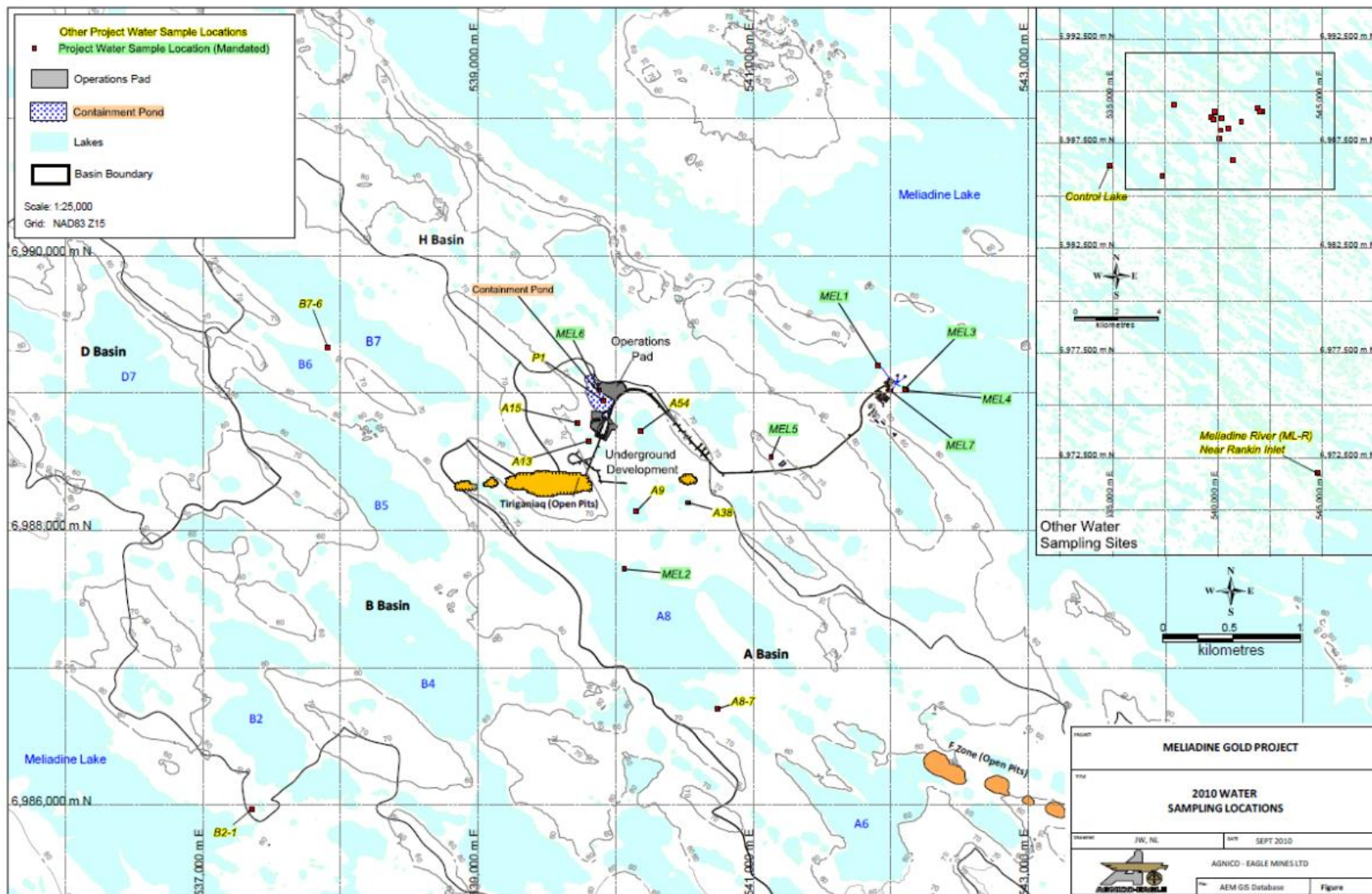


Appendix A

Figure 1, water sampling locations
Water quality data tables



Waterbody		A8 (MEL-2)			
Year		2014			
Date Sampled		01/06/2014	06/07/2014	05/08/2014	02/09/2014
GPS Coordinates		540748 -6986690	540748 -6986690	540748 -6986690	540748 -6986690
Field Measurments	Units				
Water Temperature	oC	2.7	17	17.5	11.9
pH	pH units	7.8	7.7	7.9	8.2
Conductivity	(uS/cm)	280	240	0.16	0.23
Laboratory-Measured		ALS LAB	ALS LAB	ALS LAB	ALS LAB
Ion balance	%	101	99.9	99.6	95.8
Biochemical Oxygen Demand	mg/L	<6.0	<6.0	<6.0	<6.0
Ammonia as N	mg/L	<0.010	<0.010	<0.010	<0.010
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	<0.000020	0.000136
Phosphorus (P)-Total	mg/L	0.0191	0.0082	0.0062	0.0077
Phosphorus (P)-Total Reactive	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	mg/L	0.36	0.36	0.35	0.3
Total Suspended Solids	mg/L	<5.0	5	8	<5.0
Alkalinity, Total (as CaCO3)	mg/L	33	33	37	41
Bicarbonate (HCO3)	mg/L	40	41	46	50
Carbonate (CO3)	mg/L	<12	<12	<12	<12
Hydroxide (OH)	mg/L	<6.8	<6.8	<6.8	<6.8
Calcium (Ca)-Dissolved	mg/L	53.2	24.4	25.9	24.4
Magnesium (Mg)-Dissolved	mg/L	6.92	2.91	3.3	3.08
Potassium (K)-Dissolved	mg/L	2.53	1.33	1.54	1.28
Sodium (Na)-Dissolved	mg/L	10.3	4.73	5.53	5.05
Chloride	mg/L	89.1	33.3	35.8	31.3
Conductivity	umhos/cm	386	187	212	184
Fluoride	mg/L	<0.10	<0.10	<0.10	<0.10
Hardness (as CaCO3)	mg/L	148	67.4	84.8	74.1
Nitrate-N	mg/L	0.104	<0.050	<0.050	<0.050
Nitrate and Nitrite as N	mg/L	0.104	<0.071	<0.071	<0.071
Nitrite-N	mg/L	<0.050	<0.050	<0.050	<0.050
Sulfate	mg/L	26	4.17	4.19	4.66
TDS (Calculated)	mg/L	251	122	138	120
Aluminum (Al)-Total	mg/L	0.0062	0.0061	0.0065	0.007
Antimony (Sb)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Arsenic (As)-Total	mg/L	0.00095	0.00199	0.00267	<0.00201
Barium (Ba)-Total	mg/L	0.0481	0.0204	0.0216	0.0193
Beryllium (Be)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Bismuth (Bi)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Boron (B)-Total	mg/L	<0.010	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	mg/L	49.8	22.6	28.6	24.6
Cesium (Cs)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.00010	<0.00010
Cobalt (Co)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Copper (Cu)-Total	mg/L	0.00104	0.00073	0.00088	0.00073
Iron (Fe)-Total	mg/L	<0.10	0.12	0.121	0.114
Lead (Pb)-Total	mg/L	<0.000090	<0.000090	<0.000090	<0.000090
Lithium (Li)-Total	mg/L	0.0126	0.0067	0.0073	0.0056
Magnesium (Mg)-Total	mg/L	5.79	2.65	3.22	3.07
Manganese (Mn)-Total	mg/L	0.0196	0.0193	0.0195	0.0164
Molybdenum (Mo)-Total	mg/L	<0.00020	<0.00020	0.00028	0.00026
Nickel (Ni)-Total	mg/L	<0.0020	<0.0020	0.00089	<0.00040
Phosphorus (P)-Total	mg/L	<0.10	<0.10	<0.050	<0.050
Potassium (K)-Total	mg/L	2.29	1.22	1.41	1.23
Rubidium (Rb)-Total	mg/L	0.00201	0.00147	0.00175	0.00159
Selenium (Se)-Total	mg/L	<0.0010	<0.0010	<0.00010	<0.00010
Silicon (Si)-Total	mg/L	0.9	0.19	0.39	0.53
Silver (Ag)-Total	mg/L	<0.00010	<0.00010	0.000012	<0.000010
Sodium (Na)-Total	mg/L	9.16	4.51	5.22	5
Strontium (Sr)-Total	mg/L	0.382	0.157	0.19	0.168
Tellurium (Te)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Thorium (Th)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Titanium (Ti)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Tungsten (W)-Total	mg/L	0.00013	0.00013	0.00012	<0.00010
Uranium (U)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Vanadium (V)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Zinc (Zn)-Total	mg/L	<0.0020	0.0024	0.0015	<0.0010
Zirconium (Zr)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040
Sodium Adsorption Ratio		0.35	0.24	0.25	0.25
Ortho-Phosphate (PO4-P)	mg/L				
Turbidity	NTU	0.47	0.94	1.26	1.27
pH	pH units	7.43	7.79	7.72	7.74

Waterbody		A9			
Year		2014			
Date Sampled		01/06/2014	06/07/2014	05/08/2014	02/09/2014
GPS Coordinates		540194-6988142	540194-6988142	540194-6988142	540194-6988142
Field Measurments	Units				
Water Temperature	oC	2	16.9	17.5	11.9
pH	pH units	7.7	8.2	20.6	8
Conductivity	(µS/cm)	340	1375	1.95	1.52
Laboratory-Measured		ALS LAB	ALS LAB	ALS LAB	ALS LAB
Ion balance	%	105	104	101	96.5
Biochemical Oxygen Demand	mg/L	<6.0	<6.0	<6.0	<6.0
Ammonia as N	mg/L	0.031	0.012	0.02	<0.010
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020
Phosphorus (P)-Total	mg/L	0.0171	0.0193	0.0156	0.0179
Phosphorus (P)-Total Reactive	mg/L	0.0011	<0.0010	0.0011	<0.0010
Total Kjeldahl Nitrogen	mg/L	0.51	1.4	2.09	1.34
Total Suspended Solids	mg/L	<5.0	<5.0	8	<5.0
Alkalinity, Total (as CaCO3)	mg/L	33	58	64	59
Bicarbonate (HCO3)	mg/L	40	71	78	72
Carbonate (CO3)	mg/L	<12	<12	<12	<12
Hydroxide (OH)	mg/L	<6.8	<6.8	<6.8	<6.8
Calcium (Ca)-Dissolved	mg/L	73.8	186	300	220
Magnesium (Mg)-Dissolved	mg/L	8.72	24.8	44.4	30.2
Potassium (K)-Dissolved	mg/L	2.93	8.26	14.2	8.03
Sodium (Na)-Dissolved	mg/L	11.7	32.4	57.9	38.6
Chloride	mg/L	119	324	597	429
Conductivity	umhos/cm	514	1310	2260	1510
Fluoride	mg/L	<0.10	<0.10	<0.50	<0.50
Hardness (as CaCO3)	mg/L	200	533	920	961
Nitrate-N	mg/L	<0.050	<0.050	<0.25	<0.25
Nitrate and Nitrite as N	mg/L	<0.071	<0.071	<0.35	<0.35
Nitrite-N	mg/L	<0.050	<0.050	<0.25	<0.25
Sulfate	mg/L	36.3	104	153	126
TDS (Calculated)	mg/L	334	848	1470	984
Aluminum (Al)-Total	mg/L	0.0141	0.007	0.0057	0.0083
Antimony (Sb)-Total	mg/L	<0.00020	<0.00020	0.00021	<0.00020
Arsenic (As)-Total	mg/L	0.00171	0.00482	0.00831	0.00503
Barium (Ba)-Total	mg/L	0.0736	0.152	0.277	0.179
Beryllium (Be)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Bismuth (Bi)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Boron (B)-Total	mg/L	<0.010	0.013	0.012	<0.010
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	mg/L	67.7	174	293	336
Cesium (Cs)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	0.00016	<0.00010
Cobalt (Co)-Total	mg/L	0.00022	<0.00020	<0.00020	<0.00020
Copper (Cu)-Total	mg/L	0.00154	0.0032	0.00376	0.00218
Iron (Fe)-Total	mg/L	0.2	0.2	0.096	0.216
Lead (Pb)-Total	mg/L	<0.000090	<0.000090	<0.000090	<0.000090
Lithium (Li)-Total	mg/L	0.017	0.0514	0.0839	0.0604
Magnesium (Mg)-Total	mg/L	7.45	23.9	45.9	29.7
Manganese (Mn)-Total	mg/L	0.0229	0.0119	0.00529	0.00875
Molybdenum (Mo)-Total	mg/L	0.00023	0.00049	0.00051	0.00052
Nickel (Ni)-Total	mg/L	0.0038	0.0064	0.00877	0.00698
Phosphorus (P)-Total	mg/L	<0.10	<0.10	<0.050	<0.050
Potassium (K)-Total	mg/L	2.77	7.45	13.5	7.94
Rubidium (Rb)-Total	mg/L	0.00222	0.00697	0.0112	0.00704
Selenium (Se)-Total	mg/L	<0.0010	<0.0010	0.00013	<0.00010
Silicon (Si)-Total	mg/L	1.16	0.42	2.76	0.82
Silver (Ag)-Total	mg/L	<0.00010	<0.00010	0.000011	<0.000010
Sodium (Na)-Total	mg/L	10.3	33.2	57.7	41.9
Strontium (Sr)-Total	mg/L	0.526	1.37	2.41	2.72
Tellurium (Te)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Thorium (Th)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Titanium (Ti)-Total	mg/L	<0.00050	<0.00050	<0.00050	<0.00050
Tungsten (W)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Uranium (U)-Total	mg/L	<0.00010	0.00021	0.00029	0.00031
Vanadium (V)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Zinc (Zn)-Total	mg/L	<0.0020	<0.0020	0.002	0.0026
Zirconium (Zr)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040
Sodium Adsorption Ratio		0.34	0.63	0.83	0.59
Ortho-Phosphate (PO4-P)	mg/L	-	-	-	-
Turbidity	NTU	0.93	1.64	0.85	1.7
pH	pH units	7.61	8.02	8.07	7.86

Waterbody		A13			
Year		2014			
Date Sampled		01/06/2014	06/07/2014	05/08/2014	02/09/2014
GPS Coordinates		539828-6988676	539828-6988676	539828-6988676	539828-6988676
LAB		ALS LAB	ALS LAB	ALS LAB	ALS LAB
Field Measurmments	Units				
Water Temperature	oC	1.8	20.7	19.5	11.6
pH	pH units	7.7	7.6	8.1	7.9
Conductivity	(µS/cm)	320	1374	2.45	2.22
Laboratory-Measured					
Ion balance	%	105	104	98.6	98.7
Biochemical Oxygen Demand	mg/L	<6.0	<6.0	<6.0	<6.0
Ammonia as N	mg/L	0.311	0.016	0.039	1.56
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020
Phosphorus (P)-Total	mg/L	0.0175	0.0177	0.0177	0.0143
Phosphorus (P)-Total Reactive	mg/L	<0.0010	0.0036	<0.0010	<0.0010
Total Kjeldahl Nitrogen	mg/L	0.68	1.22	2.36	2.77
Total Suspended Solids	mg/L	<5.0	5	14	7
Alkalinity, Total (as CaCO3)	mg/L	24	49	77	60
Bicarbonate (HCO3)	mg/L	30	60	94	73
Carbonate (CO3)	mg/L	<12	<12	<12	<12
Hydroxide (OH)	mg/L	<6.8	<6.8	<6.8	<6.8
Calcium (Ca)-Dissolved	mg/L	66.7	218	411	349
Magnesium (Mg)-Dissolved	mg/L	7.16	22.3	52.1	35.7
Potassium (K)-Dissolved	mg/L	2.73	8.96	19.7	11.6
Sodium (Na)-Dissolved	mg/L	11.8	33.1	77.6	45.4
Chloride	mg/L	112	399	905	687
Conductivity	umhos/cm	473	1470	2950	2150
Fluoride	mg/L	<0.10	<0.10	<0.50	<0.50
Hardness (as CaCO3)	mg/L	169	590	1260	1070
Nitrate-N	mg/L	<0.050	<0.050	<0.25	2.83
Nitrate and Nitrite as N	mg/L	<0.071	<0.071	<0.35	2.83
Nitrite-N	mg/L	<0.050	<0.050	<0.25	<0.25
Sulfate	mg/L	31.7	73.6	96.7	109
TDS (Calculated)	mg/L	308	953	1920	1400
Aluminum (Al)-Total	mg/L	0.0526	0.0104	0.0186	0.0076
Antimony (Sb)-Total	mg/L	<0.00020	0.00114	0.0002	<0.00020
Arsenic (As)-Total	mg/L	0.00157	0.00595	0.0111	0.00379
Barium (Ba)-Total	mg/L	0.0789	0.184	0.424	0.273
Beryllium (Be)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Bismuth (Bi)-Total	mg/L	<0.00020	0.00094	<0.00020	<0.00020
Boron (B)-Total	mg/L	0.014	0.024	0.024	0.015
Cadmium (Cd)-Total	mg/L	0.000011	0.000111	0.000017	0.000027
Calcium (Ca)-Total	mg/L	57.8	201	418	367
Cesium (Cs)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	0.00026	0.00012
Cobalt (Co)-Total	mg/L	0.00071	0.00038	0.0004	0.00061
Copper (Cu)-Total	mg/L	0.00159	0.00388	0.00444	0.00278
Iron (Fe)-Total	mg/L	0.39	0.43	1.32	0.51
Lead (Pb)-Total	mg/L	0.000125	0.000552	0.000197	<0.000090
Lithium (Li)-Total	mg/L	0.0179	0.0801	0.177	0.113
Magnesium (Mg)-Total	mg/L	6.07	21.5	53	37.9
Manganese (Mn)-Total	mg/L	0.129	0.00831	0.068	0.0592
Molybdenum (Mo)-Total	mg/L	0.00032	0.00132	0.00153	0.00089
Nickel (Ni)-Total	mg/L	0.0037	0.0064	0.0116	0.00931
Phosphorus (P)-Total	mg/L	<0.10	<0.10	<0.050	<0.050
Potassium (K)-Total	mg/L	2.62	8.31	18.3	12.5
Rubidium (Rb)-Total	mg/L	0.00224	0.00742	0.014	0.011
Selenium (Se)-Total	mg/L	<0.0010	0.0011	0.00014	<0.00010
Silicon (Si)-Total	mg/L	1.42	1.51	5.32	3.55
Silver (Ag)-Total	mg/L	<0.00010	0.00013	0.000026	0.000027
Sodium (Na)-Total	mg/L	11.7	32.4	73.9	48.2
Strontium (Sr)-Total	mg/L	0.481	1.61	3.26	2.95
Tellurium (Te)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	<0.00010	0.00105	<0.00010	<0.00010
Thorium (Th)-Total	mg/L	<0.00010	0.0001	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.00020	0.0005	<0.00020	<0.00020
Titanium (Ti)-Total	mg/L	0.00125	<0.00050	0.00053	<0.00050
Tungsten (W)-Total	mg/L	0.00013	0.00032	0.00021	0.0001
Uranium (U)-Total	mg/L	<0.00010	0.00025	0.00051	0.00043
Vanadium (V)-Total	mg/L	<0.00020	0.00066	0.00037	<0.00020
Zinc (Zn)-Total	mg/L	0.0022	0.0035	0.0022	0.0027
Zirconium (Zr)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040
Turbidity	NTU	1.96	1.92	4.4	2.5
pH	pH units	7.43	7.97	8.01	7.83
Sodium Adsorption Ratio		0.37	0.58	0.91	0.64

Waterbody		A15		
Year		2014		
Date Sampled		01/06/2014	06/07/2014	02/09/2014
GPS Coordinates		539731.8-6988798	539731.8-6988798	539731.8-6988798
Field Measurments	Units			
Water Temperature	oC	2	19.2	12.3
pH	pH units	7.9	7.4	7.5
Conductivity	(µS/cm)	310	3230	2.36
Laboratory-Measured		ALS LAB	ALS LAB	ALS LAB
Ion balance	%			
Biochemical Oxygen Demand	mg/L	<6.0	<6.0	<6.0
Ammonia as N	mg/L	0.097	0.022	2.69
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	<0.000020
Phosphorus (P)-Total	mg/L	0.0149	0.02	0.0154
Phosphorus (P)-Total Reactive	mg/L	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	mg/L	0.59	1.87	3.65
Total Suspended Solids	mg/L	70	17	<5.0
Alkalinity, Total (as CaCO3)	mg/L	21	31	24.5
Bicarbonate (HCO3)	mg/L	26	38	29.9
Carbonate (CO3)	mg/L	<12	<12	<0.60
Hydroxide (OH)	mg/L	<6.8	<6.8	<0.34
Calcium (Ca)-Dissolved	mg/L	55.5	636	398
Magnesium (Mg)-Dissolved	mg/L	6.77	52.8	34.3
Potassium (K)-Dissolved	mg/L	2.37	19.3	9.02
Sodium (Na)-Dissolved	mg/L	13.5	65	42.1
Chloride	mg/L	100	1070	710
Conductivity	umhos/cm	432	3360	2270
Fluoride	mg/L	<0.10	<0.50	<0.50
Hardness (as CaCO3)	mg/L	154	1560	1130
Nitrate-N	mg/L	<0.050	<0.25	0.46
Nitrate and Nitrite as N	mg/L	<0.071	<0.35	0.46
Nitrite-N	mg/L	<0.050	<0.25	<0.25
Sulfate	mg/L	31.6	132	197
TDS (Calculated)	mg/L	281	2190	1470
Aluminum (Al)-Total	mg/L	0.103	0.0183	0.0123
Antimony (Sb)-Total	mg/L	<0.00020	<0.00020	<0.00020
Arsenic (As)-Total	mg/L	0.00182	0.00681	0.00235
Barium (Ba)-Total	mg/L	0.0558	0.421	0.216
Beryllium (Be)-Total	mg/L	<0.00020	<0.00020	<0.00020
Bismuth (Bi)-Total	mg/L	<0.00020	<0.00020	<0.00020
Boron (B)-Total	mg/L	<0.010	0.016	0.02
Cadmium (Cd)-Total	mg/L	0.000014	0.00003	0.000151
Calcium (Ca)-Total	mg/L	52.6	541	393
Cesium (Cs)-Total	mg/L	<0.00010	<0.00010	<0.00010
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	0.00015
Cobalt (Co)-Total	mg/L	0.0004	0.00028	0.0017
Copper (Cu)-Total	mg/L	0.00156	0.00457	0.00277
Iron (Fe)-Total	mg/L	0.86	0.29	0.285
Lead (Pb)-Total	mg/L	0.000146	<0.000090	<0.000090
Lithium (Li)-Total	mg/L	0.0126	0.241	0.102
Magnesium (Mg)-Total	mg/L	5.58	50.7	35.6
Manganese (Mn)-Total	mg/L	0.0246	0.0199	0.386
Molybdenum (Mo)-Total	mg/L	0.00023	0.00083	0.00038
Nickel (Ni)-Total	mg/L	0.003	0.0083	0.0162
Phosphorus (P)-Total	mg/L	<0.10	<0.10	<0.050
Potassium (K)-Total	mg/L	2.12	18	9.51
Rubidium (Rb)-Total	mg/L	0.00201	0.014	0.01
Selenium (Se)-Total	mg/L	<0.0010	<0.0010	<0.00010
Silicon (Si)-Total	mg/L	1.61	1.28	4.63
Silver (Ag)-Total	mg/L	<0.00010	<0.00010	0.00003
Sodium (Na)-Total	mg/L	12.3	66.6	42.9
Strontium (Sr)-Total	mg/L	0.387	4.42	3.03
Tellurium (Te)-Total	mg/L	<0.00020	0.00025	<0.00020
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010	<0.00010
Thorium (Th)-Total	mg/L	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.00020	<0.00020	<0.00020
Titanium (Ti)-Total	mg/L	0.00173	<0.00050	<0.00050
Tungsten (W)-Total	mg/L	0.00013	0.00011	<0.00010
Uranium (U)-Total	mg/L	<0.00010	0.00023	<0.00010
Vanadium (V)-Total	mg/L	0.00033	<0.00020	<0.00020
Zinc (Zn)-Total	mg/L	0.0032	0.0021	0.0122
Zirconium (Zr)-Total	mg/L	<0.00040	<0.00040	<0.00040
Turbidity	NTU	7.2	2.3	1.45
pH	pH units	7.37	7.65	7.3

Waterbody		A38			
Year		2014			
Date Sampled		01/06/2014	06/07/2014	05/08/2014	02/09/2014
GPS Coordinates		540500-6988254	540500-6988254	540500-6988254	540500-6988254
Field Measurments	Units				
Water Temperature	oC	3	19.4	20.8	11.4
pH	pH units	7.8	8.4	8.2	8
Conductivity	(µS/cm)	380	1201	1.44	1.42
Laboratory-Measured		ALS LAB	ALS LAB	ALS LAB	ALS LAB
Ion balance	%	102	108	101	97.8
Biochemical Oxygen Demand	mg/L	<6.0	<6.0	<6.0	<6.0
Ammonia as N	mg/L	0.62	0.029	0.019	0.026
Mercury (Hg)-Total	mg/L	0.000025	<0.000020	<0.000020	<0.000020
Phosphorus (P)-Total	mg/L	0.014	0.012	0.012	0.0136
Phosphorus (P)-Total Reactive	mg/L	<0.0010	<0.0010	<0.0010	<0.0010
Total Kjeldahl Nitrogen	mg/L	1.43	1.2	1.48	1.03
Total Suspended Solids	mg/L	10	7	11	9
Alkalinity, Total (as CaCO3)	mg/L	45	48	52	66
Bicarbonate (HCO3)	mg/L	55	58	64	80
Carbonate (CO3)	mg/L	<12	<12	<12	<12
Hydroxide (OH)	mg/L	<6.8	<6.8	<6.8	<6.8
Calcium (Ca)-Dissolved	mg/L	68.4	154	172	171
Magnesium (Mg)-Dissolved	mg/L	9.32	21.4	30	27.3
Potassium (K)-Dissolved	mg/L	4.5	11.4	15.6	11.9
Sodium (Na)-Dissolved	mg/L	23.1	58.5	79.8	64.5
Chloride	mg/L	126	315	426	403
Conductivity	umhos/cm	559	1230	1610	1420
Fluoride	mg/L	<0.10	<0.10	<0.50	<0.10
Hardness (as CaCO3)	mg/L	191	431	562	539
Nitrate-N	mg/L	1.32	1.25	<0.25	0.494
Nitrate and Nitrite as N	mg/L	1.32	1.25	<0.35	0.494
Nitrite-N	mg/L	<0.050	<0.050	<0.25	<0.050
Sulfate	mg/L	33.4	71.3	81.8	71.6
TDS (Calculated)	mg/L	363	800	1050	923
Aluminum (Al)-Total	mg/L	0.0164	0.0111	0.0097	0.0108
Antimony (Sb)-Total	mg/L	<0.00020	<0.00020	<0.00020	0.00109
Arsenic (As)-Total	mg/L	0.00205	0.00383	0.00657	0.00459
Barium (Ba)-Total	mg/L	0.0452	0.104	0.144	0.118
Beryllium (Be)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Bismuth (Bi)-Total	mg/L	<0.00020	<0.00020	<0.00020	0.00095
Boron (B)-Total	mg/L	<0.010	0.012	0.012	<0.010
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	<0.000010	0.000124
Calcium (Ca)-Total	mg/L	63.1	138	173	170
Cesium (Cs)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.00010	0.00035
Cobalt (Co)-Total	mg/L	0.00023	<0.00020	0.00022	0.0005
Copper (Cu)-Total	mg/L	0.00084	0.00209	0.00251	0.00165
Iron (Fe)-Total	mg/L	0.22	0.2	0.205	0.174
Lead (Pb)-Total	mg/L	0.000113	<0.000090	<0.000090	0.000535
Lithium (Li)-Total	mg/L	0.0146	0.0399	0.0557	0.0474
Magnesium (Mg)-Total	mg/L	8.18	21.2	31.8	27.8
Manganese (Mn)-Total	mg/L	0.0269	0.00645	0.00997	0.0154
Molybdenum (Mo)-Total	mg/L	0.00035	0.00053	0.0009	0.00079
Nickel (Ni)-Total	mg/L	0.0023	0.0032	0.00487	0.00467
Phosphorus (P)-Total	mg/L	<0.10	<0.10	<0.050	<0.050
Potassium (K)-Total	mg/L	4.12	9.98	14.9	11.8
Rubidium (Rb)-Total	mg/L	0.00327	0.00822	0.0104	0.00882
Selenium (Se)-Total	mg/L	<0.0010	<0.0010	<0.00010	0.00111
Silicon (Si)-Total	mg/L	0.73	0.38	0.77	1.29
Silver (Ag)-Total	mg/L	<0.00010	<0.00010	<0.000010	0.000102
Sodium (Na)-Total	mg/L	21.6	55.5	79	65.9
Strontium (Sr)-Total	mg/L	0.569	1.34	1.68	1.69
Tellurium (Te)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010	<0.00010	0.00094
Thorium (Th)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.00020	<0.00020	<0.00020	0.00052
Titanium (Ti)-Total	mg/L	<0.00050	<0.00050	<0.00050	0.00056
Tungsten (W)-Total	mg/L	<0.00010	<0.00010	0.00012	0.00016
Uranium (U)-Total	mg/L	0.00014	0.0003	0.00038	0.00046
Vanadium (V)-Total	mg/L	<0.00020	<0.00020	0.00024	0.00074
Zinc (Zn)-Total	mg/L	<0.0020	<0.0020	0.0015	0.0026
Zirconium (Zr)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040
Sodium Adsorption Ratio		0.7	1.16	1.45	1.24
Turbidity	NTU	0.97	1.13	1.26	1.7
pH	pH units	7.75	8.07	8.04	7.92

Waterbody		P1			
Year		2014			
Date Sampled		01/06/2014	06/07/2014	05/08/2014	02/09/2014
GPS Coordinates		539901-6988966	539901-6988966	539901-6988966	539901-6988966
Field Measurments	Units				
Water Temperature	oC	2.1	17.2	18.2	11.2
pH	pH units	7.9	7.7	7.9	7.9
Conductivity	(µS/cm)	420	836	0.05	2.31
Laboratory-Measured		ALS	ALS	ALS	ALS
Ion balance	%	104	99.5	106	94.5
Biochemical Oxygen Demand	mg/L	<6.0	<6.0	<6.0	<6.0
Ammonia as N	mg/L	2.82	0.63	4.85	7.7
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	<0.000020	<0.000020
Phosphorus (P)-Total	mg/L	0.0083	0.0189	0.0079	0.0079
Phosphorus (P)-Total Reactive	mg/L	<0.0010	0.0011	<0.0010	<0.0010
Total Kjeldahl Nitrogen	mg/L	3.87	6.54	5.78	8.82
Total Suspended Solids	mg/L	9	7	5	6
Alkalinity, Total (as CaCO3)	mg/L	64	66	85	92
Alkalinity Bicarbonate (HCO3)	mg/L	77	80	104	112
Alkalinity Carbonate (CO3)	mg/L	<12	<12	<12	<12
Alkalinity Hydroxide (OH)	mg/L	<6.8	<6.8	<6.8	<6.8
Calcium (Ca)-Dissolved	mg/L	95.7	122	206	358
Magnesium (Mg)-Dissolved	mg/L	7.09	9.38	17.1	28
Potassium (K)-Dissolved	mg/L	4.55	7.75	12.7	16
Sodium (Na)-Dissolved	mg/L	12.7	17.9	32	47
Chloride	mg/L	151	208	378	745
Conductivity	umhos/cm	638	894	1450	2320
Fluoride	mg/L	<0.10	<0.10	<0.50	<0.50
Hardness (as CaCO3)	mg/L	241	309	563	1140
Nitrate-N	mg/L	3.55	6.03	3.22	13.2
Nitrate and Nitrite as N	mg/L	3.55	6.21	3.22	13.2
Nitrite-N	mg/L	<0.050	0.177	<0.25	<0.25
Sulfate	mg/L	9.86	14.5	18	35.3
TDS (Calculated)	mg/L	415	581	944	1510
Aluminum (Al)-Total	mg/L	0.125	0.0622	0.0069	0.0044
Antimony (Sb)-Total	mg/L	<0.00020	0.00025	0.0003	<0.00020
Arsenic (As)-Total	mg/L	0.00815	0.00795	0.00364	0.00233
Barium (Ba)-Total	mg/L	0.0438	0.0768	0.156	0.287
Beryllium (Be)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Bismuth (Bi)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Boron (B)-Total	mg/L	0.015	0.025	0.023	0.012
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	<0.000010	0.000018
Calcium (Ca)-Total	mg/L	86.2	111	197	412
Cesium (Cs)-Total	mg/L	0.00021	0.00036	0.00032	0.00026
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.00010	<0.00010
Cobalt (Co)-Total	mg/L	0.00051	0.00047	0.00022	0.0004
Copper (Cu)-Total	mg/L	0.00159	0.00157	0.00192	0.00145
Iron (Fe)-Total	mg/L	0.34	0.25	0.262	0.242
Lead (Pb)-Total	mg/L	0.00314	0.000698	<0.000090	<0.000090
Lithium (Li)-Total	mg/L	0.0309	0.0445	0.0819	0.101
Magnesium (Mg)-Total	mg/L	6.3	7.95	17	27.7
Manganese (Mn)-Total	mg/L	0.0817	0.0562	0.0224	0.0518
Molybdenum (Mo)-Total	mg/L	0.00035	0.00073	0.00085	0.00052
Nickel (Ni)-Total	mg/L	0.0024	0.0025	0.00269	0.00373
Phosphorus (P)-Total	mg/L	<0.10	<0.10	<0.050	<0.050
Potassium (K)-Total	mg/L	4.43	6.46	12.2	15.3
Rubidium (Rb)-Total	mg/L	0.00518	0.00833	0.0116	0.0122
Selenium (Se)-Total	mg/L	<0.0010	<0.0010	<0.00010	<0.00010
Silicon (Si)-Total	mg/L	1.13	1.49	0.28	0.28
Silver (Ag)-Total	mg/L	<0.00010	<0.00010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	11.9	16.8	31.8	48.4
Strontium (Sr)-Total	mg/L	1.04	1.19	1.91	4.16
Tellurium (Te)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Thorium (Th)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Titanium (Ti)-Total	mg/L	0.00129	0.00314	<0.00050	<0.00050
Tungsten (W)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Uranium (U)-Total	mg/L	0.00015	0.00032	0.00081	0.00121
Vanadium (V)-Total	mg/L	0.0005	0.00042	<0.00020	<0.00020
Zinc (Zn)-Total	mg/L	0.0022	0.0032	0.0015	0.0022
Zirconium (Zr)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040
Turbidity	NTU	3.1	2.5	1.24	1.46
Sodium Adsorption Ratio		0.34	0.42	0.58	0.62
pH	pH units	7.91	7.74	8	7.9

Waterbody		Control lake		
Year		2014		
Date Sampled		01/06/2014	06/07/2014	05/08/2014
GPS Coordinates		535000.8-6986333	535000.8-6986333	535000.8-6986333
LAB		ALS	ALS	ALS
Field Measurments	Units			
Water Temperature	oC	3.9	17.3	18.7
pH	pH units	9.3	7.6	8.2
Conductivity	(µS/cm)	40	102	0.05
Laboratory-Measured				
Ion balance	%	Low EC	Low EC	Low EC
Biochemical Oxygen Demand	mg/L	<6.0	<6.0	<6.0
Ammonia as N	mg/L	<0.010	<0.010	<0.010
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	<0.000020
Phosphorus (P)-Total	mg/L	0.0076	0.0071	0.006
Phosphorus (P)-Total Reactive	mg/L	0.0018	<0.0010	0.0012
Total Kjeldahl Nitrogen	mg/L	0.22	0.32	0.28
Total Suspended Solids	mg/L	<5.0	<5.0	6
Alkalinity, Total (as CaCO3)	mg/L	14.9	22	24
Bicarbonate (HCO3)	mg/L	18.2	27	30
Carbonate (CO3)	mg/L	<0.60	<12	<12
Hydroxide (OH)	mg/L	<0.34	<6.8	<6.8
Calcium (Ca)-Dissolved	mg/L	5.02	8.22	8.47
Magnesium (Mg)-Dissolved	mg/L	0.605	0.852	0.964
Potassium (K)-Dissolved	mg/L	0.628	0.883	1.03
Sodium (Na)-Dissolved	mg/L	2.1	3.73	4.4
Chloride	mg/L	3.84	6.81	7.55
Conductivity	umhos/cm	45	70	76
Fluoride	mg/L	<0.10	<0.10	<0.10
Hardness (as CaCO3)	mg/L	15.2	22.2	24.7
Nitrate-N	mg/L	<0.050	<0.050	<0.050
Nitrate and Nitrite as N	mg/L	<0.071	<0.071	<0.071
Nitrite-N	mg/L	<0.050	<0.050	<0.050
Sulfate	mg/L	1.46	1.82	1.86
TDS (Calculated)	mg/L	30	46	49
Aluminum (Al)-Total	mg/L	0.0051	0.0055	0.0058
Antimony (Sb)-Total	mg/L	<0.00020	<0.00020	<0.00020
Arsenic (As)-Total	mg/L	0.00023	0.00039	0.00071
Barium (Ba)-Total	mg/L	0.00645	0.00696	0.00736
Beryllium (Be)-Total	mg/L	<0.00020	<0.00020	<0.00020
Bismuth (Bi)-Total	mg/L	<0.00020	<0.00020	<0.00020
Boron (B)-Total	mg/L	<0.010	<0.010	<0.010
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	mg/L	5.14	7.54	8.25
Cesium (Cs)-Total	mg/L	<0.00010	<0.00010	<0.00010
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	<0.00010
Cobalt (Co)-Total	mg/L	<0.00020	<0.00020	<0.00020
Copper (Cu)-Total	mg/L	0.00052	0.00079	0.00097
Iron (Fe)-Total	mg/L	<0.10	<0.10	0.076
Lead (Pb)-Total	mg/L	<0.000090	<0.000090	<0.000090
Lithium (Li)-Total	mg/L	<0.0020	<0.0020	<0.0020
Magnesium (Mg)-Total	mg/L	0.573	0.827	1
Manganese (Mn)-Total	mg/L	0.00951	0.00226	0.00889
Molybdenum (Mo)-Total	mg/L	<0.00020	<0.00020	<0.00020
Nickel (Ni)-Total	mg/L	<0.0020	<0.0020	0.00049
Phosphorus (P)-Total	mg/L	<0.10	<0.10	<0.050
Potassium (K)-Total	mg/L	0.622	0.792	1
Rubidium (Rb)-Total	mg/L	0.00061	0.00094	0.00123
Selenium (Se)-Total	mg/L	<0.0010	<0.0010	<0.00010
Silicon (Si)-Total	mg/L	0.14	<0.10	0.19
Silver (Ag)-Total	mg/L	<0.00010	<0.00010	<0.000010
Sodium (Na)-Total	mg/L	2.12	3.43	4.21
Strontium (Sr)-Total	mg/L	0.0174	0.026	0.027
Tellurium (Te)-Total	mg/L	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010	<0.00010
Thorium (Th)-Total	mg/L	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.00020	<0.00020	<0.00020
Titanium (Ti)-Total	mg/L	<0.00050	<0.00050	<0.00050
Tungsten (W)-Total	mg/L	<0.00010	<0.00010	<0.00010
Uranium (U)-Total	mg/L	<0.00010	<0.00010	<0.00010
Vanadium (V)-Total	mg/L	<0.00020	<0.00020	<0.00020
Zinc (Zn)-Total	mg/L	<0.0020	<0.0020	<0.0010
Zirconium (Zr)-Total	mg/L	<0.00040	<0.00040	<0.00040
Sodium Adsorption Ratio		0.24	0.32	0.37
Turbidity	NTU	0.52	0.52	0.5
pH	pH units	7.22	7.58	7.57

Waterbody		MEL-1			
Year		2014			
Date Sampled		02/06/2014	07/07/2014	04/08/2014	01/09/2014
GPS Coordinates		541934.2-6989173	541934.2-6989173	541934.2-6989173	541934.2-6989173
LAB		ALS LAB	ALS LAB	ALS LAB	ALS LAB
Field Measurments	Units				
Water Temperature	oC	4.8	11.4	14.7	
pH	pH units	8.5	8.2	8.3	
Conductivity	(µS/cm)	160	0.04	0.05	
Laboratory-Measured					
Fecal Coliforms	MPN/100mL	<3	<30	<3	<3
Total Coliforms	mg/L	23	<30	<3	93
E. Coli	mg/L	<3	<30	<3	<3
Total Oil and Grease	mg/L	<1.0	-	<2.0	<2.0
Ion balance	%	Low EC	Low EC	Low EC	Low EC
Biochemical Oxygen Demand	mg/L	<6.0	<6.0	<6.0	<6.0
Ammonia as N	mg/L	<0.010	<0.010	<0.010	<0.010
Mercury (Hg)-Total	mg/L	<0.000020	<0.000020	0.000174	<0.000020
Phosphorus (P)-Total	mg/L	0.0117	0.0062	0.0049	0.0084
Phosphorus (P)-Total Reactive	mg/L	0.0025	0.0015	<0.0010	0.0016
Total Kjeldahl Nitrogen	mg/L	0.43	<0.20	<0.20	<0.20
Total Suspended Solids	mg/L	<5.0	<5.0	<5.0	<5.0
Phosphorus (P)-Total	mg/L	0.0117	-	0.0049	0.0084
Alkalinity, Total (as CaCO3)	mg/L	10.6	15.9	16.1	19
Bicarbonate (HCO3)	mg/L	12.9	19.4	19.7	23.2
Carbonate (CO3)	mg/L	<0.60	<0.60	<0.60	<0.60
Hydroxide (OH)	mg/L	<0.34	<0.34	<0.34	<0.34
Calcium (Ca)-Dissolved	mg/L	5.7	6.66	6.28	6.63
Magnesium (Mg)-Dissolved	mg/L	0.883	1.03	1.02	1.16
Potassium (K)-Dissolved	mg/L	0.634	0.795	0.754	0.074
Sodium (Na)-Dissolved	mg/L	1.62	3.8	3.84	4.49
Chloride	mg/L	7.83	7.47	7.82	8.7
Conductivity	umhos/cm	55	65	69	76
Fluoride	mg/L	<0.10	<0.10	<0.10	<0.10
Hardness (as CaCO3)	mg/L	17.6	19.2	21.2	23
Nitrate-N	mg/L	<0.050	<0.050	<0.050	<0.050
Nitrate and Nitrite as N	mg/L	<0.071	<0.071	<0.071	<0.071
Nitrite-N	mg/L	<0.050	<0.050	<0.050	<0.050
Sulfate	mg/L	2.48	3.09	3.18	3.81
TDS (Calculated)	mg/L	47.5	33	40	<5.0
Aluminum (Al)-Total	mg/L	0.0166	0.0087	0.0091	0.0066
Antimony (Sb)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Arsenic (As)-Total	mg/L	0.00057	0.00035	0.00041	0.00053
Barium (Ba)-Total	mg/L	0.0072	0.00691	0.00683	0.0074
Beryllium (Be)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Bismuth (Bi)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Boron (B)-Total	mg/L	<0.010	<0.010	0.01	<0.010
Cadmium (Cd)-Total	mg/L	<0.000010	<0.000010	<0.000010	<0.000010
Calcium (Ca)-Total	mg/L	5.82	5.99	6.56	7.18
Cesium (Cs)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Chromium (Cr)-Total	mg/L	<0.0010	<0.0010	0.0001	<0.00010
Cobalt (Co)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Copper (Cu)-Total	mg/L	0.00116	0.00083	0.00113	0.00103
Iron (Fe)-Total	mg/L	<0.10	<0.10	0.035	0.045
Lead (Pb)-Total	mg/L	<0.000090	<0.000090	<0.000090	<0.000090
Lithium (Li)-Total	mg/L	<0.0020	<0.0020	<0.0020	<0.0020
Magnesium (Mg)-Total	mg/L	0.738	1.02	1.18	1.24
Manganese (Mn)-Total	mg/L	0.0122	0.00556	0.00532	0.0106
Molybdenum (Mo)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Nickel (Ni)-Total	mg/L	<0.0020	<0.0020	0.00057	0.00058
Phosphorus (P)-Total	mg/L	<0.10	<0.10	<0.050	<0.050
Potassium (K)-Total	mg/L	0.593	0.751	0.846	0.781
Rubidium (Rb)-Total	mg/L	0.0006	0.00121	0.00127	0.0013
Selenium (Se)-Total	mg/L	<0.0010	<0.0010	<0.00010	<0.00010
Silicon (Si)-Total	mg/L	0.19	0.21	0.24	0.21
Silver (Ag)-Total	mg/L	<0.00010	<0.00010	<0.000010	<0.000010
Sodium (Na)-Total	mg/L	1.41	3.83	4.46	4.44
Strontium (Sr)-Total	mg/L	0.0336	0.0319	0.0307	0.0377
Tellurium (Te)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Thallium (Tl)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Thorium (Th)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Tin (Sn)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Titanium (Ti)-Total	mg/L	0.00053	<0.00050	0.00102	<0.00050
Tungsten (W)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Uranium (U)-Total	mg/L	<0.00010	<0.00010	<0.00010	<0.00010
Vanadium (V)-Total	mg/L	<0.00020	<0.00020	<0.00020	<0.00020
Zinc (Zn)-Total	mg/L	<0.0020	<0.0020	0.0011	0.0011
Zirconium (Zr)-Total	mg/L	<0.00040	<0.00040	<0.00040	<0.00040
Oil & Grease	mg/L	<1.0	<2.0	<2.0	<2.0
Turbidity	NTU	0.76	0.35	0.76	0.5
pH	pH units	6.97	7.39	7.34	7.39

Sample location	Units	2BB Limit - Part D Item 17	MEL-5	
			N-treated	treated
Date Sampled			01/06/2014	10/06/2014
Localisation			Bladder Berm	Bladder Berm
LAB			ALS LAB	ALS LAB
Benzene	mg/L	0.37	<0.00050	<0.00050
Toluene	mg/L	0.002	0.0016	0.0014
Ethyl benzene	mg/L	0.09	0.00112	0.00123
Xylenes	mg/L	-	0.0082	0.00245
Lead (Pb)-Total	mg/L	0.001	0.000803	0.000488
Oil and Grease, Total	mg/L	15	<1.0	<1.0
Phenols (4AAP)	mg/L	0.02	0.0043	0.0104