

July 31, 2018

Project No. 1899205

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 2018 GROUNDWATER SAMPLING AT THE BOETTCHER QUARRY

Dear Ms. Eschberger:

On behalf of Holcim (US) Inc., Golder Associates Inc. is pleased to submit analytical laboratory results for the first semi-annual 2018 groundwater sampling event at the Boettcher Limestone Quarry near La Porte, Colorado. Attached are Tables 1 through 7, summarizing the results, and a copy of the laboratory report. In addition to sampling wells MW-1 through MW-7, a field duplicate at MW-1 (MW-20) and a field blank (MW-15) were collected. The locations of monitoring wells MW-1 through MW-7 are presented in Figure 1.

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. Recent water levels, taken in May 2017, November 2017, and May 2018 after more than six months of recharge, are higher than the previous range of levels observed for wells that are purged dry prior to sampling (MW-2, MW-3, MW-4, MW-6, and MW-7), indicating more recharge, and further evidence that the groundwater wells were not fully recharging between sampling events.

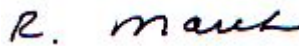
If you have any questions, please call the undersigned at (303) 980-0540.

Sincerely,

GOLDER ASSOCIATES INC.



Sara Harkins, PG
Geologist



Randy March, PE, PG
Principal Geological Engineer

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
Figure 1 – Location Map
Figure 2 – Groundwater Elevations vs. Time
Attachment 1 – ACZ Laboratory Report

Tables

Table 1: Summary of Monitoring Results for MW-1

Date	Interim Narrative Standard	9/27/2010	3/31/2011	6/28/2011	8/31/2011	11/17/2011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/14/2013	2/18/2014
Metals															
Arsenic, Dissolved (mg/L)	0.01	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	< 0.08 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	0.54	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	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	<0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U	< 0.01 U
Copper, Dissolved (mg/L)	0.2	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	<0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.05 U
Iron, Dissolved (mg/L)	0.3	< 0.3 U	0.3	< 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	0.0019 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	1.3	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	< 0.1 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	0.4928	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	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)	0.0168-0.03	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	0.13 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	< 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	0.4 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	96	88	70	81.6	81	76	89	85	78.5	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1	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	96	88	70	82	81	76	90	85	78.6	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	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*	7,770	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	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	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)	none	39 (±28)	36 (±28)	20 (±28)	23 (±32)	27 (±31)	8.1 (±25)	190 (±36)	25 (±29)	12 (±27)	NA	NA	NA	NA	NA
Supplementary Analytes (Not Historically analyzed)															
Bicarbonate as CaCO3 (mg/L)	none	279	305	309	312	311	333	334	285	337	334	334	330	320	357
Carbonate as CaCO3 (mg/L)	none	< 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
Calcium, Dissolved (mg/L)	none	323	225	305	270	240	198	222	218	169	178	276	258	302	254
Magnesium, Dissolved (mg/L)	none	336	240	313	272	246	210	213	203	175	180	265	225	308	256
Potassium, Dissolved (mg/L)	none	22	18	22.7	17	15	14.8	17	17	13	14.5	19	20	20.7	16.5
Sodium, Dissolved (mg/L)	none	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

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

Table 1: Summary of Monitoring Results for MW-1

Date	Interim Narrative Standard	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018
Metals															
Arsenic, Dissolved (mg/L)	0.01	0.001 B	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved (mg/L)	2.0	0.004 B	0.006 B	0.007 B	0.009 B	< 0.08 U	< 0.08 U	< 0.08 U	0.03 B	< 0.08 U	< 0.08 U	0.007 B	< 0.08 U	< 0.08 U	< 0.08 U
Boron, Dissolved (mg/L)	0.75	0.57	0.56	0.58	0.59	0.55	0.57	0.52	0.6	0.51	0.51	0.56	0.61	0.61	0.65
Chromium, Dissolved (mg/L)	0.1	< 0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved (mg/L)	0.2	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved (mg/L)	0.3	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.3 U	< 0.05 U	< 0.3 U	< 0.3 U	< 0.3 U
Lead, Dissolved (mg/L)	0.05	< 0.003 U	NA	NA	NA	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
Manganese, Dissolved (mg/L)	0.05	0.033	0.045	0.041	0.052	< 0.1 U	0.04 B	< 0.1 U	0.04 B	< 0.1 U	< 0.1 U	0.04	< 0.1 U	< 0.1 U	< 0.1 U
Selenium, Dissolved (mg/L)	0.02	0.2775	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium, Dissolved (mg/L)	0.002	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium, Dissolved (mg/L)	0.0168	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2.0	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other															
Chloride (mg/L)	250	< 250 U	< 250 U	< 250 U	68.9 B	154 B	< 250 U	< 250 U	< 250 U	< 250 U	< 250 U	47.5 B	32.2 B	41.3 BH	27.5 B
Fluoride (mg/L)	2.0	0.44	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as N (mg/L)	10.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	1.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	7.8 H	7.8 H	8 H	7.9 H	7.9 H	8 H	7.9 H	7.84	7.9 H	8.1 H	8.1 H	8.2 H	8 H	8.3 H
Total Dissolved Solids, filterable residue (mg/L)	8595*	6,910 H	6,950	7,900	7,380	8,210 ^	7,760 ^	8,020	7,660	8,450	8,040	7,460	7,010	7,070	7,240
Sulfate (mg/L)	250	6,850	4,670	4,300	4,800	5,540	5,640	5,430	5,250	5,470	5,540	4,700	4,690	4,340 H	4,530
Gross Alpha (pCi/L)	15.0	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Supplementary Analytes (Not Historically analyzed)															
Bicarbonate as CaCO3 (mg/L)	none	333	310	325	NA	320	302	306	319	307	329	325	369	361	358
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U	NA	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	< 20 U	3.1 B
Calcium, Dissolved (mg/L)	none	330	287	309	230	301	320	289	279	345	275	269	187	175	220
Magnesium, Dissolved (mg/L)	none	364	297	303	247	300	342	301	290	376	301	283	202	188	225
Potassium, Dissolved (mg/L)	none	18.9	19.4	21.8	15.6	19	20	18	18.6	22	16	20.5	13	12	16
Sodium, Dissolved (mg/L)	none	1,910	1,570	1,510	1,770	1,670	1,740	1,770	1,720	1,570	1,710	1,640	1,710	1,660	1,650

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

Table 2: Summary of Monitoring Results for MW-2

Date	Interim Narrative Standard	9/27/2010	3/31/2011	6/28/2011	8/31/2011	11/17/2011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/14/2013
Metals														
Arsenic, Dissolved (mg/L)	0.01	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	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	0.7	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	< 0.01 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	< 0.05 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	0.1 B	0.15	< 0.3 U	0.3 B	0.91	0.8	0.7	0.16	1.1	0.2 B	0.9	1.32
Lead, Dissolved (mg/L)	0.05	< 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	1.3	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	0.08 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	0.0006 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	< 0.003 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)	0.0168-0.03	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	< 0.05 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	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	1.5	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	0.14	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	< 0.05 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	10	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	8.6 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*	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	< 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	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)	none	4.5 (±30)	42 (±31)	12 (±29)	0 (±27)	73 (±44)	8.5 (±29)	82 (±30)	21 (±26)	11 (±28)	NA	NA	NA	NA
Supplementary Analytes (Not Historically analyzed)														
Bicarbonate as CaCO3 (mg/L)	none	993	965	978	953	914	995	968	964	978	955	963	979	1,020
Carbonate as CaCO3 (mg/L)	none	108	< 20 U	37	22	57	< 20 U	21	< 20 U	23	29	22	< 20 U	< 20 U
Calcium, Dissolved (mg/L)	none	14	14	14.4	16	15	15.5	14	16	16.3	15.1	18	17	16.9
Magnesium, Dissolved (mg/L)	none	8	8	7.8	7	7	7.4	8	8	8	7.5	8	7	7.4
Potassium, Dissolved (mg/L)	none	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
Sodium, Dissolved (mg/L)	none	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

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

Table 2: Summary of Monitoring Results for MW-2

Date	Interim Narrative Standard	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018
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
Barium, Dissolved (mg/L)	2	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
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
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
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
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
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
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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
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
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
Uranium, Dissolved (mg/L)	0.0168	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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
Fluoride (mg/L)	2	1.5	1.48	NA	NA	NA	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
Nitrite as N (mg/L)	1	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
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
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
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
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Supplementary Analytes (Not Historically analyzed)																
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
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
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
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
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
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

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

Table 3: Summary of Monitoring Results for MW-3

Date	Interim Narrative Standard	9/27/2010	3/31/2011	6/30/2011	8/31/2011	11/17/2011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/14/2013	
Metals															
Arsenic, Dissolved (mg/L)	0.01	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	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	0.77	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	0.003 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	< 0.3 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	0.04 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	< 0.001 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	0.8	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	0.04 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	0.0006	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	< 0.001 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)	0.0168-0.03	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	< 0.3 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	1,550	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	2.3	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	0.37	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	< 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	0.37	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	8.6 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*	3,930	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	< 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	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)	none	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	
Supplementary Analytes (Not Historically analyzed)															
Bicarbonate as CaCO3 (mg/L)	none	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	98	31	96	75	78	50	52	51	78	71	60	75	40	
Calcium, Dissolved (mg/L)	none	6.6	11.9	7	7.5	6.8	6.3	9.4	7	7.5	6.1	7	8	6.8	
Magnesium, Dissolved (mg/L)	none	3	3.4	3 B	2.7	2.8	2.9	2.9	4 B	3.6	3.0	3	3 B	2.8	
Potassium, Dissolved (mg/L)	none	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	
Sodium, Dissolved (mg/L)	none	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	

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

Table 3: Summary of Monitoring Results for MW-3

Date	Interim Narrative Standard	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018
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
Barium, Dissolved (mg/L)	2	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
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
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
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
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
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
Lithium, Dissolved (mg/L)	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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
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
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
Uranium, Dissolved (mg/L)	0.0168-0.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	2	0.02 B	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
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
Fluoride (mg/L)	2	2.4	2.4	NA	NA	NA	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
Nitrite as N (mg/L)	1	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
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
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
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
Gross Alpha (pCi/L)	15	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Supplementary Analytes (Not Historically analyzed)																
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	1,200	1,160	1,160	1,250
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
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
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
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
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	1,600	1,430	1,410	1490

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

Table 4: Summary of Monitoring Results for MW-4

Date	Interim Narrative Standard	9/27/2010	3/31/2011	6/28/2011	8/31/2011	11/17/2011	3/27/2012	6/27/2012	9/13/2012	11/13/2012	3/19/2013	5/28/2013	8/26/2013	11/15/2013
Metals														
Arsenic, Dissolved (mg/L)	none	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)	none	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)	none	0.7	0.5 B	0.62 *	0.7	0.7	0.7	0.8 B	0.5	0.72	0.7	0.7	0.6	0.7
Chromium, Dissolved (mg/L)	none	< 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)	none	< 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)	none	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)	none	< 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)	none	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)	none	< 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)	none	< 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)	none	< 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)	none	< 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)	none	< 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)	none	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)	none	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)	none	< 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)	none	< 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)	none	< 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)	none	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)	none	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)	none	< 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)	none	-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)	none	-7.5 (±53)	80 (±49)	22 (±45)	51 (±57)	66 (±63)	38 (±51)	270 (±61)	53 (±53)	9.9 (±42)	NA	NA	NA	NA
Supplementary Analytes (Not Historically analyzed)														
Bicarbonate as CaCO3 (mg/L)	none	585	565	569	562	573	597	580	576	571	573	567	590	576
Carbonate as CaCO3 (mg/L)	none	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
Calcium, Dissolved (mg/L)	none	37	38	79	37	35	36	42	38	39.2	37	37	37	36
Magnesium, Dissolved (mg/L)	none	18	18	38	16	16	17	22	19	18.9	18	18	17	16
Potassium, Dissolved (mg/L)	none	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
Sodium, Dissolved (mg/L)	none	4,270	4,180	4,280	4,200	3,930	4,220	4,240	4,250	4,150	4,390	4,260	4,350	4,070

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" does not apply the waters with TDS grater than 10,000 mg/L



Table 4: Summary of Monitoring Results for MW-4

Date	Interim Narrative Standard	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016	5/31/2017	11/15/2017	6/6/2018
Metals																
Arsenic, Dissolved (mg/L)	none	< 0.01 U	< 0.01 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved (mg/L)	none	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
Boron, Dissolved (mg/L)	none	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
Chromium, Dissolved (mg/L)	none	< 0.02 U	< 0.02 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Copper, Dissolved (mg/L)	none	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved (mg/L)	none	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
Lead, Dissolved (mg/L)	none	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lithium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Manganese, Dissolved (mg/L)	none	< 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
Selenium, Dissolved (mg/L)	none	< 0.003 U	< 0.003 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Thallium, Dissolved (mg/L)	none	< 0.005 U	< 0.005 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Uranium, Dissolved (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Zinc, Dissolved (mg/L)	none	< 0.3 U	< 0.5 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Other																
Chloride (mg/L)	none	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
Fluoride (mg/L)	none	1.1	1.13	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate as N (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrite as N (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Nitrate+Nitrite as N (mg/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab pH (s.u)	none	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
Total Dissolved Solids, filterable residue (mg/L)	none	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
Sulfate (mg/L)	none	< 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
Gross Alpha (pCi/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gross Beta (pCi/L)	none	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Supplementary Analytes (Not Historically analyzed)																
Bicarbonate as CaCO3 (mg/L)	none	606	623	616	611	NA	604	599	615	606	664	613	619	612	592	602
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
Calcium, Dissolved (mg/L)	none	36.1	38	37	37	38	38	36.9	38	38	36	37	35.8	36	36	36
Magnesium, Dissolved (mg/L)	none	16	17	18	18	21	17	18	17	17	16.4	18	16.1	16	16	17
Potassium, Dissolved (mg/L)	none	9	9 B	9 B	10.0	12.0 B	9.0	9.0	10.0	11.0	9.1	9	9	10.0	9.0	8.0 B
Sodium, Dissolved (mg/L)	none	4,120	4,360	4,050	3,950	4,070	4,040	4,030	4,050	4,290	4,020	4,000	4,160	4,080	3,950	4,030

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" does not apply the waters with TDS grater than 10,000 mg/L



Table 5: Summary of Monitoring Results for MW-5

Date	Interim Narrative Standard	3/19/2013	5/28/2013	8/26/2013	11/14/2013	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016
Metals																	
Arsenic, Dissolved (mg/L)	0.01	0.002 B	0.0004 B	0.005	< 0.002 U	0.0004 B	< 0.002 U	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Barium, Dissolved (mg/L)	2	0.015 B	0.014 B	0.015 B	0.014 B	0.015 B	0.006 B	0.008 B	0.011 B	0.012 B	0.009 B	< 0.03 U	0.015 B	0.017 B	0.013 B	0.006 B	0.013 B
Boron, Dissolved (mg/L)	0.75	0.37	0.33	0.25	0.32	0.33	0.36	0.33	0.36	0.36	0.26	0.30	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	< 0.1 U	< 0.05 U	< 0.05 U	< 0.05 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Iron, Dissolved (mg/L)	0.3	17.5	15.60	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
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
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
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 ^	3,070 ^	3,220	3,540	3,140	2,850	3,310
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
Supplementary Analytes																	
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
Calcium, Dissolved (mg/L)	none	426	464	523	446	433	441	442	461	453	505	520	478	464	486	495	494
Magnesium, Dissolved (mg/L)	none	147	126	131	101	109	106	101	111	118	112	115	115	124	112	113	122
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
Sodium, Dissolved (mg/L)	none	865	373	312	269	332	308	257	285	344	232	209	260	450	229	221	281

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

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

Table 5: Summary of Monitoring Results for MW-5

Date	Interim Narrative Standard	5/31/2017	11/15/2017	6/6/2018
Metals				
Arsenic, Dissolved (mg/L)	0.01	NA	NA	NA
Barium, Dissolved (mg/L)	2	0.01 B	< 0.03 U	< 0.03 U
Boron, Dissolved (mg/L)	0.75	0.36	0.36	0.35
Chromium, Dissolved (mg/L)	0.1	NA	NA	NA
Copper, Dissolved (mg/L)	0.2	NA	NA	NA
Iron, Dissolved (mg/L)	0.3	2.15	10.3	0.97
Lead, Dissolved (mg/L)	0.05	NA	NA	NA
Manganese, Dissolved (mg/L)	0.05	0.09	0.09	0.08
Selenium, Dissolved (mg/L)	0.02	NA	NA	NA
Thallium, Dissolved (mg/L)	0.002	NA	NA	NA
Zinc, Dissolved (mg/L)	2	NA	NA	NA
Other				
Chloride (mg/L)	250	45.4 B	25.8 BH	19.7 B
Fluoride (mg/L)	2	NA	NA	NA
Lab pH (s.u)	6.5 - 8.5	7.8 H	7.3 H	7.7 H
Total Dissolved Solids, filterable residue (mg/L)	1.25 x Background*	3,970	3,160	3,020 H
Sulfate (mg/L)	250	2,540	1,820 H	1,780
Supplementary Analytes				
Bicarbonate as CaCO3 (mg/L)	none	348	375	401
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U
Calcium, Dissolved (mg/L)	none	429	461	425
Magnesium, Dissolved (mg/L)	none	128	119	109
Potassium, Dissolved (mg/L)	none	8.2	7.2	6.6
Sodium, Dissolved (mg/L)	none	614	322	329

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

Table 6: Summary of Monitoring Results for MW-6

Date	Interim Narrative Standard	3/19/2013	5/28/2013	8/27/2013	11/14/2013	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016
Metals																	
Arsenic, Dissolved (mg/L)	none	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)	none	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)	none	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)	none	< 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)	none	< 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)	none	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)	none	< 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
Manganese, Dissolved (mg/L)	none	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)	none	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)	none	< 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
Zinc, Dissolved (mg/L)	none	< 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)	none	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	5,620
Fluoride (mg/L)	none	1.3	1.4	1.4	1.3	1.3	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab pH (s.u)	none	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)	none	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	10,500
Sulfate (mg/L)	none	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
Supplementary Analytes																	
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
Calcium, Dissolved (mg/L)	none	58	44	33	34	32.2	40	41	45	51	49	57.9	63	68	67	69	66.1
Magnesium, Dissolved (mg/L)	none	21	20	18	17	16	16	17	18	22	17	18	17	18	16	19	17.3
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
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

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" does not apply the waters with TDS grater than 10,000 mg/L

Table 6: Summary of Monitoring Results for MW-6

Date	Interim Narrative Standard	5/31/2017	11/15/2017	6/6/2018
Metals				
Arsenic, Dissolved (mg/L)	none	NA	NA	NA
Barium, Dissolved (mg/L)	none	7.85	7.77	7.65
Boron, Dissolved (mg/L)	none	0.7	0.8	0.6
Chromium, Dissolved (mg/L)	none	NA	NA	NA
Copper, Dissolved (mg/L)	none	NA	NA	NA
Iron, Dissolved (mg/L)	none	1.7	3.4	3.0
Lead, Dissolved (mg/L)	none	NA	NA	NA
Manganese, Dissolved (mg/L)	none	0.14 B	0.07 B	0.06 B
Selenium, Dissolved (mg/L)	none	NA	NA	NA
Thallium, Dissolved (mg/L)	none	NA	NA	NA
Zinc, Dissolved (mg/L)	none	NA	NA	NA
Other				
Chloride (mg/L)	none	6,130	5,900	5,880
Fluoride (mg/L)	none	NA	NA	NA
Lab pH (s.u)	none	8.1 H	7.7 H	7.8 H
Total Dissolved Solids, filterable residue (mg/L)	none	10,500	10,400	10,500
Sulfate (mg/L)	none	< 250 U	< 200 U	51 B
Supplementary Analytes				
Bicarbonate as CaCO3 (mg/L)	none	658	639	652
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U
Calcium, Dissolved (mg/L)	none	51	44	41
Magnesium, Dissolved (mg/L)	none	16	16	16
Potassium, Dissolved (mg/L)	none	9 B	9 B	8 B
Sodium, Dissolved (mg/L)	none	3,920	4,060	3,870

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" does not apply the waters with TDS grater than 10,000 mg/l

Table 7: Summary of Monitoring Results for MW-7

Date	Interim Narrative Standard	3/19/2013	5/29/2013	8/27/2013	11/14/2013	2/18/2014	5/21/2014	8/27/2014	11/11/2014	2/18/2015	5/27/2015	8/27/2015	11/9/2015	2/15/2016	5/31/2016	8/16/2016	11/9/2016
Metals																	
Arsenic, Dissolved (mg/L)	none	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)	none	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)	none	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)	none	< 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)	none	< 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)	none	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)	none	< 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
Manganese, Dissolved (mg/L)	none	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)	none	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)	none	< 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
Zinc, Dissolved (mg/L)	none	< 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)	none	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)	none	1.3	1.0	1.1	1.1	1	1.04	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Lab pH (s.u)	none	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)	none	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)	none	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
Supplementary Analytes																	
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
Calcium, Dissolved (mg/L)	none	105	142	103	72	67.8	58	56	51	50	47	52	53	54	50	54	47.1
Magnesium, Dissolved (mg/L)	none	40	43	30	25	22	21	21	20	23	19	19	18	20	18	19	18
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
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

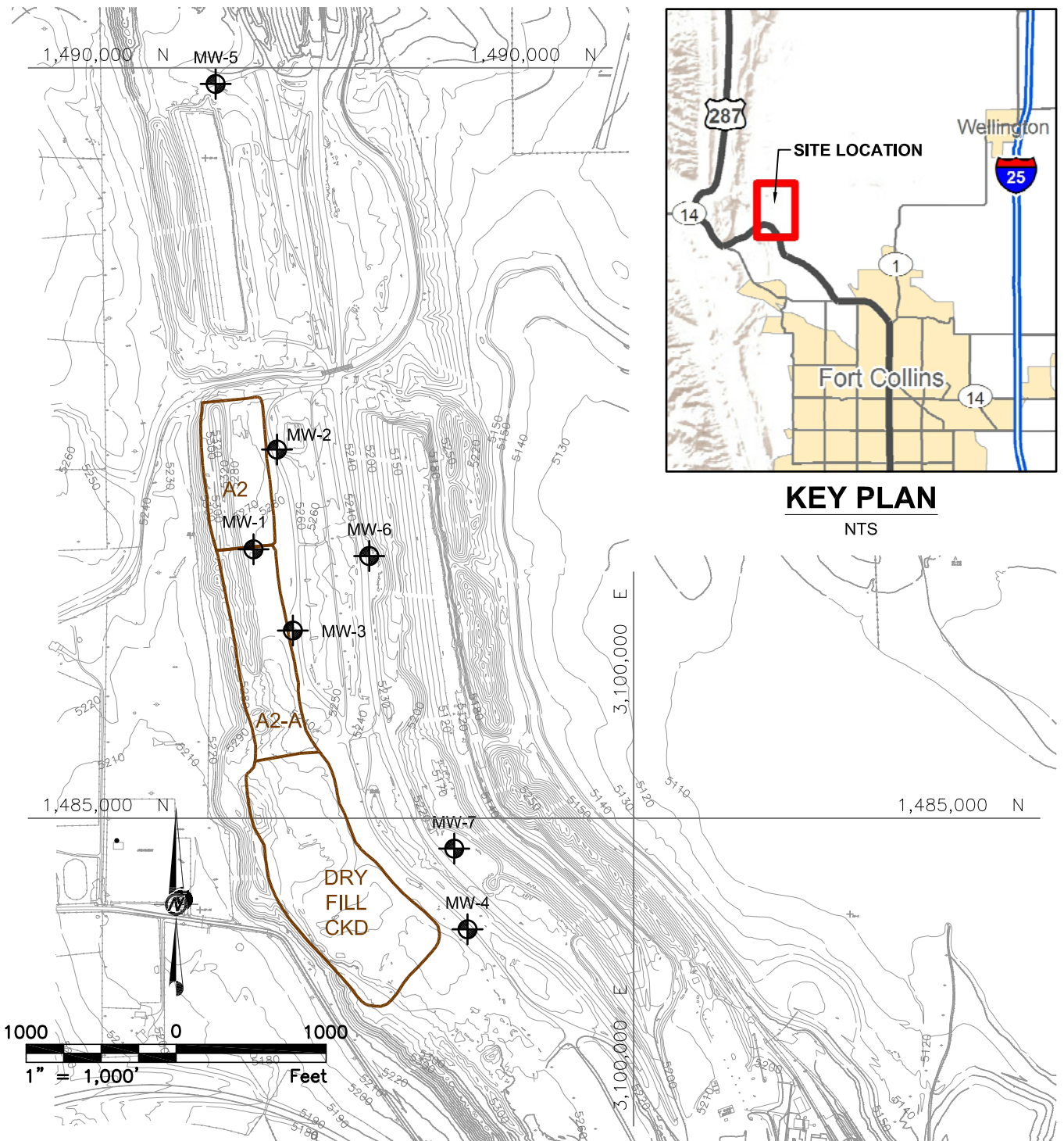
Notes:
B = Estimated value, less than the practical quantitation limit for that analyte, but greater than the method detection limit
U = Analyte not detected, reported less than the practical quantitation limit
H = Analysis exceeded method hold time. pH is a field test with an immediate hold time.
NA = 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" does not apply the waters with TDS grater than 10,000 mg/L

Table 7: Summary of Monitoring Results for MW-7

Date	Interim Narrative Standard	5/31/2017	11/15/2017	6/6/2018
Metals				
Arsenic, Dissolved (mg/L)	none	NA	NA	NA
Barium, Dissolved (mg/L)	none	3.96	3.8	5.5
Boron, Dissolved (mg/L)	none	0.7	0.8	0.7
Chromium, Dissolved (mg/L)	none	NA	NA	NA
Copper, Dissolved (mg/L)	none	NA	NA	NA
Iron, Dissolved (mg/L)	none	5.5	6.1	3.2
Lead, Dissolved (mg/L)	none	NA	NA	NA
Manganese, Dissolved (mg/L)	none	0.19 B	0.18 B	0.14 B
Selenium, Dissolved (mg/L)	none	NA	NA	NA
Thallium, Dissolved (mg/L)	none	NA	NA	NA
Zinc, Dissolved (mg/L)	none	NA	NA	NA
Other				
Chloride (mg/L)	none	6,480	6,240	6,440
Fluoride (mg/L)	none	NA	NA	NA
Lab pH (s.u)	none	8 H	7.8 H	7.7 H
Total Dissolved Solids, filterable residue (mg/L)	none	11,100	11,300	11,500 H
Sulfate (mg/L)	none	59 B	58 B	75 B
Supplementary Analytes				
Bicarbonate as CaCO3 (mg/L)	none	745	700	714
Carbonate as CaCO3 (mg/L)	none	< 20 U	< 20 U	< 20 U
Calcium, Dissolved (mg/L)	none	52	55	52
Magnesium, Dissolved (mg/L)	none	19	20	20
Potassium, Dissolved (mg/L)	none	11	9 B	9 B
Sodium, Dissolved (mg/L)	none	4,240	4,320	4,170

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" does not apply the waters with TDS grater than 10,000 mg/L

Figures



LEGEND

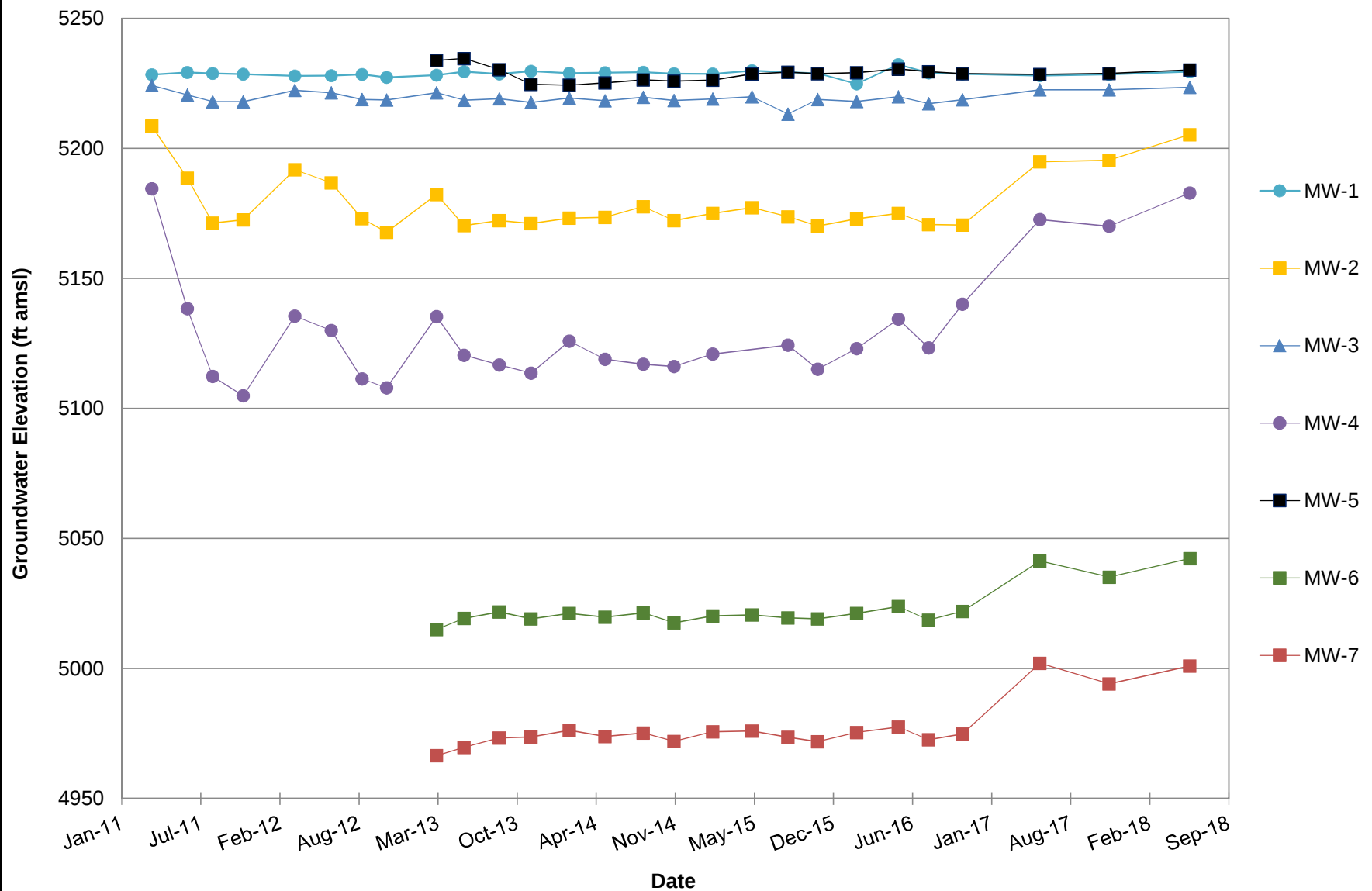
- MW-1
- EXISTING MONITORING WELL
- APPROXIMATE CKD DISPOSAL
AREA BOUNDARY

REFERENCES

1. BASEMAP PROVIDED BY; HOLCIM (US) INC.
2. COORDINATE SYSTEM: STATE PLANE COLORADO,
NORTH ZONE, NAD 83, NAVD88

PROJECT		HOLCIM (US) INC. BOETTCHER LIMESTONE QUARRY LARIMER COUNTY, COLORADO				
TITLE		LOCATION MAP				
 Golder Associates	PROJECT No.	103-81640A		FILE No.	10381640A010	
	DESIGN	LS	03/12/13	SCALE	AS SHOWN	REV. A
	CADD	DBS	03/12/13	FIGURE 1		
	CHECK	LS	03/12/13			
	REVIEW	EJP	03/12/13			

C:\Users\DSkinner\Golder Associates\1899205, Holcim Boettcher Quarry 2018 CO - Reports\Boettcher_SampleResults_1stHalf2018_Dft-23Jul18\Figures\Figure 2.xlsx/2



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

July 03, 2018

Report to:

Kristina Minchow
Golder Associates
44 Union Blvd Suite 300
Lakewood, CO 80228

cc: Sara Harkins

Bill to:

Accounts Payable
Golder Associates
44 Union Blvd., Suite 300
Lakewood, CO 80228

Project ID:

ACZ Project ID: L44806

Kristina Minchow:

Enclosed are the analytical results for sample(s) submitted to ACZ Laboratories, Inc. (ACZ) on June 08, 2018. This project has been assigned to ACZ's project number, L44806. Please reference this number in all future inquiries.

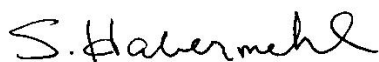
All analyses were performed according to ACZ's Quality Assurance Plan. The enclosed results relate only to the samples received under L44806. Each section of this report has been reviewed and approved by the appropriate Laboratory Supervisor, or a qualified substitute.

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 02, 2018. 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.



Scott Habermehl has reviewed
and approved this report.



Golder Associates

July 03, 2018

Project ID:

ACZ Project ID: L44806

Sample Receipt

ACZ Laboratories, Inc. (ACZ) received 9 groundwater samples from Golder Associates on June 8, 2018. 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 L44806. 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 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) The 105 C oven was OOS over the weekend. The WG was removed when the oven was within range.

Golder Associates

Project ID:

Sample ID: MW-1

ACZ Sample ID: **L44806-01**

Date Sampled: 06/06/18 12:05

Date Received: 06/08/18

Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Barium, dissolved	M200.7 ICP	5		U		mg/L	0.02	0.08	06/18/18 22:51	dcm
Boron, dissolved	M200.7 ICP	5	0.65			mg/L	0.05	0.3	06/18/18 22:51	dcm
Calcium, dissolved	M200.7 ICP	5	220		*	mg/L	0.5	3	06/18/18 22:51	dcm
Iron, dissolved	M200.7 ICP	5		U		mg/L	0.1	0.3	06/18/18 22:51	dcm
Magnesium, dissolved	M200.7 ICP	5	225			mg/L	1	5	06/18/18 22:51	dcm
Manganese, dissolved	M200.7 ICP	5		U		mg/L	0.03	0.1	06/18/18 22:51	dcm
Potassium, dissolved	M200.7 ICP	5	16			mg/L	1	5	06/18/18 22:51	dcm
Sodium, dissolved	M200.7 ICP	5	1650			mg/L	1	5	06/18/18 22:51	dcm

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	358		*	mg/L	2	20	06/16/18 0:00	enb
Carbonate as CaCO ₃		1	3.1	B	*	mg/L	2	20	06/16/18 0:00	enb
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	06/16/18 0:00	enb
Total Alkalinity		1	361		*	mg/L	2	20	06/16/18 0:00	enb
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-0.5			%			07/03/18 0:00	calc
Sum of Anions			103			meq/L			07/03/18 0:00	calc
Sum of Cations			102			meq/L			07/03/18 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	27.5	B	*	mg/L	20	100	06/22/18 18:45	las
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	06/16/18 0:00	enb
pH measured at		1	20.3		*	C	0.1	0.1	06/16/18 0:00	enb
Residue, Filterable (TDS) @180C	SM2540C	5	7240		*	mg/L	50	100	06/13/18 15:45	kja
Sulfate	M300.0 - Ion Chromatography	50	4530		*	mg/L	20	100	06/22/18 18:45	las
TDS (calculated)	Calculation		6890			mg/L			07/03/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.05						07/03/18 0:00	calc

Golder Associates

Project ID:

Sample ID: MW-2

ACZ Sample ID: **L44806-02**

Date Sampled: 06/06/18 10:35

Date Received: 06/08/18

Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Barium, dissolved	M200.7 ICP	5	3.32			mg/L	0.02	0.08	06/18/18 22:54	dcm
Boron, dissolved	M200.7 ICP	5	0.78			mg/L	0.05	0.3	06/18/18 22:54	dcm
Calcium, dissolved	M200.7 ICP	5	16.8		*	mg/L	0.5	3	06/18/18 22:54	dcm
Iron, dissolved	M200.7 ICP	5	0.3			mg/L	0.1	0.3	06/18/18 22:54	dcm
Magnesium, dissolved	M200.7 ICP	5	7			mg/L	1	5	06/18/18 22:54	dcm
Manganese, dissolved	M200.7 ICP	5	0.06	B		mg/L	0.03	0.1	06/18/18 22:54	dcm
Potassium, dissolved	M200.7 ICP	5	6			mg/L	1	5	06/18/18 22:54	dcm
Sodium, dissolved	M200.7 ICP	5	2360			mg/L	1	5	06/18/18 22:54	dcm

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	1080		*	mg/L	2	20	06/18/18 0:00	ecc
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Total Alkalinity		1	1080		*	mg/L	2	20	06/18/18 0:00	ecc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-0.9			%			07/03/18 0:00	calc
Sum of Anions			107			meq/L			07/03/18 0:00	calc
Sum of Cations			105			meq/L			07/03/18 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	3030		*	mg/L	20	100	06/22/18 19:21	las
pH (lab)	SM4500H+ B									
pH		1	8.0	H	*	units	0.1	0.1	06/18/18 0:00	ecc
pH measured at		1	19.9		*	C	0.1	0.1	06/18/18 0:00	ecc
Residue, Filterable (TDS) @180C	SM2540C	5	6270	H	*	mg/L	50	100	06/15/18 14:31	mh
Sulfate	M300.0 - Ion Chromatography	50	22.0	B	*	mg/L	20	100	06/22/18 19:21	las
TDS (calculated)	Calculation		6100			mg/L			07/03/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.03						07/03/18 0:00	calc

Golder Associates

Project ID:

Sample ID: MW-3

ACZ Sample ID: **L44806-03**

Date Sampled: 06/06/18 13:55

Date Received: 06/08/18

Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Barium, dissolved	M200.7 ICP	2	2.18			mg/L	0.006	0.03	06/18/18 22:57	dcm
Boron, dissolved	M200.7 ICP	2	0.81			mg/L	0.02	0.1	06/18/18 22:57	dcm
Calcium, dissolved	M200.7 ICP	2	6.9		*	mg/L	0.2	1	06/18/18 22:57	dcm
Iron, dissolved	M200.7 ICP	2	0.41			mg/L	0.04	0.1	06/18/18 22:57	dcm
Magnesium, dissolved	M200.7 ICP	2	3.1			mg/L	0.4	2	06/18/18 22:57	dcm
Manganese, dissolved	M200.7 ICP	2	0.06			mg/L	0.01	0.05	06/18/18 22:57	dcm
Potassium, dissolved	M200.7 ICP	2	3.4			mg/L	0.4	2	06/18/18 22:57	dcm
Sodium, dissolved	M200.7 ICP	2	1490			mg/L	0.4	2	06/18/18 22:57	dcm

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	1250		*	mg/L	2	20	06/18/18 0:00	ecc
Carbonate as CaCO ₃		1	19.6	B	*	mg/L	2	20	06/18/18 0:00	ecc
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Total Alkalinity		1	1270		*	mg/L	2	20	06/18/18 0:00	ecc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.2			%			07/03/18 0:00	calc
Sum of Anions			69			meq/L			07/03/18 0:00	calc
Sum of Cations			66			meq/L			07/03/18 0:00	calc
Chloride	M300.0 - Ion Chromatography	20	1560		*	mg/L	8	40	06/21/18 23:05	las
pH (lab)	SM4500H+ B									
pH		1	8.3	H	*	units	0.1	0.1	06/18/18 0:00	ecc
pH measured at		1	19.5		*	C	0.1	0.1	06/18/18 0:00	ecc
Residue, Filterable (TDS) @180C	SM2540C	2	4020	H	*	mg/L	20	40	06/15/18 14:33	mh
Sulfate	M300.0 - Ion Chromatography	20		U	*	mg/L	8	40	06/21/18 23:05	las
TDS (calculated)	Calculation		3840			mg/L			07/03/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.05						07/03/18 0:00	calc

Golder Associates

Project ID:

Sample ID: MW-4

ACZ Sample ID: **L44806-04**

Date Sampled: 06/06/18 13:15

Date Received: 06/08/18

Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Barium, dissolved	M200.7 ICP	10	9.00			mg/L	0.03	0.2	06/18/18 23:00	dcm
Boron, dissolved	M200.7 ICP	10	0.8			mg/L	0.1	0.5	06/18/18 23:00	dcm
Calcium, dissolved	M200.7 ICP	10	36		*	mg/L	1	5	06/18/18 23:00	dcm
Iron, dissolved	M200.7 ICP	10		U		mg/L	0.2	0.5	06/18/18 23:00	dcm
Magnesium, dissolved	M200.7 ICP	10	17			mg/L	2	10	06/18/18 23:00	dcm
Manganese, dissolved	M200.7 ICP	10		U		mg/L	0.05	0.3	06/18/18 23:00	dcm
Potassium, dissolved	M200.7 ICP	10	8	B		mg/L	2	10	06/18/18 23:00	dcm
Sodium, dissolved	M200.7 ICP	10	4030			mg/L	2	10	06/18/18 23:00	dcm

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	602		*	mg/L	2	20	06/18/18 0:00	ecc
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Total Alkalinity		1	602		*	mg/L	2	20	06/18/18 0:00	ecc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-0.8			%			07/03/18 0:00	calc
Sum of Anions			184			meq/L			07/03/18 0:00	calc
Sum of Cations			181			meq/L			07/03/18 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6150		*	mg/L	40	200	06/22/18 19:57	las
pH (lab)	SM4500H+ B									
pH		1	8.1	H	*	units	0.1	0.1	06/18/18 0:00	ecc
pH measured at		1	19.0		*	C	0.1	0.1	06/18/18 0:00	ecc
Residue, Filterable (TDS) @180C	SM2540C	5	10900		*	mg/L	50	100	06/13/18 16:52	mh
Sulfate	M300.0 - Ion Chromatography	100		U	*	mg/L	40	200	06/22/18 19:57	las
TDS (calculated)	Calculation		10600			mg/L			07/03/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.03						07/03/18 0:00	calc

Golder Associates

Project ID:

Sample ID: MW-5

ACZ Sample ID: **L44806-05**

Date Sampled: 06/06/18 09:15

Date Received: 06/08/18

Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Barium, dissolved	M200.7 ICP	2		U		mg/L	0.006	0.03	06/18/18 23:09	dcm
Boron, dissolved	M200.7 ICP	2	0.35			mg/L	0.02	0.1	06/18/18 23:09	dcm
Calcium, dissolved	M200.7 ICP	2	425		*	mg/L	0.2	1	06/18/18 23:09	dcm
Iron, dissolved	M200.7 ICP	2	0.97			mg/L	0.04	0.1	06/18/18 23:09	dcm
Magnesium, dissolved	M200.7 ICP	2	109			mg/L	0.4	2	06/18/18 23:09	dcm
Manganese, dissolved	M200.7 ICP	2	0.08			mg/L	0.01	0.05	06/18/18 23:09	dcm
Potassium, dissolved	M200.7 ICP	2	6.6			mg/L	0.4	2	06/18/18 23:09	dcm
Sodium, dissolved	M200.7 ICP	2	329			mg/L	0.4	2	06/18/18 23:09	dcm

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	401		*	mg/L	2	20	06/18/18 0:00	ecc
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Total Alkalinity		1	401		*	mg/L	2	20	06/18/18 0:00	ecc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.1			%			07/03/18 0:00	calc
Sum of Anions			46.0			meq/L			07/03/18 0:00	calc
Sum of Cations			45			meq/L			07/03/18 0:00	calc
Chloride	M300.0 - Ion Chromatography	20	19.7	B	*	mg/L	8	40	06/22/18 20:15	las
pH (lab)	SM4500H+ B									
pH		1	7.7	H	*	units	0.1	0.1	06/18/18 0:00	ecc
pH measured at		1	19.3		*	C	0.1	0.1	06/18/18 0:00	ecc
Residue, Filterable (TDS) @180C	SM2540C	2	3020	H	*	mg/L	20	40	06/15/18 14:35	mh
Sulfate	M300.0 - Ion Chromatography	20	1780		*	mg/L	8	40	06/22/18 20:15	las
TDS (calculated)	Calculation		2910			mg/L			07/03/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.04						07/03/18 0:00	calc

Golder Associates

Project ID:

Sample ID: MW-6

ACZ Sample ID: **L44806-06**

Date Sampled: 06/06/18 09:57

Date Received: 06/08/18

Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Barium, dissolved	M200.7 ICP	10	7.65			mg/L	0.03	0.2	06/18/18 23:12	dcm
Boron, dissolved	M200.7 ICP	10	0.6			mg/L	0.1	0.5	06/18/18 23:12	dcm
Calcium, dissolved	M200.7 ICP	10	41		*	mg/L	1	5	06/18/18 23:12	dcm
Iron, dissolved	M200.7 ICP	10	3.0			mg/L	0.2	0.5	06/18/18 23:12	dcm
Magnesium, dissolved	M200.7 ICP	10	16			mg/L	2	10	06/18/18 23:12	dcm
Manganese, dissolved	M200.7 ICP	10	0.06	B		mg/L	0.05	0.3	06/18/18 23:12	dcm
Potassium, dissolved	M200.7 ICP	10	8	B		mg/L	2	10	06/18/18 23:12	dcm
Sodium, dissolved	M200.7 ICP	10	3870			mg/L	2	10	06/18/18 23:12	dcm

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	652		*	mg/L	2	20	06/18/18 0:00	ecc
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Total Alkalinity		1	652		*	mg/L	2	20	06/18/18 0:00	ecc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.4			%			07/03/18 0:00	calc
Sum of Anions			179			meq/L			07/03/18 0:00	calc
Sum of Cations			174			meq/L			07/03/18 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	5880		*	mg/L	40	200	06/21/18 23:59	las
pH (lab)	SM4500H+ B									
pH		1	7.8	H	*	units	0.1	0.1	06/18/18 0:00	ecc
pH measured at		1	19.7		*	C	0.1	0.1	06/18/18 0:00	ecc
Residue, Filterable (TDS) @180C	SM2540C	5	10500		*	mg/L	50	100	06/13/18 16:54	mh
Sulfate	M300.0 - Ion Chromatography	100	51.4	B	*	mg/L	40	200	06/21/18 23:59	las
TDS (calculated)	Calculation		10300			mg/L			07/03/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.02						07/03/18 0:00	calc

Golder Associates

Project ID:

Sample ID: MW-7

ACZ Sample ID: **L44806-07**

Date Sampled: 06/06/18 15:11

Date Received: 06/08/18

Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Barium, dissolved	M200.7 ICP	10	5.50			mg/L	0.03	0.2	06/18/18 23:15	dcm
Boron, dissolved	M200.7 ICP	10	0.7			mg/L	0.1	0.5	06/18/18 23:15	dcm
Calcium, dissolved	M200.7 ICP	10	52		*	mg/L	1	5	06/18/18 23:15	dcm
Iron, dissolved	M200.7 ICP	10	3.2			mg/L	0.2	0.5	06/18/18 23:15	dcm
Magnesium, dissolved	M200.7 ICP	10	20			mg/L	2	10	06/18/18 23:15	dcm
Manganese, dissolved	M200.7 ICP	10	0.14	B		mg/L	0.05	0.3	06/18/18 23:15	dcm
Potassium, dissolved	M200.7 ICP	10	9	B		mg/L	2	10	06/18/18 23:15	dcm
Sodium, dissolved	M200.7 ICP	10	4170			mg/L	2	10	06/18/18 23:15	dcm

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	714		*	mg/L	2	20	06/18/18 0:00	ecc
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Total Alkalinity		1	714		*	mg/L	2	20	06/18/18 0:00	ecc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-2.1			%			07/03/18 0:00	calc
Sum of Anions			196			meq/L			07/03/18 0:00	calc
Sum of Cations			188			meq/L			07/03/18 0:00	calc
Chloride	M300.0 - Ion Chromatography	100	6440		*	mg/L	40	200	06/22/18 0:53	las
pH (lab)	SM4500H+ B									
pH		1	7.7	H	*	units	0.1	0.1	06/18/18 0:00	ecc
pH measured at		1	20.0		*	C	0.1	0.1	06/18/18 0:00	ecc
Residue, Filterable (TDS) @180C	SM2540C	5	11500	H	*	mg/L	50	100	06/28/18 10:48	enb
Sulfate	M300.0 - Ion Chromatography	100	75.3	B	*	mg/L	40	200	06/22/18 0:53	las
TDS (calculated)	Calculation		11200			mg/L			07/03/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.03						07/03/18 0:00	calc

Golder Associates

Project ID:

Sample ID: MW-15

ACZ Sample ID: **L44806-08**

Date Sampled: 06/06/18 11:40

Date Received: 06/08/18

Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Barium, dissolved	M200.7 ICP	1		U		mg/L	0.003	0.02	06/18/18 23:18	dcm
Boron, dissolved	M200.7 ICP	1		U		mg/L	0.01	0.05	06/18/18 23:18	dcm
Calcium, dissolved	M200.7 ICP	1		U	*	mg/L	0.1	0.5	06/18/18 23:18	dcm
Iron, dissolved	M200.7 ICP	1		U		mg/L	0.02	0.05	06/18/18 23:18	dcm
Magnesium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	06/18/18 23:18	dcm
Manganese, dissolved	M200.7 ICP	1		U		mg/L	0.005	0.03	06/18/18 23:18	dcm
Potassium, dissolved	M200.7 ICP	1		U		mg/L	0.2	1	06/18/18 23:18	dcm
Sodium, dissolved	M200.7 ICP	1	0.3	B		mg/L	0.2	1	06/18/18 23:18	dcm

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Total Alkalinity		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			n/a			%			07/03/18 0:00	calc
Sum of Anions			N/A			meq/L			07/03/18 0:00	calc
Sum of Cations				U		meq/L			07/03/18 0:00	calc
Chloride	M300.0 - Ion Chromatography	1		U	*	mg/L	0.4	2	06/22/18 1:11	las
pH (lab)	SM4500H+ B									
pH		1	6.9	H	*	units	0.1	0.1	06/18/18 0:00	ecc
pH measured at		1	20.3		*	C	0.1	0.1	06/18/18 0:00	ecc
Residue, Filterable (TDS) @180C	SM2540C	1	12	B	*	mg/L	10	20	06/12/18 15:41	mh
Sulfate	M300.0 - Ion Chromatography	1		U	*	mg/L	0.4	2	06/22/18 1:11	las
TDS (calculated)	Calculation		0.3			mg/L			07/03/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		40.00						07/03/18 0:00	calc

Golder Associates

Project ID:

Sample ID: MW-20

ACZ Sample ID: **L44806-09**

Date Sampled: 06/06/18 00:00

Date Received: 06/08/18

Sample Matrix: Groundwater

Metals Analysis

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Barium, dissolved	M200.7 ICP	5		U		mg/L	0.02	0.08	06/18/18 23:22	dcm
Boron, dissolved	M200.7 ICP	5	0.67			mg/L	0.05	0.3	06/18/18 23:22	dcm
Calcium, dissolved	M200.7 ICP	5	217		*	mg/L	0.5	3	06/18/18 23:22	dcm
Iron, dissolved	M200.7 ICP	5		U		mg/L	0.1	0.3	06/18/18 23:22	dcm
Magnesium, dissolved	M200.7 ICP	5	224			mg/L	1	5	06/18/18 23:22	dcm
Manganese, dissolved	M200.7 ICP	5		U		mg/L	0.03	0.1	06/18/18 23:22	dcm
Potassium, dissolved	M200.7 ICP	5	15			mg/L	1	5	06/18/18 23:22	dcm
Sodium, dissolved	M200.7 ICP	5	1640			mg/L	1	5	06/18/18 23:22	dcm

Wet Chemistry

Parameter	EPA Method	Dilution	Result	Qual	XQ	Units	MDL	PQL	Date	Analyst
Alkalinity as CaCO ₃	SM2320B - Titration									
Bicarbonate as CaCO ₃		1	361		*	mg/L	2	20	06/18/18 0:00	ecc
Carbonate as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Hydroxide as CaCO ₃		1		U	*	mg/L	2	20	06/18/18 0:00	ecc
Total Alkalinity		1	361		*	mg/L	2	20	06/18/18 0:00	ecc
Cation-Anion Balance	Calculation									
Cation-Anion Balance			-1.0			%			07/03/18 0:00	calc
Sum of Anions			104			meq/L			07/03/18 0:00	calc
Sum of Cations			102			meq/L			07/03/18 0:00	calc
Chloride	M300.0 - Ion Chromatography	50	26.2	B	*	mg/L	20	100	06/22/18 1:28	las
pH (lab)	SM4500H+ B									
pH		1	8.0	H	*	units	0.1	0.1	06/18/18 0:00	ecc
pH measured at		1	20.3		*	C	0.1	0.1	06/18/18 0:00	ecc
Residue, Filterable (TDS) @180C	SM2540C	5	7320		*	mg/L	50	100	06/13/18 16:57	mh
Sulfate	M300.0 - Ion Chromatography	50	4550		*	mg/L	20	100	06/22/18 1:28	las
TDS (calculated)	Calculation		6890			mg/L			07/03/18 0:00	calc
TDS (ratio - measured/calculated)	Calculation		1.06						07/03/18 0:00	calc


Report Header Explanations

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

QC Sample Types

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

<http://www.acz.com/public/extquallist.pdf>

Golder Associates

ACZ Project ID: **L44806**

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
WG449603													
WG449603PBW1	PBW	06/16/18 12:30				3.8	mg/L		-20	20			
WG449603LCSW3	LCSW	06/16/18 12:47	WC180615-7	820.0001		809	mg/L	99	90	110			
WG449603LCSW6	LCSW	06/16/18 15:07	WC180615-7	820.0001		829	mg/L	101	90	110			
WG449603PBW2	PBW	06/16/18 15:13				U	mg/L		-20	20			
WG449603LCSW9	LCSW	06/16/18 17:08	WC180531-2	820.0001		837	mg/L	102	90	110			
WG449603PBW3	PBW	06/16/18 17:16				U	mg/L		-20	20			
WG449603LCSW12	LCSW	06/16/18 19:54	WC180531-2	820.0001		841	mg/L	103	90	110			
WG449603PBW4	PBW	06/16/18 20:01				U	mg/L		-20	20			
L44835-07DUP	DUP	06/16/18 21:47			432	419	mg/L				3	20	
WG449603LCSW15	LCSW	06/16/18 22:17	WC180531-2	820.0001		844	mg/L	103	90	110			
WG449751													
WG449751PBW1	PBW	06/18/18 16:44				6	mg/L		-20	20			
WG449751LCSW3	LCSW	06/18/18 17:00	WC180615-7	820.0001		792	mg/L	97	90	110			
L44824-02DUP	DUP	06/18/18 19:05			29.7	29.7	mg/L				0	20	
WG449751LCSW6	LCSW	06/18/18 21:00	WC180615-7	820.0001		802	mg/L	98	90	110			
WG449751PBW2	PBW	06/18/18 21:06				U	mg/L		-20	20			
WG449751LCSW9	LCSW	06/19/18 0:33	WC180615-7	820.0001		818	mg/L	100	90	110			
WG449751PBW3	PBW	06/19/18 0:41				2.4	mg/L		-20	20			
WG449751LCSW12	LCSW	06/19/18 4:12	WC180615-7	820.0001		823	mg/L	100	90	110			
WG449751PBW4	PBW	06/19/18 4:19				U	mg/L		-20	20			
WG449751LCSW15	LCSW	06/19/18 7:48	WC180615-7	820.0001		823	mg/L	100	90	110			

Barium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG449740													
WG449740ICV	ICV	06/18/18 22:14	II180612-1	2		1.9985	mg/L	100	95	105			
WG449740ICB	ICB	06/18/18 22:20				U	mg/L		-0.009	0.009			
WG449740LFB	LFB	06/18/18 22:32	II180608-2	.5025		.507	mg/L	101	85	115			
L44622-03AS	AS	06/18/18 22:44	II180608-2	.5025	.009	.5324	mg/L	104	85	115			
L44622-03ASD	ASD	06/18/18 22:47	II180608-2	.5025	.009	.537	mg/L	105	85	115	1	20	
L44824-04AS	AS	06/18/18 23:37	II180608-2	.5025	.139	.6651	mg/L	105	85	115			
L44824-04ASD	ASD	06/18/18 23:46	II180608-2	.5025	.139	.6513	mg/L	102	85	115	2	20	

Boron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG449740													
WG449740ICV	ICV	06/18/18 22:14	II180612-1	2		2.058	mg/L	103	95	105			
WG449740ICB	ICB	06/18/18 22:20				U	mg/L		-0.03	0.03			
WG449740LFB	LFB	06/18/18 22:32	II180608-2	.5005		.535	mg/L	107	85	115			
L44622-03AS	AS	06/18/18 22:44	II180608-2	.5005	.18	.7	mg/L	104	85	115			
L44622-03ASD	ASD	06/18/18 22:47	II180608-2	.5005	.18	.706	mg/L	105	85	115	1	20	
L44824-04AS	AS	06/18/18 23:37	II180608-2	.5005	.07	.614	mg/L	109	85	115			
L44824-04ASD	ASD	06/18/18 23:46	II180608-2	.5005	.07	.602	mg/L	106	85	115	2	20	

Golder Associates

ACZ Project ID: **L44806**

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.

Calcium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG449740													
WG449740ICV	ICV	06/18/18 22:14	II180612-1	100		99.38	mg/L	99	95	105			
WG449740ICB	ICB	06/18/18 22:20				U	mg/L		-0.3	0.3			
WG449740LFB	LFB	06/18/18 22:32	II180608-2	68.22088		68.24	mg/L	100	85	115			
L44622-03AS	AS	06/18/18 22:44	II180608-2	68.22088	223	279.6	mg/L	83	85	115			M3
L44622-03ASD	ASD	06/18/18 22:47	II180608-2	68.22088	223	280.3	mg/L	84	85	115	0	20	M3
L44824-04AS	AS	06/18/18 23:37	II180608-2	68.22088	214	270.6	mg/L	83	85	115			M3
L44824-04ASD	ASD	06/18/18 23:46	II180608-2	68.22088	214	268.6	mg/L	80	85	115	1	20	M3

Chloride

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG450092													
WG450092LFB	LFB	06/21/18 21:36	WI180430-12	30		30.6	mg/L	102	90	110			
L44806-01DUP	DUP	06/22/18 19:03			27.5	27.5	mg/L				0	20	RA
L44806-02AS	AS	06/22/18 19:39	WI180430-12	1500	3030	4460	mg/L	95	90	110			

Iron, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG449740													
WG449740ICV	ICV	06/18/18 22:14	II180612-1	2		1.943	mg/L	97	95	105			
WG449740ICB	ICB	06/18/18 22:20				U	mg/L		-0.06	0.06			
WG449740LFB	LFB	06/18/18 22:32	II180608-2	1.0011		1.042	mg/L	104	85	115			
L44622-03AS	AS	06/18/18 22:44	II180608-2	1.0011	.33	1.354	mg/L	102	85	115			
L44622-03ASD	ASD	06/18/18 22:47	II180608-2	1.0011	.33	1.35	mg/L	102	85	115	0	20	
L44824-04AS	AS	06/18/18 23:37	II180608-2	1.0011	U	1.057	mg/L	106	85	115			
L44824-04ASD	ASD	06/18/18 23:46	II180608-2	1.0011	U	1.046	mg/L	104	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
WG449740													
WG449740ICV	ICV	06/18/18 22:14	II180612-1	100		99.83	mg/L	100	95	105			
WG449740ICB	ICB	06/18/18 22:20				U	mg/L		-0.6	0.6			
WG449740LFB	LFB	06/18/18 22:32	II180608-2	50.05667		48.36	mg/L	97	85	115			
L44622-03AS	AS	06/18/18 22:44	II180608-2	50.05667	88.4	134.3	mg/L	92	85	115			
L44622-03ASD	ASD	06/18/18 22:47	II180608-2	50.05667	88.4	134.8	mg/L	93	85	115	0	20	
L44824-04AS	AS	06/18/18 23:37	II180608-2	50.05667	14.1	62.73	mg/L	97	85	115			
L44824-04ASD	ASD	06/18/18 23:46	II180608-2	50.05667	14.1	61.97	mg/L	96	85	115	1	20	

Manganese, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG449740													
WG449740ICV	ICV	06/18/18 22:14	II180612-1	2		1.9858	mg/L	99	95	105			
WG449740ICB	ICB	06/18/18 22:20				U	mg/L		-0.015	0.015			
WG449740LFB	LFB	06/18/18 22:32	II180608-2	.5005		.5183	mg/L	104	85	115			
L44622-03AS	AS	06/18/18 22:44	II180608-2	.5005	.13	.6464	mg/L	103	85	115			
L44622-03ASD	ASD	06/18/18 22:47	II180608-2	.5005	.13	.6508	mg/L	104	85	115	1	20	
L44824-04AS	AS	06/18/18 23:37	II180608-2	.5005	.265	.7787	mg/L	103	85	115			
L44824-04ASD	ASD	06/18/18 23:46	II180608-2	.5005	.265	.7651	mg/L	100	85	115	2	20	

Golder Associates

ACZ Project ID: **L44806**

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
WG449603													
WG449603LCSW1	LCSW	06/16/18 12:33	PCN54162	6.01		6	units	100	5.9	6.1			
WG449603LCSW4	LCSW	06/16/18 14:53	PCN54162	6.01		6	units	100	5.9	6.1			
WG449603LCSW7	LCSW	06/16/18 16:54	PCN54162	6.01		6	units	100	5.9	6.1			
WG449603LCSW10	LCSW	06/16/18 19:40	PCN54162	6.01		6	units	100	5.9	6.1			
L44835-07DUP	DUP	06/16/18 21:47			8.4	8.4	units				0	20	
WG449603LCSW13	LCSW	06/16/18 22:02	PCN54162	6.01		6	units	100	5.9	6.1			
WG449751													
WG449751LCSW1	LCSW	06/18/18 16:47	PCN54162	6.01		6.1	units	101	5.9	6.1			
L44824-02DUP	DUP	06/18/18 19:05			7.9	7.7	units				3	20	
WG449751LCSW4	LCSW	06/18/18 20:47	PCN54162	6.01		6.1	units	101	5.9	6.1			
WG449751LCSW7	LCSW	06/19/18 0:19	PCN54162	6.01		6.1	units	101	5.9	6.1			
WG449751LCSW10	LCSW	06/19/18 3:58	PCN54162	6.01		6.1	units	101	5.9	6.1			
WG449751LCSW13	LCSW	06/19/18 7:34	PCN54162	6.01		6.1	units	101	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
WG449740													
WG449740ICV	ICV	06/18/18 22:14	II180612-1	20		19.94	mg/L	100	95	105			
WG449740ICB	ICB	06/18/18 22:20				U	mg/L		-0.6	0.6			
WG449740LFB	LFB	06/18/18 22:32	II180608-2	99.72934		99.79	mg/L	100	85	115			
L44622-03AS	AS	06/18/18 22:44	II180608-2	99.72934	14	116.4	mg/L	103	85	115			
L44622-03ASD	ASD	06/18/18 22:47	II180608-2	99.72934	14	116.3	mg/L	103	85	115	0	20	
L44824-04AS	AS	06/18/18 23:37	II180608-2	99.72934	7.9	110.5	mg/L	103	85	115			
L44824-04ASD	ASD	06/18/18 23:46	II180608-2	99.72934	7.9	109.5	mg/L	102	85	115	1	20	

Golder Associates

ACZ Project ID: **L44806**

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

Residue, Filterable (TDS) @180C

SM2540C

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG449286													
WG449286PBW	PBW	06/12/18 15:17				U	mg/L		-20	20			
WG449286LCSW	LCSW	06/12/18 15:18	PCN56036	260		272	mg/L	105	80	120			
L44843-04DUP	DUP	06/12/18 15:59			1450	1470	mg/L				1	10	
WG449411													
WG449411PBW	PBW	06/13/18 15:30				16	mg/L		-20	20			
WG449411LCSW	LCSW	06/13/18 15:31	PCN56036	260		270	mg/L	104	80	120			
L44907-02DUP	DUP	06/13/18 15:53			31800	34400	mg/L				8	10	
WG449432													
WG449432PBW	PBW	06/13/18 16:48				U	mg/L		-20	20			
WG449432LCSW	LCSW	06/13/18 16:50	PCN56036	260		266	mg/L	102	80	120			
L44915-06DUP	DUP	06/13/18 17:15			136	136	mg/L				0	10	
WG449609													
WG449609PBW	PBW	06/15/18 14:19				U	mg/L		-20	20			
WG449609LCSW	LCSW	06/15/18 14:20	PCN56035	260		258	mg/L	99	80	120			
L44860-01DUP	DUP	06/15/18 14:40			1540	1540	mg/L				0	10	
WG450540													
WG450540PBW	PBW	06/28/18 10:45				U	mg/L		-20	20			
WG450540LCSW	LCSW	06/28/18 10:46	PCN56362	260		262	mg/L	101	80	120			
L45103-01DUP	DUP	06/28/18 11:08			3540	3570	mg/L				1	10	

Sodium, dissolved

M200.7 ICP

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG449740													
WG449740ICV	ICV	06/18/18 22:14	II180612-1	100		100.1	mg/L	100	95	105			
WG449740ICB	ICB	06/18/18 22:20				U	mg/L		-0.6	0.6			
WG449740LFB	LFB	06/18/18 22:32	II180608-2	100.6711		101.5	mg/L	101	85	115			
L44622-03AS	AS	06/18/18 22:44	II180608-2	100.6711	60.4	161.6	mg/L	101	85	115			
L44622-03ASD	ASD	06/18/18 22:47	II180608-2	100.6711	60.4	161.3	mg/L	100	85	115	0	20	
L44824-04AS	AS	06/18/18 23:37	II180608-2	100.6711	41.2	142.6	mg/L	101	85	115			
L44824-04ASD	ASD	06/18/18 23:46	II180608-2	100.6711	41.2	141	mg/L	99	85	115	1	20	

Sulfate

M300.0 - Ion Chromatography

ACZ ID	Type	Analyzed	PCN/SCN	QC	Sample	Found	Units	Rec%	Lower	Upper	RPD	Limit	Qual
WG450092													
WG450092LFB	LFB	06/21/18 21:36	WI180430-12	30		31.8	mg/L	106	90	110			
L44806-01DUP	DUP	06/22/18 19:03			4530	4530	mg/L				0	20	
L44806-02AS	AS	06/22/18 19:39	WI180430-12	1500	22	1570	mg/L	103	90	110			

Golder Associates

ACZ Project ID: **L44806**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L44806-01	WG449603	Bicarbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG449740	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG449603	Carbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG450092	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG449603	Hydroxide as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG449411	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG450092	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG449603	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
L44806-02	WG449751	Bicarbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG449740	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG449751	Carbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG449751	Hydroxide as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG449609	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540C	N1	See Case Narrative.
			SM2540C	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
	WG450092	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG449751	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.

Golder Associates

ACZ Project ID: **L44806**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L44806-03	WG449751	Bicarbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG449740	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG449751	Carbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG450092	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG449751	Hydroxide as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG449609	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540C	N1	See Case Narrative.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG450092	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.
L44806-04	WG449751	Bicarbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG449740	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG449751	Carbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG450092	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG449751	Hydroxide as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG449432	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG450092	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG449751	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Golder Associates

ACZ Project ID: **L44806**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L44806-05	WG449751	Bicarbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG449740	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG449751	Carbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG450092	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG449751	Hydroxide as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG449609	Residue, Filterable (TDS) @180C	SM2540C	HC	Initial analysis within holding time. Reanalysis was past holding time, which was required due to a QC failure during the initial analysis.
			SM2540C	N1	See Case Narrative.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG450092	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG449751	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
L44806-06	WG449751	Bicarbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG449740	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG449751	Carbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG450092	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG449751	Hydroxide as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG449432	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG450092	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG449751	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.

Golder Associates

ACZ Project ID: **L44806**

ACZ ID	WORKNUM	PARAMETER	METHOD	QUAL	DESCRIPTION
L44806-07	WG449751	Bicarbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG449740	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG449751	Carbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG450092	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG449751	Hydroxide as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG450540	Residue, Filterable (TDS) @180C	SM2540C	C5	Confirmatory analysis was past holding time. Original result not confirmed.
			SM2540C	Q6	Sample was received above recommended temperature.
	WG450092	Sulfate	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG449751	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.
L44806-08	WG449751	Bicarbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG449740	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG449751	Carbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG450092	Chloride	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
	WG449751	Hydroxide as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG449286	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG450092	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG449751	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.
L44806-09	WG449751	Bicarbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG449740	Calcium, dissolved	M200.7 ICP	M3	The spike recovery value is unusable since the analyte concentration in the sample is disproportionate to the spike level. The recovery of the associated control sample (LCS or LFB) was acceptable.
	WG449751	Carbonate as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
	WG450092	Chloride	M300.0 - Ion Chromatography	DC	Sample required dilution. Non-target analyte exceeded calibration range.
			M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
			M300.0 - Ion Chromatography	RA	Relative Percent Difference (RPD) was not used for data validation because the concentration of the duplicated sample is too low for accurate evaluation (< 10x MDL).
			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).
	WG449751	Hydroxide as CaCO ₃	SM2320B - Titration	Q6	Sample was received above recommended temperature.
		pH	SM4500H+ B	Q6	Sample was received above recommended temperature.
		pH measured at	SM4500H+ B	Q6	Sample was received above recommended temperature.
	WG449432	Residue, Filterable (TDS) @180C	SM2540C	Q6	Sample was received above recommended temperature.
	WG450092	Sulfate	M300.0 - Ion Chromatography	Q6	Sample was received above recommended temperature.
	WG449751	Total Alkalinity	SM2320B - Titration	Q6	Sample was received above recommended temperature.
			SM2320B - Titration	Q6	Sample was received above recommended temperature.

Golder Associates

ACZ Project ID: **L44806**

No certification qualifiers associated with this analysis

Golder Associates

ACZ Project ID: L44806

Date Received: 06/08/2018 10:54

Received By:

Date Printed: 6/11/2018

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? A change was made in the Sample ID: Line 8 and Sample ID: Date:Time Line 9 section prior to ACZ custody.	X		

Samples/Containers

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

NA indicates Not Applicable

Chain of Custody Related Remarks

Client Contact Remarks

Shipping Containers

Cooler Id	Temp(°C)	Temp Criteria(°C)	Rad(µR/Hr)	Custody Seal Intact?
4171	7.2	<=6.0	13	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.

Golder Associates

ACZ Project ID: L44806

Date Received: 06/08/2018 10:54

Received By:

Date Printed: 6/11/2018

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).

LL21806

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

CHAIN of CUSTODY

Report to:

Name: Kristina Minchow
Company: Golder
E-mail: KMinchow@golder.com

Address: 44 Union Blvd suite 300
 Lakewood, CO 80212
 Telephone: 303 980 6540

Copy of Report to:

Name: Sara Hawkins
Company: Gobler

E-mail: Sharkings@golder.com
Telephone: 303 908 4541

Invoice to:

Name: Kristina Minchaw
Company: see above
E-mail:

Address: See Above

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	☒
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

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

Sampler's Name: D. Brown Sampler's Site Information State CO Zip code _____ Time Zone MST

*Sampler's Signature:

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

PROJECT INFORMATION

ANALYSES REQUESTED (attach list or use quote number)

Quote #: BO 39923

PO#:

Reporting state for compliance testing:

Check box if samples include NRC licensed material?

SAMPLE IDENTIFICATION	DATE:TIME	Matrix
-----------------------	-----------	--------

MW-1	6/6/18	1205	GW
MW-2	6/6/18	1035	GW
MW-3	6/6/18	1355	GW
MW-4	6/6/18	1315	GW
MW-5	6/6/18	915	GW
MW-6	6/6/18	957	GW
MW-7	6/6/18	1511	GW
MW- 8 ⁵ 15	6/6/18	1140	GW
MW-20	6/6/18	—	GW

of Containers

See Quote/Bo

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

REMARKS

Samples Field Filtered

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

RELINQUISHED BY:

DATE:TIME

RECEIVED BY:

DATE:TIME

Diana Brown	6/6/18 11:15	<i>[Signature]</i>	6/8/18 10:54