbonate	380		20.0	1	01/24/2023 11:20	WG1993128
Alkalinity,Carbonate	ND		20.0	1	01/24/2023 11:20	WG1993128

Sample Narrative:

L1577830-07 WG1993128: Endpoint pH 4.5 Headspace

Wet Chemistry by Method 353.2

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Nitrate-Nitrite	ND		2.00	20	01/24/2023 23:19	WG1991876

Sample Narrative:

L1577830-07 WG1991876: Dilution due to matrix.

Wet Chemistry by Method 365.4

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Phosphorus>Total	0.108		0.100	1	01/25/2023 20:14	WG1994827

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	6.58	<u>T8</u>	1	01/20/2023 22:13	WG1992192

Sample Narrative:

L1577830-07 WG1992192: 6.58 at 18.2C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	27400		10.0	1	01/21/2023 10:50	WG1992307

Sample Narrative:

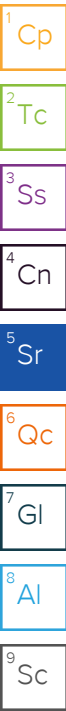
L1577830-07 WG1992307: at 25C

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	57.4		10.0	10	01/21/2023 06:03	WG1992225
Chloride	9480		100	100	01/21/2023 10:00	WG1992225
Fluoride	ND		1.50	10	01/21/2023 06:03	WG1992225
Nitrate as (N)	ND		1.00	10	01/21/2023 06:03	WG1992225
Nitrite as (N)	ND		1.00	10	01/21/2023 06:03	WG1992225
Sulfate	ND		50.0	10	01/21/2023 06:03	WG1992225

Sample Narrative:

L1577830-07 WG1992225: Dilution due to matrix impact on instrumentation at lower dilution



Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Barium	99.6		0.0500	10	01/24/2023 07:33	WG1992955
Boron	ND		2.00	10	01/24/2023 18:13	WG1992955
Calcium	738		10.0	10	01/24/2023 07:33	WG1992955
Iron	179		1.00	10	01/24/2023 07:33	WG1992955
Magnesium	25.9		10.0	10	01/24/2023 07:33	WG1992955
Manganese	3.19		0.100	10	01/24/2023 07:33	WG1992955
Potassium	53.0		20.0	10	01/24/2023 07:33	WG1992955
Selenium	ND		0.100	10	01/24/2023 07:33	WG1992955
Sodium	5190		30.0	10	01/24/2023 07:33	WG1992955
Strontium	99.0		0.100	10	01/24/2023 07:33	WG1992955

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
TPH (GC/FID) Low Fraction	172		10.0	100	01/22/2023 17:49	WG1992428
(S) <i>a,a,a</i> -Trifluorotoluene(FID)	101		78.0-120		01/22/2023 17:49	WG1992428

7 Gl

8 Al

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
Benzene	9.09		1.00	1000	01/26/2023 06:03	WG1994846
Toluene	32.8		1.00	1000	01/26/2023 06:03	WG1994846
Ethylbenzene	ND		1.00	1000	01/26/2023 06:03	WG1994846
Xylenes, Total	14.6		3.00	1000	01/26/2023 06:03	WG1994846
Naphthalene	ND		5.00	1000	01/26/2023 06:03	WG1994846
(S) Toluene-d8	96.3		80.0-120		01/26/2023 06:03	WG1994846
(S) 4-Bromofluorobenzene	101		77.0-126		01/26/2023 06:03	WG1994846
(S) 1,2-Dichloroethane-d4	115		70.0-130		01/26/2023 06:03	WG1994846

9 Sc

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

Analyte	Result	Qualifier	RDL	Dilution	Analysis	Batch
	mg/l		mg/l		date / time	
C10-C28 Diesel Range	6.52		0.100	1	01/24/2023 00:52	WG1992957
C28-C36 Motor Oil Range	0.214		0.100	1	01/24/2023 00:52	WG1992957
(S) <i>o</i> -Terphenyl	94.7		52.0-156		01/24/2023 00:52	WG1992957

Method Blank (MB)

(MB) R3883547-2 01/23/23 10:46

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Alkalinity	U		8.45	20.0
Alkalinity,Bicarbonate	U		8.45	20.0
Alkalinity,Carbonate	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1576848-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1576848-01 01/23/23 11:16 • (DUP) R3883547-3 01/23/23 11:21

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	118	118	1	0.394		20
Alkalinity,Bicarbonate	118	118	1	0.394		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1577760-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1577760-01 01/23/23 12:38 • (DUP) R3883547-4 01/23/23 12:43

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Alkalinity	1360	1350	1	0.722		20
Alkalinity,Bicarbonate	1360	1350	1	0.722		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5

DUP: Endpoint pH 4.5



Laboratory Control Sample (LCS)

(LCS) R3883547-1 01/23/23 10:39

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Alkalinity	100	102	102	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3883850-2 01/24/23 10:56

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Alkalinity	U		8.45	20.0
Alkalinity,Bicarbonate	U		8.45	20.0
Alkalinity,Carbonate	U		8.45	20.0

Sample Narrative:

BLANK: Endpoint pH 4.5

L1577843-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1577843-01 01/24/23 11:24 • (DUP) R3883850-4 01/24/23 11:29

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Alkalinity	321	324	1	1.07		20
Alkalinity,Bicarbonate	321	324	1	1.07		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5

L1577845-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1577845-08 01/24/23 12:44 • (DUP) R3883850-6 01/24/23 12:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Alkalinity	302	303	1	0.311		20
Alkalinity,Bicarbonate	302	303	1	0.311		20
Alkalinity,Carbonate	ND	ND	1	0.000		20

Sample Narrative:

OS: Endpoint pH 4.5 Headspace

DUP: Endpoint pH 4.5



Laboratory Control Sample (LCS)

(LCS) R3883850-1 01/24/23 10:48

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Alkalinity	100	104	104	90.0-110	

Sample Narrative:

LCS: Endpoint pH 4.5

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Method Blank (MB)

(MB) R3884041-1 01/24/23 22:38

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Nitrate-Nitrite	U		0.0500	0.100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1577649-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1577649-01 01/24/23 22:40 • (DUP) R3884041-3 01/24/23 22:42

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Nitrate-Nitrite	ND	ND	1	2.60		20

L1577658-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1577658-02 01/24/23 22:48 • (DUP) R3884041-6 01/24/23 22:53

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Nitrate-Nitrite	1.28	1.25	1	2.37		20

Laboratory Control Sample (LCS)

(LCS) R3884041-2 01/24/23 22:39

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Nitrate-Nitrite	2.50	2.58	103	90.0-110	

L1577649-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1577649-01 01/24/23 22:40 • (MS) R3884041-4 01/24/23 22:43 • (MSD) R3884041-5 01/24/23 22:44

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Nitrate-Nitrite	2.50	ND	2.61	2.59	101	100	1	90.0-110			0.769	20

L1577658-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1577658-02 01/24/23 22:48 • (MS) R3884041-7 01/24/23 22:54

Analyte	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Nitrate-Nitrite	2.50	1.28	3.70	96.8	1	90.0-110	

Method Blank (MB)

(MB) R3884453-1 01/25/23 19:41

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Phosphorus,Total	U		0.0350	0.100

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1577631-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1577631-01 01/25/23 19:47 • (DUP) R3884453-3 01/25/23 19:48

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Phosphorus,Total	ND	ND	1	7.16		20

L1577658-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1577658-01 01/25/23 19:52 • (DUP) R3884453-6 01/25/23 19:56

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Phosphorus,Total	0.921	0.925	1	0.433		20

Laboratory Control Sample (LCS)

(LCS) R3884453-2 01/25/23 19:42

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Phosphorus,Total	2.47	2.40	97.2	83.2-116	

L1577631-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1577631-01 01/25/23 19:47 • (MS) R3884453-4 01/25/23 19:50 • (MSD) R3884453-5 01/25/23 19:51

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Phosphorus,Total	2.50	ND	2.46	2.48	96.2	97.0	1	90.0-110			0.810	20

L1576217-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1576217-01 01/20/23 22:13 • (DUP) R3883065-2 01/20/23 22:13

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

Sample Narrative:

OS: 0.75 at 23.9C
 DUP: 0.75 at 21.7C

L1577914-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1577914-02 01/20/23 22:13 • (DUP) R3883065-3 01/20/23 22:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.92	7.95	1	0.378		1

Sample Narrative:

OS: 7.92 at 20.1C
 DUP: 7.95 at 19.6C

Laboratory Control Sample (LCS)

(LCS) R3883065-1 01/20/23 22:13

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

Sample Narrative:

LCS: 9.92 at 19.4C

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3883122-1 01/21/23 10:50

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
Specific Conductance	U		10.0	10.0

Sample Narrative:

BLANK: at 25C

L1577830-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1577830-04 01/21/23 10:50 • (DUP) R3883122-3 01/21/23 10:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Specific Conductance	14500	14500	1	0.138		20

Sample Narrative:

OS: at 25C

DUP: at 25C

L1577845-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1577845-06 01/21/23 10:50 • (DUP) R3883122-4 01/21/23 10:50

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Specific Conductance	1880	1880	1	0.107		20

Sample Narrative:

OS: at 25C

DUP: at 25C

Laboratory Control Sample (LCS)

(LCS) R3883122-2 01/21/23 10:50

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Specific Conductance	1120	1140	102	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) R3883142-1 01/21/23 03:21

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Bromide	U		0.353	1.00
Chloride	U		0.379	1.00
Fluoride	U		0.0640	0.150
Nitrate	U		0.0480	0.100
Nitrite	U		0.0420	0.100
Sulfate	U		0.594	5.00

L1577800-18 Original Sample (OS) • Duplicate (DUP)

(OS) L1577800-18 01/21/23 03:46 • (DUP) R3883142-3 01/21/23 08:20

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	ND	ND	1	0.000		15
Chloride	2.77	2.74	1	1.28		15
Fluoride	0.449	0.445	1	1.03		15
Nitrate	ND	ND	1	0.401		15
Nitrite	ND	ND	1	0.000		15
Sulfate	ND	ND	1	2.64		15

L1577904-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1577904-06 01/21/23 06:15 • (DUP) R3883142-5 01/21/23 10:37

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	mg/l	mg/l		%		%
Bromide	1.04	1.09	1	4.41		15
Chloride	36.6	36.3	1	0.869		15
Fluoride	0.193	0.191	1	1.15		15
Nitrate	0.386	0.418	1	7.99		15
Nitrite	ND	ND	1	0.000		15
Sulfate	48.9	48.8	1	0.203		15

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Laboratory Control Sample (LCS)

(LCS) R3883142-2 01/21/23 03:33

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Bromide	40.0	40.7	102	80.0-120	
Chloride	40.0	40.5	101	80.0-120	
Fluoride	8.00	8.41	105	80.0-120	
Nitrate	8.00	8.00	100	80.0-120	
Nitrite	8.00	8.30	104	80.0-120	
Sulfate	40.0	40.5	101	80.0-120	

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1577800-18 Original Sample (OS) • Matrix Spike (MS)

(OS) L1577800-18 01/21/23 03:46 • (MS) R3883142-4 01/21/23 08:32

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MS Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>
Bromide	50.0	ND	51.4	103	1	80.0-120	
Chloride	50.0	2.77	52.1	98.6	1	80.0-120	
Fluoride	5.00	0.449	5.29	96.9	1	80.0-120	
Nitrate	5.00	ND	4.95	98.1	1	80.0-120	
Nitrite	5.00	ND	5.10	102	1	80.0-120	
Sulfate	50.0	ND	50.9	97.7	1	80.0-120	

L1577904-06 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1577904-06 01/21/23 06:15 • (MS) R3883142-6 01/21/23 10:49 • (MSD) R3883142-7 01/21/23 11:02

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	<u>MS Qualifier</u>	<u>MSD Qualifier</u>	RPD %	RPD Limits %
Bromide	50.0	1.04	50.3	50.2	98.5	98.2	1	80.0-120			0.272	15
Chloride	50.0	36.6	84.5	84.4	95.7	95.5	1	80.0-120			0.127	15
Fluoride	5.00	0.193	5.39	5.36	104	103	1	80.0-120			0.478	15
Nitrate	5.00	0.386	5.35	5.34	99.4	99.1	1	80.0-120			0.284	15
Nitrite	5.00	ND	5.24	5.24	105	105	1	80.0-120			0.00763	15
Sulfate	50.0	48.9	95.9	96.0	94.1	94.2	1	80.0-120			0.0644	15

Method Blank (MB)

(MB) R3883298-1 01/22/23 18:28

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Barium	U		0.000736	0.00500
Boron	U		0.0200	0.200
Calcium	U		0.0793	1.00
Iron	0.0219	U	0.0180	0.100
Magnesium	U		0.0853	1.00
Manganese	U		0.000934	0.0100
Potassium	0.518	U	0.261	2.00
Selenium	U		0.00735	0.0100
Sodium	1.10	U	0.504	3.00
Strontium	U		0.000640	0.0100

1
Cp

2
Tc

3
Ss

4
Cn

5
Sr

6
Qc

7
Gl

8
Al

9
Sc

Laboratory Control Sample (LCS)

(LCS) R3883298-2 01/22/23 18:30

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Barium	1.00	1.00	100	80.0-120	
Boron	1.00	0.983	98.3	80.0-120	
Calcium	10.0	9.60	96.0	80.0-120	
Iron	10.0	9.80	98.0	80.0-120	
Magnesium	10.0	9.20	92.0	80.0-120	
Manganese	1.00	0.902	90.2	80.0-120	
Potassium	10.0	9.85	98.5	80.0-120	
Selenium	1.00	0.928	92.8	80.0-120	
Sodium	10.0	10.7	107	80.0-120	
Strontium	1.00	0.973	97.3	80.0-120	

L1577174-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1577174-02 01/22/23 18:33 • (MS) R3883298-4 01/22/23 18:38 • (MSD) R3883298-5 01/22/23 18:41

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Barium	1.00	0.0318	1.04	1.04	101	101	1	75.0-125			0.125	20
Boron	1.00	ND	1.16	1.15	99.0	98.2	1	75.0-125			0.671	20
Calcium	10.0	25.3	34.6	34.4	92.7	90.7	1	75.0-125			0.562	20
Iron	10.0	ND	9.93	9.88	98.7	98.1	1	75.0-125			0.559	20
Magnesium	10.0	10.5	19.7	19.6	91.6	90.2	1	75.0-125			0.702	20
Manganese	1.00	ND	0.904	0.901	89.6	89.3	1	75.0-125			0.302	20
Potassium	10.0	38.7	48.7	48.5	100	98.1	1	75.0-125			0.404	20

L1577174-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1577174-02 01/22/23 18:33 • (MS) R3883298-4 01/22/23 18:38 • (MSD) R3883298-5 01/22/23 18:41

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Selenium	1.00	ND	0.990	0.986	99.0	98.6	1	75.0-125			0.394	20
Sodium	10.0	219	223	223	40.5	40.2	1	75.0-125	√	√	0.0137	20
Strontium	1.00	0.0965	1.08	1.08	98.8	98.3	1	75.0-125			0.406	20

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

Method Blank (MB)

(MB) R3883625-1 01/23/23 18:12

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Barium	U		0.000736	0.00500
Boron	U		0.0200	0.200
Calcium	U		0.0793	1.00
Iron	U		0.0180	0.100
Magnesium	U		0.0853	1.00
Manganese	U		0.000934	0.0100
Potassium	0.265	U	0.261	2.00
Selenium	U		0.00735	0.0100
Sodium	U		0.504	3.00
Strontium	U		0.000640	0.0100

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

Laboratory Control Sample (LCS)

(LCS) R3883625-2 01/23/23 18:15

Analyte	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
	mg/l	mg/l	%	%	
Barium	1.00	0.997	99.7	80.0-120	
Boron	1.00	0.959	95.9	80.0-120	
Calcium	10.0	9.69	96.9	80.0-120	
Iron	10.0	9.59	95.9	80.0-120	
Magnesium	10.0	9.71	97.1	80.0-120	
Manganese	1.00	0.894	89.4	80.0-120	
Potassium	10.0	9.95	99.5	80.0-120	
Selenium	1.00	0.978	97.8	80.0-120	
Sodium	10.0	9.63	96.3	80.0-120	
Strontium	1.00	0.989	98.9	80.0-120	

7 Gl

8 Al

9 Sc

L1577733-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1577733-01 01/23/23 18:17 • (MS) R3883625-4 01/23/23 18:23 • (MSD) R3883625-5 01/23/23 18:25

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Barium	1.00	0.0174	1.03	1.04	101	102	1	75.0-125			1.24	20
Boron	1.00	ND	0.983	0.984	98.3	98.4	1	75.0-125			0.120	20
Calcium	10.0	41.6	50.6	50.2	89.4	86.1	1	75.0-125			0.660	20
Iron	10.0	45.8	55.1	54.9	93.4	91.3	1	75.0-125			0.375	20
Magnesium	10.0	2.73	12.1	12.1	94.1	93.9	1	75.0-125			0.173	20
Manganese	1.00	0.596	1.48	1.48	88.9	88.7	1	75.0-125			0.104	20
Potassium	10.0	2.91	12.6	12.6	96.6	96.5	1	75.0-125			0.0449	20

L1577733-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1577733-01 01/23/23 18:17 • (MS) R3883625-4 01/23/23 18:23 • (MSD) R3883625-5 01/23/23 18:25

Analyte	Spike Amount mg/l	Original Result mg/l	MS Result mg/l	MSD Result mg/l	MS Rec. %	MSD Rec. %	Dilution	Rec. Limits %	MS Qualifier	MSD Qualifier	RPD %	RPD Limits %
Selenium	1.00	ND	1.01	1.02	99.8	101	1	75.0-125			1.24	20
Sodium	10.0	9.03	18.4	18.4	93.9	94.0	1	75.0-125			0.0449	20
Strontium	1.00	0.107	1.11	1.12	101	102	1	75.0-125			1.02	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3883730-2 01/22/23 11:37

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
TPH (GC/FID) Low Fraction	0.0385	↓	0.0314	0.100
(S) a,a,a-Trifluorotoluene(FID)	103			78.0-120

Laboratory Control Sample (LCS)

(LCS) R3883730-1 01/22/23 10:43

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
TPH (GC/FID) Low Fraction	5.50	5.59	102	72.0-127	
(S) a,a,a-Trifluorotoluene(FID)			110	78.0-120	

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

Method Blank (MB)

(MB) R3884445-3 01/21/23 18:24

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
Ethylbenzene	U		0.000137	0.00100
Xylenes, Total	U		0.000174	0.00300
Naphthalene	U		0.00100	0.00500
(S) Toluene-d8	103			80.0-120
(S) 4-Bromofluorobenzene	92.8			77.0-126
(S) 1,2-Dichloroethane-d4	97.5			70.0-130

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

(LCS) R3884445-1 01/21/23 17:22 • (LCSD) R3884445-2 01/21/23 17:43

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
Benzene	0.00500	0.00496	0.00529	99.2	106	70.0-123			6.44	20
Toluene	0.00500	0.00489	0.00510	97.8	102	79.0-120			4.20	20
Ethylbenzene	0.00500	0.00488	0.00488	97.6	97.6	79.0-123			0.000	20
Xylenes, Total	0.0150	0.0137	0.0149	91.3	99.3	79.0-123			8.39	20
Naphthalene	0.00500	0.00282	0.00314	56.4	62.8	54.0-135			10.7	20
(S) Toluene-d8				98.4	101	80.0-120				
(S) 4-Bromofluorobenzene				93.8	95.7	77.0-126				
(S) 1,2-Dichloroethane-d4				92.6	95.3	70.0-130				

L1577733-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1577733-01 01/21/23 19:46 • (MS) R3884445-4 01/22/23 01:35 • (MSD) R3884445-5 01/22/23 01:55

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Benzene	0.00500	0.00115	0.00587	0.00615	94.4	100	1	17.0-158			4.66	27
Toluene	0.00500	ND	0.00578	0.00631	98.2	109	1	26.0-154			8.77	28
Ethylbenzene	0.00500	ND	0.00568	0.00623	102	113	1	30.0-155			9.24	27
Xylenes, Total	0.0150	0.00424	0.0167	0.0191	83.1	99.1	1	29.0-154			13.4	28
Naphthalene	0.00500	0.0246	0.00694	0.00809	0.000	0.000	1	12.0-156	V	V	15.3	35
(S) Toluene-d8					96.3	97.7		80.0-120				
(S) 4-Bromofluorobenzene					93.0	100		77.0-126				
(S) 1,2-Dichloroethane-d4					96.0	91.4		70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3884637-3 01/25/23 20:28

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.0000941	0.00100
Toluene	U		0.000278	0.00100
Ethylbenzene	U		0.000137	0.00100
Xylenes, Total	U		0.000174	0.00300
Naphthalene	U		0.00100	0.00500
(S) Toluene-d8	97.2			80.0-120
(S) 4-Bromofluorobenzene	99.3			77.0-126
(S) 1,2-Dichloroethane-d4	113			70.0-130

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

(LCS) R3884637-1 01/25/23 19:24 • (LCSD) R3884637-2 01/25/23 19:45

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 %
Benzene	0.00500	0.00497	0.00456	99.4	91.2	70.0-123			8.60	20
Toluene	0.00500	0.00449	0.00432	89.8	86.4	79.0-120			3.86	20
Ethylbenzene	0.00500	0.00419	0.00417	83.8	83.4	79.0-123			0.478	20
Xylenes, Total	0.0150	0.0136	0.0129	90.7	86.0	79.0-123			5.28	20
Naphthalene	0.00500	0.00443	0.00491	88.6	98.2	54.0-135			10.3	20
(S) Toluene-d8				95.4	94.4	80.0-120				
(S) 4-Bromofluorobenzene				99.9	97.8	77.0-126				
(S) 1,2-Dichloroethane-d4				115	114	70.0-130				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Method Blank (MB)

(MB) R3883747-1 01/23/23 19:47

Analyte	MB Result	MB Qualifier	MB MDL	MB RDL
	mg/l		mg/l	mg/l
C10-C28 Diesel Range	U		0.0222	0.100
C28-C36 Motor Oil Range	U		0.0118	0.100
(S) o-Terphenyl	67.0			52.0-156

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

(LCS) R3883747-2 01/23/23 20:09 • (LCSD) R3883747-3 01/23/23 20:30

Analyte	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	LCS Qualifier	LCSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	%	%	%			%	%
C10-C28 Diesel Range	1.50	1.25	1.34	83.3	89.3	50.0-150			6.95	20
(S) o-Terphenyl				104	152	52.0-156				

L1578248-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1578248-04 01/23/23 20:52 • (MS) R3883747-4 01/23/23 21:14 • (MSD) R3883747-5 01/23/23 21:36

Analyte	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
C10-C28 Diesel Range	1.43	ND	1.40	1.57	97.9	110	1	50.0-150			11.4	20
(S) o-Terphenyl					96.8	90.5		52.0-156				

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

GLOSSARY OF TERMS

Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

Qualifier Description

B	The same analyte is found in the associated blank.
C4	The reported concentration is an estimate. The continuing calibration standard associated with this data responded low. Data is likely to show a low bias concerning the result.
J	The identification of the analyte is acceptable; the reported value is an estimate.
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

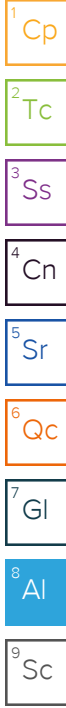
Pace Analytical National 12065 Lebanon Rd Mount Juliet, TN 37122

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.



Company Name/Address:

Caerus Oil and Gas

143 Diamond Avenue
Parachute, CO 81635

Billing Information:

Accounts Payable
1001 17th St., Ste. 1600
Denver, CO 80202

Pres
Chk

Analysis / Container / Preservative

Chain of Custody Page ___ of ___



MT JULIET, TN

12065 Lebanon Rd Mount Juliet, TN 37122
Submitting a sample via this chain of custody
constitutes acknowledgment and acceptance of the
Pace Terms and Conditions found at:
<https://info.pacelabs.com/hubs/pas-standard-terms.pdf>

SDG # U577830

Table # B225

Account # USPCO

Template: T215555

Prelogin: P963757

PM: 824 - Chris Ward

PB:

Shipped Via: FedEX Ground

Remarks | Sample # (lab only)

Report to:

Brett Middleton

Email To:

JJanicek@caerusoilandgas.com; brollins@caerus

Project Description:

9095

City/State
Collected:

Parachute, CO

Please Circle:
PT MT CT ET

Phone: 970-285-2653

Client Project #

Lab Project #

Collected by (print):

Site/Facility ID #

P.O. #

Collected by (signature):

Rush? (Lab MUST Be Notified)

Quote #

Immediately
Packed on Ice N Y X

Same Day Five Day
 Next Day 5 Day (Rad Only)
 Two Day 10 Day (Rad Only)
 Three Day

Date Results Needed
ASAP

No.
of
Cnts

Sample ID	Comp/Grab	Matrix *	Depth	Date	Time	No. of Cnts	ALK,ALKB,ALKCA 250mlHDPE-NoPres	Br,Cl,F,SO4 250mlHDPE-NoPres	DRONMLVI 40mlAmb-HCl-BT	GRO 40mlAmb HCl	PT 250mlHDPE-H2SO4	RA-226/228 1L-HDPE-Add-HNO3	SPCON 250mlHDPE-NoPres	TDS 1L-HDPE NoPres	TSS 1L-HDPE NoPres	Total Metals 250mlHDPE-HNO3	Remarks	Sample # (lab only)
PSE-07114-ILES	Grab	GW	Surface	1/19/23	1100	17	X	X	X	X	X	X	X	X	X	X		-01
E22NE-TANK-WMPK	Grab	GW	Surface	1/19/23	1000	17	X	X	X	X	X	X	X	X	X	X		-02
K7-08933-ILES	Grab	GW	Surface	1/19/23	1410	17	X	X	X	X	X	X	X	X	X	X		-03
C29NE-TANK-WMPK	Grab	GW	Surface	1/19/23	0915	17	X	X	X	X	X	X	X	X	X	X		-04
K19CNE-13512-WMPK	GRAB	GW	Surface	1/19/23	0820	17	X	X	X	X	X	X	X	X	X	X		-05
B9W-07817-ILES	Grab	GW	Surface	1/19/23	1320	17	X	X	X	X	X	X	X	X	X	X		-06
K35-10307-WMPK	GRAB	GW	Surface	1/19/23	1220	17	X	X	X	X	X	X	X	X	X	X		-07
		GW				17	X	X	X	X	X	X	X	X	X	X		
		GW				17	X	X	X	X	X	X	X	X	X	X		
		GW				17	X	X	X	X	X	X	X	X	X	X		

* Matrix:
SS - Soil AIR - Air F - Filter
GW - Groundwater B - Bioassay
WW - WasteWater
DW - Drinking Water
OT - Other

Remarks: Metals - Ba,B,Ca,Fe,K,Mg,Mn,Na,Se,Sr

pH _____ Temp _____

Flow _____ Other _____

Samples returned via:
 UPS FedEx Courier

Tracking #

Sample Receipt Checklist	
COC Seal Present/Intact: <u>NP</u>	<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
RAD Screen <0.5 mR/hr:	<input checked="" type="checkbox"/> Y <input type="checkbox"/> N

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Trip Blank Received: Yes No
FCL MeOH
TBR

Relinquished by: (Signature)

Date:

Time:

Received by: (Signature)

Temp: _____ °C Bottles Received: 118

If preservation required by Login: Date/Time

Relinquished by: (Signature)

Date:

Time:

Received for lab by: (Signature)

Date: 1-20-23 Time: 9:00

Hold: _____ Condition: NCF / OK

U577820

Tracking Numbers		Temperature
G126 6537 5066		DRHJ 4.3 to = 4.3
G126 6537 4920		DRHJ 3.8 to = 3.8
G126 6537 5077		DRHJ 5.2 to = 5.2
G126 6537 5000		DRHJ 3.7 to = 3.7