

Caerus Oil and Gas

Sample Delivery Group: L1158611
Samples Received: 11/08/2019
Project Number: NPR QRT
Description: NPR 4thq
Site: NPR
Report To: Jake Janicek
143 Diamond Avenue
Parachute, CO 81635

Entire Report Reviewed By:

Chris Ward

Chris Ward
Project Manager

Results relate only to the items tested or calibrated and are reported as rounded values. This test report shall not be reproduced, except in full, without written approval of the laboratory. Where applicable, sampling conducted by Pace Analytical National is performed per guidance provided in laboratory standard operating procedures ENV-SOP-MTJL-0067 and ENV-SOP-MTJL-0068. Where sampling conducted by the customer, results relate to the accuracy of the information provided, and as the samples are received.



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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



20191107-NPR1ST L1158611-01 GW

Collected by
Chance Holder

Collected date/time
11/07/19 09:30

Received date/time
11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378163	1	11/11/19 11:41	11/11/19 12:56	TH	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1380577	1	11/15/19 13:25	11/15/19 13:25	GB	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1381475	1	11/19/19 13:39	11/19/19 13:39	JER	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG1379332	1	11/13/19 15:34	11/13/19 15:34	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1378259	1	11/10/19 22:05	11/10/19 22:05	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1379189	1	11/13/19 15:02	11/13/19 15:02	BAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377367	1	11/09/19 09:28	11/09/19 09:28	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377367	5	11/09/19 09:42	11/09/19 09:42	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1378889	1	11/13/19 13:39	11/14/19 02:44	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1379553	1	11/13/19 16:18	11/13/19 16:18	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1378080	1	11/10/19 05:27	11/10/19 05:27	CMJ	Mt. Juliet, TN

1 Cp

2 Tc

3 Ss

4 Cn

5 Sr

6 Qc

7 Gl

8 Al

9 Sc

20191107-NPR2ST L1158611-02 GW

Collected by
Chance Holder

Collected date/time
11/07/19 10:00

Received date/time
11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378163	1	11/11/19 11:41	11/11/19 12:56	TH	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1380577	1	11/15/19 13:41	11/15/19 13:41	GB	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1381475	1	11/19/19 14:20	11/19/19 14:20	JER	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG1379332	1	11/13/19 15:34	11/13/19 15:34	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1378259	1	11/10/19 22:05	11/10/19 22:05	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1379189	1	11/13/19 15:02	11/13/19 15:02	BAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	1	11/08/19 13:27	11/08/19 13:27	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1378889	1	11/13/19 13:39	11/14/19 02:47	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1379553	1	11/13/19 16:25	11/13/19 16:25	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1378080	1	11/10/19 05:47	11/10/19 05:47	CMJ	Mt. Juliet, TN

20191107-NPR2SP L1158611-03 GW

Collected by
Chance Holder

Collected date/time
11/07/19 10:15

Received date/time
11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378163	1	11/11/19 11:41	11/11/19 12:56	TH	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1380577	5	11/15/19 16:16	11/15/19 16:16	GB	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1381475	1	11/19/19 14:21	11/19/19 14:21	JER	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG1379332	1	11/13/19 15:34	11/13/19 15:34	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1378259	1	11/10/19 22:05	11/10/19 22:05	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1379189	1	11/13/19 15:02	11/13/19 15:02	BAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	1	11/08/19 13:44	11/08/19 13:44	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	50	11/08/19 16:41	11/08/19 16:41	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1378889	1	11/13/19 13:39	11/14/19 02:49	TRB	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1378889	5	11/13/19 13:39	11/14/19 14:10	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1379553	1	11/13/19 16:29	11/13/19 16:29	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1378080	1	11/10/19 06:07	11/10/19 06:07	CMJ	Mt. Juliet, TN

20191107-NPR6ST L1158611-04 GW

Collected by
Chance Holder

Collected date/time
11/07/19 10:30

Received date/time
11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378163	1	11/11/19 11:41	11/11/19 12:56	TH	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1380577	1	11/15/19 14:10	11/15/19 14:10	GB	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1381475	1	11/19/19 13:51	11/19/19 13:51	JER	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG1379332	1	11/13/19 15:35	11/13/19 15:35	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1378259	1	11/10/19 22:05	11/10/19 22:05	ANP	Mt. Juliet, TN

ACCOUNT:
Caerus Oil and Gas

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L1158611

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11/20/19 09:09

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



20191107-NPR6ST L1158611-04 GW

Collected by
Chance Holder

Collected date/time
11/07/19 10:30

Received date/time
11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Wet Chemistry by Method 9050A	WG1379189	1	11/13/19 15:02	11/13/19 15:02	BAM	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	1	11/08/19 14:02	11/08/19 14:02	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1378889	1	11/13/19 13:39	11/14/19 02:52	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1379553	1	11/13/19 16:31	11/13/19 16:31	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1378080	1	11/10/19 06:28	11/10/19 06:28	CMJ	Mt. Juliet, TN

¹ Cp

² Tc

³ Ss

⁴ Cn

20191107-NPR3MW L1158611-05 GW

Collected by
Chance Holder

Collected date/time
11/07/19 11:05

Received date/time
11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378163	1	11/11/19 11:41	11/11/19 12:56	TH	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1380577	1	11/15/19 14:18	11/15/19 14:18	GB	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1381475	1	11/19/19 13:53	11/19/19 13:53	JER	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG1379332	1	11/13/19 15:35	11/13/19 15:35	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1378260	1	11/10/19 19:13	11/10/19 19:13	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1379711	1	11/13/19 12:16	11/13/19 12:16	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	1	11/08/19 14:20	11/08/19 14:20	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	2	11/08/19 23:44	11/08/19 23:44	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1378889	1	11/13/19 13:39	11/14/19 02:55	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1379553	1	11/13/19 16:34	11/13/19 16:34	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1378080	1	11/10/19 06:48	11/10/19 06:48	CMJ	Mt. Juliet, TN

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

20191107-NPR3ST L1158611-06 GW

Collected by
Chance Holder

Collected date/time
11/07/19 11:45

Received date/time
11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378163	1	11/11/19 11:41	11/11/19 12:56	TH	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1380577	1	11/15/19 14:26	11/15/19 14:26	GB	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1381475	1	11/19/19 13:54	11/19/19 13:54	JER	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG1380284	1	11/14/19 20:34	11/14/19 20:34	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1378260	1	11/10/19 19:13	11/10/19 19:13	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1379711	1	11/13/19 12:16	11/13/19 12:16	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	1	11/08/19 14:37	11/08/19 14:37	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	2	11/09/19 00:02	11/09/19 00:02	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1378889	1	11/13/19 13:39	11/14/19 03:03	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1379553	1	11/13/19 16:36	11/13/19 16:36	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1378080	1	11/10/19 07:08	11/10/19 07:08	CMJ	Mt. Juliet, TN

20191107-NPR4MW L1158611-07 GW

Collected by
Chance Holder

Collected date/time
11/07/19 12:00

Received date/time
11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378163	1	11/11/19 11:41	11/11/19 12:56	TH	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1380577	1	11/15/19 14:34	11/15/19 14:34	GB	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1381475	1	11/19/19 13:56	11/19/19 13:56	JER	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG1380284	1	11/14/19 20:35	11/14/19 20:35	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1378260	1	11/10/19 19:13	11/10/19 19:13	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1379711	1	11/13/19 12:16	11/13/19 12:16	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	1	11/08/19 14:55	11/08/19 14:55	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	2	11/09/19 00:20	11/09/19 00:20	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1378889	1	11/13/19 13:39	11/14/19 03:05	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1379553	1	11/13/19 16:38	11/13/19 16:38	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1378080	1	11/10/19 07:29	11/10/19 07:29	CMJ	Mt. Juliet, TN

ACCOUNT:
Caerus Oil and Gas

PROJECT:
NPR QRT

SDG:
L1158611

DATE/TIME:
11/20/19 09:09

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SAMPLE SUMMARY

ONE LAB. NATIONWIDE.



20191107-NPR13MW L1158611-08 GW

Collected by
Chance HolderCollected date/time
11/07/19 12:30Received date/time
11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378163	1	11/11/19 11:41	11/11/19 12:56	TH	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1380577	1	11/15/19 14:42	11/15/19 14:42	GB	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1381475	1	11/19/19 13:58	11/19/19 13:58	JER	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG1380284	1	11/14/19 20:35	11/14/19 20:35	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1378260	1	11/10/19 19:13	11/10/19 19:13	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1379711	1	11/13/19 12:16	11/13/19 12:16	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	1	11/08/19 15:14	11/08/19 15:14	ELN	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	2	11/09/19 00:37	11/09/19 00:37	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1378889	1	11/13/19 13:39	11/14/19 03:08	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1379553	1	11/13/19 16:41	11/13/19 16:41	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1378085	1	11/09/19 20:38	11/09/19 20:38	CMJ	Mt. Juliet, TN

1
Cp2
Tc3
Ss4
Cn5
Sr6
Qc7
Gl8
Al9
Sc

20191107-NPR11ST L1158611-09 GW

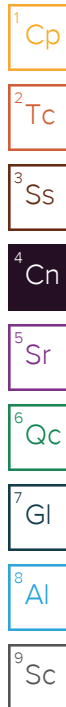
Collected by
Chance HolderCollected date/time
11/07/19 13:45Received date/time
11/08/19 08:45

Method	Batch	Dilution	Preparation date/time	Analysis date/time	Analyst	Location
Gravimetric Analysis by Method 2540 C-2011	WG1378163	1	11/11/19 11:41	11/11/19 12:56	TH	Mt. Juliet, TN
Wet Chemistry by Method 2320 B-2011	WG1380577	1	11/15/19 14:49	11/15/19 14:49	GB	Mt. Juliet, TN
Wet Chemistry by Method 350.1	WG1381475	1	11/19/19 13:59	11/19/19 13:59	JER	Mt. Juliet, TN
Wet Chemistry by Method 4500S2 D-2011	WG1380284	1	11/14/19 20:37	11/14/19 20:37	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9040C	WG1378260	1	11/10/19 19:13	11/10/19 19:13	ANP	Mt. Juliet, TN
Wet Chemistry by Method 9050A	WG1379711	1	11/13/19 12:16	11/13/19 12:16	MJA	Mt. Juliet, TN
Wet Chemistry by Method 9056A	WG1377422	1	11/08/19 15:31	11/08/19 15:31	ELN	Mt. Juliet, TN
Metals (ICP) by Method 6010B	WG1378889	1	11/13/19 13:39	11/14/19 03:11	TRB	Mt. Juliet, TN
Volatile Organic Compounds (GC) by Method RSK175	WG1379553	1	11/13/19 16:43	11/13/19 16:43	DAH	Mt. Juliet, TN
Volatile Organic Compounds (GC/MS) by Method 8260B	WG1378085	1	11/09/19 20:57	11/09/19 20:57	CMJ	Mt. Juliet, TN



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





Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	435		10.0	1	11/11/2019 12:56	WG1378163

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	305		20.0	1	11/15/2019 13:25	WG1380577
Alkalinity,Bicarbonate	302		20.0	1	11/15/2019 13:25	WG1380577
Alkalinity,Carbonate	ND		20.0	1	11/15/2019 13:25	WG1380577

Sample Narrative:

L1158611-01 WG1380577: Endpoint pH 4.5 headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	ND		0.100	1	11/19/2019 13:39	WG1381475

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	11/13/2019 15:34	WG1379332

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.44	T8	1	11/10/2019 22:05	WG1378259

Sample Narrative:

L1158611-01 WG1378259: 8.44 at 16.6C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	755		10.0	1	11/13/2019 15:02	WG1379189

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	11/09/2019 09:28	WG1377367
Chloride	8.70		1.00	1	11/09/2019 09:28	WG1377367
Fluoride	0.171		0.100	1	11/09/2019 09:28	WG1377367
Nitrate as (N)	ND		0.100	1	11/09/2019 09:28	WG1377367
Nitrite as (N)	ND		0.100	1	11/09/2019 09:28	WG1377367
Sulfate	103		25.0	5	11/09/2019 09:42	WG1377367

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	ND		0.0100	1	11/14/2019 02:44	WG1378889
Barium,Dissolved	0.0813		0.00500	1	11/14/2019 02:44	WG1378889
Cadmium,Dissolved	ND		0.00200	1	11/14/2019 02:44	WG1378889
Calcium,Dissolved	55.8		1.00	1	11/14/2019 02:44	WG1378889



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Dissolved	ND		0.0100	1	11/14/2019 02:44	WG1378889
Copper,Dissolved	ND		0.0100	1	11/14/2019 02:44	WG1378889
Iron,Dissolved	ND		0.100	1	11/14/2019 02:44	WG1378889
Lead,Dissolved	ND		0.00500	1	11/14/2019 02:44	WG1378889
Magnesium,Dissolved	38.2		1.00	1	11/14/2019 02:44	WG1378889
Manganese,Dissolved	ND		0.0100	1	11/14/2019 02:44	WG1378889
Potassium,Dissolved	1.24		1.00	1	11/14/2019 02:44	WG1378889
Selenium,Dissolved	ND		0.0100	1	11/14/2019 02:44	WG1378889
Silver,Dissolved	ND		0.00500	1	11/14/2019 02:44	WG1378889
Sodium,Dissolved	63.9		1.00	1	11/14/2019 02:44	WG1378889

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	11/13/2019 16:18	WG1379553
Ethane	ND		0.0130	1	11/13/2019 16:18	WG1379553
Ethene	ND		0.0130	1	11/13/2019 16:18	WG1379553
Propane	ND		0.0190	1	11/13/2019 16:18	WG1379553

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/10/2019 05:27	WG1378080
Toluene	ND		0.00100	1	11/10/2019 05:27	WG1378080
Ethylbenzene	ND		0.00100	1	11/10/2019 05:27	WG1378080
Total Xylenes	ND		0.00300	1	11/10/2019 05:27	WG1378080
Methyl tert-butyl ether	ND		0.00100	1	11/10/2019 05:27	WG1378080
(S) Toluene-d8	107		80.0-120		11/10/2019 05:27	WG1378080
(S) 4-Bromofluorobenzene	92.3		77.0-126		11/10/2019 05:27	WG1378080
(S) 1,2-Dichloroethane-d4	101		70.0-130		11/10/2019 05:27	WG1378080



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	454		10.0	1	11/11/2019 12:56	WG1378163

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	327		20.0	1	11/15/2019 13:41	WG1380577
Alkalinity,Bicarbonate	327		20.0	1	11/15/2019 13:41	WG1380577
Alkalinity,Carbonate	ND		20.0	1	11/15/2019 13:41	WG1380577

Sample Narrative:

L1158611-02 WG1380577: Endpoint pH 4.5 headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	ND		0.100	1	11/19/2019 14:20	WG1381475

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	11/13/2019 15:34	WG1379332

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.44	T8	1	11/10/2019 22:05	WG1378259

Sample Narrative:

L1158611-02 WG1378259: 8.44 at 16.2C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	746		10.0	1	11/13/2019 15:02	WG1379189

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	11/08/2019 13:27	WG1377422
Chloride	7.96		1.00	1	11/08/2019 13:27	WG1377422
Fluoride	0.177		0.100	1	11/08/2019 13:27	WG1377422
Nitrate as (N)	ND		0.100	1	11/08/2019 13:27	WG1377422
Nitrite as (N)	ND		0.100	1	11/08/2019 13:27	WG1377422
Sulfate	97.4		5.00	1	11/08/2019 13:27	WG1377422

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	ND		0.0100	1	11/14/2019 02:47	WG1378889
Barium,Dissolved	0.0806		0.00500	1	11/14/2019 02:47	WG1378889
Cadmium,Dissolved	ND		0.00200	1	11/14/2019 02:47	WG1378889
Calcium,Dissolved	59.8		1.00	1	11/14/2019 02:47	WG1378889



Collected date/time: 11/07/19 10:00

L1158611

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Dissolved	ND		0.0100	1	11/14/2019 02:47	WG1378889
Copper,Dissolved	ND		0.0100	1	11/14/2019 02:47	WG1378889
Iron,Dissolved	ND		0.100	1	11/14/2019 02:47	WG1378889
Lead,Dissolved	ND		0.00500	1	11/14/2019 02:47	WG1378889
Magnesium,Dissolved	37.3		1.00	1	11/14/2019 02:47	WG1378889
Manganese,Dissolved	ND		0.0100	1	11/14/2019 02:47	WG1378889
Potassium,Dissolved	1.37		1.00	1	11/14/2019 02:47	WG1378889
Selenium,Dissolved	ND		0.0100	1	11/14/2019 02:47	WG1378889
Silver,Dissolved	ND		0.00500	1	11/14/2019 02:47	WG1378889
Sodium,Dissolved	62.2		1.00	1	11/14/2019 02:47	WG1378889

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	11/13/2019 16:25	WG1379553
Ethane	ND		0.0130	1	11/13/2019 16:25	WG1379553
Ethene	ND		0.0130	1	11/13/2019 16:25	WG1379553
Propane	ND		0.0190	1	11/13/2019 16:25	WG1379553

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/10/2019 05:47	WG1378080
Toluene	ND		0.00100	1	11/10/2019 05:47	WG1378080
Ethylbenzene	ND		0.00100	1	11/10/2019 05:47	WG1378080
Total Xylenes	ND		0.00300	1	11/10/2019 05:47	WG1378080
Methyl tert-butyl ether	ND		0.00100	1	11/10/2019 05:47	WG1378080
(S) Toluene-d8	108		80.0-120		11/10/2019 05:47	WG1378080
(S) 4-Bromofluorobenzene	91.0		77.0-126		11/10/2019 05:47	WG1378080
(S) 1,2-Dichloroethane-d4	99.0		70.0-130		11/10/2019 05:47	WG1378080



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	5890		100	1	11/11/2019 12:56	WG1378163

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	2560		100	5	11/15/2019 16:16	WG1380577
Alkalinity,Bicarbonate	2260		100	5	11/15/2019 16:16	WG1380577
Alkalinity,Carbonate	300		100	5	11/15/2019 16:16	WG1380577

Sample Narrative:

L1158611-03 WG1380577: Endpoint pH 4.5 headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	ND		0.100	1	11/19/2019 14:21	WG1381475

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	11/13/2019 15:34	WG1379332

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.43	T8	1	11/10/2019 22:05	WG1378259

Sample Narrative:

L1158611-03 WG1378259: 8.43 at 16.5C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	10000		10.0	1	11/13/2019 15:02	WG1379189

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	2.97		1.00	1	11/08/2019 13:44	WG1377422
Chloride	2220		50.0	50	11/08/2019 16:41	WG1377422
Fluoride	10.5		5.00	50	11/08/2019 16:41	WG1377422
Nitrate as (N)	1.16		0.100	1	11/08/2019 13:44	WG1377422
Nitrite as (N)	ND		0.100	1	11/08/2019 13:44	WG1377422
Sulfate	15.4		5.00	1	11/08/2019 13:44	WG1377422

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	0.0155		0.0100	1	11/14/2019 02:49	WG1378889
Barium,Dissolved	0.789		0.00500	1	11/14/2019 02:49	WG1378889
Cadmium,Dissolved	ND		0.00200	1	11/14/2019 02:49	WG1378889
Calcium,Dissolved	6.22		1.00	1	11/14/2019 02:49	WG1378889



Collected date/time: 11/07/19 10:15

L1158611

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Dissolved	ND		0.0100	1	11/14/2019 02:49	WG1378889
Copper,Dissolved	ND		0.0100	1	11/14/2019 02:49	WG1378889
Iron,Dissolved	ND		0.100	1	11/14/2019 02:49	WG1378889
Lead,Dissolved	ND		0.00500	1	11/14/2019 02:49	WG1378889
Magnesium,Dissolved	18.1		1.00	1	11/14/2019 02:49	WG1378889
Manganese,Dissolved	ND		0.0100	1	11/14/2019 02:49	WG1378889
Potassium,Dissolved	4.14		1.00	1	11/14/2019 02:49	WG1378889
Selenium,Dissolved	ND		0.0100	1	11/14/2019 02:49	WG1378889
Silver,Dissolved	ND		0.00500	1	11/14/2019 02:49	WG1378889
Sodium,Dissolved	2190		5.00	5	11/14/2019 14:10	WG1378889

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	11/13/2019 16:29	WG1379553
Ethane	ND		0.0130	1	11/13/2019 16:29	WG1379553
Ethene	ND		0.0130	1	11/13/2019 16:29	WG1379553
Propane	ND		0.0190	1	11/13/2019 16:29	WG1379553

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/10/2019 06:07	WG1378080
Toluene	ND		0.00100	1	11/10/2019 06:07	WG1378080
Ethylbenzene	ND		0.00100	1	11/10/2019 06:07	WG1378080
Total Xylenes	ND		0.00300	1	11/10/2019 06:07	WG1378080
Methyl tert-butyl ether	ND		0.00100	1	11/10/2019 06:07	WG1378080
(S) Toluene-d8	108		80.0-120		11/10/2019 06:07	WG1378080
(S) 4-Bromofluorobenzene	89.6		77.0-126		11/10/2019 06:07	WG1378080
(S) 1,2-Dichloroethane-d4	101		70.0-130		11/10/2019 06:07	WG1378080



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	435		10.0	1	11/11/2019 12:56	WG1378163

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	336		20.0	1	11/15/2019 14:10	WG1380577
Alkalinity,Bicarbonate	336		20.0	1	11/15/2019 14:10	WG1380577
Alkalinity,Carbonate	ND		20.0	1	11/15/2019 14:10	WG1380577

Sample Narrative:

L1158611-04 WG1380577: Endpoint pH 4.5 headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	ND		0.100	1	11/19/2019 13:51	WG1381475

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	11/13/2019 15:35	WG1379332

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.36	T8	1	11/10/2019 22:05	WG1378259

Sample Narrative:

L1158611-04 WG1378259: 8.36 at 16.8C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	752		10.0	1	11/13/2019 15:02	WG1379189

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	11/08/2019 14:02	WG1377422
Chloride	17.7		1.00	1	11/08/2019 14:02	WG1377422
Fluoride	0.223		0.100	1	11/08/2019 14:02	WG1377422
Nitrate as (N)	ND		0.100	1	11/08/2019 14:02	WG1377422
Nitrite as (N)	ND		0.100	1	11/08/2019 14:02	WG1377422
Sulfate	97.5		5.00	1	11/08/2019 14:02	WG1377422

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	ND		0.0100	1	11/14/2019 02:52	WG1378889
Barium,Dissolved	0.0766		0.00500	1	11/14/2019 02:52	WG1378889
Cadmium,Dissolved	ND		0.00200	1	11/14/2019 02:52	WG1378889
Calcium,Dissolved	59.3		1.00	1	11/14/2019 02:52	WG1378889



Collected date/time: 11/07/19 10:30

L1158611

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Dissolved	ND		0.0100	1	11/14/2019 02:52	WG1378889
Copper,Dissolved	ND		0.0100	1	11/14/2019 02:52	WG1378889
Iron,Dissolved	ND		0.100	1	11/14/2019 02:52	WG1378889
Lead,Dissolved	ND		0.00500	1	11/14/2019 02:52	WG1378889
Magnesium,Dissolved	36.8		1.00	1	11/14/2019 02:52	WG1378889
Manganese,Dissolved	ND		0.0100	1	11/14/2019 02:52	WG1378889
Potassium,Dissolved	1.45		1.00	1	11/14/2019 02:52	WG1378889
Selenium,Dissolved	ND		0.0100	1	11/14/2019 02:52	WG1378889
Silver,Dissolved	ND		0.00500	1	11/14/2019 02:52	WG1378889
Sodium,Dissolved	61.3		1.00	1	11/14/2019 02:52	WG1378889

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	11/13/2019 16:31	WG1379553
Ethane	ND		0.0130	1	11/13/2019 16:31	WG1379553
Ethene	ND		0.0130	1	11/13/2019 16:31	WG1379553
Propane	ND		0.0190	1	11/13/2019 16:31	WG1379553

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/10/2019 06:28	WG1378080
Toluene	ND		0.00100	1	11/10/2019 06:28	WG1378080
Ethylbenzene	ND		0.00100	1	11/10/2019 06:28	WG1378080
Total Xylenes	ND		0.00300	1	11/10/2019 06:28	WG1378080
Methyl tert-butyl ether	ND		0.00100	1	11/10/2019 06:28	WG1378080
(S) Toluene-d8	108		80.0-120		11/10/2019 06:28	WG1378080
(S) 4-Bromofluorobenzene	88.5		77.0-126		11/10/2019 06:28	WG1378080
(S) 1,2-Dichloroethane-d4	99.1		70.0-130		11/10/2019 06:28	WG1378080



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	549		10.0	1	11/11/2019 12:56	WG1378163

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	387		20.0	1	11/15/2019 14:18	WG1380577
Alkalinity,Bicarbonate	387		20.0	1	11/15/2019 14:18	WG1380577
Alkalinity,Carbonate	ND		20.0	1	11/15/2019 14:18	WG1380577

Sample Narrative:

L1158611-05 WG1380577: Endpoint pH 4.5 headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	ND		0.100	1	11/19/2019 13:53	WG1381475

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	11/13/2019 15:35	WG1379332

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.57	T8	1	11/10/2019 19:13	WG1378260

Sample Narrative:

L1158611-05 WG1378260: 7.57 at 15.8C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	931		10.0	1	11/13/2019 12:16	WG1379711

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	11/08/2019 14:20	WG1377422
Chloride	27.3		1.00	1	11/08/2019 14:20	WG1377422
Fluoride	0.614		0.100	1	11/08/2019 14:20	WG1377422
Nitrate as (N)	0.521		0.100	1	11/08/2019 14:20	WG1377422
Nitrite as (N)	ND		0.100	1	11/08/2019 14:20	WG1377422
Sulfate	109		10.0	2	11/08/2019 23:44	WG1377422

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	ND		0.0100	1	11/14/2019 02:55	WG1378889
Barium,Dissolved	0.0732		0.00500	1	11/14/2019 02:55	WG1378889
Cadmium,Dissolved	ND		0.00200	1	11/14/2019 02:55	WG1378889
Calcium,Dissolved	65.6		1.00	1	11/14/2019 02:55	WG1378889



Collected date/time: 11/07/19 11:05

L1158611

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Dissolved	ND		0.0100	1	11/14/2019 02:55	WG1378889
Copper,Dissolved	ND		0.0100	1	11/14/2019 02:55	WG1378889
Iron,Dissolved	ND		0.100	1	11/14/2019 02:55	WG1378889
Lead,Dissolved	ND		0.00500	1	11/14/2019 02:55	WG1378889
Magnesium,Dissolved	44.8		1.00	1	11/14/2019 02:55	WG1378889
Manganese,Dissolved	ND		0.0100	1	11/14/2019 02:55	WG1378889
Potassium,Dissolved	2.59		1.00	1	11/14/2019 02:55	WG1378889
Selenium,Dissolved	ND		0.0100	1	11/14/2019 02:55	WG1378889
Silver,Dissolved	ND		0.00500	1	11/14/2019 02:55	WG1378889
Sodium,Dissolved	85.7		1.00	1	11/14/2019 02:55	WG1378889

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	11/13/2019 16:34	WG1379553
Ethane	ND		0.0130	1	11/13/2019 16:34	WG1379553
Ethene	ND		0.0130	1	11/13/2019 16:34	WG1379553
Propane	ND		0.0190	1	11/13/2019 16:34	WG1379553

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/10/2019 06:48	WG1378080
Toluene	ND		0.00100	1	11/10/2019 06:48	WG1378080
Ethylbenzene	ND		0.00100	1	11/10/2019 06:48	WG1378080
Total Xylenes	ND		0.00300	1	11/10/2019 06:48	WG1378080
Methyl tert-butyl ether	ND		0.00100	1	11/10/2019 06:48	WG1378080
(S) Toluene-d8	109		80.0-120		11/10/2019 06:48	WG1378080
(S) 4-Bromofluorobenzene	90.0		77.0-126		11/10/2019 06:48	WG1378080
(S) 1,2-Dichloroethane-d4	98.0		70.0-130		11/10/2019 06:48	WG1378080



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	523		10.0	1	11/11/2019 12:56	WG1378163

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	379		20.0	1	11/15/2019 14:26	WG1380577
Alkalinity,Bicarbonate	379		20.0	1	11/15/2019 14:26	WG1380577
Alkalinity,Carbonate	ND		20.0	1	11/15/2019 14:26	WG1380577

Sample Narrative:

L1158611-06 WG1380577: Endpoint pH 4.5 headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	ND		0.100	1	11/19/2019 13:54	WG1381475

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	11/14/2019 20:34	WG1380284

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.18	T8	1	11/10/2019 19:13	WG1378260

Sample Narrative:

L1158611-06 WG1378260: 8.18 at 14.5C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	941		10.0	1	11/13/2019 12:16	WG1379711

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	11/08/2019 14:37	WG1377422
Chloride	27.0		1.00	1	11/08/2019 14:37	WG1377422
Fluoride	0.680		0.100	1	11/08/2019 14:37	WG1377422
Nitrate as (N)	0.454		0.100	1	11/08/2019 14:37	WG1377422
Nitrite as (N)	ND		0.100	1	11/08/2019 14:37	WG1377422
Sulfate	112		10.0	2	11/09/2019 00:02	WG1377422

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	ND		0.0100	1	11/14/2019 03:03	WG1378889
Barium,Dissolved	0.0611		0.00500	1	11/14/2019 03:03	WG1378889
Cadmium,Dissolved	ND		0.00200	1	11/14/2019 03:03	WG1378889
Calcium,Dissolved	63.7		1.00	1	11/14/2019 03:03	WG1378889



Collected date/time: 11/07/19 11:45

L1158611

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Dissolved	ND		0.0100	1	11/14/2019 03:03	WG1378889
Copper,Dissolved	ND		0.0100	1	11/14/2019 03:03	WG1378889
Iron,Dissolved	ND		0.100	1	11/14/2019 03:03	WG1378889
Lead,Dissolved	ND		0.00500	1	11/14/2019 03:03	WG1378889
Magnesium,Dissolved	45.7		1.00	1	11/14/2019 03:03	WG1378889
Manganese,Dissolved	ND		0.0100	1	11/14/2019 03:03	WG1378889
Potassium,Dissolved	2.99		1.00	1	11/14/2019 03:03	WG1378889
Selenium,Dissolved	ND		0.0100	1	11/14/2019 03:03	WG1378889
Silver,Dissolved	ND		0.00500	1	11/14/2019 03:03	WG1378889
Sodium,Dissolved	86.4		1.00	1	11/14/2019 03:03	WG1378889

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	11/13/2019 16:36	WG1379553
Ethane	ND		0.0130	1	11/13/2019 16:36	WG1379553
Ethene	ND		0.0130	1	11/13/2019 16:36	WG1379553
Propane	ND		0.0190	1	11/13/2019 16:36	WG1379553

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/10/2019 07:08	WG1378080
Toluene	ND		0.00100	1	11/10/2019 07:08	WG1378080
Ethylbenzene	ND		0.00100	1	11/10/2019 07:08	WG1378080
Total Xylenes	ND		0.00300	1	11/10/2019 07:08	WG1378080
Methyl tert-butyl ether	ND		0.00100	1	11/10/2019 07:08	WG1378080
(S) Toluene-d8	109		80.0-120		11/10/2019 07:08	WG1378080
(S) 4-Bromofluorobenzene	87.6		77.0-126		11/10/2019 07:08	WG1378080
(S) 1,2-Dichloroethane-d4	99.4		70.0-130		11/10/2019 07:08	WG1378080



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	568		10.0	1	11/11/2019 12:56	WG1378163

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	402		20.0	1	11/15/2019 14:34	WG1380577
Alkalinity,Bicarbonate	402		20.0	1	11/15/2019 14:34	WG1380577
Alkalinity,Carbonate	ND		20.0	1	11/15/2019 14:34	WG1380577

Sample Narrative:

L1158611-07 WG1380577: Endpoint pH 4.5 headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	ND		0.100	1	11/19/2019 13:56	WG1381475

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	11/14/2019 20:35	WG1380284

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.64	T8	1	11/10/2019 19:13	WG1378260

Sample Narrative:

L1158611-07 WG1378260: 7.64 at 14.9C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	1020		10.0	1	11/13/2019 12:16	WG1379711

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	11/08/2019 14:55	WG1377422
Chloride	30.8		1.00	1	11/08/2019 14:55	WG1377422
Fluoride	0.639		0.100	1	11/08/2019 14:55	WG1377422
Nitrate as (N)	0.751		0.100	1	11/08/2019 14:55	WG1377422
Nitrite as (N)	ND		0.100	1	11/08/2019 14:55	WG1377422
Sulfate	124		10.0	2	11/09/2019 00:20	WG1377422

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	ND		0.0100	1	11/14/2019 03:05	WG1378889
Barium,Dissolved	0.0644		0.00500	1	11/14/2019 03:05	WG1378889
Cadmium,Dissolved	ND		0.00200	1	11/14/2019 03:05	WG1378889
Calcium,Dissolved	69.9		1.00	1	11/14/2019 03:05	WG1378889



Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Dissolved	ND		0.0100	1	11/14/2019 03:05	WG1378889
Copper,Dissolved	ND		0.0100	1	11/14/2019 03:05	WG1378889
Iron,Dissolved	ND		0.100	1	11/14/2019 03:05	WG1378889
Lead,Dissolved	ND		0.00500	1	11/14/2019 03:05	WG1378889
Magnesium,Dissolved	48.8		1.00	1	11/14/2019 03:05	WG1378889
Manganese,Dissolved	ND		0.0100	1	11/14/2019 03:05	WG1378889
Potassium,Dissolved	3.23		1.00	1	11/14/2019 03:05	WG1378889
Selenium,Dissolved	ND		0.0100	1	11/14/2019 03:05	WG1378889
Silver,Dissolved	ND		0.00500	1	11/14/2019 03:05	WG1378889
Sodium,Dissolved	90.7		1.00	1	11/14/2019 03:05	WG1378889

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	11/13/2019 16:38	WG1379553
Ethane	ND		0.0130	1	11/13/2019 16:38	WG1379553
Ethene	ND		0.0130	1	11/13/2019 16:38	WG1379553
Propane	ND		0.0190	1	11/13/2019 16:38	WG1379553

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/10/2019 07:29	WG1378080
Toluene	ND		0.00100	1	11/10/2019 07:29	WG1378080
Ethylbenzene	ND		0.00100	1	11/10/2019 07:29	WG1378080
Total Xylenes	ND		0.00300	1	11/10/2019 07:29	WG1378080
Methyl tert-butyl ether	ND		0.00100	1	11/10/2019 07:29	WG1378080
(S) Toluene-d8	109		80.0-120		11/10/2019 07:29	WG1378080
(S) 4-Bromofluorobenzene	91.0		77.0-126		11/10/2019 07:29	WG1378080
(S) 1,2-Dichloroethane-d4	101		70.0-130		11/10/2019 07:29	WG1378080



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	645		10.0	1	11/11/2019 12:56	WG1378163

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	398		20.0	1	11/15/2019 14:42	WG1380577
Alkalinity,Bicarbonate	398		20.0	1	11/15/2019 14:42	WG1380577
Alkalinity,Carbonate	ND		20.0	1	11/15/2019 14:42	WG1380577

Sample Narrative:

L1158611-08 WG1380577: Endpoint pH 4.5 headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	ND		0.100	1	11/19/2019 13:58	WG1381475

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	11/14/2019 20:35	WG1380284

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	7.54	T8	1	11/10/2019 19:13	WG1378260

Sample Narrative:

L1158611-08 WG1378260: 7.54 at 14.6C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	1040		10.0	1	11/13/2019 12:16	WG1379711

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	11/08/2019 15:14	WG1377422
Chloride	31.0		1.00	1	11/08/2019 15:14	WG1377422
Fluoride	0.723		0.100	1	11/08/2019 15:14	WG1377422
Nitrate as (N)	1.02		0.100	1	11/08/2019 15:14	WG1377422
Nitrite as (N)	ND		0.100	1	11/08/2019 15:14	WG1377422
Sulfate	137		10.0	2	11/09/2019 00:37	WG1377422

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	ND		0.0100	1	11/14/2019 03:08	WG1378889
Barium,Dissolved	0.0761		0.00500	1	11/14/2019 03:08	WG1378889
Cadmium,Dissolved	ND		0.00200	1	11/14/2019 03:08	WG1378889
Calcium,Dissolved	67.8		1.00	1	11/14/2019 03:08	WG1378889



Collected date/time: 11/07/19 12:30

L1158611

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Dissolved	ND		0.0100	1	11/14/2019 03:08	WG1378889
Copper,Dissolved	ND		0.0100	1	11/14/2019 03:08	WG1378889
Iron,Dissolved	ND		0.100	1	11/14/2019 03:08	WG1378889
Lead,Dissolved	ND		0.00500	1	11/14/2019 03:08	WG1378889
Magnesium,Dissolved	49.3		1.00	1	11/14/2019 03:08	WG1378889
Manganese,Dissolved	ND		0.0100	1	11/14/2019 03:08	WG1378889
Potassium,Dissolved	3.08		1.00	1	11/14/2019 03:08	WG1378889
Selenium,Dissolved	ND		0.0100	1	11/14/2019 03:08	WG1378889
Silver,Dissolved	ND		0.00500	1	11/14/2019 03:08	WG1378889
Sodium,Dissolved	97.9		1.00	1	11/14/2019 03:08	WG1378889

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	11/13/2019 16:41	WG1379553
Ethane	ND		0.0130	1	11/13/2019 16:41	WG1379553
Ethene	ND		0.0130	1	11/13/2019 16:41	WG1379553
Propane	ND		0.0190	1	11/13/2019 16:41	WG1379553

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/09/2019 20:38	WG1378085
Toluene	ND		0.00100	1	11/09/2019 20:38	WG1378085
Ethylbenzene	ND		0.00100	1	11/09/2019 20:38	WG1378085
Total Xylenes	ND		0.00300	1	11/09/2019 20:38	WG1378085
Methyl tert-butyl ether	ND		0.00100	1	11/09/2019 20:38	WG1378085
(S) Toluene-d8	104		80.0-120		11/09/2019 20:38	WG1378085
(S) 4-Bromofluorobenzene	94.3		77.0-126		11/09/2019 20:38	WG1378085
(S) 1,2-Dichloroethane-d4	114		70.0-130		11/09/2019 20:38	WG1378085



Gravimetric Analysis by Method 2540 C-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Dissolved Solids	419		10.0	1	11/11/2019 12:56	WG1378163

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	303		20.0	1	11/15/2019 14:49	WG1380577
Alkalinity,Bicarbonate	303		20.0	1	11/15/2019 14:49	WG1380577
Alkalinity,Carbonate	ND		20.0	1	11/15/2019 14:49	WG1380577

Sample Narrative:

L1158611-09 WG1380577: Endpoint pH 4.5 headspace

Wet Chemistry by Method 350.1

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Ammonia Nitrogen	ND		0.100	1	11/19/2019 13:59	WG1381475

Wet Chemistry by Method 4500S2 D-2011

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Sulfide	ND		0.0500	1	11/14/2019 20:37	WG1380284

Wet Chemistry by Method 9040C

Analyte	Result	Qualifier	Dilution	Analysis date / time	Batch
pH	8.49	T8	1	11/10/2019 19:13	WG1378260

Sample Narrative:

L1158611-09 WG1378260: 8.49 at 15.3C

Wet Chemistry by Method 9050A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Specific Conductance	730		10.0	1	11/13/2019 12:16	WG1379711

Wet Chemistry by Method 9056A

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Bromide	ND		1.00	1	11/08/2019 15:31	WG1377422
Chloride	9.15		1.00	1	11/08/2019 15:31	WG1377422
Fluoride	0.604		0.100	1	11/08/2019 15:31	WG1377422
Nitrate as (N)	1.46		0.100	1	11/08/2019 15:31	WG1377422
Nitrite as (N)	ND		0.100	1	11/08/2019 15:31	WG1377422
Sulfate	90.3		5.00	1	11/08/2019 15:31	WG1377422

Metals (ICP) by Method 6010B

Analyte	Result	Qualifier	RDL	Dilution	Analysis date / time	Batch
Arsenic,Dissolved	ND		0.0100	1	11/14/2019 03:11	WG1378889
Barium,Dissolved	0.0693		0.00500	1	11/14/2019 03:11	WG1378889
Cadmium,Dissolved	ND		0.00200	1	11/14/2019 03:11	WG1378889
Calcium,Dissolved	59.7		1.00	1	11/14/2019 03:11	WG1378889



Collected date/time: 11/07/19 13:45

L1158611

Metals (ICP) by Method 6010B

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Chromium,Dissolved	ND		0.0100	1	11/14/2019 03:11	WG1378889
Copper,Dissolved	ND		0.0100	1	11/14/2019 03:11	WG1378889
Iron,Dissolved	ND		0.100	1	11/14/2019 03:11	WG1378889
Lead,Dissolved	ND		0.00500	1	11/14/2019 03:11	WG1378889
Magnesium,Dissolved	37.3		1.00	1	11/14/2019 03:11	WG1378889
Manganese,Dissolved	ND		0.0100	1	11/14/2019 03:11	WG1378889
Potassium,Dissolved	2.35		1.00	1	11/14/2019 03:11	WG1378889
Selenium,Dissolved	ND		0.0100	1	11/14/2019 03:11	WG1378889
Silver,Dissolved	ND		0.00500	1	11/14/2019 03:11	WG1378889
Sodium,Dissolved	49.4		1.00	1	11/14/2019 03:11	WG1378889

¹ Cp² Tc³ Ss⁴ Cn⁵ Sr⁶ Qc⁷ Gl⁸ Al⁹ Sc

Volatile Organic Compounds (GC) by Method RSK175

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Methane	ND		0.0100	1	11/13/2019 16:43	WG1379553
Ethane	ND		0.0130	1	11/13/2019 16:43	WG1379553
Ethene	ND		0.0130	1	11/13/2019 16:43	WG1379553
Propane	ND		0.0190	1	11/13/2019 16:43	WG1379553

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

Analyte	Result mg/l	Qualifier	RDL mg/l	Dilution	Analysis date / time	Batch
Benzene	ND		0.00100	1	11/09/2019 20:57	WG1378085
Toluene	ND		0.00100	1	11/09/2019 20:57	WG1378085
Ethylbenzene	ND		0.00100	1	11/09/2019 20:57	WG1378085
Total Xylenes	ND		0.00300	1	11/09/2019 20:57	WG1378085
Methyl tert-butyl ether	ND		0.00100	1	11/09/2019 20:57	WG1378085
(S) Toluene-d8	104		80.0-120		11/09/2019 20:57	WG1378085
(S) 4-Bromofluorobenzene	93.9		77.0-126		11/09/2019 20:57	WG1378085
(S) 1,2-Dichloroethane-d4	118		70.0-130		11/09/2019 20:57	WG1378085

Method Blank (MB)

(MB) R3470958-1 11/11/19 12:56

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Dissolved Solids	U		2.82	10.0

L1158593-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158593-01 11/11/19 12:56 • (DUP) R3470958-3 11/11/19 12:56

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	7160	7780	1	8.30	J3	5

L1158593-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1158593-03 11/11/19 12:56 • (DUP) R3470958-4 11/11/19 12:56

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Dissolved Solids	7260	7180	1	1.11		5

Laboratory Control Sample (LCS)

(LCS) R3470958-2 11/11/19 12:56

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Dissolved Solids	8800	8100	92.0	85.0-115	

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

Method Blank (MB)

(MB) R3472503-1 11/15/19 12:22

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Alkalinity	3.43	U	2.71	20.0
Alkalinity,Bicarbonate	3.43	U	2.71	20.0
Alkalinity,Carbonate	U		2.71	20.0

Sample Narrative:
BLANK: Endpoint pH 4.5

L1158611-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-01 11/15/19 13:25 • (DUP) R3472503-2 11/15/19 13:34

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	305	321	1	5.00		20
Alkalinity,Bicarbonate	302	321	1	6.14		20
Alkalinity,Carbonate	ND	0.000	1	0.000		20

Sample Narrative:
OS: Endpoint pH 4.5 headspace
DUP: Endpoint pH 4.5

L1158611-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-09 11/15/19 14:49 • (DUP) R3472503-4 11/15/19 14:57

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Alkalinity	303	305	1	0.843		20
Alkalinity,Bicarbonate	303	305	1	0.843		20
Alkalinity,Carbonate	ND	0.000	1	0.000		20

Sample Narrative:
OS: Endpoint pH 4.5 headspace
DUP: Endpoint pH 4.5

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Laboratory Control Sample (LCS)

(LCS) R3472503-3 11/15/19 13:51

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Alkalinity	100	99.4	99.4	85.0-115	

Sample Narrative:
LCS: Endpoint pH 4.5

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



Method Blank (MB)

(MB) R3473751-1 11/19/19 13:29

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Ammonia Nitrogen	U		0.0317	0.100

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1158598-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158598-01 11/19/19 13:34 • (DUP) R3473751-3 11/19/19 13:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Ammonia Nitrogen	1.31	1.30	1	0.461		10

L1158643-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1158643-02 11/19/19 14:10 • (DUP) R3473751-6 11/19/19 14:12

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Ammonia Nitrogen	U	0.000	1	0.000		10

Laboratory Control Sample (LCS)

(LCS) R3473751-2 11/19/19 13:31

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Ammonia Nitrogen	7.50	7.22	96.2	90.0-110	

L1158611-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158611-01 11/19/19 13:39 • (MS) R3473751-4 11/19/19 13:40 • (MSD) R3473751-5 11/19/19 13:42

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Ammonia Nitrogen	5.00	ND	4.82	4.82	96.5	96.3	1	90.0-110			0.166	10

L1158697-01 Original Sample (OS) • Matrix Spike (MS)

(OS) L1158697-01 11/19/19 14:14 • (MS) R3473751-7 11/19/19 14:15

	Spike Amount	Original Result	MS Result	MS Rec.	Dilution	Rec. Limits	MS Qualifier
Analyte	mg/l	mg/l	mg/l	%		%	
Ammonia Nitrogen	5.00	10.7	15.0	85.0	1	90.0-110	E J6



Method Blank (MB)

(MB) R3471612-1 11/13/19 15:28

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Sulfide	U		0.00650	0.0500

L1158071-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158071-01 11/13/19 15:28 • (DUP) R3471612-3 11/13/19 15:28

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Sulfide	U	0.000	1	0.000		20

L1158587-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158587-01 11/13/19 15:32 • (DUP) R3471612-6 11/13/19 15:33

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Sulfide	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3471612-2 11/13/19 15:28

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Sulfide	0.500	0.518	104	85.0-115	

L1158207-07 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158207-07 11/13/19 15:29 • (MS) R3471612-4 11/13/19 15:29 • (MSD) R3471612-5 11/13/19 15:29

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Sulfide	1.00	ND	0.912	0.860	91.2	86.0	1	80.0-120			5.87	20

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3472162-1 11/14/19 20:33

	MB Result	MB Qualifier	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Sulfide	U		0.00650	0.0500

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1158611-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-06 11/14/19 20:34 • (DUP) R3472162-3 11/14/19 20:35

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Sulfide	ND	0.000	1	0.000		20

L1159960-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1159960-02 11/14/19 20:40 • (DUP) R3472162-6 11/14/19 20:40

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Sulfide	ND	0.000	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3472162-2 11/14/19 20:33

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	mg/l	mg/l	%	%	
Sulfide	0.500	0.481	96.2	85.0-115	

L1158611-08 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158611-08 11/14/19 20:35 • (MS) R3472162-4 11/14/19 20:36 • (MSD) R3472162-5 11/14/19 20:36

	Spike Amount	Original Result	MS Result	MSD Result	MS Rec.	MSD Rec.	Dilution	Rec. Limits	MS Qualifier	MSD Qualifier	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	mg/l	%	%		%			%	%
Sulfide	1.00	ND	0.948	0.947	94.8	94.7	1	80.0-120			0.106	20



L1158208-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1158208-06 11/10/19 22:05 • (DUP) R3470429-2 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.42	7.43	1	0.135		1

Sample Narrative:

OS: 7.42 at 17.7C

DUP: 7.43 at 17.8C



L1158208-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1158208-07 11/10/19 22:05 • (DUP) R3470429-3 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.02	8.07	1	0.622		1

Sample Narrative:

OS: 8.02 at 16.9C

DUP: 8.07 at 16.6C

L1158208-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1158208-08 11/10/19 22:05 • (DUP) R3470429-4 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.03	8.03	1	0.000		1

Sample Narrative:

OS: 8.03 at 17.1C

DUP: 8.03 at 17.1C

L1158551-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158551-01 11/10/19 22:05 • (DUP) R3470429-5 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.42	6.41	1	0.156		1

Sample Narrative:

L1158551-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158551-01 11/10/19 22:05 • (DUP) R3470429-5 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
OS: 6.42 at 16.7C						
DUP: 6.41 at 16.6C						

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1158551-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1158551-02 11/10/19 22:05 • (DUP) R3470429-6 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.40	7.39	1	0.135		1

Sample Narrative:

OS: 7.4 at 16.5C
DUP: 7.39 at 16.2C

L1158551-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1158551-03 11/10/19 22:05 • (DUP) R3470429-7 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.86	6.83	1	0.438		1

Sample Narrative:

OS: 6.86 at 16.4C
DUP: 6.83 at 16.4C

L1158595-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158595-01 11/10/19 22:05 • (DUP) R3470429-8 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.31	6.31	1	0.000		1

Sample Narrative:

OS: 6.31 at 16.5C
DUP: 6.31 at 16.4C



L1158605-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158605-01 11/10/19 22:05 • (DUP) R3470429-9 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.57	6.58	1	0.152		1

Sample Narrative:

OS: 6.57 at 16.7C

DUP: 6.58 at 16.6C



L1158606-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158606-01 11/10/19 22:05 • (DUP) R3470429-10 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.22	6.20	1	0.322		1

Sample Narrative:

OS: 6.22 at 17.1C

DUP: 6.2 at 16.9C

L1158611-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-01 11/10/19 22:05 • (DUP) R3470429-11 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.44	8.43	1	0.119		1

Sample Narrative:

OS: 8.44 at 16.6C

DUP: 8.43 at 16.7C

L1158611-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-02 11/10/19 22:05 • (DUP) R3470429-12 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.44	8.43	1	0.119		1

Sample Narrative:

L1158611-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-02 11/10/19 22:05 • (DUP) R3470429-12 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
OS: 8.44 at 16.2C						
DUP: 8.43 at 16.1C						

L1158611-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-03 11/10/19 22:05 • (DUP) R3470429-13 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.43	8.44	1	0.119		1

Sample Narrative:

OS: 8.43 at 16.5C
DUP: 8.44 at 16.4C

L1158611-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-04 11/10/19 22:05 • (DUP) R3470429-14 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.36	8.40	1	0.477		1

Sample Narrative:

OS: 8.36 at 16.8C
DUP: 8.4 at 16.8C

L1159079-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159079-01 11/10/19 22:05 • (DUP) R3470429-15 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.95	7.93	1	0.252		1

Sample Narrative:

OS: 7.95 at 17.3C
DUP: 7.93 at 17.3C

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



L1159392-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1159392-02 11/10/19 22:05 • (DUP) R3470429-16 11/10/19 22:05

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.29	7.29	1	0.000		1

Sample Narrative:

OS: 7.29 at 16.8C

DUP: 7.29 at 16.9C

Laboratory Control Sample (LCS)

(LCS) R3470429-1 11/10/19 22:05

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

Sample Narrative:

LCS: 9.92 at 18.3C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc



L1158611-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-05 11/10/19 19:13 • (DUP) R3470413-2 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.57	7.55	1	0.265		1

Sample Narrative:

OS: 7.57 at 15.8C

DUP: 7.55 at 15.5C



L1158611-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-06 11/10/19 19:13 • (DUP) R3470413-3 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.18	8.21	1	0.366		1

Sample Narrative:

OS: 8.18 at 14.5C

DUP: 8.21 at 14.5C

L1158611-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-07 11/10/19 19:13 • (DUP) R3470413-4 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.64	7.65	1	0.131		1

Sample Narrative:

OS: 7.64 at 14.9C

DUP: 7.65 at 14.6C

L1158611-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-08 11/10/19 19:13 • (DUP) R3470413-5 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.54	7.53	1	0.133		1

Sample Narrative:



L1158611-08 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-08 11/10/19 19:13 • (DUP) R3470413-5 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
OS: 7.54 at 14.6C						
DUP: 7.53 at 14.5C						

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1158611-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-09 11/10/19 19:13 • (DUP) R3470413-6 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.49	8.49	1	0.000		1

Sample Narrative:

OS: 8.49 at 15.3C

DUP: 8.49 at 14.9C

L1158844-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158844-01 11/10/19 19:13 • (DUP) R3470413-7 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.79	6.76	1	0.443		1

Sample Narrative:

OS: 6.79 at 16.3C

DUP: 6.76 at 15.9C

L1158875-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158875-01 11/10/19 19:13 • (DUP) R3470413-8 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.58	7.55	1	0.397		1

Sample Narrative:

OS: 7.58 at 17.2C

DUP: 7.55 at 17.5C

L1158895-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158895-01 11/10/19 19:13 • (DUP) R3470413-9 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.86	7.87	1	0.127		1

Sample Narrative:
OS: 7.86 at 15.7C
DUP: 7.87 at 15.7C

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1158895-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1158895-02 11/10/19 19:13 • (DUP) R3470413-10 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.86	7.88	1	0.254		1

Sample Narrative:
OS: 7.86 at 15.1C
DUP: 7.88 at 14.6C

L1158895-03 Original Sample (OS) • Duplicate (DUP)

(OS) L1158895-03 11/10/19 19:13 • (DUP) R3470413-11 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.81	7.80	1	0.128		1

Sample Narrative:
OS: 7.81 at 14.5C
DUP: 7.8 at 13.9C

L1158895-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1158895-04 11/10/19 19:13 • (DUP) R3470413-12 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.78	7.78	1	0.000		1

Sample Narrative:



L1158895-04 Original Sample (OS) • Duplicate (DUP)

(OS) L1158895-04 11/10/19 19:13 • (DUP) R3470413-12 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
OS: 7.78 at 14.6C						
DUP: 7.78 at 14C						

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1158895-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1158895-05 11/10/19 19:13 • (DUP) R3470413-13 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.80	7.79	1	0.128		1

Sample Narrative:

OS: 7.8 at 15.6C

DUP: 7.79 at 15.2C

L1158895-06 Original Sample (OS) • Duplicate (DUP)

(OS) L1158895-06 11/10/19 19:13 • (DUP) R3470413-14 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.80	7.80	1	0.000		1

Sample Narrative:

OS: 7.8 at 15.7C

DUP: 7.8 at 15.6C

L1158895-07 Original Sample (OS) • Duplicate (DUP)

(OS) L1158895-07 11/10/19 19:13 • (DUP) R3470413-15 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.73	7.78	1	0.645		1

Sample Narrative:

OS: 7.73 at 16.3C

DUP: 7.78 at 16C



L1158898-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158898-01 11/10/19 19:13 • (DUP) R3470413-16 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	7.90	7.91	1	0.127		1

Sample Narrative:

OS: 7.9 at 15.8C

DUP: 7.91 at 15.1C



L1159074-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159074-01 11/10/19 19:13 • (DUP) R3470413-17 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	8.16	8.18	1	0.245		1

Sample Narrative:

OS: 8.16 at 15C

DUP: 8.18 at 14.7C

L1159078-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159078-01 11/10/19 19:13 • (DUP) R3470413-18 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.47	6.47	1	0.000		1

Sample Narrative:

OS: 6.47 at 14.7C

DUP: 6.47 at 14.6C

L1159087-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159087-01 11/10/19 19:13 • (DUP) R3470413-19 11/10/19 19:13

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	su	su		%		%
pH	6.09	6.08	1	0.164		1

Sample Narrative:



L1159087-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159087-01 11/10/19 19:13 • (DUP) R3470413-19 11/10/19 19:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
OS: 6.09 at 15.8C						
DUP: 6.08 at 15.5C						

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1159089-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159089-01 11/10/19 19:13 • (DUP) R3470413-20 11/10/19 19:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	7.05	7.05	1	0.000		1

Sample Narrative:

OS: 7.05 at 17.4C

DUP: 7.05 at 17.6C

L1159090-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159090-01 11/10/19 19:13 • (DUP) R3470413-21 11/10/19 19:13

Analyte	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
	su	su		%		%
pH	6.13	6.10	1	0.491		1

Sample Narrative:

OS: 6.13 at 16.8C

DUP: 6.1 at 16.8C

Laboratory Control Sample (LCS)

(LCS) R3470413-1 11/10/19 19:13

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 18.4C



Method Blank (MB)

(MB) R3471568-1 11/13/19 15:02

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

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

L1157897-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1157897-01 11/13/19 15:02 • (DUP) R3471568-3 11/13/19 15:02

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	219	216	1	1.43		20

L1159029-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159029-01 11/13/19 15:02 • (DUP) R3471568-4 11/13/19 15:02

Analyte	Original Result umhos/cm	DUP Result umhos/cm	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Specific Conductance	400	400	1	0.000		20

Laboratory Control Sample (LCS)

(LCS) R3471568-2 11/13/19 15:02

Analyte	Spike Amount umhos/cm	LCS Result umhos/cm	LCS Rec. %	Rec. Limits %	LCS Qualifier
Specific Conductance	475	475	100	85.0-115	

Method Blank (MB)

(MB) R3471453-1 11/13/19 12:16

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

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc

L1158611-05 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-05 11/13/19 12:16 • (DUP) R3471453-3 11/13/19 12:16

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	931	948	1	1.81		20

L1159074-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1159074-01 11/13/19 12:16 • (DUP) R3471453-4 11/13/19 12:16

	Original Result	DUP Result	Dilution	DUP RPD	DUP Qualifier	DUP RPD Limits
Analyte	umhos/cm	umhos/cm		%		%
Specific Conductance	336	337	1	0.297		20

Laboratory Control Sample (LCS)

(LCS) R3471453-2 11/13/19 12:16

	Spike Amount	LCS Result	LCS Rec.	Rec. Limits	LCS Qualifier
Analyte	umhos/cm	umhos/cm	%	%	
Specific Conductance	475	475	100	85.0-115	



Method Blank (MB)

(MB) R3470232-1 11/08/19 11:47

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.0790	1.00
Chloride	0.0781	U	0.0519	1.00
Fluoride	U		0.00990	0.100
Nitrate	U		0.0227	0.100
Nitrite	U		0.0277	0.100
Sulfate	0.792	U	0.0774	5.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

L1158580-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158580-01 11/08/19 17:38 • (DUP) R3470232-4 11/08/19 18:22

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.000	1	0.000		15
Chloride	15.9	16.2	1	1.78		15
Fluoride	0.560	0.561	1	0.214		15
Nitrate	0.662	0.661	1	0.0454		15
Nitrite	ND	0.000	1	0.000		15
Sulfate	22.9	22.8	1	0.175		15

L1158644-02 Original Sample (OS) • Duplicate (DUP)

(OS) L1158644-02 11/09/19 10:26 • (DUP) R3470232-10 11/09/19 12:46

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Chloride	1.85	2.22	1	18.6	P1	15
Fluoride	ND	0.0211	1	0.000		15
Nitrate	ND	0.0229	1	0.000		15
Nitrite	ND	0.000	1	0.000		15
Sulfate	ND	0.504	1	0.000		15

Laboratory Control Sample (LCS)

(LCS) R3470232-3 11/08/19 13:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Bromide	40.0	39.2	97.9	80.0-120	
Chloride	40.0	38.4	96.1	80.0-120	



Laboratory Control Sample (LCS)

(LCS) R3470232-3 11/08/19 13:10

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Fluoride	8.00	7.91	98.9	80.0-120	
Nitrate	8.00	8.14	102	80.0-120	
Nitrite	8.00	7.96	99.5	80.0-120	
Sulfate	40.0	40.2	101	80.0-120	

L1158593-02 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158593-02 11/08/19 19:48 • (MS) R3470232-5 11/08/19 20:31 • (MSD) R3470232-6 11/08/19 20:46

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	3.66	49.6	49.6	91.9	91.9	1	80.0-120			0.0373	15
Chloride	50.0	5730	5500	5500	0.000	0.000	1	80.0-120	E V	E V	0.119	15
Fluoride	5.00	0.905	5.41	5.39	90.1	89.7	1	80.0-120			0.300	15
Nitrate	5.00	ND	4.58	4.58	91.5	91.5	1	80.0-120			0.0459	15
Nitrite	5.00	ND	4.28	4.32	85.6	86.3	1	80.0-120			0.852	15
Sulfate	50.0	332	358	358	52.3	52.2	1	80.0-120	E V	E V	0.0195	15

L1158644-04 Original Sample (OS) • Matrix Spike (MS)

(OS) L1158644-04 11/09/19 01:34 • (MS) R3470232-8 11/09/19 01:48

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	46.5	92.9	1	80.0-120	
Chloride	50.0	6.58	54.0	94.8	1	80.0-120	
Fluoride	5.00	ND	5.01	99.1	1	80.0-120	
Nitrate	5.00	0.670	5.51	96.9	1	80.0-120	
Nitrite	5.00	ND	4.96	99.1	1	80.0-120	
Sulfate	50.0	5.73	55.0	98.6	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc



Method Blank (MB)

(MB) R3470184-1 11/08/19 08:45

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Bromide	U		0.0790	1.00
Chloride	U		0.0519	1.00
Fluoride	U		0.00990	0.100
Nitrate	U		0.0227	0.100
Nitrite	U		0.0277	0.100
Sulfate	U		0.0774	5.00

L1158611-09 Original Sample (OS) • Duplicate (DUP)

(OS) L1158611-09 11/08/19 15:31 • (DUP) R3470184-3 11/08/19 16:23

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	ND	0.000	1	0.000		15
Chloride	9.15	9.16	1	0.0284		15
Fluoride	0.604	0.603	1	0.149		15
Nitrate	1.46	1.43	1	1.72		15
Nitrite	ND	0.000	1	0.000		15
Sulfate	90.3	90.2	1	0.123		15

L1158641-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158641-01 11/08/19 17:52 • (DUP) R3470184-4 11/08/19 18:09

Analyte	Original Result mg/l	DUP Result mg/l	Dilution	DUP RPD %	DUP Qualifier	DUP RPD Limits %
Bromide	0.249	0.246	1	1.21	J	15
Chloride	663	662	1	0.0793	E	15
Fluoride	0.0842	0.0599	1	33.7	J P1	15
Nitrate	1.19	1.18	1	1.26		15
Nitrite	U	0.000	1	0.000		15
Sulfate	12.1	12.2	1	0.730		15

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Laboratory Control Sample (LCS)

(LCS) R3470184-2 11/08/19 09:02

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	<u>LCS Qualifier</u>
Bromide	40.0	38.5	96.3	80.0-120	
Chloride	40.0	39.2	97.9	80.0-120	
Fluoride	8.00	7.85	98.1	80.0-120	
Nitrate	8.00	8.08	101	80.0-120	
Nitrite	8.00	7.84	98.0	80.0-120	
Sulfate	40.0	38.0	95.0	80.0-120	

L1158641-04 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158641-04 11/08/19 19:02 • (MS) R3470184-5 11/08/19 20:30 • (MSD) R3470184-7 11/08/19 20:48

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	U	46.7	47.1	93.5	94.1	1	80.0-120			0.657	15
Fluoride	5.00	0.0551	5.03	5.02	99.5	99.2	1	80.0-120			0.277	15
Nitrate	5.00	2.24	7.31	7.34	102	102	1	80.0-120			0.441	15
Nitrite	5.00	U	5.18	5.16	104	103	1	80.0-120			0.421	15
Sulfate	50.0	16.6	64.8	65.0	96.4	96.9	1	80.0-120			0.351	15

L1158618-02 Original Sample (OS) • Matrix Spike (MS)

(OS) L1158618-02 11/08/19 21:23 • (MS) R3470184-6 11/08/19 21:41

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	U	41.5	82.9	1	80.0-120	
Chloride	50.0	1.34	49.0	95.3	1	80.0-120	
Fluoride	5.00	0.555	5.26	94.2	1	80.0-120	
Nitrate	5.00	1.35	5.97	92.5	1	80.0-120	
Nitrite	5.00	U	4.90	98.1	1	80.0-120	
Sulfate	50.0	45.2	89.4	88.5	1	80.0-120	

1Cp

2Tc

3Ss

4Cn

5Sr

6Qc

7Gl

8Al

9Sc

Method Blank (MB)

(MB) R3471788-1 11/14/19 01:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Arsenic,Dissolved	U		0.00650	0.0100
Barium,Dissolved	U		0.00170	0.00500
Cadmium,Dissolved	U		0.000700	0.00200
Calcium,Dissolved	U		0.0463	1.00
Chromium,Dissolved	U		0.00140	0.0100
Copper,Dissolved	U		0.00530	0.0100
Iron,Dissolved	U		0.0141	0.100
Lead,Dissolved	U		0.00190	0.00500
Magnesium,Dissolved	U		0.0111	1.00
Manganese,Dissolved	U		0.00120	0.0100
Potassium,Dissolved	U		0.102	1.00
Selenium,Dissolved	U		0.00740	0.0100
Silver,Dissolved	U		0.00280	0.00500
Sodium,Dissolved	U		0.0985	1.00

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

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

(LCS) R3471788-2 11/14/19 01:58 • (LCSD) R3471788-3 11/14/19 02:00

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 %
Arsenic,Dissolved	1.00	0.957	0.944	95.7	94.4	80.0-120			1.41	20
Barium,Dissolved	1.00	1.01	1.00	101	100	80.0-120			0.788	20
Cadmium,Dissolved	1.00	0.962	0.957	96.2	95.7	80.0-120			0.464	20
Calcium,Dissolved	10.0	9.69	9.56	96.9	95.6	80.0-120			1.28	20
Chromium,Dissolved	1.00	0.968	0.960	96.8	96.0	80.0-120			0.791	20
Copper,Dissolved	1.00	0.971	0.957	97.1	95.7	80.0-120			1.47	20
Iron,Dissolved	10.0	9.62	9.45	96.2	94.5	80.0-120			1.86	20
Lead,Dissolved	1.00	0.969	0.959	96.9	95.9	80.0-120			1.03	20
Magnesium,Dissolved	10.0	9.98	9.80	99.8	98.0	80.0-120			1.83	20
Manganese,Dissolved	1.00	0.963	0.949	96.3	94.9	80.0-120			1.41	20
Potassium,Dissolved	10.0	9.82	9.60	98.2	96.0	80.0-120			2.27	20
Selenium,Dissolved	1.00	0.970	0.963	97.0	96.3	80.0-120			0.726	20
Silver,Dissolved	0.200	0.186	0.182	93.0	91.1	80.0-120			2.08	20
Sodium,Dissolved	10.0	9.84	9.72	98.4	97.2	80.0-120			1.21	20



L1158590-01 Original Sample (OS) • Matrix Spike (MS) • Matrix Spike Duplicate (MSD)

(OS) L1158590-01 11/14/19 02:03 • (MS) R3471788-5 11/14/19 02:08 • (MSD) R3471788-6 11/14/19 02:11

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 %
Arsenic,Dissolved	1.00	ND	1.00	0.998	100	99.8	1	75.0-125			0.619	20
Barium,Dissolved	1.00	0.0595	1.06	1.05	100	99.4	1	75.0-125			0.650	20
Cadmium,Dissolved	1.00	ND	0.990	0.983	99.0	98.3	1	75.0-125			0.685	20
Calcium,Dissolved	10.0	47.0	56.2	56.3	92.3	93.7	1	75.0-125			0.251	20
Chromium,Dissolved	1.00	ND	0.945	0.948	94.5	94.8	1	75.0-125			0.354	20
Copper,Dissolved	1.00	ND	0.984	0.961	98.4	96.1	1	75.0-125			2.35	20
Iron,Dissolved	10.0	ND	9.65	9.59	96.5	95.9	1	75.0-125			0.640	20
Lead,Dissolved	1.00	ND	0.980	0.978	98.0	97.8	1	75.0-125			0.243	20
Magnesium,Dissolved	10.0	54.5	63.7	64.6	92.2	101	1	75.0-125			1.41	20
Manganese,Dissolved	1.00	ND	0.947	0.943	94.7	94.3	1	75.0-125			0.443	20
Potassium,Dissolved	10.0	5.45	15.1	15.1	96.1	96.6	1	75.0-125			0.303	20
Selenium,Dissolved	1.00	0.0114	1.02	1.02	101	101	1	75.0-125			0.0243	20
Silver,Dissolved	0.200	ND	0.193	0.189	96.4	94.3	1	75.0-125			2.22	20
Sodium,Dissolved	10.0	271	281	284	104	126	1	75.0-125		V	0.782	20

¹Cp

²Tc

³Ss

⁴Cn

⁵Sr

⁶Qc

⁷Gl

⁸Al

⁹Sc

Method Blank (MB)

(MB) R3471798-1 11/13/19 15:47

	MB Result	<u>MB Qualifier</u>	MB MDL	MB RDL
Analyte	mg/l		mg/l	mg/l
Methane	U		0.00291	0.0100
Ethane	U		0.00407	0.0130
Ethene	U		0.00426	0.0130
Propane	U		0.00548	0.0190

L1158590-01 Original Sample (OS) • Duplicate (DUP)

(OS) L1158590-01 11/13/19 16:04 • (DUP) R3471798-2 11/13/19 16:27

	Original Result	DUP Result	Dilution	DUP RPD	<u>DUP Qualifier</u>	DUP RPD Limits
Analyte	mg/l	mg/l		%		%
Methane	ND	0.000	1	0.000		20
Ethane	ND	0.000	1	0.000		20
Ethene	ND	0.000	1	0.000		20
Propane	ND	0.000	1	0.000		20

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

(LCS) R3471798-3 11/13/19 16:56 • (LCSD) R3471798-4 11/13/19 16:59

	Spike Amount	LCS Result	LCSD Result	LCS Rec.	LCSD Rec.	Rec. Limits	<u>LCS Qualifier</u>	<u>LCSD Qualifier</u>	RPD	RPD Limits
Analyte	mg/l	mg/l	mg/l	%	%	%			%	%
Methane	0.0678	0.0653	0.0687	96.3	101	85.0-115			5.07	20
Ethane	0.129	0.125	0.128	96.9	99.2	85.0-115			2.37	20
Ethene	0.127	0.120	0.123	94.5	96.9	85.0-115			2.47	20
Propane	0.186	0.180	0.186	96.8	100	85.0-115			3.28	20

1

Cp

2

Tc

3

Ss

4

Cn

5

Sr

6

Qc

7

Gl

8

Al

9

Sc



Method Blank (MB)

(MB) R3470540-2 11/09/19 23:46

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Methyl tert-butyl ether	U		0.000367	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	106			80.0-120
(S) 4-Bromofluorobenzene	90.3			77.0-126
(S) 1,2-Dichloroethane-d4	102			70.0-130

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc

Laboratory Control Sample (LCS)

(LCS) R3470540-1 11/09/19 22:45

Analyte	Spike Amount mg/l	LCS Result mg/l	LCS Rec. %	Rec. Limits %	LCS Qualifier
Benzene	0.00500	0.00582	116	70.0-123	
Ethylbenzene	0.00500	0.00466	93.2	79.0-123	
Methyl tert-butyl ether	0.00500	0.00509	102	68.0-125	
Toluene	0.00500	0.00526	105	79.0-120	
Xylenes, Total	0.0150	0.0143	95.3	79.0-123	
(S) Toluene-d8			106	80.0-120	
(S) 4-Bromofluorobenzene			93.2	77.0-126	
(S) 1,2-Dichloroethane-d4			101	70.0-130	



Method Blank (MB)

(MB) R3470608-2 11/09/19 15:55

Analyte	MB Result mg/l	MB Qualifier	MB MDL mg/l	MB RDL mg/l
Benzene	U		0.000331	0.00100
Ethylbenzene	U		0.000384	0.00100
Methyl tert-butyl ether	U		0.000367	0.00100
Toluene	U		0.000412	0.00100
Xylenes, Total	U		0.00106	0.00300
(S) Toluene-d8	105			80.0-120
(S) 4-Bromofluorobenzene	94.6			77.0-126
(S) 1,2-Dichloroethane-d4	116			70.0-130

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

(LCS) R3470608-1 11/09/19 14:58 • (LCSD) R3470608-3 11/09/19 16:48

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	0.00528	0.00565	106	113	70.0-123			6.77	20
Ethylbenzene	0.00500	0.00477	0.00524	95.4	105	79.0-123			9.39	20
Methyl tert-butyl ether	0.00500	0.00533	0.00593	107	119	68.0-125			10.7	20
Toluene	0.00500	0.00502	0.00539	100	108	79.0-120			7.11	20
Xylenes, Total	0.0150	0.0144	0.0158	96.0	105	79.0-123			9.27	20
(S) Toluene-d8				102	101	80.0-120				
(S) 4-Bromofluorobenzene				97.8	96.9	77.0-126				
(S) 1,2-Dichloroethane-d4				117	123	70.0-130				

¹ Cp

² Tc

³ Ss

⁴ Cn

⁵ Sr

⁶ Qc

⁷ Gl

⁸ Al

⁹ Sc



Guide to Reading and Understanding Your Laboratory Report

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

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

Abbreviations and Definitions

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

Qualifier	Description
E	The analyte concentration exceeds the upper limit of the calibration range of the instrument established by the initial calibration (ICAL).
J	The identification of the analyte is acceptable; the reported value is an estimate.
J3	The associated batch QC was outside the established quality control range for precision.
J6	The sample matrix interfered with the ability to make any accurate determination; spike value is low.
P1	RPD value not applicable for sample concentrations less than 5 times the reporting limit.
T8	Sample(s) received past/too close to holding time expiration.
V	The sample concentration is too high to evaluate accurate spike recoveries.

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



Pace National is the only environmental laboratory accredited/certified to support your work nationwide from one location. One phone call, one point of contact, one laboratory. No other lab is as accessible or prepared to handle your needs throughout the country. Our capacity and capability from our single location laboratory is comparable to the collective totals of the network laboratories in our industry. The most significant benefit to our one location design is the design of our laboratory campus. The model is conducive to accelerated productivity, decreasing turn-around time, and preventing cross contamination, thus protecting sample integrity. Our focus on premium quality and prompt service allows us to be YOUR LAB OF CHOICE.

* 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 National.

State Accreditations

Alabama	40660	Nebraska	NE-OS-15-05
Alaska	17-026	Nevada	TN-03-2002-34
Arizona	AZ0612	New Hampshire	2975
Arkansas	88-0469	New Jersey–NELAP	TN002
California	2932	New Mexico ¹	n/a
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}	90010	South Carolina	84004
Kentucky ²	16	South Dakota	n/a
Louisiana	AI30792	Tennessee ^{1 4}	2006
Louisiana ¹	LA180010	Texas	T104704245-18-15
Maine	TN0002	Texas ⁵	LAB0152
Maryland	324	Utah	TN00003
Massachusetts	M-TN003	Vermont	VT2006
Michigan	9958	Virginia	460132
Minnesota	047-999-395	Washington	C847
Mississippi	TN00003	West Virginia	233
Missouri	340	Wisconsin	9980939910
Montana	CERT0086	Wyoming	A2LA

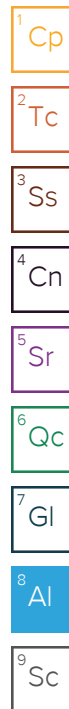
Third Party Federal Accreditations

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

Our Locations

Pace National has sixty-four client support centers that provide sample pickup and/or the delivery of sampling supplies. If you would like assistance from one of our support offices, please contact our main office. Pace National performs all testing at our central laboratory.



Company Name/Address: Caerus 143 Diamond Avenue Parachute, CO 81635				Billing Information: Caerus				Analysis / Container / Preservative										Chain of Custody Page ____ of ____ <div style="text-align: center;"> ESC <small>L.A.B S.C.I.E.N.C.E.S</small> <hr/> <small>YOUR LAB OF CHOICE</small> 12065 Lebanon Rd Mount Juliet, TN 37122 Phone: 615-758-5858 Phone: 800-767-5859 Fax: 615-758-5859 </div>			
Report to: Blair Rollins				Email To: brollins@caerusoilandgas.com																	
Project NPR 4thq Description:				City/State Collected:																	
Phone: Fax:		Client Project # NPR QRT		Lab Project #																	
Collected by (print): MK <i>CHANCE HOLDER</i>		Site/Facility ID # NPR		P.O. #																	
Collected by (signature): 		Rush? (Lab MUST Be Notified) _____ Same Day200% _____ Next Day100% _____ Two Day50% _____ Three Day25%		Date Results Needed Email? <input type="checkbox"/> No <input checked="" type="checkbox"/> Yes FAX? <input type="checkbox"/> No <input type="checkbox"/> Yes		No. of Cntrs															
Immediately Packed on Ice N ____ Y <input checked="" type="checkbox"/>																					
Sample ID		Comp/Grab	Matrix *	Depth	Date	Time		ALK/ALKBI/ALKCA	Br,Cl,F,SO4,NO2,NO3	Dissolved Metals (See Remarks)	Ammonia (H2SO4)	RSK175 (HCL)	Sulfide (NaOH+ZnAc)	BTEXM (8260)(HCL)	pH/SPCOND/TDS						
20191107 - NPR 1st		Grab	GW	—	11/7/19	930	12	X	X	X	X	X	X	X	X						
20191107 - NPR 2st						1000	12	X	X	X	X	X	X	X	X		01				
20191107 - NPR 3sp						1015	13	X	X	X	X	X	X	X	X		02				
20191107 - NPR 6st						1030	13	X	X	X	X	X	X	X	X		03				
20191107 - NPR 2MW						1100	12	X	X	X	X	X	X	X	X		04				
20191107 - NPR 3MW						1115	12	X	X	X	X	X	X	X	X		05				
20191107 - NPR 3st						1145	12	X	X	X	X	X	X	X	X		06				
20191107 - NPR 4MW						1200	12	X	X	X	X	X	X	X	X		07				
20191107 - NPR 13MW						1230	12	X	X	X	X	X	X	X	X		08				
20191107 - NPR 11st						1345	12	X	X	X	X	X	X	X	X		09				

* Matrix: SS - Soil GW - Groundwater WW - WasteWater DW - Drinking Water OT - Other Surface Water

Remarks: **Metals-As,Ba,Cd,Cr,Cu,Pb,Ag,Ca,Fe,K,Mg,Mn,Na,Se**

pH _____ Temp _____

Flow _____ Other _____

451016633448

Relinquished by: (Signature) 		Date: 11/7/19	Time: 1800	Received by: (Signature) 		Samples returned via: <input type="checkbox"/> UPS <input checked="" type="checkbox"/> FedEx <input type="checkbox"/> Courier <input type="checkbox"/> _____		Condition: (lab use only) <div style="text-align: center;"> </div>	
Relinquished by: (Signature) 		Date: 11/6/19	Time: 1700	Received by: (Signature) 		Temp: _____ °C Bottles Received: _____ 03-1-023 122		COC Seal Intact: _____ Y _____ N <input checked="" type="checkbox"/> NA	
Relinquished by: (Signature) 		Date:	Time:	Received for lab by: (Signature) 		Date: _____ Time: _____ 11-8-14 0845		pH Checked: _____ NCF: _____	

Pace Analytical National Center for Testing & Innovation
Cooler Receipt Form

Client: <i>Caerus</i>	<i>L1158611</i>
Cooler Received/Opened On: 11 /12 /19	Temperature: 2
Received By: Tanner Windham	
Signature: <i>[Signature]</i>	

Receipt Check List	NP	Yes	No
COC Seal Present / Intact?	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
COC Signed / Accurate?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Bottles arrive intact?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Correct bottles used?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Sufficient volume sent?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
If Applicable		<input checked="" type="checkbox"/>	<input type="checkbox"/>
VOA Zero headspace?		<input checked="" type="checkbox"/>	<input type="checkbox"/>
Preservation Correct / Checked?		<input checked="" type="checkbox"/>	<input type="checkbox"/>