STATE OF COLORADO

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

Boettcher Quarry Groundwater Results

Harkins, Sara <Sara_Harkins@golder.com> Fri, Aug 6, 2021 at 11:53 AM
To: "Eschberger - DNR, Amy" <amy.eschberger@state.co.us>
Cc: "Hall, Tricia" <Tricia_Hall@golder.com>, "McClain, Mark" <Mark_McClain@golder.com>, "Moreno, Joanna" <Joanna_Moreno@golder.com>, Mike Toelle <mike.toelle@lafargeholcim.com>, "travis.bennett@lafargeholcim.com" <Travis.Bennett@lafargeholcim.com>

Hello Amy,

On behalf of Holcim (US) Inc., Golder is pleased to submit the results of the 1st semi-annual 2021 groundwater sampling event at the Boettcher Limestone Quarry near La Porte, Colorado. Per our discussion earlier this week, we are not sending you a paper copy.

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

Thanks,

Sara

Sara Harkins, PG(WY)
Senior Geologist/Geochemist

GOLDER
MEMBER OF WSP

Golder Associates Inc.
2121 Abbott Road, Suite 100, Anchorage, Alaska, USA 99507
T: +1 907 344-6001 | **D:** +1 907 865 2532 | **golder.com**
LinkedIn | Instagram | Facebook | Twitter

[Quoted text hidden]

2 attachments

image002.png
5K

21467005-1-TM-0_2021_First_SemiAnnual_GW_Event_BQ_05AUG21.pdf
7426K

August 5, 2021 Reference No. 21467005-1-TM-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 2021 GROUNDWATER SAMPLING AT THE BOETTCHER QUARRY

Dear Ms. Eschberger:

On behalf of Holcim (US) Inc., Golder Associates Inc. (Golder) is pleased to submit analytical laboratory results for the first semi-annual 2021 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 report (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-2 (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 2021 groundwater sampling event was the second 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:

- The samples were received by the laboratory at the appropriate temperature.
- The required analyses were performed.
- The analyses were conducted within their respective United States Environmental Protection Agency recommended hold times, apart from pH. Measurements for pH should be conducted within 15 minutes of sample collection; thus, the laboratory pH measurement will always be out of hold time. Nitrate, nitrite and nitrate+nitrite were analyzed past the recommended the hold time due to a shipping delay that the shipping company noted was outside their control due to COVID-19 pandemic.

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:

Golder Associates Inc.
7245 W Alaska Drive, Suite 200, Lakewood, Colorado, USA 80226 T: +1 303 980-0540 F: +1 303 985-2080

- MW-1: manganese, selenium, uranium, nitrate as n, nitrate+nitrite as n, and sulfate
- MW-2: barium, boron, manganese, and chloride
- MW-3: barium, boron, chloride, and fluoride
- MW-4: barium, chloride, and total dissolved solids
- MW-5: iron, manganese, uranium, sulfate, and gross alpha
- MW-6: barium, boron, iron, manganese, chloride, and gross alpha
- MW-7: barium, iron, manganese, chloride, gross alpha, and antimony
- MW-8: boron, uranium, chloride, sulfate 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 antimony at MW-1, MW-2, MW-3, MW-4, and MW-6; and iron at MW-4 and MW-8. These constituents were not detected above the method detection limit (MDL), which was lower than the Interim Narrative Standard for antimony. The iron MDL for the samples collected from MW-4 and MW-8 was greater than the Interim Narrative Standard, the analytical laboratory is reviewing limits and methods to determine if they can reduce the iron detection limits for future events.

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

Sincerely,

Golder Associates Inc.

Tricia Hall
Project Hydrogeologist

Sara Harkins, PG
Senior Geochemist

TH/SH/rm

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 Report
Attachment 2: Field Sheets

https://golderassociates.sharepoint.com/sites/146499/project files/6 deliverables/techmemos/1-tm-1st_semi_annual_2021 gws/1-tm-0/21467005-1-tm-0_2021_first_semiannual_gw_event_bq_05aug21.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	09/27/2010	03/31/2011	06/28/2011	08/31/2011	11/17/2011	03/27/2012	06/27/2012	09/13/2012	11/13/2012	03/19/2013	05/28/2013	08/26/2013	11/14/2013	02/18/2014
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 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 1: Summary of Monitoring Results for MW-1

Date	Vlookup (HIDE)	Interim Narrative Standard	05/21/2014	08/27/2014	11/11/2014	02/18/2015	05/27/2015	08/27/2015	11/09/2015	02/15/2016	05/31/2016	08/16/2016	11/09/2016	05/31/2017	11/15/2017	06/06/2018	11/15/2018	06/12/2019	12/12/2019	06/04/2020	12/14/2020	06/23/2021
Metals																						
Arsenic, Dissolved (mg/L)	Arsenic, dissolved	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
Barium, Dissolved (mg/L)	Barium, Dissolved	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
Boron, Dissolved (mg/L)	Boron, Dissolved	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
Chromium, Dissolved (mg/L)	Chromium, Dissolved	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
Copper, Dissolved (mg/L)	Copper, Dissolved	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
Iron, Dissolved (mg/L)	Iron, Dissolved	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
Lead, Dissolved (mg/L)	Lead, Dissolved	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
Lithium, Dissolved (mg/L)	Lithium, Dissolved	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
Manganese, Dissolved (mg/L)	Manganese, Dissolved	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**
Selenium, Dissolved (mg/L)	Selenium, Dissolved	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**
Thallium, Dissolved (mg/L)	Thallium, Dissolved	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
Uranium, Dissolved (mg/L)	Uranium, Dissolved	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**
Zinc, Dissolved (mg/L)	Zinc, Dissolved	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
Other																						
Chloride (mg/L)	Chloride	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
Fluoride (mg/L)	Fluoride	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
Nitrate as N (mg/L)	Nitrate as N, dissolved	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
Nitrite as N (mg/L)	Nitrite as N, dissolved	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
Nitrate+Nitrite as N (mg/L)	Nitrate/Nitrite as N, dissolved	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
Lab pH (s.u)	pH	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
Total Dissolved Solids, filterable residue (mg/L)	TDS (calculated)	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
Sulfate (mg/L)	Sulfate	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**
Gross Alpha (pCi/L)	Gross Alpha	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)
Gross Beta (pCi/L)	Gross Beta	**	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)
Field Parameters (Not Available pre-2010))																						
Field pH (s.u)	Field pH	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
Field Conductivity (µS/cm)	Field Conductivity	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
Temperature (Degrees Celsius)	Temperature	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
Supplementary Analytes (Not Historically analyzed)																						
Aluminum, Dissolved (mg/L)	Aluminum, Dissolved	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
Antimony, Dissolved (mg/L)	Antimony, Dissolved	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
Beryllium, Dissolved (mg/L)	Beryllium, Dissolved	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
Bicarbonate as CaCO3 (mg/L)	Bicarbonate as CaCO3	none	333	310	325	NA	320	302	306	319	307	329	325	369	361	358	NA	376 H	402	458	421	342
Carbonate as CaCO3 (mg/L)	Carbonate as CaCO3	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
Cadmium, Dissolved (mg/L)	Cadmium, Dissolved	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
Calcium, Dissolved (mg/L)	Calcium, Dissolved	none	330	287	309	230	301	320	289	279	345	275	269	187	175	220	163	171	131	110	109	299
Cobalt, Dissolved (mg/L)	Cobalt, Dissolved	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
Cyanide, Free (mg/L)	Cyanide, Free	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
Magnesium, Dissolved (mg/L)	Magnesium, Dissolved	none	364	297	303	247	300	342	301	290	376	301	283	202	188	225	175	170	135	116	116	308
Mercury, Dissolved (mg/L)	Mercury, Dissolved	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
Molybdenum, Dissolved (mg/L)	Molybdenum, Dissolved	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
Nickel, Dissolved (mg/L)	Nickel, Dissolved	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
Potassium, Dissolved (mg/L)	Potassium, Dissolved	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
Silver, Dissolved (mg/L)	Silver, Dissolved	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
Sodium, Dissolved (mg/L)	Sodium, Dissolved	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	1630
Vanadium, Dissolved (mg/L)	Vanadium, Dissolved	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

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 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	09/27/2010	03/31/2011	06/28/2011	08/31/2011	11/17/2011	03/27/2012	06/27/2012	09/13/2012	11/13/2012	03/19/2013	05/28/2013	08/26/2013	11/14/2013
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
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
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
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
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
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**
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
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
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**
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
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
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
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
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**
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
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
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	< 0.1 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
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
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
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
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
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
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
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
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
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	993	965	978	953	914	995	968	964	978	955	963	979	1020
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
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	14	14	14.4	16	15	15.5	14	16	16.3	15.1	18	17	16.9
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	8	8	7.8	7	7	7.4	8	8	8	7.5	8	7	7.4
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	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
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	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
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 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 2: Summary of Monitoring Results for MW-2

Date	Interim Narrative Standard	02/18/2014	05/21/2014	08/27/2014	11/11/2014	02/18/2015	05/27/2015	08/27/2015	11/09/2015	02/15/2016	05/31/2016	08/16/2016	11/09/2016	05/31/2017	11/15/2017	06/06/2018	11/15/2018	06/12/2019	12/12/2019	06/04/2020	12/14/2020	06/23/2021
Metals																						
Arsenic, Dissolved (mg/L)	0.01	0.004 B	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
Barium, Dissolved (mg/L)	2.0	1.74	**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**
Boron, Dissolved (mg/L)	0.75	0.7	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**
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	< 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
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	0.005 B	<0.002 U	< 0.004 U	< 0.002 U	< 0.002 U	< 0.01 U
Iron, Dissolved (mg/L)	0.3	**1.51**	**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
Lead, Dissolved (mg/L)	0.05	< 0.003 U	< 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
Lithium, Dissolved (mg/L)	2.5	NA	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
Manganese, Dissolved (mg/L)	0.05	**0.099**	**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**
Selenium, Dissolved (mg/L)	0.02	< 0.001 U	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
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	< 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	0.000329 B
Uranium, Dissolved (mg/L)	0.03	NA	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
Zinc, Dissolved (mg/L)	2.0	< 0.05 U	< 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
Other																						
Chloride (mg/L)	250	**3,180**	**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**
Fluoride (mg/L)	2	1.5	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
Nitrate as N (mg/L)	10	NA	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
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
Nitrate+Nitrite as N (mg/L)	10	NA	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
Lab pH (s.u)	6.5 - 8.5	8.0 H	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
Total Dissolved Solids, filterable residue (mg/L)	7084	5,720	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	6270
Sulfate (mg/L)	250	< 250 U	< 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
Gross Alpha (pCi/L)	15	NA	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)
Gross Beta (pCi/L)	**	NA	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)
Field Parameters (Not Available pre-2010))																						
Field pH (s.u)	6.5 - 8.5	7.6	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
Field Conductivity (µS/cm)	none	10,440	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
Temperature (Degrees Celsius)	none	12.9	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
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	<0.8 U	<1 U	< 0.05 U	< 0.02 U	< 0.015 U	< 0.075 U
Antimony, Dissolved (mg/L)	0.006	NA	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
Beryllium, Dissolved (mg/L)	0.004	NA	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
Bicarbonate as CaCO3 (mg/L)	none	1,060	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
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	40.9	40.7	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 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	<0.001 U	0.00011 B	< 0.0003 U	< 0.0003 U	0.000077 B	< 0.00125 U
Calcium, Dissolved (mg/L)	none	17.6	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
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	<0.001 U	0.00009 B	< 0.0003 U	0.0002 B	0.000073 B	< 0.00125 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	0.004 B	< 0.003 U	< 0.01 U	0.003 B	0.0063 B
Magnesium, Dissolved (mg/L)	none	7.3	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
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
Molybdenum, Dissolved (mg/L)	0.21	NA	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
Nickel, Dissolved (mg/L)	0.1	NA	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
Potassium, Dissolved (mg/L)	none	6.2	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
Silver, Dissolved (mg/L)	0.05	NA	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
Sodium, Dissolved (mg/L)	none	2,440	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
Vanadium, Dissolved (mg/L)	0.1	NA	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

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 3: Summary of Monitoring Results for MW-3

Date	Interim Narrative Standard	4/28/1999	7/21/1999	09/16/1999	11/10/1999	01/19/2000	03/13/2000	05/16/2000	07/10/2000	09/27/2010	03/31/2011	06/30/2011	08/31/2011	11/17/2011	03/27/2012	06/27/2012	09/13/2012	11/13/2012	03/19/2013	05/28/2013	08/26/2013	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 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 3: Summary of Monitoring Results for MW-3

Date	Interim Narrative Standard	02/18/2014	05/21/2014	08/27/2014	11/11/2014	02/18/2015	05/27/2015	08/27/2015	11/09/2015	02/15/2016	05/31/2016	08/16/2016	11/09/2016	05/31/2017	11/15/2017	06/06/2018	11/15/2018	06/12/2019	12/12/2019	06/04/2020	12/14/2020	06/23/2021
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
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**
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**
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
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	<0.1 U	<0.1 U	< 0.002 U	< 0.002 U	< 0.002 U	< 0.01 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
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	<0.001 U	<0.0005 U	< 0.0002 U	< 0.0005 U	< 0.0005 U	< 0.0025 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
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
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
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
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
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
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**
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**
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
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
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
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
Total Dissolved Solids, filterable residue (mg/L)	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
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
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)
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)
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

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 4: Summary of Monitoring Results for MW-4

Date	Interim Narrative Standard	05/26/1999	07/21/1999	09/23/1999	11/10/1999	01/19/2000	03/13/2000	05/16/2000	07/10/2000	09/27/2010	03/31/2011	06/28/2011	08/31/2011	11/172011	03/27/2012	06/27/2012	09/13/2012	11/13/2012	03/19/2013	05/28/2013	08/26/2013	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	0.8	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 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 4: Summary of Monitoring Results for MW-4

Date	Interim Narrative Standard	02/18/2014	05/21/2014	08/27/2014	11/11/2014	02/18/2015	05/27/2015	08/27/2015	11/09/2015	02/15/2016	05/31/2016	08/16/2016	11/09/2016	05/31/2017	11/15/2017	06/06/2018	11/15/2018	06/12/2019	12/12/2019	06/04/2020	12/14/2020	06/23/2021
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
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**
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
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
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
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
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
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
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
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
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
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
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
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**
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
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
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
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
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
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**
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
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)
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)
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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
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

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 5: Summary of Monitoring Results for MW-5

Date	Interim Narrative Standard	03/19/2013	05/28/2013	08/26/2013	11/14/2013	02/18/2014	05/21/2014	08/27/2014	11/11/2014	02/18/2015	05/27/2015	08/27/2015	11/09/2015	02/15/2016	05/31/2016	08/16/2016	11/09/2016
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 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 5: Summary of Monitoring Results for MW-5

Date	Interim Narrative Standard	05/31/2017	11/15/2017	06/06/2018	11/15/2018	06/12/2019	12/12/2019	06/04/2020	12/14/2020	06/23/2021
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
Barium, Dissolved (mg/L)	2	0.01 B	< 0.03 U	< 0.03 U	<0.03 U	0.02 B	0.01 B	0.011	0.0106	0.00986
Boron, Dissolved (mg/L)	0.75	0.36	0.36	0.35	0.33	0.35	0.35	0.33	0.32	0.307
Chromium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.004 U	<0.002 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 U
Copper, Dissolved (mg/L)	0.2	NA	NA	NA	<0.1 U	<0.1 U	< 0.002 U	< 0.002 U	< 0.002 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**
Lead, Dissolved (mg/L)	0.05	NA	NA	NA	<0.001 U	<0.0005 U	< 0.0002 U	< 0.0005 U	< 0.0005 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
Manganese, Dissolved (mg/L)	0.05	**0.09**	**0.09**	**0.08**	**0.09**	**0.09** B	**0.0772**	**0.0775**	**0.0935**	**0.0767**
Selenium, Dissolved (mg/L)	0.02	NA	NA	NA	0.0017	0.0005	0.0002 B	0.001	0.00154	0.00503
Thallium, Dissolved (mg/L)	0.002	NA	NA	NA	<0.001 U	0.0001 B	0.00007 B	0.0002 B	0.00021 B	0.000437 B
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	**0.0379**	0.0261	0.0241	**0.0465**	0.0243	**0.0416**
Zinc, Dissolved (mg/L)	2	NA	NA	NA	<0.1 U	<0.1 U	< 0.01 U	0.007 B	0.0075 B	< 0.03 U
Other										
Chloride (mg/L)	250	45.4 B	25.8 BH	19.7 B	36.2 B	29.8 B	36 B	27.3 B	30.8 B	11.8 B
Fluoride (mg/L)	2	NA	NA	NA	0.72	0.6	0.7	0.7	0.73	0.47
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	<0.1 U	< 0.1 U	< 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
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	0.1 U	< 0.1 U	< 0.1 UH
Lab pH (s.u)	6.5 - 8.5	7.8 H	7.3 H	7.7 H	7.5	7.7 H	7.7 H	7.6 H	7.4 H	7.6 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
Sulfate (mg/L)	250	**2,540**	**1,820** H	**1,780**	**2,190**	**2,180**	**2,480**	**2,290**	**2,530**	**1,860**
Gross Alpha (pCi/L)	15	NA	NA	NA	8.6 (±11)	8.5 (±9.2)	**24(±14)**	**32(±15)**	**26 (±13)**	**31(±13)**
Gross Beta (pCi/L)	**	NA	NA	NA	18 (±13)	8.2 (±13)	25(±12)	12(±12)	19 (±13)	20(±9.2)
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
Field Conductivity (µS/cm)	none	4,530,000	3,280	3,397	3,622	3,983	2,416	2,808	3,810	2,928
Temperature (Degrees Celsius)	none	15.4	12.8	16	13.6	15.2	12.2	14.3	11.2	15.9
Supplementary Analytes (Not Historically analyzed)										
Aluminum, Dissolved (mg/L)	5	NA	NA	NA	<0.3 U	<0.5 U	< 0.05 U	< 0.02 U	0.013 B	< 0.03 U
Antimony, Dissolved (mg/L)	0.006	NA	NA	NA	<0.004 U	<0.002 U	< 0.0008 U	< 0.002 U	< 0.002 U	< 0.004 U
Beryllium, Dissolved (mg/L)	0.004	NA	NA	NA	<0.0005 U	<0.0003 U	< 0.0002 U	< 0.0003 U	< 0.00025 U	< 0.0005 U
Bicarbonate as CaCO3 (mg/L)	none	348	375	401	NA	392 H	354	328	304	360
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 U	< 20 U	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	NA	NA	NA	<0.0005 U	<0.0003 U	< 0.0001 U	0.00014 B	< 0.00025 U	< 0.0005 U
Calcium, Dissolved (mg/L)	none	429	461	425	490	402	405	474	427	477
Cobalt, Dissolved (mg/L)	0.05	NA	NA	NA	0.0047	0.00595	0.0046	0.00805	0.00527	0.00582
Cyanide, Free (mg/L)	0.2	NA	NA	NA	<0.01 U	<0.01 U	< 0.003 U	< 0.01 U	< 0.01 U	< 0.01 U
Magnesium, Dissolved (mg/L)	none	128	119	109	121	113	116	117	120	104
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
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	<0.2 U	<0.2 U	0.0045	0.0146	0.0089	0.00157
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	0.05 B	0.04 B	0.021	0.0511	0.0436	0.0237
Potassium, Dissolved (mg/L)	none	8.2	7.2	6.6	8.1	8.1	9.4	9.7	9.03	6.08
Silver, Dissolved (mg/L)	0.05	NA	NA	NA	<0.05 U	<0.0005 U	< 0.0002 U	< 0.001 U	< 0.001 U	< 0.001 U
Sodium, Dissolved (mg/L)	none	614	322	329	317	501	617	439	497	230
Vanadium, Dissolved (mg/L)	0.1	NA	NA	NA	<0.05 U	<0.05 U	< 0.001 U	< 0.002 U	< 0.002 U	< 0.004 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 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 n

Table 6: Summary of Monitoring Results for MW-6

Date	Interim Narrative Standard	03/19/2013	05/28/2013	08/27/2013	11/14/2013	02/18/2014	05/21/2014	08/27/2014	11/11/2014	02/18/2015	05/27/2015	08/27/2015	11/09/2015	02/15/2016	05/31/2016	08/16/2016	11/09/2016
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 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 6: Summary of Monitoring Results for MW-6

Date	Interim Narrative Standard	05/31/2017	11/15/2017	06/06/2018	11/15/2018	06/12/2019	12/12/2019	06/04/2020	12/14/2020	06/23/2021
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
Barium, Dissolved (mg/L)	2	**7.85**	**7.77**	**7.65**	**7.25**	**6.66**	**6.84**	**6.64**	**6**	**5.81**
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
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
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
Iron, Dissolved (mg/L)	0.3	**1.7**	**3.4**	**3.0**	**2.9**	**2.2**	**2.87**	**1.93**	**2.99**	**3.14**
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
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	1.74	1.87	2.21	1.81	1.79	1.76
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**
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
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
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.004	0.0023	0.004 B	0.003 B	0.00322	0.00264 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
Other										
Chloride (mg/L)	250	**6,130**	**5,900**	**5,880**	**6,490**	**6,610** H	**6,390**	**7,100**	**6,110**	**6,810**
Fluoride (mg/L)	2	NA	NA	NA	1.09	1.2	1.2	1.1	1.12	1.18
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	< 0.02 U	< 0.1 U	< 0.1 U	< 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
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	< 0.02 U	< 0.1 U	< 0.1 U	< 0.1 UH
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
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
Sulfate (mg/L)	250	< 250 U	< 200 U	51 B	<200 U	<200 U	< 40 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)**
Gross Beta (pCi/L)	**	NA	NA	NA	43 (±35)	56 (±47)	0.78(±63)	33(±46)	-28 (±47)	57(±44)
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
Field Conductivity (µS/cm)	none	17,850	17,470	18,950	17,560	18,000	11,290	14,930	16,067	16,612
Temperature (Degrees Celsius)	none	16.6	11.3	17.7	11.1	17.9	10	21.5	12.1	19.4
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
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
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
Bicarbonate as CaCO3 (mg/L)	none	658	639	652	NA	685 H	702	720	647	625
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 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
Calcium, Dissolved (mg/L)	none	51	44	41	47	40	45.4	43.2	41.1	45.7
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
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
Magnesium, Dissolved (mg/L)	none	16	16	16	16	14	15.8	15	15.8	14.7
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
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	0.025 B	0.0208 U	0.021	0.022	0.0279	0.0177
Nickel, Dissolved (mg/L)	0.1	NA	NA	NA	0.007 B	0.0063 U	0.01	0.02	0.023	0.0204
Potassium, Dissolved (mg/L)	none	9 B	9 B	8 B	10	9 B	11.6	14.8	8.7	7.67 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
Sodium, Dissolved (mg/L)	none	3,920	4,060	3,870	3,960	3,910	3,960	3,890	3,710	3,860
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

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 pa

Table 7: Summary of Monitoring Results for MW-7

Date	Interim Narrative Standard	03/19/2013	05/29/2013	08/27/2013	11/14/2013	02/18/2014	05/21/2014	08/27/2014	11/11/2014	02/18/2015	05/27/2015	08/27/2015	11/09/2015	02/15/2016	05/31/2016	08/16/2016	11/09/2016
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	05/31/2017	11/15/2017	06/06/2018	11/15/2018	06/12/2019	12/12/2019	06/04/2020	12/14/2020	06/23/2021
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
Barium, Dissolved (mg/L)	2	**3.96**	**3.8**	**5.5**	**3.42**	**4.42**	**2.86**	1.06	**2.54**	**4.32**
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
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
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
Iron, Dissolved (mg/L)	0.3	**5.5**	**6.1**	**3.2**	**3.9**	**2**	**2.81**	**11.6**	**0.932**	**2.95**
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
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	1.84	2.02	2.30	1.92	1.84	1.88
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**
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
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
Uranium, Dissolved (mg/L)	0.03	NA	NA	NA	0.005	0.004	0.005	0.0093	0.00185	0.00426 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
Other										
Chloride (mg/L)	250	**6,480**	**6,240**	**6,440**	**7,310**	**7,480** H	**6,780**	**6,550**	**6,690**	**7,410**
Fluoride (mg/L)	2	NA	NA	NA	0.88	1	0.9	0.8	1	0.95
Nitrate as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	< 0.1 U	0.083	0.05 BH
Nitrite as N (mg/L)	1	NA	NA	NA	NA	NA	< 0.01 U	0.02 B	< 0.05 U	< 0.05 UH
Nitrate+Nitrite as N (mg/L)	10	NA	NA	NA	NA	NA	0.57	0.03 B	0.083 B	0.052 BH
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
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
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
Gross Alpha (pCi/L)	15	NA	NA	NA	5.8 (±29)	**23 (±41)**	-50(±26)	2.4(±37)	-21 (±31)	**64(±53)**
Gross Beta (pCi/L)	**	NA	NA	NA	34 (±42)	42 (±252)	35(±59)	11(±53)	1.9 (±53)	92(±58)
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
Field Conductivity (µS/cm)	none	19,350	18,550	20,050	19,200	19,110	11,900	15,310	17,263	17,831
Temperature (Degrees Celsius)	none	22.5	12.3	16.4	12.9	16.3	8.3	19.8	12.5	20.9
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
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
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
Bicarbonate as CaCO3 (mg/L)	none	745	700	714	NA	681 H	701	876	663	650
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	<20 UH	< 2 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
Calcium, Dissolved (mg/L)	none	52	55	52	54	53	54.4	54.2	52.5	56.8
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
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
Magnesium, Dissolved (mg/L)	none	19	20	20	19	18	18.5	17.9	18.4	17.9
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
Molybdenum, Dissolved (mg/L)	0.21	NA	NA	NA	0.022 B	0.0182 U	0.017	0.0416	0.00375	0.0148
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
Potassium, Dissolved (mg/L)	none	11	9 B	9 B	11	11	12.7	17.6	8.85	9.09 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
Sodium, Dissolved (mg/L)	none	4,240	4,320	4,170	4,250	4,220	4,250	4,070	3,840	4,160
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

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 ap

Table 8: Summary of Monitoring Results for MW-8

Date	Interim Narrative Standard	12/14/2020	06/23/2021
Metals			
Arsenic, Dissolved (mg/L)	0.01	0.00546	< 0.01 U
Barium, Dissolved (mg/L)	2	0.299	0.137
Boron, Dissolved (mg/L)	0.75	**0.90**	**0.823** B
Chromium, Dissolved (mg/L)	0.1	< 0.002 U	< 0.02 U
Copper, Dissolved (mg/L)	0.2	0.00306	< 0.02 U
Iron, Dissolved (mg/L)	0.3	< 0.75 U	< 1.5 U
Lead, Dissolved (mg/L)	0.05	< 0.0005 U	< 0.005 U
Lithium, Dissolved (mg/L)	2.5	1.55	1.7
Manganese, Dissolved (mg/L)	0.05	0.0161	0.0336
Selenium, Dissolved (mg/L)	0.02	0.00179 B	< 0.0025 U
Thallium, Dissolved (mg/L)	0.002	< 0.0025 U	0.000826 B
Uranium, Dissolved (mg/L)	0.03	0.0167	**0.056**
Zinc, Dissolved (mg/L)	2	0.0091 B	< 0.15 U
Other			
Chloride (mg/L)	250	**5,910**	**7,000**
Fluoride (mg/L)	2	1.66	1.54
Nitrate as N (mg/L)	10	< 0.1 U	< 0.1 UH
Nitrite as N (mg/L)	1	< 0.05 U	< 0.05 UH
Nitrate+Nitrite as N (mg/L)	10	< 0.1 U	< 0.1 UH
Lab pH (s.u)	6.5 - 8.5	8.3 H	8.0 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	10,100	12,600
Sulfate (mg/L)	250	**529**	**885**
Gross Alpha (pCi/L)	15	**45 (±45)**	-1.4(±38)
Gross Beta (pCi/L)	**	9.1 (±44)	-1.9(±57)
Field Parameters (Not Available pre-2010))			
Field pH (s.u)	6.5 - 8.5	8.15	8.00
Field Conductivity (µS/cm)	none	14,360	18,379
Temperature (Degrees Celsius)	none	12.5	21.3
Supplementary Analytes (Not Historically analyzed)			
Aluminum, Dissolved (mg/L)	5	0.0057 B	< 0.15 U
Antimony, Dissolved (mg/L)	0.006	**0.0125** B	**0.0102** B
Beryllium, Dissolved (mg/L)	0.004	< 0.00025 U	< 0.0025 U
Bicarbonate as CaCO3 (mg/L)	none	664	612
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U
Cadmium, Dissolved (mg/L)	0.005	< 0.00025 U	< 0.0025 U
Calcium, Dissolved (mg/L)	none	23.4	56.1
Cobalt, Dissolved (mg/L)	0.05	0.000745	0.000951 B
Cyanide, Free (mg/L)	0.2	< 0.01 U	0.0128
Magnesium, Dissolved (mg/L)	none	18.8	18.4
Mercury, Dissolved (mg/L)	0.002	< 0.001 U	< 0.001 U
Molybdenum, Dissolved (mg/L)	0.21	0.0225	0.0469
Nickel, Dissolved (mg/L)	0.1	0.00469	0.00575 B
Potassium, Dissolved (mg/L)	none	16.6	12.5
Silver, Dissolved (mg/L)	0.05	< 0.005 U	< 0.005 U
Sodium, Dissolved (mg/L)	none	3,380	4,260
Vanadium, Dissolved (mg/L)	0.1	0.0044	< 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)

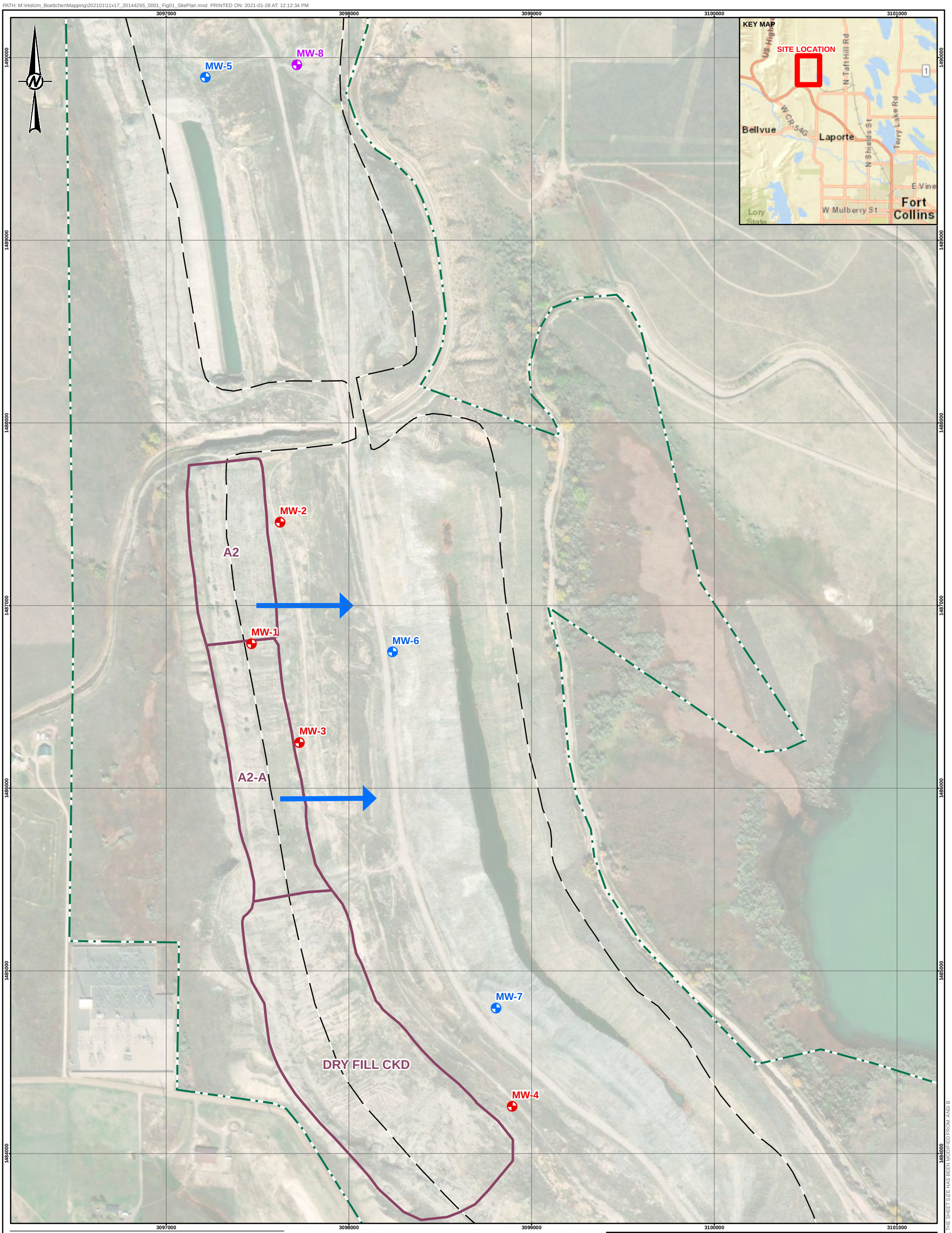
*TDS standard is 1.25 * Background, where background is the average of the 1999-2000 sampling (when available)

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

Figures

PATH: M:\Holcim_Boettcher\Mapping\202101\11x17_20144265_0001_Fig01_SitePlan.mxd PRINTED ON: 2021-01-28 AT: 12:12:34 PM



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, DIGITAL GLOBE. IMAGERY CAPTURED OCTOBER 2017.

CLIENT
HOLCIM (US) INC.

PROJECT
BOETTCHER LIMESTONE QUARRY
LARIMER COUNTY, COLORADO

TITLE
SITE LOCATION PLAN

CONSULTANT
GOLDER

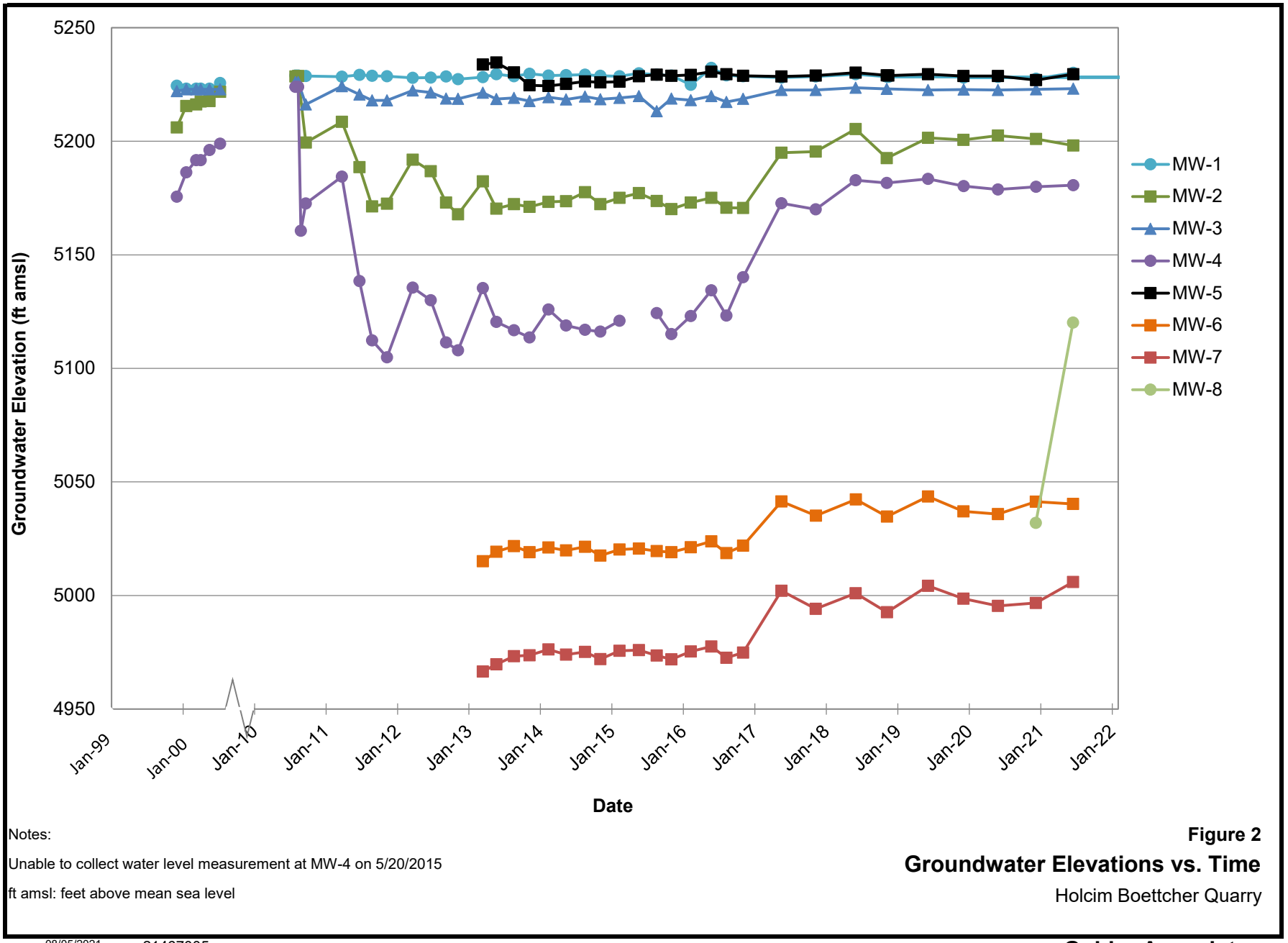
YYYY-MM-DD	2021-01-28
DESIGNED	SAH
PREPARED	KJC
REVIEWED	SAH
APPROVED	RSM

PROJECT NO.
21467005

FIGURE
1

IF THIS MEASUREMENT DOES NOT MATCH WHAT IS SHOWN, THE SHEET SIZE HAS BEEN MODIFIED FROM: ANSI B

1 in
0



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

ATTACHMENT 1

ACZ Laboratory Report

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

Analytical Report

July 26, 2021

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: L66751

Sara Harkins:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 25, 2021. This project has been assigned to ACZ's project number, L66751. 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 L66751. 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 August 25, 2021. 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.

S. Habermehl

Scott Habermehl has reviewed
and approved this report.

Golder Associates

July 26, 2021

Project ID:
ACZ Project ID: L66751

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 10 groundwater samples from Golder Associates on June 24, 2021. 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 L66751. 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:

1. (N1) Applies to: L66751-01 and -10 /SULFATE

Quantitation-level QC (PQV) had low recovery for sulfate. Passed samples with Sulfate >> than the PQL. SCP 7/19/2021

Golder Associates
Project ID:
Sample ID: MW-5

ACZ Sample ID: ***L66751-01***
Date Sampled: *06/23/21 09:22*
Date Received: *06/25/21*
Sample Matrix: *Groundwater*

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Aluminum, dissolved	M200.8 ICP-MS	2	<0.01	U		mg/L	0.01	0.03	07/09/21 11:50	mfm
Antimony, dissolved	M200.8 ICP-MS	2	<0.0008	U		mg/L	0.0008	0.004	07/09/21 11:50	mfm
Arsenic, dissolved	M200.8 ICP-MS	2	<0.0004	U		mg/L	0.0004	0.002	07/09/21 11:50	mfm
Barium, dissolved	M200.8 ICP-MS	2	0.00986			mg/L	0.001	0.005	07/09/21 11:50	mfm
Beryllium, dissolved	M200.8 ICP-MS	2	<0.00016	U	*	mg/L	0.00016	0.0005	07/09/21 11:50	mfm
Boron, dissolved	M200.7 ICP	2	0.307			mg/L	0.06	0.2	07/04/21 23:38	kja
Cadmium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	07/09/21 11:50	mfm
Calcium, dissolved	M200.7 ICP	2	477			mg/L	0.2	1	07/04/21 23:38	kja
Chromium, dissolved	M200.8 ICP-MS	2	<0.001	U		mg/L	0.001	0.004	07/09/21 11:50	mfm
Cobalt, dissolved	M200.8 ICP-MS	2	0.00582			mg/L	0.0001	0.0005	07/09/21 11:50	mfm
Copper, dissolved	M200.8 ICP-MS	2	<0.0016	U		mg/L	0.0016	0.004	07/09/21 11:50	mfm
Iron, dissolved	M200.7 ICP	2	0.404			mg/L	0.12	0.3	07/04/21 23:38	kja
Lead, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	07/09/21 11:50	mfm
Lithium, dissolved	M200.7 ICP	2	0.242			mg/L	0.016	0.08	07/04/21 23:38	kja
Magnesium, dissolved	M200.7 ICP	2	104			mg/L	0.4	2	07/04/21 23:38	kja
Manganese, dissolved	M200.8 ICP-MS	2	0.0767			mg/L	0.0008	0.004	07/09/21 11:50	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/02/21 14:40	mlh
Molybdenum, dissolved	M200.8 ICP-MS	2	0.00157			mg/L	0.0004	0.001	07/09/21 11:50	mfm
Nickel, dissolved	M200.8 ICP-MS	2	0.0237			mg/L	0.0008	0.002	07/09/21 11:50	mfm
Potassium, dissolved	M200.7 ICP	2	6.08			mg/L	0.4	2	07/04/21 23:38	kja
Selenium, dissolved	M200.8 ICP-MS	2	0.00503			mg/L	0.0002	0.0005	07/09/21 11:50	mfm
Silver, dissolved	M200.8 ICP-MS	2	<0.0002	U		mg/L	0.0002	0.001	07/09/21 11:50	mfm
Sodium, dissolved	M200.7 ICP	2	230			mg/L	0.4	2	07/04/21 23:38	kja
Thallium, dissolved	M200.8 ICP-MS	2	0.000437	B		mg/L	0.0001	0.0005	07/13/21 16:03	bsu
Uranium, dissolved	M200.8 ICP-MS	2	0.0416			mg/L	0.0002	0.001	07/09/21 11:50	mfm
Vanadium, dissolved	M200.8 ICP-MS	2	<0.001	U		mg/L	0.001	0.004	07/09/21 11:50	mfm
Zinc, dissolved	M200.8 ICP-MS	2	<0.012	U		mg/L	0.012	0.03	07/09/21 11:50	mfm

Golder Associates
Project ID:
Sample ID: MW-5

ACZ Sample ID: ***L66751-01***
Date Sampled: *06/23/21 09:22*
Date Received: *06/25/21*
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	360			mg/L	2	20	07/03/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Total Alkalinity		1	360			mg/L	2	20	07/03/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-4.4			%			07/26/21 0:00	calc
Sum of Anions			47			meq/L			07/26/21 0:00	calc
Sum of Cations			43			meq/L			07/26/21 0:00	calc
Chloride	M300.0 - Ion Chromatography	20	11.8	B	*	mg/L	8	40	07/15/21 16:34	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U		mg/L	0.003	0.01	06/30/21 12:33	md
Fluoride	SM4500F-C	1	0.47			mg/L	0.15	0.35	07/03/21 14:02	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	07/26/21 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/30/21 23:42	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/30/21 23:42	pjb
pH (lab)	SM4500H+ B									
pH		1	7.6	H		units	0.1	0.1	07/03/21 0:00	eep
pH measured at		1	20.2			C	0.1	0.1	07/03/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	2	2850			mg/L	40	80	06/29/21 16:01	jck
Sulfate	M300.0 - Ion Chromatography	50	1860		*	mg/L	20	100	07/14/21 2:26	krh
TDS (calculated)	Calculation		2910			mg/L			07/26/21 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.98						07/26/21 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-6

ACZ Sample ID: ***L66751-02***
Date Sampled: *06/23/21 10:00*
Date Received: *06/25/21*
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	07/09/21 11:52	mfm
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	07/09/21 11:52	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	0.00574	B		mg/L	0.002	0.01	07/09/21 11:52	mfm
Barium, dissolved	M200.8 ICP-MS	10	5.81			mg/L	0.005	0.025	07/09/21 11:52	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	07/09/21 11:52	mfm
Boron, dissolved	M200.7 ICP	10	0.765	B		mg/L	0.3	1	07/04/21 23:41	kja
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 11:52	mfm
Calcium, dissolved	M200.7 ICP	10	45.7			mg/L	1	5	07/04/21 23:41	kja
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/09/21 11:52	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	0.000693	B		mg/L	0.0005	0.0025	07/09/21 11:52	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	07/09/21 11:52	mfm
Iron, dissolved	M200.7 ICP	10	3.14			mg/L	0.6	1.5	07/04/21 23:41	kja
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/09/21 11:52	mfm
Lithium, dissolved	M200.7 ICP	10	1.76			mg/L	0.08	0.4	07/04/21 23:41	kja
Magnesium, dissolved	M200.7 ICP	10	14.7			mg/L	2	10	07/04/21 23:41	kja
Manganese, dissolved	M200.8 ICP-MS	10	0.0862			mg/L	0.004	0.02	07/09/21 11:52	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/02/21 14:41	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.0177			mg/L	0.002	0.005	07/09/21 11:52	mfm
Nickel, dissolved	M200.8 ICP-MS	10	0.0204			mg/L	0.004	0.01	07/09/21 11:52	mfm
Potassium, dissolved	M200.7 ICP	10	7.67	B		mg/L	2	10	07/04/21 23:41	kja
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	07/09/21 11:52	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/09/21 11:52	mfm
Sodium, dissolved	M200.7 ICP	10	3860			mg/L	2	10	07/04/21 23:41	kja
Thallium, dissolved	M200.8 ICP-MS	10	0.000924	B		mg/L	0.0005	0.0025	07/13/21 16:07	bsu
Uranium, dissolved	M200.8 ICP-MS	10	0.00264	B		mg/L	0.001	0.005	07/09/21 11:52	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/09/21 11:52	mfm
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	07/09/21 11:52	mfm

Golder Associates
Project ID:
Sample ID: MW-6

ACZ Sample ID: ***L66751-02***
Date Sampled: *06/23/21 10:00*
Date Received: *06/25/21*
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	625			mg/L	2	20	07/03/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Total Alkalinity		1	625			mg/L	2	20	07/03/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-7.7			%			07/26/21 0:00	calc
Sum of Anions			203			meq/L			07/26/21 0:00	calc
Sum of Cations			174			meq/L			07/26/21 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6810		*	mg/L	40	200	07/14/21 3:02	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0080	B		mg/L	0.003	0.01	06/30/21 12:35	md
Fluoride	SM4500F-C	1	1.18			mg/L	0.15	0.35	07/03/21 14:17	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	07/26/21 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/30/21 23:45	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/30/21 23:45	pjb
pH (lab)	SM4500H+ B									
pH		1	7.9	H		units	0.1	0.1	07/03/21 0:00	eep
pH measured at		1	19.9			C	0.1	0.1	07/03/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	5	10500			mg/L	100	200	06/29/21 16:04	jck
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	07/20/21 17:28	krh
TDS (calculated)	Calculation		11100			mg/L			07/26/21 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.95						07/26/21 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-8

ACZ Sample ID: ***L66751-03***
Date Sampled: *06/23/21 10:45*
Date Received: *06/25/21*
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	07/09/21 11:54	mfm
Antimony, dissolved	M200.8 ICP-MS	10	0.0102	B		mg/L	0.004	0.02	07/09/21 11:54	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	<0.002	U		mg/L	0.002	0.01	07/09/21 11:54	mfm
Barium, dissolved	M200.8 ICP-MS	10	0.137			mg/L	0.005	0.025	07/09/21 11:54	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	07/09/21 11:54	mfm
Boron, dissolved	M200.7 ICP	10	0.823	B		mg/L	0.3	1	07/04/21 23:44	kja
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 11:54	mfm
Calcium, dissolved	M200.7 ICP	10	56.1			mg/L	1	5	07/04/21 23:44	kja
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/09/21 11:54	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	0.000951	B		mg/L	0.0005	0.0025	07/09/21 11:54	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	07/09/21 11:54	mfm
Iron, dissolved	M200.7 ICP	10	<0.6	U		mg/L	0.6	1.5	07/04/21 23:44	kja
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/09/21 11:54	mfm
Lithium, dissolved	M200.7 ICP	10	1.70			mg/L	0.08	0.4	07/04/21 23:44	kja
Magnesium, dissolved	M200.7 ICP	10	18.4			mg/L	2	10	07/04/21 23:44	kja
Manganese, dissolved	M200.8 ICP-MS	10	0.0336			mg/L	0.004	0.02	07/09/21 11:54	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/02/21 14:42	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.0469			mg/L	0.002	0.005	07/09/21 11:54	mfm
Nickel, dissolved	M200.8 ICP-MS	10	0.00575	B		mg/L	0.004	0.01	07/09/21 11:54	mfm
Potassium, dissolved	M200.7 ICP	10	12.5			mg/L	2	10	07/04/21 23:44	kja
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	07/09/21 11:54	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/09/21 11:54	mfm
Sodium, dissolved	M200.7 ICP	10	4260			mg/L	2	10	07/04/21 23:44	kja
Thallium, dissolved	M200.8 ICP-MS	10	0.000826	B		mg/L	0.0005	0.0025	07/13/21 16:09	bsu
Uranium, dissolved	M200.8 ICP-MS	10	0.0560			mg/L	0.001	0.005	07/09/21 11:54	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/09/21 11:54	mfm
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	07/09/21 11:54	mfm

Golder Associates
Project ID:
Sample ID: MW-8

ACZ Sample ID: ***L66751-03***
Date Sampled: *06/23/21 10:45*
Date Received: *06/25/21*
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	612			mg/L	2	20	07/03/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Total Alkalinity		1	612			mg/L	2	20	07/03/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-8.4			%			07/26/21 0:00	calc
Sum of Anions			227			meq/L			07/26/21 0:00	calc
Sum of Cations			192			meq/L			07/26/21 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	7000			mg/L	40	200	07/14/21 3:38	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0128			mg/L	0.003	0.01	06/30/21 12:37	md
Fluoride	SM4500F-C	1	1.54			mg/L	0.15	0.35	07/03/21 14:36	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	07/26/21 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/30/21 23:47	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/30/21 23:47	pjb
pH (lab)	SM4500H+ B									
pH		1	8.0	H		units	0.1	0.1	07/03/21 0:00	eep
pH measured at		1	19.9			C	0.1	0.1	07/03/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	5	12200			mg/L	100	200	06/29/21 16:06	jck
Sulfate	M300.0 - Ion Chromatography	100	885			mg/L	40	200	07/20/21 18:40	krh
TDS (calculated)	Calculation		12600			mg/L			07/26/21 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.97						07/26/21 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-15

ACZ Sample ID: ***L66751-04***
Date Sampled: *06/23/21 10:32*
Date Received: *06/25/21*
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	07/09/21 11:55	mfm
Antimony, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	07/09/21 11:55	mfm
Arsenic, dissolved	M200.8 ICP-MS	1	<0.0002	U		mg/L	0.0002	0.001	07/09/21 11:55	mfm
Barium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 11:55	mfm
Beryllium, dissolved	M200.8 ICP-MS	1	<0.00008	U		mg/L	0.00008	0.00025	07/09/21 11:55	mfm
Boron, dissolved	M200.7 ICP	1	<0.03	U		mg/L	0.03	0.1	07/04/21 23:47	kja
Cadmium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/09/21 11:55	mfm
Calcium, dissolved	M200.7 ICP	1	<0.1	U		mg/L	0.1	0.5	07/04/21 23:47	kja
Chromium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/09/21 11:55	mfm
Cobalt, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/09/21 11:55	mfm
Copper, dissolved	M200.8 ICP-MS	1	<0.0008	U		mg/L	0.0008	0.002	07/09/21 11:55	mfm
Iron, dissolved	M200.7 ICP	1	<0.06	U		mg/L	0.06	0.15	07/04/21 23:47	kja
Lead, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/09/21 11:55	mfm
Lithium, dissolved	M200.7 ICP	1	<0.008	U		mg/L	0.008	0.04	07/04/21 23:47	kja
Magnesium, dissolved	M200.7 ICP	1	<0.2	U		mg/L	0.2	1	07/04/21 23:47	kja
Manganese, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.002	07/09/21 11:55	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/02/21 14:42	mlh
Molybdenum, dissolved	M200.8 ICP-MS	1	<0.0002	U		mg/L	0.0002	0.0005	07/09/21 11:55	mfm
Nickel, dissolved	M200.8 ICP-MS	1	<0.0004	U		mg/L	0.0004	0.001	07/09/21 11:55	mfm
Potassium, dissolved	M200.7 ICP	1	<0.2	U		mg/L	0.2	1	07/04/21 23:47	kja
Selenium, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.00025	07/09/21 11:55	mfm
Silver, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/09/21 11:55	mfm
Sodium, dissolved	M200.7 ICP	1	<0.2	U		mg/L	0.2	1	07/04/21 23:47	kja
Thallium, dissolved	M200.8 ICP-MS	1	<0.00005	U		mg/L	0.00005	0.00025	07/13/21 16:10	bsu
Uranium, dissolved	M200.8 ICP-MS	1	<0.0001	U		mg/L	0.0001	0.0005	07/09/21 11:55	mfm
Vanadium, dissolved	M200.8 ICP-MS	1	<0.0005	U		mg/L	0.0005	0.002	07/09/21 11:55	mfm
Zinc, dissolved	M200.8 ICP-MS	1	<0.006	U		mg/L	0.006	0.015	07/09/21 11:55	mfm

Golder Associates
Project ID:
Sample ID: MW-15

ACZ Sample ID: ***L66751-04***
Date Sampled: *06/23/21 10:32*
Date Received: *06/25/21*
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	U		mg/L	2	20	07/03/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Total Alkalinity		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			n/a			%			07/26/21 0:00	calc
Sum of Anions			<	U		meq/L			07/26/21 0:00	calc
Sum of Cations			<	U		meq/L			07/26/21 0:00	calc
Chloride	M300.0 - Ion Chromatography	1	<0.4	U		mg/L	0.4	2	07/15/21 17:10	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0031	B		mg/L	0.003	0.01	06/30/21 12:39	md
Fluoride	SM4500F-C	1	<0.15	U		mg/L	0.15	0.35	07/03/21 14:43	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	07/26/21 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/30/21 23:49	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/30/21 23:49	pjb
pH (lab)	SM4500H+ B									
pH		1	6.6	H		units	0.1	0.1	07/03/21 0:00	eep
pH measured at		1	19.9			C	0.1	0.1	07/03/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	1	<20	U	*	mg/L	20	40	06/29/21 16:09	jck
Sulfate	M300.0 - Ion Chromatography	1	<0.4	U		mg/L	0.4	2	07/20/21 18:58	krh
TDS (calculated)	Calculation					mg/L			07/26/21 0:00	calc
TDS (ratio - measured/calculated)	Calculation		n/a						07/26/21 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-7

ACZ Sample ID: ***L66751-05***
Date Sampled: *06/23/21 11:40*
Date Received: *06/25/21*
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	07/09/21 12:01	mfm
Antimony, dissolved	M200.8 ICP-MS	10	0.00691	B		mg/L	0.004	0.02	07/09/21 12:01	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	<0.002	U		mg/L	0.002	0.01	07/09/21 12:01	mfm
Barium, dissolved	M200.8 ICP-MS	10	4.32			mg/L	0.005	0.025	07/09/21 12:01	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	07/09/21 12:01	mfm
Boron, dissolved	M200.7 ICP	10	0.717	B		mg/L	0.3	1	07/04/21 23:56	kja
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:01	mfm
Calcium, dissolved	M200.7 ICP	10	56.8			mg/L	1	5	07/04/21 23:56	kja
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/09/21 12:01	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	0.000587	B		mg/L	0.0005	0.0025	07/09/21 12:01	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	07/09/21 12:01	mfm
Iron, dissolved	M200.7 ICP	10	2.95			mg/L	0.6	1.5	07/04/21 23:56	kja
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/09/21 12:01	mfm
Lithium, dissolved	M200.7 ICP	10	1.88			mg/L	0.08	0.4	07/04/21 23:56	kja
Magnesium, dissolved	M200.7 ICP	10	17.9			mg/L	2	10	07/04/21 23:56	kja
Manganese, dissolved	M200.8 ICP-MS	10	0.112			mg/L	0.004	0.02	07/09/21 12:01	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/02/21 14:43	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	0.0148			mg/L	0.002	0.005	07/09/21 12:01	mfm
Nickel, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.01	07/09/21 12:01	mfm
Potassium, dissolved	M200.7 ICP	10	9.09	B		mg/L	2	10	07/04/21 23:56	kja
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	07/09/21 12:01	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/09/21 12:01	mfm
Sodium, dissolved	M200.7 ICP	10	4160			mg/L	2	10	07/04/21 23:56	kja
Thallium, dissolved	M200.8 ICP-MS	10	0.000757	B		mg/L	0.0005	0.0025	07/13/21 16:12	bsu
Uranium, dissolved	M200.8 ICP-MS	10	0.00426	B		mg/L	0.001	0.005	07/09/21 12:01	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/09/21 12:01	mfm
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	07/09/21 12:01	mfm

Golder Associates
Project ID:
Sample ID: MW-7

ACZ Sample ID: ***L66751-05***
Date Sampled: *06/23/21 11:40*
Date Received: *06/25/21*
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	650			mg/L	2	20	07/03/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Total Alkalinity		1	650			mg/L	2	20	07/03/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-8.1			%			07/26/21 0:00	calc
Sum of Anions			221			meq/L			07/26/21 0:00	calc
Sum of Cations			188			meq/L			07/26/21 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	7410			mg/L	40	200	07/14/21 4:49	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0098	B		mg/L	0.003	0.01	06/30/21 12:41	md
Fluoride	SM4500F-C	1	0.95			mg/L	0.15	0.35	07/03/21 14:47	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		0.05	BH		mg/L	0.02	0.1	07/26/21 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.052	BH	*	mg/L	0.02	0.1	06/30/21 23:54	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/30/21 23:54	pjb
pH (lab)	SM4500H+ B									
pH		1	7.8	H		units	0.1	0.1	07/03/21 0:00	eep
pH measured at		1	19.9			C	0.1	0.1	07/03/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	5	11500			mg/L	100	200	06/29/21 16:12	jck
Sulfate	M300.0 - Ion Chromatography	100	43.0	B	*	mg/L	40	200	07/20/21 19:16	krh
TDS (calculated)	Calculation		12100			mg/L			07/26/21 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.95						07/26/21 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-4

ACZ Sample ID: ***L66751-06***
Date Sampled: *06/23/21 12:15*
Date Received: *06/24/21*
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	07/09/21 12:06	mfm
Antimony, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.02	07/09/21 12:06	mfm
Arsenic, dissolved	M200.8 ICP-MS	10	<0.002	U		mg/L	0.002	0.01	07/09/21 12:06	mfm
Barium, dissolved	M200.8 ICP-MS	10	8.80			mg/L	0.005	0.025	07/09/21 12:06	mfm
Beryllium, dissolved	M200.8 ICP-MS	10	<0.0008	U	*	mg/L	0.0008	0.0025	07/09/21 12:06	mfm
Boron, dissolved	M200.7 ICP	10	0.747	B		mg/L	0.3	1	07/04/21 23:59	kja
Cadmium, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:06	mfm
Calcium, dissolved	M200.7 ICP	10	36.8			mg/L	1	5	07/04/21 23:59	kja
Chromium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/09/21 12:06	mfm
Cobalt, dissolved	M200.8 ICP-MS	10	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:06	mfm
Copper, dissolved	M200.8 ICP-MS	10	<0.008	U		mg/L	0.008	0.02	07/09/21 12:06	mfm
Iron, dissolved	M200.7 ICP	10	<0.6	U		mg/L	0.6	1.5	07/04/21 23:59	kja
Lead, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/09/21 12:06	mfm
Lithium, dissolved	M200.7 ICP	10	1.80			mg/L	0.08	0.4	07/04/21 23:59	kja
Magnesium, dissolved	M200.7 ICP	10	15.6			mg/L	2	10	07/04/21 23:59	kja
Manganese, dissolved	M200.8 ICP-MS	10	0.00612	B		mg/L	0.004	0.02	07/09/21 12:06	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/02/21 14:44	mlh
Molybdenum, dissolved	M200.8 ICP-MS	10	<0.002	U		mg/L	0.002	0.005	07/09/21 12:06	mfm
Nickel, dissolved	M200.8 ICP-MS	10	<0.004	U		mg/L	0.004	0.01	07/09/21 12:06	mfm
Potassium, dissolved	M200.7 ICP	10	8.04	B		mg/L	2	10	07/04/21 23:59	kja
Selenium, dissolved	M200.8 ICP-MS	10	<0.001	U	*	mg/L	0.001	0.0025	07/09/21 12:06	mfm
Silver, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/09/21 12:06	mfm
Sodium, dissolved	M200.7 ICP	10	4050			mg/L	2	10	07/04/21 23:59	kja
Thallium, dissolved	M200.8 ICP-MS	10	0.000825	B		mg/L	0.0005	0.0025	07/13/21 16:16	bsu
Uranium, dissolved	M200.8 ICP-MS	10	<0.001	U		mg/L	0.001	0.005	07/09/21 12:06	mfm
Vanadium, dissolved	M200.8 ICP-MS	10	<0.005	U		mg/L	0.005	0.02	07/09/21 12:06	mfm
Zinc, dissolved	M200.8 ICP-MS	10	<0.06	U		mg/L	0.06	0.15	07/09/21 12:06	mfm

Golder Associates
Project ID:
Sample ID: MW-4

ACZ Sample ID: ***L66751-06***
Date Sampled: *06/23/21 12:15*
Date Received: *06/24/21*
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	595			mg/L	2	20	07/03/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Total Alkalinity		1	595			mg/L	2	20	07/03/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-4.5			%			07/26/21 0:00	calc
Sum of Anions			199			meq/L			07/26/21 0:00	calc
Sum of Cations			182			meq/L			07/26/21 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6680			mg/L	40	200	07/14/21 5:07	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0097	B		mg/L	0.003	0.01	06/30/21 12:43	md
Fluoride	SM4500F-C	1	1.10			mg/L	0.15	0.35	07/03/21 14:50	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	07/26/21 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/30/21 23:55	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/30/21 23:55	pjb
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	07/03/21 0:00	eep
pH measured at		1	19.9			C	0.1	0.1	07/03/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	5	11000			mg/L	100	200	06/29/21 16:14	jck
Sulfate	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	07/20/21 19:34	krh
TDS (calculated)	Calculation		11200			mg/L			07/26/21 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.98						07/26/21 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-3

ACZ Sample ID: ***L66751-07***
Date Sampled: *06/23/21 12:50*
Date Received: *06/24/21*
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	07/09/21 12:08	mfm
Antimony, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.01	07/09/21 12:08	mfm
Arsenic, dissolved	M200.8 ICP-MS	5	<0.001	U		mg/L	0.001	0.005	07/09/21 12:08	mfm
Barium, dissolved	M200.8 ICP-MS	5	2.66			mg/L	0.0025	0.0125	07/09/21 12:08	mfm
Beryllium, dissolved	M200.8 ICP-MS	5	<0.0004	U	*	mg/L	0.0004	0.00125	07/09/21 12:08	mfm
Boron, dissolved	M200.7 ICP	2	0.782			mg/L	0.06	0.2	07/05/21 0:03	kja
Cadmium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	07/09/21 12:08	mfm
Calcium, dissolved	M200.7 ICP	2	6.45			mg/L	0.2	1	07/05/21 0:03	kja
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/09/21 12:08	mfm
Cobalt, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	07/09/21 12:08	mfm
Copper, dissolved	M200.8 ICP-MS	5	<0.004	U		mg/L	0.004	0.01	07/09/21 12:08	mfm
Iron, dissolved	M200.7 ICP	2	<0.12	U		mg/L	0.12	0.3	07/05/21 0:03	kja
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:08	mfm
Lithium, dissolved	M200.7 ICP	2	0.714			mg/L	0.016	0.08	07/05/21 0:03	kja
Magnesium, dissolved	M200.7 ICP	2	2.57			mg/L	0.4	2	07/05/21 0:03	kja
Manganese, dissolved	M200.8 ICP-MS	5	0.0160			mg/L	0.002	0.01	07/09/21 12:08	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/02/21 14:45	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	<0.001	U		mg/L	0.001	0.0025	07/09/21 12:08	mfm
Nickel, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.005	07/09/21 12:08	mfm
Potassium, dissolved	M200.7 ICP	2	3.86			mg/L	0.4	2	07/05/21 0:03	kja
Selenium, dissolved	M200.8 ICP-MS	5	<0.0005	U	*	mg/L	0.0005	0.00125	07/09/21 12:08	mfm
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:08	mfm
Sodium, dissolved	M200.7 ICP	2	1460			mg/L	0.4	2	07/05/21 0:03	kja
Thallium, dissolved	M200.8 ICP-MS	2	<0.0001	U		mg/L	0.0001	0.0005	07/13/21 16:18	bsu
Uranium, dissolved	M200.8 ICP-MS	5	0.00070	B		mg/L	0.0005	0.0025	07/09/21 12:08	mfm
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/09/21 12:08	mfm
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	07/09/21 12:08	mfm

Golder Associates
Project ID:
Sample ID: MW-3

ACZ Sample ID: ***L66751-07***
Date Sampled: *06/23/21 12:50*
Date Received: *06/24/21*
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	1140			mg/L	2	20	07/03/21 0:00	eep
Carbonate as CaCO3		1	74.5			mg/L	2	20	07/03/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Total Alkalinity		1	1210			mg/L	2	20	07/03/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-4.4			%			07/26/21 0:00	calc
Sum of Anions			71			meq/L			07/26/21 0:00	calc
Sum of Cations			65			meq/L			07/26/21 0:00	calc
Chloride	M300.0 - Ion Chromatography	20	1670			mg/L	8	40	07/15/21 17:46	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0031	B		mg/L	0.003	0.01	06/30/21 12:45	md
Fluoride	SM4500F-C	1	2.48			mg/L	0.15	0.35	07/03/21 14:53	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	07/26/21 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/30/21 23:56	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/30/21 23:56	pjb
pH (lab)	SM4500H+ B									
pH		1	8.5	H		units	0.1	0.1	07/03/21 0:00	eep
pH measured at		1	20.0			C	0.1	0.1	07/03/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	2	3910	H	*	mg/L	40	80	07/08/21 17:38	scd
Sulfate	M300.0 - Ion Chromatography	50	<20	U	*	mg/L	20	100	07/20/21 20:10	krh
TDS (calculated)	Calculation		3890			mg/L			07/26/21 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.01						07/26/21 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-2

ACZ Sample ID: ***L66751-08***
Date Sampled: *06/23/21 13:15*
Date Received: *06/24/21*
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	07/09/21 12:10	mfm
Antimony, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.01	07/09/21 12:10	mfm
Arsenic, dissolved	M200.8 ICP-MS	5	0.00410	B		mg/L	0.001	0.005	07/09/21 12:10	mfm
Barium, dissolved	M200.8 ICP-MS	5	3.38			mg/L	0.0025	0.0125	07/09/21 12:10	mfm
Beryllium, dissolved	M200.8 ICP-MS	5	<0.0004	U	*	mg/L	0.0004	0.00125	07/09/21 12:10	mfm
Boron, dissolved	M200.7 ICP	5	0.802			mg/L	0.15	0.5	07/05/21 0:12	kja
Cadmium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	07/09/21 12:10	mfm
Calcium, dissolved	M200.7 ICP	5	18.3			mg/L	0.5	2.5	07/05/21 0:12	kja
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/09/21 12:10	mfm
Cobalt, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	07/09/21 12:10	mfm
Copper, dissolved	M200.8 ICP-MS	5	<0.004	U		mg/L	0.004	0.01	07/09/21 12:10	mfm
Iron, dissolved	M200.7 ICP	5	<0.3	U		mg/L	0.3	0.75	07/05/21 0:12	kja
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:10	mfm
Lithium, dissolved	M200.7 ICP	5	1.15			mg/L	0.04	0.2	07/05/21 0:12	kja
Magnesium, dissolved	M200.7 ICP	5	6.26			mg/L	1	5	07/05/21 0:12	kja
Manganese, dissolved	M200.8 ICP-MS	5	0.0577			mg/L	0.002	0.01	07/09/21 12:10	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/02/21 14:46	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	<0.001	U		mg/L	0.001	0.0025	07/09/21 12:10	mfm
Nickel, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.005	07/09/21 12:10	mfm
Potassium, dissolved	M200.7 ICP	5	5.54			mg/L	1	5	07/05/21 0:12	kja
Selenium, dissolved	M200.8 ICP-MS	5	<0.0005	U	*	mg/L	0.0005	0.00125	07/09/21 12:10	mfm
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:10	mfm
Sodium, dissolved	M200.7 ICP	5	2360			mg/L	1	5	07/05/21 0:12	kja
Thallium, dissolved	M200.8 ICP-MS	5	0.000329	B		mg/L	0.00025	0.00125	07/13/21 16:19	bsu
Uranium, dissolved	M200.8 ICP-MS	5	0.00246	B		mg/L	0.0005	0.0025	07/09/21 12:10	mfm
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/09/21 12:10	mfm
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	07/09/21 12:10	mfm

Golder Associates
Project ID:
Sample ID: MW-2

ACZ Sample ID: ***L66751-08***
Date Sampled: *06/23/21 13:15*
Date Received: *06/24/21*
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	07/03/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Total Alkalinity		1	1030			mg/L	2	20	07/03/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-3.2			%			07/26/21 0:00	calc
Sum of Anions			112			meq/L			07/26/21 0:00	calc
Sum of Cations			105			meq/L			07/26/21 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	3250			mg/L	20	100	07/14/21 6:19	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0063	B		mg/L	0.003	0.01	06/30/21 12:47	md
Fluoride	SM4500F-C	1	1.46			mg/L	0.15	0.35	07/03/21 15:10	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	07/26/21 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/30/21 23:58	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/30/21 23:58	pjb
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/03/21 0:00	eep
pH measured at		1	20.1			C	0.1	0.1	07/03/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	2	6340			mg/L	40	80	06/29/21 17:40	jck
Sulfate	M300.0 - Ion Chromatography	50	<20	U	*	mg/L	20	100	07/20/21 20:45	krh
TDS (calculated)	Calculation		6270			mg/L			07/26/21 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.01						07/26/21 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-20

ACZ Sample ID: ***L66751-09***
Date Sampled: *06/23/21 13:30*
Date Received: *06/24/21*
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	07/09/21 12:12	mfm
Antimony, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.01	07/09/21 12:12	mfm
Arsenic, dissolved	M200.8 ICP-MS	5	0.00377	B		mg/L	0.001	0.005	07/09/21 12:12	mfm
Barium, dissolved	M200.8 ICP-MS	5	3.39			mg/L	0.0025	0.0125	07/09/21 12:12	mfm
Beryllium, dissolved	M200.8 ICP-MS	5	<0.0004	U	*	mg/L	0.0004	0.00125	07/09/21 12:12	mfm
Boron, dissolved	M200.7 ICP	5	0.806			mg/L	0.15	0.5	07/05/21 0:15	kja
Cadmium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	07/09/21 12:12	mfm
Calcium, dissolved	M200.7 ICP	5	18.8			mg/L	0.5	2.5	07/05/21 0:15	kja
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/09/21 12:12	mfm
Cobalt, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	07/09/21 12:12	mfm
Copper, dissolved	M200.8 ICP-MS	5	<0.004	U		mg/L	0.004	0.01	07/09/21 12:12	mfm
Iron, dissolved	M200.7 ICP	5	<0.3	U		mg/L	0.3	0.75	07/05/21 0:15	kja
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:12	mfm
Lithium, dissolved	M200.7 ICP	5	1.17			mg/L	0.04	0.2	07/05/21 0:15	kja
Magnesium, dissolved	M200.7 ICP	5	6.35			mg/L	1	5	07/05/21 0:15	kja
Manganese, dissolved	M200.8 ICP-MS	5	0.0589			mg/L	0.002	0.01	07/09/21 12:12	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/02/21 14:49	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	<0.001	U		mg/L	0.001	0.0025	07/09/21 12:12	mfm
Nickel, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.005	07/09/21 12:12	mfm
Potassium, dissolved	M200.7 ICP	5	5.82			mg/L	1	5	07/05/21 0:15	kja
Selenium, dissolved	M200.8 ICP-MS	5	<0.0005	U	*	mg/L	0.0005	0.00125	07/09/21 12:12	mfm
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:12	mfm
Sodium, dissolved	M200.7 ICP	5	2380			mg/L	1	5	07/05/21 0:15	kja
Thallium, dissolved	M200.8 ICP-MS	5	0.000313	B		mg/L	0.00025	0.00125	07/13/21 16:20	bsu
Uranium, dissolved	M200.8 ICP-MS	5	0.00248	B		mg/L	0.0005	0.0025	07/09/21 12:12	mfm
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/09/21 12:12	mfm
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	07/09/21 12:12	mfm

Golder Associates
Project ID:
Sample ID: MW-20

ACZ Sample ID: ***L66751-09***
Date Sampled: *06/23/21 13:30*
Date Received: *06/24/21*
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	07/03/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Total Alkalinity		1	1030			mg/L	2	20	07/03/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-4.5			%			07/26/21 0:00	calc
Sum of Anions			116			meq/L			07/26/21 0:00	calc
Sum of Cations			106			meq/L			07/26/21 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	3400			mg/L	20	100	07/14/21 6:37	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	0.0064	B		mg/L	0.003	0.01	06/30/21 12:49	md
Fluoride	SM4500F-C	1	1.45			mg/L	0.15	0.35	07/03/21 15:18	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		<0.02	UH		mg/L	0.02	0.1	07/26/21 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.02	UH	*	mg/L	0.02	0.1	06/30/21 23:59	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	<0.01	UH	*	mg/L	0.01	0.05	06/30/21 23:59	pjb
pH (lab)	SM4500H+ B									
pH		1	8.3	H		units	0.1	0.1	07/03/21 0:00	eep
pH measured at		1	19.9			C	0.1	0.1	07/03/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	2	6370	H	*	mg/L	40	80	07/08/21 17:40	scd
Sulfate	M300.0 - Ion Chromatography	50	<20	U	*	mg/L	20	100	07/20/21 21:03	krh
TDS (calculated)	Calculation		6440			mg/L			07/26/21 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.99						07/26/21 0:00	calc

Golder Associates
Project ID:
Sample ID: MW-1

ACZ Sample ID: ***L66751-10***
Date Sampled: *06/23/21 14:13*
Date Received: *06/24/21*
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	07/09/21 12:14	mfm
Antimony, dissolved	M200.8 ICP-MS	5	<0.002	U		mg/L	0.002	0.01	07/09/21 12:14	mfm
Arsenic, dissolved	M200.8 ICP-MS	5	<0.001	U		mg/L	0.001	0.005	07/09/21 12:14	mfm
Barium, dissolved	M200.8 ICP-MS	5	0.00929	B		mg/L	0.0025	0.0125	07/09/21 12:14	mfm
Beryllium, dissolved	M200.8 ICP-MS	5	<0.0004	U	*	mg/L	0.0004	0.00125	07/09/21 12:14	mfm
Boron, dissolved	M200.7 ICP	5	0.644			mg/L	0.15	0.5	07/05/21 0:19	kja
Cadmium, dissolved	M200.8 ICP-MS	5	<0.00025	U		mg/L	0.00025	0.00125	07/09/21 12:14	mfm
Calcium, dissolved	M200.7 ICP	5	299			mg/L	0.5	2.5	07/05/21 0:19	kja
Chromium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/09/21 12:14	mfm
Cobalt, dissolved	M200.8 ICP-MS	5	0.00708			mg/L	0.00025	0.00125	07/09/21 12:14	mfm
Copper, dissolved	M200.8 ICP-MS	5	<0.004	U		mg/L	0.004	0.01	07/09/21 12:14	mfm
Iron, dissolved	M200.7 ICP	5	<0.3	U		mg/L	0.3	0.75	07/05/21 0:19	kja
Lead, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:14	mfm
Lithium, dissolved	M200.7 ICP	5	1.24			mg/L	0.04	0.2	07/05/21 0:19	kja
Magnesium, dissolved	M200.7 ICP	5	308			mg/L	1	5	07/05/21 0:19	kja
Manganese, dissolved	M200.8 ICP-MS	5	0.0741			mg/L	0.002	0.01	07/09/21 12:14	mfm
Mercury, dissolved	M245.1 CVAA	1	<0.0002	U		mg/L	0.0002	0.001	07/02/21 14:50	mlh
Molybdenum, dissolved	M200.8 ICP-MS	5	0.0754			mg/L	0.001	0.0025	07/09/21 12:14	mfm
Nickel, dissolved	M200.8 ICP-MS	5	0.0261			mg/L	0.002	0.005	07/09/21 12:14	mfm
Potassium, dissolved	M200.7 ICP	5	19.3			mg/L	1	5	07/05/21 0:19	kja
Selenium, dissolved	M200.8 ICP-MS	5	0.219			mg/L	0.0005	0.00125	07/09/21 12:14	mfm
Silver, dissolved	M200.8 ICP-MS	5	<0.0005	U		mg/L	0.0005	0.0025	07/09/21 12:14	mfm
Sodium, dissolved	M200.7 ICP	5	1630			mg/L	1	5	07/05/21 0:19	kja
Thallium, dissolved	M200.8 ICP-MS	5	0.000465	B		mg/L	0.00025	0.00125	07/13/21 16:22	bsu
Uranium, dissolved	M200.8 ICP-MS	5	0.0452			mg/L	0.0005	0.0025	07/09/21 12:14	mfm
Vanadium, dissolved	M200.8 ICP-MS	5	<0.0025	U		mg/L	0.0025	0.01	07/09/21 12:14	mfm
Zinc, dissolved	M200.8 ICP-MS	5	<0.03	U		mg/L	0.03	0.075	07/09/21 12:14	mfm

Golder Associates
Project ID:
Sample ID: MW-1

ACZ Sample ID: ***L66751-10***
Date Sampled: *06/23/21 14:13*
Date Received: *06/24/21*
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	342			mg/L	2	20	07/03/21 0:00	eep
Carbonate as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Hydroxide as CaCO3		1	<2	U		mg/L	2	20	07/03/21 0:00	eep
Total Alkalinity		1	342			mg/L	2	20	07/03/21 0:00	eep
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-6.7			%			07/26/21 0:00	calc
Sum of Anions			128			meq/L			07/26/21 0:00	calc
Sum of Cations			112			meq/L			07/26/21 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	<40	U	*	mg/L	40	200	07/14/21 6:55	krh
Cyanide, Free	D6888-09/OIA-1677-09	1	<0.003	U		mg/L	0.003	0.01	06/30/21 12:57	md
Fluoride	SM4500F-C	1	0.44			mg/L	0.15	0.35	07/03/21 15:33	eep
Nitrate as N, dissolved	Calculation: NO3NO2 minus NO2		13	H		mg/L	0.2	1	07/26/21 0:00	calc
Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	10	13.5	H	*	mg/L	0.2	1	07/01/21 0:14	pjb
Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	1	0.140	H	*	mg/L	0.01	0.05	07/01/21 0:00	pjb
pH (lab)	SM4500H+ B									
pH		1	8.1	H		units	0.1	0.1	07/03/21 0:00	eep
pH measured at		1	20.1			C	0.1	0.1	07/03/21 0:00	eep
Residue, Filterable (TDS) @180C	SM2540C	2	7980			mg/L	40	80	06/29/21 17:45	jck
Sulfate	M300.0 - Ion Chromatography	100	5730		*	mg/L	40	200	07/14/21 6:55	krh
TDS (calculated)	Calculation		8260			mg/L			07/26/21 0:00	calc
TDS (ratio - measured/calculated)	Calculation		0.97						07/26/21 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 Associates

ACZ Project ID: ***L66751***

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
WG522493													
WG522493PBW1	PBW	07/02/21 20:23				10	mg/L		-20	20			
WG522493LCSW3	LCSW	07/02/21 20:41	WC210702-1	820.0001		763.7	mg/L	93	90	110			
WG522493LCSW6	LCSW	07/03/21 0:18	WC210622-2	820.0001		778	mg/L	95	90	110			
WG522493PBW2	PBW	07/03/21 0:25				U	mg/L		-20	20			
L66750-02DUP	DUP	07/03/21 3:52			1200	1194.2	mg/L				0	20	
WG522493LCSW9	LCSW	07/03/21 4:21	WC210622-2	820.0001		796.2	mg/L	97	90	110			
WG522493PBW3	PBW	07/03/21 4:28				U	mg/L		-20	20			
L66758-01DUP	DUP	07/03/21 6:34			185	184.4	mg/L				0	20	
WG522493LCSW12	LCSW	07/03/21 7:49	WC210622-2	820.0001		798.5	mg/L	97	90	110			

Aluminum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.1		.1018	mg/L	102	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.011	0.011			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.050065		.0507	mg/L	101	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.050065	U	.0535	mg/L	107	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.050065	U	.0489	mg/L	98	70	130	9	20	

Antimony, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.0201		.0201	mg/L	100	90	110			
WG522846ICB	ICB	07/09/21 11:21				.00048	mg/L		-0.00088	0.00088			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.01		.00875	mg/L	88	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.01	U	.00744	mg/L	74	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.01	U	.00739	mg/L	74	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
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.0498	mg/L	100	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00044	0.00044			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05005		.05041	mg/L	101	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05005	U	.05464	mg/L	109	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05005	U	.05025	mg/L	100	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
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.05115	mg/L	102	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.0011	0.0011			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.049985		.04911	mg/L	98	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.049985	U	.05098	mg/L	102	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.049985	U	.04638	mg/L	93	70	130	9	20	

Golder Associates

ACZ Project ID: ***L66751***

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
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.045888	mg/L	92	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.000176	0.000176			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05005		.044689	mg/L	89	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05005	U	.04727	mg/L	94	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05005	U	.043064	mg/L	86	70	130	9	20	

Boron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522518													
WG522518ICV	ICV	07/04/21 23:16	II210628-1	2		1.981	mg/L	99	95	105			
WG522518ICB	ICB	07/04/21 23:22				U	mg/L		-0.09	0.09			
WG522518LFB	LFB	07/04/21 23:34	II210622-2	.5005		.526	mg/L	105	85	115			
L66751-04AS	AS	07/04/21 23:50	II210622-2	.5005	U	.53	mg/L	106	85	115			
L66751-04ASD	ASD	07/04/21 23:53	II210622-2	.5005	U	.532	mg/L	106	85	115	0	20	

Cadmium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.050155	mg/L	100	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00011	0.00011			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05005		.048161	mg/L	96	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05005	U	.052424	mg/L	105	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05005	U	.047964	mg/L	96	70	130	9	20	

Calcium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522518													
WG522518ICV	ICV	07/04/21 23:16	II210628-1	100		99.03	mg/L	99	95	105			
WG522518ICB	ICB	07/04/21 23:22				U	mg/L		-0.3	0.3			
WG522518LFB	LFB	07/04/21 23:34	II210622-2	67.98753		69.74	mg/L	103	85	115			
L66751-04AS	AS	07/04/21 23:50	II210622-2	67.98753	U	69.93	mg/L	103	85	115			
L66751-04ASD	ASD	07/04/21 23:53	II210622-2	67.98753	U	70.43	mg/L	104	85	115	1	20	

Chloride M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522573													
WG522573ICV	ICV	07/02/21 18:45	WI210702-4	19.96		20.28	mg/L	102	90	110			
WG522573ICB	ICB	07/02/21 19:02				U	mg/L		-0.4	0.4			
WG523119													
WG523119LFB	LFB	07/13/21 23:09	WI210329-1	30		30.37	mg/L	101	90	110			
L66751-02AS	AS	07/14/21 3:20	WI210329-1	3000	6810	9318.82	mg/L	84	90	110			M2
L66751-03DUP	DUP	07/14/21 3:56			7000	6968.91	mg/L				0	20	
L66751-01DUP	DUP	07/15/21 16:52			11.8	11.63	mg/L				1	20	RA
L66751-04AS	AS	07/15/21 17:28	WI210329-1	30	U	30.51	mg/L	102	90	110			

Golder Associates

ACZ Project ID: ***L66751***

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.

Chromium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.05012	mg/L	100	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.0011	0.0011			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05		.04883	mg/L	98	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05	U	.05022	mg/L	100	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05	U	.04695	mg/L	94	70	130	7	20	

Cobalt, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.051964	mg/L	104	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00011	0.00011			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05005		.048476	mg/L	97	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05005	U	.05058	mg/L	101	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05005	U	.048711	mg/L	97	70	130	4	20	

Copper, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.0501	mg/L	100	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00176	0.00176			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05		.0528	mg/L	106	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05	U	.05056	mg/L	101	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05	U	.04792	mg/L	96	70	130	5	20	

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

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522216													
WG522216ICV	ICV	06/30/21 12:25	WI210630-4	.3		.2942	mg/L	98	90	110			
WG522216ICB	ICB	06/30/21 12:27				U	mg/L		-0.003	0.003			
WG522216LFB	LFB	06/30/21 12:31	WI210630-6	.1		.1015	mg/L	102	90	110			
L66751-10AS	AS	06/30/21 12:59	WI210630-6	.1	U	.0967	mg/L	97	90	110			
L66751-10ASD	ASD	06/30/21 13:01	WI210630-6	.1	U	.0962	mg/L	96	90	110	1	20	

Fluoride SM4500F-C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522503													
WG522503ICV	ICV	07/03/21 11:25	WC210609-3	2.002		2.16	mg/L	108	90	110			
WG522503ICB	ICB	07/03/21 11:31				U	mg/L		-0.3	0.3			
WG522503LFB1	LFB	07/03/21 11:37	WC201221-2	5.015		5.35	mg/L	107	90	110			
L66751-01AS	AS	07/03/21 14:06	WC201221-2	5.015	.47	5.53	mg/L	101	90	110			
L66751-01ASD	ASD	07/03/21 14:14	WC201221-2	5.015	.47	5.48	mg/L	100	90	110	1	20	
L66751-07AS	AS	07/03/21 14:57	WC201221-2	5.015	2.48	7.78	mg/L	106	90	110			
L66751-07ASD	ASD	07/03/21 15:00	WC201221-2	5.015	2.48	7.71	mg/L	104	90	110	1	20	
WG522503LFB2	LFB	07/03/21 15:03	WC201221-2	5.015		5.43	mg/L	108	90	110			

Golder Associates

ACZ Project ID: ***L66751***

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.

Iron, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522518													
WG522518ICV	ICV	07/04/21 23:16	II210628-1	2		1.9	mg/L	95	95	105			
WG522518ICB	ICB	07/04/21 23:22				U	mg/L		-0.18	0.18			
WG522518LFB	LFB	07/04/21 23:34	II210622-2	1.0018		.992	mg/L	99	85	115			
L66751-04AS	AS	07/04/21 23:50	II210622-2	1.0018	U	.995	mg/L	99	85	115			
L66751-04ASD	ASD	07/04/21 23:53	II210622-2	1.0018	U	1.012	mg/L	101	85	115	2	20	

Lead, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.05049	mg/L	101	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00022	0.00022			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05005		.0484	mg/L	97	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05005	U	.05041	mg/L	101	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05005	U	.04595	mg/L	92	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
WG522518													
WG522518ICV	ICV	07/04/21 23:16	II210628-1	2		1.9492	mg/L	97	95	105			
WG522518ICB	ICB	07/04/21 23:22				U	mg/L		-0.024	0.024			
WG522518LFB	LFB	07/04/21 23:34	II210622-2	.999		.9681	mg/L	97	85	115			
L66751-04AS	AS	07/04/21 23:50	II210622-2	.999	U	.9688	mg/L	97	85	115			
L66751-04ASD	ASD	07/04/21 23:53	II210622-2	.999	U	.9834	mg/L	98	85	115	1	20	

Magnesium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522518													
WG522518ICV	ICV	07/04/21 23:16	II210628-1	100		98.06	mg/L	98	95	105			
WG522518ICB	ICB	07/04/21 23:22				U	mg/L		-0.6	0.6			
WG522518LFB	LFB	07/04/21 23:34	II210622-2	50.00302		50.25	mg/L	100	85	115			
L66751-04AS	AS	07/04/21 23:50	II210622-2	50.00302	U	50.27	mg/L	101	85	115			
L66751-04ASD	ASD	07/04/21 23:53	II210622-2	50.00302	U	50.86	mg/L	102	85	115	1	20	

Manganese, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.05104	mg/L	102	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00088	0.00088			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.0499		.04858	mg/L	97	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.0499	U	.04996	mg/L	100	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.0499	U	.04575	mg/L	92	70	130	9	20	

Golder Associates

ACZ Project ID: ***L66751***

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.

Mercury, dissolved M245.1 CVAA

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522259													
WG522259ICV	ICV	07/02/21 13:17	HG210701-3	.00501		.005	mg/L	100	95	105			
WG522259ICB	ICB	07/02/21 13:18				U	mg/L		-0.0002	0.0002			
WG522376													
WG522376LRB	LRB	07/02/21 14:27				U	mg/L		-0.00044	0.00044			
WG522376LFB	LFB	07/02/21 14:28	HG210701-6	.002002		.00194	mg/L	97	85	115			
L66714-03LFM	LFM	07/02/21 14:30	HG210701-6	.002002	U	.0018	mg/L	90	85	115			
L66714-03LFMD	LFMD	07/02/21 14:31	HG210701-6	.002002	U	.00205	mg/L	102	85	115	13	20	
L66754-01LFM	LFM	07/02/21 14:52	HG210701-6	.002002	U	.0018	mg/L	90	85	115			
L66754-01LFMD	LFMD	07/02/21 14:53	HG210701-6	.002002	U	.00186	mg/L	93	85	115	3	20	

Molybdenum, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.01992		.01917	mg/L	96	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00044	0.00044			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.0501		.04793	mg/L	96	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.0501	U	.04967	mg/L	99	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.0501	U	.04548	mg/L	91	70	130	9	20	

Nickel, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.05003	mg/L	100	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00088	0.00088			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05		.04893	mg/L	98	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05	U	.05045	mg/L	101	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05	U	.04788	mg/L	96	70	130	5	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
WG522298													
WG522298ICV	ICV	06/30/21 23:35	WI210603-7	2.416		2.403	mg/L	99	90	110			
WG522298ICB	ICB	06/30/21 23:36				U	mg/L		-0.02	0.02			
WG522298LFB	LFB	06/30/21 23:41	WI210331-13	2		2.021	mg/L	101	90	110			
L66751-01AS	AS	06/30/21 23:44	WI210331-13	2	U	2.016	mg/L	101	90	110			
L66751-02DUP	DUP	06/30/21 23:46			U	U	mg/L				0	20	RA

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
WG522298													
WG522298ICV	ICV	06/30/21 23:35	WI210603-7	.609		.585	mg/L	96	90	110			
WG522298ICB	ICB	06/30/21 23:36				U	mg/L		-0.01	0.01			
WG522298LFB	LFB	06/30/21 23:41	WI210331-13	1		.955	mg/L	96	90	110			
L66751-01AS	AS	06/30/21 23:44	WI210331-13	1	U	.946	mg/L	95	90	110			
L66751-02DUP	DUP	06/30/21 23:46			U	U	mg/L				0	20	RA

Golder Associates

ACZ Project ID: ***L66751***

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.

pH (lab) SM4500H+ B

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522493													
WG522493LCSW1	LCSW	07/02/21 20:28	PCN61687	6		6.1	units	102	5.9	6.1			
WG522493LCSW4	LCSW	07/03/21 0:05	PCN61687	6		6.1	units	102	5.9	6.1			
L66750-02DUP	DUP	07/03/21 3:52			8.4	8.4	units				0	20	
WG522493LCSW7	LCSW	07/03/21 4:06	PCN61687	6		6.1	units	102	5.9	6.1			
L66758-01DUP	DUP	07/03/21 6:34			8.2	8.2	units				0	20	
WG522493LCSW10	LCSW	07/03/21 7:34	PCN61687	6		6.1	units	102	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
WG522518													
WG522518ICV	ICV	07/04/21 23:16	II210628-1	20		19.55	mg/L	98	95	105			
WG522518ICB	ICB	07/04/21 23:22				U	mg/L		-0.6	0.6			
WG522518LFB	LFB	07/04/21 23:34	II210622-2	100.0157		100.3	mg/L	100	85	115			
L66751-04AS	AS	07/04/21 23:50	II210622-2	100.0157	U	100.8	mg/L	101	85	115			
L66751-04ASD	ASD	07/04/21 23:53	II210622-2	100.0157	U	101.8	mg/L	102	85	115	1	20	

Residue, Filterable (TDS) @180C SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522176													
WG522176PBW	PBW	06/29/21 15:25				U	mg/L		-20	20			
WG522176LCSW	LCSW	06/29/21 15:27	PCN63835	1000		992	mg/L	99	80	120			
L66804-02DUP	DUP	06/29/21 16:25			352	354	mg/L				1	10	H1
WG522191													
WG522191PBW	PBW	06/29/21 17:27				U	mg/L		-20	20			
WG522191LCSW	LCSW	06/29/21 17:29	PCN63835	1000		996	mg/L	100	80	120			
L66766-02DUP	DUP	06/29/21 17:58			1010	1008	mg/L				0	10	
WG522793													
WG522793PBW	PBW	07/08/21 17:30				U	mg/L		-20	20			
WG522793LCSW	LCSW	07/08/21 17:31	PCN63837	1000		990	mg/L	99	80	120			
L66914-05DUP	DUP	07/08/21 17:50			80	80	mg/L				0	10	RA

Selenium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.04979	mg/L	100	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00022	0.00022			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05		.04905	mg/L	98	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05	U	.05604	mg/L	112	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05	U	.05189	mg/L	104	70	130	8	20	

Golder Associates

ACZ Project ID: ***L66751***

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.

Silver, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.02		.01821	mg/L	91	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00022	0.00022			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.01002		.00929	mg/L	93	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.01002	U	.00951	mg/L	95	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.01002	U	.00913	mg/L	91	70	130	4	20	

Sodium, dissolved M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522518													
WG522518ICV	ICV	07/04/21 23:16	II210628-1	100		98.06	mg/L	98	95	105			
WG522518ICB	ICB	07/04/21 23:22				U	mg/L		-0.6	0.6			
WG522518LFB	LFB	07/04/21 23:34	II210622-2	100.0605		99.56	mg/L	99	85	115			
L66751-04AS	AS	07/04/21 23:50	II210622-2	100.0605	U	100.6	mg/L	101	85	115			
L66751-04ASD	ASD	07/04/21 23:53	II210622-2	100.0605	U	100.9	mg/L	101	85	115	0	20	

Sulfate M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG519666													
WG519666ICV	ICV	05/20/21 17:50	WI210520-6	51.15		51.12	mg/L	100	90	110			
WG519666ICB	ICB	05/20/21 18:08				U	mg/L		-0.4	0.4			
WG523119													
WG523119LFB	LFB	07/13/21 23:09	WI210329-1	29.97		30.19	mg/L	101	90	110			
L66751-01DUP	DUP	07/14/21 2:44			1860	1867.16	mg/L				0	20	
WG523594													
WG523594LFB1	LFB	07/20/21 15:05	WI210329-1	29.97		32.23	mg/L	108	90	110			
L66741-01DUP	DUP	07/20/21 15:41			45.5	45.48	mg/L				0	20	
L66751-02AS	AS	07/20/21 18:22	WI210329-1	2997	U	3126.7	mg/L	104	90	110			
L66751-06DUP	DUP	07/20/21 19:52			U	U	mg/L				0	20	RA
L66751-07AS	AS	07/20/21 20:27	WI210329-1	1498.5	U	1557.54	mg/L	104	90	110			
WG523594LFB2	LFB	07/20/21 23:45	WI210329-1	29.97		31.13	mg/L	104	90	110			

Thallium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG523130													
WG523130ICV	ICV	07/13/21 15:57	MS210630-2	.05		.052382	mg/L	105	90	110			
WG523130ICB	ICB	07/13/21 15:59				U	mg/L		-0.00011	0.00011			
WG523130LFB	LFB	07/13/21 16:01	MS210702-2	.05		.050533	mg/L	101	85	115			
L66751-01AS	AS	07/13/21 16:04	MS210702-2	.1	.000437	.101112	mg/L	101	70	130			
L66751-01ASD	ASD	07/13/21 16:06	MS210702-2	.1	.000437	.105988	mg/L	106	70	130	5	20	

Golder Associates

ACZ Project ID: ***L66751***

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.

Uranium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.05036	mg/L	101	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.00022	0.00022			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05		.04785	mg/L	96	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05	U	.04882	mg/L	98	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05	U	.04465	mg/L	89	70	130	9	20	

Vanadium, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.04847	mg/L	97	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.0011	0.0011			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.05		.04868	mg/L	97	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.05	U	.05026	mg/L	101	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.05	U	.04711	mg/L	94	70	130	6	20	

Zinc, dissolved M200.8 ICP-MS

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG522846													
WG522846ICV	ICV	07/09/21 11:19	MS210630-2	.05		.0502	mg/L	100	90	110			
WG522846ICB	ICB	07/09/21 11:21				U	mg/L		-0.0132	0.0132			
WG522846LFB	LFB	07/09/21 11:23	MS210702-2	.050075		.0531	mg/L	106	85	115			
L66751-04AS	AS	07/09/21 11:57	MS210702-2	.050075	U	.0574	mg/L	115	70	130			
L66751-04ASD	ASD	07/09/21 11:59	MS210702-2	.050075	U	.0525	mg/L	105	70	130	9	20	

Golder Associates

ACZ Project ID: ***L66751***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66751-01	WG522846	Beryllium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG523119	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			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).
	WG522298	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			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	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).
	WG523119	Sulfate	M300.0 - Ion Chromatography	N1	See Case Narrative.
L66751-02	WG522846	Beryllium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG523119	Chloride	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).
	WG522298	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			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	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).
	WG522846	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.
	WG523594	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
L66751-03	WG522846	Beryllium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG522298	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			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	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).
	WG522846	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.

Golder Associates

ACZ Project ID: ***L66751***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66751-04	WG522298	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			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	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).
	WG522176	Residue, Filterable (TDS) @180C	SM2540C	Z3	Sample volume yielded a residue less than 2.5 mg
L66751-05	WG522846	Beryllium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG522298	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H3	Sample was received and analyzed past holding time.
			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	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).
	WG522846	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.
	WG523594	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
L66751-06	WG522846	Beryllium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG522298	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H1	Sample prep or analysis performed past holding time. See case narrative.
			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).
	WG522846	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.
	WG523594	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).

Golder Associates

ACZ Project ID: ***L66751***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66751-07	WG522846	Beryllium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG522298	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H1	Sample prep or analysis performed past holding time. See case narrative.
			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).
	WG522793	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			SM2540C	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).
	WG522846	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.
	WG523594	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).
L66751-08	WG522846	Beryllium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG522298	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H1	Sample prep or analysis performed past holding time. See case narrative.
			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).
	WG522846	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.
	WG523594	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).

Golder Associates

ACZ Project ID: ***L66751***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66751-09	WG522846	Beryllium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG522298	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H1	Sample prep or analysis performed past holding time. See case narrative.
			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).
	WG522793	Residue, Filterable (TDS) @180C	SM2540C	H2	Initial analysis within holding time. Reanalysis for the required dilution was past holding time.
			SM2540C	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).
	WG522846	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.
	WG523594	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).
L66751-10	WG522846	Beryllium, dissolved	M200.8 ICP-MS	IA	Internal standard recovery exceeded the acceptance limits. Concentration of associated target analyte(s) in the sample is < MDL.
	WG523119	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG522298	Nitrate/Nitrite as N, dissolved	M353.2 - Automated Cadmium Reduction	H1	Sample prep or analysis performed past holding time. See case narrative.
			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).
	WG523119	Sulfate	M300.0 - Ion Chromatography	N1	See Case Narrative.

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

RadioChemistry Analytical Results

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

ACZ Sample ID: ***L66751-01***
Date Sampled: *06/23/21 9:22*
Date Received: *06/25/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/06/21 0:21		31	13	22	pCi/L	*	ess
Gross Beta	07/06/21 0:21		20	9.2	29	pCi/L	*	ess

RadioChemistry Analytical Results

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

ACZ Sample ID: ***L66751-02***
Date Sampled: *06/23/21 10:00*
Date Received: *06/25/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/06/21 0:23		65	40	120	pCi/L	*	ess
Gross Beta	07/06/21 0:23		57	44	110	pCi/L	*	ess

RadioChemistry Analytical Results

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

ACZ Sample ID: ***L66751-03***
Date Sampled: *06/23/21 10:45*
Date Received: *06/25/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/06/21 0:24		-1.4	38	170	pCi/L	*	ess
Gross Beta	07/06/21 0:24		-1.9	57	170	pCi/L	*	ess

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: ***L66751-04***
Date Sampled: *06/23/21 10:32*
Date Received: *06/25/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/06/21 0:25		-0.1	0.77	11	pCi/L	*	ess
Gross Beta	07/06/21 0:25		3	2.7	17	pCi/L	*	ess

RadioChemistry Analytical Results

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

ACZ Sample ID: ***L66751-05***
Date Sampled: *06/23/21 11:40*
Date Received: *06/25/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/06/21 0:30		64	53	170	pCi/L	*	ess
Gross Beta	07/06/21 0:30		92	58	110	pCi/L	*	ess

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

RadioChemistry Analytical Results

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

ACZ Sample ID: ***L66751-06***
Date Sampled: *06/23/21 12:15*
Date Received: *06/24/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/06/21 0:31		11	30	150	pCi/L	*	ess
Gross Beta	07/06/21 0:31		16	57	190	pCi/L	*	ess

RadioChemistry Analytical Results

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

ACZ Sample ID: ***L66751-07***
Date Sampled: *06/23/21 12:50*
Date Received: *06/24/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/06/21 0:33		5.1	11	89	pCi/L	*	ess
Gross Beta	07/06/21 0:33		1.9	17	75	pCi/L	*	ess

RadioChemistry Analytical Results

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

ACZ Sample ID: ***L66751-08***
Date Sampled: *06/23/21 13:15*
Date Received: *06/24/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/06/21 0:34		11	21	73	pCi/L	*	ess
Gross Beta	07/06/21 0:34		27	28	96	pCi/L	*	ess

RadioChemistry Analytical Results

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

ACZ Sample ID: ***L66751-09***
Date Sampled: *06/23/21 13:30*
Date Received: *06/24/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/06/21 0:36		3.5	18	90	pCi/L	*	ess
Gross Beta	07/06/21 0:36		31	27	69	pCi/L	*	ess

RadioChemistry Analytical Results

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

ACZ Sample ID: ***L66751-10***
Date Sampled: *06/23/21 14:13*
Date Received: *06/24/21*
Sample Matrix: *Groundwater*

Gross Alpha & Beta, dissolved
M900.0

Prep Method:

Parameter	Measure Date	Prep Date	Result	Error(+/-)	LLD	Units	XQ	Analyst
Gross Alpha	07/06/21 0:37		7.6	18	67	pCi/L	*	ess
Gross Beta	07/06/21 0:37		-5.6	23	73	pCi/L	*	ess

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: ***L66751***

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
WG522182																
WG522182PBW	PBW	07/06/21						-.1	0.77	11			22			
WG522182LCSWA	LCSW	07/06/21	PCN62436	100				120	9.3	12	120	67	144			
L65950-01MSA	MS	07/06/21	PCN62436	100	11	4.2	8.7	87	11	7.7	76	67	144			
L65950-01DUP	DUP-RPD	07/06/21			11	4.2	8.7	9.2	3.8	14				18	20	
L66751-04DUP	DUP-RPD	07/06/21			-0.1	0.77	11	.41	0.94	12				329	20	RG
L66751-04DUP	DUP-RER	07/06/21			-0.1	0.77	11	.41	0.94	12				0.42	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
WG522182																
WG522182PBW	PBW	07/06/21						2.2	2.6	17			34			
WG522182LCSWB	LCSW	07/06/21	RC210621-11	49.9				52	4.8	6.7	104	82	122			
L65950-01DUP	DUP-RPD	07/06/21			16	3.5	5.4	14	3.4	12				13	20	
L66751-04DUP	DUP-RPD	07/06/21			3	2.7	17	.03	2.3	18				196	20	RG
L66751-04DUP	DUP-RER	07/06/21			3	2.7	17	.03	2.3	18				0.84	2	
L66751-04MSB	MS	07/06/21	RC210621-11	49.9	3	2.7	17	53	4.8	6.7	100	82	122			

Golder Associates

ACZ Project ID: ***L66751***

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L66751-01	WG522182	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.
L66751-02	WG522182	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.
L66751-03	WG522182	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.
L66751-04	WG522182	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.
L66751-05	WG522182	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.
L66751-06	WG522182	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.
L66751-07	WG522182	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.
L66751-08	WG522182	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.
L66751-09	WG522182	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.
L66751-10	WG522182	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.

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

Sample Receipt

Golder Associates

ACZ Project ID: L66751
Date Received: 06/25/2021 11:45
Received By:
Date Printed: 6/28/2021

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?
4817	3.9	<=6.0	15	Yes
6635	2.3	<=6.0	15	Yes

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:	L66751
Date Received:	06/25/2021 11:45
Received By:	
Date Printed:	6/28/2021

[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, Inc. L66751

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

CHAIN of CUSTODY

Report to:

Name: Sara Markins
Company: Golder Associates
E-mail: Sara_Markins@golder.com
Address:
Telephone:

Copy of Report to:

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

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** _____ **Time Zone** MST

***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#: 2146705
Reporting state for compliance testing: CO
Check box if samples include NRC licensed material? [ ]

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

SAMPLE IDENTIFICATION	DATE:TIME	Matrix	# of Containers	ANALYSES REQUESTED
MW-5	6/23/21 0922	GW	5	See attached list
MW-6	6/23/21 1000	GW	5	
MW-8	6/23/21 1045	GW	5	
MW-15	6/23/21 1032	GW	5	
MW-7	6/23/21 1140	GW	5	
MW-4	6/23/21 1215	GW	5	
MW-3	6/23/21 1250	GW	5	
MW-2	6/23/21 1315	GW	5	
MW-20	6/23/21 1330	GW	5	
MW-1	6/23/21 1413	GW	5	

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

REMARKS

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

RELINQUISHED BY:	DATE:TIME	RECEIVED BY:	DATE:TIME
Candace Whitten	6/23/21 1645	[signature]	6/25/21 11:45

L66751 Chain of Custod

ACZ Laboratories, Inc.

2773 Downhill Drive Steamboat Springs, CO 80487 (800) 334-5493

Bottle Order Packing List

Account: GOLDER/Golder Associates
Bottle Order: BO47508
Internal Note: onsite by Monday

Bill to Account: Bill to ACZ
Ship Date Requested: 06/10/2021
Request Placed at: 06/09/2021 10:12
Service Requested: UPS Ground

Sampling supplies

PACK	Qty	ACZ ID	Type	Description
	3	COC	Chain of Custody	Chain of Custody, 1 for 10 samples.
	3	SEAL	Custody Seal	Custody seals for cooler, two for each cooler.
	3	RETURN	Return Address	Return Address label, one for each cooler.
	55	LABELS	Sample Labels	ACZ supplied labels for sample containers
		TRIP HG		

ACZ Coolers

PACK	Qty	ACZ ID	Size	Weight	UPS Tracking Number
	1	6635	Large	12	
	1	4817	Large	12	

Quote number: HOLCIM-TAB1
Sample Quantity: 11

Holcim Groundwater Monitoring Table 1

Client is responsible for necessary field filtering

PACK	Qty	Type	Size	Filter/Raw/Preserve	Instructions
	1	GREEN PC	125 ML	Green pre-cleaned Filtered/Nitiric	Metals (dissolved including ICPMS) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	GREEN RAD	1000 ML	Filtered/Nitric	Radiochemistry (dissolved) - Filter sample with .45 micron filter. Do not overfill as there is Nitric Acid in the bottle.
	1	PURPLE	250 ML	Raw/NaOH	Cyanide - Do not overfill as there is Sodium Hydroxide in the bottle.
	1	RAW	500 ML	Raw	Wet Chemistry (analyses that do not require preservative or filtration) - Completely fill container.
	1	WHITE	250 ML	Filtered	Wet chemistry (dissolved) - Filter sample with .45 micron filter. Completely fill container.

Prepared By/Date: _____

sh

ATTACHMENT 2

Field Sheets

WELL DEVELOPMENT/PURGING FORM

Project Ref: Morrum **Project No.:** 21467005

Location

MW-2

Monitored By: T. Whitton, V. Smith Date 6/16/21 Time 1331

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	112	feet
Depth of Water (from top of PVC or ground)	67.92	feet
Radius of Casing		inches
		feet
Casing Volume		cubic feet
	7.2	gallons

Development / Purging Discharge Data

Purging Method: bailer, manual

Start Purging Date 6/16/21 Time 1338

Stop Purging Date 6/16/21 Time 1430

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
6/16/21	1348	2	19.3	7.90	9483	low		
	1353	4	16.1	7.83	9318	low		
	1401	6	15.9	7.59	9825	low		
	1409	8	16.3	7.54	9980	low		
	1416	10	16.3	~~7.60~~	9938	low		
	1426	12	16.5	7.74	10061	low		
		— bailed dry at 12.5 gallons						

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim **Project No.:** 21467005

Location

MW-3

Monitored By: CWhitten Date 6/16/21 Time 0828

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	107.2	feet
Depth of Water (from top of PVC or ground)	37.85	feet
Radius of Casing	2	inches
		feet
Casing Volume		cubic feet
	11.3	gallons

Development / Purging Discharge Data

Purging Method: HDPE tubing, manual lifting/purging

Start Purging Date 6/16/21 Time 0840

Stop Purging Date 6/16/21 Time 0940

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
6/16/21	0845	2	20.8	7.98	6058	low		slight sulfur odor
	850	4	19.6	7.86	5926	low		
	0906	6	20.0	7.85	5964	low		
	0923	8	24.2	7.95	6016	low		
	9:29	10	26.3	7.90	6036	low		
	0937	12	20.6	7.93	5937	low		
	0935	14	20.3	7.89	5846	low		
	— bailed dry at 15.5 gallons —							at 0940

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim **Project No.:** 21467005

Location

MW-4

Monitored By: C. Whitten, D. Smith Date 6/16/21 Time 1027

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	182	feet
Depth of Water (from top of PVC or ground)	65.50	feet
Radius of Casing	2	inches
		feet
Casing Volume		cubic feet
	~~18~~ 19	gallons

Development / Purging Discharge Data

Purging Method: bailer, rope, manual

Start Purging Date 6/16/21 Time 1038

Stop Purging Date 6/16/21 Time 1315

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
6/16/21	1047	7	21.2	7.53	16587	low		slight sulfur odor, red flakes in water
	1057	~~+5~~ VS	15.6	7.52	17101	low		- no red flakes
	1109	8	15.9	7.55	8271	low		
	1122	11	16.2	7.57	17200	low		
	1133	14	16.5	7.60	~~16~~ 16955	low		
	1151	17	17.0	7.59	17023	low		
	1207	20	18.4	7.56	17490	low		
	1227	23	18.4	4.68	16855	low		
	1249	26	21.5	7.71	17714	low		
	1303	29	19.1	7.60	17365	low		
	1313	31	16.5	7.73	17312	low		
								bailed dry at 31 gallons

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim **Project No.:** 21466705

Location

MW-Ce

Monitored By: C. Whitten Date ~~6/14/21~~ 6/15/21 V.S Time 12:00

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	229.7	feet
Depth of Water (from top of PVC or ground)	199.33	feet
Radius of Casing	4	inches
		feet
Casing Volume		cubic feet
	19.9	gallons

Development / Purging Discharge Data

Purging Method: Disposable, dedicated bailer, winch

Start Purging Date ~~6-14-21~~ 6-15-21 V.S Time 12:06

Stop Purging Date 6-15-21 Time 13:21

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
~~6-14-21~~ 15 V.S	1217	3	21.9	7.44	15390	med		gray color, slight sulfur odor
	1230	6	19.0	7.45	15598	med		- bailer broke @ ~5 gal, lost down hole
	1237	9	17.1	7.48	15811	med		
	1244	12	16.5	7.52	15921	med		
	1255	15	16.8	7.47	15855	med		
	1302	18	16.5	7.50	16070	med		
	1313	21	22.3	7.47	15600	med		
	1321	25	17.6	7.54	~~16407~~ V.S 16190	med		Bailed dry @ 25 gal 228.5 ft w.l

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim **Project No.:** 21467605

Location MW-7

Monitored By: C. Whitten Date 6/15/21 Time 1404

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	159.2	feet
Depth of Water (from top of PVC or ground)	113.70	feet
Radius of Casing	4	inches
		feet
Casing Volume		cubic feet
	29.7	gallons

Development / Purging Discharge Data

Purging Method: Bailer, Winch

Start Purging Date ~~6/14~~ 6/15/21 Time 1410

Stop Purging Date 6/15/21 Time 1615

Monitoring

Date	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity (NTU)		Appearance of Water and Comments
6/15/21	1418	3	22.5	6.99	13738	low		soapy appearance
	1429	6	18.8	7.15	13876	low		sulfur odor
	1444	10	18.7	7.39	15278	low		
	1458	13	17.9	7.18	14138	low		
	1507	16	17.6	7.16	15169	low		
	1519	20	18.5	7.25	15444	med		darker in color, gray
	1529	23	17.3	7.31	16162	med		
	1542	27	18.1	7.33	16515	med		
	1552	30	17.5	7.37	17091	med		
	1559	33	17.2	7.38	17184	med		
	1612	36	17.6	7.54	18081	med		

WELL DEVELOPMENT/PURGING FORM

Project Ref: Holcim Q. **Project No.:** 21467065

Location MW8

Monitored By: C. Whitten Date ~~6/14/21~~ 6-15-21 VS Time 0850

Well Piezometer Data

(circle one)

Depth of Well (from top of PVC or ground)	226	feet
Depth of Water (from top of PVC or ground)	130.42	feet
Radius of Casing	4	inches
		feet
Casing Volume		cubic feet
	62	gallons

Development / Purging Discharge Data

Purging Method: Bailer, winch

Start Purging Date 6/~~14~~15/21 VS Time 0850

Stop Purging Date 6/~~14~~15/21 VS Time 1109

Monitoring

Date 6-15-21 VS	Time	Volume Discharge (gals)	Temp (°C)	pH	Spec.Cond. (µS/cm)	Turbidity ~~(NTU)~~		Appearance of Water and Comments
~~6/14/21~~	0859	2	17.8	8.08	17210	low		Slight sulfur smell
	0901	6	15.1	7.97	17631	low		
	0909	11	15.1	7.97	17694	low		
	0916	16	15.2	7.96	17677	low		
	0927	21	15.5	7.98	17	low		
	0940	26	17.0	8.01	17549	low		
	0948	31	16.2	7.95	17559	low		WL = 182.83
	1000	36	16.8	7.94	17766	low		
	1010	41	16.6	7.91	17941	low		
	1016	46	16.5	7.84	17772	low		
	1027	51	17.4	7.66	17990	low		slightly more turbid / grey
	1035	56	16.6	7.60	17836	low		
	1045	61	18.0	7.40	17392	low		219.2 WL
	1057	66	16.9	7.56	17341	low		strong sulfur smell
	1109	71	18.3	7.28	16855	medium		
								Bailed dry @ 71 gal
								Post purge WL @ 227.9' b.t.o.c

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Candace Whitten**
Project Number: **21467005**	Date: **6/ 23 /2021**
Monitoring Well I.D.: **MW-1**	Weather Conditions: **~ 92 °F**
Wellhead Inspection (note conditions):	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	42.15	8. Purge Equipment Used	Bailer
2. Bottom of Casing[1] (±0.01ft.)	65.59	9. Dedicated? (Yes or No)	No
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	3.8	11. Time to Purge Well (min)	30 min
5. 3 x Casing Volume (gallons)	11.5	12. Immiscible Layer Observed (yes or no)	no
6. Actual Volume of Water Purged	12	13. Thickness if Immiscible layer (if present)	N/A
7. Water Level Measuring Equip.	WLM		

[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
6/23/21	1351	2	17.01	7.56	7897	Low	—
	1355	4	17.4	7.38	7885	Low	—
	14:00	6	17.1	7.35	8080	Low	
	14:05	8	16.6	7.38	8065	Low	
	~~1413~~	~~10~~	~~17.3~~	~~7.46~~	~~7998~~	~~Low~~	

Well Evacuated to Dryness? (Yes or No) N

Time to recharge? —

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/21	1413	12	~~17.3~~ ~~17.1~~ VS	7.46	7998	Low	

1. Sampling Equipment Used	~~Inertial lift~~				**Other Information:**	
2. Pump Rate					**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☐	medium ☐	high ☐		
Color					**Instrument Calibrations**	
4. Odor						
5. Method of Sample Preservation	H_2SO_4				**Unusual Occurrences**	

purge parameters cont.

14:09	10	16.6	7.42	8011	Low
~~1413~~	~~12~~	~~17.3~~	~~7.46~~	~~7998~~	~~Low~~

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Candace Whitten**
Project Number: **21467005**	Date: **6/ 23 /2021**
Monitoring Well I.D.: **MW-2**	Weather Conditions: ~ 97 °F
Wellhead Inspection (note conditions): good	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	106.53 (52.28)	8. Purge Equipment Used	Disposable Bailer
2. Bottom of Casing[1] (±0.01ft.)	~~61.59 ft~~ btoc – as drilled	9. Dedicated? (Yes or No)	No, disposable
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	(1.52)	11. Time to Purge Well (min)	
5. 3 x Casing Volume (gallons)	(4.51)	12. Immiscible Layer Observed (yes or no)	
6. Actual Volume of Water Purged	(5.0)	13. Thickness if Immiscible layer (if present)	
7. Water Level Measuring Equip.			

[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 (__S/cm)	Relative Turbidity	Other

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

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/21	1315	—	20.4	8.02	10340	Low	—

1. Sampling Equipment Used	Disposable bailer				**Other Information:**		
2. Pump Rate					**Decontamination Procedures**	Alconox, DI rinse	
3. Sample Appearance:	clear ☐	low ☐	medium ☐	high ☐			
Color					**Instrument Calibrations**	pH, conductivity	
4. Odor							
5. Method of Sample Preservation	H_2SO_4, HNO_3				**Unusual Occurrences**		

* MW-20 sampled @ 1330

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Candace Whitten**
Project Number: **21467005**	Date: **6/23/2021**
Monitoring Well I.D.: **MW-3**	Weather Conditions: ~94 °F
Wellhead Inspection (note conditions): good	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	81.00 ~~(46.07)~~	8. Purge Equipment Used	Disposable Bailer
2. Bottom of Casing[1] (±0.01ft.)	~~53.14 ft~~ btoc – as drilled	9. Dedicated? (Yes or No)	No, disposable
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	~~(1.15)~~	11. Time to Purge Well (min)	
5. 3 x Casing Volume (gallons)	~~(3.45)~~	12. Immiscible Layer Observed (yes or no)	
6. Actual Volume of Water Purged	~~(3.75)~~	13. Thickness if Immiscible layer (if present)	
7. Water Level Measuring Equip.			

[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 (__S/cm)	Relative Turbidity	Other

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

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/21	12:50	–	26	8.02	6452	low	–

1. Sampling Equipment Used	~~Disposable bailer~~ foot valve				**Other Information:**	
2. Pump Rate	–				**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☑	medium ☐	high ☐		
Color	None				**Instrument Calibrations**	pH, conductivity
4. Odor						
5. Method of Sample Preservation	H_2SO_4, HNO_3				**Unusual Occurrences**	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Candace Whitten**
Project Number: **21467005**	Date: **6/ 23 /2021**
Monitoring Well I.D.: **MW-4**	Weather Conditions: ~92 °F
Wellhead Inspection (note conditions): good	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	140.86 ~~(47.91)~~	8. Purge Equipment Used	Disposable Bailer
2. Bottom of Casing[1] (±0.01ft.)	~~60.14 ft~~ btoc 182 – as drilled	9. Dedicated? (Yes or No)	No, disposable
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	~~(2.00)~~	11. Time to Purge Well (min)	
5. 3 x Casing Volume (gallons)	~~(5.99)~~	12. Immiscible Layer Observed (yes or no)	
6. Actual Volume of Water Purged	~~(6.5)~~	13. Thickness if Immiscible layer (if present)	
7. Water Level Measuring Equip.			

[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 (__S/cm)	Relative Turbidity	Other

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

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/21	1215	—	20.7	7.90	17690	Low	

1. Sampling Equipment Used	Disposable bailer				**Other Information:**	
2. Pump Rate					**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☐	medium ☐	high ☐		
Color					**Instrument Calibrations**	pH, conductivity
4. Odor						
5. Method of Sample Preservation	H_2SO_4, HNO_3				**Unusual Occurrences**	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Candace Whitten**
Project Number: **21467005**	Date: **6/ 23/2021**
Monitoring Well I.D.: **MW-5**	Weather Conditions: ~75 °F
Wellhead Inspection (note conditions): good	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	47.02 (50.29)	8. Purge Equipment Used	Disposable Bailer
2. Bottom of Casing[1] (±0.01ft.)	60.23 ft btoc – as drilled	9. Dedicated? (Yes or No)	No, disposable
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	2.15 (1.62)	11. Time to Purge Well (min)	20 min
5. 3 x Casing Volume (gallons)	6.46 (4.87)	12. Immiscible Layer Observed (yes or no)	no
6. Actual Volume of Water Purged	6.5 (5.25)	13. Thickness if Immiscible layer (if present)	N/A
7. Water Level Measuring Equip.	Solinst		

[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
6/23/21	0905	1.5	16.6	~~7.3~~ 8.00	2899	Low	—
	0910	3.5	15.1	7.11	2890	Low	—
	0915	5.0	15.1	7.01	2925	Low	—
	0922	6.5	15.9	6.93	2928	Low	—

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

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/21	0922	6.5	15.9	6.93	2928	Low	—

1. Sampling Equipment Used	Disposable bailer				**Other Information:**	
2. Pump Rate					**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☑	medium ☐	high ☐		
Color	Yellowish tint				**Instrument Calibrations**	pH, conductivity
4. Odor	none					
5. Method of Sample Preservation	H_2SO_4 (HNO$_3$) NaOH				**Unusual Occurrences**	none

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Candace Whitten**
Project Number: **21467005**	Date: **6/ 23/2021**
Monitoring Well I.D.: **MW-6**	Weather Conditions: ~82°F
Wellhead Inspection (note conditions): Good	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	226.70 ~~(57.06)~~	8. Purge Equipment Used	Disposable Bailer
2. Bottom of Casing[1] (±0.01ft.)	~~66.33 ft~~ btoc – as drilled 229.70	9. Dedicated? (Yes or No)	No, disposable
3. Casing Diameter (in.)	~~2~~ 4	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	~~(1.51)~~	11. Time to Purge Well (min)	
5. 3 x Casing Volume (gallons)	~~(4.54)~~	12. Immiscible Layer Observed (yes or no)	
6. Actual Volume of Water Purged	(5.0)	13. Thickness if Immiscible layer (if present)	
7. Water Level Measuring Equip.			

[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 (__S/cm)	Relative Turbidity	Other
6/23/21	1000						

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

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/21	1000		19.4	7.52	1662	Low	

1. Sampling Equipment Used	Disposable bailer				**Other Information:**	
2. Pump Rate					**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☐	medium ☐	high ☐		
Color					**Instrument Calibrations**	pH, conductivity
4. Odor						
5. Method of Sample Preservation	H_2SO_4, HNO_3				**Unusual Occurrences**	

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Candace Whitten**
Project Number: **21467005**	Date: **6/23 /2021**
Monitoring Well I.D.: **MW-7**	Weather Conditions: ~ 85 °F
Wellhead Inspection (note conditions): good	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	unable to obtain ~~(57.06)~~	8. Purge Equipment Used	Disposable Bailer
2. Bottom of Casing[1] (±0.01ft.)	~~66.33~~ 259.2 ft btoc – as drilled	9. Dedicated? (Yes or No)	No, disposable
3. Casing Diameter (in.)	2	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	~~(1.51)~~	11. Time to Purge Well (min)	
5. 3 x Casing Volume (gallons)	~~(4.54)~~	12. Immiscible Layer Observed (yes or no)	
6. Actual Volume of Water Purged	~~(5.0)~~	13. Thickness if Immiscible layer (if present)	
7. Water Level Measuring Equip.			

[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 (__S/cm)	Relative Turbidity	Other

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

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6/23/21	1140	—	20.9	7.71	17831	low	slight sulfur odor

1. Sampling Equipment Used	Disposable bailer				**Other Information:**	
2. Pump Rate					**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☑	medium ☐	high ☐		
Color	—				**Instrument Calibrations**	pH, conductivity
4. Odor	slight sulfurous					
5. Method of Sample Preservation	H_2SO_4, HNO_3				**Unusual Occurrences**	None

GROUNDWATER SAMPLING DATA SHEET

Project Name: **Holcim/Boettcher Quarry 2021 Groundwater Monitoring**	Sampler Name(s): **Candace Whitten**
Project Number: **21467005**	Date: 6/ 23 /2021
Monitoring Well I.D.: **MW-8**	Weather Conditions: ~ 85 °F
Wellhead Inspection (note conditions): good	

Groundwater Measurements and Purge Data:

1. Static Water Level[1] (±0.01ft.)	223.87 ~~(57.06)~~	8. Purge Equipment Used	Disposable Bailer
2. Bottom of Casing[1] (±0.01ft.)	~~66.33~~ ft btoc – as drilled 226	9. Dedicated? (Yes or No)	No, disposable
3. Casing Diameter (in.)	2"	10. Purge Rate (if pump used)	N/A
4. Casing Volume (gallons)	~~(1.51)~~	11. Time to Purge Well (min)	
5. 3 x Casing Volume (gallons)	~~(4.54)~~	12. Immiscible Layer Observed (yes or no)	
6. Actual Volume of Water Purged	~~(5.0)~~	13. Thickness if Immiscible layer (if present)	
7. Water Level Measuring Equip.			

[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 (S/cm)	Relative Turbidity	Other
6							

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

Groundwater Sample Information:

Date	Time	Volume Purged (gallons)	Temp (°C)	pH	Specific Conductivity (µS/cm)	Relative Turbidity	Other
6-23-21	10:45	—	21.3	8.00	18379	low	—

1. Sampling Equipment Used	Disposable bailer				**Other Information:**	
2. Pump Rate					**Decontamination Procedures**	Alconox, DI rinse
3. Sample Appearance:	clear ☐	low ☐	medium ☐	high ☐		
Color					**Instrument Calibrations**	pH, conductivity
4. Odor						
5. Method of Sample Preservation	H_2SO_4, HNO_3				**Unusual Occurrences**	

RECORD OF WATER LEVEL READINGS

Project Name: Holcim **Location:** Fort Collins, CO **Project No.**

Borehole No.	Date (15 VS)	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-8	6/14/21	0830	WLM	TPVC	130.42	—	—	—	VS	
MW-8	6/15/21	0948	WLM	TPVC	182.83				CMW	
MW-8	6/15/21	1045	WLM	TPVC	219.20				CMW	
MW-8	6/15/21	1110	WLM	TPVC	227.90				CMW	
MW-6	6-15-21	12:05	WLM	TPVC	199,33				VS	
MW-7	6/15/21		WLM	TPVC	228.50				VS	
MW-7	6/15/21	1405	WLM	TPVC	213.70				VS	
MW-3	6/16/21	0824	WLM	TPVC	37.85				CMW	
MW-4	6/16/21	1033	WLM	TPVC	45.50				VS	
MW-2	6/16/21	1330	WLM	TPVC	0792				VS	
MW-1	6/16/21	1453	WLM	TPVC	42.00				VS	
MW-5	6/16/21		WLM	TPVC	46.90				VS	
MW-5	6/23/21	0830	WLM	TPVC	47.02				VS	
MW-6	6/23/21	0950	WLM	TPVC	226.70				CW	
MW-8	6/23/21	1030	WLM	TPVC	223.87				CW	
MW-7	6/23/21	1120	WLM	TPVC	unable to obtain WL				CW	
MW-4	6/23/21	1208	WLM	TPVC	140.86				VS	
MW-3	6/23/21	1235	WLM	TPVC	81.00				VS	
MW-2	6/23/21	1308	WLM	TPVC	106.53				CW	
MW-1	6/23/21	1348	WLM	TPVC	42.15				CW	