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January 8, 2014 File: 121511151

Clayton Developments Limited 255 Lacewood Drive, Suite 100C Halifax, NS B3M 4G2

Attention: Mike Hanusiak, Sr. Vice President, General Manager

Dear Mr. Hanusiak:

Reference: Water Quality Monitoring Results for Russell Lake – November 2013 Sampling Event

To monitor the effects of development, water quality monitoring has been undertaken on a seasonal basis since April 2005 at four stations in Russell Lake (Figure 1 in Attachment). Monitoring is conducted four times each year with sampling events carried out once during the spring, twice during the summer, and once during the fall. Water samples are not collected during the winter. Sampling results have been provided in previous letter reports, with a summary of the sampling up to August 26, 2013 presented in the report dated September 30, 2013. The present report builds on the results to date while focusing on the most current (November 15, 2013) fall sampling event, with special attention provided to previous fall sampling events.

The weather during the sampling period on November 15, 2013 was partly cloudy with an air temperature of -10°C to 2°C. Approximately 1 cm of snow fell within 48 hours prior to the sampling event, with 1 cm of snow measured at the Halifax International Airport on November 13. Hourly mean wind speeds were up to 30 km/h and blew primarily from the southwest for 48 hours leading up to the date of sample collection. The mean hourly wind speeds were between 9 and 26 km/h on the sampling date, similar to the previous 48 hours.

Sampling was conducted between 11:30 and 13:50 on November 15, 2013. The following conditions were observed at the four Russell Lake monitoring stations (i.e., In-Lake, Outlet, South Inlet and North Inlet sampling stations):

- In Russell Lake, the water appeared clear to slightly greenish tea-stained. Approximately 15 seagulls were
 observed within the vicinity of the lake at the time of sampling.
- At the Outlet station of Russell Lake, the water appeared clear. The water level at the Outlet station
 appeared similar to other November events. In-stream vegetation was mostly decayed along the banks but
 still present.
- Water flowing in the South Inlet station appeared clear but slightly tea-stained. The South Inlet station contained a water level similar to previous November sampling events.
- The water appeared clear at the time of sample collection from the North Inlet station. The grating within the culvert at this station contained garbage. Water levels appeared similar to previous November sampling events.

Tables 1 to 6 below present statistical summaries of analytical results from April 2005 to November 2013 for key water quality parameters (total suspended solids (TSS), turbidity, pH, conductivity, sodium and chloride, total phosphorus (TP), Chlorophyll a (Chl a), and faecal coliforms) at each of the monitoring stations. The seasonal trends for some of the key water quality parameters are presented graphically in Figures 2 to 8 in the Attachment. Where applicable, the water quality data were compared to the Canadian Council for the Ministers of the Environment Guidelines for the Protection of Freshwater Aquatic Life (CCME FAL).

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Reference: Water Quality Monitoring Results for Russell Lake - November 2013 Sampling Event

Water Clarity

TSS concentrations (Figure 2 in Attachment and Table 1) were not detected and below the reportable detection limit of 1 mg/L at all stations except at the In-Lake station at 1.2 mg/L during the fall monitoring event. These results are consistent with low TSS concentrations for previous November sampling events.

Table 1 Russell Lake - TSS Statistics

Station	November 15, 2013 Results (mg/L)	Fall Season Min (mg/L)	Fall Season Max (mg/L)	Fall Season Median (mg/L)	Fall Season Mean (mg/L)
In-Lake	1.2	ND	4	1	2.0
Outlet	ND	ND	3	1.5	1.8
South Inlet	ND	ND	5	1.5	1.8
North Inlet	ND	ND	3	1	1.7

ND = <1 mg/L TSS

Turbidity levels at all stations were within the range of historical measurements. The South Inlet had a turbidity concentration of 2.2 NTU, which was within the historical range but higher than the median value (1.5 NTU) for fall results (Table 2).

Table 2 Russell Lake - Turbidity Statistics

Station	November 15, 2013 Results (NTU)	Fall Season Min (NTU)	Fall Season Max (NTU)	Fall Season Median (NTU)	Fall Season Mean (NTU)	
In-Lake	0.7	0.7	3.6	1.3	1.8	
Outlet	0.5	0.3	2.8	1.2	1.4	
South Inlet	2.2	0.7	5.5	1.5	2.3	
North Inlet	0.8	0.6	10.0	1.3	2.6	

рΗ

Measurements of pH collected since April 2005 (Figure 3 in Attachment and Table 3) indicate that the water of Russell Lake and its tributaries are historically slightly basic with a median value of 7.3. The pH readings in November 2013 were slightly basic and ranged from 7.2 at the South Inlet station to 7.8 at the In-Lake station. These pH results are consistent with results from previous fall sampling events and are within the CCME FAL guideline for pH of 6.5 to 9.0.

Table 3 Russell Lake - pH Statistics

Station	November 15, 2013 Results (Units)	Fall Season Min (Units)	Fall Season Max (Units)	Fall Season Median (Units)	Fall Season Mean (Units)	
In-Lake	7.8	5.7	8.0	7.2	7.1	
Outlet	7.5	6.8	8.2	7.4	7.5	
South Inlet	7.2*	5.7	7.6	7.3	7.1	
North Inlet	7.4	7.0	8.1	7.3	7.4	

^{*}Laboratory result substituted due to YSI operation error.

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Reference: Water Quality Monitoring Results for Russell Lake - November 2013 Sampling Event

Salt Concentrations

As is typical of urban lakes in watersheds subject to development, Russell Lake has relatively higher salt concentrations than would be expected for a similar lake in a less developed watershed. Conductivity increases with salt concentrations and elevated levels are typically exhibited during spring melt conditions which decrease during the summer monitoring periods. Concentrations tend to be higher at the North Inlet station, where the road network and associated drainage is concentrated, and lower at the South Inlet station, which is less developed.

As shown in Table 4 and on Figure 4 (Attachment), the November 2013 conductivity measurements at the four stations were within the range observed since March 2005. The November 2013 conductivity measurements were all similar to the fall mean and median values with the South Inlet station slightly elevated and the North Inlet slightly lower than typical.

Table 4 Russell Lake - Conductivity Statistics

Station	November 15, 2013 Results (μS/cm)	Fall Season Min (µS/cm)	Fall Season Max (µS/cm)	Fall Season Median (µS/cm)	Fall Season Mean (µS/cm)
In-Lake	460	310	700	435	470
Outlet	460	300	700	435	468
South Inlet	200	120	210	170	163
North Inlet	590	430	1000	780	760

Sodium and chloride are indicators of road salt concentrations in urban lakes and are discussed in that context below. Given that CCME FAL recommends a chloride concentration of less than 120 mg/L for the long-term health of aquatic organisms (guideline of 640 mg/L for short-term exposure), the discussion of salt concentrations below will revolve predominantly around chloride with a brief description of sodium concentrations within Russell Lake.

Sodium (Na) concentrations in November 2013 at the In-Lake, Outlet, South Inlet and North Inlet sampling stations (67 mg/L, 79 mg/L, 20 mg/L and 79 mg/L, respectively) were within their respective ranges observed over the duration of monitoring during previous fall events with the North Inlet concentration slightly lower from its mean and median values.

Chloride ion concentrations at the In-Lake, Outlet, South Inlet, and North Inlet stations (120 mg/L, 130 mg/L, 32 mg/L and 150 mg/L, respectively) were within the range observed over the duration of monitoring (refer to Table 5 below and Figure 5 in Attachment). The In-Lake, Outlet and North Inlet stations on the long term have generally exceeded the CCME FAL long-term guideline concentration of 120 mg/L for chloride. The November 2013 South Inlet sample concentration was below the CCME long-term guideline which is typical historically.

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Reference: Water Quality Monitoring Results for Russell Lake - November 2013 Sampling Event

Table 5 Russell Lake - Chloride Statistics

Station	November 15, 2013 Results (mg/L)	Fall Season Min (mg/L)	Fall Season Max (mg/L)	Fall Season Median (mg/L)	Fall Season Mean (mg/L)	
In-Lake	120	72	190	107	118	
Outlet	130	72	190	107	118	
South Inlet	32	20	38	32	29	
North Inlet	150	87	250	190	167	

Nutrient Enrichment

The Chlorophyll a (Chl a) concentration of 1.21 μ g/L (based on the acidification technique) at the In-Lake site for November 2013 was the lowest fall value observed since measurements began in 2005 (Table 6 below and Figure 6 in Attachment). The fall season results for the In-Lake station from previous sampling years ranged from 1.48 μ g/L in 2008 to 18.67 μ g/L in 2011. The Outlet sample (1.14 μ g/L) was within the range of previous fall samples, which ranged from a low of 1.04 μ g/L in 2008 to a high of 17.70 μ g/L in 2005.

Total phosphorus (TP) concentrations at the In-Lake station have fluctuated over the fall sampling events, ranging from a low of 2 μ g/L in 2010 to a high of 25 μ g/L in 2005 (Figure 7 in Attachment and Table 7). The TP concentration in November 2013 was 5 μ g/L (Table 7), which is below the HRM threshold value of 15 μ g/L for Russell Lake. It should be noted that the HRM threshold value is intended for comparison to sample results at the In-Lake station only. The TP measured at the In-Lake station is primarily comprised of dissolved phosphorus and not associated with particulate matter, as indicated by the measured dissolved phosphorus concentration of 10 μ g/L in the water sample (refer to Table 8 in the Attachment) The Outlet station TP concentration historically fluctuated similarly to the In-Lake station, with a range from 6 μ g/L in 2009 to 27 μ g/L in 2005. The November 2013 TP concentration of the Outlet station was below the lab detection limit of 2 μ g/L and the lowest fall level observed since 2005 (Figure 7) and well below the fall median and mean concentrations (Table 7).

Table 6 Russell Lake - Chl a Statistics

Station	November 15, 2013 Results (μg/L)	Fall Season Min (µg/L)	Fall Season Max (μg/L)	Fall Season Median (µg/L)	Fall Season Mean (µg/L)
In-Lake	1.21	1.48	18.67	6.68	7.71
Outlet	1.14	1.04	17.70	4.94	7.02
South Inlet	0.12	0.13	1.08	0.24	0.37
North Inlet	0.14	0.17	6.60	1.44	1.88

The ChI a concentration for the November 2013 sampling event at the South Inlet station was 0.12 μ g/L (Table 6). This result is slightly below the range of previous fall season values, which were between 0.13 μ g/L (in 2010) and 1.08 μ g/L (in 2006). The TP concentration at the South Inlet station in November 2013 measured 15 μ g/L (Table 7), which is approximately 40 % lower than the previous minimum value recorded since 2005. Prior TP concentrations ranged from 26 μ g/L in 2010 to 110 μ g/L in 2006. As for the In-Lake TP, the South Inlet TP concentration in November 2013 is also mostly comprised of dissolved phosphorus in the water sample; the dissolved phosphorus concentration measured 11 μ g/L (refer to Table 10 in the Attachment).

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The ChI a concentration for the November 2013 sampling event at the North Inlet station was 0.14 μ g/L (Table 6 above). This result falls slightly below the range of all previous fall season values, which were between 0.17 μ g/L (in 2008) and 6.60 μ g/L (in 2007). As indicated in Table 7 (below), the TP concentration at the North Inlet station in November 2013 measured 3 μ g/L and is also below its respective range of fall values ever measured for TP concentrations (6 μ g/L in 2010 to 27 μ g/L in 2011). As for the other stations, the TP at the North Inlet station is also mostly comprised of dissolved phosphorus in the water, which was measured at a concentration of 3 μ g/L and the same concentration as that for TP (refer to Table 11 in the Attachment).

Table 7 Russell Lake - TP Statistics

Station	November 15, 2013 Results (μg/L)	Fall Season Min (µg/L)	Fall Season Max (μg/L)	Fall Season Median (µg/L)	Fall Season Mean (µg/L)
In-Lake	5	2	25	11	11
Outlet	<2	6	27	10	12
South Inlet	15	26	110	44	54
North Inlet	3	6	27	9.5	12

Bacterial Contamination

Bacterial contamination in Russell Lake is measured by sampling and testing for the presence of fecal coliforms in the water. In addition to fecal coliform analysis conducted by the lab, analysis of *Escherichia coli* (*E. coli*) has also been carried out for sampling events beginning in 2010. *E coli* are a type of fecal coliform that may be considered a more specific indicator for bacteria typically found in the intestines of warm-blooded animals. An elevated *E. coli* concentration is a stronger indication of recent sewage or animal waste contamination, whereas some fecal bacteria may originate from non-fecal sources. *E. coli* counts were 10 CFU/100 mL for the In-Lake station and 10 CFU/100ml at the Outlet, 10 CFU/100ml at the South Inlet and 20 CFU/100ml at the North Inlet stations. The concentration of fecal coliforms measured at the In-Lake station was 5 CFU/100 mL, 11 CFU/100ml at the Outlet, 5 CFU/100ml at the South Inlet and 15 CFU/100ml at the North Inlet stations. These values are similar to the median values when compared to station-specific results from past years (refer to Figure 8 in Attachment).

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Reference: Water Quality Monitoring Results for Russell Lake - November 2013 Sampling Event

Conclusion

The November 2013 conductivity, sodium (Na) and chloride (CI) concentrations were within the range of results from previous sampling events for all stations, though they were slightly above their respective median values of fall samples collected from 2005 to 2013 in all but the North Inlet station.

The concentration of total phosphorus (TP) for the In-Lake station was 5 μ g /L for the November 2013 sampling event, which is well below the HRM threshold value of 15 μ g/L. The Outlet station TP concentration was below the lab detection limit of 2 μ g/L, which is the lowest historical TP concentration at this station. The fall TP results for the two inlet stations were also the lowest fall TP concentrations recorded since 2005 and well below the historical ranges. It should be noted that the TP measured in all the November 2013 samples for all stations were mostly comprised of dissolved phosphorus in the water (as indicated by the measured concentration for dissolved phosphorus) and not from particulate matter, which is also supported by the relatively low or non-detectable concentrations for TSS. The chlorophyll a (Chl a) concentration at the Outlet station (1.14 μ g/L) was within the historical range of Chl a concentration for this station. The In-Lake, South Inlet and North Inlet Chl a concentrations were all slightly below their historical ranges observed for the fall season (refer to Tables 8 and 9 in the Attachment).

As compared to fall sampling events from 2005 to 2013, TSS, turbidity and fecal coliform results were within the historical ranges for previous fall sampling events. TSS, turbidity, and fecal coliform results were typically below the seasonal median values.

The pH values from November 2013 at the In-Lake, Outlet, South Inlet, and North Inlet stations were within their historic fall ranges and were well within the CCME FAL guideline for pH of 6.5 to 9.0.

Sincerely,

STANTEC CONSULTING LTD.

ORIGINAL SIGNED BY

Michael McLean Aquatic Scientist Tel: (902) 468-7777 michael.mclean@stantec.com

cc: Cameron Deacoff, Halifax Regional Municipality

Attachment: Figures 1-8 and Tables 8-11

ORIGINAL SIGNED BY

Amber Fox, MREM Project Manager Tel: (902) 468-7777 amber.fox@stantec.com



Your P.O. #: 16400NR Your Project #: 121511151 Your C.O.C. #: 443233-01-01

Attention: Amber Fox Stantec Consulting Ltd 40 Highfield Park Drive Suite 102 Dartmouth, NS B3A 0A3

Report Date: 2013/11/27

CERTIFICATE OF ANALYSIS

MAXXAM JOB #: B3J7647 Received: 2013/11/15, 15:08

Sample Matrix: Water # Samples Received: 5

		Date	Date	Method
Analyses	Quantity	Extracted	Analyzed Laboratory Method	Reference
Carbonate, Bicarbonate and Hydroxide	5	N/A	2013/11/25 CAM SOP-00102	APHA 4500-CO2 D
Alkalinity	5	N/A	2013/11/22 ATL SOP 00013	Based on EPA310.2
Chloride	5	N/A	2013/11/25 ATL SOP 00014	Based on SM4500-CI-
TC/EC Non Drinking Water CFU/100mL	5	N/A	2013/11/15 ATL SOP 00096	Based MOE3407, SM
Colour	5	N/A	2013/11/25 ATL SOP 00020	Based on SM2120C
Conductance - water	5	N/A	2013/11/25 ATL SOP-00004	Based on SM2510B
Fecal coliform in water (CFU/100 mL)	5	N/A	2013/11/15 ATL SOP-00071	Based SM9222D
Hardness (calculated as CaCO3)	5	N/A	2013/11/22 ATL SOP 00048	Based on SM2340B
Metals Water Total MS (3)	5	2013/11/20	2013/11/21 ATL SOP 00058	Based on EPA6020A
Ion Balance (% Difference)	5	N/A	2013/11/26	
Anion and Cation Sum	5	N/A	2013/11/25	
Nitrogen Ammonia - water	5	N/A	2013/11/21 ATL SOP 00015	Based on USEPA 350.1
Nitrogen - Nitrate + Nitrite	5	N/A	2013/11/26 ATL SOP 00016	Based on USGS - Enz.
pH (4)	5	N/A	2013/11/25 ATL SOP 00003	Based on SM4500H+B
Phosphorus - ortho	5	N/A	2013/11/25 ATL SOP 00021	Based on USEPA 365.2
Sat. pH and Langelier Index (@ 20C)	5	N/A	2013/11/26 ATL SOP-00049	
Sat. pH and Langelier Index (@ 4C)	5	N/A	2013/11/26 ATL SOP-00049	
Reactive Silica	3	N/A	2013/11/22 ATL SOP 00022	Based on EPA 366.0
Reactive Silica	2	N/A	2013/11/23 ATL SOP 00022	Based on EPA 366.0
Sulphate	5	N/A	2013/11/26 ATL SOP 00023	Based on EPA 375.4
Chlorophyll A (Sub from Bedford) (1)	5	2013/11/18	2013/11/21	
Total Dissolved Solids (TDS calc)	5	N/A	2013/11/26	
Organic carbon - Total (TOC) (5)	2	N/A	2013/11/21 ATL SOP 00037	Based on SM5310C
Organic carbon - Total (TOC) (5)	3	N/A	2013/11/26 ATL SOP 00037	Based on SM5310C
Dissolved Phosphorus (2)	5	2013/11/25	2013/11/25 CAM SOP-00407	APHA 4500 P,B,F
Total Phosphorus (Colourimetric) (2)	3	2013/11/20	2013/11/21 CAM SOP-00407	APHA 4500 P,B,F
Total Phosphorus (Colourimetric) (2)	2	2013/11/22	2013/11/23 CAM SOP-00407	APHA 4500 P,B,F
Total Suspended Solids	5	N/A	2013/11/19 ATL SOP 00007	based on EPA 160.2
Turbidity	5	N/A	2013/11/25 ATL SOP 00011	based on EPA 180.1

Remarks:

Reporting results to two significant figures at the RDL is to permit statistical evaluation and is not intended to be an indication of analytical precision.

- * RPDs calculated using raw data. The rounding of final results may result in the apparent difference.
- * Results relate only to the items tested.
- (1) This test was performed by Dalhousie Department of Oceano

- (2) This test was performed by Maxxam Analytics Mississauga
- (3) New RDLs in effect due to release of NS Contaminated Sites Regulations. Reduced RDL based on MDL study performance. Low level analytical run checks being implemented.
- (4) The APHA Standard Method require pH to be analyzed within 15 minutes of sampling and therefore field analysis is required for compliance. All Laboratory pH analyses in this report are reported past the APHA Standard Method holding time.
- (5) TOC / DOC present in the sample should be considered as non-purgeable TOC / DOC.

Encryption Key Original , Avery Withrow

Signed 27 Nov 2013 10:54:01 -04:00

Please direct all questions regarding this Certificate of Analysis to your Project Manager.

Marie Muise, Project Manager Email: MMuise@maxxam.ca Phone# (902) 420-0203 Ext:253

Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

Total cover pages: 1



Stantec Consulting Ltd Client Project #: 121511151

Your P.O. #: 16400NR Sampler Initials: AF

RESULTS OF ANALYSES OF WATER

Maxxam ID		TX4348	TX4349		TX4350	TX4351		TX4352	TX4352		
Sampling Date		2013/11/15	2013/11/15		2013/11/15	2013/11/15		2013/11/15	2013/11/15		
		13:50	13:23		12:07	11:30		13:50	13:50		
	Units	NORTH INLET	OUTLET	QC Batch	IN-LAKE STATION	SOUTH INLET	QC Batch	DUP	DUP Lab-Dup	RDL	QC Batch
Calculated Parameters											
Anion Sum	me/L	5.96	4.51	3424649	4.45	1.92	3424649	5.89		N/A	3424649
Bicarb. Alkalinity (calc. as CaCO3)	mg/L	70	36	3424645	36	36	3424645	70		1.0	3424645
Calculated TDS	mg/L	330	250	3424652	250	110	3424652	330		1.0	3424652
Carb. Alkalinity (calc. as CaCO3)	mg/L	ND	ND	3424645	ND	ND	3424645	ND		1.0	3424645
Cation Sum	me/L	5.45	3.98	3424649	4.00	1.86	3424649	5.27		N/A	3424649
Hardness (CaCO3)	mg/L	98	52	3424647	51	46	3424647	95		1.0	3424647
Ion Balance (% Difference)	%	4.47	6.24	3424648	5.33	1.59	3424648	5.56		N/A	3424648
Langelier Index (@ 20C)	N/A	-0.356	-1.16	3424650	-1.19	-1.39	3424650	-0.429			3424650
Langelier Index (@ 4C)	N/A	-0.605	-1.41	3424651	-1.44	-1.64	3424651	-0.678			3424651
Saturation pH (@ 20C)	N/A	8.07	8.61	3424650	8.61	8.63	3424650	8.08			3424650
Saturation pH (@ 4C)	N/A	8.32	8.86	3424651	8.86	8.88	3424651	8.33			3424651
Inorganics											
Total Alkalinity (Total as CaCO3)	mg/L	70	36	3432458	36	36	3432458	70		5.0	3432458
Dissolved Chloride (CI)	mg/L	150	130	3432464	120	32	3432464	150		1.0	3432464
Colour	TCU	20	15	3432475	13	38	3432475	21		5.0	3432475
Nitrate + Nitrite	mg/L	0.38	ND	3432481	ND	0.11	3432481	0.37		0.050	3432481
Nitrogen (Ammonia Nitrogen)	mg/L	0.097	0.070	3430806	0.054	ND	3430806	ND		0.050	3430807
Total Organic Carbon (C)	mg/L	4.2	3.9	3431049	3.8	6.6	3435791	4.2		0.50	3435791
Orthophosphate (P)	mg/L	ND	ND	3432478	ND	ND	3432478	ND		0.010	3432478
pH	pН	7.71	7.45	3434246	7.42	7.24	3434246	7.65		N/A	3434252
Dissolved Phosphorus	mg/L	0.003	0.005	3434318	0.010	0.011	3434318	ND	0.002	0.002	3434318
Total Phosphorus	mg/L	0.003	ND	3432873	0.005	0.015	3429330	0.002		0.002	3429330
Reactive Silica (SiO2)	mg/L	4.5	3.3	3432469	3.4	5.7	3432469	4.6		0.50	3432469
Total Suspended Solids	mg/L	ND	ND	3427192	1.2	ND	3427192	ND		1.0	3427192
Dissolved Sulphate (SO4)	mg/L	18	11	3432466	12	13	3432466	17		2.0	3432466
Turbidity	NTU	0.75	0.53	3434450	0.74	2.2	3434450	0.86		0.10	3434450
Conductivity	uS/cm	590	460	3434251	460	200	3434251	590		1.0	3434256
Subcontracted Analysis											
Subcontract Parameter	N/A	ATTACHED	ATTACHED	3426850	ATTACHED	ATTACHED	3426850	ATTACHED		N/A	3426850

N/A = Not Applicable

ND = Not detected

RDL = Reportable Detection Limit QC Batch = Quality Control Batch



Stantec Consulting Ltd Client Project #: 121511151

Your P.O. #: 16400NR Sampler Initials: AF

ELEMENTS BY ICP/MS (WATER)

Maxxam ID		TX4348	TX4349	TX4350	TX4351	TX4352		
Sampling Date		2013/11/15	2013/11/15	2013/11/15	2013/11/15	2013/11/15		
		13:50	13:23	12:07	11:30	13:50		
	Units	NORTH INLET	OUTLET	IN-LAKE	SOUTH INLET	DUP	RDL	QC Batch
				STATION				
Metals								
Total Calcium (Ca)	ug/L	33000	17000	17000	15000	32000	100	3429135
Total Copper (Cu)	ug/L	3.0	ND	3.0	ND	2.8	2.0	3429135
Total Iron (Fe)	ug/L	270	72	72	290	260	50	3429135
Total Magnesium (Mg)	ug/L	3900	2000	2000	2400	3800	100	3429135
Total Manganese (Mn)	ug/L	150	51	40	130	140	2.0	3429135
Total Potassium (K)	ug/L	2100	1900	1900	1700	2100	100	3429135
Total Sodium (Na)	ug/L	79000	67000	67000	20000	76000	100	3429135
Total Zinc (Zn)	ug/L	6.4	ND	ND	ND	21	5.0	3429135

MICROBIOLOGY (WATER)

Maxxam ID		TX4348	TX4349	TX4350	TX4351	TX4352		
Sampling Date		2013/11/15	2013/11/15	2013/11/15	2013/11/15	2013/11/15		
		13:50	13:23	12:07	11:30	13:50		
	Units	NORTH INLET	OUTLET	IN-LAKE	SOUTH INLET	DUP	RDL	QC Batch
				STATION				
Microbiological								
Escherichia coli	CFU/100mL	20	10	10	10	20	10	3424685
Fecal coliform	CFU/100mL	15	11	5.0	5.0	19	1.0	3424683
Total Coliforms	CFU/100mL	880	890	450	830	900	10	3424685



Stantec Consulting Ltd Client Project #: 121511151

Your P.O. #: 16400NR Sampler Initials: AF

Package 1 7.7°C

Each temperature is the average of up to three cooler temperatures taken at receipt

GENERAL COMMENTS

Sample TX4349-01: Poor RCAp Ion Balance due to sample matrix.

Sample TX4350-01: Poor RCAp Ion Balance due to sample matrix.

Sample TX4352-01: Poor RCAp Ion Balance due to sample matrix.



Stantec Consulting Ltd Client Project #: 121511151

Your P.O. #: 16400NR Sampler Initials: AF

QUALITY ASSURANCE REPORT

			Matrix S	Spike	Spiked	Blank	Method B	lank	RPD		QC Star	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3424683	Fecal coliform	2013/11/15					ND, RDL=1.0	CFU/100mL				
3424685	Escherichia coli	2013/11/15					ND, RDL=1.0	CFU/100mL				
3424685	Total Coliforms	2013/11/15					ND, RDL=1.0	CFU/100mL				
3427192	Total Suspended Solids	2013/11/19					ND, RDL=1.0	mg/L	18.2	25	97	80 - 120
3429135	Total Calcium (Ca)	2013/11/21	98	80 - 120	98	80 - 120	ND, RDL=100	ug/L	3.5	20		
3429135	Total Copper (Cu)	2013/11/21	NC	80 - 120	97	80 - 120	ND, RDL=2.0	ug/L	1.2	20		
3429135	Total Iron (Fe)	2013/11/21	104	80 - 120	104	80 - 120	ND, RDL=50	ug/L	NC	20		
3429135	Total Magnesium (Mg)	2013/11/21	103	80 - 120	105	80 - 120	ND, RDL=100	ug/L	0.4	20		
3429135	Total Manganese (Mn)	2013/11/21	99	80 - 120	99	80 - 120	ND, RDL=2.0	ug/L	NC	20		
3429135	Total Potassium (K)	2013/11/21	102	80 - 120	103	80 - 120	ND, RDL=100	ug/L	2.7	20		
3429135	Total Sodium (Na)	2013/11/21	NC	80 - 120	99	80 - 120	ND, RDL=100	ug/L	1.2	20		
3429135	Total Zinc (Zn)	2013/11/21	97	80 - 120	98	80 - 120	ND, RDL=5.0	ug/L	NC	20		
3429330	Total Phosphorus	2013/11/21	NC	80 - 120	99	80 - 120	0.002, RDL=0.002	mg/L	1	20	101	80 - 120
3430806	Nitrogen (Ammonia Nitrogen)	2013/11/21	104	80 - 120	99	80 - 120	ND, RDL=0.050	mg/L	NC	25		
3430807	Nitrogen (Ammonia Nitrogen)	2013/11/22	100	80 - 120	100	80 - 120	ND, RDL=0.050	mg/L	NC	25		
3431049	Total Organic Carbon (C)	2013/11/21	NC	80 - 120	97	80 - 120	ND, RDL=0.50	mg/L	5.0	25		
3432458	Total Alkalinity (Total as CaCO3)	2013/11/22	104	80 - 120	107	80 - 120	ND, RDL=5.0	mg/L	NC	25		
3432464	Dissolved Chloride (CI)	2013/11/25	95	80 - 120	102	80 - 120	ND, RDL=1.0	mg/L	4.3	25	109	80 - 120
3432466	Dissolved Sulphate (SO4)	2013/11/26	95	80 - 120	107	80 - 120	ND, RDL=2.0	mg/L	NC	25		
3432469	Reactive Silica (SiO2)	2013/11/22	100	80 - 120	101	80 - 120	ND, RDL=0.50	mg/L	NC	25		
3432475	Colour	2013/11/25					ND, RDL=5.0	TCU	NC	25	105	80 - 120
3432478	Orthophosphate (P)	2013/11/25	NC	80 - 120	97	80 - 120	ND, RDL=0.010	mg/L	1.7	25		
3432481	Nitrate + Nitrite	2013/11/26	92	80 - 120	100	80 - 120	ND, RDL=0.050	mg/L	NC	25		
3432873	Total Phosphorus	2013/11/23	NC	80 - 120	98	80 - 120	ND, RDL=0.002	mg/L	1.3	20	103	80 - 120
3434246	рН	2013/11/25							1.1	25	100	80 - 120
3434251	Conductivity	2013/11/25			98	80 - 120	1.2, RDL=1.0	uS/cm	0.2	25		
3434252	pН	2013/11/25							0.6	25	100	80 - 120
3434256	Conductivity	2013/11/25			97	80 - 120	1.5, RDL=1.0	uS/cm	0.5	25		
3434318	Dissolved Phosphorus	2013/11/25	99	80 - 120	101	80 - 120	0.002, RDL=0.002	mg/L	NC	20	104	80 - 120



Stantec Consulting Ltd Client Project #: 121511151

Your P.O. #: 16400NR Sampler Initials: AF

QUALITY ASSURANCE REPORT

			Matrix S	Spike	Spiked l	Blank	Method Bla	ank	RP	D	QC Star	ndard
QC Batch	Parameter	Date	% Recovery	QC Limits	% Recovery	QC Limits	Value	Units	Value (%)	QC Limits	% Recovery	QC Limits
3434450	Turbidity	2013/11/25					ND, RDL=0.10	NTU	NC	25	96	80 - 120
3435791	Total Organic Carbon (C)	2013/11/26	NC	80 - 120	88	80 - 120	ND, RDL=0.50	mg/L	9.2(1)	25		

N/A = Not Applicable

RDL = Reportable Detection Limit

RPD = Relative Percent Difference

Duplicate: Paired analysis of a separate portion of the same sample. Used to evaluate the variance in the measurement.

Matrix Spike: A sample to which a known amount of the analyte of interest has been added. Used to evaluate sample matrix interference.

QC Standard: A sample of known concentration prepared by an external agency under stringent conditions. Used as an independent check of method accuracy.

Spiked Blank: A blank matrix sample to which a known amount of the analyte, usually from a second source, has been added. Used to evaluate method accuracy.

Method Blank: A blank matrix containing all reagents used in the analytical procedure. Used to identify laboratory contamination.

NC (Matrix Spike): The recovery in the matrix spike was not calculated. The relative difference between the concentration in the parent sample and the spiked amount was not sufficiently significant to permit a reliable recovery calculation.

NC (RPD): The RPD was not calculated. The level of analyte detected in the parent sample and its duplicate was not sufficiently significant to permit a reliable calculation.

(1) - Elevated reporting limit due to sample matrix.



Validation Signature Page

Maxxam Job #: B3J7647
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).
Original Signed
Collecti Acker, Supervisor, General Chemistry
Original Signed
Cristina Carriere, Scientific Services
Original Signed
Evic Bearman, Scientific Specialist
Original Signed
Mike MacGillivray, Scientific Specialist (Inorganics)



Validation Signature Page

Maxxam Job #: B3J7647
The analytical data and all QC contained in this report were reviewed and validated by the following individual(s).
Original Signed
Robyn Edwards, Bedford Micro Supervisor
Maxxam has procedures in place to guard against improper use of the electronic signature and have the required "signatories", as per section 5.10.2 of

ISO/IEC 17025:2005(E), signing the reports. For Service Group specific validation please refer to the Validation Signature Page.

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F	Maxxam Analytics In	nternational Corporation o	/a Maxxam	Analytics 200 l	Bluewater l	Rd, Sui	te 105, l	Bedford,	Nova S	Scotia C	anada	B4B 1G	9 Tel:90	2-420-0203 To	ll-free:8	00-565-	7227 Fax: 902-420-8612 w	ww.maxxamanalytics.com 🗕

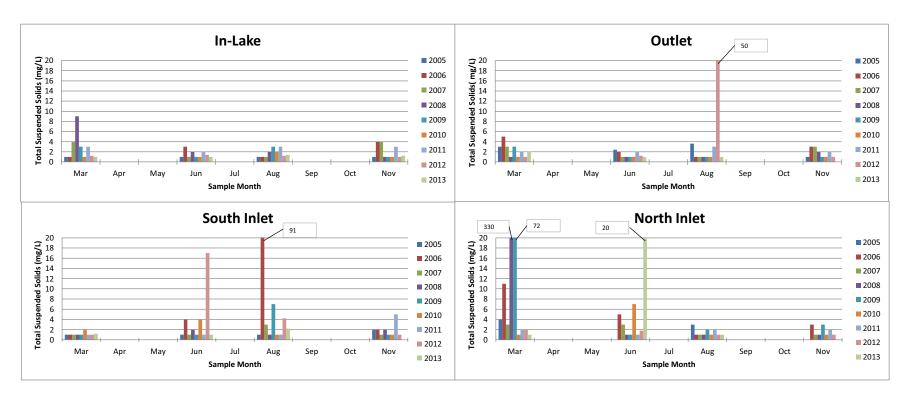


Figure 2. Total Suspended Solids at four sites in Russell Lake from April 2005 to November 2013

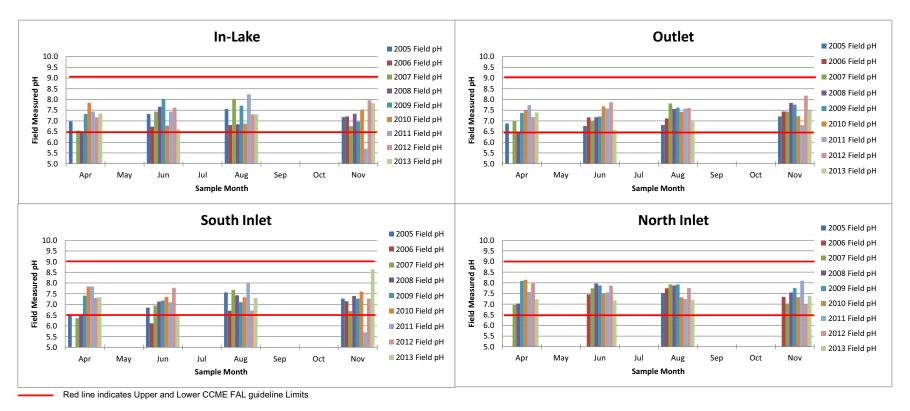


Figure 3. pH at four sites in Russell Lake from April 2005 to November 2013

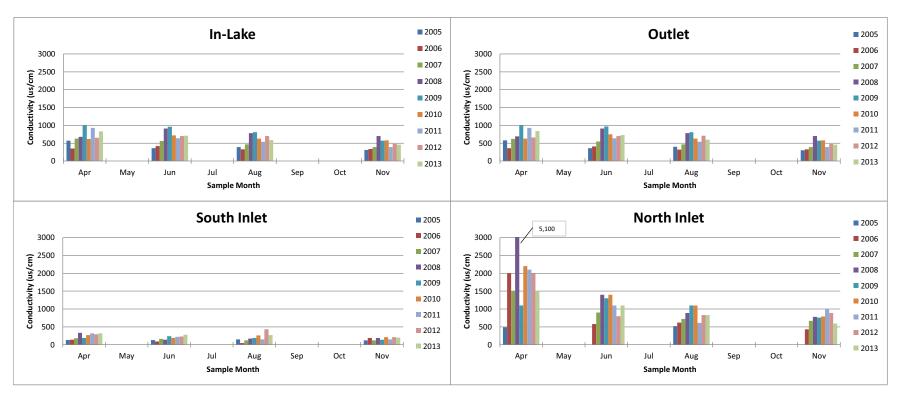


Figure 4. Conductivity at four sites in Russell Lake from April 2005 to November 2013

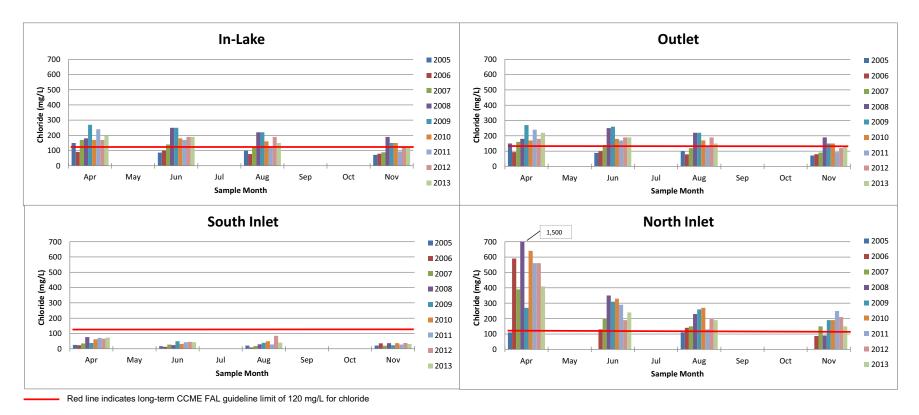


Figure 5. Chloride concentrations at four sites in Russell Lake from April 2005 to November 2013

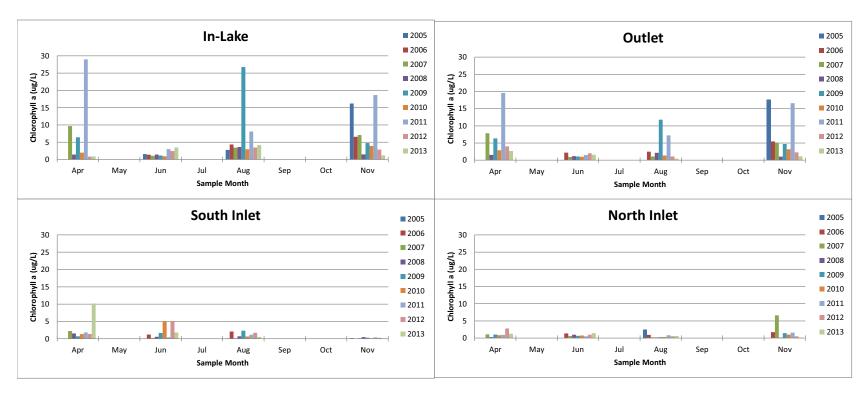


Figure 6. Chlorophyll a concentrations at four sites in Russell Lake from April 2005 to November 2013

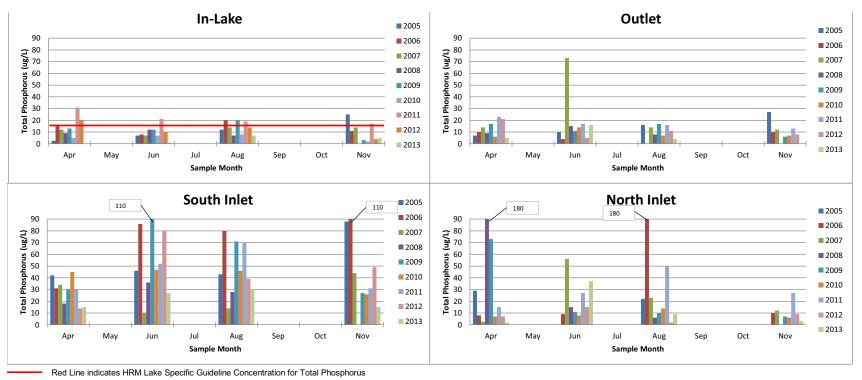


Figure 7. Total Phosphorous concentrations at four sites in Russell Lake from April 2005 to November 2013

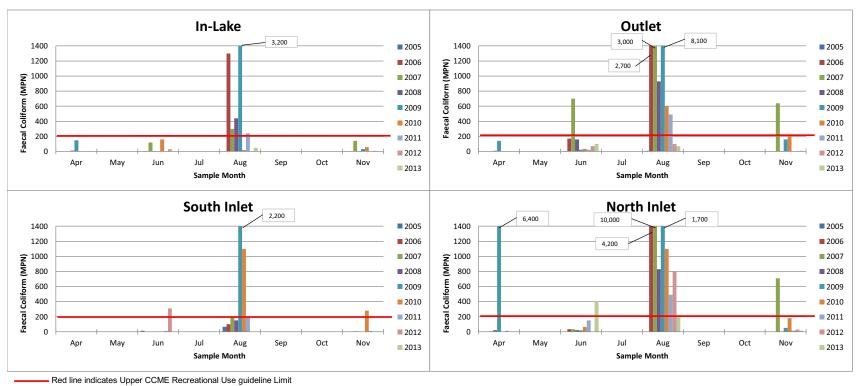


Figure 8. Fecal Coliform at four sites in Russell Lake from April 2005 to November 2013

TABLE 8	Surface Water	Quality	Data fo	Russell	Lake, I	n-Lake ((2005-2013	i

																					In-Lak	e																
Analyte	Units	CCME FWAL			2005			2	006			- 2	007			- 2	008			20	09			20	010			20	111			2	012			201	13	
			Apr	Jun	Aug	Nov	Mar	Jun	Aug	Oct	Apr	Jun	Aug	Oct	Mar	Jun	Aug	Oct	Apr	Jun	Aug	Oct	Mar	Jun	Aug	Nov	Mar	Jun	Aug	Nov	Apr	Jun	Aug	Nov	Apr	June	Aug	Fall
General Chemistry																																						
Total Alkalinity (asCaCO ₃)	mg/L		20	17	21	17	15	20	25	26	22	29	27	30	19	22	28	34	27	30	36	35	30	35	36	36	32	31	33	35	27	33	35	36	32	34	37	36
Chloride	mg/L		150	87	99	72	91	100	77	79	170	140	120	89	180	250	220	190	270	250	220	150	170	180	160	150	240	170	130	94	170	190	190	120	200	190	150	120
Colour	TCU		12	12	8	18	12	14	13	11	9	9	8	12	10	11	15	9	16	9	14	20	14	8	10	15	14	19	22	21	10	7.9	6.2	15	11	14	9.6	13
Hardness (as CaCO ₃)	mg/L		48	34	40	37		43	39	42	59	53	52	46	52	62	64	56	70	65	66	52	54	69	65	58	69	60	53	47	56	63	62	52	66	63	59	51
Nitrate + Nitrite (as N)	mg/L		< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	0.15	< 0.05	< 0.05	< 0.05	0.2	< 0.05	< 0.05	< 0.05	0.11	<0.05	< 0.05	< 0.05	0.08	< 0.05	< 0.05	< 0.05	0.095	< 0.05	< 0.05	< 0.05	0.14	< 0.05	< 0.05	<0.05
Nitrate (as N)	mg/L	13000	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05											< 0.05			< 0.05	< 0.05	-	-		-					-			-
Nitrite (as N)	mg/L	60	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01											< 0.01			< 0.01	< 0.01	-	-		-	-				-			-
Ammonia (as N)	mg/L	19	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	>0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.12	< 0.05	<0.05	0.064	< 0.05	< 0.05	0.059	0.054	0.063	0.054
Total Keljdahl Nitrogen	mg/L				0.4	0.4	0.3	0.3																			-	-		-	-				-			-
Total Organic Carbon	mg/L		1.9	3.6	3	4.4	< 0.5	3.7	4.6	3.6	2.7	4	2.4	4.3	2	2.2	2.4	4.3	3.3	3.1	5	4.5	2.9	2.4	4.1	3.3	2.7	3.5	4.2	<5	2.7	2.9	3.1	4	3.1	3.1	3.6	3.8
Ortho Phosphate (as P)	mg/L		< 0.01	< 0.01	<0.01	< 0.01	< 0.01	< 0.01	<0.01	< 0.01	0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	<0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	< 0.01	< 0.01	<0.01	< 0.01
Total Phosphorus	ug/L		2.5	7	12	25	15	8	20	11	12	7	14	14	9	12	7		13	12	20	3	5	7	8	2	31	21	19	17	20	10	14	4	<1	1 1	7	5
Dissolved Phosphorus	mg/L		< 0.005		<0.1		0.006			-	< 0.1													-	-		-	-	-	-	-	-	-	-	< 0.002	< 0.002	< 0.002	0.01
pH	Units	6.5-9	7.0	7.0	7.1	7.3	7.0	6.8	7.4	7.5	7.4	7.5	7.6	7.5	7.5	7.6	7.4	7.4	7.1	7.4	7.5	7.5	7.3	7.5	7.5	7.5	7.4	7.5	6.8	7.6	7.5	7.7	7.8	7.7	7.4	7.6	7.7	7.42
Reactive Silica (as SiO ₂)	mg/L		1.8	0.7	2.1	3.5	2.5	1.3	2.5	<0.5	0.9	0.7	2.3	0.8	1.8	0.8	2.6	3.6	2.2	0.6	2.2	3.4	2.8	1.2	2.4	2.4	1.9	0.8	2.0	2.5	1.9	1	2.0	3.5	2.3	1.1	2.3	3.4
Sulphate	mg/L		16	12	13	13	15	15	11	12	17	18	16	13	20	24	23	20	25	26	20	17	18	18	16	16	23	17	16	13	16	18	15	13	21	17	14	12
Turbidity	NTU		0.7	0.6	0.8	2	1.3	1.1	1	3.6	2.9	0.9	0.8	3.2	3.1	1	1.7	0.7	1.4	0.6	- 1	0.8	1.1	0.5	1	1.2	2.8	1.0	2.2	1.2	1.2	1.1	0.9	1.3	0.62	0.48	1.2	0.74
Conductivity	µS/cm		570	360	390	310	350	420	330	340	630	560	470	390	680	910	780	700	1000	960	810	570	620	720	630	580	930	640	540	390	650	700	700	480	830	710	590	460
TDS (calculated)	mg/L		289	176	206	159	192	212	176	170	326	285	245	204	345	462	434	368	518	485	418	300	327	358	139	309	456	332	279	207	328	365	359	256	403	363	308	250
Bicarbonate (as CaCO ₃)	mg/L		20	17.1	21.3	17	15	20	25	26	22	29	27	30	19	22	27	34	27	30	36	35	30	35	36	36	31	31	33	35	27	33	35	36	32	34	37	36
Carbonate (as CaCO ₃)	mg/L		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Calcium	mg/L		16	12	14	12	13	14	13	14	20	18	17	15	18	21	22	19	24	22	23	18	18	23	22	20	24	20	18	16	19	21	21	17.5	22.3	21.3	20	17
Magnesium	mg/L		1.8	1.4	1.7	1.6	1.7	1.8	1.8	1.8	2.5	2.1	2.1	1.8	1.8	2.2	2.2	2.1	2.4	2.2	2.3	2	1.9	2.6	2.4	2.2	2.3	2.2	2.0	1.9	2	2.3	2.4	2.06	2.48	2.27	2.26	2
Potassium	mg/L		1.5	1.2	1.5	1.5	1.5	1.4	1.6	1.7	2.2	2.3	2.1	2.3	2.1	2.3	2.4	2.4	2.6	2.5	2.5	2.3	2.0	2.2	2.1	2.3	2	1.9	1.8	1.9	1.8	2.0	2.0	1.95	2.15	2.15	2.11	1.9
Sodium	mg/L		92	52	64	46	58	64	54	45	100	85	73	63	110	150	140	110	180	160	130	89	95	107	89	94	144	102	85	57	99	115	109	74.4	131	108	94	67
*Total Suspended Solids	mg/L		1	1	1	1	1	3	1	4	4	- 1	- 1	4	9	2	2	1	3	1	3	1	1	1	2	1	3	2	3	3	1.2	1.4	1.2	1	1	1	1.4	1.2
Chlorophyll a	µg/L			1.60	2.80	16.20		1.42	4.35	6.58	9.69	1.07	3.45	7.11	1.44	1.47	3.64	1.48	6.43	1.17	26.80	4.78	1.99	0.96	2.99	3.96	29.01	3.04	8.11	18.67	0.84	2.46	3.48	2.87	0.89	3.48	4.20	1.21
Field Measurements																																						
Secchi disc depth	а			3.4	2.8	3.0		2.8		1.5		4.8	2.5	1.5			1.75	4	1.3	6	1.4	3.75	3.5	4	2.3	2.6	1.7	1.6	1.5	1.4	4.5	2.8	3.6	2.7	4.5	3.0	2.5	3.0
Dissolved Oxygen	mg/L		10.5	8.9	7.3	13.2		10.6	5.6	12.3	14.5	9.8	11.0	10.2	16.9	9.5	8.0	10.8	9.7	11.3	8.8	10.9	13.4	8.1	7.6	13.1	13.1	7.4	5.9	10.5	10.5	8.2	9.6	10.6	13.4	8.0	7.5	11.9
pH	units		7.0	7.3	7.6	7.2		6.7	6.8	7.2	6.6	7.4	8.0	6.8	6.5	7.7	6.8	7.3	7.3	8.0	7.7	7.0	7.8	6.8	6.9	7.5	7.4	7.4	8.2	5.7	7.2	7.6	7.3	8.0	7.3	6.6	7.3	7.8
Conductivity	μS/cm		602	334	188	129		393	310	330	612	527	474	278	444	1701	1514	600	1031	278	831		601	698	635	570	917	631	526	387	648	635	652	443	654	582	140	361.9
Temperature (field)	*C		10.4	19.6	23.4	7.2		19.8	21.1	8.4	7.8	20.4	23.3	11.1	5.6	18.3	21.9	9.5	5.3	16.9	22.2	8.3	5.2	20.6	22.6	8.7	3.4	18.3	20.7	8.0	6.8	18.9	25.0	10.1	5.2	21.6	22.3	6.4
Bacteriological							1							1			T T															T				-		
**E.Coli	CFU/100ml						1																- 1	- 1	3	3	<1	3	67	4	- 1	45	- 1	20	1	1	10	10
**Fecal Coliform	CFU/100 ml		1	1	1	1	1	5	1300	1	3	120	300	140	11	8	440	2	150	1	3200	32	1	160	20	57	2	3	240	1	4	30	1	10	1	1	50	5
		=																																				-

Fiscal Collision CPU100 ml 1 1 1

Fiscal Collision CPU100 ml 1 1 1

Fiscal Laborator Aquatic Life
Fiscal Laborator Aquatic Life
Fiscal Laborator Application Life CPU100 mm as 17 D.L

Fiscal Laborator Application Limits abrown as 1

Colls bit interiorushy blank for pagins to indicate no sample collected

Calls bit disabilitation to sample collected

April 2005 result for TP is italized because result was below detection limit (DL) and shown as 2.5 (1/2 DL). The DL is now 2 ugl.

TABLE 9	Surface Water Quality	/ Data for Russell Lake, Outlet	(2005-2013)

			<u> </u>																		Outlet																	
Part Part																																						
		FWAL	Apr	Jun	Aug	Nov	Mar	Jun	Aug	Oct	Apr	Jun	Aug	Oct	Mar	Jun	Aug	Oct	Apr	Jun	Aug	Oct	Mar	Jun	Aug	Nov	Mar	Jun	Aug	Nov	Apr	Jun	Aug	Nov	Apr	June	Aug	Fall
General Chemistry																																				$\overline{}$		1
Total Alkalinity (asCaCO ₃)	mg/L		19	17	23	17	16	21	25	26	22	26	27	30	19	23	27	33	27	29	36	34	30	34	37	37	29	33	34	34	28	30	37	37	32	38	34	36
Chloride	mg/L		150	88	100	72	93	99	79	80	160	140	120	90	180	250	220	190	270	260	220	150	170	180	170	150	240	170	130	93	180	190	190	120	220	190	150	130
Colour	TCU		- 11	12	12	18	12	14	14	11	9	9	9	12	11	10	16	9	16	10	16	18	16	14	14	18	13	21	21	22	13	8.7	10	16	9.4	18	12	15
Hardness (as CaCO ₃)	mg/L		49	6.94	42	37		43	41	41	59	54	50	44	53	63	65	59	65	68	66	51	56	73	62	58	68	55	54	48	58	61	63	55	69	65	58	52
Nitrate + Nitrite (as N)	mg/L		< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.14	< 0.05	< 0.05	< 0.05	0.21	< 0.05	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05	0.07	< 0.05	< 0.05	< 0.05	0.092	< 0.05	< 0.05	< 0.05	0.12	0.054	< 0.05	< 0.05
Nitrate (as N)	mg/L	13000	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05		-									< 0.05			< 0.05	< 0.05	-								-			
Nitrite (as N)	mg/L	60		<0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01					-		-				< 0.01			< 0.01	< 0.01												
Ammonia (as N)	mg/L	19	< 0.05	<0.05	0.06	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.09	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.11	< 0.05	0.07
Total Keljdahl Nitrogen	mg/L			0.5	0.4	0.3	0.1	0.4	-																			-								- '		
Total Organic Carbon	mg/L																							3	3.7	3.6	2.5	3.7		< 0.01	3	3.2	3.5	4.1	2.8			3.9
Ortho Phosphate (as P)	mg/L		0.01	<0.01	< 0.01	< 0.01	< 0.01	<0.01	< 0.01	<0.01	< 0.01	<0.01	<0.01	<0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	<0.01	< 0.01	< 0.01	< 0.01	<0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	<0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01	< 0.01
Total Phosphorus	ug/L		7	10	16	27	10	4	<20	10	14	73	14	12	9	15	8		17	11	17	6	6	14	7	7	23	17	16	13	21	5	11	8	5	16	4	<2
Dissolved Phosphorus	mg/L		0.005	-	<0.1		0.007				<0.1				-	-		-																	< 0.002	<0.01	< 0.002	0.005
pH	Units	6.5-9.0	6.7	6.9	7.1	7.3	6.9	6.7	7.4	7.5	7.2	7.4	7.6	7.5	7.5	7.4	7.3	7.3	7.1	7.5	7.3	7.8	7.3	7.3	7.7	7.5	7.5	7.7	6.6	7.6	7.5	7.7	7.6	7.7	7.4	7.3	7.55	7.5
Reactive Silica (as SiO ₂)	mg/L		1.4	1	2.5	3.5	2	1.3	2.4	1.4	0.9	4.4	2.3	0.8	1.8	1.6	2.6	3.4	2.1	0.5	2.4	3.3	2.3	0.9	2.4	2.4	1.7	0.8	2.1	2.4	1.3	1.1	2.4	3.4	2	1.3	2.2	3.3
Sulphate	mg/L		16	12	12	16	14	14	11	12	17	18	16	13	19	24	23	20	25	24	20	17	17	18	17	16	23	17	15.0	13	16	18	15	12	21	17	16	11
Turbidity	UTN		1.4	2.4	0.2	1.8	1.2	1	0.3	2.8	2.9	0.7	0.6	2.5	2.8	0.8	1.2	0.3	1.4	0.6	0.5	0.7	1.2	1	0.6	0.8	2.4	0.6	1.3	1.1	1.8	0.88	0.34	1.3	0.8	88.0	0.33	0.53
Conductivity	μS/cm		580	360	400	300	360	410	320	330	620	550	470	390	690	910	780	700	1000	970	810	570	630	750	630	580	930	640	540	390	660	700	710	480	840	730	600	460
TDS (calculated)	mg/L		292	<1	214	162	197	209	178	171	323	286	243	201	342	469	435	372	506	499	417	296	328	365	319	308	450	324	279	207	339	360	365	260	425	370	310	250
Bicarbonate (as CaCO ₃)	mg/L		19.5	36	23	17	16	21	25	26	22	26	27	30	19	23	27	33	27	29	36	34	30	34	37	36	29	33	33	34	28	30	37	36	32	38	34	36
Carbonate (as CaCO ₃)	mg/L		<1	16.8	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Calcium	mg/L		17	12	14	12	14	14	14	14	20	18	17	15	18	22	22	19	22	23	23	17	19	25	21	20	23	19	18	16	20.0	20.7	21.3	148.3	23.3	22	19.5	17
Magnesium	mg/L		1.8	1.5	1.7	1.6	1.7	1.7	1.7	1.8	2.3	2.2	2.1	1.8	1.8	2.2	2.2	2.1	2.2	2.3	2.3	1.9	2.0	2.7	2.3	2.1	2.3	2.0	2	1.9	2.00	2.24	2.39	2.13	2.59	2.3	2.24	2.00
Potassium	mg/L		1.6	1.3	1.2	1.5	1.5	1.4	1.5	1.7	2.4	2.1	2	2.3	2.1	2.3	2.4	2.4	2.4	2.6	2.5	2.1	2.0	2.2	2.0	2.2	2.0	1.8	1.8	1.9	2.00	1.99	1.97	1.95	2.27	2.11	1.96	1.90
Sodium	mg/L		92	57	65	46	61	64	52	44	110	87	71	61	110	150	140	110	160	170	130	88	98	112	85	93	143	95.1	87	58	104	113	110	77.4	138	109	94	79
**Total Suspended Solids	mg/L		3	2.4	3.6	1	5	2	1	3	3	1	1	3	1	1	1	2	3	1	1	1	1	1	1	1	2	2	3	2	1	1.2	50	1	2	1 1	1	<1
Chlorophyll a	μg/L					17.70		2.19	2.46	5.46	7.85	0.95	1.08	5.16	1.54	1.20	2.16	1.04	6.35	1.07	11.80	4.72	2.92	1.00	1.35	3.18	19.56	1.49	7.22	16.61	4.03	2.02	1.08	2.3	2.69	1.58	0.42	1.14
Field Measurements																																						
Secchi disc depth	m								-		-			-		-		-			-	-						-	-	-				-		-	-	
Dissolved Oxygen	mg/L		10.2	7.4	5.5	10.8	-	11.3	8.9	11.9	14.8	8.4	11.3	10.1	19.3	8.4	7.4	10.9	9.6	6.9	8.1	10.6	11.1	5.0	5.6	13.4	12.6	7.3	5.5	11.2	11.0	8.9	8.1	10.5	13.8	4.3	8.0	11.4
pH	units		6.9	6.8	6.8	7.2		7.2	7.1	7.4	7.0	7.0	7.8	7.4	6.5	7.2	7.6	7.8	7.4	7.2	7.6	7.8	7.5	7.7	7.4	7.2	7.7	7.6	7.6	6.8	7.2	7.9	7.6	8.2	7.4	6.6	7.0	7.5
Conductivity	μS/cm		635	345	201	136		389	399	344	613	532	473	272	448	1703	1505	602	1023	278	834		592	702	633	571	914	634	529	389	659	633	657	444	654	601	160	366.9
Temperature (field)	°C		12.2	22.5	25.5	7.6	-	21.3	23.1	9.1	9.6	22.9	24.5	9.9	5.5	18.6	23.2	7.8	6.2	19.6	23.5	8.8	5.1	20.5	22.8	7.9	5.0	21.0	21	9.3	7.6	20.3	25.9	8.4	5.2	23.5	21.7	7.0
Bacteriological												1																			1		1			1		T
	CFU/100ml											1											3	- 1	29	10	1	28	54	4	- 1	59	1	20	1	200	70	10
**Fecal Colform	CFU/100 ml		1	8	10	1	1	170	2700	1	1	700	3000	640	9	160	930	4	140	24	8100	160	1	35	600	200	4	23	490	1	1	70	100	1	1	100	70	11
EWAL - Erechwater Acustic Li							•																															

"Fecal Collorm CFU1'00 ml 1

FWAL - Freshwater Aquatic Life
"Results below detection limits (DL) shown as 1/2 DL
"Results below detection limits shown as 1
Cels left hindranishy blank for graphs to indicate no sample collected
Cells with dash indicate no sample collected

TABLE 10	Surface Water Quali	ty Data for Russell Lake, South Inlet (2005-2013)

Part Color Color																																						
Analyte	Units				2005				2006				200	17			20	08			21	09				010			2	011			21	012			2	013
-		FWAL	Apr	Jun	Aug	Nov	Mar	Jun	Aug	Sep	Oct	Apr	Jun	Aug	Oct	Mar	Jun	Aug	Oct	Apr	Jun	Aug	Oct	Mar	Jun	Aug	Nov	Mar	Jun	Aug	Nov	Apr	Jun	Aug	Nov	Apr	June	Aug Fall
General Chemistry					i e					additional											Î														i i			
Total Alkalinity (asCaCO ₄)	mg/L		11	31	33	7	21	13	<5	35	13	11	25	24	25	18	23	37	32	16	34	54	24	25	41	56	27	25	35	24	28	28	32	73	36	27	60	56 36
Chloride	mg/L		25	17	21	21	23	13	9	36	26	35	27	18	20	76	24	29	37	38	49	39	23	62	31	49	37	71	43	28	27	66	45	85	38	73	43	40 32
Colour	TCU		24	27	21	45	14	68	380	44	38	23	47	52	41	17	52	150	51	51	50	150	57	26	47	87	59	22	83	200	42	18	99	38	59	24	62	53 38
Hardness (as CaCO ₃)	mg/L		24	40	45			21	46	48	29	30	33		28	43	29	41	37	27	40		32	42	47	54	43	42	40	31	38	48	44	89	44	46	71	74 46
Nitrate + Nitrite (as N)	mg/L		<0.05	< 0.05	0.09	0.08	0.13	< 0.05	< 0.05	0.12	80.0	0.09	< 0.05	0.07	0.05	0.1	< 0.05	0.1	< 0.05	0.15	< 0.05	0.14	<0.05	0.11	0.06	0.1	< 0.05	< 0.05	< 0.05	< 0.05	42	0.067	0.19	0.14	0.11	0.066	0.13	<0.05 0.11
Nitrate (as N)	mg/L	13000	< 0.05	< 0.05	0.09	0.08	0.13	< 0.05	< 0.05		0.07	0.09											< 0.05			0.1	< 0.05		-									
Nitrite (as N)	mg/L	60									<0.01												<0.01								-							
Ammonia (as N)	mg/L	19	<0.05	<0.05	<0.05	< 0.05	0.05	<0.05	0.07	<0.05	<0.05	< 0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	0.08	<0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	0.06	< 0.05	< 0.05	< 0.05	0.062	< 0.05	<0.05	0.24	<0.05 <0.05
Total Keljdahl Nitrogen	mg/L					0.3																																
Total Organic Carbon	mg/L		6.6	7.1	6.1	9	4.6	< 0.5	45	11	7.2	5.6	11	11	9.2	3.3	8.5	17	11	6.3	8.9	13	7.8	5.5	8.1	12	8.4	4.2	9.1	17	5	5.1	11	9.7	8.4	5	9.4	7.5 6.6
Ortho Phosphate (as P)	mg/L		0.04	0.03	0.04	0.08	0.02	0.08	0.01	0.11	0.05	< 0.01	0.05	0.07	0.03	< 0.01	0.03	0.03	0.02	0.01	0.01	0.03	< 0.01	0.01	0.03	0.02	0.03	0.01	0.02	0.03	0.01	0.012	0.028	0.015	0.013	<1	0.015	0.014 <0.01
Total Phosphorus	ug/L			46		88		86	80	110	53		10	14	44	18	36	28		30	110	71	27	45	47	46	26	30	52	70	31	14	80	39	49	15		
Dissolved Phosphorus	mg/L		0.037		<0.1		0.021	-	-			<0.1																	-							0.003	0.011	0.015 0.011
pH	Units	6.5-9.0	6.8	7.0	7.2	6.6	7.0	6.6	4.7	7.5	6.9	7.0	7.3	7.2	7.2	7.4	7.3	7.2	7.4	6.9	7.4	7.4	7.4	7.3	7.6	7.6	7.4	7.4	7.5	7.0	7.4	7.5	7.4	7.9	7.6	7.3	7.4	7.6 7.24
Reactive Silica (as SiO ₂)	mg/L		4.1	7.2	9.9	5.7	7.4	3.8	5.9	10	5.8	3.5	0.7	6.1	6.5	3.8	4.8	6.5	8.8	3.2	3.5	7.1	5.5	5.6	6.8	7.2	6.4	4.8	4.1	4.8	6.8	4.1	4.5	9	6.9	3.4	5.7	7.7 5.7
Sulphate											13						2		<2	15	3		12		3													
Turbidity	NTU							0.4	3.2	1.3									1.6			6.4	1.5	1.1	1.7	4.1	1.5	0.9	1.0	2.5	4.5	1.3	39	7.5	5.5	1.8	1.4	5.6 2.20
Conductivity	μS/cm		130	130	150	120	140	89	45	190	140	180	160	120	120	330	140	170	190	190	240	190	140	270	190	260	210	320	220	150	150	290	230	430	210	320	280	270 200
TDS (calculated)	mg/L					70		43	60	113	78	91		66	67	170	75	98	102	104	125	128	84	147	101	139	119	165	112		93	155	134	237	116	167	154	155 110
Bicarbonate (as CaCO ₃)	mg/L		10.7	31.3	32.8	7	21	13	<1	35	13	11	25	24	25	18	23	37		16	34	54	24	25	40	56	27	25	35	24	28	28	32	73	36	27	60	56 36
Carbonate (as CaCO ₃)	mg/L		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1 <1
Calcium	mg/L		6.6	10	11	6.7	9.1	5.8	14	14	8.4	8.3	9.4	9.3	7.9	13	8.1	13	10	8.3	12	16	9.4	12	13	16.1	13	13	12	9.7	11	147	135	28.1	13.1	14	22	22.7 15
Magnesium	mg/L		1.9	3.4	4.1	1.6	3.2	1.5	3	3.4	2	2.1	0.01	2.3	2	2.3	2.2	2.4	2.7	1.5	2.3	3.3	2	2.8	3.6	3.3	2.6	2.7	2.5	1.75	2.5	2.7	2.49	4.5	2.75	2.5	4.1	4.2 2.4
Potassium	mg/L		1	0.9	0.9	1	1	0.5	2	2	2.1	1.4	0.9	1	1.5	1.6	1.1	1.9	2.4	1.4	1.3	1.4	1.1	1.3	0.9	1.4	1.6	1.1	0.8	1.1	1.4	1.4	2.16	2.63	1.45	1.8	2.1	2.2 1.7
Sodium	mg/L		16	12	14	13	15	10	21	25	13	21	18	14	13	47	18	21	21	26	34	24	16	35	19	26	24	44	28	21	16	37	30	51	23	42	27	26 20
**Total Suspended Solids	mg/L		1	1	1	2	1	4	91	2	1	1	1	3	1	1	2	1	2	1	1	7	1	2	4	1	1	1	1	1	5	1	17	4.2	1	1.2	1	2.2 <1.0
Chlorophyll a	μg/L				0.10	0.20		1.23	2.07		1.08	2.22	0.22	0.16	0.15	1.54	0.56	0.70	0.48	0.69	1.67	2.32	0.29	1.37	5.05	0.64	0.13	1.80	0.42	1.18	0.36	1.39	4.99	1.71	0.24	10.17	1.81	0.51 0.12
Field Measurements																																						
Secchi disc depth	m									-	-																-						-	-				
Dissolved Oxygen	mg/L		10.4	9.3	7.4	13.0	-	10.3	8.8	-	12.3	14.8	9.9	11.7	12.5	21.4	10.5	6.9	11.4	10.0	10.9	9.1	10.7	15.6	9.3	9.5	15.1	13.7	7.9	6.3	11.0	10.4	8.2	9.8	10.2	15.0	8.3	10.4 12.5
pH	units		6.5	6.9	7.6	7.3		6.1	6.7	7.2	7.2	6.4	7.0	7.7	6.7	6.5	7.1	7.4	7.4	7.4	7.2	7.1	7.3	7.8	7.4	7.3	7.6	7.8	7.1	8.0	5.7	7.3	7.8	6.7	7.3	7.3	6.5	7.3 8.6
Conductivity	μS/cm		124	105	185	78		94	161	-	142	174	145	121	74	187	260	331	164	191	69	232		268	187	270	205	316	214	145.0	157.0	334	213	392	191	234.3	222	689 155
Temperature (field)	°C		9.0	15.3	23.5	5.7		14.7	16.9		6.6	4.8	14.7	16.3	5.1	0.5	12.0	17.2	5.6	4.3	13.3	16.0	5.7	3.7	13.0	16.6	5.4	2.1	13.3	17	7.0	2.6	15.1	17.1	5.3	2.7	15.8	- 5.6
Bacteriological																																						
**E. Coli	CFU/100ml				1		1		1	1	1													2	- 1	500	7	1	4	>250	5	- 1	340	- 1	30	10	100	100 10
	CFU/100 ml		1	14	66	- 1	1	1	100	i	1	- 1	2	200	- 6	2	2	150	3	3	1	2200	2	1	1	1100	280	5	12	200	11	1	310	1	1	1	1	1 5
WAL - Erechwater Aquatic Li			سخسا																																			

"Fecal Colform | CFU1100 ml | 1
FVML - Freshwater Aquatic Life
Results below detection limits (DL) shown as 12 DL
"Results below detection limits shown as 1
Cels left limiterionally blank for graphs to indicate no sample collected
Cells with dash indicate no sample collected

TABLE 11	Surface Water	Quality Data	for Russell Lak	e, North Inlet	(2005-2013)

																					North Inlet																	
Analyte	Units	CCME FWAL		2	005			21	9006			201	07			20	08			20	19			20	10			20	11			20	12			20	113	
		THAL	Apr	Jun	Aug	Nov	Mar	Jun	Aug	Oct	Apr	Jun	Aug	Oct	Mar	Jun	Aug	Oct	Apr	Jun	Aug	Oct	Mar	Jun	Aug	Nov	Mar	Jun	Aug	Nov	Apr	Jun	Aug	Nov	Apr	June	Aug	Fall
General Chemistry																																						
Total Alkalinity (asCaCO ₃)	mg/L		28		56		71	63	70	41	56	81	88	83	40	<1	87	71	47	80	92	72	70	110	99	77	83	92	77	98	84	68	76	93	59	71	84	70
Chloride	mg/L		110		110		590	130	140	87	390	200	150	150	1500	350	230	91	270	310	260	190	640	330	270	190	560	290	130	250	560	190	200	210	410	240	190	150
Colour	TCU		28		17		7	21	13	20	12	13	15	12	7	16	49	13	30	24	25	27	11	22	38	33	13	36	63	18	9.3	41	21	20	11	46	18	20
Hardness (as CaCO ₃)	mg/L		62		93			86	110	81	160	150	120	120	230	150	130	120	100	140	140	110	200	170	160	120	220	150	90	170	210	99	110	130	140	110	120	98
Nitrate + Nitrite (as N)	mg/L		0.65		0.22	-	0.4	< 0.05	0.07	1.3	0.32	0.24	0.25	0.23	0.62	0.2	0.26	0.15	0.56	0.27	0.21	0.23	0.33	0.26	0.24	0.36	0.47	0.27	0.38	0.35	0.27	0.74	0.27	0.32	0.53	0.48	0.2	0.38
Nitrate (as N)	mg/L	13000				-	0.4	< 0.05	0.07	1.27	0.32											0.23			0.23	0.36								-		-	-	-
Nitrite (as N)	mg/L	60	< 0.01				< 0.01	< 0.01	<0.01	0.03	< 0.01											< 0.01			0.01	< 0.01											-	-
Ammonia (as N)	mg/L	19	< 0.05		< 0.05		0.14	< 0.05	<0.05	<0.05	< 0.05	< 0.05	< 0.05	< 0.05	0.12	<0.05	< 0.05	< 0.05	0.06	< 0.05	0.06	< 0.05	<0.05	<0.05	0.15	0.07	< 0.05	0.06	0.1	0.12	0.15	0.082	<0.05	0.091	<0.05	0.51	< 0.05	0.097
Total Keljdahl Nitrogen	mg/L				0.3	-	0.6	0.4	-	-	-	-											-				-			-				-		-	-	-
	mg/L		6.5		3.3		2	4.6	5.8	4.9	4.2	3.9	3.7	4.3	5	3.8	6.2	3.3	5	4.7	4.8	5	34	5	7	4.5	3.1	5.1	6.6	6	3.3	6.2	4.4	4.5	3	13	3.8	4.2
Ortho Phosphate (as P)	mg/L		0.02		< 0.01		< 0.01	< 0.01	0.11	<0.01	5.2	0.03	0.01	<0.01	< 0.01	<0.01	< 0.01	<0.01	< 0.01	< 0.01	<0.01	< 0.01	<0.01	< 0.01	<0.01	< 0.01	< 0.01	<0.01	0.02	<0.01	<0.01	0.010	0.010	<0.01	<0.01	< 0.01	<0.01	< 0.01
*Total Phosphorus	ug/L		29		22		8	9	180	10	2.5	56	23	12	180	15	6		73	11	10	7	7	8	14	6	15	27	50	27	7	15	2	9	2	37	9	3
	mg/L						0.007				5.1																								<0.002	0.004	0.005	0.003
	Units	6.5-9.0	7.3		7.6		7.7	7.3	7.8	7.6	7.3	7.9	7.9	7.9	7.6	8.0	7.8	7.7	7.4	7.7	7.9	7.9	7.8	7.9	8.0	7.8	7.9	7.9	7.9	8.0	8.0	7.98	8.1	8.04	7.7	7.4	8.0	7.71
	mg/L		3.3		4		3.4	2.2	3.3	5.5	3.3	3.3	4.9	4.2	2.6	2.2	5.7	4.5	3.2	2.9	4.9	5.4	4.5	5.5	5.9	6.1	5.3	4.1	5.8	5.8	3.8	5.2	5	6.4	4.5	3.2	5.1	4.5
	mg/L		26		21		40	17	12	26	46	50	30	23	97	22	32	20	38	28	14	23	<0.01	17	19	29	46	23	22.0	22	36	28	15	19	40	21	11	18
	NTU		25		3.3	-	14	2.1	0.7	10	4.2	1.5	1.2	1.5	170	0.8	1.5	0.6	8.5	1	0.9	1.3	1.8	0.9	2.7	1.3	1.3	1.8	4.3	1.9	2	5.1	1.7	1.3	1.2	3.7	1.1	0.75
	μS/cm		490		520		2000	580	620	430	1500	900	720	670	5100	1400	890	780	1100	1300	1100	760	2200	1400	1100	790	2100	1100	610	1000	2000	800	830	890	1500	1100	830	590
	mg/L		262		274	-	1110	310	339	234	804	488	392	364	2740	693	521	413	563	652	560	407	1170		574	428	1080	593	335	544	1030	427	439	468	800	478	420	330
	mg/L		28		56		71	63	70	41	56	80	88	83	40	83	87	70	47	80	91	71	70	104	98	76	82	92	76	97	84	67	75	92	58	70	84	70
	mg/L		<1		<1		<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	mg/L		21		31	-	62	29	39	26	55	50	42	40	78	52	43	40	35	47	48	37	69	57	54	40	75	51	31	57	71	34	39	44	48	38	41	33
	mg/L		2.3		3.7		6.3	3.2	4	3.7	5	5.2	4.4	4.3	8.4	5.8	4.4	4.8	3.8	5.1	5.6	4.3	7.7	7	5.8	4.2	8.6	6.1	3.3	7.3	8.3	3.7	4.4	5.4	5.1	4.6	5.0	3.9
	mg/L		2.3		2.4		3.4	2.1	2.5	5.2	5.9	4.4	4.1	4.8	6.8	2.6	3.4	3.3	3.4	2.9	3.0	2.6	4.0	3.4	3.7	3.1	3.8	2.8	2.9	3.1	3.5	3.1	2.3	2.6	3.0	2.8	2.3	2.1
	mg/L		75		68		360	83	91	49	250	120	98	90	990	210	150	100	180	200	160	110	350	174	148	109	330	162	89	132	292	118	121	116	253	121	113	79
"Total Suspended Solids Chlorophyll a	mg/L		4		3		11	5	1	3	3	3	1	1	330	1	1	1	72	1	2	3	1	7	11	1	2	1	2	2	2	1.8	1	11	1	20	1	<1.0
	μg/L				2.50			1.35	0.94	1.74	1.08	0.59	0.23	6.60	0.31	1.00	0.21	0.17	1.03	0.67	0.27	1.44	0.83	0.75	0.35	1.04	0.94	0.51	0.84	1.61	2.78	0.98	0.51	0.53	1.26	1.43	0.62	0.14
Field Measurements										1																												
Seochi disc depth	m		-	-																																	-	
	mg/L		-		12.0		-	11.6	9.8	12.1	13.9	10.0	11.3	13.9	20.3	10.3	9.4	11.6	10.3	9.5	9.6	11.0	12.4	8.8	7.9	14.2	13.9	5.4	7.0	11.0	13.3	8.9	11.0	10.5	12.5	7.6	7.7	10.6
	units				7.5			7.5	7.7	7.3	7.0	7.7	7.9	7.0	7.0	8.0	7.9	7.6	8.1	7.9	7.9	7.8	8.1	7.5	7.3	7.3	7.6	7.6	7.2	8.1	8.0	7.9	7.8	7.0	7.2	7.2	7.2	7.4
	μS/cm				170			542	754	437	1523	908	728	444	3036	2540	1750	681	1075	366	1069		2093	1293	1119	780	2142	1142	598	999	1957	633	765	823	1178	843	226	472.6
Temperature (field)	*C		-	-	7.2			18.9	21.8	8.2	8.9	19.0	18.7	9.0	1.9	14.4	18.3	8.7	6.4	14.8	18.3	7.5	4.1	15.8	19.0	7.2	2.5	16.1	18	8.2	4.6	17.4	20.9	8.4	3.2	18.9	19.3	7.1
Bacteriological										1																												
	FU/100ml									1													45	1	21	7	1	6	>250	14	1	>250	100	60	30	300	1	20
**Fecal Coliform CF	CFU/100 ml				4			35	4200	1 1	6	34	10000	710	22	22	830	6	6400	20	1700	51	4	65	1100	180	13	150	490	15	1	>250	800	30	1	400	200	15

FVML - Frethwater Aquatic Life

*Results below detection limits (DL) shown as 1/2 DL

*Results below detection limits (DL) shown as 1.

Cels left limitationally blank for graphs to indicate no sample collected

Cels with dash indicate no sample collected