STATE OF COLORADO

Eschberger - DNR, Amy <amy.eschberger@state.co.us>

Boettcher Limestone Quarry Reporting

Harkins, Sara <Sara_Harkins@golder.com> Wed, Aug 31, 2022 at 5:23 PM
To: "Eschberger - DNR, Amy" <amy.eschberger@state.co.us>
Cc: Michael TOELLE <mike.toelle@lafargeholcim.com>, Travis Weide <travis.weide@lafargeholcim.com>, "Moreno, Joanna" <Joanna_Moreno@golder.com>, "Thompson, Jennifer" <Jennifer_Thompson@golder.com>

Hello Amy,

On behalf of Holcim (US) Inc., Golder is pleased to submit the results of the 1st semi-annual 2022 groundwater sampling event at the Boettcher Limestone Quarry near La Porte, Colorado.

Please let us know if you have any questions or difficultly opening the document.

Thanks,

Sara

Sara Harkins, PG (WY)

Senior Geochemist/Geologist

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August 31, 2022 Project No. GL21467005-3-L-0

Ms. Amy Eschberger
Colorado Division of Reclamation Mining and Safety
Department of Natural Resources
1313 Sherman Street, Room 215
Denver, Colorado 80203

FIRST SEMI-ANNUAL EVENT 2022 GROUNDWATER SAMPLING AT THE BOETTCHER QUARRY

Dear Ms. Eschberger:

On behalf of Holcim (US) Inc., Golder Associates USA Inc. (Golder), a Member of WSP, is pleased to submit analytical laboratory results for the first semi-annual 2022 groundwater sampling event at the Boettcher Limestone Quarry near La Porte, Colorado. Attached are Tables 1 through 8, summarizing the results, and a copy of the laboratory reports (Attachment 1). Field sheets for the purging and sampling are presented in Attachment 2. In addition to sampling wells MW-1 through MW-8, a field duplicate at MW-1 (MW-20) and a field blank (MW-15) were collected. The locations of monitoring wells MW-1 through MW-8 are presented in Figure 1. The first semi-annual 2022 groundwater sampling event was the fourth time MW-8 was sampled.

In December 2016, the Colorado Division of Reclamation Mining and Safety approved a revision to change the required groundwater monitoring frequency from quarterly to semi-annually (Revision TR07) based on evidence that the groundwater wells were not fully recharging between sampling events. Figure 2 presents a graph of the monitoring well water elevations measured during each sampling event from 2013 to present.

Upon receipt of the laboratory reports, Golder reviewed the results, and a general analytical data evaluation was performed. Results of this evaluation included the following:

- Samples MW-1, MW-2, MW-6, MW-7, and MW-8 were received at the lab at the appropriate temperature. Due to a delay caused by the shipping courier, samples MW-20 (duplicate for MW-1), MW-3, MW-4, and MW-5 were received at 9.2°C (slightly above the 6°C guidance). The required analyses were performed.
    - Analytes that could potentially be influenced by samples received above the 6°C guidance are: alkalinity including bicarbonate (as $CaCO_3$), carbonate (as $CaCO_3$), and hydroxide (as $CaCO_3$), cyanide (free), chloride, fluoride, nitrate, nitrite, total nitrogen, pH, and total dissolved solids (TDS). The results from these analyses are consistent with previous sampling events for the wells.

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- The analyses were conducted within their respective United States Environmental Protection Agency-recommended hold times, apart from pH, TDS, chloride, and nitrogen species.
  - Measurements for pH should be conducted within 15 minutes of sample collection; thus, the laboratory pH measurement will always be out of hold time.
  - TDS analyses were run within the recommended hold time initially but required re-analysis on a dilution after the hold time for samples MW-1, MW-2, MW-4, MW-6, MW-7, and MW-8. TDS results are consistent with previous sampling events for these wells.
  - Chloride analyses were run within the recommended hold time initially but required re-analyses in samples MW-4, MW-5, and MW-7 to meet laboratory quality control standards. Chloride results are consistent with previous sampling events.
  - Shipping for samples MW-20 (duplicate for MW-1), MW-3, MW-4, and MW-5 was delayed and nitrate species including nitrate, nitrite, and total nitrogen were measured in these samples outside of the preferred hold time. However, results of nitrogen for samples MW-3, MW-4, and MW-5 are below detection and consistent with previous sampling events.

Based on the above review, the laboratory results are considered valid for the sampling event. Reported concentrations are consistent with previous events, and the analytes that exceeded the Interim Narrative Standard for this sampling event are listed by sampling location below:

- MW-1: manganese, uranium, and sulfate
- MW-2: barium, iron, manganese, gross alpha, and chloride
- MW-3: barium, boron, chloride, and fluoride
- MW-4: barium, chloride, fluoride, and total dissolved solids
- MW-5: iron, manganese, uranium, sulfate, and gross alpha
- MW-6: barium, iron, manganese, chloride, and gross alpha
- MW-7: barium, iron, manganese, and chloride
- MW-8: uranium, chloride, and antimony

Consistent with previous events, some sample dilutions are required by the analytical laboratory due to matrix interferences of non-target analytes and concerns of damaging equipment. This results in practical quantitation limits greater than the Interim Narrative Standard for thallium at MW-4, MW-6, MW-7, and MW-8. These constituents were not detected above the method detection limit (MDL), which was lower than the Interim Narrative Standard for thallium.

If you have any questions, please call the undersigned at (303) 980-0540.

Sincerely,

Golder Associates USA Inc.

Jennifer Thompson
Geochemist

Sara Harkins, PG
Senior Geochemist

JT/SH/df

Attachments: Table 1: Summary of Monitoring Results for MW-1
Table 2: Summary of Monitoring Results for MW-2
Table 3: Summary of Monitoring Results for MW-3
Table 4: Summary of Monitoring Results for MW-4
Table 5: Summary of Monitoring Results for MW-5
Table 6: Summary of Monitoring Results for MW-6
Table 7: Summary of Monitoring Results for MW-7
Table 8: Summary of Monitoring Results for MW-8
Figure 1: Location Map
Figure 2: Groundwater Elevations vs. Time
Attachment 1: ACZ Laboratory Reports
Attachment 2: Field Sheets

https://golderassociates-my.sharepoint.com/personal/dfabyanic_golder_com/documents/gl21467005-3-l-0_first_semiannual_event_2022_gws_boetcher_quarry_31aug22-.docx

TABLES

Table 1: Summary of Monitoring Results for MW-1

Date	Interim Narrative Standard	5/26/1999	7/21/1999	9/16/1999	11/10/1999	1/19/2000	3/13/2000	5/16/2000	7/10/2000	9/27/2010	3/31/2011	6/28/2011	8/31/2011	11/17/2011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/14/2013	2/18/2014
Metals																							
Arsenic, Dissolved (mg/L)	0.01	NA	< 0.005 U	0.002 B	0.0046	**0.02** B	**0.027**	0.01 B	**0.013** B	**0.015**	0.005 B	0.01 B	**0.011**	<0.01 U	< 0.01 U	0.003 B	0.001 B	0.002 B	0.002 B	< 0.005 U	0.002 B	< 0.005 U	0.001 B
Barium, Dissolved (mg/L)	2	< 0.05 U	0.013 B	< 0.05 U	< 0.05 U	0.02 B	< 0.05 U	< 0.05 U	0.014	< 0.08 U	0.04 B	0.005 B	< 0.08 U	<0.08 U	0.017 B	< 0.08 U	0.02 B	0.02 B	0.011 B	< 0.08 U	< 0.08 U	0.011 B	0.008 B
Boron, Dissolved (mg/L)	0.75	0.36	0.35	0.41	0.46	0.5	0.46	0.51	0.5	0.54	0.59	0.58	0.64	0.64	0.62	0.59	0.71	0.73	0.64	0.69	0.61	0.6	0.61
Chromium, Dissolved (mg/L)	0.1	< 0.3 U	< 0.1 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	<0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Copper, Dissolved (mg/L)	0.2	0.06 B	< 0.1 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	<0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.05 U
Iron, Dissolved (mg/L)	0.3	< 0.3 U	< 0.1 U	< 0.3 U	< 0.3 U	0.14 B	< 0.3 U	0.1 B	< 0.05	< 0.3 U	0.3	< 0.05 U	< 0.3 U	0.2 B	0.15	**1.4**	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.05 U
Lead, Dissolved (mg/L)	0.05	< 0.01 U	< 0.005 U	< 0.005 U	< 0.001 U	< 0.05 U	< 0.005 U	0.013	< 0.005	0.0019 B	0.0027 B	0.0052	0.0045	0.0007 B	< 0.003 U	0.0035	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U
Lithium, Dissolved (mg/L)	2.5	1.1	1.21	1	1	1.2	1.1	1.2	1.05	1.3	1.3	1.18	1.2	1.1	1.15	1.1	1.1	1.2	NA	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.08** B	0.05	**0.09** B	**0.1**	**0.06**	0.04 B	0.05 B	**0.053**	< 0.1 U	0.05 B	0.041	< 0.1 U	< 0.1 U	0.026 B	0.04 B	0.04 B	0.04 B	0.025	< 0.1 U	0.04 B	0.044	**0.054**
Selenium, Dissolved (mg/L)	0.02	**0.35**	**0.27**	**0.19**	**0.093**	**0.078**	**0.054**	**0.046**	**0.101**	**0.4928**	**0.2684**	**0.2656**	**0.2826**	**0.275**	**0.2328**	**0.2204**	**0.1995**	**0.1756**	**0.1826**	**0.2278**	**0.257**	**0.2616**	**0.2067**
Thallium, Dissolved (mg/L)	0.002	< 5 U	< 0.01 U	< 5 U	0.00014 B	< 0.005 U	< 0.001 U	< 0.003 U	0.0007 B	0.0016 B	**0.0025** B	0.0014 B	0.0017 B	<0.003 U	< 0.003 U	0.0007 B	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.0192	0.019	0.0205	0.0199	0.0193	**0.0364**	**0.0303**	**0.0397**	**0.0344**	**0.0403**	**0.0338**	**0.0367**	**0.0433**	**0.0371**	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.3 U	< 0.1 U	< 0.3 U	< 0.3 U	0.07 B	< 0.3 U	< 0.3 U	< 0.05	0.13 B	< 0.3 U	< 0.05 U	< 0.3 U	<0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	0.02	< 0.3 U	< 0.3 U	< 0.05 U	0.01 B
Other																							
Chloride (mg/L)	250	20	18	36	22	31	28	25	25	< 300 U	< 300 U	< 300 U	40 B	36.4 B	50 B	< 250 U	< 250 U	< 250 U	86 B	< 250 U	55.5 B	< 250 U	< 250 U
Fluoride (mg/L)	2	0.7	0.7	0.6	0.6	0.8	0.7	0.6	0.5	0.4 B	0.5	0.4 B	0.4 B	0.6	0.6	0.6	0.6	0.7	0.6	0.5	0.5	0.5	0.5
Nitrate as N (mg/L)	10	**14.3**	**19.5**	**19.6**	**14**	9.4	NA	3.77	3.28	**96**	**88**	**70**	**81.6**	**81**	**76**	**89**	**85**	**78.5**	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1	0.07	0.16	< 1	0.56	0.03	NA	0.04 B	0.66	0.24	0.36	0.34	0.4	0.26	0.29	0.56	0.21	0.11	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	**14.4**	**19.7**	**19.6**	**14.6**	9.5	NA B	3.81	3.94	**96**	**88**	**70**	**82**	**81**	**76**	**90**	**85**	**78.6**	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8	7.3	7.4	7.6	8.1	7.5	7.5	7.6	8.1 H	8.1 H	8.0 H	8.0 H	8.0 H	8.0 H	8.1 H	8.2 H	8.2 H	8.1 H	8.0 H	8.0 H	7.8 H	7.9 H
Total Dissolved Solids, filterable residue (mg/L)	8595	7,690.0	7,000.0	6,820.0	7,190.0	6,650.0	6,810.0	6,750.0	6,020.0	7,770	7,560	7,610	7,540	7,110	7,150	6,770	6,770	6,660	6,610	7,420	6,650 H	7,800 H	7,330
Sulfate (mg/L)	250	**5,210**	**4,780**	**4,470**	**5,180**	**4,530**	**4,370**	**4,410**	**4,000**	**4,840**	**4,540**	**4,820**	**4,620**	**4,306**	**4,056**	**4,090**	**4,041**	**3,991**	**3,980**	**4,610**	**4,230**	**5,150**	**4,980**
Gross Alpha (pCi/L)	15.0	**32**	**62**	**45**	**88**	0	**35**	2.7	4.9	**41 (±31)**	**53 (±31)**	**22 (±25)**	5.8 (±29)	**32 (±30)**	**48 (±30)**	**180 (±52)**	**24 (±23)**	-0.51 (±22)	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	**	0	69	25	100	0.7	18	0	53	39 (±28)	36 (±28)	20 (±28)	23 (±32)	27 (±31)	8.1 (±25)	190 (±36)	25 (±29)	12 (±27)	NA	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																							
Field pH (s.u)	6.5 - 8.5	NA	NA	NA	NA	NA	NA	NA	NA	7.4	7.42	7.27	7.42	7.42	7.6	7.36	7.42	7.62	7.59	7.23	7.34	7.40	7.39
Field Conductivity (µS/cm)	none	NA	NA	NA	NA	NA	NA	NA	NA	904	860	7,390	7,960	6,580	7,830	37.21	6,170	7,740	7,620	8,210	7,800	8,888	8,180
Temperature (Degrees Celsius)	none	NA	NA	NA	NA	NA	NA	NA	NA	16.83	14.6	18.7	20.9	16.1	15.6	18.4	16.1	14.6	14.3	16.3	17.1	13.62	14
Supplementary Analytes (Not Historically analyzed)																							
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	279	305	309	312	311	333	334	285	337	334	334	330	320	357
Carbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	323	225	305	270	240	198	222	218	169	178	276	258	302	254
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	336	240	313	272	246	210	213	203	175	180	265	225	308	256
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	22	18	22.7	17	15	14.8	17	17	13	14.5	19	20	20.7	16.5
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	1,660	1,800	1,680	1,670	1,610	1,680	1,630	1,650	1,770	1,670	1,660	1,580	1,820	1,790
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 1: Summary of Monitoring Results for MW-1

Date	Interim Narrative Standard	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021	6/23/2022
Metals																							
Arsenic, Dissolved (mg/L)	0.01	0.001 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001 B	0.0018	0.002 B	0.0027	0.00163	< 0.005 U	0.00135 B	0.00145 B
Barium, Dissolved (mg/L)	2.0	0.004 B	0.006 B	0.007 B	0.009 B	< 0.08 U	< 0.08 U	< 0.08 U	0.03 B	< 0.08 U	< 0.08 U	0.007 B	< 0.08 U	< 0.08 U	< 0.08 U	<0.08 U	<0.2 U	< 0.04 U	0.041	0.0104	0.00929 B	0.00991 B	0.0105 B
Boron, Dissolved (mg/L)	0.75	0.57	0.56	0.58	0.59	0.55	0.57	0.52	0.6	0.51	0.51	0.56	0.61	0.61	0.65	0.62	0.7	0.6	0.68	0.744	0.644	0.658	0.645
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.002 U	< 0.003 U	0.001 B	< 0.002 U	< 0.01 U	< 0.01 U	<0.01 U
Copper, Dissolved (mg/L)	0.2	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.0028 U	< 0.004 U	< 0.004 U	< 0.002 U	< 0.01 U	0.0107	<0.01 U
Iron, Dissolved (mg/L)	0.3	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	<0.3 U	0.018 U	< 0.2 U	**0.93**	< 0.3 U	< 0.75 U	< 0.15 U	<0.75 U
Lead, Dissolved (mg/L)	0.05	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.0005 U	0.002	< 0.0005 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.13	1.23	1.05	1.09	1.09	1.24	1.28	1.13
Manganese, Dissolved (mg/L)	0.05	0.033	0.045	0.041	**0.052**	< 0.1 U	0.04 B	< 0.1 U	0.04 B	< 0.1 U	< 0.1 U	0.04	< 0.1 U	< 0.1 U	< 0.1 U	0.022	0.05 B	0.03	0.035	0.038	**0.0741**	**0.0904**	**0.053**
Selenium, Dissolved (mg/L)	0.02	**0.2775**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.0904**	**0.0998**	**0.0474**	**0.0378**	**0.0271**	**0.219**	**0.034**	0.0174
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.0003 U	< 0.001 U	< 0.00125 U	0.000465 B	< 0.00125 U	<0.00125 U
Uranium, Dissolved (mg/L)	0.0300	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.035**	**0.0352**	**0.0407**	**0.0385**	**0.0308**	**0.0452**	**0.0406**	**0.0395**
Zinc, Dissolved (mg/L)	2.0	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.3 U	<0.3 U	< 0.05 U	< 0.03 U	< 0.015 U	< 0.075 U	< 0.075 U	<0.075 U
Other																							
Chloride (mg/L)	250	< 250 U	< 250 U	< 250 U	68.9 B	154 B	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	47.5 B	32.2 B	41.3 BH	27.5 B	<200 U	<200 U	36.2 B	36.8 B	36.6 B	< 200 U	< 200 U	25.4 B
Fluoride (mg/L)	2.0	0.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.62	0.6	0.7	0.6	0.62	0.44	0.58	0.54
Nitrate as N (mg/L)	10.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**15**	**17**	5.93	2.42	0.857	**13** H	2.96	0.468
Nitrite as N (mg/L)	1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.06	0.17	0.04 B	0.02 B	0.013 B	0.14 H	< 0.05 U	0.013 B
Nitrate+Nitrite as N (mg/L)	10.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**15.2**	**16.8**	5.97	2.44	0.87	**13.5** H	2.96	0.481
Lab pH (s.u)	6.5 - 8.5	7.8 H	7.8 H	8 H	7.9 H	7.9 H	8 H	7.9 H	7.84	7.9 H	8.1 H	8.1 H	8.2 H	8 H	8.3 H	8.2	7.9 H	8.2 H	8.2 H	8.2 H	8.1 H	8.2 H	8.2 H
Total Dissolved Solids, filterable residue (mg/L)	8595	6,910 H	6,950	7,900	7,380	8,210 ^	7,760 ^	8,020	7,660	8,450	8,040	7,460	7,010	7,070	7,240	6,910	6,670	6,280	6,320	6,110	8,260	8190	6780 H
Sulfate (mg/L)	250	**6,850**	**4,670**	**4,300**	**4,800**	**5,540**	**5,640**	**5,430**	**5,250**	**5,470**	**5,540**	**4,700**	**4,690**	**4,340** H	**4,530**	**5,090**	**5,040**	**4,230**	**4,120**	**4,470**	**5,730**	**5,750**	**4,400**
Gross Alpha (pCi/L)	15.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**40 (±31)**	**20 (±18)**	**54(±26)**	**67 (±26)**	**39 (±25)**	7.6(±18)	**43(±36)**	5.2(±24)
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	33 (±29)	28 (±22)	7.9(±19)	22(±22)	13 (±21)	-5.6(±23)	17(±34)	26(±32)
Field Parameters (Not Available pre-2010))																							
Field pH (s.u)	6.5 - 8.5	7.15	7.35	7.4	7.3	6.99	7.42	7.78	7.84	7.39	7.34	7.56	8.46	7.71	7.46	7.64	7.69	7.85	7.80	7.73	7.46	7.54	7.38
Field Conductivity (µS/cm)	none	9,650	8,560	8,600	5,330	8,050	9,130	7,000	6,580	7,650	8,610	8,280	8,380	7,520	8,480	7,900	6,740	4,890	5,700	6,929	7,998	8,895	8,567
Temperature (Degrees Celsius)	none	15.9	15.3	9.1	14.3	16	15.8	16.3	13.9	17	18	16.5	16.5	12.9	17	16.6	17.2	13.1	16.5	13.6	17.3	13.84	15.1
Supplementary Analytes (Not Historically analyzed)																							
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.8 U	<1 U	< 0.3 U	1.93	0.058	< 0.075 U	0.1	<0.075 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.004 B	0.0021	0.004 B	0.0024 B	0.00171 B	< 0.01 U	0.00233 B	0.00212 B
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0003 U	< 0.0004 U	< 0.0003 U	< 0.00025 U	< 0.00125 U	< 0.00125 U	<0.00125 U
Bicarbonate as CaCO3 (mg/L)	none	333	310	325	NA	320	302	306	319	307	329	325	369	361	358	NA	376 H	402	458	421	342	358	413
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	3.1 B	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U	6.7 B	<20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0003 U	< 0.0003 U	0.0002 B	< 0.00025 U	< 0.00125 U	< 0.00125 U	<0.00125 U
Calcium, Dissolved (mg/L)	none	330	287	309	230	301	320	289	279	345	275	269	187	175	220	163	171	131	110	109	299	161	136
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0018	0.00349	0.0019	0.002	0.00168	0.00708	0.00308	0.00269
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U	< 0.003 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	<0.01 U
Magnesium, Dissolved (mg/L)	none	364	297	303	247	300	342	301	290	376	301	283	202	188	225	175	170	135	116	116	308	178	139
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	<0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.085	0.1 B	0.09	0.084	0.0737	0.0754	0.0826	0.0695
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.009 B	<0.2 U	0.007	0.0077	0.00692	0.0261	0.00881	0.00927
Potassium, Dissolved (mg/L)	none	18.9	19.4	21.8	15.6	19	20	18	18.6	22	16	20.5	13	12	16	12	13	10	10.1	9.56	19.3	11.6	10.7
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.0005 U	< 0.001 U	< 0.0005 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Sodium, Dissolved (mg/L)	none	1,910	1,570	1,510	1,770	1,670	1,740	1,770	1,720	1,570	1,710	1,640	1,710	1,660	1,650	1,760	1,730	1,710	1,680	1,640	1,630	1,850	1790
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U	<0.01 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 2: Summary of Monitoring Results for MW-2

Date	Interim Narrative Standard	4/28/1999	7/21/1999	9/16/1999	11/10/1999	1/19/2000	3/13/2000	5/16/2000	7/10/2000	9/27/2010	3/31/2011	6/28/2011	8/31/2011	11/17/2011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/14/2013	2/18/2014
Metals																							
Arsenic, Dissolved (mg/L)	0.01	NA	0.003 B	0.004 B	**0.0567**	**0.05** B	**0.045**	**0.062**	**0.042**	**0.036**	**0.021**	**0.03**	**0.036**	< 0.01 U	< 0.01 U	< 0.01 U	< 0.005 U	0.001 B	0.002 B	0.001 B	0.002 B	0.001 B	0.004 B
Barium, Dissolved (mg/L)	2	0.4	0.42	0.41	0.41	0.4	0.42	0.41	0.398	**2.09**	1.33	1.09	0.96	1.09	1.42	1.55	1.72	1.26	1.3	1.07	1.23	1.22	1.74
Boron, Dissolved (mg/L)	0.75	0.73	0.74	0.72	0.74	0.69	0.73	0.74	0.67	0.7	0.64	0.69	**0.78**	0.64	0.73	0.72	0.70	**0.79**	0.71	**0.76**	0.70	0.74	0.7
Chromium, Dissolved (mg/L)	0.1	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Copper, Dissolved (mg/L)	0.2	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.05 U
Iron, Dissolved (mg/L)	0.3	< 0.3 U	< 0.3 U	0.27 B	0.11 B	0.16 B	0.2 B	**0.5**	0.07	< 0.3 U	0.1 B	0.15	< 0.3 U	0.3 B	**0.91**	**0.8**	**0.7**	0.16	**1.1**	0.2 B	**0.9**	**1.3**	**1.51**
Lead, Dissolved (mg/L)	0.05	< 0.005 U	< 0.005 U	0.001 B	< 0.005 U	< 0.005 U	< 0.005 U	0.005 B	0.002 B	< 0.003 U	< 0.003 U	0.0011 B	0.0006 B	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U
Lithium, Dissolved (mg/L)	2.5	1	1	1	1	1	1.1	1	0.91	1.3	1.2	1.12	1.1	1.1	1.16	1.2	1.2	1.36	NA	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.49**	**0.44**	**0.4**	**0.33**	**0.33**	**0.33**	**0.33**	**0.329**	**0.08** B	**0.12**	**0.139**	**0.1**	**0.12**	**0.102**	**0.06** B	**0.06** B	**0.114**	**0.121**	**0.09**	**0.11**	**0.127**	**0.099**
Selenium, Dissolved (mg/L)	0.02	< 0.005 U	0.002 B	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	0.0006 B	0.0015	0.0006 B	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	0.0008 B	0.0007 B	0.0011	0.0032	< 0.001 U	0.0006 B	< 0.001 U
Thallium, Dissolved (mg/L)	0.002	< 0.01 U	< 0.01 U	< 5 U	< 0.0003 U	< 0.005 U	< 0.001 U	< 0.003 U	< 0.003 U	< 0.003 U	0.0007 B	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U	< 0.003 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.00465	0.005	0.0041	0.0037	0.0042	0.0048	0.0033	0.0025 B	< 0.003 U	0.0011 B	0.0009 B	0.0012 B	0.0012 B	0.0012 B	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.05 U
Other																							
Chloride (mg/L)	250	**2,890**	**2,260**	**2,670**	**2,700**	**2,240**	**2,880**	**3,100**	**2730**	**3,050**	**3,100**	**3,090**	**3,240**	**3,017**	**3,052**	**3,079**	**3,188**	**2,968**	**3,227**	**3,220**	**2,960**	**3,080**	**3,180**
Fluoride (mg/L)	2	1.7	1.8	1.7	1.5	1.8	1.7	**2.1**	1.8	1.7	1.5	1.5	1.4	1.6	1.5	1.6	1.5	1.7	1.7	1.6	1.6	1.5	1.5
Nitrate as N (mg/L)	10	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	0.03	NA	< 0.1 U	< 0.1 U	0.14	0.07 B	0.06 B	0.03 B	< 0.1 U	0.04 B	0.04 B	0.03 B	0.04 B	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	0.03 B	NA	< 0.1 U	< 0.1 U	0.14	0.07 B	0.06 B	0.03 B	< 0.1 U	0.04 B	0.04 B	0.03 B	0.04 B	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8.2	8.2	8.1	8	8.5	7.9	8	8.1	**8.6** H	8.2 H	8.4 H	8.3 H	8.2 H	8.3 H	8.3 H	**8.6** H	8.3 H	8.3 H	8.3 H	8.2 H	8.1 H	8.0 H
Total Dissolved Solids, filterable residue (mg/L)	7084	5,680.0	5,640.0	5,680.0	5,700.0	5,600.0	5,740.0	5,600.0	5,700.0	6,270	6,390	6,350	6,320	6,140	6,340	6,120	6,270	6,180	6,300	6,400	6,210 H	6,150 H	5,720
Sulfate (mg/L)	250	140	160	190	210	240	220	220	220	< 300 U	60 B	90 B	< 100 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U
Gross Alpha (pCi/L)	15	NA	**44**	0	**140**	0.9	0	1	8.4	15 (±26)	9.8 (±25)	**18 (±24)**	0 (±26)	**38 (±38)**	-1.1 (±21)	5.1 (±12)	-6.2 (±13)	-12 (±21)	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	**	NA	81	52	80	52	19	26	0	4.5 (±30)	42 (±31)	12 (±29)	0 (±27)	73 (±44)	8.5 (±29)	82 (±30)	21 (±26)	11 (±28)	NA	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																							
Field pH (s.u)	6.5 - 8.5	NA	NA	NA	NA	NA	NA	NA	NA	8.71	7.84	7.98	7.54	7.91	8.2	7.61	9.58	8.11	7.6	7.74	7.61	7.61	7.6
Field Conductivity (µS/cm)	none	NA	NA	NA	NA	NA	NA	NA	NA	1,169	1,088	10,160	10,350	10,500	10,630	11	10,640	10,520	6,840	1,130	10,840	11,220	10,440
Temperature (Degrees Celsius)	none	NA	NA	NA	NA	NA	NA	NA	NA	15.47	16	21.4	22.4	12.5	14.5	14.6	19.4	13.9	12.2	20.8	18.7	12.58	12.9
Supplementary Analytes (Not Historically analyzed)																							
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	993	965	978	953	914	995	968	964	978	955	963	979	1020	1,060
Carbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	108	< 20 U	37	22	57	< 20 U	21	< 20 U	23	29	22	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	14	14	14.4	16	15	15.5	14	16	16.3	15.1	18	17	16.9	17.6
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	8	8	7.8	7	7	7.4	8	8	8	7.5	8	7	7.4	7.3
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	7 B	8 B	7.4	4 B	6 B	6.6	7 B	7 B	10.8 B	7.0	7	6 B	6.1	6.2
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	2,480	2,430	2,470	2,410	2,260	2,410	2,420	2,420	2,310	2,550	2,500	2,540	2,490	2,440
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit
U = Analyte not detected, reported less than the practical quantitation limit
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NA = Analyte not analyzed
^ = Second and third quarter 2015 reports presented calculated total dissolved solids results
Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)
*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)
Values in **bold** indicate a value greater than the Interim Narrative Standard
**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 2: Summary of Monitoring Results for MW-2

Date	Interim Narrative Standard	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021	6/23/2022
Metals																							
Arsenic, Dissolved (mg/L)	0.01	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.004 B	0.0063	0.004 B	0.0043	0.00527	0.0041 B	0.00377 B	0.0039 B
Barium, Dissolved (mg/L)	2.0	**2.28**	**2.57**	1.71	**2.03**	**2.65**	**2.04**	1.90	2.0	1.93	**2.23**	1.88	**2.61**	**2.77**	**3.32**	**3.22**	**3.19**	**3.85**	**3.75**	**2.99**	**3.38**	**3.11**	**3.69**
Boron, Dissolved (mg/L)	0.75	0.75	0.75	0.74	0.73	0.72	0.75	0.68	**0.79**	0.68	0.73	0.71	**0.77**	0.72	**0.78**	0.75	**0.8**	**0.76**	**0.76**	**0.784**	**0.802**	**0.762**	0.711
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.002 U	< 0.003 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U	<0.01 U
Copper, Dissolved (mg/L)	0.2	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005 B	<0.002 U	< 0.004 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.01 U	<0.01 U
Iron, Dissolved (mg/L)	0.3	**2.5**	**1.16**	**0.82**	**0.38**	**0.6**	**0.7**	**0.4**	**0.4** B	0.2 B	**1.2**	0.28	**0.5**	0.3	0.3	**0.4**	**0.4**	**0.38**	**0.37**	**0.34**	< 0.75 U	0.226	**0.588** B
Lead, Dissolved (mg/L)	0.05	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.16	1.31	1.83	1.19	1.16	1.15	1.23	1.14
Manganese, Dissolved (mg/L)	0.05	**0.097**	**0.105**	**0.103**	**0.075**	0.05 B	**0.07** B	**0.08** B	**0.08** B	0.05 B	**0.10**	**0.06**	0.05 B	< 0.1 U	**0.06** B	0.04 B	**0.07** B	**0.054**	**0.0639**	**0.0556**	**0.0577**	**0.0598**	**0.0529**
Selenium, Dissolved (mg/L)	0.02	0.0007 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	0.0004	< 0.0005 U	< 0.001 U	< 0.005 U	0.00125 U	< 0.00125 U	<0.00125 U
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.00005 U	< 0.001 U	< 0.00125 U	0.00033 B	< 0.00125 U	<0.00125 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0028 B	0.0028	0.0026 B	0.0028	0.00232	0.00246 B	0.00227 B	0.00303
Zinc, Dissolved (mg/L)	2.0	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.3 U	<0.3 U	< 0.05 U	< 0.02 U	< 0.015 U	< 0.075 U	< 0.075 U	<0.075 U
Other																							
Chloride (mg/L)	250	**3,240**	**2,930**	**2,980**	**2,990**	**3,150**	**3,100**	**3,040**	**3,240**	**3,120**	**3,110**	**3,010**	**3,170**	**3,070**	**3,030**	**3,530**	**3,340**	**3,130**	**3,090**	**3,820**	**3,250**	**3,290**	**3,630**
Fluoride (mg/L)	2	1.48	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.3	1.6	1.4	1.3	1.39	1.46	1.48	1.35
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 B	<0.1 U	0.67	0.06	< 0.1	< 0.1 UH	< 0.1 U	<0.1 U
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05 U	<0.05 U	< 0.01 U	<0.05 U	< 0.05 U	< 0.05 UH	< 0.05 U	<0.05 U
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.08 B	<0.1 U	0.67	0.06 B	< 0.1 U	< 0.1 UH	< 0.1 U	<0.1 U
Lab pH (s.u)	6.5 - 8.5	8.0 H	8.0 H	8.3 H	8.0 H	8.0 H	8.3 H	8.2 H	8.3	8.1 H	8.4 H	8.4 H	8.2 H	8.0 H	8.0 H	8.2 H	8 H	8.1 H	8.1 H	8.1 H	8.3 H	8 H	8.2 H
Total Dissolved Solids, filterable residue (mg/L)	7084	6,040 H	5,730	6,180	6,230	6,000 ^	5,520 ^	6,020	6,230	6,080	6,010	6,300	6,160	6,400	6,270 H	6,280	6,310	6,210	6,260	6,450	6,270	6,400	6,280 H
Sulfate (mg/L)	250	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 125 U	< 250 U	< 125 U	< 250 U	< 200 U	22 B	<100 U	<100 U	< 40 U	< 100 U	< 200 U	< 100 U	< 100 U	<100 U
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**20 (±18)**	0.14 (±18)	10(±24)	**20 (±21)**	11 (±23)	11(±21)	1.4(±27)	**21(±28)**
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	25 (±21)	-3.9 (±30)	41(±31)	0.8 (±26)	-3.2 (±26)	27(±28)	-8.6(±28)	17(±32)
Field Parameters (Not Available pre-2010))																							
Field pH (s.u)	6.5 - 8.5	7.32	6.95	7.6	7.56	7.38	7.53	7.99	8.28	7.51	7.63	7.53	8.02	8.06	7.93	7.53	8.15	8.04	8.03	7.82	8.02	7.95	7.47
Field Conductivity (µS/cm)	none	11,040	11,310	11,100	11,440	9,630	11,050	6,750	8,770	10,020	10,890	10,510	10,360	10,570	11,060	11,000	11,080	6,730	8,600	9,622	10,340	11,199	11,428
Temperature (Degrees Celsius)	none	16.7	15.7	7.5	11.7	17.3	17.6	14.9	16.8	15.6	17.1	14.3	18.5	12.2	18.1	13.9	18.6	13.3	20	11.5	20.7	13.8	16.1
Supplementary Analytes (Not Historically analyzed)																							
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.8 U	<1 U	< 0.05 U	< 0.02 U	< 0.015 U	< 0.075 U	< 0.075 U	<0.075 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.0023	0.003 B	0.0017 B	**< 0.01** U	< 0.01 U	**< 0.01** U	0.00349 B
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0003 U	< 0.0004 U	< 0.0003 U	< 0.00025 U	0.00125 U	< 0.00125 U	<0.00125 U
Bicarbonate as CaCO3 (mg/L)	none	1,100	1,080	1,100	NA	1,070	1,040	1,050	1,040	1,100	1,000	1,010	1,070	1,030	1,080	NA	1,090 H	1080	1,140	1,040	1,030	1,020	1,030
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	40.9	40.7	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U	< 20 U	<20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	0.00011 B	< 0.0003 U	< 0.0003 U	0.000077 B	0.00125 U	0.000349 B	<0.00125 U
Calcium, Dissolved (mg/L)	none	18.2	17.9	17.4	17.5	17.3	17.3	17.2	18	16.9	17.5	16.6	16.7	16.6	16.8	18.6	17.3	18.1	18.6	17.6	18.3	17.6	18.5
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	0.00009 B	< 0.0003 U	0.0002 B	0.000073 B	0.00125 U	< 0.00125 U	<0.00125 U
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.004 B	< 0.003 U	< 0.01 U	0.003 B	0.0063 B	0.0037 B	<0.01 U
Magnesium, Dissolved (mg/L)	none	6.9	6.6	7.4	7.4	7.0	8.0	7.0	8.0 B	7.0	8.0	6.6	7.0	7.0	7.0	7.0	6	6.6	6.6	6.95	6.26	6.67	7.03
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	<0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.0013 U	0.001 B	0.0009 B	0.00102	< 0.0025 U	0.00216 B	0.00202 B
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.02 U	<0.001 U	< 0.002 U	< 0.001 U	< 0.001 U	< 0.005 U	< 0.005 U	<0.005 U
Potassium, Dissolved (mg/L)	none	6.5	6.1	6	6.4	7.0	7.0	6.0	8.0	6.0	6.0	6.7	6.0	6.0	6.0	9.0	6	6.8	7.7	5.7	5.54	7.15	5.99
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0005 U	< 0.0005 U	0.0006 B	< 0.0025 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Sodium, Dissolved (mg/L)	none	2,440	2,330	2,260	2,390	2,270	2,370	2,260	2,560	2,350	2,230	2,430	2,430	2,270	2,360	2,460	2,420	2,420	2,440	2,160	2,360	2,450	2,370
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	< 0.003 U	< 0.004 U	0.00185 B	< 0.01 U	< 0.01 U	<0.01 U

Notes:
B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit
U = Analyte not detected, reported less than the practical quantitation limit
H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.
NA = Analyte not analyzed
^ = Second and third quarter 2015 reports presented calculated total dissolved solids results
Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)
*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)
Values in **bold** indicate a value greater than the Interim Narrative Standard
**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 3: Summary of Monitoring Results for MW-3

Date	Interim Narrative Standard	4/28/1999	7/21/1999	9/16/1999	11/10/1999	1/19/2000	3/13/2000	5/16/2000	7/10/2000	9/27/2010	3/31/2011	6/30/2011	8/31/2011	11/17/2011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/14/2013
Metals																						
Arsenic, Dissolved (mg/L)	0.01	NA	0.005	0.005	**0.0362**	**0.03** B	**0.025**	**0.036**	**0.025**	**0.019**	0.01	**0.011**	**0.02**	< 0.004 U	< 0.01 U	0.0011 B	< 0.005 U	0.0005 B	0.0008 B	< 0.005 U	0.001 B	< 0.002 U
Barium, Dissolved (mg/L)	2	0.177	0.172	0.218	0.213	0.249	0.261	0.287	0.307	**2.4**	**2.95**	**2.23**	**2.73**	**2.25**	**2.51**	**2.08**	**2.52**	**2.23**	**2.5**	**2.20**	**2.41**	**2.25**
Boron, Dissolved (mg/L)	0.75	0.63	0.53	0.62	0.58	0.62	0.62	0.6	0.6	**0.77**	0.75	0.74	**0.8**	**0.78**	**0.77**	**0.76**	**0.76**	**0.85**	**0.79**	**0.84**	0.75	**0.76**
Chromium, Dissolved (mg/L)	0.1	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.05 U	0.003 B	0.001 B	< 0.01 U	0.004 B	< 0.004 U	< 0.01 U	< 0.002 U	< 0.01 U	< 0.01 U	< 0.004 U	< 0.01 U	< 0.01 U	< 0.004 U
Copper, Dissolved (mg/L)	0.2	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.05 U	< 0.1 U	< 0.1 U	< 0.3 U	< 0.1 U	< 0.1 U	< 0.05 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U
Iron, Dissolved (mg/L)	0.3	0.02 B	0.03 B	0.12	0.03 B	0.03 B	0.05 B	0.17	0.02 B	0.04 B	0.27	< 0.3 U	< 0.1 U	0.1	0.22	**0.32**	< 0.3 U	0.1	0.11	< 0.3 U	< 0.3 U	0.14
Lead, Dissolved (mg/L)	0.05	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	0.0031	< 0.003 U	< 0.001 U	0.0007 B	0.0002 *B	0.0004 B	< 0.001 U	< 0.003 U	0.0007	< 0.003 U	0.0003 B	< 0.001 U	< 0.003 U	< 0.003 U	< 0.001 U
Lithium, Dissolved (mg/L)	2.5	0.71	0.65	0.6	0.7	0.75	0.74	0.7	0.67	0.8	0.74	0.8	0.71	0.64	0.72	0.7	0.7	0.83	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.19**	0.05	**0.06**	0.05 B	0.05	0.05	**0.07**	**0.06**	0.04 B	0.05	0.03 B	0.04 B	0.03 B	0.021 B	0.034	< 0.1 U	0.047	0.026	< 0.1	< 0.1 U	0.031
Selenium, Dissolved (mg/L)	0.02	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	0.0006	0.0012	< 0.001 U	0.0005	< 0.005 U	0.0065	0.0007	< 0.001 U	0.0005 B	0.0006	0.0043	< 0.001 U	0.0003 B
Thallium, Dissolved (mg/L)	0.002	< 0.01 U	< 0.01 U	< 2 U	< 0.0003 U	< 0.005 U	< 0.0005 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.003 U	< 0.001 U	< 0.001 U	< 0.003 U	< 0.0005 U	< 0.003 U	< 0.003 U	< 0.001 U	< 0.003 U	< 0.003 U	< 0.001 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.00871	0.007	0.0065	0.0058	0.0058	0.0015	0.0008 B	0.001 B	0.0006 B	0.0012	0.0006 B	0.0011	0.0005 B	0.0005 B	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.05 U	< 0.1 U	< 0.1 U	< 0.3 U	< 0.1 U	< 0.1 U	< 0.05 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U
Other																						
Chloride (mg/L)	250	**1,480**	**1,350**	**1,310**	**1,450**	**1,360**	**1,480**	**1,400**	**1,460**	**1,550**	**1,530**	**1,550**	**1,620**	**1,530**	**1,565**	**1,505**	**1,681**	**1,721**	**1,665**	**1,620**	**1,570**	**1,610**
Fluoride (mg/L)	2	**2.4**	**2.8**	**3** B	**2.2**	**3** B	**2.6**	**2.8**	**2.6**	**2.4**	**2.3**	**2.2**	**2.4**	**2.4**	**2.3**	**2.5**	**2.3**	**2.4**	**2.3**	**2.4**	**2.4**	**2.3**
Nitrate as N (mg/L)	10	< 0.1 U	< 0.1 U	0.02	< 0.1 U	< 0.1 U	NA	< 0.1 U	0.17	< 0.1 U	0.37	0.79	0.03 B	< 0.1 U	< 0.1 U	0.02 B	0.17	0.09 B	NA	NA	NA	NA
Nitrite as N (mg/L)	1	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	< 0.1 U	< 0.1 U	0.02 B	< 1 U	< 0.1 U	NA	< 0.1 U	0.17	< 0.1 U	0.37	0.79	0.03 B	< 0.1 U	< 0.1 U	0.02 B	0.17	0.09 B	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8.5	**8.9**	**8.6**	8.4	**8.6**	8.2	8.2	8.4	**8.6** H	8.4 H	**8.6** H	8.5 H	8.2 H	8.4 H	8.4 H	8.5 H	8.5 H	8.5 H	8.4 H	8.5 H	8.4 H
Total Dissolved Solids, filterable residue (mg/L)	4620	3,780.0	3,740.0	3,690.0	3,720.0	3,660.0	3,680.0	3,620.0	3,680.0	3,930	3,940	4,000	3,940	3,860	4,000	3,790	4,000	3,950	3,990	4,000	4,000	3,880 H
Sulfate (mg/L)	250	140	110	100	100	90	90	90	90	< 100 U	< 100 U	< 300 U	< 50 U	< 125 U	< 125 U	30.1 B	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U
Gross Alpha (pCi/L)	15	NA	**54**	0	**77**	15	8.4	6.2	9.6	5.7 (±13)	**33 (±20)**	5.7 (±17)	15 (±18)	**20 (±18)**	8 (±13)	**66 (±27)**	0.85 (±14)	-8.2 (±8.6)	NA	NA	NA	NA
Gross Beta (pCi/L)	**	NA	25	0	64	19	6.7	32	4.7	3.2 (±17)	25 (±21)	7.2 (±18)	5 (±19)	5.4 (±18)	13 (±18)	110 (±24)	15 (±17)	-4.9 (±18)	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																						
Field pH (s.u)	6.5 - 8.5	NA	NA	NA	NA	NA	NA	NA	NA	8.01	8.06	NA	8.46	7.98	8.36	7.95	8.14	8.34	8.24	8.31	8.25	8.15
Field Conductivity (µS/cm)	none	NA	NA	NA	NA	NA	NA	NA	NA	6186	675	NA	6,660	5,240	6,710	7	6,270	6,980	6,840	7,010	6,920	7,093
Temperature (Degrees Celsius)	none	NA	NA	NA	NA	NA	NA	NA	NA	17.55	16	NA	30.4	13.8	17.7	22.2	20.4	13.6	14.3	19.1	23.9	14.35
Supplementary Analytes (Not Historically analyzed)																						
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	1,110	1,130	1,100	1,090	1,100	1,160	1,130	1,130	1,130	1,140	1,130	1,130	1,170
Carbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	98	31	96	75	78	50	52	51	78	71	60	75	40
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	6.6	11.9	7	7.5	6.8	6.3	9.4	7	7.5	6.1	7	8	6.8
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	3	3.4	3 B	2.7	2.8	2.9	2.9	4 B	3.6	3.0	3	3 B	2.8
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	4.4	5.5	5.0 B	3.2	3.6	4.2	4.1	4.0 B	6.9	4.4	4.0	4.0 B	3.9
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	1,600	1,450	1,560	1,490	1,370	1,550	1,530	1,580	1,550	1,620	1,590	1,600	1,600
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 3: Summary of Monitoring Results for MW-3

Date	Interim Narrative Standard	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021	6/23/2022
Metals																								
Arsenic, Dissolved (mg/L)	0.01	0.0009 B	0.0005 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.002 U	0.0009 B	0.0004 B	0.0004 B	< 0.001 U	< 0.005 U	< 0.002 U	0.00046 B
Barium, Dissolved (mg/L)	2.0	**2.31**	**2.02**	**2.23**	**2.62**	**2.25**	**2.83**	**2.47**	**2.81**	**2.58**	**3.16**	**3.16**	**2.57**	**2.45**	**2.93**	**2.18**	**2.4**	**2.93**	**2.77**	**2.42**	1.93	**2.66**	**2.52**	**2.62**
Boron, Dissolved (mg/L)	0.75	0.74	**0.76**	**0.76**	**0.78**	**0.81**	0.74	**0.79**	0.74	**0.76**	0.74	**0.79**	**0.77**	0.75	0.74	**0.81**	**0.77**	**0.80**	**0.77**	**0.76**	**0.841**	**0.782**	**0.786**	0.748
Chromium, Dissolved (mg/L)	0.1	< 0.004 U	< 0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.004 U	<0.002 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.004 U	<0.002 U
Copper, Dissolved (mg/L)	0.2	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.004 U	<0.002 U
Iron, Dissolved (mg/L)	0.3	0.19	0.30	0.29	0.29	**0.79**	0.19	0.26	0.21	0.2 B	0.2 B	0.17	0.29	0.11	0.14	**0.41**	0.18	<0.2 U	0.07 B	0.16 B	< 0.3 U	< 0.3 U	0.154	0.154 B
Lead, Dissolved (mg/L)	0.05	< 0.001 U	0.0002 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0005 U	< 0.0002 U	< 0.0005 U	< 0.0005 U	< 0.0025 U	< 0.001 U	<0.0005 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.69	0.86	0.708	0.711	0.747	0.714	0.737	0.69
Manganese, Dissolved (mg/L)	0.05	0.043	0.05	0.05	**0.061**	**0.054**	0.02 B	0.03 B	0.03 B	< 0.1 U	< 0.1 U	0.02 B	0.033	0.01 B	0.01 B	**0.06**	<0.05 U	0.02 B	0.0195	0.0223	0.0259	0.016	0.0154	0.00855
Selenium, Dissolved (mg/L)	0.02	< 0.0005 U	0.0002 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0005 U	0.0002 B	< 0.0002 U	< 0.0005 U	0.00025 B	< 0.00125 U	< 0.0005 U	<0.00025 U
Thallium, Dissolved (mg/L)	0.002	< 0.001 U	< 0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0005 U	< 0.00005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	< 0.0005 U	<0.0005 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0003 B	0.0008	0.0005 B	0.0004 B	0.0001 B	0.0007 B	< 0.001 U	0.00036 B
Zinc, Dissolved (mg/L)	2.0	0.02 B	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	< 0.01 U	< 0.02 U	< 0.015 U	< 0.075 U	< 0.03 U	<0.015 U
Other																								
Chloride (mg/L)	250	**1,570**	**1,580**	**1,520**	**1,540**	**1,530**	**1,620**	**1,570**	**1,560**	**1,640**	**1,690**	**1,550**	**1,550**	**1,550**	**1,580**	**1,560**	**1,750**	**1,660**	**1,620**	**1,640**	**1,670**	**1,670**	**1,670**	**1,650**
Fluoride (mg/L)	2	**2.4**	**2.4**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**2.38**	**2.4**	**2.5**	**2.5**	**2.44**	**2.48**	**2.49**	**2.67**
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	1.2	0.02 B	< 0.1	< 0.1 UH	0.055 B	<0.1 UH
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05 U	<0.05 U	< 0.01 U	< 0.05 U	< 0.05 U	< 0.05 UH	< 0.05 U	<0.05 UH
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	<0.1 U	1.2	0.02 B	< 0.1 U	< 0.1 UH	0.055 B	<0.1 UH
Lab pH (s.u)	6.5 - 8.5	8.4 H	8.3 H	8.3 H	8.4 H	8.2 H	8.3 H	8.4 H	8.3 H	8.4	8.3 H	8.5 H	8.4 H	8.5 H	8.3 H	8.3 H	8.4 H	8.4 H	8.4 H	8.5 H	8.4 H	8.5 H	8.4 H	8.2 H
Total Dissolved Solids, filterable residue (m	4620	3,890	3,910 H	3,920	3,890	3,920	3,930 ^	3,910 ^	3,970	3,970	4,040	3,790	4,000	3,820	3,940	4,020 H	3,850	3,960	3,940	3,910	3,890	3,890	3,930	3,960
Sulfate (mg/L)	250	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U	< 125 U	< 50 U	< 50 U	< 50 U	< 50 U	< 50 U	< 40 U	< 40 U	<40 U	<40 U	< 8 U	< 40 U	< 40 U	< 100 U	< 40 U	<100 U
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.15 (±7.4)	3.5	-1.5(±14)	10 (±13)	-7.4 (±13)	5.1(±11)	-3.4(±15)	3.7(±11)
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	3.7 (±15)	1.6	12(±18)	-2.2 (±16)	-5.4 (±20)	1.9(±17)	-10(±21)	-9.8(±17)
Field Parameters (Not Available pre-2010))																								
Field pH (s.u)	6.5 - 8.5	8.12	7.78	7.94	7.9	7.78	7.78	7.83	8.02	8.4	8.05	7.52	7.77	NA	8.61	7.98	7.83	8.25	8.23	8.25	8.1	8.02	8.04	7.95
Field Conductivity (µS/cm)	none	6,610	7,140	7,220	6,800	7,140	6,120	7,010	5,820	4,850	6,290	6,710	7,030	NA	6,730	7,160	6,790	7,030	4,348	5,730	6,140	6,452	6,743	7,225
Temperature (Degrees Celsius)	none	14.8	17.1	17.0	9.0	14	19.7	18.5	17.3	11.4	18.6	20.7	20.7	NA	10.8	20.1	16	21.8	12.4	25.1	13.2	26	16.7	22.2
Supplementary Analytes (Not Historically analyzed)																								
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.3 U	<0.5 U	< 0.05 U	0.008 B	0.0057 B	< 0.075 U	< 0.03 U	0.0146 B
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.004 U	0.0007 B	< 0.0008 U	< 0.002 U	< 0.004 U	< 0.01 U	< 0.004 U	<0.002 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0005 U	<0.0003 U	< 0.0002 U	< 0.0003 U	< 0.00025 U	< 0.00125 U	< 0.0005 U	<0.00025 U
Bicarbonate as CaCO3 (mg/L)	none	1,220	982	1,270	1,260	NA	1,200	1,170	1,230	1,210	1,300	1,170	1200	1160	1160	1250	NA	1,260 H	1190	1,240	1,160	1,140	1,120	1,190
Carbonate as CaCO3 (mg/L)	none	37	57	< 20 U	41.6	NA	56.5	98.5	30.6	37.4	21.4	71.5	44.9	54.5	26.7	19.6 B	NA	<20 UH	55.1	60.4	51.2	74.5	54.3	<20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.0005 U	<0.0003 U	< 0.0001 U	< 0.0003 U	< 0.00025 U	< 0.00125 U	< 0.0005 U	<0.00025 U
Calcium, Dissolved (mg/L)	none	6.7	7.2	6.7	7.7	8.7	7	7.6	6.9	6.7	7.4	7.8	7.3	6.8	6.5	6.9	7.4	6.7	6.9	6.7	6.69	6.45	6.25	7.36
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.0003 U	< 0.0001 U	0.0001 B	< 0.00025 U	< 0.00125 U	< 0.0005 U	<0.00025 U
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	<0.01 U	< 0.003 U	< 0.01 U	< 0.01 U	0.0031 B	< 0.01 U	<0.01 U
Magnesium, Dissolved (mg/L)	none	3	3.1	3.4	3.2	3.3	2.8	3.1	2.9	2.8	3.0 B	3.2	2.6	2.5	2.6	3.1	2.5	2.5	2.6	2.5	2.91	2.57	2.78	2.6
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	<0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.2 U	<0.2 U	0.0004 B	< 0.001 U	0.00032 B	< 0.0025 U	< 0.001 U	0.00047 B
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.08 U	<0.08 U	< 0.0008 U	< 0.001 U	< 0.001 U	< 0.005 U	< 0.002 U	0.0006 B
Potassium, Dissolved (mg/L)	none	4.0	3.8	4.0	4.1	4.0	5.3	4.0	4.0	4.1	4.0	4	4.4	3.5	4.0	3.4	3.6	3.9	3.7	3.3	3.82	3.86	3.95	3.61
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05 U	<0.0005 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.0025 U	< 0.001 U	<0.0005 U
Sodium, Dissolved (mg/L)	none	1,570	1,610	1,500	1,490	1,430	1,480	1,450	1,480	1,540	1,510	1,470	1600	1430	1410	1490	1500	1,560	1,540	1,490	1,460	1,460	1,530	1,440
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05 U	<0.05 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.01 U	< 0.004 U	<0.002 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 4: Summary of Monitoring Results for MW-4

Date	Interim Narrative Standard	5/26/1999	7/21/1999	9/23/1999	11/10/1999	1/19/2000	3/13/2000	5/16/2000	7/10/2000	9/27/2010	3/31/2011	6/28/2011	8/31/2011	11/172011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/15/2013
Metals																						
Arsenic, Dissolved (mg/L)	0.01	NA	< 0.005 U	NA	0.0894	0.08	0.075	0.103	0.08	**0.068**	**0.04**	**0.055**	**0.076**	<0.02 U	< 0.02 U	0.0009 B	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Barium, Dissolved (mg/L)	2	0.14	0.29	0.461	0.55	0.69	0.81	0.92	0.972	**8.69**	**8.84**	**7.83** *	**8.93**	**7.94**	**8.73**	**8.41**	**8.91**	**8.67**	**9.22**	**8.74**	**9.13**	**8.8**
Boron, Dissolved (mg/L)	0.75	0.49	0.54	0.53	0.59	0.56	0.6	0.6	0.55	0.7	0.5 B	0.62 *	0.7	0.7	0.7	**0.8** B	0.5	0.72	0.7	0.7	0.6	0.7
Chromium, Dissolved (mg/L)	0.1	< 0.3 U	< 0.3 U	< 0.25 U	< 0.3 U	< 0.3 U	NA	< 0.3 U	< 0.05 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	0.0014 B	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U	< 0.02 U
Copper, Dissolved (mg/L)	0.2	< 0.3 U	< 0.3 U	0.11 B	< 0.3 U	< 0.3 U	NA	< 0.3 U	< 0.05 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 1 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Iron, Dissolved (mg/L)	0.3	< 0.3 U	< 0.3 U	1.13	0.07 B	0.05 B	0.17 B	0.44	0.04 B	0.3 B	0.3 B	0.28 *	**0.8**	< 0.5 U	**0.6**	**1.0**	< 0.5 U	**0.32** U	**0.8**	**0.5** U	**0.4** B	0.3 B
Lead, Dissolved (mg/L)	0.05	< 0.01 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	NA	0.009	< 0.01 U	< 0.005 U	< 0.005 U	0.002 B	0.001 B	< 0.005 U	< 0.005 U	< 0.01 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U
Lithium, Dissolved (mg/L)	2.5	0.9	1.2	1.3	1.4	1.5	1.6	1.5	1.51	2	1.9	2.25 *	1.8	1.6	1.8	1.9 B	1.9	2.38	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	0.21	0.89	0.977	0.94	0.87	0.81	0.75	0.703	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.5 U	< 0.3 U	0.018 B	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U
Selenium, Dissolved (mg/L)	0.02	< 0.5 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.003 U	0.012	< 0.003 U	< 0.003 U	<0.003 U	0.007	0.0029	< 0.003 U	0.002 B	0.003 B	0.006	< 0.003 U	< 0.003 U
Thallium, Dissolved (mg/L)	0.002	< 5 U	< 0.01 U	< 5 U	< 0.0003 U	< 0.005 U	< 0.001 U	< 0.003 U	< 0.005 U	< 0.005 U	0.001 B	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.01 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.0235	0.019	0.0168	0.0138	0.015	< 0.005 U	0.001 B	< 0.005 U	0.002 B	< 0.005 U	< 0.005 U	< 0.01 U	< 0.005 U	< 0.005 U	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	1.07	1.03	1.71	< 0.3 U	< 3 U	< 0.3 U	< 0.3 U	0.01 B	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 1.0 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U	< 0.5 U
Other																						
Chloride (mg/L)	250	2,770	2,940	4,260	4,800	4,970	5,200	6,900	5,300	**6,300**	**6,200**	**6,200**	**6,500**	**6,282**	**6,063**	**6,105**	**6,566**	**6,077**	**6,744**	**6,490**	**6,470**	**6,750**
Fluoride (mg/L)	2	1	1.1	0.9	0.9	1.1	1.1	1.4	1.1	1.1	1.1	1	1.1	1.1	1.0	1.1	1.2	1.1	1.1	1.1	1.1	1.1
Nitrate as N (mg/L)	10	< 0.1 U	0.07	< 0.1 U	< 0.1 U	0.13	NA	< 0.1 U	0.73	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	< 0.1 U	1.83	0.04 B	0.04 B	0.04 B	NA	NA	NA	NA
Nitrite as N (mg/L)	1	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	< 0.05 U	< 0.05 U	< 0.05 U	0.01 B	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	< 0.1 U	0.07 B	< 0.1 U	< 0.1 U	0.13	NA	< 0.1 U	0.73	< 0.1 U	0.02 B	< 0.1 U	< 0.1 U	< 0.1 U	1.83	0.04 B	0.04 B	0.04 B	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8.1	7.7	7.8	7.8	8.1	7.6	8	8	8.3 H	8.2 H	8.2	8.2 H	8.3 U	8.1 H	8.1 H	8.1 H	8.2 H	8.1 H	8.2 H	8.1 H	8.1 H
Total Dissolved Solids, filterable residue (mg/L)	10,212*	5,870.0	7,610.0	8,170.0	8,660.0	8,670.0	9,110.0	8,980.0	9,350.0	**11,000**	**11,100**	**11,100**	**10,900**	**11,100**	**11,200**	**10,800**	**11,100**	**10,800**	**11,100**	**11,000**	**10,900**	**10,300** H
Sulfate (mg/L)	250	970	600	460	390	3150	290	270	250	< 500 U	< 500 U	< 500 U	< 300 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U
Gross Alpha (pCi/L)	15	26	12	53	-4.3	57	4.7	0	65	-10 (±39)	73 (±47)	16 (±37)	40 (±52)	19 (±52)	-33 (±18)	260 (±76)	-0.11 (±17)	-15 (±30)	NA	NA	NA	NA
Gross Beta (pCi/L)	**	23	37	27	-24	18	20	4.7	8.6	-7.5 (±53)	80 (±49)	22 (±45)	51 (±57)	66 (±63)	38 (±51)	270 (±61)	53 (±53)	9.9 (±42)	NA	NA	NA	NA
Field Paramters (Not Avalible pre-2010))																						
Field pH (s.u)	6.5 - 8.5	NA	NA	NA	NA	NA	NA	NA	NA	7.95	7.85	7.68	7.97	7.92	8.23	7.48	7.84	8.05	7.53	7.36	7.73	6.57
Field Conductivity (µS/cm)	none	NA	NA	NA	NA	NA	NA	NA	NA	1,825	1,959	17,420	18,450	18,230	18,500	9	17,080	18,790	11,720	18,800	18,750	19,055
Temperature (Degrees Celsius)	none	NA	NA	NA	NA	NA	NA	NA	NA	17.7	15	19.9	23.4	14	14.6	18.6	22.0	12.3	12.1	16.7	18.8	11.46
Supplementary Analytes (Not Historically analyzed)																						
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	585	565	569	562	573	597	580	576	571	573	567	590	576
Carbonate as CaCO3 (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	16 B	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	37	38	79	37	35	36	42	38	39.2	37	37	37	36
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	18	18	38	16	16	17	22	19	18.9	18	18	17	16
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	10 B	12 B	20 B	7.0 B	9.0 B	7.0 B	15 B	10 B	22	10 B	10 B	9.0 B	9 B
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	4,270	4,180	4,280	4,200	3,930	4,220	4,240	4,250	4,150	4,390	4,260	4,350	4070
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 4: Summary of Monitoring Results for MW-4

Date	Interim Narrative Standard	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021	6/23/2022
Metals																								
Arsenic, Dissolved (mg/L)	0.01	< 0.01 U	< 0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.01 U	0.0004 B	< 0.002 U	< 0.02 U	0.00055 B	< 0.01 U	< 0.01 U	<0.02 U
Barium, Dissolved (mg/L)	2.0	**8.58**	**9.64**	**8.01**	**8.56**	**8.77**	**8.76**	**8.81**	**8.80**	**8.66**	**8.79**	**8.91**	**8.61**	**8.95**	**8.60**	**9.00**	**8.90**	**8.42**	**8.94**	**9.17**	**7.95**	**8.80**	**8.58**	**8.73**
Boron, Dissolved (mg/L)	0.75	0.63	0.6	0.7	0.7	**0.8** B	0.6	0.7	0.6	0.7	0.6	0.6	0.61	0.7	0.6	**0.8**	0.6	0.7 B	0.63	0.63	**0.76**	0.747 B	0.67	0.705 B
Chromium, Dissolved (mg/L)	0.1	< 0.02 U	< 0.02 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.02 U	<0.002 U	< 0.005 U	< 0.002 U	< 0.002 U	< 0.02 U	< 0.02 U	<0.002 U
Copper, Dissolved (mg/L)	0.2	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.02 U	<0.002 U	< 0.008 U	< 0.002 U	< 0.002 U	< 0.02 U	< 0.02 U	<0.04 U
Iron, Dissolved (mg/L)	0.3	**0.8**	0.2 B	**0.5**	0.3 B	< 1 U	0.3 B	0.1 B	**0.4** B	0.2 B	0.14	< 0.5 U	0.15	< 0.5 U	< 0.5 U	< 0.5 U	0.15	0.114 U	0.12	0.11 B	< 0.75 U	< 1.5 U	< 0.15	<1.5 U
Lead, Dissolved (mg/L)	0.05	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.0005 U	< 0.0005 U	< 0.005 U	< 0.005 U	<0.01 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.76	1.93	1.81	1.91	1.81	1.80	1.98	1.78
Manganese, Dissolved (mg/L)	0.05	< 0.1 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.5 U	< 0.3 U	< 0.1 U	< 0.3 U	< 0.3 U	< 0.03 U	< 0.3 U	< 0.03 U	< 0.3 U	< 0.3 U	< 0.3 U	0.008 B	0.0065 U	0.007 B	0.011 B	0.00724	0.00612 B	0.00886 B	0.00752
Selenium, Dissolved (mg/L)	0.02	< 0.003 U	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.017	0.0014	< 0.001 U	< 0.003 U	< 0.002 U	< 0.0025 U	< 0.0025 U	0.00026
Thallium, Dissolved (mg/L)	0.002	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005 U	<0.0005 U	< 0.0001 U	< 0.003 U	< 0.0025 U	0.000825 B	< 0.0025 U	<0.0025 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005 U	0.0001 B	< 0.001 U	< 0.01 U	0.0003 B	< 0.005 U	< 0.005 U	<0.01 U
Zinc, Dissolved (mg/L)	2.0	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.5 U	<0.5 U	< 0.01 U	< 0.02 U	< 0.015 U	< 0.15 U	< 0.15 U	<0.015 U
Other																								
Chloride (mg/L)	250	**7,080**	**6,450**	**5,600**	**6,260**	**6,650**	**6,410**	**6,630**	**6,880**	**6,530**	**6,290**	**6,350**	**5,960**	**6,390**	**6,170** H	**6,150**	**7,780**	**7,140**	**7,100**	**7,020**	**6,160**	**6,680**	**7,010**	**6,490** H
Fluoride (mg/L)	2	1.1	1.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.03	1.1	1.1	1.1	1.07	1.1	1.11	1.25
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	0.12	< 0.02 U	<0.1 U	< 0.1 U	< 0.1 UH	< 0.1 U	<0.1 UH
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.05 U	<0.05 U	0.01 B	<0.05 U	< 0.05 U	< 0.05 UH	< 0.05 U	<0.05 UH
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.1 U	0.12	< 0.02 U	<0.1 U	< 0.1 U	< 0.1 UH	< 0.1 U	<0.1 UH
Lab pH (s.u)	6.5 - 8.5	8 H	7.9 H	8.1 H	8.2 H	8 H	8.1 H	8.2 H	8.2 H	8.2	7.9 H	8.3 H	8.2 H	8.3 H	7.9 H	8.1 H	8.1	8 H	8.2 H	8.1 H	8 H	8.1 H	8 H	8 H
Total Dissolved Solids, filterable residue (mg/L)	10,212	**10,800** H	**10,300** H	9,530	**10,900**	**10,600**	**10,600** ^	9,720 ^	**10,800**	**10,900**	10,100	**10,800**	**11,100**	**10,500**	**11,000**	**10,900**	**11,200**	**11,000**	**10,600**	**11,700**	**11,000**	**11,200**	**11,500**	**10,600** H
Sulfate (mg/L)	250	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 500 U	< 250 U	< 250 U	< 250 U	< 250 U	< 200 UH	< 200 U	<200 U	<200 U	< 40 U	< 200 U	< 400 U	< 200 U	< 200 U	<400 U
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.83 (±26)	-17 (±22)	-3.9(±37)	**19(±31)**	**19 (±44)**	11(±30)	**87(±72)**	9.7(±22)
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	38 (±39)	-11 (±57)	40(±44)	1.3(±43)	-2.6 (±53)	16(±57)	28(±61)	88(±74)
Field Parameters (Not Available pre-2010))																								
Field pH (s.u)	6.5 - 8.5	7.27	7.25	7.52	7.56	7.54	9.09	7.49	8.26	8.2	7.74	7.31	7.65	8.05	7.81	7.89	7.63	7.96	7.79	8.28	7.86	7.9	7.94	7.71
Field Conductivity (µS/cm)	none	18,020	19,380	19,500	18,510	19,550	16,610	19,050	14,650	13,890	16,140	18,530	19,320	17,800	18,260	19,620	18,570	18,390	11,030	15,330	16,872	17,690	19,307	20,248
Temperature (Degrees Celsius)	none	12.1	14.9	14.5	11.7	12.5	17.5	16.6	13.1	11.6	16	18.3	16.1	14.7	12.4	16.8	14	15.6	7.3	22.4	11.3	20.7	14.8	16.1
Supplementary Analytes (Not Historically analyzed)																								
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<2 U	<3 U	< 0.05 U	< 0.02 U	< 0.015 U	< 0.15 U	< 0.15 U	<0.015 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.006 B	<0.002 U	0.005 B	< 0.04 U	< 0.02 U	< 0.02 U	< 0.02 U	<0.002 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	<0.0003 U	< 0.0008 U	< 0.0003 U	< 0.00025 U	< 0.0025 U	< 0.0025 U	<0.00025 U
Bicarbonate as CaCO3 (mg/L)	none	606	623	616	611	NA	604	599	615	606	664	613	619	612	592	602	NA	601 H	606	644	585	595	567	586
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	6.2 B	< 20 U	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U	< 20 U	<20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	0.00007 B	< 0.0005 U	< 0.0003 U	< 0.00025 U	< 0.0025 U	< 0.0025 U	<0.00025 U
Calcium, Dissolved (mg/L)	none	36.1	38	37	37	38	38	36.9	38	38	36	37	35.8	36	36	36	36	35	37	35.6	35.7	36.8	34.1	36
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.003 U	0.00015 B	0.0012 B	< 0.005 U	0.000116 B	< 0.0025 U	< 0.0025 U	0.000119 B
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.004 B	0.009 B	< 0.003 U	< 0.01 U	0.0061 B	0.0097 B	< 0.01 U	<0.01 U
Magnesium, Dissolved (mg/L)	none	16	17	18	18	21	17	18	17	17	16.4	18	16.1	16	16	17	17	15	16.6	16	16.4	15.6	15.8	16.2
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.0002 B	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	<0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.03 U	0.0002 U	< 0.002 U	< 0.01 U	0.00045 B	< 0.005 U	0.00216 B	<0.0005 U
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.03 U	<0.001 U	< 0.004 U	< 0.001 U	< 0.001 U	< 0.01 U	< 0.01 U	<0.02 U
Potassium, Dissolved (mg/L)	none	9	9 B	9 B	10	12 B	9	9	10	11	9.1	9	9	10	9	8 B	10	8 B	11.7	15.3	8.34	8.04 B	10.9	8.6 B
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.01 U	< 0.005 U	< 0.005 U	< 0.005 U	<0.0005 U
Sodium, Dissolved (mg/L)	none	4120	4360	4050	3950	4070	4040	4030	4050	4290	4020	4000	4160	4080	3950	4030	4130	4,030	4,180	4,240	3,830	4,050	4,050	3,940
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.02 U	<0.002 U	< 0.005 U	< 0.04 U	0.00067 B	< 0.02 U	< 0.02 U	0.00059 B

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 5: Summary of Monitoring Results for MW-5

Date	Interim Narrative Standard	3/19/2013	5/28/2013	8/26/2013	11/14/2013	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016
Metals																	
Arsenic, Dissolved (mg/L)	0.01	0.002 B	0.0004 B	0.005	< 0.002 U	0.0004 B	< 0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved (mg/L)	2	0.015 B	0.014 B	0.015 B	0.014 B	0.015 B	0.006 B	0.008 B	0.011 B	0.012 B	0.009 B	< 0.03 U	0.015 B	0.017 B	0.013 B	0.006 B	0.013 B
Boron, Dissolved (mg/L)	0.75	0.37	0.33	0.25	0.32	0.33	0.36	0.33	0.36	0.36	0.26	0.3	0.29	0.33	0.26	0.26	0.29
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	< 0.004 U	< 0.004 U	< 0.004 U	< 0.004 U	< 0.004 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved (mg/L)	0.2	< 0.05 U	< 0.1 U	< 0.1 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved (mg/L)	0.3	**17.5**	**15.6**	**85.4**	**1.39**	**9.56**	0.15	**0.7**	**8.11**	**19.6**	0.05	**0.6**	**20.3**	**7.11**	**0.58**	**11.6**	**33.5**
Lead, Dissolved (mg/L)	0.05	< 0.003 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.168**	**0.13**	**0.16**	**0.074**	**0.091**	**0.069**	**0.12**	**0.093**	**0.109**	**0.072**	< 0.3 B	**0.11**	**0.1**	**0.07**	**0.09**	**0.11**
Selenium, Dissolved (mg/L)	0.02	0.0008 B	**0.0593**	0.0013	0.0027	0.0005	**0.023**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	0.01 B	< 0.1 U	< 0.1 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other																	
Chloride (mg/L)	250	79.4 B	27.6 B	36.3 B	18.6	26.4 B	27.9 B	< 125 U	< 125 U	50.8 B	27 B	44.5 B	< 250 U	< 250 U	18.5 B	18.6 B	42.4 B
Fluoride (mg/L)	2	0.8	0.7	1.3	0.6	0.7	0.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	7.5 H	7.7 H	7.3 H	7.4 H	7.4 H	7.6 H	7.5 H	7.7 H	7.4 H	7.6 H	7.5 H	7.5 H	7.2	7.3 H	7.9 H	7.7 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	4,950	3,360	3,710	3,110	3,100	3,010 H	2,970	3,140	3,240	3,160 ^	3070 ^	3220	3540	3140	2850	3310
Sulfate (mg/L)	250	**3,273**	**2,050**	**2,200**	**1,690**	**1,770**	**1,870**	**1,630**	**1,690**	**1,900**	**1,860**	**1,720**	**1,940**	**2,250**	**1,920**	**1,770**	**1,940**
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																	
Field pH (s.u)	6.5 - 8.5	6.65	6.67	7	6.74	6.83	6.56	6.76	6.77	6.67	6.47	6.76	7.06	7.2	6.77	6.74	6.59
Field Conductivity (µS/cm)	none	2,631	3,735	3,774	3324	3,262	3,370	3,345	33,200	3,787	3,016	3,340	2,900	2,800	2,649	3,192	3,546
Temperature (Degrees Celsius)	none	12	14.3	15.8	11.34	12.3	13.9	13.8	10.5	11.1	15.1	14.4	13.9	10.7	14.1	16.1	12.8
Supplementary Analytes (Not Historically analyzed)																	
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	225	320	205	343	380	410	378	377	NA	347	376	377	361	409	357	311
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	426	464	523	446	433	441	442	461	453	505	520	478	464	486	495	494
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	147	126	131	101	109	106	101	111	118	112	115	115	124	112	113	122
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	10.1	8.1	10.2	6.2	7.1	6.5	6.3	6.9	7.7	6	6	7.1	7.6	6	6.6	8.7
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	865	373	312	269	332	308	257	285	344	232	209	260	450	229	221	281
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 5: Summary of Monitoring Results for MW-5

Date	Interim Narrative Standard	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021	6/23/2022
Metals												
Arsenic, Dissolved (mg/L)	0.01	NA	NA	NA	0.0019 B	0.0018	0.0011 B	0.0037	0.00273	< 0.002 U	0.00167 B	0.00284
Barium, Dissolved (mg/L)	2	0.01 B	< 0.03 U	< 0.03 U	<0.03 U	0.02	0.01 B	0.011	0.0106	0.00986	0.0128	0.0121
Boron, Dissolved (mg/L)	0.75	0.36	0.36	0.35	0.33	0.35	0.35	0.33	0.32	0.307	0.344	0.315
Chromium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.004 U	<0.002	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U	<0.002 U
Copper, Dissolved (mg/L)	0.2	NA	NA	NA	<0.1 U	<0.1	< 0.002 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U	<0.004 U
Iron, Dissolved (mg/L)	0.3	**2.15**	**10.3**	**0.97**	**32.8**	**7.67**	**9.22**	**38**	**28.1**	**0.404**	**17**	**39.7**
Lead, Dissolved (mg/L)	0.05	NA	NA	NA	<0.001 U	<0.0005	< 0.0002 U	< 0.0005 U	< 0.0005 U	< 0.001 U	< 0.001 U	<0.001 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	0.3	0.39	0.417	0.364	0.385	0.242	0.344	0.317
Manganese, Dissolved (mg/L)	0.05	**0.09**	**0.09**	**0.08**	**0.09**	**0.09**	**0.0772**	**0.0775**	**0.0935**	**0.0767**	**0.0899**	**0.105**
Selenium, Dissolved (mg/L)	0.02	NA	NA	NA	0.0017	0.0005	0.0002 B	0.001	0.00154	0.00503	< 0.0005 U	0.00055
Thallium, Dissolved (mg/L)	0.002	NA	NA	NA	<0.001 U	0.0001	0.00007 B	0.0002 B	0.00021 B	0.000437 B	< 0.0005 U	<0.0005 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	**0.0379**	0.0261	0.0241	**0.0465**	0.0243	**0.0416**	**0.031**	**0.0381**
Zinc, Dissolved (mg/L)	2	NA	NA	NA	<0.1 U	<0.1	< 0.01 U	0.007 B	0.0075 B	< 0.03 U	< 0.03 U	0.0123 B
Other												
Chloride (mg/L)	250	45.4 B	25.8 BH	19.7 B	36.2 B	29.8	36 B	27.3 B	30.8 B	11.8 B	< 100 U	31.6 U
Fluoride (mg/L)	2	NA	NA	NA	0.72	0.6	0.7	0.7	0.73	0.47	0.74	0.95
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	<0.1 U	< 0.1 U	< 0.1 UH	0.188	<0.1 UH
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	< 0.01 U	<0.05 U	< 0.05 U	< 0.05 UH	0.014 B	<0.05 UH
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	0.1 U	< 0.1 U	< 0.1 UH	0.202	<0.1 UH
Lab pH (s.u)	6.5 - 8.5	7.8 H	7.3 H	7.7 H	7.5	7.7	7.7 H	7.6 H	7.4 H	7.6 H	7.4 H	7.3 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	3,970	3,160	3,020 H	3,340	3,630	3,800	3630	3830	2,910	3,300	3640
Sulfate (mg/L)	250	**2,540**	**1,820** H	**1,780**	**2,190**	**2,180**	**2,480**	**2,290**	**2,530**	**1,860**	**2,120**	**2,190**
Gross Alpha (pCi/L)	15	NA	NA	NA	8.6 (±11)	8.5 (±9.2)	**24(±14)**	**32(±15)**	**26 (±13)**	**31(±13)**	**38(±19)**	**20(±16)**
Gross Beta (pCi/L)	**	NA	NA	NA	18 (±13)	8.2 (±13)	25(±12)	12(±12)	19 (±13)	20(±9.2)	8.6(±12)	31(±17)
Field Parameters (Not Available pre-2010))												
Field pH (s.u)	6.5 - 8.5	7.23	7.04	6.81	6.85	7.06	7.08	7.06	7.27	6.93	6.79	6.78
Field Conductivity (µS/cm)	none	4,530,000	3,280	3,397	3,622	3,983	2,416	2,808	3,810	2,928	3,921	3,899
Temperature (Degrees Celsius)	none	15.4	12.8	16	13.6	15.2	12.2	14.3	11.2	15.9	12.5	13.6
Supplementary Analytes (Not Historically analyzed)												
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	<0.3 U	<0.5	< 0.05 U	< 0.02 U	0.013 B	< 0.03 U	< 0.03 U	<0.015 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	<0.004 U	<0.002	< 0.0008 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U	<0.002 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	<0.0005 U	<0.0003	< 0.0002 U	< 0.0003 U	< 0.00025 U	< 0.0005 U	< 0.0005 U	<0.00025 U
Bicarbonate as CaCO3 (mg/L)	none	348	375	401	NA	392	354	328	304	360	323	258
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	<20	< 2 U	< 20 U	< 20 U	< 20 U	< 20 U	<20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	<0.0005 U	<0.0003	< 0.0001 U	0.00014 B	< 0.00025 U	< 0.0005 U	< 0.0005 U	<0.00025 U
Calcium, Dissolved (mg/L)	none	429	461	425	490	402	405	474	427	477	433	475
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	0.0047	0.00595	0.0046	0.00805	0.00527	0.00582	0.00508	0.00554
Cyanide, Free (mg/L)	0.2	NA	NA	NA	<0.01 U	<0.01	< 0.003 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	<0.01 U
Magnesium, Dissolved (mg/L)	none	128	119	109	121	113	116	117	120	104	109	114
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	<0.001 U	<0.001	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	<0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	<0.2 U	<0.2	0.0045	0.0146	0.0089	0.00157	0.00892	0.0126
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	0.05 B	0.04	0.021	0.0511	0.0436	0.0237	0.0268	0.0477
Potassium, Dissolved (mg/L)	none	8.2	7.2	6.6	8.1	8.1	9.4	9.7	9.03	6.08	8.49	8.08
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	<0.05 U	<0.0005	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	<0.0005 U
Sodium, Dissolved (mg/L)	none	614	322	329	317	501	617	439	497	230	413	356
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.05 U	<0.05	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U	< 0.004 U	<0.002 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 6: Summary of Monitoring Results for MW-6

Date	Interim Narrative Standard	3/19/2013	5/28/2013	8/27/2013	11/14/2013	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016
Metals																	
Arsenic, Dissolved (mg/L)	0.01	0.002 B	< 0.01 U	< 0.01 U	< 0.01 U	0.004 B	0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved (mg/L)	2	0.97	**3.22**	**3.56**	**4.12**	**5.95**	**3.32**	**3.46**	**4.37**	**7.37**	**7.47**	**8.74**	**8.12**	**8.34**	**8.26**	**8.42**	**8.25**
Boron, Dissolved (mg/L)	0.75	0.6	0.7	0.6	0.6	0.58	0.7	0.6	0.7	0.6 B	0.6	0.65	0.6	0.57	0.5	0.5	0.55
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	< 0.02 U	0.018 B	< 0.02 U	< 0.02 U	< 0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved (mg/L)	0.2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.3 U	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved (mg/L)	0.3	**1.0**	**1.3**	**0.6**	**0.6**	**0.6**	**2.1**	**1.9**	**1.3**	**2.5**	**4.1**	**3.9**	**5.2**	**5.3**	**5.5**	**5.4**	**5**
Lead, Dissolved (mg/L)	0.05	< 0.003 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.33**	**0.29** B	**0.2** B	**0.19**	**0.19**	**0.21** B	**0.2** B	**0.25** B	**0.3** B	**0.31**	**0.39**	**0.42**	**0.45**	**0.37**	**0.35**	**0.31**
Selenium, Dissolved (mg/L)	0.02	0.0048	0.007	0.0016	0.002 B	0.001 B	0.0033	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.5 U	< 0.5 U	< 0.5 U	< 0.3 U	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other																	
Chloride (mg/L)	250	**5,090**	**5,680**	**6,080** U	**5,860**	**6,020**	**6,520**	**5,610**	**6,110**	**5,960**	**5,680**	**5,880**	**5,800**	**5,590**	**5,520**	**6,050**	**5620**
Fluoride (mg/L)	2	1.3	1.4	1.4	1.3	1.3	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8.1 H	8.2 H	8.2 H	8.2 H	8.2 H	7.9 H	8.0 H	8.1 H	7.7 H	7.8 H	7.8 H	7.7 H	7.78	7.4 H	7.6 H	7.7 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	9,110	10,200	9,340 H	10,100 H	10,900	8,800 H	9,350	10,400	10,600	10,300 ^	8,840 ^	10,200	9,780	10,800	10,400	10500
Sulfate (mg/L)	250	249.7	< 250 U	< 250 U	98.6 B	< 250 U	52.5 B	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																	
Field pH (s.u)	6.5 - 8.5	7.91	7.67	7.58	7.46	7.85	7.47	7.46	7.75	7.43	7.55	7.2	7.51	7.78	7.32	6.6	7.24
Field Conductivity (µS/cm)	none	9,340	16,470	17,850	18,064	17,460	18,250	18,670	17,940	18,880	16,370	18,670	13,820	14,380	16,600	17,790	17,570
Temperature (Degrees Celsius)	none	12.8	17	18.4	13.72	11.3	16.1	17.1	7.9	14.5	17.1	19.8	12.7	15.3	17.8	18.3	18.9
Supplementary Analytes																	
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	463	507	513	529	558	580	608	632	NA	656	673	702	691	736	716	715
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	58	44	33	34	32.2	40	41	45	51	49	57.9	63	68	67	69	66.1
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	21	20	18	17	16	16	17	18	22	17	18	17	18	16	19	17.3
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	14 B	12 B	12 B	11	10	11	10	10	13 B	10	10	10	11	9 B	10	10.7
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	3,600	3,920	3,860	4,000	3,960	4,060	3,770	3,710	3,840	3,930	3,850	3,840	4,100	3,770	3,780	3,960
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 6: Summary of Monitoring Results for MW-6

Date	Interim Narrative Standard	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021	6/23/2022
Metals												
Arsenic, Dissolved (mg/L)	0.01	NA	NA	NA	0.007 B	0.0074	0.007 B	0.009 B	0.00928	0.00574 B	0.00479 B	0.00603 B
Barium, Dissolved (mg/L)	2	**7.85**	**7.77**	**7.65**	**7.25**	**6.66**	**6.84**	**6.64**	**6**	**5.81**	**6.01**	**6.57**
Boron, Dissolved (mg/L)	0.75	0.7	**0.8**	0.6	0.6	0.6 B	0.67	0.58	**0.757**	**0.765** B	0.657	0.594 B
Chromium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.02 U	<0.002 U	< 0.005 U	< 0.04 U	< 0.002 U	< 0.02 U	< 0.02 U	<0.02 U
Copper, Dissolved (mg/L)	0.2	NA	NA	NA	<0.02 U	<0.002 U	< 0.008 U	0.05	0.00195 B	< 0.02 U	< 0.02 U	<0.02 U
Iron, Dissolved (mg/L)	0.3	**1.7**	**3.4**	**3.0**	**2.9**	**2.2**	**2.87**	**1.93**	**2.99**	**3.14**	**3.62**	**3.69**
Lead, Dissolved (mg/L)	0.05	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.01 U	< 0.0005 U	< 0.005 U	< 0.005 U	<0.005 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	1.74	1.87	2.21	1.81	1.79	1.76	1.96	1.74
Manganese, Dissolved (mg/L)	0.05	**0.14** B	**0.07** B	**0.06** B	**0.09**	**0.0733** U	**0.079**	**0.072**	**0.0585**	**0.0862**	**0.0831**	**0.0667**
Selenium, Dissolved (mg/L)	0.02	NA	NA	NA	<0.003 U	0.0009	< 0.001 U	< 0.003 U	< 0.0025 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Thallium, Dissolved (mg/L)	0.002	NA	NA	NA	<0.005 U	<0.0005 U	< 0.0001 U	< 0.003 U	< 0.0025 U	0.000924 B	< 0.0025 U	<0.0025 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.004	0.0023	0.004 B	0.003 B	0.00322	0.00264 B	0.00306 B	0.00361 B
Zinc, Dissolved (mg/L)	2	NA	NA	NA	<0.5 U	<0.5 U	< 0.05 U	< 0.02 U	< 0.015 U	< 0.15 U	< 0.15 U	<0.15 U
Other												
Chloride (mg/L)	250	**6,130**	**5,900**	**5,880**	**6,490**	**6,610** H	**6,390**	**7,100**	**6,110**	**6,810**	**6,190**	**6,730**
Fluoride (mg/L)	2	NA	NA	NA	1.09	1.2	1.2	1.1	1.12	1.18	1.27	1.01
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	< 0.02 U	< 0.1 U	< 0.1 U	< 0.1 UH	< 0.1 U	0.032 B
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	< 0.01 U	< 0.05 U	< 0.05 U	< 0.05 UH	< 0.05 U	<0.05 U
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	< 0.02 U	< 0.1 U	< 0.1 U	< 0.1 UH	< 0.1 U	0.032 B
Lab pH (s.u)	6.5 - 8.5	8.1 H	7.7 H	7.8 H	8 H	7.9 H	8.1 H	8.1 H	8 H	7.9 H	7.9 H	8.1 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	10,500	10,400	10,500	10,700	10,600	10,300	10,700	10,600	11,100	10,500	10,400 H
Sulfate (mg/L)	250	< 250 U	< 200 U	51 B	<200 U	<200 U	< 40 U	< 200 U	< 200 U	< 200 U	< 200 U	<200 U
Gross Alpha (pCi/L)	15	NA	NA	NA	**47 (±36)**	-33 (±24)	0.0(±52)	**16(±29)**	14 (±33)	**65(±40)**	**21(±56)**	**19(±53)**
Gross Beta (pCi/L)	**	NA	NA	NA	43 (±35)	56 (±47)	0.78(±63)	33(±46)	-28 (±47)	57(±44)	-0.71(±50)	630(±110)
Field Parameters (Not Available pre-2010))												
Field pH (s.u)	6.5 - 8.5	7.79	7.86	7.76	7.34	7.76	7.72	7.29	7.72	7.52	7.52	7.56
Field Conductivity (µS/cm)	none	17,850	17,470	18,950	17,560	18,000	11,290	14,930	16,067	16,612	19,008	19,509
Temperature (Degrees Celsius)	none	16.6	11.3	17.7	11.1	17.9	10	21.5	12.1	19.4	11.95	16.6
Supplementary Analytes (Not Historically analyzed)												
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	<2 U	<3 U	< 0.05 U	< 0.3 U	< 0.015 U	< 0.15 U	< 0.15 U	<0.15 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	<0.02 U	0.0014 B	< 0.004 U	< 0.04 U	< 0.02 U	< 0.02 U	< 0.02 U	<0.02 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	<0.003 U	<0.0003 U	< 0.0008 U	< 0.0003 U	< 0.00025 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	658	639	652	NA	685 H	702	720	647	625	629	624
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U	< 20 U	<20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	<0.003 U	0.00006 B	< 0.0005 U	< 0.0003 U	< 0.00025 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Calcium, Dissolved (mg/L)	none	51	44	41	47	40	45.4	43.2	41.1	45.7	40.3	44.4
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	<0.003 U	0.00024 B	< 0.0005 U	< 0.005 U	0.000315	0.000693 B	0.000723 B	0.000533 B
Cyanide, Free (mg/L)	0.2	NA	NA	NA	0.009 B	0.012	< 0.003 U	0.004 B	0.005 B	0.008 B	0.0088 B	<0.01 U
Magnesium, Dissolved (mg/L)	none	16	16	16	16	14	15.8	15	15.8	14.7	14.7	16.2
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	<0.001 U	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	<0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	0.025 B	0.0208 U	0.021	0.022	0.0279	0.0177	0.0254	0.0291
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	0.007 B	0.0063 U	0.01	0.02	0.023	0.0204	0.0167	0.019
Potassium, Dissolved (mg/L)	none	9 B	9 B	8 B	10	9 B	11.6	14.8	8.7	7.67 B	10.6	9.1 B
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.01 U	< 0.005 U	< 0.005 U	< 0.005 U	<0.005 U
Sodium, Dissolved (mg/L)	none	3,920	4,060	3,870	3,960	3,910	3,960	3,890	3,710	3,860	3,900	3,940
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.02 U	0.0005 U	< 0.005 U	< 0.04 U	0.00145 B	< 0.02 U	< 0.02 U	<0.02 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 7: Summary of Monitoring Results for MW-7

Date	Interim Narrative Standard	3/19/2013	5/29/2013	8/27/2013	11/14/2013	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016
Metals																	
Arsenic, Dissolved (mg/L)	0.01	0.010	0.010 B	**0.011**	0.008 B	**0.015**	0.009 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved (mg/L)	2	0.16 B	0.14 B	0.33	**2.08**	1.78	**3.52**	**2.35**	**3.7**	**5.43**	**4.74**	**2.66**	**2.65**	**4.66**	**3.79**	1.24	**4.19**
Boron, Dissolved (mg/L)	0.75	0.6	**0.9**	**0.79**	0.75	0.75	0.7	**0.8**	**0.8**	0.7 B	0.6	0.73	0.7	**0.8**	0.6	0.5	0.63
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	< 0.02 U	0.009 B	< 0.02 U	< 0.02 U	< 0.02 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved (mg/L)	0.2	< 0.5 U	< 0.5 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved (mg/L)	0.3	**1.6**	**3.4**	**1.5**	**2.9**	**2.9**	**2.8**	**4.4**	**3.8**	**4.6**	**5.8**	**4.7**	**4.6**	**6.3**	**5.9**	**2.3**	**3.26**
Lead, Dissolved (mg/L)	0.05	< 0.003 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	**0.27**	**0.66**	**0.51**	**0.61**	**0.53**	**0.41**	**0.66**	**0.45**	**0.3** B	**0.38**	**0.37**	**0.36**	**0.3**	**0.3**	**0.26** B	**0.205**
Selenium, Dissolved (mg/L)	0.02	0.0025	0.006	< 0.003 U	0.002 B	0.001 B	0.001 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.5 U	< 0.5 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other																	
Chloride (mg/L)	250	**3,701**	**5,280**	**6,040**	**6,430**	**6,030**	**6,510**	**5,330**	**5,850**	**6,140**	**6,330**	**5,860**	**5,680**	**6,230**	**5,850**	**5,550**	**5,990**
Fluoride (mg/L)	2	1.3	1.0	1.1	1.1	1	1.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	8.1 H	8.0 H	7.9 H	7.9 H	8.0 H	7.6 H	7.9 H	7.9 H	7.8 H	7.8 H	7.9 H	7.8 H	7.75	7.6 H	7.6 H	8 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	8,640	11,500	10,200 H	10,700 H	10,300	10,600 H	10,100	10,600	10,500	10,200 ^	8,800 ^	10,400	10,800	10,900	10,100	10,700
Sulfate (mg/L)	250	**1,589**	**1,240**	**510**	130 B	104 B	60.9 B	80.2 B	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	179 B	101 B
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	**	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Field Parameters (Not Available pre-2010))																	
Field pH (s.u)	6.5 - 8.5	7.85	7.08	6.86	7.55	7.27	6.95	7.37	6.94	7.05	6.27	7.08	7.42	7.75	7.22	6.91	7.3
Field Conductivity (µS/cm)	none	13	19,280	19,810	19,358	18,640	18,880	18,970	18,440	8,770	16,170	18,020	14,000	13,820	16,530	17,520	18,050
Temperature (Degrees Celsius)	none	13.4	12.2	20.5	13	11.3	16.2	15.1	8	13.5	17.2	18.3	12.1	13.3	17.6	18.1	16.1
Supplementary Analytes																	
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Bicarbonate as CaCO3 (mg/L)	none	458	596	696	715	838	822	785	837	NA	765	853	828	821	828	844	836
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Calcium, Dissolved (mg/L)	none	105	142	103	72	67.8	58	56	51	50	47	52	53	54	50	54	47.1
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Cyanide, Free (mg/L)	0.2	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Magnesium, Dissolved (mg/L)	none	40	43	30	25	22	21	21	20	23	19	19	18	20	18	19	18
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Potassium, Dissolved (mg/L)	none	11 B	13 B	12	11	10	10	11	9 B	13 B	9 B	9	10	11	10	10	8.8
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Sodium, Dissolved (mg/L)	none	3,200	4,150	4,720	4,280	4,020	4,350	3,910	3,740	3,970	4,010	3,930	3,880	4,240	3,930	3,820	4,330
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the BSGW

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 7: Summary of Monitoring Results for MW-7

Date	Interim Narrative Standard	5/31/2017	11/15/2017	6/6/2018	11/15/2018	6/12/2019	12/12/2019	6/4/2020	12/14/2020	6/23/2021	12/8/2021	6/23/2022
Metals												
Arsenic, Dissolved (mg/L)	0.01	NA	NA	NA	0.002 B	0.0031	0.002 B	0.0039	0.00175	< 0.01 U	0.0026 B	0.00265 B
Barium, Dissolved (mg/L)	2	**3.96**	**3.8**	**5.5**	**3.42**	**4.42**	**2.86**	1.06	**2.54**	**4.32**	**2.28**	**3.05**
Boron, Dissolved (mg/L)	0.75	0.7	**0.8**	0.7	0.7	0.7 B	0.64	0.65	0.735	0.717 B	0.634	0.604 B
Chromium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.02 U	<0.002 U	< 0.005 U	< 0.004 U	< 0.002 U	< 0.02 U	< 0.02 U	<0.02 U
Copper, Dissolved (mg/L)	0.2	NA	NA	NA	<0.02 U	<0.002 U	< 0.008 U	< 0.004 U	0.00177 B	< 0.02 U	< 0.02 U	<0.02 U
Iron, Dissolved (mg/L)	0.3	**5.5**	**6.1**	**3.2**	**3.9**	**2**	**2.81**	**11.6**	**0.932**	**2.95**	**1.96**	**2.07**
Lead, Dissolved (mg/L)	0.05	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.0005 U	0.00012 B	< 0.005 U	< 0.005 U	<0.005 U
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	1.84	2.02	2.30	1.92	1.84	1.88	2.06	1.85
Manganese, Dissolved (mg/L)	0.05	**0.19** B	**0.18** B	**0.14** B	**0.11** B	**0.2** B	**0.122**	**0.166**	**0.117**	**0.112**	**0.14**	**0.109**
Selenium, Dissolved (mg/L)	0.02	NA	NA	NA	<0.003 U	0.001	< 0.001 U	< 0.003 U	< 0.001 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Thallium, Dissolved (mg/L)	0.002	NA	NA	NA	<0.005 U	<0.0005 U	< 0.0001 U	< 0.003 U	< 0.0025 U	0.000757 B	< 0.0025 U	<0.0025 U
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.005	0.004	0.005	0.0093	0.00185	0.00426 B	0.00494 B	0.00423 B
Zinc, Dissolved (mg/L)	2	NA	NA	NA	<0.5 U	0.1 B	0.19 B	0.01 B	< 0.015 U	< 0.15 U	< 0.15 U	0.116 B
Other												
Chloride (mg/L)	250	**6,480**	**6,240**	**6,440**	**7,310**	**7,480** H	**6,780**	**6,550**	**6,690**	**7,410**	**6,420**	**6,650** H
Fluoride (mg/L)	2	NA	NA	NA	0.88	1	0.9	0.8	1	0.95	0.9	0.91
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	< 0.1 U	0.083	0.05 BH	< 0.1 U	<0.1 U
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	< 0.01 U	0.02 B	< 0.05 U	< 0.05 UH	< 0.05 U	<0.05 U
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	0.03 B	0.083 B	0.052 BH	< 0.1 U	<0.1 U
Lab pH (s.u)	6.5 - 8.5	8 H	7.8 H	7.7 H	7.9 H	7.9 H	7.9 H	8 H	7.8 H	7.8 H	7.8 H	8 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	11,100	11,300	11,500 H	11,300	11,300	11,200	11,200	11,300	12,100	11,100	11,200 H
Sulfate (mg/L)	250	59 B	58 B	75 B	83.9 B	63.8 B	54.1 B	125 B	< 200 U	43 B	< 200 U	94.8 B
Gross Alpha (pCi/L)	15	NA	NA	NA	5.8 (±29)	**23 (±41)**	-50(±26)	2.4(±37)	-21 (±31)	**64(±53)**	-19(±51)	-23(±35)
Gross Beta (pCi/L)	**	NA	NA	NA	34 (±42)	42 (±252)	35(±59)	11(±53)	1.9 (±53)	92(±58)	26(±67)	39(±66)
Field Parameters (Not Available pre-2010))												
Field pH (s.u)	6.5 - 8.5	7.65	7.17	7.37	7.19	7.61	7.58	7.85	7.69	7.71	7.32	7.18
Field Conductivity (µS/cm)	none	19,350	18,550	20,050	19,200	19,110	11,900	15,310	17,263	17,831	19,845	20,634
Temperature (Degrees Celsius)	none	22.5	12.3	16.4	12.9	16.3	8.3	19.8	12.5	20.9	12.14	17.4
Supplementary Analytes (Not Historically analyzed)												
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	<2 U	<3 U	< 0.05 U	< 0.02 U	0.0067 B	< 0.15 U	< 0.15 U	<0.15 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	<0.02 U	0.0015 B	< 0.004 U	0.0045	< 0.02 U	**0.00691** B	< 0.02 U	<0.02 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	<0.003 U	<0.0003 U	< 0.0008 U	< 0.0003 U	< 0.00025 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	745	700	714	NA	681 H	701	876	663	650	713	688
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U	< 20 U	<20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	<0.003 U	0.00007 B	< 0.0005 U	< 0.0005 U	0.000056 B	< 0.0025 U	< 0.0025 U	<0.0025 U
Calcium, Dissolved (mg/L)	none	52	55	52	54	53	54.4	54.2	52.5	56.8	52	54
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	<0.003 U	0.00025 B	< 0.0005 U	0.0004 B	0.000208 B	0.000587 B	< 0.0025 U	<0.0025 U
Cyanide, Free (mg/L)	0.2	NA	NA	NA	0.005 B	0.012	0.003 B	0.003 B	0.0096 B	0.0098 B	0.0197	<0.01 U
Magnesium, Dissolved (mg/L)	none	19	20	20	19	18	18.5	17.9	18.4	17.9	17.1	18.8
Mercury, Dissolved (mg/L)	0.002	NA	NA	NA	<0.001 U	<0.001 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U	< 0.001 U	<0.001 U
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	0.022 B	0.0182 U	0.017	0.0416	0.00375	0.0148	0.0103	0.012
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	<0.03 U	<0.001 U	< 0.004 U	0.0015 B	< 0.001 U	< 0.01 U	< 0.01 U	<0.01 U
Potassium, Dissolved (mg/L)	none	11	9 B	9 B	11	11	12.7	17.6	8.85	9.09 B	10.9	9.98 B
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	<0.005 U	<0.0005 U	< 0.001 U	< 0.001 U	< 0.005 U	< 0.005 U	< 0.005 U	<0.005 U
Sodium, Dissolved (mg/L)	none	4,240	4,320	4,170	4,250	4,220	4,250	4,070	3,840	4,160	4,160	4,260
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.02 U	0.0008 U	< 0.005 U	< 0.004 U	0.00118 B	< 0.02 U	< 0.02 U	<0.02 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

^ = Second and third quarter 2015 reports presented calculated total dissolved solids results

Per Section 41.5 (C) (6) the of Regulation 41, the "Interim Narrative Standard" , is the minimum of Table 1- Table 4 of The Basic Standards for Groundwater (BSGW)

*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

Table 8: Summary of Monitoring Results for MW-8

Date	Interim Narrative Standard	12/14/2020	6/23/2021	12/8/2021	6/23/2022
Metals					
Arsenic, Dissolved (mg/L)	0.01	0.00546	< 0.01 U	0.0025 B	0.00361 B
Barium, Dissolved (mg/L)	2	0.299	0.137	0.161	0.847
Boron, Dissolved (mg/L)	0.75	**0.90**	**0.823** B	**0.763**	0.682 B
Chromium, Dissolved (mg/L)	0.1	< 0.002 U	< 0.02 U	< 0.02 U	<0.02 U
Copper, Dissolved (mg/L)	0.2	0.00306	< 0.02 U	< 0.02 U	<0.02 U
Iron, Dissolved (mg/L)	0.3	< 0.75 U	< 1.5 U	0.13 B	<1.5 U
Lead, Dissolved (mg/L)	0.05	< 0.0005 U	< 0.005 U	< 0.005 U	<0.005 U
Lithium, Dissolved (mg/L)	2.5	1.55	1.7	1.97	1.8
Manganese, Dissolved (mg/L)	0.05	0.0161	0.0336	0.0455	0.0233
Selenium, Dissolved (mg/L)	0.02	0.00179 B	< 0.0025 U	< 0.0025 U	<0.0025 U
Thallium, Dissolved (mg/L)	0.002	< 0.0025 U	0.000826 B	< 0.0025 U	<0.0025 U
Uranium, Dissolved (mg/L)	0.03	0.0167	**0.056**	**0.0452**	**0.0311**
Zinc, Dissolved (mg/L)	2	0.0091 B	< 0.15 U	< 0.15 U	<0.15 U
Other					
Chloride (mg/L)	250	**5,910**	**7,000**	**6,910**	**7,130**
Fluoride (mg/L)	2	1.66	1.54	1.4	1.34
Nitrate as N (mg/L)	10	< 0.1 U	< 0.1 UH	< 0.1 U	0.041 B
Nitrite as N (mg/L)	1	< 0.05 U	< 0.05 UH	< 0.05 U	<0.05 U
Nitrate+Nitrite as N (mg/L)	10	< 0.1 U	< 0.1 UH	< 0.1 U	0.041 B
Lab pH (s.u)	6.5 - 8.5	8.3 H	8.0 H	8.0 H	8.1 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	10,100	12,600	12,300	11,600 H
Sulfate (mg/L)	250	**529**	**885**	**444**	135 B
Gross Alpha (pCi/L)	15	**45 (±45)**	-1.4(±38)	**36(±60)**	4.9(±46)
Gross Beta (pCi/L)	**	9.1 (±44)	-1.9(±57)	7.8(±67)	-5.8(±56)
Field Parameters (Not Available pre-2010))					
Field pH (s.u)	6.5 - 8.5	8.15	8.00	7.47	7.62
Field Conductivity (µS/cm)	none	14,360	18,379	21,344	21,985
Temperature (Degrees Celsius)	none	12.5	21.3	13.3	18.5
Supplementary Analytes (Not Historically analyzed)					
Aluminum, Dissolved (mg/L)	5	0.0057 B	< 0.15 U	< 0.15 U	<0.15 U
Antimony, Dissolved (mg/L)	0.006	**0.0125** B	**0.0102** B	**0.0109** B	**0.0134** B
Beryllium, Dissolved (mg/L)	0.004	< 0.00025 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	664	612	582	545
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	<20 U
Cadmium, Dissolved (mg/L)	0.005	< 0.00025 U	< 0.0025 U	< 0.0025 U	<0.0025 U
Calcium, Dissolved (mg/L)	none	23.4	56.1	93.6	92.4
Cobalt, Dissolved (mg/L)	0.05	0.000745	0.000951 B	0.00158 B	0.00122 B
Cyanide, Free (mg/L)	0.2	< 0.01 U	0.0128	0.0158	<0.01 U
Magnesium, Dissolved (mg/L)	none	18.8	18.4	19.7	21.2
Mercury, Dissolved (mg/L)	0.002	< 0.001 U	< 0.001 U	< 0.001 U	<0.001 U
Molybdenum, Dissolved (mg/L)	0.21	0.0225	0.0469	0.0425	0.0193
Nickel, Dissolved (mg/L)	0.1	0.00469	0.00575 B	0.00905 B	0.00634 B
Potassium, Dissolved (mg/L)	none	16.6	12.5	14.4	12.5
Silver, Dissolved (mg/L)	0.05	< 0.005 U	< 0.005 U	< 0.005 U	<0.005 U
Sodium, Dissolved (mg/L)	none	3,380	4,260	4,490	4,530
Vanadium, Dissolved (mg/L)	0.1	0.0044	< 0.02 U	< 0.02 U	<0.02 U

Notes:

B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit

U = Analyte not detected, reported less than the practical quantitation limit

H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.

NA = Analyte not analyzed

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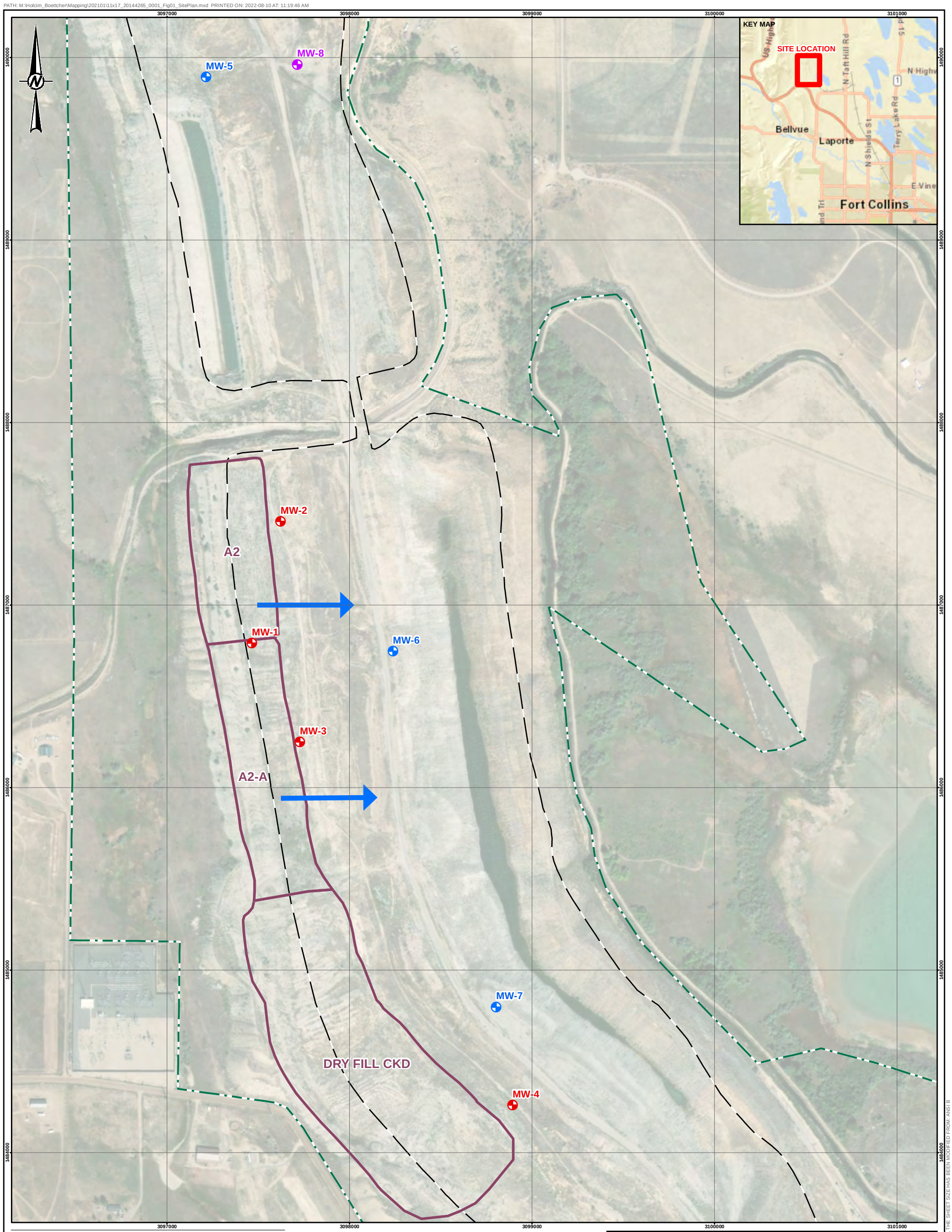
*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

Values in **bold** indicate a value greater than the Interim Narrative Standard

**The regulatory standard for Gross Beta is provided in units of exposure, millirems per year (mrems/yr), which would require the measurement of specific nuclides (Tritium and Strontium) with known energy levels. Specific nuclides were not part of the approved constituent list.

FIGURES



LEGEND

- MW-1 — PRE-2012 MONITORING WELL
- MW-6 — MONITORING WELL INSTALLED 2012
- MW-8 — MONITORING WELL INSTALLED 2020
- APPROXIMATE CKD DISPOSAL AREA BOUNDARY
- AMENDED PERMIT BOUNDARY
- PROPERTY BOUNDARY
- APPROXIMATE GROUNDWATER FLOW DIRECTION

0 500 1,000
Feet

NOTES

1. PROPERTY AND PERMIT BOUNDARIES PROVIDED BY HOLCIM (US) INC.
2. COORDINATE SYSTEM: NAD83 STATE PLANE COLORADO NORTH (US FT).
3. AERIAL IMAGERY: ESRI BASEMAPS, VIVID. MAXAR. IMAGERY COLLECTED 09/22/2021.

CLIENT
HOLCIM (US) INC.

PROJECT
BOETTCHER LIMESTONE QUARRY
LARIMER COUNTY, COLORADO

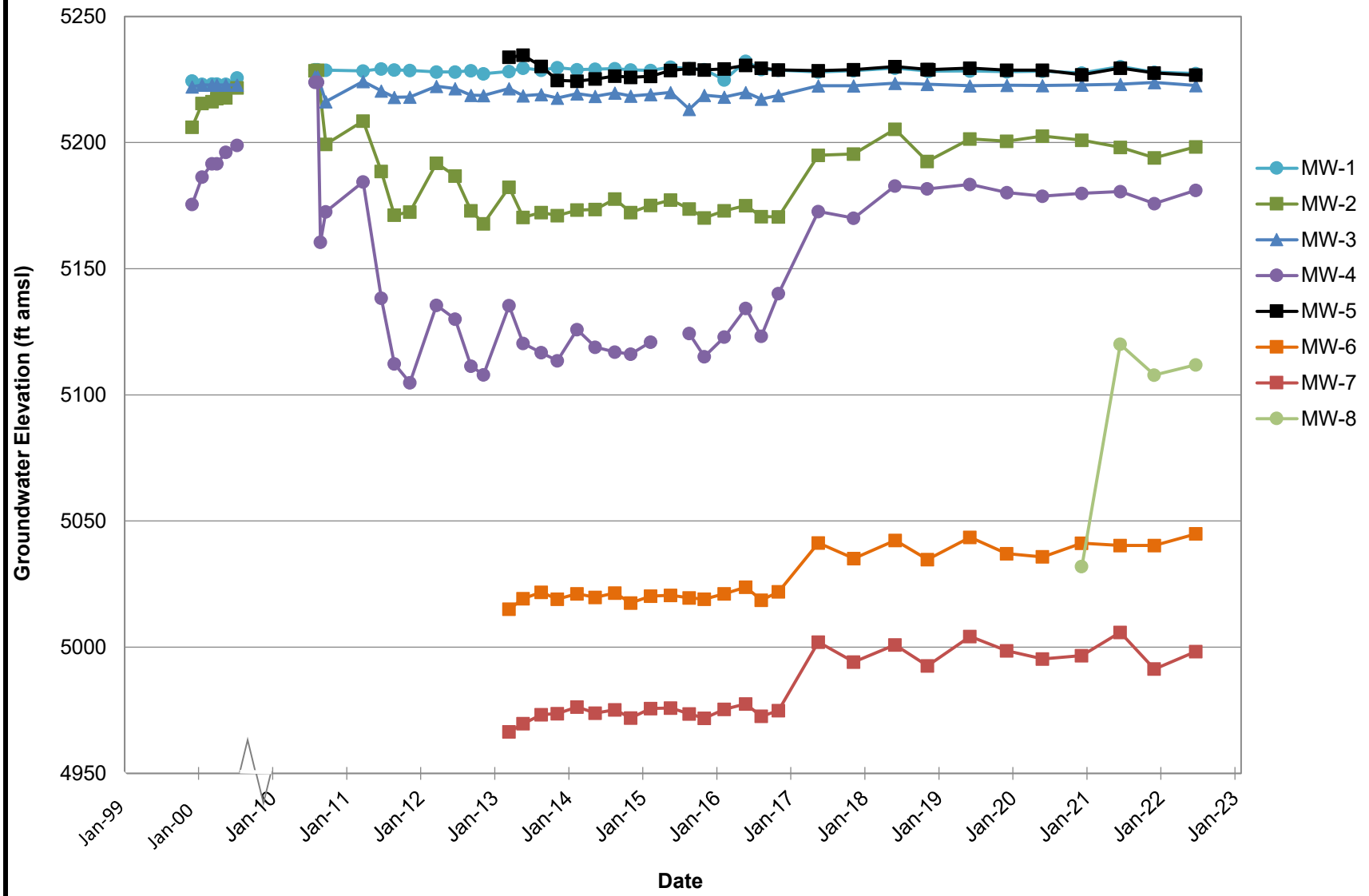
TITLE
SITE LOCATION PLAN

CONSULTANT
WSP GOLDER

YYYY-MM-DD	2022-08-10
DESIGNED	SAH
PREPARED	KJC
REVIEWED	SAH
APPROVED	RSM

PROJECT NO.
GL21467005.000

FIGURE
1



Notes:

Unable to collect water level measurement at MW-4 on 5/20/2015

ft amsl: feet above mean sea level

Figure 2

Groundwater Elevations vs. Time

Holcim Boettcher Quarry

8/10/2022 GL21467005.000

Golder Associates USA Inc.

ATTACHMENT 1

ACZ Laboratory Reports

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Analytical Report

August 05, 2022

Report to:
Sara Harkins
Golder Associates
44 Union Blvd., Suite 300
Lakewood, CO 80228

cc: Candace Whitten

Bill to:
Accounts Payable
Golder Associates
7245 W Alaska Dr Suite 200
Lakewood, CO 80226

Project ID:
ACZ Project ID: L74152

Sara Harkins:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 24, 2022. This project has been assigned to ACZ's project number, L74152. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L74152. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 04, 2022. If the samples are determined to be hazardous, additional charges apply for disposal (typically $11/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical raw data reports for ten years.

If you have any questions or other needs, please contact your Project Manager.

Sue Webber has reviewed and approved this report.

Golder Associates
Project ID:
Sample ID: MW 15

ACZ Sample ID: ***L74152-01***
Date Sampled: *06/23/22 09:15*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	1	<0.005	U		mg/L	0.005	0.015	07/05/22 16:01	mfm
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	07/05/22 16:01	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	<0.0002	U		mg/L	0.0002	0.001	07/05/22 16:01	mfm
Barium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.0025	07/05/22 16:01	mfm
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U	*	mg/L	0.00008	0.00025	07/05/22 16:01	mfm
Boron, dissolved	M200.7 ICP	1	<0.03	U		mg/L	0.03	0.1	07/11/22 19:14	keh1
Cadmium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/05/22 16:01	mfm
Calcium, dissolved	M200.7 ICP	1	<0.1	U		mg/L	0.1	0.5	07/11/22 19:14	keh1
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/05/22 16:01	mfm
Cobalt, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/05/22 16:01	mfm
Copper, dissolved	M200.8 ICP-MS	1	<0.0008	U		mg/L	0.0008	0.002	07/05/22 16:01	mfm
Iron, dissolved	M200.7 ICP	1	<0.06	U		mg/L	0.06	0.15	07/11/22 19:14	keh1
Lead, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/05/22 16:01	mfm
Lithium, dissolved	M200.7 ICP	1	<0.008	U		mg/L	0.008	0.04	07/11/22 19:14	keh1
Magnesium, dissolved	M200.7 ICP	1	<0.2	U		mg/L	0.2	1	07/11/22 19:14	keh1
Manganese, dissolved	M200.8 ICP-MS	1	0.00118	B		mg/L	0.0004	0.002	07/05/22 16:01	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	06/29/22 11:30	mlh
Molybdenum, dissolved	M200.8 ICP-MS	1	<0.0002	U		mg/L	0.0002	0.0005	07/05/22 16:01	mfm
Nickel, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.001	07/05/22 16:01	mfm
Potassium, dissolved	M200.7 ICP	1	<0.2	U		mg/L	0.2	1	07/11/22 19:14	keh1
Selenium, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.00025	07/05/22 16:01	mfm
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/05/22 16:01	mfm
Sodium, dissolved	M200.7 ICP	1	<0.2	U		mg/L	0.2	1	07/11/22 19:14	keh1
Thallium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/26/22 13:24	kja
Uranium, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/05/22 16:01	mfm
Vanadium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/05/22 16:01	mfm
Zinc, dissolved	M200.8 ICP-MS	1	<0.006	U		mg/L	0.006	0.015	07/05/22 16:01	mfm

Golder Associates
Project ID:
Sample ID: MW 15

ACZ Sample ID: ***L74152-01***
Date Sampled: *06/23/22 09:15*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	2.8	B		mg/L	2	20	07/06/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Total Alkalinity		1	2.8	B		mg/L	2	20	07/06/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			n/a			%			08/05/22 0:00	calc
Sum of Anions			<	U		meq/L			08/05/22 0:00	calc
Sum of Cations			<	U		meq/L			08/05/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	1	<0.4	U	*	mg/L	0.4	2	07/20/22 10:44	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	07/06/22 13:03	mjj1
Fluoride	SM4500F-C	1	<0.15	U	*	mg/L	0.15	0.35	07/06/22 17:52	emk
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	08/05/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	U		mg/L	0.02	0.1	06/25/22 1:55	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U		mg/L	0.01	0.05	06/25/22 1:55	pjb
pH (lab)	SM4500H+ B									
pH		1	7.3	H		units	0.1	0.1	07/06/22 0:00	emk
pH measured at		1	22.8			C	0.1	0.1	07/06/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	1	<20	U	*	mg/L	20	40	06/29/22 13:26	jck
Sulfate	M300.0 - Ion Chromatography	1	<0.4	U	*	mg/L	0.4	2	07/20/22 10:44	mad
TDS (calculated)	Calculation		1.71			mg/L			08/05/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		n/a						08/05/22 0:00	calc

Golder Associates
Project ID:
Sample ID: MW 2

ACZ Sample ID: ***L74152-02***
Date Sampled: *06/23/22 09:42*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	5	<0.025	U		mg/L	0.025	0.075	07/05/22 16:06	mfm
Antimony, dissolved	M200.8 ICP-MS	5	0.00349	B		mg/L	0.002	0.01	07/05/22 16:06	mfm
Arsenic, dissolved	M200.8 ICP-MS	5	0.00390	B		mg/L	0.001	0.005	07/05/22 16:06	mfm
Barium, dissolved	M200.8 ICP-MS	5	3.69			mg/L	0.0025	0.0125	07/05/22 16:06	mfm
Beryllium, dissolved	M200.8 ICP-MS	5	<0.0004	U	*	mg/L	0.0004	0.00125	07/05/22 16:06	mfm
Boron, dissolved	M200.7 ICP	5	0.711			mg/L	0.15	0.5	07/11/22 19:18	keh1
Cadmium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	07/05/22 16:06	mfm
Calcium, dissolved	M200.7 ICP	5	18.5			mg/L	0.5	2.5	07/11/22 19:18	keh1
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/05/22 16:06	mfm
Cobalt, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	07/05/22 16:06	mfm
Copper, dissolved	M200.8 ICP-MS	5	<0.004	U		mg/L	0.004	0.01	07/05/22 16:06	mfm
Iron, dissolved	M200.7 ICP	5	0.588	B		mg/L	0.3	0.75	07/11/22 19:18	keh1
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/05/22 16:06	mfm
Lithium, dissolved	M200.7 ICP	5	1.14			mg/L	0.04	0.2	07/11/22 19:18	keh1
Magnesium, dissolved	M200.7 ICP	5	7.03			mg/L	1	5	07/11/22 19:18	keh1
Manganese, dissolved	M200.8 ICP-MS	5	0.0529			mg/L	0.002	0.01	07/05/22 16:06	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	06/29/22 11:31	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	0.00202	B		mg/L	0.001	0.0025	07/05/22 16:06	mfm
Nickel, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.005	07/05/22 16:06	mfm
Potassium, dissolved	M200.7 ICP	5	5.99			mg/L	1	5	07/11/22 19:18	keh1
Selenium, dissolved	M200.8 ICP-MS	5	<0.0005	U	*	mg/L	0.0005	0.00125	07/05/22 16:06	mfm
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/05/22 16:06	mfm
Sodium, dissolved	M200.7 ICP	5	2370			mg/L	1	5	07/11/22 19:18	keh1
Thallium, dissolved	M200.8 ICP-MS	5	<0.00025	U	*	mg/L	0.00025	0.00125	07/26/22 13:29	kja
Uranium, dissolved	M200.8 ICP-MS	5	0.00303			mg/L	0.0005	0.0025	07/05/22 16:06	mfm
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/05/22 16:06	mfm
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	07/05/22 16:06	mfm

Golder Associates
Project ID:
Sample ID: MW 2

ACZ Sample ID: ***L74152-02***
Date Sampled: *06/23/22 09:42*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	1030			mg/L	2	20	07/06/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Total Alkalinity		1	1030			mg/L	2	20	07/06/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-7.0			%			08/05/22 0:00	calc
Sum of Anions			122			meq/L			08/05/22 0:00	calc
Sum of Cations			106			meq/L			08/05/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	3630		*	mg/L	20	100	07/19/22 18:44	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	07/06/22 13:05	mjj1
Fluoride	SM4500F-C	1	1.35		*	mg/L	0.15	0.35	07/06/22 18:00	emk
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	08/05/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	U		mg/L	0.02	0.1	06/25/22 1:56	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U		mg/L	0.01	0.05	06/25/22 1:56	pjb
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	07/06/22 0:00	emk
pH measured at		1	22.6			C	0.1	0.1	07/06/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	2	6280	H	*	mg/L	40	80	07/07/22 10:29	pcj
Sulfate	M300.0 - Ion Chromatography	50	<20	U	*	mg/L	20	100	07/19/22 18:44	mad
TDS (calculated)	Calculation		6660			mg/L			08/05/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.94						08/05/22 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-1

ACZ Sample ID: ***L74152-03***
Date Sampled: *06/23/22 10:40*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	5	<0.025	U		mg/L	0.025	0.075	07/05/22 16:12	mfm
Antimony, dissolved	M200.8 ICP-MS	5	0.00212	B		mg/L	0.002	0.01	07/05/22 16:12	mfm
Arsenic, dissolved	M200.8 ICP-MS	5	0.00145	B		mg/L	0.001	0.005	07/05/22 16:12	mfm
Barium, dissolved	M200.8 ICP-MS	5	0.0105	B		mg/L	0.0025	0.0125	07/05/22 16:12	mfm
Beryllium, dissolved	M200.8 ICP-MS	5	<0.0004	U	*	mg/L	0.0004	0.00125	07/05/22 16:12	mfm
Boron, dissolved	M200.7 ICP	5	0.645			mg/L	0.15	0.5	07/11/22 19:21	keh1
Cadmium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	07/05/22 16:12	mfm
Calcium, dissolved	M200.7 ICP	5	136			mg/L	0.5	2.5	07/11/22 19:21	keh1
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/05/22 16:12	mfm
Cobalt, dissolved	M200.8 ICP-MS	5	0.00269			mg/L	0.00025	0.00125	07/05/22 16:12	mfm
Copper, dissolved	M200.8 ICP-MS	5	<0.004	U		mg/L	0.004	0.01	07/05/22 16:12	mfm
Iron, dissolved	M200.7 ICP	5	<0.3	U		mg/L	0.3	0.75	07/11/22 19:21	keh1
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/05/22 16:12	mfm
Lithium, dissolved	M200.7 ICP	5	1.13			mg/L	0.04	0.2	07/11/22 19:21	keh1
Magnesium, dissolved	M200.7 ICP	5	139			mg/L	1	5	07/11/22 19:21	keh1
Manganese, dissolved	M200.8 ICP-MS	5	0.0530			mg/L	0.002	0.01	07/05/22 16:12	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	06/29/22 11:32	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	0.0695			mg/L	0.001	0.0025	07/05/22 16:12	mfm
Nickel, dissolved	M200.8 ICP-MS	5	0.00927			mg/L	0.002	0.005	07/05/22 16:12	mfm
Potassium, dissolved	M200.7 ICP	5	10.7			mg/L	1	5	07/11/22 19:21	keh1
Selenium, dissolved	M200.8 ICP-MS	5	0.0174			mg/L	0.0005	0.00125	07/05/22 16:12	mfm
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/05/22 16:12	mfm
Sodium, dissolved	M200.7 ICP	5	1790			mg/L	1	5	07/11/22 19:21	keh1
Thallium, dissolved	M200.8 ICP-MS	5	<0.00025	U	*	mg/L	0.00025	0.00125	07/26/22 13:30	kja
Uranium, dissolved	M200.8 ICP-MS	5	0.0395			mg/L	0.0005	0.0025	07/05/22 16:12	mfm
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/05/22 16:12	mfm
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	07/05/22 16:12	mfm

Golder Associates
Project ID:
Sample ID: MW-1

ACZ Sample ID: ***L74152-03***
Date Sampled: *06/23/22 10:40*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	413			mg/L	2	20	07/06/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Total Alkalinity		1	413			mg/L	2	20	07/06/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.0			%			08/05/22 0:00	calc
Sum of Anions			101			meq/L			08/05/22 0:00	calc
Sum of Cations			97			meq/L			08/05/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	25.4	B	*	mg/L	20	100	07/19/22 19:02	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	07/06/22 13:07	mjj1
Fluoride	SM4500F-C	1	0.54		*	mg/L	0.15	0.35	07/06/22 18:04	emk
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.468			mg/L	0.02	0.1	08/05/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.481			mg/L	0.02	0.1	06/25/22 1:57	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.013	B		mg/L	0.01	0.05	06/25/22 1:57	pjb
pH (lab)	SM4500H+ B									
pH		1	8.2	H		units	0.1	0.1	07/06/22 0:00	emk
pH measured at		1	22.8			C	0.1	0.1	07/06/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	2	6780	H	*	mg/L	40	80	07/07/22 10:32	pcj
Sulfate	M300.0 - Ion Chromatography	50	4400		*	mg/L	20	100	07/19/22 19:02	mad
TDS (calculated)	Calculation		6760			mg/L			08/05/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.00						08/05/22 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-8

ACZ Sample ID: ***L74152-04***
Date Sampled: *06/23/22 14:15*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	10	<0.05	U		mg/L	0.05	0.15	07/05/22 16:14	mfm
Antimony, dissolved	M200.8 ICP-MS	10	0.0134	B		mg/L	0.004	0.02	07/05/22 16:14	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	0.00361	B		mg/L	0.002	0.01	07/05/22 16:14	mfm
Barium, dissolved	M200.8 ICP-MS	10	0.847			mg/L	0.005	0.025	07/05/22 16:14	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	07/05/22 16:14	mfm
Boron, dissolved	M200.7 ICP	10	0.682	B		mg/L	0.3	1	07/11/22 19:31	keh1
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	07/05/22 16:14	mfm
Calcium, dissolved	M200.7 ICP	10	92.4			mg/L	1	5	07/11/22 19:31	keh1
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/05/22 16:14	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	0.00122	B		mg/L	0.0005	0.0025	07/05/22 16:14	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	07/05/22 16:14	mfm
Iron, dissolved	M200.7 ICP	10	<0.6	U		mg/L	0.6	1.5	07/11/22 19:31	keh1
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/05/22 16:14	mfm
Lithium, dissolved	M200.7 ICP	10	1.80			mg/L	0.08	0.4	07/11/22 19:31	keh1
Magnesium, dissolved	M200.7 ICP	10	21.2			mg/L	2	10	07/11/22 19:31	keh1
Manganese, dissolved	M200.8 ICP-MS	10	0.0233			mg/L	0.004	0.02	07/05/22 16:14	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	06/29/22 11:33	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.0193			mg/L	0.002	0.005	07/05/22 16:14	mfm
Nickel, dissolved	M200.8 ICP-MS	10	0.00634	B		mg/L	0.004	0.01	07/05/22 16:14	mfm
Potassium, dissolved	M200.7 ICP	10	12.5			mg/L	2	10	07/11/22 19:31	keh1
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	07/05/22 16:14	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/05/22 16:14	mfm
Sodium, dissolved	M200.7 ICP	10	4530			mg/L	2	10	07/11/22 19:31	keh1
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U	*	mg/L	0.0005	0.0025	07/26/22 13:32	kja
Uranium, dissolved	M200.8 ICP-MS	10	0.0311			mg/L	0.001	0.005	07/05/22 16:14	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/05/22 16:14	mfm
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	07/05/22 16:14	mfm

Golder Associates
Project ID:
Sample ID: MW-8

ACZ Sample ID: ***L74152-04***
Date Sampled: *06/23/22 14:15*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	545			mg/L	2	20	07/06/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Total Alkalinity		1	545			mg/L	2	20	07/06/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.7			%			08/05/22 0:00	calc
Sum of Anions			213			meq/L			08/05/22 0:00	calc
Sum of Cations			206			meq/L			08/05/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	7130		*	mg/L	40	200	07/19/22 19:20	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	07/06/22 13:09	mjj1
Fluoride	SM4500F-C	1	1.34		*	mg/L	0.15	0.35	07/06/22 18:12	emk
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.041	B		mg/L	0.02	0.1	08/05/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.041	B		mg/L	0.02	0.1	06/25/22 1:59	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U		mg/L	0.01	0.05	06/25/22 1:59	pjb
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	07/06/22 0:00	emk
pH measured at		1	22.7			C	0.1	0.1	07/06/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	10	11600	H	*	mg/L	200	400	07/07/22 10:34	pcj
Sulfate	M300.0 - Ion Chromatography	100	135	B	*	mg/L	40	200	07/19/22 19:20	mad
TDS (calculated)	Calculation		12300			mg/L			08/05/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.94						08/05/22 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-6

ACZ Sample ID: ***L74152-05***
Date Sampled: *06/23/22 15:10*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	10	<0.05	U		mg/L	0.05	0.15	07/05/22 16:16	mfm
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	07/05/22 16:16	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	0.00603	B		mg/L	0.002	0.01	07/05/22 16:16	mfm
Barium, dissolved	M200.8 ICP-MS	10	6.57			mg/L	0.005	0.025	07/05/22 16:16	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	07/05/22 16:16	mfm
Boron, dissolved	M200.7 ICP	10	0.594	B		mg/L	0.3	1	07/11/22 19:34	keh1
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	07/05/22 16:16	mfm
Calcium, dissolved	M200.7 ICP	10	44.4			mg/L	1	5	07/11/22 19:34	keh1
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/05/22 16:16	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	0.000533	B		mg/L	0.0005	0.0025	07/05/22 16:16	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	07/05/22 16:16	mfm
Iron, dissolved	M200.7 ICP	10	3.69			mg/L	0.6	1.5	07/11/22 19:34	keh1
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/05/22 16:16	mfm
Lithium, dissolved	M200.7 ICP	10	1.74			mg/L	0.08	0.4	07/11/22 19:34	keh1
Magnesium, dissolved	M200.7 ICP	10	16.2			mg/L	2	10	07/11/22 19:34	keh1
Manganese, dissolved	M200.8 ICP-MS	10	0.0667			mg/L	0.004	0.02	07/05/22 16:16	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	06/29/22 11:34	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.0291			mg/L	0.002	0.005	07/05/22 16:16	mfm
Nickel, dissolved	M200.8 ICP-MS	10	0.0190			mg/L	0.004	0.01	07/05/22 16:16	mfm
Potassium, dissolved	M200.7 ICP	10	9.10	B		mg/L	2	10	07/11/22 19:34	keh1
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	07/05/22 16:16	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/05/22 16:16	mfm
Sodium, dissolved	M200.7 ICP	10	3940			mg/L	2	10	07/11/22 19:34	keh1
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U	*	mg/L	0.0005	0.0025	07/26/22 13:33	kja
Uranium, dissolved	M200.8 ICP-MS	10	0.00361	B		mg/L	0.001	0.005	07/05/22 16:16	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/05/22 16:16	mfm
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	07/05/22 16:16	mfm

Golder Associates
Project ID:
Sample ID: MW-6

ACZ Sample ID: ***L74152-05***
Date Sampled: *06/23/22 15:10*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	624			mg/L	2	20	07/06/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Total Alkalinity		1	624			mg/L	2	20	07/06/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-6.3			%			08/05/22 0:00	calc
Sum of Anions			201			meq/L			08/05/22 0:00	calc
Sum of Cations			177			meq/L			08/05/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6730		*	mg/L	40	200	07/19/22 19:38	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	07/06/22 13:11	mjj1
Fluoride	SM4500F-C	1	1.01		*	mg/L	0.15	0.35	07/06/22 18:16	emk
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.032	B		mg/L	0.02	0.1	08/05/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.032	B	*	mg/L	0.02	0.1	06/25/22 2:00	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	06/25/22 2:00	pjb
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	07/06/22 0:00	emk
pH measured at		1	22.6			C	0.1	0.1	07/06/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	5	10400	H	*	mg/L	100	200	07/07/22 10:37	pcj
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	07/19/22 19:38	mad
TDS (calculated)	Calculation		11100			mg/L			08/05/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.94						08/05/22 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-7

ACZ Sample ID: ***L74152-06***
Date Sampled: *06/23/22 16:00*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	10	<0.05	U		mg/L	0.05	0.15	07/05/22 16:17	mfm
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	07/05/22 16:17	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	0.00265	B		mg/L	0.002	0.01	07/05/22 16:17	mfm
Barium, dissolved	M200.8 ICP-MS	10	3.05			mg/L	0.005	0.025	07/05/22 16:17	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	07/05/22 16:17	mfm
Boron, dissolved	M200.7 ICP	10	0.604	B		mg/L	0.3	1	07/11/22 19:37	keh1
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	07/05/22 16:17	mfm
Calcium, dissolved	M200.7 ICP	10	54.0			mg/L	1	5	07/11/22 19:37	keh1
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/05/22 16:17	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	07/05/22 16:17	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	07/05/22 16:17	mfm
Iron, dissolved	M200.7 ICP	10	2.07			mg/L	0.6	1.5	07/11/22 19:37	keh1
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/05/22 16:17	mfm
Lithium, dissolved	M200.7 ICP	10	1.85			mg/L	0.08	0.4	07/11/22 19:37	keh1
Magnesium, dissolved	M200.7 ICP	10	18.8			mg/L	2	10	07/11/22 19:37	keh1
Manganese, dissolved	M200.8 ICP-MS	10	0.109			mg/L	0.004	0.02	07/05/22 16:17	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	06/29/22 11:35	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.0120			mg/L	0.002	0.005	07/05/22 16:17	mfm
Nickel, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.01	07/05/22 16:17	mfm
Potassium, dissolved	M200.7 ICP	10	9.98	B		mg/L	2	10	07/11/22 19:37	keh1
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	07/05/22 16:17	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/05/22 16:17	mfm
Sodium, dissolved	M200.7 ICP	10	4260			mg/L	2	10	07/11/22 19:37	keh1
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U	*	mg/L	0.0005	0.0025	07/26/22 13:38	kja
Uranium, dissolved	M200.8 ICP-MS	10	0.00423	B		mg/L	0.001	0.005	07/05/22 16:17	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/05/22 16:17	mfm
Zinc, dissolved	M200.8 ICP-MS	10	0.116	B		mg/L	0.06	0.15	07/05/22 16:17	mfm

Golder Associates
Project ID:
Sample ID: MW-7

ACZ Sample ID: ***L74152-06***
Date Sampled: *06/23/22 16:00*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	688			mg/L	2	20	07/06/22 0:00	emk
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/06/22 0:00	emk
Total Alkalinity		1	688			mg/L	2	20	07/06/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.5			%			08/05/22 0:00	calc
Sum of Anions			202			meq/L			08/05/22 0:00	calc
Sum of Cations			192			meq/L			08/05/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6650	H	*	mg/L	40	200	08/02/22 17:53	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	07/06/22 13:19	mjj1
Fluoride	SM4500F-C	1	0.91			mg/L	0.15	0.35	07/06/22 18:24	emk
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	U		mg/L	0.02	0.1	08/05/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	U	*	mg/L	0.02	0.1	06/25/22 2:03	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	U	*	mg/L	0.01	0.05	06/25/22 2:03	pjb
pH (lab)	SM4500H+ B									
pH		1	8.0	H		units	0.1	0.1	07/06/22 0:00	emk
pH measured at		1	22.6			C	0.1	0.1	07/06/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	5	11200	H	*	mg/L	100	200	07/07/22 10:39	pcj
Sulfate	M300.0 - Ion Chromatography	100	94.8	B	*	mg/L	40	200	07/19/22 20:14	mad
TDS (calculated)	Calculation		11500			mg/L			08/05/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.97						08/05/22 0:00	calc

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

REP001.03.15.02

GOLDER

ACZ Project ID: ***L74152***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545624													
WG545624PBW1	PBW	07/05/22 20:43				2.3	mg/L		-20	20			
WG545624LCSW3	LCSW	07/05/22 21:02	WC220701-2	820.0001		777.9	mg/L	95	90	110			
WG545624LCSW6	LCSW	07/06/22 0:30	WC220701-2	820.0001		779.2	mg/L	95	90	110			
WG545624PBW2	PBW	07/06/22 0:41				4.1	mg/L		-20	20			
WG545624LCSW9	LCSW	07/06/22 3:40	WC220701-2	820.0001		780.6	mg/L	95	90	110			
WG545624PBW3	PBW	07/06/22 3:50				4.4	mg/L		-20	20			
WG545624LCSW12	LCSW	07/06/22 6:20	WC220701-2	820.0001		773.8	mg/L	94	90	110			
WG545624PBW4	PBW	07/06/22 6:31				4.7	mg/L		-20	20			
L74152-03DUP	DUP	07/06/22 8:29			413	403.6	mg/L				2	20	
L74160-05DUP	DUP	07/06/22 10:39			255	239.1	mg/L				6	20	
WG545624LCSW15	LCSW	07/06/22 10:58	WC220701-2	820.0001		783.2	mg/L	96	90	110			

Aluminum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.1		.1075	mg/L	108	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.011	0.011			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.050065		.0507	mg/L	101	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.050065	U	.0491	mg/L	98	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.050065	U	.0462	mg/L	92	70	130	6	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.0201		.02103	mg/L	105	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00088	0.00088			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.01		.01019	mg/L	102	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.01	U	.00906	mg/L	91	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.01	U	.00915	mg/L	92	70	130	1	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.05178	mg/L	104	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00044	0.00044			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05005		.05247	mg/L	105	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05005	U	.05533	mg/L	111	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05005	U	.05125	mg/L	102	70	130	8	20	

Barium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.05502	mg/L	110	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.0011	0.0011			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05005		.05442	mg/L	109	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05005	U	.05429	mg/L	108	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05005	U	.05	mg/L	100	70	130	8	20	

GOLDER

ACZ Project ID: ***L74152***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.053225	mg/L	106	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.000176	0.000176			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05005		.05224	mg/L	104	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05005	U	.060389	mg/L	121	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05005	U	.05604	mg/L	112	70	130	7	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546202													
WG546202ICV	ICV	07/11/22 17:55	II220624-2	2		2.052	mg/L	103	95	105			
WG546202ICB	ICB	07/11/22 18:01				U	mg/L		-0.09	0.09			
WG546202LFB	LFB	07/11/22 18:14	II220628-3	.5005		.519	mg/L	104	85	115			
L71618-20AS	AS	07/11/22 19:08	II220628-3	.5005	U	.527	mg/L	105	85	115			
L71618-20ASD	ASD	07/11/22 19:11	II220628-3	.5005	U	.536	mg/L	107	85	115	2	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.05469	mg/L	109	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00011	0.00011			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05005		.051756	mg/L	103	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05005	U	.05597	mg/L	112	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05005	U	.051542	mg/L	103	70	130	8	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546202													
WG546202ICV	ICV	07/11/22 17:55	II220624-2	100		99.47	mg/L	99	95	105			
WG546202ICB	ICB	07/11/22 18:01				U	mg/L		-0.3	0.3			
WG546202LFB	LFB	07/11/22 18:14	II220628-3	67.98862		68.61	mg/L	101	85	115			
L71618-20AS	AS	07/11/22 19:08	II220628-3	67.98862	U	66.88	mg/L	98	85	115			
L71618-20ASD	ASD	07/11/22 19:11	II220628-3	67.98862	U	68.58	mg/L	101	85	115	3	20	

GOLDER

ACZ Project ID: ***L74152***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545938													
WG545938ICV	ICV	07/08/22 0:25	WI220706-12	20		19.89	mg/L	99	90	110			
WG545938ICB	ICB	07/08/22 0:43				U	mg/L		-0.4	0.4			
WG546690													
WG546690LFB1	LFB	07/18/22 18:12	WI211112-6	30		30.14	mg/L	100	90	110			
L74122-04DUP	DUP	07/18/22 22:58			2.5	2.58	mg/L				3	20	RA
L74122-05AS	AS	07/18/22 23:34	WI211112-6	30	U	28.72	mg/L	96	90	110			
WG546690LFB2	LFB	07/19/22 19:56	WI211112-6	30		32.15	mg/L	107	90	110			
L74154-01DUP	DUP	07/19/22 20:49			2.55	2.52	mg/L				1	20	RA
L74154-02AS	AS	07/19/22 22:01	WI211112-6	30	4.52	34.83	mg/L	101	90	110			
WG547662													
WG547662LFB1	LFB	08/02/22 16:59	WI211112-6	30		30.55	mg/L	102	90	110			
L74066-01DUP	DUP	08/02/22 17:35			U	U	mg/L				0	20	RA
L74275-01AS	AS	08/02/22 18:47	WI211112-6	30	U	30.35	mg/L	101	90	110			
WG547662LFB2	LFB	08/03/22 1:39	WI211112-6	30		30.68	mg/L	102	90	110			

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.05362	mg/L	107	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.0011	0.0011			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.0501		.05213	mg/L	104	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.0501	U	.05254	mg/L	105	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.0501	U	.04851	mg/L	97	70	130	8	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.054003	mg/L	108	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00011	0.00011			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05005		.050978	mg/L	102	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05005	U	.051229	mg/L	102	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05005	U	.04762	mg/L	95	70	130	7	20	

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.055	mg/L	110	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00176	0.00176			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05		.05172	mg/L	103	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05	U	.05252	mg/L	105	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05	U	.04798	mg/L	96	70	130	9	20	

GOLDER

ACZ Project ID: ***L74152***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Cyanide, Free D6888-09/OIA-1677-09

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545764													
WG545764ICV	ICV	07/06/22 12:21	WI220706-9	.3003		.2825	mg/L	94	90	110			
WG545764ICB	ICB	07/06/22 12:23				U	mg/L		-0.003	0.003			
WG545764LFB	LFB	07/06/22 12:27	WI220706-10	.1001		.0988	mg/L	99	90	110			
L74184-02AS	AS	07/06/22 13:25	WI220706-10	.1001	U	.0872	mg/L	87	90	110			MA
L74184-02ASD	ASD	07/06/22 13:27	WI220706-10	.1001	U	.0896	mg/L	90	90	110	3	20	MA

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545810													
WG545810ICV	ICV	07/06/22 12:59	WC220627-1	2.008		2.01	mg/L	100	90	110			
WG545810ICB	ICB	07/06/22 13:07				U	mg/L		-0.3	0.3			
WG545810LFB1	LFB	07/06/22 13:15	WC220606-1	5.02		5.07	mg/L	101	90	110			
L74055-02AS	AS	07/06/22 16:59	WC220606-1	5.02	.74	4.79	mg/L	81	90	110			M2
L74055-02ASD	ASD	07/06/22 17:07	WC220606-1	5.02	.74	4.93	mg/L	83	90	110	3	20	M2
WG545810LFB3	LFB	07/06/22 17:28	WC220606-1	5.02		4.72	mg/L	94	90	110			
L74152-06AS	AS	07/06/22 18:27	WC220606-1	5.02	.91	5.59	mg/L	93	90	110			
L74152-06ASD	ASD	07/06/22 18:46	WC220606-1	5.02	.91	5.53	mg/L	92	90	110	1	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546202													
WG546202ICV	ICV	07/11/22 17:55	II220624-2	2		2.035	mg/L	102	95	105			
WG546202ICB	ICB	07/11/22 18:01				U	mg/L		-0.18	0.18			
WG546202LFB	LFB	07/11/22 18:14	II220628-3	1.0013		1.039	mg/L	104	85	115			
L71618-20AS	AS	07/11/22 19:08	II220628-3	1.0013	U	.997	mg/L	100	85	115			
L71618-20ASD	ASD	07/11/22 19:11	II220628-3	1.0013	U	1.023	mg/L	102	85	115	3	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.05395	mg/L	108	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00022	0.00022			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.0501		.05253	mg/L	105	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.0501	U	.05302	mg/L	106	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.0501	U	.04854	mg/L	97	70	130	9	20	

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546202													
WG546202ICV	ICV	07/11/22 17:55	II220624-2	2		2.003	mg/L	100	95	105			
WG546202ICB	ICB	07/11/22 18:01				U	mg/L		-0.024	0.024			
WG546202LFB	LFB	07/11/22 18:14	II220628-3	.998		.9902	mg/L	99	85	115			
L71618-20AS	AS	07/11/22 19:08	II220628-3	.998	U	.975	mg/L	98	85	115			
L71618-20ASD	ASD	07/11/22 19:11	II220628-3	.998	U	.9982	mg/L	100	85	115	2	20	

GOLDER

ACZ Project ID: ***L74152***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546202													
WG546202ICV	ICV	07/11/22 17:55	II220624-2	100		95.6	mg/L	96	95	105			
WG546202ICB	ICB	07/11/22 18:01				U	mg/L		-0.6	0.6			
WG546202LFB	LFB	07/11/22 18:14	II220628-3	49.99809		47.38	mg/L	95	85	115			
L71618-20AS	AS	07/11/22 19:08	II220628-3	49.99809	U	46.3	mg/L	93	85	115			
L71618-20ASD	ASD	07/11/22 19:11	II220628-3	49.99809	U	47.44	mg/L	95	85	115	2	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.05366	mg/L	107	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00088	0.00088			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.0498		.05195	mg/L	104	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.0498	.00118	.0511	mg/L	100	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.0498	.00118	.04756	mg/L	93	70	130	7	20	

Mercury, dissolved M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545292													
WG545292ICV	ICV	06/29/22 10:52	HG220620-3	.005005		.00495	mg/L	99	90	110			
WG545292ICB	ICB	06/29/22 10:53				U	mg/L		-0.0006	0.0006			
WG545293													
WG545293LRB	LRB	06/29/22 11:07				U	mg/L		-0.00044	0.00044			
WG545293LFB	LFB	06/29/22 11:08	HG220620-6	.002002		.0019	mg/L	95	85	115			
L74112-03LFM	LFM	06/29/22 11:23	HG220620-6	.002002	U	.00189	mg/L	94	85	115			
L74112-03LFMD	LFMD	06/29/22 11:24	HG220620-6	.002002	U	.00185	mg/L	92	85	115	2	20	

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.02		.0211	mg/L	106	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00044	0.00044			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05005		.05257	mg/L	105	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05005	U	.05248	mg/L	105	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05005	U	.04836	mg/L	97	70	130	8	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.05422	mg/L	108	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00088	0.00088			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05		.05265	mg/L	105	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05	U	.05288	mg/L	106	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05	U	.04848	mg/L	97	70	130	9	20	

GOLDER

ACZ Project ID: ***L74152***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545164													
WG545164ICV	ICV	06/25/22 1:34	WI220602-3	2.4161		2.365	mg/L	98	90	110			
WG545164ICB	ICB	06/25/22 1:35				U	mg/L		-0.02	0.02			
WG545164LFB	LFB	06/25/22 1:39	WI220401-10	2		2.043	mg/L	102	90	110			
L74142-01DUP	DUP	06/25/22 1:44			.968	.964	mg/L				0	20	
L74152-05AS	AS	06/25/22 2:01	WI220401-10	2	.032	2.124	mg/L	105	90	110			
L74152-06DUP	DUP	06/25/22 2:04			U	U	mg/L				0	20	RA
L74139-01AS	AS	06/25/22 2:17	WI220401-10	10	5.26	15.365	mg/L	101	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545164													
WG545164ICV	ICV	06/25/22 1:34	WI220602-3	.6089		.598	mg/L	98	90	110			
WG545164ICB	ICB	06/25/22 1:35				U	mg/L		-0.01	0.01			
WG545164LFB	LFB	06/25/22 1:39	WI220401-10	1		1.026	mg/L	103	90	110			
L74139-01AS	AS	06/25/22 1:42	WI220401-10	1	.012	1.043	mg/L	103	90	110			
L74142-01DUP	DUP	06/25/22 1:44			.134	.133	mg/L				1	20	
L74152-05AS	AS	06/25/22 2:01	WI220401-10	1	U	1.041	mg/L	104	90	110			
L74152-06DUP	DUP	06/25/22 2:04			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545624													
WG545624LCSW1	LCSW	07/05/22 20:47	PCN64057	6		6	units	100	5.9	6.1			
WG545624LCSW4	LCSW	07/06/22 0:14	PCN64057	6		6	units	100	5.9	6.1			
WG545624LCSW7	LCSW	07/06/22 3:24	PCN64057	6		6	units	100	5.9	6.1			
WG545624LCSW10	LCSW	07/06/22 6:04	PCN64057	6		6	units	100	5.9	6.1			
L74152-03DUP	DUP	07/06/22 8:29			8.2	8.2	units				0	20	
L74160-05DUP	DUP	07/06/22 10:39			8.2	8.2	units				0	20	
WG545624LCSW13	LCSW	07/06/22 10:43	PCN64057	6		6	units	100	5.9	6.1			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546202													
WG546202ICV	ICV	07/11/22 17:55	II220624-2	20		19.72	mg/L	99	95	105			
WG546202ICB	ICB	07/11/22 18:01				U	mg/L		-0.6	0.6			
WG546202LFB	LFB	07/11/22 18:14	II220628-3	99.95798		97.28	mg/L	97	85	115			
L71618-20AS	AS	07/11/22 19:08	II220628-3	99.95798	.68	95.43	mg/L	95	85	115			
L71618-20ASD	ASD	07/11/22 19:11	II220628-3	99.95798	.68	97.9	mg/L	97	85	115	3	20	

GOLDER

ACZ Project ID: ***L74152***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545426													
WG545426PBW	PBW	06/29/22 12:45				U	mg/L		-20	20			
WG545426LCSW	LCSW	06/29/22 12:47	PCN65053	1000		998	mg/L	100	80	120			
L74157-01DUP	DUP	06/29/22 13:45			224	234	mg/L				4	10	
WG545917													
WG545917PBW	PBW	07/07/22 9:45				U	mg/L		-20	20			
WG545917LCSW	LCSW	07/07/22 9:47	PCN65844	1000		984	mg/L	98	80	120			
L74334-01DUP	DUP	07/07/22 10:45			1350	1342	mg/L				1	10	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.05267	mg/L	105	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00022	0.00022			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05		.0519	mg/L	104	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05	U	.05668	mg/L	113	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05	U	.05231	mg/L	105	70	130	8	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.02		.02185	mg/L	109	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00022	0.00022			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.01		.01064	mg/L	106	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.01	U	.01043	mg/L	104	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.01	U	.01016	mg/L	102	70	130	3	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546202													
WG546202ICV	ICV	07/11/22 17:55	II220624-2	100		99.21	mg/L	99	95	105			
WG546202ICB	ICB	07/11/22 18:01				U	mg/L		-0.6	0.6			
WG546202LFB	LFB	07/11/22 18:14	II220628-3	100.0023		98.06	mg/L	98	85	115			
L71618-20AS	AS	07/11/22 19:08	II220628-3	100.0023	.76	96.91	mg/L	96	85	115			
L71618-20ASD	ASD	07/11/22 19:11	II220628-3	100.0023	.76	99.63	mg/L	99	85	115	3	20	

GOLDER

ACZ Project ID: ***L74152***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545938													
WG545938ICV	ICV	07/08/22 0:25	WI220706-12	48.85		48.61	mg/L	100	90	110			
WG545938ICB	ICB	07/08/22 0:43				U	mg/L		-0.4	0.4			
WG546690													
WG546690LFB1	LFB	07/18/22 18:12	WI211112-6	30		29.11	mg/L	97	90	110			
L74122-04DUP	DUP	07/18/22 22:58			6.58	6.57	mg/L				0	20	RA
L74122-05AS	AS	07/18/22 23:34	WI211112-6	30	9.7	37.21	mg/L	92	90	110			
WG546690LFB2	LFB	07/19/22 19:56	WI211112-6	30		31.41	mg/L	105	90	110			
L74154-02AS	AS	07/19/22 22:01	WI211112-6	30	28.4	56.46	mg/L	94	90	110			
L74154-01DUP	DUP	07/20/22 11:37			128	127.89	mg/L				0	20	

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG547183													
WG547183ICV	ICV	07/26/22 13:20	MS220701-3	.05		.052398	mg/L	105	90	110			
WG547183ICB	ICB	07/26/22 13:21				U	mg/L		-0.00011	0.00011			
WG547183LFB	LFB	07/26/22 13:23	MS220722-2	.05		.053717	mg/L	107	85	115			
L74152-01AS	AS	07/26/22 13:26	MS220722-2	.05	U	.053373	mg/L	107	70	130			
L74152-01ASD	ASD	07/26/22 13:27	MS220722-2	.05	U	.053346	mg/L	107	70	130	0	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.05389	mg/L	108	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.00022	0.00022			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05		.05143	mg/L	103	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05	U	.05072	mg/L	101	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05	U	.04708	mg/L	94	70	130	7	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.05244	mg/L	105	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.0011	0.0011			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.05005		.05132	mg/L	103	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.05005	U	.05259	mg/L	105	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.05005	U	.0481	mg/L	96	70	130	9	20	

Zinc, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545711													
WG545711ICV	ICV	07/05/22 15:23	MS220701-3	.05		.0527	mg/L	105	90	110			
WG545711ICB	ICB	07/05/22 15:25				U	mg/L		-0.0132	0.0132			
WG545711LFB	LFB	07/05/22 15:27	MS220627-2	.050075		.0537	mg/L	107	85	115			
L74152-01AS	AS	07/05/22 16:03	MS220627-2	.050075	U	.0598	mg/L	119	70	130			
L74152-01ASD	ASD	07/05/22 16:04	MS220627-2	.050075	U	.0556	mg/L	111	70	130	7	20	

Golder Associates

ACZ Project ID: ***L74152***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L74152-01	WG545711	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG546690	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545764	Cyanide, Free	D6888-09/OIA-1677-09	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG545810	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG545426	Residue, Filterable (TDS) @180C	SM2540C	Z3	Sample volume yielded a residue less than 2.5 mg
	WG546690	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
L74152-02	WG545711	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG546690	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545764	Cyanide, Free	D6888-09/OIA-1677-09	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG545810	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG545917	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
	WG545711	Selenium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG546690	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG547183	Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
L74152-03	WG545711	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG546690	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545764	Cyanide, Free	D6888-09/OIA-1677-09	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG545810	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG545917	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
	WG546690	Sulfate	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG547183	Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.

Golder Associates

ACZ Project ID: ***L74152***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L74152-04	WG545711	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG546690	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545764	Cyanide, Free	D6888-09/OIA-1677-09	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG545810	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG545917	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
	WG545711	Selenium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG546690	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG547183	Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
L74152-05	WG545711	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG546690	Chloride	M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545764	Cyanide, Free	D6888-09/OIA-1677-09	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG545810	Fluoride	SM4500F-C	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
	WG545164	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545917	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
	WG545711	Selenium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG546690	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG547183	Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.

Inorganic Extended Qualifier Report

Golder Associates

ACZ Project ID: ***L74152***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L74152-06	WG545711	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG547662	Chloride	M300.0 - Ion Chromatography	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545764	Cyanide, Free	D6888-09/OIA-1677-09	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
	WG545164	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545917	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
	WG545711	Selenium, dissolved	M200.8 ICP-MS	DB	Sample required dilution due to low bias result.
			M200.8 ICP-MS	EA	Concentration estimated. Analytical result was less than the negative MDL due to matrix interferences.
	WG546690	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG547183	Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

RadioChemistry Analytical Results

Golder Associates
Project ID:
Sample ID: MW 15
Locator:

ACZ Sample ID: ***L74152-01***
Date Sampled: *06/23/22 9:15*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/11/22 0:27		-0.49	0.75	12	pCi/L	*	slc/msm
Gross Beta	07/11/22 0:27		1.8	2.7	21	pCi/L	*	slc/msm

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RadioChemistry Analytical Results

Golder Associates
Project ID:
Sample ID: MW 2
Locator:

ACZ Sample ID: ***L74152-02***
Date Sampled: *06/23/22 9:42*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/11/22 0:30		21	28	110	pCi/L	*	slc/msm
Gross Beta	07/11/22 0:30		17	32	71	pCi/L	*	slc/msm

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RadioChemistry Analytical Results

Golder Associates
Project ID:
Sample ID: MW-1
Locator:

ACZ Sample ID: ***L74152-03***
Date Sampled: *06/23/22 10:40*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/11/22 0:31		5.2	24	95	pCi/L	*	slc/msm
Gross Beta	07/11/22 0:31		26	32	100	pCi/L	*	slc/msm

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RadioChemistry Analytical Results

Golder Associates
Project ID:
Sample ID: MW-8
Locator:

ACZ Sample ID: ***L74152-04***
Date Sampled: *06/23/22 14:15*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/11/22 0:33		4.9	46	400	pCi/L	*	slc/msm
Gross Beta	07/11/22 0:33		-5.8	56	290	pCi/L	*	slc/msm

Golder Associates
Project ID:
Sample ID: MW-6
Locator:

ACZ Sample ID: ***L74152-05***
Date Sampled: *06/23/22 15:10*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/11/22 0:36		19	53	300	pCi/L	*	slc/msm
Gross Beta	07/11/22 0:36		630	110	210	pCi/L	*	slc/msm

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RadioChemistry Analytical Results

Golder Associates
Project ID:
Sample ID: MW-7
Locator:

ACZ Sample ID: ***L74152-06***
Date Sampled: *06/23/22 16:00*
Date Received: *06/24/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/11/22 0:37		-23	35	220	pCi/L	*	slc/msm
Gross Beta	07/11/22 0:37		39	66	200	pCi/L	*	slc/msm

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

GOLDER

ACZ Project ID: ***L74152***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alpha M900.0 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG545742																
WG545742PBW	PBW	07/11/22						.24	0.76	0.97			1.94			
WG545742LCSWA	LCSW	07/11/22	PCN65744	100				110	9.3	1.4	110	67	144			
L73279-01DUP	DUP-RPD	07/11/22			0.68	1.4	6.4	1.3	1.7	5.4				63	20	RG
L73279-01DUP	DUP-RER	07/11/22			0.68	1.4	6.4	1.3	1.7	5.4				0.28	2	
L73279-04MSA	MS	07/11/22	PCN65744	100	1.6	1.7	7.3	120	11	6.8	118	67	144			
L74152-04DUP	DUP-RPD	07/11/22			4.9	46	400	23	54	190				130	20	RG
L74152-04DUP	DUP-RER	07/11/22			4.9	46	400	23	54	190				0.26	2	

Beta M900.0 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG545742																
WG545742PBW	PBW	07/11/22						-.84	1.9	2.1			4.2			
WG545742LCSWB	LCSW	07/11/22	RC220511-11	100				97	6.6	2.7	97	82	122			
L73279-01DUP	DUP-RPD	07/11/22			13	3.5	6	13	3.8	10				0	20	
L74152-01MSB	MS	07/11/22	RC220511-11	100	1.8	2.7	21	100	6.7	7.6	98	82	122			
L74152-04DUP	DUP-RPD	07/11/22			-5.8	56	290	35	61	230				279	20	RG
L74152-04DUP	DUP-RER	07/11/22			-5.8	56	290	35	61	230				0.49	2	

Golder Associates

ACZ Project ID: ***L74152***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L74152-01	WG545742	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L74152-02	WG545742	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L74152-03	WG545742	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L74152-04	WG545742	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L74152-05	WG545742	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L74152-06	WG545742	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.

Certification Qualifiers

Golder Associates

ACZ Project ID: ***L74152***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Golder Associates

ACZ Project ID: L74152
Date Received: 06/24/2022 14:02
Received By:
Date Printed: 6/27/2022

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?	X		

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Only two of the three coolers were received. The samples from the received coolers were logged in in order to meet hold times. The rest of the samples will be logged in under another project when they are received.

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
6685	3.4	<=6.0	15	Yes

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s).

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Golder Associates

ACZ Project ID:	L74152
Date Received:	06/24/2022 14:02
Received By:	
Date Printed:	6/27/2022

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ LABORATORIES | Accredited Environmental Testing | 2773 Downhill Drive, Steamboat Springs, CO 80487, (970) 879-6590 | L74152

CHAIN of CUSTODY

Report to:

Name: Sarah Harkins
Company: Golder Associates
E-mail: Sara.Harkins@wsp.com
Address: 2121 Abbott Rd ste 100, Anchorage Alaska 99507
Telephone: 907-520-2532

Copy of Report to:

Name: Candace Whitten
Company: Golder Associates
E-mail: Candace.Whitten@wsp.com
Telephone:

Invoice to:

Name: Sara Harkins
Company: Golder Associates
E-mail: Sara.Harkins@wsp.com
Address:
Telephone:

Copy of Invoice to:

Name:
Company:
E-mail:
Address:
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: C. Whitten **Sampler's Site Information** State CO Zip code 80635 Time Zone MT

***Sampler's Signature:** 

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #:
PO#:
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

	SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	5-day quick							
1	MW 15	6/23/22 0915	GW	5	X							
2	MW 2	6/23/22 0942	GW	5	X							
3	MW-1	6/23/22 1040	GW	5	X							
	MW-20	6/23/22 11:00	GW	5	X							
	MW-3	6/23/22 11:45	GW	5	X							
	MW-4	6/23/22 12:40	GW	5	X							
	MW-5	6/23/22 13:45	GW	5	X							
4	MW-8	6/23/22 14:15	GW	5	X							
5	MW-6	6/23/22 15:00	GW	5	X							
6	MW-7	6/23/22 16:00	GW	5	X							

not received

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

3 coolers

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	6/23/22 1145		6/24/22 14CZ

L74152 Chain of Custod

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Revised Analytical Report

August 26, 2022

Report to:
Sara Harkins
Golder Associates
44 Union Blvd., Suite 300
Lakewood, CO 80228

Bill to:
Accounts Payable
Golder Associates
7245 W Alaska Dr Suite 200
Lakewood, CO 80226

cc: Candace Whitten

Project ID:
ACZ Project ID: L74186

Sara Harkins:

Enclosed are revised analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 28, 2022 and originally reported on August 08, 2022. Refer to the case narrative for an explanation of the changes. This project was assigned to ACZ's project number, L74186. Please reference this number in all future inquiries.

All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L74186. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

Except as noted, the test results for the methods and parameters listed on ACZ's current NELAC certificate letter (#ACZ) meet all requirements of NELAC.

This report shall be used or copied only in its entirety. ACZ is not responsible for the consequences arising from the use of a partial report.

All samples and sub-samples associated with this project will be disposed of after September 07, 2022. If the samples are determined to be hazardous, additional charges apply for disposal (typically less than $10/sample). If you would like the samples to be held longer than ACZ's stated policy or to be returned, please contact your Project Manager or Customer Service Representative for further details and associated costs. ACZ retains analytical reports for five years.

If you have any questions or other needs, please contact your Project Manager.

Mark McNeal has reviewed
and approved this report.

Golder Associates

August 26, 2022

Project ID:
ACZ Project ID: L74186

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 4 groundwater samples from Golder Associates on June 28, 2022. The samples were received in good condition. Upon receipt, the sample custodian removed the samples from the cooler, inspected the contents, and logged the samples into ACZ's computerized Laboratory Information Management System (LIMS). The samples were assigned ACZ LIMS project number L74186. The custodian verified the sample information entered into the computer against the chain of custody (COC) forms and sample bottle labels.

Holding Times

Any analyses not performed within EPA recommended holding times have been qualified with an "H" flag.

Sample Analysis

These samples were analyzed for inorganic, radiochemistry parameters. The individual methods are referenced on both, the ACZ invoice and the analytical reports. The extended qualifier reports may contain footnotes qualifying specific elements due to QC failures. In addition the following has been noted with this specific project:

Chloride was re-analyzed on -03 to bring the CAB into better control. Cholride was re-analyzed for sample -04 due to client request.

1. Qualifier: N1 Applies to: L74186-01/BETA, L74186-02/BETA, L74186-03/BETA, L74186-04/BETA

LCSW Beta recovery above acceptance limits. MS within limits and used as positive control.

Golder Associates
Project ID:
Sample ID: MW-20

ACZ Sample ID: ***L74186-01***
Date Sampled: *06/23/22 11:00*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	1	0.0099	B		mg/L	0.005	0.015	07/08/22 10:50	kja
Antimony, dissolved	M200.8 ICP-MS	1	0.00173	B		mg/L	0.0004	0.002	07/06/22 16:28	kja
Arsenic, dissolved	M200.8 ICP-MS	1	0.00113			mg/L	0.0002	0.001	07/07/22 13:21	kja
Barium, dissolved	M200.8 ICP-MS	1	0.00928			mg/L	0.0005	0.0025	07/06/22 16:28	kja
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U	*	mg/L	0.00008	0.00025	07/06/22 16:28	kja
Boron, dissolved	M200.7 ICP	5	0.709		*	mg/L	0.15	0.5	07/12/22 20:00	keh1
Cadmium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/06/22 16:28	kja
Calcium, dissolved	M200.7 ICP	5	133			mg/L	0.5	2.5	07/12/22 20:00	keh1
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/06/22 16:28	kja
Cobalt, dissolved	M200.8 ICP-MS	1	0.00218			mg/L	0.00005	0.00025	07/06/22 16:28	kja
Copper, dissolved	M200.8 ICP-MS	1	<0.0008	U		mg/L	0.0008	0.002	07/07/22 13:21	kja
Iron, dissolved	M200.7 ICP	5	<0.3	U		mg/L	0.3	0.75	07/12/22 20:00	keh1
Lead, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/06/22 16:28	kja
Lithium, dissolved	M200.7 ICP	5	1.13			mg/L	0.04	0.2	07/12/22 20:00	keh1
Magnesium, dissolved	M200.7 ICP	5	144			mg/L	1	5	07/14/22 14:26	keh1
Manganese, dissolved	M200.8 ICP-MS	1	0.0532			mg/L	0.0004	0.002	07/06/22 16:28	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/07/22 9:26	mlh
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0647			mg/L	0.0002	0.0005	07/06/22 16:28	kja
Nickel, dissolved	M200.8 ICP-MS	1	0.00727			mg/L	0.0004	0.001	07/07/22 13:21	kja
Potassium, dissolved	M200.7 ICP	5	10.3			mg/L	1	5	07/12/22 20:00	keh1
Selenium, dissolved	M200.8 ICP-MS	1	0.0248			mg/L	0.0001	0.00025	07/06/22 16:28	kja
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/06/22 16:28	kja
Sodium, dissolved	M200.7 ICP	5	1770			mg/L	1	5	07/12/22 20:00	keh1
Thallium, dissolved	M200.8 ICP-MS	5	<0.00025	U	*	mg/L	0.00025	0.00125	07/26/22 13:39	kja
Uranium, dissolved	M200.8 ICP-MS	1	0.0367			mg/L	0.0001	0.0005	07/06/22 16:28	kja
Vanadium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/06/22 16:28	kja
Zinc, dissolved	M200.8 ICP-MS	1	<0.006	U		mg/L	0.006	0.015	07/06/22 16:28	kja

Golder Associates
Project ID:
Sample ID: MW-20

ACZ Sample ID: ***L74186-01***
Date Sampled: *06/23/22 11:00*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	399		*	mg/L	2	20	07/05/22 0:00	emk
Carbonate as CaCO3		1	<2	U	*	mg/L	2	20	07/05/22 0:00	emk
Hydroxide as CaCO3		1	<2	U	*	mg/L	2	20	07/05/22 0:00	emk
Total Alkalinity		1	399		*	mg/L	2	20	07/05/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-3.5			%			08/26/22 0:00	calc
Sum of Anions			104			meq/L			08/26/22 0:00	calc
Sum of Cations			97			meq/L			08/26/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	07/20/22 21:39	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	07/07/22 11:39	mjj1
Fluoride	SM4500F-C	1	0.79		*	mg/L	0.15	0.35	07/20/22 21:20	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.287	H		mg/L	0.02	0.1	08/26/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.287	H	*	mg/L	0.02	0.1	06/29/22 1:46	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/29/22 1:46	pjb
pH (lab)	SM4500H+ B									
pH		1	8.0	H	*	units	0.1	0.1	07/05/22 0:00	emk
pH measured at		1	21.5		*	C	0.1	0.1	07/05/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	2	6940		*	mg/L	40	80	06/29/22 19:19	jck
Sulfate	M300.0 - Ion Chromatography	100	4590		*	mg/L	40	200	07/20/22 21:39	mad
TDS (calculated)	Calculation		6890			mg/L			08/26/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.01						08/26/22 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-3

ACZ Sample ID: ***L74186-02***
Date Sampled: *06/23/22 11:45*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	2	0.0146	B	*	mg/L	0.01	0.03	07/08/22 17:01	kja
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	07/06/22 16:30	kja
Arsenic, dissolved	M200.8 ICP-MS	1	0.00046	B		mg/L	0.0002	0.001	07/07/22 13:23	kja
Barium, dissolved	M200.8 ICP-MS	1	2.62			mg/L	0.0005	0.0025	07/06/22 16:30	kja
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U	*	mg/L	0.00008	0.00025	07/06/22 16:30	kja
Boron, dissolved	M200.7 ICP	2	0.748		*	mg/L	0.06	0.2	07/12/22 20:03	keh1
Cadmium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/06/22 16:30	kja
Calcium, dissolved	M200.7 ICP	2	7.36			mg/L	0.2	1	07/12/22 20:03	keh1
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/06/22 16:30	kja
Cobalt, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/06/22 16:30	kja
Copper, dissolved	M200.8 ICP-MS	1	<0.0008	U		mg/L	0.0008	0.002	07/07/22 13:23	kja
Iron, dissolved	M200.7 ICP	2	0.154	B		mg/L	0.12	0.3	07/12/22 20:03	keh1
Lead, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/06/22 16:30	kja
Lithium, dissolved	M200.7 ICP	2	0.690			mg/L	0.016	0.08	07/12/22 20:03	keh1
Magnesium, dissolved	M200.7 ICP	2	2.60			mg/L	0.4	2	07/14/22 14:29	keh1
Manganese, dissolved	M200.8 ICP-MS	1	0.00855			mg/L	0.0004	0.002	07/06/22 16:30	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/07/22 9:26	mlh
Molybdenum, dissolved	M200.8 ICP-MS	1	0.00047	B		mg/L	0.0002	0.0005	07/06/22 16:30	kja
Nickel, dissolved	M200.8 ICP-MS	1	0.00060	B		mg/L	0.0004	0.001	07/07/22 13:23	kja
Potassium, dissolved	M200.7 ICP	2	3.61			mg/L	0.4	2	07/12/22 20:03	keh1
Selenium, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.00025	07/06/22 16:30	kja
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/06/22 16:30	kja
Sodium, dissolved	M200.7 ICP	2	1440			mg/L	0.4	2	07/12/22 20:03	keh1
Thallium, dissolved	M200.8 ICP-MS	2	<0.0001	U	*	mg/L	0.0001	0.0005	07/26/22 13:40	kja
Uranium, dissolved	M200.8 ICP-MS	1	0.00036	B		mg/L	0.0001	0.0005	07/06/22 16:30	kja
Vanadium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/06/22 16:30	kja
Zinc, dissolved	M200.8 ICP-MS	1	<0.006	U		mg/L	0.006	0.015	07/06/22 16:30	kja

Golder Associates
Project ID:
Sample ID: MW-3

ACZ Sample ID: ***L74186-02***
Date Sampled: *06/23/22 11:45*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	1190		*	mg/L	2	20	07/05/22 0:00	emk
Carbonate as CaCO3		1	<2	U	*	mg/L	2	20	07/05/22 0:00	emk
Hydroxide as CaCO3		1	<2	U	*	mg/L	2	20	07/05/22 0:00	emk
Total Alkalinity		1	1190		*	mg/L	2	20	07/05/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-4.5			%			08/26/22 0:00	calc
Sum of Anions			70			meq/L			08/26/22 0:00	calc
Sum of Cations			64.0			meq/L			08/26/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	1650		*	mg/L	20	100	07/20/22 22:14	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	07/07/22 11:45	mjj1
Fluoride	SM4500F-C	1	2.67		*	mg/L	0.15	0.35	07/20/22 21:28	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	08/26/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/29/22 1:47	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/29/22 1:47	pjb
pH (lab)	SM4500H+ B									
pH		1	8.2	H	*	units	0.1	0.1	07/05/22 0:00	emk
pH measured at		1	21.1		*	C	0.1	0.1	07/05/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	1	3960		*	mg/L	20	40	06/29/22 19:22	jck
Sulfate	M300.0 - Ion Chromatography	50	<20	U	*	mg/L	20	100	07/20/22 22:14	mad
TDS (calculated)	Calculation		3830			mg/L			08/26/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.03						08/26/22 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-4

ACZ Sample ID: ***L74186-03***
Date Sampled: *06/23/22 12:40*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	1	<0.005	U	*	mg/L	0.005	0.015	07/06/22 16:32	kja
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	07/06/22 16:32	kja
Arsenic, dissolved	M200.8 ICP-MS	20	<0.004	U	*	mg/L	0.004	0.02	07/07/22 13:25	kja
Barium, dissolved	M200.8 ICP-MS	20	8.73			mg/L	0.01	0.05	07/07/22 13:25	kja
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U	*	mg/L	0.00008	0.00025	07/06/22 16:32	kja
Boron, dissolved	M200.7 ICP	10	0.705	B	*	mg/L	0.3	1	07/12/22 20:07	keh1
Cadmium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/06/22 16:32	kja
Calcium, dissolved	M200.7 ICP	10	36.0			mg/L	1	5	07/12/22 20:07	keh1
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/06/22 16:32	kja
Cobalt, dissolved	M200.8 ICP-MS	1	0.000119	B		mg/L	0.00005	0.00025	07/06/22 16:32	kja
Copper, dissolved	M200.8 ICP-MS	20	<0.016	U	*	mg/L	0.016	0.04	07/07/22 13:25	kja
Iron, dissolved	M200.7 ICP	10	<0.6	U		mg/L	0.6	1.5	07/12/22 20:07	keh1
Lead, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	07/07/22 13:25	kja
Lithium, dissolved	M200.7 ICP	10	1.78			mg/L	0.08	0.4	07/12/22 20:07	keh1
Magnesium, dissolved	M200.7 ICP	10	16.2			mg/L	2	10	07/14/22 14:32	keh1
Manganese, dissolved	M200.8 ICP-MS	1	0.00752			mg/L	0.0004	0.002	07/06/22 16:32	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/07/22 9:27	mlh
Molybdenum, dissolved	M200.8 ICP-MS	1	<0.0002	U		mg/L	0.0002	0.0005	07/06/22 16:32	kja
Nickel, dissolved	M200.8 ICP-MS	20	<0.008	U	*	mg/L	0.008	0.02	07/07/22 13:25	kja
Potassium, dissolved	M200.7 ICP	10	8.60	B		mg/L	2	10	07/12/22 20:07	keh1
Selenium, dissolved	M200.8 ICP-MS	1	0.00026			mg/L	0.0001	0.00025	07/06/22 16:32	kja
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/06/22 16:32	kja
Sodium, dissolved	M200.7 ICP	10	3940			mg/L	2	10	07/12/22 20:07	keh1
Thallium, dissolved	M200.8 ICP-MS	10	<0.0005	U	*	mg/L	0.0005	0.0025	07/26/22 13:42	kja
Uranium, dissolved	M200.8 ICP-MS	20	<0.002	U		mg/L	0.002	0.01	07/07/22 13:25	kja
Vanadium, dissolved	M200.8 ICP-MS	1	0.00059	B		mg/L	0.0005	0.002	07/06/22 16:32	kja
Zinc, dissolved	M200.8 ICP-MS	1	<0.006	U		mg/L	0.006	0.015	07/06/22 16:32	kja

Golder Associates
Project ID:
Sample ID: MW-4

ACZ Sample ID: ***L74186-03***
Date Sampled: *06/23/22 12:40*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	586		*	mg/L	2	20	07/05/22 0:00	emk
Carbonate as CaCO3		1	<2	U	*	mg/L	2	20	07/05/22 0:00	emk
Hydroxide as CaCO3		1	<2	U	*	mg/L	2	20	07/05/22 0:00	emk
Total Alkalinity		1	586		*	mg/L	2	20	07/05/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-4.6			%			08/26/22 0:00	calc
Sum of Anions			194			meq/L			08/26/22 0:00	calc
Sum of Cations			177			meq/L			08/26/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6490	H	*	mg/L	40	200	08/02/22 18:11	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	07/07/22 11:47	mjj1
Fluoride	SM4500F-C	1	1.25		*	mg/L	0.15	0.35	07/20/22 21:36	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	08/26/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/29/22 1:48	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/29/22 1:48	pjb
pH (lab)	SM4500H+ B									
pH		1	8.0	H	*	units	0.1	0.1	07/05/22 0:00	emk
pH measured at		1	21.2		*	C	0.1	0.1	07/05/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	5	10600	H	*	mg/L	100	200	07/07/22 14:15	pcj
Sulfate	M300.0 - Ion Chromatography	200	<80	U	*	mg/L	80	400	07/20/22 22:50	mad
TDS (calculated)	Calculation		10800			mg/L			08/26/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.98						08/26/22 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-5

ACZ Sample ID: ***L74186-04***
Date Sampled: *06/23/22 13:45*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	1	<0.005	U	*	mg/L	0.005	0.015	07/06/22 16:34	kja
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	07/06/22 16:34	kja
Arsenic, dissolved	M200.8 ICP-MS	2	0.00284			mg/L	0.0004	0.002	07/07/22 13:30	kja
Barium, dissolved	M200.8 ICP-MS	1	0.0121			mg/L	0.0005	0.0025	07/06/22 16:34	kja
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U	*	mg/L	0.00008	0.00025	07/06/22 16:34	kja
Boron, dissolved	M200.7 ICP	2	0.315		*	mg/L	0.06	0.2	07/12/22 20:10	keh1
Cadmium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/06/22 16:34	kja
Calcium, dissolved	M200.7 ICP	2	475			mg/L	0.2	1	07/12/22 20:10	keh1
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/06/22 16:34	kja
Cobalt, dissolved	M200.8 ICP-MS	1	0.00554			mg/L	0.00005	0.00025	07/06/22 16:34	kja
Copper, dissolved	M200.8 ICP-MS	2	<0.0016	U		mg/L	0.0016	0.004	07/07/22 13:30	kja
Iron, dissolved	M200.7 ICP	2	39.7			mg/L	0.12	0.3	07/12/22 20:10	keh1
Lead, dissolved	M200.8 ICP-MS	2	<0.0002	U	*	mg/L	0.0002	0.001	07/07/22 13:30	kja
Lithium, dissolved	M200.7 ICP	2	0.317			mg/L	0.016	0.08	07/12/22 20:10	keh1
Magnesium, dissolved	M200.7 ICP	2	114			mg/L	0.4	2	07/14/22 14:36	keh1
Manganese, dissolved	M200.8 ICP-MS	1	0.105			mg/L	0.0004	0.002	07/06/22 16:34	kja
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/07/22 9:28	mlh
Molybdenum, dissolved	M200.8 ICP-MS	1	0.0126			mg/L	0.0002	0.0005	07/06/22 16:34	kja
Nickel, dissolved	M200.8 ICP-MS	2	0.0477			mg/L	0.0008	0.002	07/07/22 13:30	kja
Potassium, dissolved	M200.7 ICP	2	8.08			mg/L	0.4	2	07/12/22 20:10	keh1
Selenium, dissolved	M200.8 ICP-MS	1	0.00055			mg/L	0.0001	0.00025	07/06/22 16:34	kja
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/06/22 16:34	kja
Sodium, dissolved	M200.7 ICP	2	356			mg/L	0.4	2	07/12/22 20:10	keh1
Thallium, dissolved	M200.8 ICP-MS	2	<0.0001	U	*	mg/L	0.0001	0.0005	07/26/22 13:43	kja
Uranium, dissolved	M200.8 ICP-MS	2	0.0381			mg/L	0.0002	0.001	07/07/22 13:30	kja
Vanadium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/06/22 16:34	kja
Zinc, dissolved	M200.8 ICP-MS	1	0.0123	B		mg/L	0.006	0.015	07/06/22 16:34	kja

Golder Associates
Project ID:
Sample ID: MW-5

ACZ Sample ID: ***L74186-04***
Date Sampled: *06/23/22 13:45*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO3	SM2320B - Titration									
Bicarbonate as CaCO3		1	258		*	mg/L	2	20	07/05/22 0:00	emk
Carbonate as CaCO3		1	<2	U	*	mg/L	2	20	07/05/22 0:00	emk
Hydroxide as CaCO3		1	<2	U	*	mg/L	2	20	07/05/22 0:00	emk
Total Alkalinity		1	258		*	mg/L	2	20	07/05/22 0:00	emk
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.0			%			08/26/22 0:00	calc
Sum of Anions			52			meq/L			08/26/22 0:00	calc
Sum of Cations			51			meq/L			08/26/22 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	31.6	BH	*	mg/L	20	100	08/17/22 18:03	mad
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U	*	mg/L	0.003	0.01	07/07/22 11:49	mjj1
Fluoride	SM4500F-C	1	0.95		*	mg/L	0.15	0.35	07/20/22 21:52	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	08/26/22 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/29/22 1:50	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/29/22 1:50	pjb
pH (lab)	SM4500H+ B									
pH		1	7.3	H	*	units	0.1	0.1	07/05/22 0:00	emk
pH measured at		1	21.1		*	C	0.1	0.1	07/05/22 0:00	emk
Residue, Filterable (TDS) @180C	SM2540C	1	3640		*	mg/L	20	40	06/29/22 19:27	jck
Sulfate	M300.0 - Ion Chromatography	500	2190		*	mg/L	200	1000	07/20/22 23:08	mad
TDS (calculated)	Calculation		3370			mg/L			08/26/22 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.08						08/26/22 0:00	calc

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
Lower	Lower Recovery Limit, in % (except for LCSS, mg/Kg)
MDL	Method Detection Limit. Same as Minimum Reporting Limit unless omitted or equal to the PQL (see comment #5). Allows for instrument and annual fluctuations.
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit. Synonymous with the EPA term "minimum level".
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Recovered amount of the true value or spike added, in % (except for LCSS, mg/Kg)
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
Upper	Upper Recovery Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

AS	Analytical Spike (Post Digestion)	*LCSWD*	Laboratory Control Sample - Water Duplicate
ASD	Analytical Spike (Post Digestion) Duplicate	*LFB*	Laboratory Fortified Blank
CCB	Continuing Calibration Blank	*LFM*	Laboratory Fortified Matrix
CCV	Continuing Calibration Verification standard	*LFMD*	Laboratory Fortified Matrix Duplicate
DUP	Sample Duplicate	*LRB*	Laboratory Reagent Blank
ICB	Initial Calibration Blank	*MS*	Matrix Spike
ICV	Initial Calibration Verification standard	*MSD*	Matrix Spike Duplicate
ICSAB	Inter-element Correction Standard - A plus B solutions	*PBS*	Prep Blank - Soil
LCSS	Laboratory Control Sample - Soil	*PBW*	Prep Blank - Water
LCSSD	Laboratory Control Sample - Soil Duplicate	*PQV*	Practical Quantitation Verification standard
LCSW	Laboratory Control Sample - Water	*SDL*	Serial Dilution

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method or calibration procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Spikes/Fortified Matrix	Determines sample matrix interferences, if any.
Standard	Verifies the validity of the calibration.

ACZ Qualifiers (Qual)

B	Analyte concentration detected at a value between MDL and PQL. The associated value is an estimated quantity.
H	Analysis exceeded method hold time. pH is a field test with an immediate hold time.
L	Target analyte response was below the laboratory defined negative threshold.
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.

Method References

(1) EPA 600/4-83-020. Methods for Chemical Analysis of Water and Wastes, March 1983.
(2) EPA 600/R-93-100. Methods for the Determination of Inorganic Substances in Environmental Samples, August 1993.
(3) EPA 600/R-94-111. Methods for the Determination of Metals in Environmental Samples - Supplement I, May 1994.
(4) EPA SW-846. Test Methods for Evaluating Solid Waste.
(5) Standard Methods for the Examination of Water and Wastewater.

Comments

(1) QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(2) Soil, Sludge, and Plant matrices for Inorganic analyses are reported on a dry weight basis.
(3) Animal matrices for Inorganic analyses are reported on an "as received" basis.
(4) An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.
(5) If the MDL equals the PQL or the MDL column is omitted, the PQL is the reporting limit.

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

REP001.03.15.02

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ACZ Project ID: ***L74186***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alkalinity as CaCO3 SM2320B - Titration

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545672													
WG545672PBW1	PBW	07/05/22 10:39				47.8	mg/L		-20	20			B4 B7 BF
WG545672LCSW3	LCSW	07/05/22 10:57	WC220701-2	820.0001		771.8	mg/L	94	90	110			
L74184-02DUP	DUP	07/05/22 12:54			U	U	mg/L				0	20	RA
WG545672LCSW6	LCSW	07/05/22 14:07	WC220701-2	820.0001		775.9	mg/L	95	90	110			
WG545672PBW2	PBW	07/05/22 14:18				4.1	mg/L		-20	20			
L74308-01DUP	DUP	07/05/22 15:55			92.7	94	mg/L				1	20	
WG545672LCSW9	LCSW	07/05/22 16:13	WC220701-2	820.0001		778.3	mg/L	95	90	110			

Aluminum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.1		.1009	mg/L	101	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.011	0.011			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.050065		.0506	mg/L	101	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.050065	.101	.1454	mg/L	89	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.050065	.101	.1458	mg/L	89	70	130	0	20	
WG546025													
WG546025ICV	ICV	07/08/22 10:21	MS220701-3	.1		.0992	mg/L	99	90	110			
WG546025ICB	ICB	07/08/22 10:23				U	mg/L		-0.011	0.011			
WG546025LFB	LFB	07/08/22 10:25	MS220627-2	.050065		.0566	mg/L	113	85	115			
L74168-03AS	AS	07/08/22 10:36	MS220627-2	.050065	.122	.1653	mg/L	86	70	130			
L74168-03ASD	ASD	07/08/22 10:38	MS220627-2	.050065	.122	.1649	mg/L	86	70	130	0	20	
WG546063													
WG546063ICV	ICV	07/08/22 16:13	MS220701-3	.1		.0991	mg/L	99	90	110			
WG546063ICB	ICB	07/08/22 16:14				U	mg/L		-0.011	0.011			
WG546063LFB	LFB	07/08/22 16:16	MS220627-2	.050065		.0434	mg/L	87	85	115			
L74184-02AS	AS	07/08/22 16:49	MS220627-2	.10013	9.03	9.1438	mg/L	114	70	130			
L74184-02ASD	ASD	07/08/22 16:50	MS220627-2	.10013	9.03	9.0297	mg/L	0	70	130	1	20	M3

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.0201		.01976	mg/L	98	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.00088	0.00088			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.01		.01042	mg/L	104	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.01	U	.009	mg/L	90	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.01	U	.00919	mg/L	92	70	130	2	20	

Arsenic, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545942													
WG545942ICV	ICV	07/07/22 12:47	MS220701-3	.05		.05123	mg/L	102	90	110			
WG545942ICB	ICB	07/07/22 12:49				U	mg/L		-0.00044	0.00044			
WG545942LFB	LFB	07/07/22 12:51	MS220627-2	.05005		.05208	mg/L	104	85	115			
L74295-03AS	AS	07/07/22 13:37	MS220627-2	.05005	.00206	.05066	mg/L	97	70	130			
L74295-03ASD	ASD	07/07/22 13:39	MS220627-2	.05005	.00206	.04944	mg/L	95	70	130	2	20	

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ACZ Project ID: ***L74186***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Barium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.05124	mg/L	102	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.0011	0.0011			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.05005		.05244	mg/L	105	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.05005	.0144	.06442	mg/L	100	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.05005	.0144	.06495	mg/L	101	70	130	1	20	
WG545942													
WG545942ICV	ICV	07/07/22 12:47	MS220701-3	.05		.05089	mg/L	102	90	110			
WG545942ICB	ICB	07/07/22 12:49				U	mg/L		-0.0011	0.0011			
WG545942LFB	LFB	07/07/22 12:51	MS220627-2	.05005		.05201	mg/L	104	85	115			
L74295-03AS	AS	07/07/22 13:37	MS220627-2	.05005	.0747	.128	mg/L	106	70	130			
L74295-03ASD	ASD	07/07/22 13:39	MS220627-2	.05005	.0747	.12234	mg/L	95	70	130	5	20	

Beryllium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.049534	mg/L	99	90	110			
WG545832ICB	ICB	07/06/22 15:40				.000083	mg/L		-0.000176	0.000176			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.05005		.050609	mg/L	101	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.05005	U	.051987	mg/L	104	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.05005	U	.052888	mg/L	106	70	130	2	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546235													
WG546235ICV	ICV	07/12/22 18:50	II220624-2	2		2.036	mg/L	102	95	105			
WG546235ICB	ICB	07/12/22 18:56				U	mg/L		-0.09	0.09			
WG546235LFB	LFB	07/12/22 19:09	II220628-3	.5005		.535	mg/L	107	85	115			
L74211-05AS	AS	07/12/22 20:37	II220628-3	10.01	78.3	90.24	mg/L	119	85	115			M3
L74211-05ASD	ASD	07/12/22 20:40	II220628-3	10.01	78.3	89.96	mg/L	116	85	115	0	20	M3

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.051002	mg/L	102	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.00011	0.00011			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.05005		.052108	mg/L	104	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.05005	.000651	.051203	mg/L	101	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.05005	.000651	.05163	mg/L	102	70	130	1	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546235													
WG546235ICV	ICV	07/12/22 18:50	II220624-2	100		97.83	mg/L	98	95	105			
WG546235ICB	ICB	07/12/22 18:56				U	mg/L		-0.3	0.3			
WG546235LFB	LFB	07/12/22 19:09	II220628-3	67.98862		68.42	mg/L	101	85	115			
L74211-05AS	AS	07/12/22 20:37	II220628-3	1359.7724	1610	2884	mg/L	94	85	115			
L74211-05ASD	ASD	07/12/22 20:40	II220628-3	1359.7724	1610	2906	mg/L	95	85	115	1	20	

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ACZ Project ID: ***L74186***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545938													
WG545938ICV	ICV	07/08/22 0:25	WI220706-12	20		19.89	mg/L	99	90	110			
WG545938ICB	ICB	07/08/22 0:43				U	mg/L		-0.4	0.4			
WG546868													
WG546868LFB1	LFB	07/20/22 17:10	WI211112-6	30		30.52	mg/L	102	90	110			
L74186-01DUP	DUP	07/20/22 21:56			U	U	mg/L				0	20	RA
L74186-02AS	AS	07/20/22 22:32	WI211112-6	1500	1650	3149.09	mg/L	100	90	110			
WG546868LFB2	LFB	07/21/22 1:50	WI211112-6	30		30.57	mg/L	102	90	110			
WG547662													
WG547662LFB1	LFB	08/02/22 16:59	WI211112-6	30		30.55	mg/L	102	90	110			
L74066-01DUP	DUP	08/02/22 17:35			U	U	mg/L				0	20	RA
L74275-01AS	AS	08/02/22 18:47	WI211112-6	30	U	30.35	mg/L	101	90	110			
WG547662LFB2	LFB	08/03/22 1:39	WI211112-6	30		30.68	mg/L	102	90	110			
WG547857													
WG547857ICV	ICV	08/03/22 17:44	WI220803-5	19.98		20.18	mg/L	101	90	110			
WG547857ICB	ICB	08/03/22 18:02				U	mg/L		-0.4	0.4			
WG548663													
WG548663LFB1	LFB	08/17/22 17:45	WI211112-6	30		29.39	mg/L	98	90	110			
L74186-04DUP	DUP	08/17/22 18:21			31.6	29.37	mg/L				7	20	RA
L74898-15AS	AS	08/17/22 18:57	WI211112-6	15000	19200	15231.16	mg/L	-26	90	110			M2

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.05028	mg/L	101	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.0011	0.0011			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.0501		.05122	mg/L	102	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.0501	U	.04831	mg/L	96	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.0501	U	.04967	mg/L	99	70	130	3	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.050569	mg/L	101	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.00011	0.00011			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.05005		.050728	mg/L	101	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.05005	.00037	.049073	mg/L	97	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.05005	.00037	.050238	mg/L	100	70	130	2	20	

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545942													
WG545942ICV	ICV	07/07/22 12:47	MS220701-3	.05		.05387	mg/L	108	90	110			
WG545942ICB	ICB	07/07/22 12:49				U	mg/L		-0.00176	0.00176			
WG545942LFB	LFB	07/07/22 12:51	MS220627-2	.05		.05325	mg/L	107	85	115			
L74295-03AS	AS	07/07/22 13:37	MS220627-2	.05	U	.04483	mg/L	90	70	130			
L74295-03ASD	ASD	07/07/22 13:39	MS220627-2	.05	U	.0436	mg/L	87	70	130	3	20	

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ACZ Project ID: ***L74186***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Cyanide, Free D6888-09/OIA-1677-09

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545769													
WG545769ICV	ICV	07/07/22 11:31	WI220627-4	.3003		.2823	mg/L	94	90	110			
WG545769ICB	ICB	07/07/22 11:33				U	mg/L		-0.003	0.003			
WG545769LFB	LFB	07/07/22 11:37	WI220627-5	.1001		.0956	mg/L	96	90	110			
L74186-01AS	AS	07/07/22 11:41	WI220627-5	.1001	U	.0934	mg/L	93	90	110			
L74186-01ASD	ASD	07/07/22 11:43	WI220627-5	.1001	U	.0955	mg/L	95	90	110	2	20	

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546818													
WG546818ICV	ICV	07/20/22 14:25	WC220714-1	2.008		2.12	mg/L	106	90	110			
WG546818ICB	ICB	07/20/22 14:29				U	mg/L		-0.3	0.3			
WG546818LFB1	LFB	07/20/22 14:36	WC220606-1	5.02		4.84	mg/L	96	90	110			
WG546818LFB2	LFB	07/20/22 20:00	WC220606-1	5.02		4.53	mg/L	90	90	110			
L74147-04AS	AS	07/20/22 20:23	WC220606-1	376.5	16.3	358.57	mg/L	91	90	110			
L74147-04ASD	ASD	07/20/22 20:42	WC220606-1	376.5	16.3	345.89	mg/L	88	90	110	4	20	MA
L74186-03AS	AS	07/20/22 21:40	WC220606-1	5.02	1.25	5.96	mg/L	94	90	110			
L74186-03ASD	ASD	07/20/22 21:44	WC220606-1	5.02	1.25	5.93	mg/L	93	90	110	1	20	

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546235													
WG546235ICV	ICV	07/12/22 18:50	II220624-2	2		1.987	mg/L	99	95	105			
WG546235ICB	ICB	07/12/22 18:56				U	mg/L		-0.18	0.18			
WG546235LFB	LFB	07/12/22 19:09	II220628-3	1.0013		1.029	mg/L	103	85	115			
L74211-05AS	AS	07/12/22 20:37	II220628-3	20.026	21.2	40.86	mg/L	98	85	115			
L74211-05ASD	ASD	07/12/22 20:40	II220628-3	20.026	21.2	40.9	mg/L	98	85	115	0	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.05098	mg/L	102	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.00022	0.00022			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.0501		.05167	mg/L	103	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.0501	.00014	.04995	mg/L	99	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.0501	.00014	.05136	mg/L	102	70	130	3	20	
WG545942													
WG545942ICV	ICV	07/07/22 12:47	MS220701-3	.05		.05137	mg/L	103	90	110			
WG545942ICB	ICB	07/07/22 12:49				U	mg/L		-0.00022	0.00022			
WG545942LFB	LFB	07/07/22 12:51	MS220627-2	.0501		.0519	mg/L	104	85	115			
L74295-03AS	AS	07/07/22 13:37	MS220627-2	.0501	U	.05239	mg/L	105	70	130			
L74295-03ASD	ASD	07/07/22 13:39	MS220627-2	.0501	U	.05107	mg/L	102	70	130	3	20	

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ACZ Project ID: ***L74186***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Lithium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546235													
WG546235ICV	ICV	07/12/22 18:50	II220624-2	2		1.9702	mg/L	99	95	105			
WG546235ICB	ICB	07/12/22 18:56				U	mg/L		-0.024	0.024			
WG546235LFB	LFB	07/12/22 19:09	II220628-3	.998		.9813	mg/L	98	85	115			
L74211-05AS	AS	07/12/22 20:37	II220628-3	19.96	16.1	35.92	mg/L	99	85	115			
L74211-05ASD	ASD	07/12/22 20:40	II220628-3	19.96	16.1	35.82	mg/L	99	85	115	0	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546356													
WG546356ICV	ICV	07/14/22 13:16	II220624-2	100		95.8	mg/L	96	95	105			
WG546356ICB	ICB	07/14/22 13:22				U	mg/L		-0.6	0.6			
WG546356LFB	LFB	07/14/22 13:35	II220628-3	49.99809		47.89	mg/L	96	85	115			
L74211-05AS	AS	07/14/22 15:02	II220628-3	999.9618	109	1059.4	mg/L	95	85	115			
L74211-05ASD	ASD	07/14/22 15:05	II220628-3	999.9618	109	1057.6	mg/L	95	85	115	0	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.04994	mg/L	100	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.00088	0.00088			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.0498		.0518	mg/L	104	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.0498	.0319	.08066	mg/L	98	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.0498	.0319	.08223	mg/L	101	70	130	2	20	

Mercury, dissolved M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545775													
WG545775ICV1	ICV	07/07/22 8:35	HG220705-3	.005005		.00523	mg/L	104	95	105			
WG545775ICB	ICB	07/07/22 8:36				U	mg/L		-0.0002	0.0002			
WG545774													
WG545774LRB	LRB	07/07/22 9:11				U	mg/L		-0.00044	0.00044			
WG545774LFB	LFB	07/07/22 9:12	HG220705-6	.002002		.00196	mg/L	98	85	115			
L74169-05LFM	LFM	07/07/22 9:22	HG220705-6	.002002	U	.00195	mg/L	97	85	115			
L74169-05LFMD	LFMD	07/07/22 9:23	HG220705-6	.002002	U	.00195	mg/L	97	85	115	0	20	
L74240-02LFM	LFM	07/07/22 9:34	HG220705-6	.002002	U	.00193	mg/L	96	85	115			
L74240-02LFMD	LFMD	07/07/22 9:35	HG220705-6	.002002	U	.00191	mg/L	95	85	115	1	20	

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.02		.01973	mg/L	99	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.00044	0.00044			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.05005		.05118	mg/L	102	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.05005	.0002	.04948	mg/L	98	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.05005	.0002	.04995	mg/L	99	70	130	1	20	

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ACZ Project ID: ***L74186***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545942													
WG545942ICV	ICV	07/07/22 12:47	MS220701-3	.05		.05258	mg/L	105	90	110			
WG545942ICB	ICB	07/07/22 12:49				U	mg/L		-0.00088	0.00088			
WG545942LFB	LFB	07/07/22 12:51	MS220627-2	.05		.05363	mg/L	107	85	115			
L74295-03AS	AS	07/07/22 13:37	MS220627-2	.05	.00064	.04549	mg/L	90	70	130			
L74295-03ASD	ASD	07/07/22 13:39	MS220627-2	.05	.00064	.04469	mg/L	88	70	130	2	20	

Nitrate/Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545354													
WG545354ICV	ICV	06/29/22 1:09	WI220602-3	2.4161		2.236	mg/L	93	90	110			
WG545354ICB	ICB	06/29/22 1:10				U	mg/L		-0.02	0.02			
WG545354LFB	LFB	06/29/22 1:16	WI220401-10	2		2.053	mg/L	103	90	110			
L74177-01DUP	DUP	06/29/22 1:40			U	U	mg/L				0	20	RA
L74166-01AS	AS	06/29/22 1:55	WI220401-10	6	2.82	8.818	mg/L	100	90	110			

Nitrite as N, dissolved M353.2 - Automated Cadmium Reduction

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545354													
WG545354ICV	ICV	06/29/22 1:09	WI220602-3	.6089		.589	mg/L	97	90	110			
WG545354ICB	ICB	06/29/22 1:10				U	mg/L		-0.01	0.01			
WG545354LFB	LFB	06/29/22 1:16	WI220401-10	1		1.036	mg/L	104	90	110			
L74166-01AS	AS	06/29/22 1:38	WI220401-10	1	.065	1.115	mg/L	105	90	110			
L74177-01DUP	DUP	06/29/22 1:40			U	U	mg/L				0	20	RA

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545672													
WG545672LCSW1	LCSW	07/05/22 10:42	PCN64057	6		6	units	100	5.9	6.1			
L74184-02DUP	DUP	07/05/22 12:54			4.9	4.7	units				4	20	
WG545672LCSW4	LCSW	07/05/22 13:52	PCN64057	6		6	units	100	5.9	6.1			
L74308-01DUP	DUP	07/05/22 15:55			8	8	units				0	20	
WG545672LCSW7	LCSW	07/05/22 15:58	PCN64057	6		6	units	100	5.9	6.1			

Potassium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546235													
WG546235ICV	ICV	07/12/22 18:50	II220624-2	20		19.41	mg/L	97	95	105			
WG546235ICB	ICB	07/12/22 18:56				U	mg/L		-0.6	0.6			
WG546235LFB	LFB	07/12/22 19:09	II220628-3	99.95798		96.77	mg/L	97	85	115			
L74211-05AS	AS	07/12/22 20:37	II220628-3	1999.1596	74.3	1980	mg/L	95	85	115			
L74211-05ASD	ASD	07/12/22 20:40	II220628-3	1999.1596	74.3	1982.8	mg/L	95	85	115	0	20	

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ACZ Project ID: ***L74186***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545465													
WG545465PBW	PBW	06/29/22 18:30				U	mg/L		-20	20			
WG545465LCSW	LCSW	06/29/22 18:32	PCN65053	1000		998	mg/L	100	80	120			
L74186-04DUP	DUP	06/29/22 19:30			3640	3630	mg/L				0	10	
WG545975													
WG545975PBW	PBW	07/07/22 14:10				U	mg/L		-20	20			
WG545975LCSW	LCSW	07/07/22 14:12	PCN65844	1000		978	mg/L	98	80	120			
L74330-05DUP	DUP	07/07/22 14:46			1220	1212	mg/L				1	10	

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.05089	mg/L	102	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.00022	0.00022			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.05		.05208	mg/L	104	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.05	U	.05103	mg/L	102	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.05	U	.05238	mg/L	105	70	130	3	20	

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.02		.0203	mg/L	102	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.00022	0.00022			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.01		.01053	mg/L	105	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.01	U	.00996	mg/L	100	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.01	U	.0101	mg/L	101	70	130	1	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG546235													
WG546235ICV	ICV	07/12/22 18:50	II220624-2	100		97.94	mg/L	98	95	105			
WG546235ICB	ICB	07/12/22 18:56				U	mg/L		-0.6	0.6			
WG546235LFB	LFB	07/12/22 19:09	II220628-3	100.0023		98.03	mg/L	98	85	115			
L74211-05AS	AS	07/12/22 20:37	II220628-3	2000.046	8360	10150	mg/L	89	85	115			
L74211-05ASD	ASD	07/12/22 20:40	II220628-3	2000.046	8360	10278	mg/L	96	85	115	1	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545938													
WG545938ICV	ICV	07/08/22 0:25	WI220706-12	48.85		48.61	mg/L	100	90	110			
WG545938ICB	ICB	07/08/22 0:43				U	mg/L		-0.4	0.4			
WG546868													
WG546868LFB1	LFB	07/20/22 17:10	WI211112-6	30		30.19	mg/L	101	90	110			
L74186-01DUP	DUP	07/20/22 21:56			4590	4562.26	mg/L				1	20	
L74186-02AS	AS	07/20/22 22:32	WI211112-6	1500	U	1371.46	mg/L	91	90	110			
WG546868LFB2	LFB	07/21/22 1:50	WI211112-6	30		29.31	mg/L	98	90	110			

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ACZ Project ID: ***L74186***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG547183													
WG547183ICV	ICV	07/26/22 13:20	MS220701-3	.05		.052398	mg/L	105	90	110			
WG547183ICB	ICB	07/26/22 13:21				U	mg/L		-0.00011	0.00011			
WG547183LFB	LFB	07/26/22 13:23	MS220722-2	.05		.053717	mg/L	107	85	115			
L74152-01AS	AS	07/26/22 13:26	MS220722-2	.05	U	.053373	mg/L	107	70	130			
L74152-01ASD	ASD	07/26/22 13:27	MS220722-2	.05	U	.053346	mg/L	107	70	130	0	20	

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.05163	mg/L	103	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.00022	0.00022			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.05		.05144	mg/L	103	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.05	U	.04977	mg/L	100	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.05	U	.05097	mg/L	102	70	130	2	20	
WG545942													
WG545942ICV	ICV	07/07/22 12:47	MS220701-3	.05		.05209	mg/L	104	90	110			
WG545942ICB	ICB	07/07/22 12:49				U	mg/L		-0.00022	0.00022			
WG545942LFB	LFB	07/07/22 12:51	MS220627-2	.05		.05214	mg/L	104	85	115			
L74295-03AS	AS	07/07/22 13:37	MS220627-2	.05	.00725	.06178	mg/L	109	70	130			
L74295-03ASD	ASD	07/07/22 13:39	MS220627-2	.05	.00725	.0602	mg/L	106	70	130	3	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.05098	mg/L	102	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.0011	0.0011			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.05005		.05257	mg/L	105	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.05005	U	.04987	mg/L	100	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.05005	U	.05091	mg/L	102	70	130	2	20	

Zinc, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG545832													
WG545832ICV	ICV	07/06/22 15:39	MS220701-3	.05		.0473	mg/L	95	90	110			
WG545832ICB	ICB	07/06/22 15:40				U	mg/L		-0.0132	0.0132			
WG545832LFB	LFB	07/06/22 15:42	MS220627-2	.050075		.0514	mg/L	103	85	115			
L74181-05AS	AS	07/06/22 16:25	MS220627-2	.050075	.135	.1818	mg/L	93	70	130			
L74181-05ASD	ASD	07/06/22 16:27	MS220627-2	.050075	.135	.1834	mg/L	97	70	130	1	20	

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ACZ Project ID: ***L74186***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L74186-01	WG545832	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG545672	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG546235	Boron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG545672	Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG546868	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545769	Cyanide, Free	D6888-09/OIA-1677-09	Q6	Sample was received above recommended temperature.
	WG546818	Fluoride	SM4500F-C	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			SM4500F-C	Q6	Sample was received above recommended temperature.
	WG545672	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG545354	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545672	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
			SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG545465	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG546868	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG547183	Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
	WG545672	Total Alkalinity	SM2320B - Titration	B4	Target analyte detected in blank at or above the acceptance criteria.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

Golder Associates

ACZ Project ID: ***L74186***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L74186-02	WG546063	Aluminum, dissolved	M200.8 ICP-MS	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG545832	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG545672	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG546235	Boron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG545672	Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG546868	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545769	Cyanide, Free	D6888-09/OIA-1677-09	Q6	Sample was received above recommended temperature.
	WG546818	Fluoride	SM4500F-C	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			SM4500F-C	Q6	Sample was received above recommended temperature.
	WG545672	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG545354	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545672	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG545465	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG546868	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG547183	Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
	WG545672	Total Alkalinity	SM2320B - Titration	B7	Target analyte detected in prep / method blank at or above acceptance limit. Sample value is > 10X the concentration in the method blank.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).

Golder Associates

ACZ Project ID: ***L74186***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L74186-03	WG545832	Aluminum, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG545942	Arsenic, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG545832	Beryllium, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG545672	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG546235	Boron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG545672	Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG547662	Chloride	M300.0 - Ion Chromatography	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545942	Copper, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG545769	Cyanide, Free	D6888-09/OIA-1677-09	Q6	Sample was received above recommended temperature.
	WG546818	Fluoride	SM4500F-C	Q6	Sample was received above recommended temperature.
	WG545672	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG545942	Nickel, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG545354	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545672	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG545975	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			SM2540C	HE	Analysis performed past holding time. Method holding time is less than or equal to 7 days and sample was received with less than half of the holding time remaining (refer to item C5 of ACZ's Terms & Conditions).
			SM2540C	Q6	Sample was received above recommended temperature.
	WG546868	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG547183	Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
	WG545672	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Golder Associates

ACZ Project ID: ***L74186***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L74186-04	WG545832	Aluminum, dissolved	M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
		Beryllium, dissolved	M200.8 ICP-MS	E6	Concentration estimated. Internal standard recoveries did not meet method acceptance criteria.
			M200.8 ICP-MS	VC	CCV recovery was above the acceptance limits. Target analyte was not detected in the sample [< MDL].
	WG545672	Bicarbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG546235	Boron, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG545672	Carbonate as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG548663	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			M300.0 - Ion Chromatography	M2	Matrix spike recovery was low, the recovery of the associated control sample (LCS or LFB) was acceptable.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545769	Cyanide, Free	D6888-09/OIA-1677-09	Q6	Sample was received above recommended temperature.
	WG546818	Fluoride	SM4500F-C	MA	Recovery for either the spike or spike duplicate was outside of the acceptance limits; the RPD was within the acceptance limits.
			SM4500F-C	Q6	Sample was received above recommended temperature.
	WG545672	Hydroxide as CaCO3	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG545942	Lead, dissolved	M200.8 ICP-MS	D5	Sample required dilution. Sample matrix causing internal standards to recover outside method limits.
	WG545354	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
		Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			M353.2 - Automated Cadmium Reduction	Q6	Sample was received above recommended temperature.
			M353.2 - Automated Cadmium Reduction	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG545672	pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
			SM4500H+ B	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG545465	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG546868	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG547183	Thallium, dissolved	M200.8 ICP-MS	DH	Sample required dilution due to high TDS and/or EC value.
	WG545672	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	ZW	Method deviation. The sample was centrifuged prior to analysis due to high solid content.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

RadioChemistry Analytical Results

Golder Associates
Project ID:
Sample ID: MW-20
Locator:

ACZ Sample ID: ***L74186-01***
Date Sampled: *06/23/22 11:00*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/20/22 0:30		61	39	110	pCi/L	*	ajp
Gross Beta	07/20/22 0:30		34	42	140	pCi/L	*	ajp

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RadioChemistry Analytical Results

Golder Associates
Project ID:
Sample ID: MW-3
Locator:

ACZ Sample ID: ***L74186-02***
Date Sampled: *06/23/22 11:45*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/20/22 0:31		3.7	11	64	pCi/L	*	ajp
Gross Beta	07/20/22 0:31		-9.8	17	72	pCi/L	*	ajp

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RadioChemistry Analytical Results

Golder Associates
Project ID:
Sample ID: MW-4
Locator:

ACZ Sample ID: ***L74186-03***
Date Sampled: *06/23/22 12:40*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/20/22 0:34		9.7	22	120	pCi/L	*	ajp
Gross Beta	07/20/22 0:34		88	74	230	pCi/L	*	ajp

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RadioChemistry Analytical Results

Golder Associates
Project ID:
Sample ID: MW-5
Locator:

ACZ Sample ID: ***L74186-04***
Date Sampled: *06/23/22 13:45*
Date Received: *06/28/22*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/20/22 0:36		20	16	140	pCi/L	*	ajp
Gross Beta	07/20/22 0:36		31	17	110	pCi/L	*	ajp

Report Header Explanations

Batch	A distinct set of samples analyzed at a specific time
Error(+/-)	Calculated sample specific uncertainty
Found	Value of the QC Type of interest
Limit	Upper limit for RPD, in %.
LCL	Lower Control Limit, in % (except for LCSS, mg/Kg)
LLD	Calculated sample specific Lower Limit of Detection
PCN/SCN	A number assigned to reagents/standards to trace to the manufacturer's certificate of analysis
PQL	Practical Quantitation Limit
QC	True Value of the Control Sample or the amount added to the Spike
Rec	Amount of the true value or spike added recovered, in % (except for LCSS, mg/Kg)
RER	Relative Error Ratio, calculation used for Dup. QC taking into account the error factor.
RPD	Relative Percent Difference, calculation used for Duplicate QC Types
UCL	Upper Control Limit, in % (except for LCSS, mg/Kg)
Sample	Value of the Sample of interest

QC Sample Types

DUP	Sample Duplicate	*MS/MSD*	Matrix Spike/Matrix Spike Duplicate
LCSS	Laboratory Control Sample - Soil	*PBS*	Prep Blank - Soil
LCSW	Laboratory Control Sample - Water	*PBW*	Prep Blank - Water

QC Sample Type Explanations

Blanks	Verifies that there is no or minimal contamination in the prep method procedure.
Control Samples	Verifies the accuracy of the method, including the prep procedure.
Duplicates	Verifies the precision of the instrument and/or method.
Matrix Spikes	Determines sample matrix interferences, if any.

ACZ Qualifiers (Qual)

H	Analysis exceeded method hold time.

Method Prefix Reference

M	EPA methodology, including those under SDWA, CWA, and RCRA
SM	Standard Methods for the Examination of Water and Wastewater.
D	ASTM
RP	DOE
ESM	DOE/ESM

Comments

(1)	Solid matrices are reported on a dry weight basis.
(2)	Preparation method: "Method" indicates preparation defined in analytical method.
(3)	QC results calculated from raw data. Results may vary slightly if the rounded values are used in the calculations.
(4)	An asterisk in the "XQ" column indicates there is an extended qualifier and/or certification qualifier associated with the result.

For a complete list of ACZ's Extended Qualifiers, please click:
https://acz.com/wp-content/uploads/2019/04/Ext-Qual-List.pdf

Golder Associates

ACZ Project ID: ***L74186***

NOTE: If the Rec% column is null, the high/low limits are in the same units as the result. If the Rec% column is not null, then the high/low limits are in % Rec.

Alpha M900.0 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG546535																
WG546535PBW	PBW	07/20/22						1.5	1.3	12			24			
WG546535LCSW1	LCSW	07/20/22	PCN65744	100				120	9.4	12	120	67	144			
L74039-02DUP	DUP-RPD	07/20/22			7.2	7.3	28	6.4	5.9	20				12	20	
L74131-02MS	MS	07/20/22	PCN65744	344.83	120	28	42	370	41	29	72	67	144			
L74186-02DUP	DUP-RPD	07/20/22			3.7	11	64	-.53	9.5	81				267	20	RG
L74186-02DUP	DUP-RER	07/20/22			3.7	11	64	-.53	9.5	81				0.29	2	

Beta M900.0 **Units:** pCi/L

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Error	LLD	Found	Error	LLD	Rec%	Lower	Upper	RPD/RER	Limit	Qual
WG546535																
WG546535PBW	PBW	07/20/22						3.7	3.1	20			40			
WG546535LCSW2	LCSW	07/20/22	RC220511-11	100				130	7.4	7.6	130	82	122			N1
L74039-02DUP	DUP-RPD	07/20/22			19	9	18	14	9.6	30				30	20	RG
L74039-02DUP	DUP-RER	07/20/22			19	9	18	14	9.6	30				0.38	2	
L74131-06MS	MS	07/20/22	RC220511-11	357.14	23	12	23	380	26	38	100	82	122			
L74186-02DUP	DUP-RPD	07/20/22			-9.8	17	72	12	19	53				1982	20	RG
L74186-02DUP	DUP-RER	07/20/22			-9.8	17	72	12	19	53				0.86	2	

RadChem Extended Qualifier Report

Golder Associates

ACZ Project ID: ***L74186***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L74186-01	*N*G546535	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	N1	See Case Narrative.
			M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L74186-02	*N*G546535	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	N1	See Case Narrative.
			M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L74186-03	*N*G546535	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	N1	See Case Narrative.
			M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
L74186-04	*N*G546535	Gross Alpha	M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.
		Gross Beta	M900.0	N1	See Case Narrative.
			M900.0	RG	Sample concentration is less than 5x LLD; RPD was not used for data validation. Replicate Error Ratio (RER) is less than 2. Precision judged to be in control.

Certification Qualifiers

Golder Associates

ACZ Project ID: ***L74186***

No certification qualifiers associated with this analysis

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Golder Associates

ACZ Project ID: L74186
Date Received: 06/28/2022 12:20
Received By:
Date Printed: 6/29/2022

Receipt Verification

	YES	NO	NA
1) Is a foreign soil permit included for applicable samples?			X
2) Is the Chain of Custody form or other directive shipping papers present?	X		
3) Does this project require special handling procedures such as CLP protocol?		X	
4) Are any samples NRC licensable material?			X
5) If samples are received past hold time, proceed with requested short hold time analyses?	X		
6) Is the Chain of Custody form complete and accurate?	X		
7) Were any changes made to the Chain of Custody form prior to ACZ receiving the samples?		X	

Samples/Containers

	YES	NO	NA
8) Are all containers intact and with no leaks?	X		
9) Are all labels on containers and are they intact and legible?	X		
10) Do the sample labels and Chain of Custody form match for Sample ID, Date, and Time?	X		
11) For preserved bottle types, was the pH checked and within limits? [1]	X		
12) Is there sufficient sample volume to perform all requested work?	X		
13) Is the custody seal intact on all containers?			X
14) Are samples that require zero headspace acceptable?			X
15) Are all sample containers appropriate for analytical requirements?	X		
16) Is there an Hg-1631 trip blank present?			X
17) Is there a VOA trip blank present?			X
18) Were all samples received within hold time?		X	

Some parameters were received past hold time.

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
7191	9.2	<=6.0	15	N/A

Was ice present in the shipment container(s)?

Yes - Wet ice was present in the shipment container(s) but was thawed by receipt at ACZ.

Client must contact an ACZ Project Manager if analysis should not proceed for samples received outside of their thermal preservation acceptance criteria.

ACZ Laboratories, Inc.
2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Sample Receipt

Golder Associates

ACZ Project ID:	L74186
Date Received:	06/28/2022 12:20
Received By:	
Date Printed:	6/29/2022

[1] The preservation of the following bottle types is not checked at sample receipt: Orange (oil and grease), Purple (total cyanide), Pink (dissolved cyanide), Brown (arsenic speciation), Sterile (fecal coliform), EDTA (sulfite), HCl preserved vial (organics), Na2S2O3 preserved vial (organics), and HG-1631 (total/dissolved mercury by method 1631).

ACZ LABORATORIES | Accredited Environmental Testing | 2773 Downhill Drive, Steamboat Springs, CO 80487, (970) 879-6590 | L74186

CHAIN of CUSTODY

Report to:

Name: Sarah Harkins
Company: Golder Associates
E-mail: Sara.Harkins@wsp.com
Address: 2121 Abbott Rd ste 100, Anchorage Alaska 99507
Telephone: 907-920-2537

Copy of Report to:

Name: Candace Whitten
Company: Golder Associates
E-mail: Candace.Whitten@wsp.com
Telephone:

Invoice to:

Name: Sara Harkins
Company: Golder Associates
E-mail: Sara.Harkins@wsp.com
Address:
Telephone:

Copy of Invoice to:

Name:
Company:
E-mail:
Address:
Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]
If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]
If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: C. Whitten Sampler's Site Information State CO Zip code 80635 Time Zone MT
*Sampler's Signature:
*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #:
PO#:
Reporting state for compliance testing:
Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED (attach list or use quote number)

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	5-44 quote
MW 15	6/23/22 0915	GW	5	X
MW 2	6/23/22 0942	GW	5	X
MW-1	6/23/22 1040	GW	5	X
MW-20	6/23/22 11:00	GW	5	X
MW-3	6/23/22 11:45	GW	5	X
MW-4	6/23/22 12:40	GW	5	X
MW-5	6/23/22 13:45	GW	5	X
MW-8	6/23/22 14:15	GW	5	X
MW-6	6/23/22 15:10	GW	5	X
MW-7	6/23/22 16:00	GW	5	X

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

3 coolers

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
	6/23/22 1645		6/24/22 1220

L74186 Chain of Custody

Qualtrax ID: 1984 Revision #: 2 White - Return with sample. Yellow - Retain for your records

ATTACHMENT 2

Field Sheets

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: 21505963**

Location MW-2

Monitored By: JT / KM Date 6/15/22 Time 8:51 am

Well Piezometer Data

(*circle one*)

Depth of Well (from top of PVC or ground)	~ 113.2	feet
Depth of Water (from top of PVC or ground)	67.75	feet
Radius of Casing	2	inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 6/15/2022 Time 9:10

Stop Purging Date 6/15/2022 Time 10:09

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
6/15/22	9:28	4.	15.0	7.86	8044			yellow appearance, foamy
	9:46	8.	14.8	7.58	8315			with strong odor
	9:56	11	14.7	7.61	unstable			less color
	10:01	12.5	14.8	7.62	3980			
	10:09	13.5	14.9	7.63	8484			
		dry at	14	gal				

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: 21505963**

Location MW-3

Monitored By: JT / KM Date 6/15/22 Time 10:50

Well Piezometer Data

(*circle one*)

Depth of Well (from top of PVC or ground)		feet ← cant reach bottom
Depth of Water (from top of PVC or ground)	38.75	feet
Radius of Casing	2 inch	inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 6/15/22 Time 10:50

Stop Purging Date 6/15/22 Time 11:23

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
6/15/22	11:01	4.5	18.0	7.72	5480			some orange particles
6/15/22	11:07	8.5	16.8	7.71	300.4			slightly murkey
6/15/22	11:14	11.5	17.7	7.80				
6/15/22	11:20	[illegible]	17.6	7.83	5607			
		Dry at	13.75					

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: 21505963**

Location MW-4

Monitored By: JT / KM Date 6/15/22 Time 12:16

Well Piezometer Data

(*circle one*)

Depth of Well (from top of PVC or ground)	181.7	feet
Depth of Water (from top of PVC or ground)	65.06	feet – 12:25pm
Radius of Casing	2 inch	inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 6/15/22 Time 12:~~35~~

Stop Purging Date 6/15/22 Time 15:13

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (__S/cm)	Turbidity (NTU)		Appearance of Water and Comments
6/15/22	12:56	5	15.5	7.42	18128			Cloudy
	13:18	10	14.5	7.55	14555			
	13:38	15	14.5	7.53	14497			
	14:07	20	14.6	7.37	14955			
	14:29	25	15.5	7.59	15104			Becoming grey-smelling more.
	15:00	30	15.9	7.62	15200			
								pulling water from same spot for a while, assumed recharge
	Stopped at 32 gals - well is recharging							

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: 21505963**

Location MW-6

Monitored By: JF-~~MMR~~ KM Date 6/16/2022 Time 11:46

Well Piezometer Data

(*circle one*)

Depth of Well (from top of PVC or ground)		feet
Depth of Water (from top of PVC or ground)	194.73	feet
Radius of Casing	4 inch	inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 6/16/2022 Time 12:15

Stop Purging Date 6/16/2022 Time 13:21

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
6/16/22	12:23	5	15.2	7.47	13669			Dark Grey with a slight sheen
	12:33	10	14.5	7.55	10057			↓
	12:44	15	15.7	7.44	13722			
	12:54	20	15.1	7.55	13996			Darker - more sheen
	~~13:09~~ 13:09	24.5	15.0	7.51	14044			↓
	13:21	~~30~~ 30	16.8	7.54	14804			
	Dry at ~~30~~ 30 gal.							

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: 21505963**

Location MW-7

Monitored By: JT / KM Date 6/15/22 Time 16:00

Well Piezometer Data

(*circle one*)

Depth of Well (from top of PVC or ground)		feet
Depth of Water (from top of PVC or ground)	221.35	feet
Radius of Casing	4	inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 06/15/22 Time 16:30

Stop Purging Date 06/15/22 Time 18:20

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
6/15/22	16:45	5 gal	15.4	7.13	11747	–		Black Sediment, sulfur odor
	17:03	10	15.7	7.14	11513	–		"
	17:17	15	14.5	7.9	11959	–		Water is sudsy
	17:28	19.75	15.3	7.27	13789	–		~~Water is bubbling~~
	17:42	24.75	14.6	7.31	13929	–		Getting darker water
	17:54	29.75	14.4	7.42	14594	–		
	18:07	34.00	14.5	7.51	15005	–		Sediment
			Dry	at	34.75	gallons		

GOLDER

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim/2022Boettcher Quarry GW/CO **Project No.: 21505963**

Location MW-8

Monitored By: JT + KM Date 6/16/22 Time 8:22

Well Piezometer Data

(*circle one*)

Depth of Well (from top of RVC or ground)	~236.8	feet
Depth of Water (from top of PVC or ground)	138.61	feet
Radius of Casing	4 inches	inches
		feet
Casing Volume		cubic feet
		gallons

Development / Purging Discharge Data

Purging Method: disposable, dedicated bailer

Start Purging Date 6/16/22 Time 8:40

Stop Purging Date 6/16/22 Time 11:33

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
6/16/22	8:48	5	14.3	7.91	15366			clear
	8:56	10	14.5	7.97	15520			
	9:05	15	14.2	7.99	15491			
	9:16	~~20~~ 19.75	14.0	8.00	15503			
↓	9:26	24.75	14.6	8.01	15743			clear, some bubbles/suds
	9:36	29.75	14.6	8.01	15699			
	9:47	34.75	14.4	8.00	15301			
	9:58	39.75	15.3	7.98	8009			
	10:08	44.75	14.4	7.89	15500			
	10:20	49.75	14.7	7.49	15556			grey front w/ odor
	10:32	54.75	14.8	7.35	15695			same.
	11:10	59.75	15.6	7.30	16291			
	11:26	64.75	17.4	7.28	16700			More smelly, Grey
		~~66.50~~						
								Hitting bottom and water level not changing in bailers, assumed recharge.
		Dry at 66.5 gallons						

120
12
26

RECORD OF WATER LEVEL READINGS

GOLDER

Project Name: Holcim Boettcher 2022 1st semi-annual sampling **Location:** Laporte, CO **Project No.** 21505963

Borehole No.	Date	Time	Measuring Device / Serial No.	Measurement Point (M.P)	Water Level Below M.P.	Correction To Survey Mark	Survey Mark Elevation	Water Level Elevation	By	Comments
MW-2	6/15/22	8:51	WLM - 300'	TPVC	67.75	--	--	--	JT	
MW-1	6/15/22	10:09	WLM - 300'	TPVC	44.68	--	--	--	JT	
MW-3	6/15/22	10:31	WLM - 300'	TPVC	38.37	--	--	--	JT	
MW-4	6/15/22	12:25	WLM - 300'	TPVC	65.06	--	--	--	JT	
MW-5	6/16/22	7:45	WLM - 300'	TPVC	49.69	--	--	--	KM	
MW-6	6/16/22	11:54	WLM - 300'	TPVC	199.73 ← 194.73	--	--	--	KM	
MW-7	6/15/22	15:45	WLM - 300'	TPVC	221.35	--	--	--	KM	
MW-8	6/16/22	8:22	WLM - 300'	TPVC	138.61	--	--	--	KM	
MW-2	6/23/22	8:55	WLM-300'	TPVC	106.09				CMW	
MW-1	6/23/22	10:00	WLM-300'	TPVC	44.70				CMW	
MW-3	6/23/22	11:30	WLM-300'	TPVC	72.42				CMW	
MW-4	6/23/22	12:40	WLM-300'	TPVC	135.75				CMW	
MW-5	6/23/22	13:30	WLM-300'	TPVC	49.81				JT	
MW-8	6/23/22	14:15	WLM-300'	TPVC	224.40				CMW	
MW-6	6/23/22	15:10	WLM-300'	TPVC	226.20				JT	
MW-7	6/23/22	16:00	WLM-300'	TPVC	258.30				JT	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson + Candace Whitten
Project Number: **21505963**	Date: 6/23/2022
Monitoring Well I.D.: **MW-1**	Weather Conditions: ~83 °F
Wellhead Inspection (note conditions): Good condition	

Groundwater Measurements and Purge Data: 0.163

1. Static Water Level[1] (±0.01ft.)	44.70	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	65.59 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	3.405	11. Time to Purge Well (min)	22 min
5. 3 x Casing Volume (gallons)	10.21	12. Immiscible Layer Observed (yes or no)	~~No~~
6. Actual Volume of Water Purged	10.5	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/22	10:15	2 gal	16.7	7.23	8488	low	—
6/23/22	10:21	~~5~~ gal	16.1	7.29	8265	low	—
6/23/22	10:26	6	15.4	7.43	8074	low	—
6/23/22	10 30	8	15.1	7.32	8275	low	—
6/23/22	10 34	10	15.1	7.38	8567	low	—

Well Evacuated to Dryness? (Yes or No) No Time to recharge? N/A

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/22	10:40	10	15.1	7.38	8567	low	—

1. Sampling Equipment Used	Bailer				**Other Information:**		
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse	
3. Sample Appearance:	clear ☐	low ☒	medium ☐	high ☐			
Color	Slightly yellow				**Instrument Calibrations**	pH, conductivity	
4. Odor	sulfur						
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jen Thompson Candace Whitten
Project Number: **21505963**	Date: 6/23/2022
Monitoring Well I.D.: **MW-2**	Weather Conditions: ~ 84 °F
Wellhead Inspection (note conditions): Good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	106.09	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	112 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	0.963	11. Time to Purge Well (min)	41 min
5. 3 x Casing Volume (gallons)	2.889	12. Immiscible Layer Observed (yes or no)	No
6. Actual Volume of Water Purged	14 gal	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters: Purged dry on 6/15/2022 (removed 14 gal)

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other

Well Evacuated to Dryness? (Yes or No) Yes

Time to recharge? 8 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/22	0942	14.0	16.1	7.47	11428	Low	sulfur odor

1. Sampling Equipment Used	Bailer				**Other Information:**	
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☒	low ☐	medium ☐	high ☐		
Color	None				**Instrument Calibrations**	pH, conductivity
4. Odor	Sulfur					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	None

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson and Candace Whitten
Project Number: **21505963**	Date: 6/23/22
Monitoring Well I.D.: **MW-3**	Weather Conditions: ~90 °F
Wellhead Inspection (note conditions): Good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	72.42	8. Purge Equipment Used	HDPE tubing with hydrolift
2. Bottom of Casing[1] (±0.01ft.)	107.2 ft btoc	9. Dedicated? (Yes or No)	Yes
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	5.67	11. Time to Purge Well (min)	20 min
5. 3 x Casing Volume (gallons)	17.0	12. Immiscible Layer Observed (yes or no)	No
6. Actual Volume of Water Purged	13.75 gal	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters: Well Purged on 6/15/22

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other

Well Evacuated to Dryness? (Yes or No) Yes

Time to recharge? ~~8 days~~

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/22	11:45	1	22.2	7.95	7225	low	—

1. Sampling Equipment Used	HDPE tubing				**Other Information:**	
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☒	low ☐	medium ☐	high ☐		
Color					**Instrument Calibrations**	pH, conductivity
4. Odor	Sulphur					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s):
Project Number: **21505963**	Date: 6/23/22
Monitoring Well I.D.: **MW-4**	Weather Conditions: ~92 °F
Wellhead Inspection (note conditions): good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	135.75	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	182 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	7.54	11. Time to Purge Well (min)	124 mins
5. 3 x Casing Volume (gallons)	22.6	12. Immiscible Layer Observed (yes or no)	~~no~~
6. Actual Volume of Water Purged	32 gal	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters: Well Purged on 6/15/22

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other

Well Evacuated to Dryness? (Yes or No) yes

Time to recharge? 8 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/22	12:40	75 ~~N/A~~ gal	16.1	7.71	20248	low	—

1. Sampling Equipment Used	Bailer				**Other Information:**	
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☒	low ☐	medium ☐	high ☐		
Color					**Instrument Calibrations**	pH, conductivity
4. Odor Sulphur						
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson + Candace Whitten
Project Number: **21505963**	Date: 6/23/2022
Monitoring Well I.D.: **MW-5**	Weather Conditions: ~93 °F
Wellhead Inspection (note conditions): Good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	49.81	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	60.3 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	1.71	11. Time to Purge Well (min)	11 min
5. 3 x Casing Volume (gallons)	5.13	12. Immiscible Layer Observed (yes or no)	no
6. Actual Volume of Water Purged	5.75	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/22	13:29	1	16.0	7.18	3953	low	yellow
6/23/22	13:33	2	14.1	6.88	3935	low	yellow
6/23/22	13:35	3	13.7	6.77	3912	low	yellow
6/23/22	13:38	4	13.4	6.75	3934	low	yellow
6/23/22	13:40	5	13.6	6.78	3899	low	yellow

Well Evacuated to Dryness? (Yes or No) No Time to recharge? —

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other
6/23/22	13:45	5.75	13.6	6.78	3899	low	—

1. Sampling Equipment Used	Bailer				**Other Information:**	
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☒	low ☐	medium ☐	high ☐		
Color	yellow				**Instrument Calibrations**	pH, conductivity
4. Odor	sulfur					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson
Project Number: **21505963**	Date: 6/23/22
Monitoring Well I.D.: **MW-6**	Weather Conditions: ~ 93 °F
Wellhead Inspection (note conditions): Good Condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	226.20	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	229.7 ft btoc	9. Dedicated? (Yes or No)	Yes
3. Casing Diameter (in.)	4 in	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	1.28	11. Time to Purge Well (min)	N/A
5. 3 x Casing Volume (gallons)	6.86	12. Immiscible Layer Observed (yes or no)	No
6. Actual Volume of Water Purged	30 gal	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters: Purged on 6/16/2022

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other

Well Evacuated to Dryness? (Yes or No) Yes

Time to recharge? 8 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/22	15:10	1	16.6	7.56	19509	low	Smelly

1. Sampling Equipment Used	Bailer				**Other Information:**	
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☒	medium ☐	high ☐		
Color	grey				**Instrument Calibrations**	pH, conductivity
4. Odor	smelly - hydrocarbon					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson + Candace Whitten
Project Number: **21505963**	Date: 6/23/22
Monitoring Well I.D.: **MW-7**	Weather Conditions: ~ 94 °F
Wellhead Inspection (note conditions): good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	258.30	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	259.2 ft btoc	9. Dedicated? (Yes or No)	yes
3. Casing Diameter (in.)	4 inch	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)		11. Time to Purge Well (min)	112 min
5. 3 x Casing Volume (gallons)		12. Immiscible Layer Observed (yes or no)	no
6. Actual Volume of Water Purged	34.75 gal	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters: Purged on 6/15/22

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (__S/cm)	Relative Turbidity	Other

Well Evacuated to Dryness? (Yes or No) Yes

Time to recharge? 8 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/22	16:00	1	17.4	7.18	20634	Low	grey

1. Sampling Equipment Used	Bailer				**Other Information:**	
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☒	low ☐	medium ☐	high ☐		
Color	grey				**Instrument Calibrations**	pH, conductivity
4. Odor	hydrocarbon					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	—

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2022 Groundwater Monitoring**	Sampler Name(s): Jennifer Thompson and Candace Whitten
Project Number: **21505963**	Date: 6/23/22
Monitoring Well I.D.: **MW-8**	Weather Conditions: ~94 °F
Wellhead Inspection (note conditions): good Good condition	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	224.40	8. Purge Equipment Used	—
2. Bottom of Casing[1] (±0.01ft.)	~229 ft btoc	9. Dedicated? (Yes or No)	Yes
3. Casing Diameter (in.)	4 inch	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	3.0	11. Time to Purge Well (min)	158 min
5. 3 x Casing Volume (gallons)	9.0	12. Immiscible Layer Observed (yes or no)	No
6. Actual Volume of Water Purged	66.5	13. Thickness if Immiscible layer (if present)	—
7. Water Level Measuring Equip.	300' electronic		

[1]Measured from a defined point on the edge of casing (surveyed top of casing)

Purge Parameters: Purged on 6/16/22

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other

Well Evacuated to Dryness? (Yes or No) Yes

Time to recharge? 8 days

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/22	14:15	66.5	18.5	7.42	21985	mod	—

1. Sampling Equipment Used	Bailer				**Other Information:**	
2. Pump Rate	N/A				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☒	medium ☐	high ☐		
Color	—				**Instrument Calibrations**	pH, conductivity
4. Odor	Sulfur					
5. Method of Sample Preservation	HNO_3, NaOH				**Unusual Occurrences**	none

WSP GOLDER

INSTRUMENT CALIBRATION FORM

Project Name: Boettcher Quarry (Holcim) **Project Number:** 21505963

Calibration By: Jennifer Thompson

Instrument Details

Instrument Name: YSI Pro 1030

Serial No.: All Geotech provided Standards

Model No.:

Calibration Details

Calibration Standard: 4.00: Lot 2GC933, 7.00: 2GE590 10.00: 2GD857

Cond: Lot 2GD1167

Calibration Standard(s) Expiration Date: March 24 / APR 24

Calibration:

Date	Time	Calibration Standard	Temp (°C)	Instrument Reading	Notes
6/15/22	8:10	pH 4.0	22.0	4.01	adjusted
	↓		22.0	7.01	
			23.0	10.03	
	8:31	cond 1413 µS/cm	22.7	1413 µS	"Unstable Reading" consistently probe not registering conductivity after exiting CAL
6/16/22	8:05	pH 4	22.0	4.00	adjusted.
	↓	pH 10	23.0	10.02	
		pH 7	22.0	7.04	
	8:15		20.6		Unstable reading

Note: Calibrations were performed in hand held ziplock bag on 6/15/22

performed in water bottle on 6/16/22

WSP GOLDER

INSTRUMENT CALIBRATION FORM

Project Name: Holcim-Boettcher **Project Number:**

Calibration By: Jennifer Thompson

Instrument Details

Instrument Name: Pro Quatro

Serial No.: 21022706

Model No.:

Calibration Details

Calibration Standard: Ph 7, Ph 4, PH, 10 Conductivity

Calibration Standard(s) Expiration Date: Apr 23 (conductivity) Apr 24 (10 pH) Mar 24 (pH 4) May 24 (pH 7)

Calibration:

Date	Time	Calibration Standard	Temp (°C)	Instrument Reading	Notes
10/23/22	9:10	PH 7	24.7	7.23	
10/23/22	9:13	PH 4	24.1	4.13	
10/23/22	9:15	PH 10	24.1	9.67	
10/23/22	9:17	Conductivity	24.9	1369	

ACZ LABORATORIES | Accredited Environmental Testing | 2773 Downhill Drive, Steamboat Springs, CO 80487, (970) 879-6590

CHAIN of CUSTODY

Report to:

Name: Sarah Harkins	Address: 171 Abbott Rd Ste 100
Company: Golder Associates	Anchorage Alaska 99507
E-mail: Sara.Harkins@wsp.com	Telephone: 907-920-2532

Copy of Report to:

Name: Candace Whitten	E-mail: Candace.Whitten@wsp.com
Company: Golder Associates	Telephone:

Invoice to:

Name: Sara Harkins	Address:
Company: Golder Associates	
E-mail: Sara.Harkins@wsp.com	Telephone:

Copy of Invoice to:

Name:	Address:
Company:	
E-mail:	Telephone:

If sample(s) received past holding time (HT), or if insufficient HT remains to complete analysis before expiration, shall ACZ proceed with requested short HT analyses? YES [X] NO [ ]

If "NO" then ACZ will contact client for further instruction. If neither "YES" nor "NO" is indicated, ACZ will proceed with the requested analyses, even if HT is expired, and data will be qualified

Are samples for SDWA Compliance Monitoring? Yes [ ] No [X]

If yes, please include state forms. Results will be reported to PQL for Colorado.

Sampler's Name: C. Whitten **Sampler's Site Information** **State** CO **Zip code** 80535 **Time Zone** MT

***Sampler's Signature:** [signature]

*I attest to the authenticity and validity of this sample. I understand that intentionally mislabeling the time/date/location or tampering with the sample in anyway, is considered fraud and punishable by State Law.

PROJECT INFORMATION

Quote #:

PO#:

Reporting state for compliance testing:

Check box if samples include NRC licensed material? [ ]

ANALYSES REQUESTED *(attach list or use quote number)*

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	See Quote							
MW 15	6/23/22 0915	GW	5	X							
MW 2	6/23/22 0947	GW	5	X							
MW-1	6/23/22 1040	GW	5	X							
MW-20	6/23/22 11:00	GW	5	X							
MW-3	6/23/22 11:45	GW	5	X							
MW-4	6/23/22 12:40	GW	5	X							
MW-5	6/23/22 13:45	GW	5	X							
MW-8	6/23/22 14:15	GW	5	X							
MW-6	6/23/22 15:00	GW	5	X							
MW-7	6/23/22 16:00	GW	5	X							

Matrix: SW (Surface Water) · GW (Ground Water) · WW (Waste Water) · DW (Drinking Water) · SL (Sludge) · SO (Soil) · OL (Oil) · Other (Specify)

REMARKS

3 coolers

Please refer to ACZ's terms & conditions located on the reverse side of this COC.

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
[signature]	6/24/22 1645		

Qualtrax ID: 1984 Revision #: 2 White - Return with sample. Yellow - Retain for your records.