

Summary Report

To : Nick Colucci, Director

Date : November 1, 2020

Town of Erin, Infrastructure Services

Re. : Final Monitoring Report

From : Andrew Pentney

Groundwater Monitoring Program

CC : Triton Engineering

Project : Station Street Dam Reconstruction

The following is a summary report regarding the monitoring completed as part of the *Groundwater Monitoring and Mitigation Plan, Reconstruction of Station Street and Replacement of Station Street Bridge (Structure 2064) and Dam Control Structure, Hillsburgh (May 23, 2019)*. This report presents the post-construction monitoring results, and is the final report prepared as part of the overall monitoring program.

Monitoring Locations

The monitoring locations are shown on the attached **Figure 1**, as surveyed by Triton Engineering.

The drive-point piezometers and pond gauge were installed April 20, 2020 by hand into the shallow sediments along the perimeter of the pond. Monitor DP1 was deepened on April 30, 2020 in order to intercept the water table. The piezometers allow a comparison of the pond levels to the water table elevations immediately adjacent to the pond.

The commencement of pond lowering related to construction began on May 12, 2020. The completion of in-water works were completed prior to September 15, 2020 and normal operating conditions of the dam control structure resumed on September 18, 2020. All of the monitors were removed on October 19, 2020.

Monitoring Completed

Water level monitoring was completed through occasional manual measurements and on an hourly basis by transducer/dataloggers installed at each location. At most locations water level monitoring began on April 20, 2010. At DP1 water level monitoring began on April 30, 2020. The monitor installation details are provided on the attached **Table 1**.

A hydrograph showing measured water level elevations is attached as **Figure 2**. Reported precipitation (rainfall) at the Environment Canada Fergus Shand Dam weather station (closest monitoring station) is additionally plotted on **Figure 2** for comparison purposes.

Water quality samples were obtained from the Pond, DP1 and DP3. Monitor DP2 was installed in fine grain sediments that do not “produce” sufficient water to obtain representative samples.

Pre-construction water quality sampling occurred on April 24th and May 4th. Samples were then obtained on May 27th, June 9th, June 26th, July 10th, July 22nd, August 7th, August 25th, September 4th, and, September 18th (generally every 2nd week) over the construction period. Post construction samples were obtained on October 2nd and October 19th. Water quality sampling results to date are summarized on the attached **Table 2**.

Observations

The following is noted with regard to the monitoring program:

- The pond was lowered from mid-May to early June to allow initial construction. The maximum pond level decrease over that period related to construction was approximately 0.9 m in May 2020. Subsequently a coffer dam was installed in early June, which allowed pond levels to be recover approximately 0.8 m. That pond level was maintained over the construction period.
- On September 18th, after in-water construction was complete, the pond level recovered an additional 0.5 m to normal operational levels. The current pond level is above the pre-construction levels measured this spring (April/May).
- Water level recovery after September 18th was approximately 0.5 m at DP2, and, 1.0 m at DP1 and DP3. The water level recovery at DP1, DP2 and DP3 is likely associated with the pond recovery, in addition to the increased amount of precipitation that occurred over that period (see Figure 2).
- Based on the monitoring program results, current water levels (after in-water construction works are complete and normal dam operation has resumed) at the pond and in the area surrounding the pond are within the natural expected range.
- Water table changes associated with construction were relatively minor. No significant changes in water quality were noted.

Summary

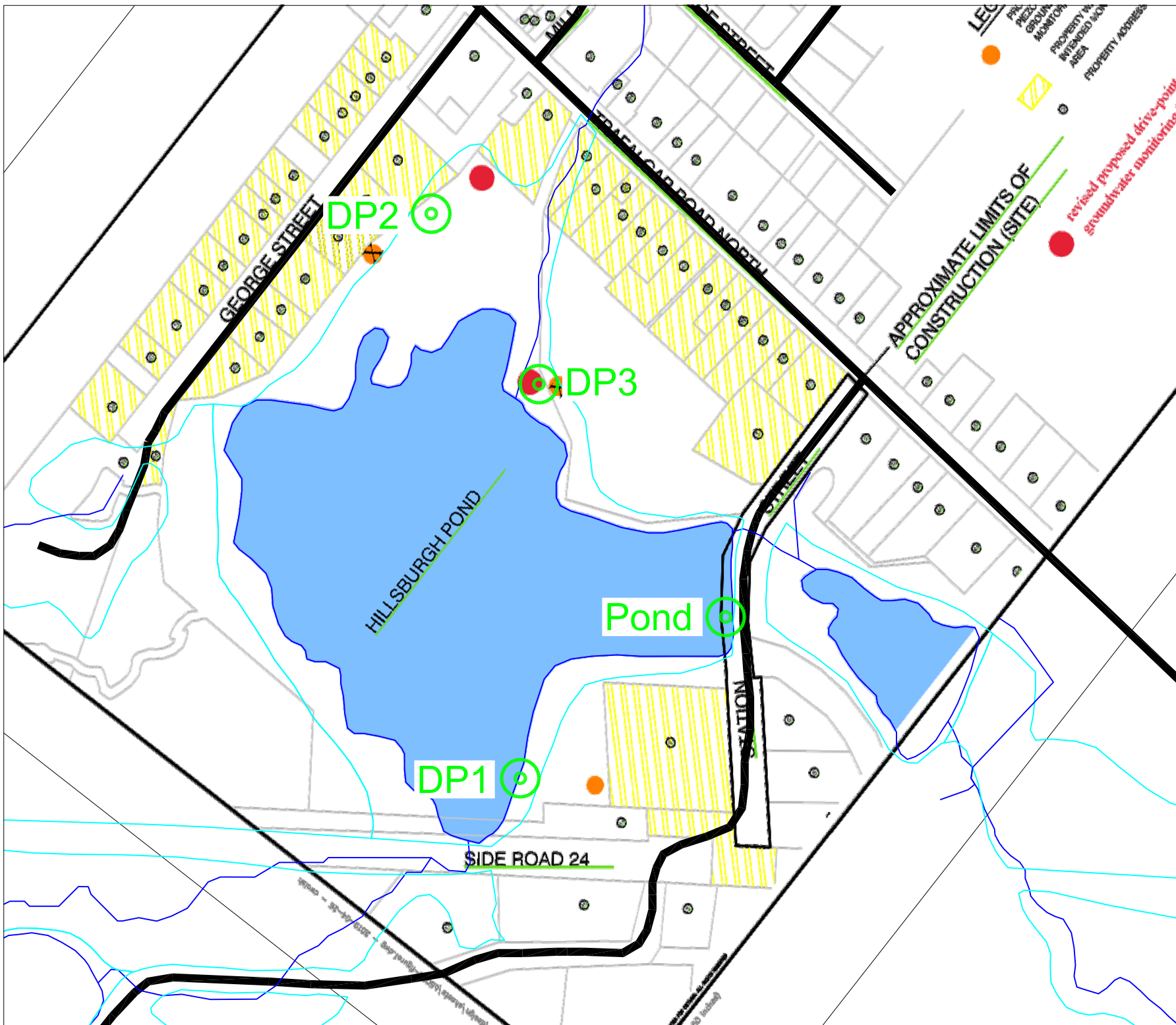
No significant changes to groundwater conditions were observed as a result of the construction activities. The monitoring program is now complete.

Sincerely,



Andrew Pentney, P.Geol.
Senior Hydrogeologist
Groundwater Science Corp.

Attached: Figure 1, Figure 2
 Table 1, Table 2



Legend
 ○ DP1 Dam monitor

Figure 1

Station Street Dam
 Monitoring Network

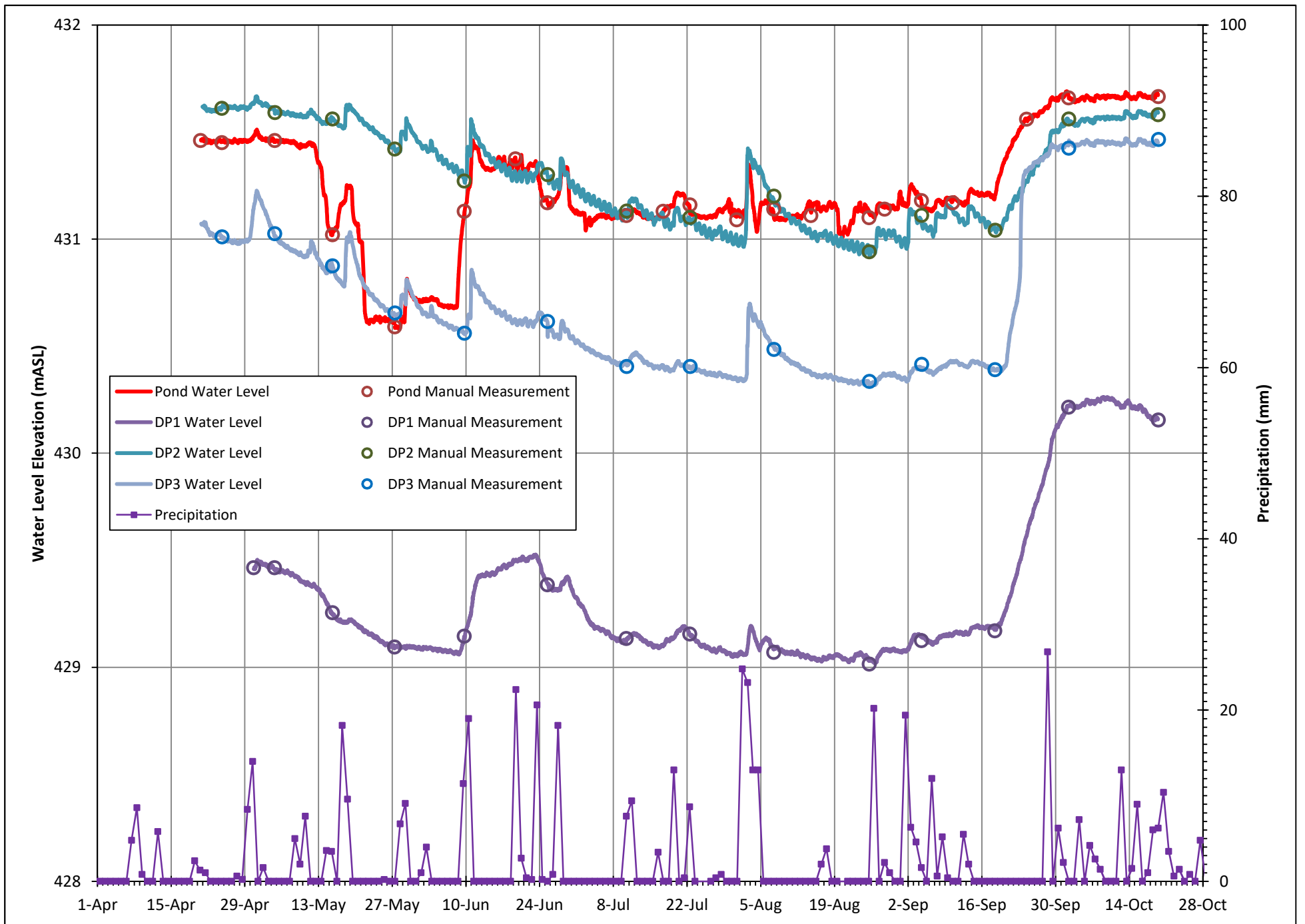


Figure 2: Water Level Hydrograph

Location	Type	As Installed			Elevations	
		Total Depth (mBTOP)	Stick-Up (mAGS)	Screen Lenth (m)	Ground Surface (mASL)	Top of Pipe (mASL)
Pond	stilling well	1.90	1.90	1.00	430.46	432.36
DP1	piezometer	4.09	1.22	0.30	431.57	432.79
DP2	piezometer	2.21	0.42	0.30	431.62	432.13
DP3	piezometer	2.84	1.26	0.30	431.36	432.70
Notes: mBTOP = metres below top of pipe mAGS = metres above ground surface mASL = metres above sea level						

Sample Location:		POND													
Parameter	Date:	24-Apr-2020	4-May-2020	27-May-2020	9-Jun-2020	25-Jun-2020	10-Jul-2020	22-Jul-2020	7-Aug-2020	25-Aug-2020	4-Sep-2020	18-Sep-2020	2-Oct-2020	19-Oct-2020	
Anions and Nutrients	Units														
Bromide (Br)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	
Chloride (Cl)	mg/L	24.7	25.9	24.4	22.3	23.9	21.8	21.4	22.9	23.1	23.1	23.9	24.3	25.2	
Fluoride (F)	mg/L	0.045	0.047	0.050	0.046	0.048	0.052	0.051	0.054	0.051	0.053	0.053	0.051	0.049	
Nitrate (as N)	mg/L	3.20	3.03	3.22	3.09	2.76	2.14	1.93	2.22	2.62	2.38	3.33	2.68	2.91	
Nitrite (as N)	mg/L	0.014	0.020	0.024	0.026	0.042	0.038	0.029	0.023	0.035	0.019	0.019	0.030	0.028	
Sulfate (SO4)	mg/L	18.1	18.7	18.7	20.5	18.3	17.8	17.0	18.7	18.1	17.8	19.4	21.6	19.1	
Total Metals															
Aluminum (Al)-Total	mg/L	0.0680	0.2350	0.1120	0.0317	0.0447	0.0233	0.0307	0.0483	0.0688	0.0551	0.0513	0.0231	0.0302	
Antimony (Sb)-Total	mg/L	<0.00010	0.00021	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Arsenic (As)-Total	mg/L	0.00025	0.00039	0.00038	0.00028	0.00036	0.00043	0.00043	0.00042	0.00037	0.00038	0.00028	0.00029	0.00027	
Barium (Ba)-Total	mg/L	0.0342	0.0416	0.0319	0.0404	0.0643	0.0634	0.0507	0.0508	0.0514	0.0456	0.0446	0.0443	0.0417	
Beryllium (Be)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Bismuth (Bi)-Total	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000054	<0.000050	<0.000050	
Boron (B)-Total	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	0.011	<0.010	
Cadmium (Cd)-Total	mg/L	0.0000076	0.0000275	0.0000090	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050	0.0000055	
Calcium (Ca)-Total	mg/L	69.2	73.5	60.1	62.0	65.4	61.4	63.1	65.9	67.2	67.1	70.0	69.8	74.1	
Cesium (Cs)-Total	mg/L	<0.000010	0.000022	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Chromium (Cr)-Total	mg/L	<0.00050	0.0008	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Cobalt (Co)-Total	mg/L	<0.00010	0.00013	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Copper (Cu)-Total	mg/L	0.00060	0.00110	0.00066	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	0.00089	0.00157	<0.00050	0.00059	
Iron (Fe)-Total	mg/L	0.108	0.377	0.179	0.083	0.145	0.119	0.083	0.109	0.100	0.093	0.083	0.053	0.057	
Lead (Pb)-Total	mg/L	0.000297	0.001100	0.000572	0.000131	0.000200	0.000139	0.000100	0.000164	0.000208	0.000189	0.000175	0.000099	0.000116	
Lithium (Li)-Total	mg/L	0.0021	0.0015	0.0018	0.0015	0.0018	0.0014	0.0015	0.0017	0.0018	0.0015	0.0019	0.0019	0.0017	
Magnesium (Mg)-Total	mg/L	21.2	20.3	21.0	21.9	21.4	20.6	22.0	19.9	21.1	19.9	21.1	21.1	21.6	
Manganese (Mn)-Total	mg/L	0.0122	0.0394	0.0211	0.0157	0.0288	0.0301	0.0230	0.0256	0.0175	0.0160	0.0154	0.0107	0.0124	
Molybdenum (Mo)-Total	mg/L	0.000263	0.000294	0.000271	0.000270	0.000324	0.000369	0.000363	0.000273	0.000289	0.000261	0.000250	0.000250	0.000256	
Nickel (Ni)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	
Phosphorus (P)-Total	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	
Potassium (K)-Total	mg/L	1.09	1.04	1.05	1.00	1.05	0.85	0.97	1.03	0.96	1.07	1.00	1.38	1.39	
Rubidium (Rb)-Total	mg/L	0.00071	0.00099	0.00083	0.00077	0.00084	0.00073	0.00087	0.00093	0.00092	0.00097	0.00079	0.00129	0.00126	
Selenium (Se)-Total	mg/L	0.000141	0.000149	0.000166	0.000113	0.000133	0.000114	0.000132	0.000128	0.000152	0.000119	0.000117	0.000113	0.000118	
Silicon (Si)-Total	mg/L	3.82	3.65	4.32	4.34	4.13	4.36	4.51	4.95	4.63	4.41	4.50	4.65	4.21	
Silver (Ag)-Total	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	
Sodium (Na)-Total	mg/L	11.7	11.3	11.0	10.5	10.9	9.1	9.8	10.0	10.0	9.5	10.0	11.0	11.3	
Strontium (Sr)-Total	mg/L	0.117	0.124	0.111	0.109	0.118	0.110	0.111	0.112	0.117	0.110	0.113	0.114	0.119	
Sulfur (S)-Total	mg/L	7.01	6.42	6.63	7.43	6.53	6.05	6.15	6.69	6.72	6.17	6.92	7.72	7.13	
Tellurium (Te)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	
Thallium (Tl)-Total	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	
Thorium (Th)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Tin (Sn)-Total	mg/L	0.00028	0.00025	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Titanium (Ti)-Total	mg/L	0.00318	0.00842	0.00419	0.00112	0.00171	0.00087	<0.00080	0.00146	0.00232	0.00165	0.00163	0.00086	0.00085	
Tungsten (W)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	
Uranium (U)-Total	mg/L	0.000524	0.000488	0.000517	0.000494	0.000501	0.000540	0.000557	0.000532	0.000558	0.000499	0.000481	0.000508	0.000496	
Vanadium (V)-Total	mg/L	<0.00050	0.00086	0.00078	<0.00050	0.00053	0.00064	0.00058	0.00051	0.00063	0.00054	<0.00050	<0.00050	<0.00050	
Zinc (Zn)-Total	mg/L	0.0139	0.0865	0.0031	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	<0.0030	0.0237	<0.0030	<0.0030	<0.0030	
Zirconium (Zr)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	

Table 2: Water Quality Results Summary

Sample Location:		DP1											
Parameter	Date:	4-May-2020	27-May-2020	9-Jun-2020	25-Jun-2020	10-Jul-2020	22-Jul-2020	7-Aug-2020	25-Aug-2020	4-Sep-2020	18-Sep-2020	2-Oct-2020	19-Oct-2020
Anions and Nutrients	Units												
Bromide (Br)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride (Cl)	mg/L	26.6	30.1	36	26.9	27.2	28.4	28.1	28.6	28.9	28.6	27.5	26.6
Fluoride (F)	mg/L	0.050	0.041	0.037	0.048	0.058	0.052	0.054	0.05	0.048	0.045	0.055	0.051
Nitrate (as N)	mg/L	3.070	2.72	1.17	2.5	1.29	1.58	3.29	0.41	2.48	2.69	3.2	3.47
Nitrite (as N)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Sulfate (SO4)	mg/L	18.4	16.8	11.3	22.3	20.4	19.3	19.7	16.1	25	21.5	21.4	19.4
Dissolved Metals													
Aluminum (Al)-Dissolved	mg/L	<0.0050	<0.0050	0.0068	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Antimony (Sb)-Dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Arsenic (As)-Dissolved	mg/L	0.00018	0.00017	0.00018	0.00013	0.00019	0.00017	0.00025	0.0002	0.00022	0.0002	0.00017	0.00015
Barium (Ba)-Dissolved	mg/L	0.0352	0.0375	0.0475	0.0513	0.0396	0.0428	0.0427	0.04	0.0431	0.0414	0.0377	0.0384
Beryllium (Be)-Dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Dissolved	mg/L	<0.010	<0.010	<0.010	0.012	0.014	0.014	0.015	0.013	0.014	0.011	<0.010	<0.010
Cadmium (Cd)-Dissolved	mg/L	0.0000255	0.0000412	0.0000253	0.0000807	0.0000318	0.0000325	0.0000182	0.0000176	0.0000206	0.0000121	0.0000162	0.0000326
Calcium (Ca)-Dissolved	mg/L	68.5	73.2	97.7	70.6	72.1	72.8	71.2	67.4	76.2	69.8	67.3	74.8
Cesium (Cs)-Dissolved	mg/L	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium (Cr)-Dissolved	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Dissolved	mg/L	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Copper (Cu)-Dissolved	mg/L	0.00053	0.0004	0.00048	0.00076	0.00053	0.00063	0.00063	0.00088	0.00078	0.00055	0.00061	0.0078
Iron (Fe)-Dissolved	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Lead (Pb)-Dissolved	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000054
Lithium (Li)-Dissolved	mg/L	<0.0010	<0.0010	0.0011	<0.0010	0.0015	0.0018	0.0012	0.0018	0.002	0.0018	<0.0010	<0.0010
Magnesium (Mg)-Dissolved	mg/L	19.1	22.4	28.1	19.8	18.9	19.7	19.7	19.4	19.7	21.2	21.1	22.4
Manganese (Mn)-Dissolved	mg/L	0.009	0.0096	0.0205	0.00094	0.00603	0.0119	0.00589	0.00824	0.00986	0.00736	0.00167	0.00364
Molybdenum (Mo)-Dissolved	mg/L	0.00029	0.000224	0.000144	0.000907	0.000213	0.000223	0.000225	0.000218	0.000249	0.000195	0.000294	0.000338
Nickel (Ni)-Dissolved	mg/L	0.00099	0.00534	0.0006	0.00075	0.00228	0.00146	0.00051	<0.00050	<0.00050	0.00055	<0.00050	<0.00050
Phosphorus (P)-Dissolved	mg/L	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	mg/L	1.090	1.04	1.18	1.34	1.21	1.38	1.54	1.46	1.59	1.5	1.16	1.23
Rubidium (Rb)-Dissolved	mg/L	0.00053	0.00051	0.00087	0.00092	0.00073	0.00097	0.00097	0.00097	0.00105	0.00095	0.0005	0.00055
Selenium (Se)-Dissolved	mg/L	0.00018	0.000242	0.000151	0.000171	0.000093	0.000183	0.000364	0.00009	0.000335	0.000376	0.000141	0.000122
Silicon (Si)-Dissolved	mg/L	3.74	3.9	4.88	5.11	5.11	5.32	5.36	5.19	5.58	5.26	3.81	3.61
Silver (Ag)-Dissolved	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium (Na)-Dissolved	mg/L	13.7	14.4	18.4	13.9	12.7	13.6	14.3	13.4	13.8	13.2	12.2	14.1
Strontium (Sr)-Dissolved	mg/L	0.122	0.13	0.157	0.129	0.124	0.13	0.128	0.119	0.141	0.129	0.117	0.129
Sulfur (S)-Dissolved	mg/L	6.7	6.1	4.18	7.81	7.01	7.31	7.34	5.65	8.39	7.56	7.86	7.66
Tellurium (Te)-Dissolved	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Dissolved	mg/L	<0.000010	<0.000010	<0.000010	0.000015	<0.000010	<0.000010	<0.000010	<0.000010	0.000011	<0.000010	<0.000010	<0.000010
Thorium (Th)-Dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	mg/L	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030	<0.00030
Tungsten (W)-Dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium (U)-Dissolved	mg/L	0.000588	0.000622	0.000596	0.000424	0.000355	0.000301	0.000401	0.000395	0.000324	0.000371	0.0006	0.000555
Vanadium (V)-Dissolved	mg/L	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Zinc (Zn)-Dissolved	mg/L	0.43	0.669	0.166	1.93	0.95	1.53	0.0445	0.0363	1.08	0.103	0.643	1.38
Zirconium (Zr)-Dissolved	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020

Table 2: Water Quality Results Summary

Sample Location:		DP3												
Parameter	Date:	24-Apr-2020	4-May-2020	27-May-2020	9-Jun-2020	25-Jun-2020	10-Jul-2020	22-Jul-2020	7-Aug-2020	25-Aug-2020	4-Sep-2020	18-Sep-2020	2-Oct-2020	19-Oct-2020
Anions and Nutrients	Units													
Bromide (Br)	mg/L	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10	<0.10
Chloride (Cl)	mg/L	20.9	21.4	21.7	21.1	22.6	22.8	21.1	22.1	22.0	21.2	23.8	22.8	21.1
Fluoride (F)	mg/L	0.055	0.055	0.055	0.057	0.053	0.062	0.057	0.033	0.050	0.056	0.035	0.058	0.064
Nitrate (as N)	mg/L	0.060	<0.020	<0.020	0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	<0.020	0.066	0.067
Nitrite (as N)	mg/L	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010	<0.010
Sulfate (SO4)	mg/L	32.7	32.7	28.3	20.1	16.8	11.9	8.3	159	98.1	94.5	71.7	248	79.3
Dissolved Metals														
Aluminum (Al)-Dissolved	mg/L	0.0058	<0.0050	<0.0050	0.2920	0.0056	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050	<0.0050
Antimony (Sb)-Dissolved	mg/L	<0.00010	0.00011	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	0.00012	<0.00010
Arsenic (As)-Dissolved	mg/L	0.00088	0.00507	0.00522	0.00564	0.00460	0.00489	0.00425	0.00683	0.00733	0.00501	0.00563	0.00263	0.00181
Barium (Ba)-Dissolved	mg/L	0.0750	0.0664	0.0801	0.1030	0.0696	0.0752	0.0714	0.1110	0.0927	0.0812	0.0904	0.1080	0.0790
Beryllium (Be)-Dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Bismuth (Bi)-Dissolved	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Boron (B)-Dissolved	mg/L	<0.010	<0.010	<0.010	<0.010	0.011	0.011	0.01	0.013	0.012	0.011	0.012	0.017	<0.010
Cadmium (Cd)-Dissolved	mg/L	<0.0000050	<0.0000050	0.0000129	0.0000467	<0.0000050	<0.0000050	<0.0000050	0.0000098	<0.0000050	<0.0000050	<0.0000050	<0.0000050	<0.0000050
Calcium (Ca)-Dissolved	mg/L	85.5	88.3	96.7	109.0	113.0	109.0	105.0	139.0	120.0	121.0	123.0	149.0	108.0
Cesium (Cs)-Dissolved	mg/L	<0.000010	<0.000010	<0.000010	0.000014	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Chromium (Cr)-Dissolved	mg/L	<0.00050	<0.00050	<0.00050	0.00056	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050	<0.00050
Cobalt (Co)-Dissolved	mg/L	0.00150	0.00043	0.00046	0.00097	0.00035	0.00015	0.00014	0.00079	0.00088	0.00032	0.00052	0.00148	0.00172
Copper (Cu)-Dissolved	mg/L	<0.00020	<0.00020	<0.00020	0.00152	0.00039	<0.00020	<0.00020	<0.00020	0.00021	<0.00020	<0.00020	0.00043	0.00024
Iron (Fe)-Dissolved	mg/L	<0.010	7.94	8.51	6.8	9.52	8.19	6.89	11.3	9.11	7.57	7.05	2.95	0.531
Lead (Pb)-Dissolved	mg/L	0.000135	<0.000050	<0.000050	0.004380	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	0.000061	0.000064
Lithium (Li)-Dissolved	mg/L	<0.0010	<0.0010	0.0011	<0.0010	<0.0010	0.0011	0.0012	<0.0010	0.001	<0.0010	<0.0010	0.0012	<0.0010
Magnesium (Mg)-Dissolved	mg/L	19.0	18.0	21.1	23.4	22.6	21.9	22.5	28.5	25.1	23.1	24.9	28.5	20.6
Manganese (Mn)-Dissolved	mg/L	0.849	0.878	1.170	1.280	1.160	1.030	0.977	1.410	1.190	1.050	1.150	0.665	0.660
Molybdenum (Mo)-Dissolved	mg/L	0.00106	0.00075	0.00080	0.00076	0.00111	0.00079	0.00089	0.00061	0.00095	0.00082	0.00070	0.00117	0.00166
Nickel (Ni)-Dissolved	mg/L	0.00450	0.01330	0.00908	0.00318	0.01190	0.00109	0.00058	0.00842	0.01920	0.00879	0.01140	0.00102	0.00109
Phosphorus (P)-Dissolved	mg/L	<0.050	0.057	0.056	0.073	0.052	<0.050	<0.050	0.09	<0.050	<0.050	<0.050	<0.050	<0.050
Potassium (K)-Dissolved	mg/L	0.768	0.441	0.537	0.703	0.529	0.566	0.576	0.711	0.679	0.565	0.607	2.090	1.270
Rubidium (Rb)-Dissolved	mg/L	0.00097	0.00051	0.00063	0.00104	0.00063	0.00066	0.00065	0.00085	0.00087	0.00069	0.00075	0.00133	0.00100
Selenium (Se)-Dissolved	mg/L	<0.000050	0.000056	0.000065	0.000511	<0.000050	0.000066	0.000066	0.00008	<0.000050	0.000051	0.000072	0.000183	0.000103
Silicon (Si)-Dissolved	mg/L	5.51	6.43	7.14	8.50	8.42	8.16	8.13	8.89	8.22	8.03	8.32	7.58	6.72
Silver (Ag)-Dissolved	mg/L	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050	<0.000050
Sodium (Na)-Dissolved	mg/L	11.6	10.0	10.5	11.5	10.4	10.7	11.1	12.2	11.5	11.3	11.4	10.5	8.7
Strontium (Sr)-Dissolved	mg/L	0.124	0.129	0.149	0.159	0.155	0.153	0.159	0.205	0.187	0.185	0.189	0.199	0.143
Sulfur (S)-Dissolved	mg/L	12.2	11.0	8.9	7.6	5.4	4.3	3.6	56.7	34.9	31.2	23.7	95.0	27.1
Tellurium (Te)-Dissolved	mg/L	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Dissolved	mg/L	<0.000010	<0.000010	<0.000010	0.000012	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010	<0.000010
Thorium (Th)-Dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Titanium (Ti)-Dissolved	mg/L	0.00030	0.00034	0.00032	0.00814	0.00035	<0.00030	<0.00030	0.00030	0.00033	<0.00030	<0.00030	0.00039	<0.00030
Tungsten (W)-Dissolved	mg/L	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010	<0.00010
Uranium (U)-Dissolved	mg/L	0.000185	0.000081	0.000156	0.000198	0.000115	0.000091	0.000104	0.000283	0.000413	0.000210	0.000219	0.000976	0.001050
Vanadium (V)-Dissolved	mg/L	<0.00050	0.0016	0.00163	0.00257	0.00146	0.00119	0.00113	0.00119	0.00109	0.00113	0.00108	0.00078	0.00095
Zinc (Zn)-Dissolved	mg/L	3.43	0.59	1.88	2.35	1.82	1.43	1.51	0.72	1.41	0.31	0.41	0.94	1.75
Zirconium (Zr)-Dissolved	mg/L	<0.00020	0.00032	0.00035	0.00055	0.00045	0.00043	0.00042	0.00049	0.00045	0.0005	0.0004	<0.00020	<0.00020

Table 2: Water Quality Results Summary