Last Mountain Lake Water Quality Report 2005 – 2007

Prepared for
The Last Mountain Lake Stewardship Group Inc.

Monitoring and Assessment Branch
Stewardship Division
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Acknowledgements

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1.0 Introduction and Background

1.1 General Description, Geology, Hydrogeology of Last Mountain Lake

Last Mountain Lake is approximately 80 kilometres long and is located in south-central Saskatchewan between Saskatoon and Regina. It is a popular recreational lake with many attractions including over 35 cottage and resort areas, as well as Rowan's Ravine Provincial Park, 3 regional parks, and the Last Mountain Lake National Wildlife Area.

Last Mountain Lake receives surface water from the north through Lanigan Creek, from the west through the Arm River and Lewis Creek, and from runoff of the area surrounding the lake. The lake's surface area is approximately 230 square kilometres, its mean depth is approximately 8 metres, and its maximum depth is approximately 30 metres.

1.2 Lake Stewardship & the Last Mountain Lake Stewardship Group Inc.

The Last Mountain Lake Stewardship Group (LMLSG) participates in Saskatchewan Watershed Authority's *Lake Stewardship Program.* This program focuses on supporting activities, projects, and public education at lakes with stewardship groups and volunteers. As part of the *Lake Stewardship Program*, Saskatchewan Watershed Authority assists in the water quality monitoring program by providing technical support and interpreting water quality measurements to the LMLSG. The purpose of Last Mountain Lake's water quality monitoring program is to better understand the characteristics of the lake and assess its water quality over time.

The LMLSG volunteers are important advocates on behalf of the health of Last Mountain Lake and surrounding area. The group became incorporated as a non-profit organization in May 2007 and continues to be active in the communities and resort areas around the lake. The mission of the LMLSG is to sustain and enhance the lake for future generations. As such, the group aims to inform the public about the water quality of Last Mountain Lake and about ways that human activities can positively or negatively impact its water quality.

2.0 Water Quality Sampling

Water quality monitoring of Last Mountain Lake began in 2003 through the cooperation of Saskatchewan Watershed Authority and the LMLSG. Water quality sampling allows background (normal or average) water quality values for the Last Mountain Lake baseline stations to be established. Once adequate water quality information has been recorded for a lake's water quality, water sampling can become less frequent. Saskatchewan Watershed Authority has implemented a three-year sampling cycle for those lakes with adequate background data. This allows changes in water quality to be assessed while enabling Saskatchewan Watershed Authority to add other Saskatchewan lakes to the monitoring program.

2.1 Water Quality Sampling Sites

The standard lake sampling schedule for Saskatchewan Watershed Authority's *Lake Stewardship Program* includes two winter (January to March) and four summer samples (May to October) per year. Samples sites are divided into *Baseline Stations* and *Shoreline Stations* (Figure 1).

Baseline Station: Baseline stations are generally deep, centrally located sites chosen to represent typical water quality conditions in the lake. Certain parameters (i.e. dissolved oxygen and temperature) are recorded at intervals throughout the depth of the site. Baseline stations are sampled on all six sample dates during the year. Water quality results from baseline stations are used to calculate the Water Quality Index (WQI) score.

Shoreline Stations: Shoreline stations are monitored to determine the effects of local influences on water quality. The locations of shoreline stations were chosen by volunteers from the stewardship group in consultation with Saskatchewan Watershed Authority (Figure 1). They are sampled on summer sample dates only. The water quality results for these shoreline stations are compared to Saskatchewan's *Surface Water Quality Objectives for Recreation and Aesthetics* (Interim Edition, July 2006).

2.2 Water Quality Index: Assessing General Water Quality

The Water Quality Index (WQI) provides a means of assessing the overall quality of lake water in Saskatchewan. To calculate the WQI, analytical results of the water quality sampling are compared to provincial objectives for specific water uses such as irrigation and the protection of aquatic life. The WQI combines key chemical and biological aspects of water quality (including major ions, nutrients, heavy metals, herbicides, bacteria, dissolved oxygen and pH) to define overall water quality and summarize these parameters in a single score.

A single score for each year allows easy comparison of general water quality trends over time as well as identifies parameters considered important to overall lake health. The WQI score is adjusted for each parameter that exceeds its objective, taking into account the magnitude and frequency of exceedances. Deviation from objective values does not necessarily indicate poor lake health or that water quality is worsening. Certain parameters (*i.e.* arsenic, chloride and pH) may naturally exceed the WQI objectives in Saskatchewan lakes due to geological and hydrological history. The WQI does not differentiate natural sources deviation or exceedances, which are a result of human influences. As such, it is important to examine lake water quality over time in order to assess if human activity may be impacting lake water quality. [1]

[1] For a more complete explanation about the Water Quality Index (WQI) or the parameters used to determine WQI scores, please refer to the "Lake Stewardship Water Quality Guide" online at www.swa.ca.

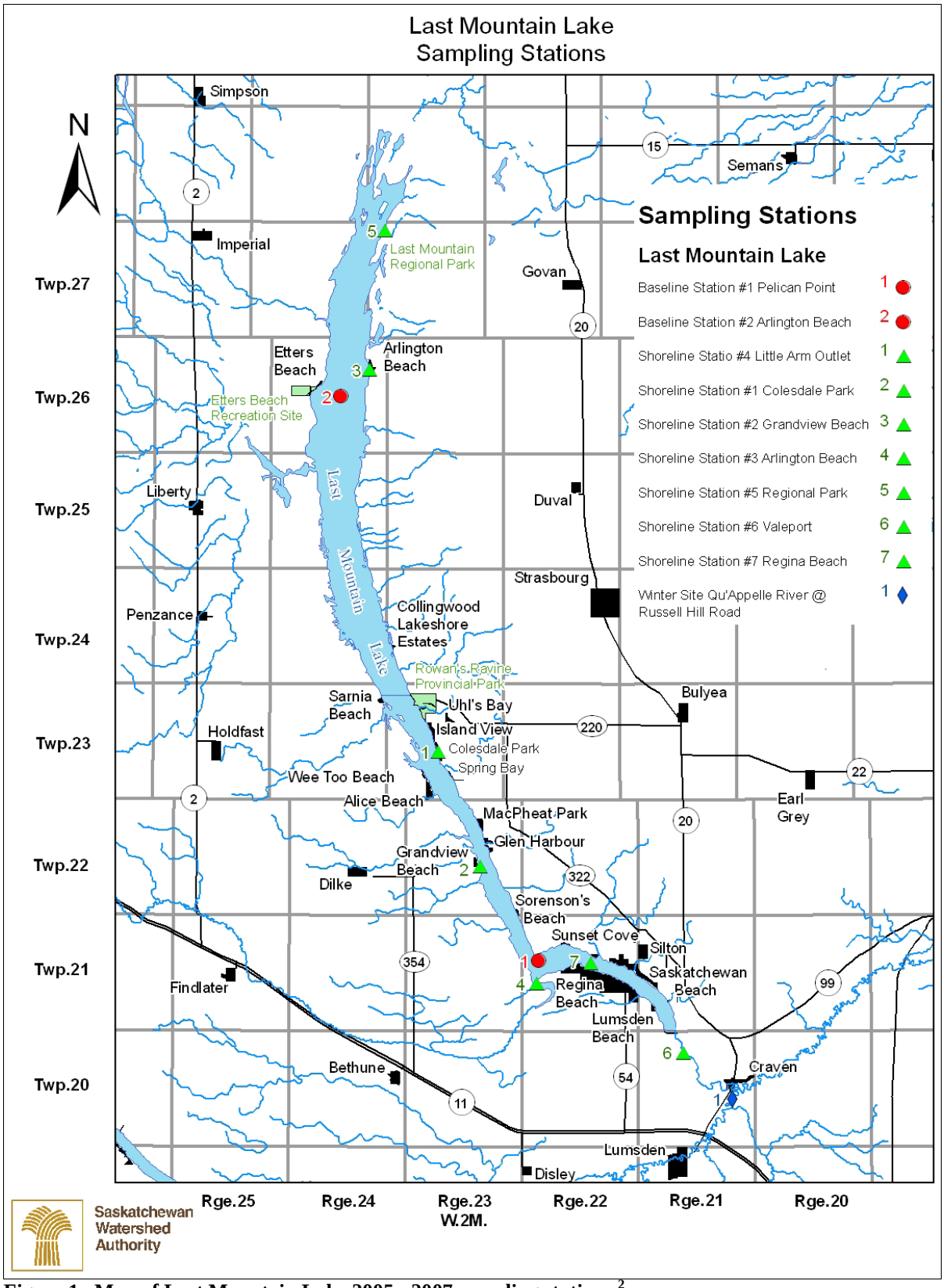

Figure 1– Map of Last Mountain Lake 2005 - 2007 sampling stations.[2]

[2] Winter Site Qu'Appelle River at Russel Hill Road was removed from sampling schedule starting in 2006.

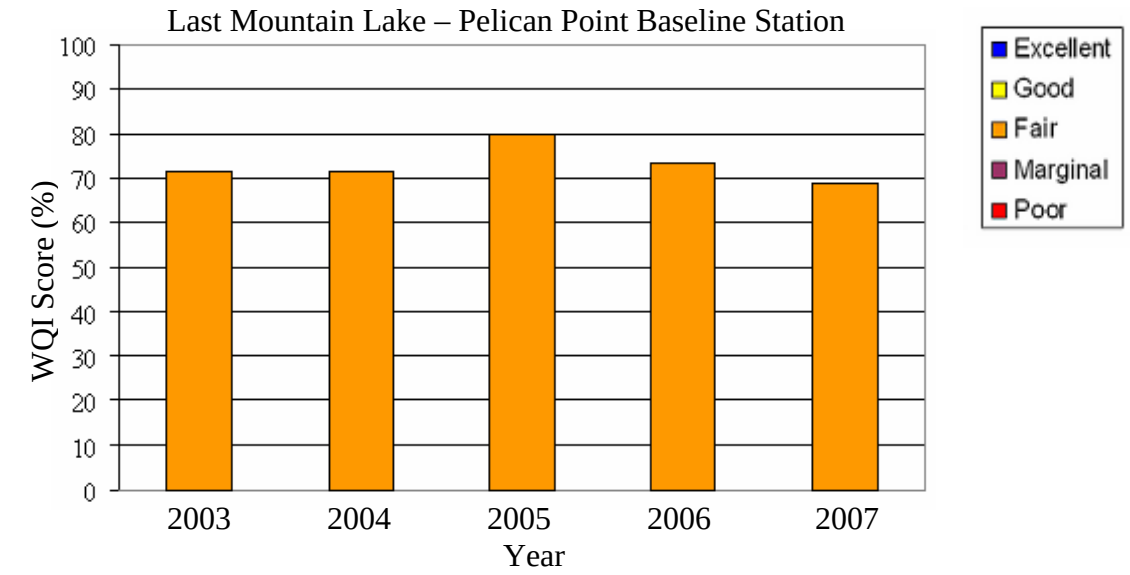

Figure 2 – Water Quality Index (WQI) scores for Last Mountain Lake – Pelican Point Baseline Station from 2003 to 2007.

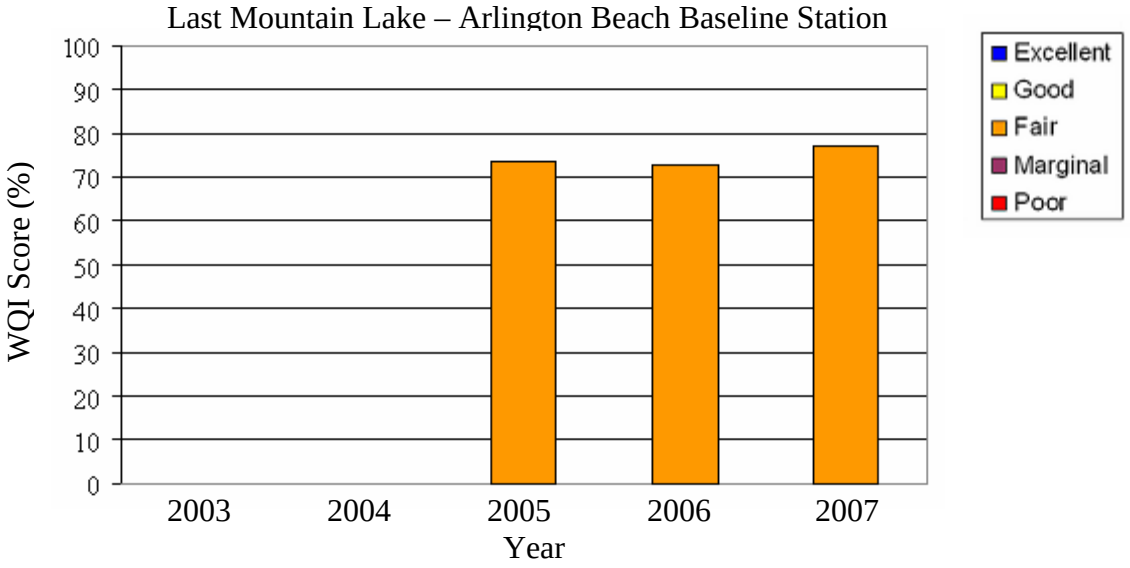

Figure 3 – Water Quality Index (WQI) scores for Last Mountain Lake – Arlington Beach Baseline Station from 2005 to 2007. Note: 2005 was the first year that Arlington Beach Baseline Station was sampled.

3.0 Water Quality Results and Discussion

3.1 Baseline Station Summary

Since water sampling began in 2003, annual WQI scores for Last Mountain Lake have been rather consistent from year to year and between the two baseline sites (Figures 2 and 3).

The WQI scores of the Pelican Point Baseline Station (south end of the lake) did not appear to improve or worsen over the sample period from 2003 to 2007. Arlington Beach Baseline Station (north end of the lake) WQI scores also appeared consistent from 2005 to 2007 (water quality sampling began at this site in 2005). Both baseline stations have WQI scores categorized as *fair* by the WQI. The consistency in both the frequency and magnitude of the parameters identified as "exceeding" the WQI index indicates that these exceedances may not be due to human influences, but rather to natural processes, and may not impair the ecology of Last Mountain Lake.

3.2 Parameters that Exceeded WQI Objectives

In summary, sodium and chloride (objectives set for irrigation) consistently exceed the WQI objectives at both baseline sites during the study period. Phosphorous often exceeded Saskatchewan Watershed Authority's target value at Pelican Point baseline, but not at Arlington Beach baseline. Both baseline stations at Last Mountain Lake had basic (vs. acidic) pH on all sample dates, but the WQI objective range for pH was only exceeded approximately once per year. Metals that exceeded the WQI at least once during the sample period were arsenic, chromium and aluminum. At Pelican Point baseline, chlorophyll *a* exceeded the WQI twice from 2003 to 2007 and at Arlington Beach baseline it exceeded once from 2005 to 2007.

Chloride and Sodium
Chloride and sodium are salts naturally found in surface water. Values from Arlington Beach baseline station were similar to those from Pelican Point baseline for both salts. Both baseline stations consistently exceeded objective values for both salts in both summer and winter from 2003 to 2007. The WQI objective for chloride is 100 mg/L (an irrigation suitability guideline). The baseline stations on Last Mountain Lake had chloride values ranging from 61.2 mg/L to 146 mg/L. The Saskatchewan Watershed Authority uses a target value of 100 mg/L to evaluate sodium levels in surface water. Baseline Station sodium values ranged from 258 mg/L to 354 mg/L from 2003 to 2007.

Phosphorous
Phosphorous is the nutrient that is most often associated with increased plant and algal growth in freshwater lakes. Although nutrients are necessary for foodweb functioning (and healthy fish populations), excess nutrients can lead to decreased dissolved oxygen, decreased water clarity and increased plant and algae growth (including cyanobacteria). Nutrients may enter the lake from upstream tributaries, rainstorms, die-off of aquatic plants or algae, direct runoff of lawn fertilizer and from leaky septic systems. Nutrient recycling from within the lake may also be a significant source of nutrients in Last Mountain Lake.

Saskatchewan's *Surface Water Quality Objectives* do not include an objective for total phosphorus, but because it is an important indicator of lake productivity, Saskatchewan Watershed Authority has adopted a target value of 0.1 mg/L for total phosphorus. Last Mountain Lake exceeded Saskatchewan Watershed Authority's target value for total phosphorous about once per year at Pelican Point baseline (usually in early fall) in 2003-2006 and four times in 2007. Values ranged from 0.04 mg/L to 0.27 mg/L. Phosphorous did not exceed the target value at Arlington Beach baseline from 2005 – 2007; values ranged from 0.03 mg/L to 0.10 mg/L.

pH

pH is an important water quality parameter that affects chemical and biological reactions within lakes. Extremes in pH or rapid changes in pH can negatively impact aquatic life. Saskatchewan lakes demonstrate a variety of pH levels from basic to acidic. Typical of most southern prairie lakes, Last Mountain Lake is basic with pH ranging from 8.1 to 9.2 pH units in 2003 – 2007. The objective range used to calculate the WQI score is 6.5 to 9.0 pH units.

Metals

Arsenic, chromium, and aluminum are natural elements found in soil and bedrock. They may enter surface water supplies through natural rock weathering, discharge of industrial wastewater, agricultural pollution, and dissolution in rain, snow, or groundwater. It is difficult to trace the source of metals in surface water since there are many natural and human sources. Given that Saskatchewan is rich in many minerals, it is not unusual to find these minerals in surface water.

Arsenic is an element common in Saskatchewan's ground and surface water. The arsenic objective (set for the protection of aquatic life) in surface water is 5 µg/L and this objective was exceeded at both of Last Mountain Lake's baseline stations at least once per year with values ranging from 3.5 µg/L to 9.6 µg/L.

The objective values for chromium (0.001 mg/L) and aluminum were less often exceeded at Last Mountain Lake's baseline stations. Arlington Beach baseline water samples exceeded the chromium objective once in 2005 and once in 2006 (concentrations were both 0.003 mg/L). Once in 2003, a Pelican Point baseline water sample exceeded the aluminum objective of 0.1 µg/L. The aluminum concentration in that water sample was 0.17 µg/L.

Since trace metal analysis was not consistently performed on water samples from Last Mountain Lake until 2005 it is difficult to assess whether levels are increasing, decreasing, or remaining the same. Since the concentration of these trace metals seem consistent within the short time they have been monitored, it is possible that these metals are from natural sources.

3.3 Shoreline Stations

Because Last Mountain Lake is so large, seven shoreline stations were chosen for summer monitoring. Last Mountain Lake's shoreline stations are located at Colesdale Park, Grandview Beach, Arlington Beach, Little Arm Outlet, Last Mountain Regional Park, Valeport Dam, and Regina Beach (Figure 1). Water quality measurements at shoreline sampling stations are

compared to Saskatchewan's *Surface Water Quality Objectives for Recreation and Aesthetics* (2006). There are numeric objectives for clarity (Secchi depth), E. coli and turbidity. Chlorophyll *a* values are compared to the Saskatchewan Watershed Authority target value.

Similar to past years, water clarity (Secchi depth) was the objective most often exceeded at the shoreline stations of Last Mountain Lake. The surface water objective for contact recreation states that Secchi depth (depth at which the Secchi disk is still visible) should be at least 1.2 metres. Water clarity tends to decrease throughout the summer and is affected by factors such as wave action, suspended particles (sediment or algae), and the amount of coloured organic material in the water.

E. coli is a species of bacteria normally found in the lower intestines of animals and people. E. coli is commonly detected in surface water because people, pets, livestock and wild animals come into contact with the water. Shoreline samples from Last Mountain Lake commonly show some level of E. coli and steps to minimize contamination (i.e. proper septic tank maintenance and keeping pets out of the water) should continue. Similar to past years, some shoreline samples from Last Mountain Lake from 2005 to 2007 periodically exceeded the surface water guideline for contact recreation. Subsequent water samples from the same sites showed E. coli levels well below the recreation objective. Surface water is considered bacteriologically suitable for contact recreation unless the objective is exceeded within 30 days. No shoreline site exceeded the E. coli objective in more than one sample.

For recreational purposes, the surface water objective for turbidity is less than 50 NTU. This was exceeded only once from 2005 to 2007 at the Little Arm Outlet. Similar to water clarity, turbidity is influenced by water movement, wind, suspended particles, and organic matter.

The relative amount of algae in surface water is assessed by measuring chlorophyll *a* (the primary pigment that plants and algae use to convert sunlight into energy for growth). Chlorophyll *a* is an indicator of the productivity of the lake. Lakes high in nutrients tend to have more algae growth. Last Mountain Lake's shoreline stations tended to be below the objective for Chlorophyll *a* most of the time. If there were exceedances, it was only once in late summer. In general, shoreline stations tend to have higher algae concentrations than baseline stations due to factors such as wind and wave action as well as warmer temperatures.

When compared to the objectives used to calculate the WQI, the shoreline sampling stations at Last Mountain Lake have similar water quality to the baseline stations. Phosphorous exceeds the objective most often while pH exceeds it occasionally. A WQI index score is not calculated for shoreline stations because some parameters needed for the index (i.e. metals) are not measured at shoreline stations as well as the fact that shoreline water quality is much more indicative of the local conditions than water quality of the entire lake.

4.0 Recommendations

It is recommended that water quality sampling continue at Last Mountain Lake in order to assess its water quality over time. Last Mountain Lake water quality monitoring is scheduled to continue in 2008 then move to a sampling rotation where the lake water will be sampled every third year and compared to the baseline water quality gathered to this point.

To maintain the water quality of Last Mountain Lake, it is recommended that recreational users and upstream stakeholders minimize nutrient additions to the lake. Fertilizer use and disruption of natural vegetation and shoreline should be kept to a minimum. Enhancement of shoreline buffer zones to slow erosion and slow the flow of surface runoff to Last Mountain Lake will help reduce the amount of nutrients and other contaminants entering the lake.

The Saskatchewan Watershed Authority encourages the continuation of public education and outreach by the *Last Mountain Lake Stewardship Group Inc*. to teach lake users and stakeholders to follow healthy shoreline living practices such as those outlined in *On the Living Edge – Your Handbook for Waterfront Living* (see references cited).

5.0 References Cited

Canadian Council of Ministers of the Environment. 1999. Canadian water quality guidelines for the protection of aquatic life: 2006 Update. Canadian Council of Ministers of the Environment, Winnipeg.

Canadian Council of Ministers of the Environment. 1999. Water Quality Index 1.0, Technical Report. In: Canadian environmental quality guidelines. 1999. Canadian Council of Ministers of the Environment, Winnipeg.

Kipp, S. and C. Gallaway. 2003. On the Living Edge – Your handbook for water front living. Saskatchewan/Manitoba Edition. Federation of British Columbia Naturalist: British Columbia. Available through Nature Saskatchewan.

Saskatchewan Environment, Drinking Water Quality Section. 2006. Surface Water Quality Objectives: Interim Edition EPB 356. p. 7.

Data Tables

2005 - 2007

Last Mountain Lake – Arlington Beach Baseline Dissolved oxygen, temperature and conductivity profiles – 2005				
Date (2005)	**Depth (m)**	**Dissolved Oxygen (mg/L)**	**Water Temperature (ºC)**	**Conductivity (µS/cm)**
June 6	0	9.57	13.7	2,161
	1	9.65	13.6	2,162
	2	9.69	13.5	2,163
	3	9.65	13.5	2,162
	4	9.63	13.4	2,162
	5	6.72	13.3	2,163
	6	9.57	13.3	2,163
	7	9.31	13.3	2,162
	8	8.05	12.8	2,164
July 7	0	9.29	20.8	2,010
	1	9.33	20.7	2,019
	2	9.38	20.6	2,022
	3	9.28	20.5	2,021
	4	9.10	20.4	2,025
	5	8.91	20.3	2,028
	6	8.92	20.3	2,029
	7	8.75	20.3	2,029
	8	8.28	20.2	2,030
August 8	0	10.50	21.2	2,110
	1	10.31	26.1	2,114
	2	10.04	21.0	2,119
	3	9.90	20.9	2,119
	4	9.29	20.8	2,119
	5	8.50	20.6	2,120
	6	8.45	20.5	2,119
	7	8.38	20.4	2,110
September 25	0	10.29	13.4	2,065
	1	10.27	13.3	2,074
	2	10.29	13.2	2,082
	3	10.25	13.2	2,088
	4	10.24	13.2	2,089
	5	10.31	13.2	2,090
	6	10.21	13.2	2,092
	7	10.22	13.2	2,092
	8	10.21	13.2	2,093

Last Mountain Lake – Arlington Beach Baseline Surface Water Chemistry – 2005				
Parameters	**June 6**	**July 7**	**Aug 8**	**Sept 25**
Nutrients (mg/L)				
Dissolved Organic Carbon	11.8	12.8	12.6	12.9
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.03	<0.02	0.03	0.03
Total Kjedahl Nitrogen	0.4	1.0	1.4	1.5
Total Phosphorous	0.04	0.05	0.08	0.10
Ortho-Phosphate, as P	0.03	0.02	0.03	<0.02
Solids (mg/L)				
Total Dissolved	1,705	1,638	1,668	1,674
Suspended, Fixed	2	2	2	3
Suspended, Volatile	2	3	6	7
Suspended, Total	4	5	8	10
Bacteria (orgs/100 mL)				
Fecal Coliform	<10	<10	<10	10
Total Coliform	<10	<10	10	100
Major Ions (mg/L)				
Alkalinity, Total	284	282	284	286
Alkalinity, Phenol	10	18	30	30
Bicarbonate	322	300	273	276
Calcium	54	52	53	54
Carbonate	12.0	21.6	53.0	36.0
Chloride	124.0	122.8	126.8	126.2
Hardness, Total	538	513	536	543
Magnesium	98	93	98	99
Potassium	29	27	28	29
Sodium	311	298	304	309
Sulphate	754.8	723.4	749.0	744.5
Other				
Chlorophyll *a* (µg/L)	5.45	5.34	30.61	24.29
Conductivity (µS/cm)	2,200	2,150	2,210	2,200
pH (pH units)	8.5	8.7	8.9	8.9
Turbidity (NTU)	1.6	2.7	4.6	3.8
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	2.7	na
Chemical Oxygen Demand (mg/L)	33.7	26.5	35.6	42.1
Field Data				
Air Temperature (ºC)	15	28	22	12
pH (pH units)	8.60	8.73	8.90	9.06
Secchi Disk (meters)	2.7	2.7	1.5	1.4
Turbidity (N.T.U.)	0.76	1.25	6.91	2.33
Wind Speed (km/hr)	20	SW 20	0	SW 25
Cloud Cover (%)	50	35	50	5

Last Mountain Lake – Arlington Beach Baseline Surface Metal Concentrations – 2005				
Parameters	**June 5**	**July 7**	**August 8**	**Sept 25**
Metals (mg/L)				
Mercury (µg/L)	<0.05	<0.05	<0.05	<0.05
Aluminum	<0.005	0.007	<0.005	<0.005
Arsenic (µg/L)	4.9	5.8	6.8	7.8
Barium	0.034	0.034	0.035	0.034
Beryllium	<0.001	<0.001	<0.001	<0.001
Boron	0.42	0.42	0.043	0.42
Cadmium	<0.001	<0.001	<0.001	<0.001
Chromium	0.003	<0.001	<0.001	0.22
Cobalt	<0.001	<0.001	<0.001	<0.001
Copper	<0.001	<0.001	<0.001	<0.001
Iron	0.006	0.008	0.006	0.008
Lead	<0.002	<0.002	<0.002	0.003
Manganese	0.004	0.007	0.018	0.013
Molybdenum	0.002	<0.001	0.002	0.002
Nickel	<0.001	<0.001	<0.001	<0.001
Phoshorous	0.02	0.03	0.03	0.03
Silicon, Soluble	1.3	1.1	2.3	1.5
Silver	<0.001	<0.001	<0.001	<0.001
Strontium	0.34	0.35	0.35	0.34
Titanium	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.001	<0.001	<0.001	0.002
Zinc	<0.005	<0.005	<0.005	<0.005
Zirconium	<0.001	<0.001	<0.001	<0.001
Herbicides (µg/L)				
2,4,5-T	<0.5	<0.5	<0.5	<0.5
2,4,5-TP (silvex)	<0.5	<0.5	<0.5	<0.5
2,4-D	<0.5	<0.5	<0.5	<0.5
Bromoxynil (Buctril)	<0.5	<0.5	<0.5	<0.5
Dicamba (Banvel)	<0.5	<0.5	<0.5	<0.5
Diclofop-methyl (HoeGrass)	<1	<1	<1	<1
MCPA	<0.5	<0.5	<0.5	<0.5
Picloram (Tordon)	<1	<1	<1	<1

Last Mountain Lake – Pelican Point Baseline Dissolved oxygen, temperature and conductivity profiles – 2005					
Date	**Depth**	**Dissolved Oxygen**		**Water Temperature**	**Conductivity**
(d/m/y)	**(m)**	**(mg/L)**	**% sat**	**(ºC)**	**(µS/cm)**
Jan 26	0	9.91		0.0	1,107
	1	10.11		0.0	1,152
	2	9.75		0.2	1,184
	3	10.62		0.2	1,198
	4	10.72		0.2	1,202
	5	11.15		0.3	1,212
	6	7.11		1.1	1,314
March 7	0	11.95		0.1	1,275
	1	11.90		0.1	1,276
	2	11.35		0.2	1,278
	3	11.38		0.3	1,284
	4	11.74		0.4	1,299
	5	11.15		0.9	1,303
	6	6.05		0.6	1,373
June 5	0	9.58	93.8	13.5	1,603
	1	9.58	92.5	13.5	1,603
	2	9.70	93.4	13.5	1,602
	3	9.70	93.7	13.4	1,601
	4	9.66	92.5	13.4	1,599
	5	9.21	88.6	13.1	1,587
	6	5.74	52.5	10.3	1,540
July 7	0	8.35		20.9	1,992
	1	8.84		21.0	1,994
	2	8.19		20.5	1,998
	3	8.14		19.7	2,001
	4	7.21		19.2	2,007
	5	3.50		16.5	2,025
	6	3.54		16.4	2,026
Sept 25	0	8.69		13.5	2,085
	1	8.53		13.5	2,095

Last Mountain Lake – Pelican Point Baseline Surface Water Chemistry – 2005					
Parameters	**Jan 24**	**Mar 7**	**June 5**	**July 7**	**Sept 25**
Nutrients (mg/L)					
Dissolved Organic Carbon	12.1	12.1	11.8	13.3	12.0
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.07	0.08	0.02	0.03	0.03
Total Kjedahl Nitrogen	1.2	1.2	1.2	1.0	1.2
Total Phosphorous	0.04	0.05	0.05	0.07	0.18
Ortho-Phosphate, as P	0.03	0.04	0.05	0.06	0.12
Solids (mg/L)					
Total Dissolved	1,799	1,887	1,615	1,617	1,691
Suspended, Fixed	<1	<1	2	4	2
Suspended, Volatile	1	1	2	2	5
Suspended, Total	2	1	4	6	7
Bacteria (orgs/100 mL)					
Fecal Coliform	<10	<10	<10	<10	30
Fecal Strep	<10	<10	na	na	na
Total Coliform	<10	<10	<10	20	50
Major Ions (mg/L)					
Alkalinity, Total	306	316	274	280	288
Alkalinity, Phenol	12	8	9	10	16
Bicarbonate	344	366	312	317	312
Calcium	60	61	55	54	58
Carbonate	14.4	9.6	10.8	12.0	19.2
Chloride	132.2	139.5	117.3	119.6	125.3
Hardness, Total	599	614	516	514	557
Magnesium	109	112	92	92	100
Potassium	31	32	28	27	29
Sodium	334	354	285	289	309
Sulphate	774.7	813.3	714.7	706.5	738.9
Other					
Chlorophyll *a* (µg/L)	0.89	2.78	8.06	2.27	16.79
Conductivity (µS/cm)	2,350	2,410	2,050	2,110	2,200
pH (pH units)	8.5	8.4	8.4	8.5	8.7
Turbidity (N.T.U.)	0.60	0.51	1.80	3.70	2.80
Biochemical Oxygen Demand (mg/L)	<2	<2	na	<2	na
Chemical Oxygen Demand (mg/L)	29.7	23.5	23.6	23.2	37.4
Field Data					
Air Temperature (ºC)	-15	-5	15	22	12
pH (pH units)	8.15	8.54	8.53	8.50	8.73
Turbidity (NTU)	1.32	na	7.10	2.95	2.84

Secchi Disk Transparency (m)	na	na	2.0	1.8	1.6
Cloud Cover (%)	na	100	90	75	50
Wind Speed (Km/hr)	W 15	0	20-30	0	na
Wave Height (cm)	na	na	15-30	na	15-18

Last Mountain Lake – Pelican Point Baseline Bottom Water Chemistry – 2005		
Parameters	**Jan 24**	**Mar 7**
Nutrients (mg/L)		
Dissolved Organic Carbon	12.8	12.1
Nitrate, as Nitrogen	<0.04	<0.04
Ammonia, as Nitrogen	0.07	0.11
Total Kjedahl Nitrogen	1.3	1.2
Total Phosphorous	0.05	0.05
Ortho-Phosphate, as P	0.04	0.04
Solids (mg/L)		
Total Dissolved	1,870	1,896
Suspended, Fixed	1	<1
Suspended, Volatile	1	1
Suspended, Total	2	1
Bacteria (orgs/100 mL)		
Fecal Coliform	<10	<10
Fecal Strep	<10	<10
Total Coliform	<10	<10
Major Ions (mg/L)		
Alkalinity, Total	312	316
Alkalinity, Phenol	12	6
Bicarbonate	351	371
Calcium	61	61
Carbonate	14.4	7.2
Chloride	140.1	139.8
Hardness, Total	609	614
Magnesium	111	112
Potassium	32	32
Sodium	343	355
Sulphate	817.4	818.2
Other		
Chlorophyll *a* (µg/L)	0.89	<0.20
Conductivity (µS/cm)	2,380	2,410
pH (pH units)	8.5	8.4
Turbidity (N.T.U.)	0.67	0.53
Biochemical Oxygen Demand (mg/L)	<2	<2
Chemical Oxygen Demand (mg/L)	28.4	25.2
Field Data		
pH (pH units)	8.53	6.50
Turbidity (NTU)	1.77	na

Last Mountain Lake – Pelican Point Baseline Surface Metal Concentrations – 2005			
Parameters	**June 5**	**July 7**	**Sept 25**
Metals (mg/L)			
Mercury (µg/L)	<0.05	<0.05	<0.05
Aluminum	<0.005	0.007	0.021
Arsenic (µg/L)	3.5	4.3	9.4
Barium	0.041	0.041	0.034
Beryllium	<0.001	<0.001	<0.001
Boron	0.39	0.039	0.042
Cadmium	<0.001	<0.001	<0.001
Chromium	<0.001	<0.001	<0.001
Cobalt	<0.001	<0.001	<0.001
Copper	<0.001	<0.001	<0.001
Iron	0.018	0.068	0.033
Lead	<0.002	<0.002	0.002
Manganese	0.006	0.005	0.018
Molybdenum	0.002	<0.001	0.002
Nickel	<0.001	<0.001	0.001
Phoshorous	0.03	0.03	0.09
Silicon, Soluble	1.9	3.4	4.8
Silver	<0.001	<0.001	<0.001
Strontium	0.34	0.35	0.35
Titanium	<0.001	<0.001	<0.001
Vanadium	<0.001	<0.001	0.003
Zinc	<0.005	<0.005	<0.005
Zirconium	<0.001	<0.001	<0.001
Herbicides (µg/L)			
2,4,5-T	<0.5	<0.5	<0.5
2,4,5-TP (silvex)	<0.5	<0.5	<0.5
2,4-D	<0.5	<0.5	<0.5
Bromoxynil (Buctril)	<0.5	<0.5	<0.5
Dicamba (Banvel)	<0.5	<0.5	<0.5
Diclofop-methyl (HoeGrass)	<1	<1	<1
MCPA	<0.5	<0.5	<0.5
Picloram (Tordon)	<1	<1	<1

Last Mountain Lake – Arlington Beach Shoreline Water Chemistry – 2005				
Parameters	**June 6**	**July 7**	**Aug 9**	**Sept 26**
Nutrients (mg/L)				
Dissolved Organic Carbon	11.7	12.2	13.2	12.8
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	<0.02	<0.02	0.03	0.03
Total Kjedahl Nitrogen	1.3	1.0	1.5	1.5
Total Phosphorous	0.06	0.06	0.07	0.09
Ortho-Phosphate, as P	0.02	0.02	<0.02	0.03
Solids (mg/L)				
Suspended, Fixed	4	4	3	5
Suspended, Volatile	4	5	8	6
Suspended, Total	7	9	11	11
Bacteria (orgs/100 mL)				
Fecal Coliform	40	70	<10	<10
Total Coliform	200	530	200	400
Other				
Chlorophyll *a* (µg/L)	6.34	6.71	31.30	18.96
Turbidity (N.T.U.)	1.6	3.3	5.1	4.2
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	3.2	2.5
Chemical Oxygen Demand (mg/L)	27.8	27.7	44.1	41.3
Field Data				
Air Temperature (ºC)	15	25	20	14
Water Temperature (ºC)	14.0	21.7	21.5	12.4
Turbidity (NTU)	1.64	2.58	6.19	2.24
pH (pH units)	8.61	8.68	9.00	9.02
Secchi Disk (meters)	>1.20	>1.00	>1.00	>1.00
Wind Speed (km/hr)	N 15	SW 20	0	SW 5
Cloud Cover (%)	10	5	0	50
Total Depth (m)	1.20	<1.00	1.00	na

Last Mountain Lake – Colesdale Park Shoreline Water Chemistry – 2005				
Parameters	**June 6**	**July 6**	**Aug 8**	**Sept 25**
Nutrients (mg/L)				
Dissolved Organic Carbon	12.0	11.6	12.8	11.6
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	<0.02	0.02	0.03	0.04
Total Kjedahl Nitrogen	1.2	1.0	2.6	1.2
Total Phosphorous	0.05	0.04	0.16	0.11
Ortho-Phosphate, as P	0.02	<0.02	<0.02	0.06
Solids (mg/L)				
Suspended, Fixed	2	2	2	2
Suspended, Volatile	2	2	17	4
Suspended, Total	4	4	18	6
Bacteria (orgs/100 mL)				
Fecal Coliform	<10	20	10	<10
Total Coliform	20	1,300	200	50
Other				
Chlorophyll *a* (µg/L)	7.70	2.89	92.72	23.50
Turbidity (N.T.U.)	1.3	1.6	15.0	<2.0
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	8.6	<2.0
Chemical Oxygen Demand (mg/L)	33.5	27.1	47.3	34.9
Field Data				
Air Temperature (ºC)	18	28	20	16
Water Temperature (ºC)	13.1	20.6	20.5	15.4
Turbidity (NTU)	1.08	1.09	10.20	1.87
pH (pH units)	8.63	8.69	8.78	8.81
Secchi Disk (meters)	>1.25	>1.20	>1.00	>1.00
Wind Speed (km/hr)	N 25	SW 25	NW 5	0
Cloud Cover (%)	65	10	0	25
Total Depth (m)	1.25	1.20	1.00	1.00

Last Mountain Lake – Grandview Beach Shoreline Water Chemistry – 2005				
Parameters	**June 6**	**July 6**	**Aug 8**	**Sept 25**
Nutrients (mg/L)				
Dissolved Organic Carbon	11.5	12.4	12.6	11.5
Nitrate, as Nitrogen	<0.04	<0.04	<0.004	<0.04
Ammonia, as Nitrogen	0.02	0.02	0.03	0.03
Total Kjedahl Nitrogen	1.1	1.0	1.7	1.3
Total Phosphorous	0.04	0.05	0.09	0.14
Ortho-Phosphate, as P	0.03	<0.02	0.04	0.08
Solids (mg/L)				
Suspended, Fixed	2	2	3	3
Suspended, Volatile	2	4	7	3
Suspended, Total	4	6	10	6
Bacteria (orgs/100 mL)				
Fecal Coliform	20	20	70	<10
Total Coliform	60	1,000	<100	100
Other				
Chlorophyll *a* (µg/L)	4.98	6.89	40.38	24.29
Turbidity (NTU)	1.3	2.1	12.0	2
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	4.4	na
Chemical Oxygen Demand (mg/L)	27.3	28.7	38.7	37.2
Field Data				
Air Temperature (ºC)	18	29	18	15
Water Temperature (ºC)	15.3	18.5	21.4	15.4
Turbidity (N.T.U.)	1.14	1.54	na	1.78
pH (pH units)	8.69	8.62	8.85	8.83
Secchi Disk (meters)	>1.10	>1.20	>1.00	>1.00
Wind Speed (km/hr)	NE 30	0	NE 10	SW 10
Cloud Cover (%)	98	95	100	75
Total Depth (m)	1.10	1.20	1.00	1.00

Last Mountain Lake – Little Arm Outlet Shoreline Water Chemistry – 2005				
Parameters	**June 6**	**July 7**	**Aug 8**	**Sept 26**
Nutrients (mg/L)				
Dissolved Organic Carbon	13.2	13.4	13.8	11.9
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.02	0.02	0.04	0.03
Total Kjedahl Nitrogen	1.4	1.4	4.1	1.4
Total Phosphorous	0.09	0.15	0.24	0.19
Ortho-Phosphate, as P	0.04	0.04	0.045	0.14
Solids (mg/L)				
Suspended, Fixed	6	12	24	1
Suspended, Volatile	4	5	5	4
Suspended, Total	10	17	29	5
Bacteria (orgs/100 mL)				
Fecal Coliform	<10	10	20	20
Total Coliform	90	300	<100	20
Other				
Chlorophyll *a* (µg/L)	11.36	3.85	242.74	12.84
Turbidity (N.T.U.)	2.6	3.2	55.0	2.5
Biochemical Oxygen Demand (mg/L)	2	<2	16	<2
Chemical Oxygen Demand (mg/L)	40.0	28.5	70.0	38.5
Field Data				
Air Temperature (ºC)	15	28	20	19
Water Temperature (ºC)	18.2	21.7	22.7	14.9
Turbidity (NTU)	3.20	2.06	35.60	1.29
pH (pH units)	8.59	8.57	9.02	8.73
Secchi Disk (meters)	>1.10	0.90	0.35	0.80
Wind Speed (km/hr)	NE 20	20-25	10	0
Cloud Cover (%)	95	100	100	10
Total Depth (m)	1.10	1.10	1.00	1.00

Last Mountain Lake – North Regional Park Shoreline Water Chemistry – 2005				
Parameters	**June 5**	**July 6**	**Aug 9**	**Sept 26**
Nutrients (mg/L)				
Dissolved Organic Carbon	12.9	13.1	15.5	13.4
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.03	0.02	0.03	0.03
Total Kjedahl Nitrogen	1.2	1.3	1.7	1.5
Total Phosphorous	0.05	0.05	0.07	0.08
Ortho-Phosphate, as P	0.02	0.02	0.02	0.04
Solids (mg/L)				
Suspended, Fixed	4	2	2	2
Suspended, Volatile	4	5	7	4
Suspended, Total	8	7	9	6
Bacteria (orgs/100 mL)				
Fecal Coliform	10	170	10	<10
Total Coliform	60	900	200	550
Other				
Chlorophyll *a* (µg/L)	7.70	5.11	13.78	15.89
Turbidity (NTU)	2.4	2.8	4.5	4.0
Biochemical Oxygen Demand (mg/L)	na	2.1	3.6	2.6
Chemical Oxygen Demand (mg/L)	31.8	29.3	49.4	43.4
Field Data				
Air Temperature (ºC)	18	23	22	10
Water Temperature (ºC)	16.7	21.8	22.3	10.9
Turbidity (NTU)	7.70	3.06	na	2.96
pH (pH units)	8.67	8.92	9.00	8.88
Secchi Disk (meters)	1.35	0.85	1.00	1.00
Wind Speed (km/hr)	5-10	SW 15	calm	SW 10
Cloud Cover (%)	70	5	0	25

Total Depth (m)	1.35	0.90	1.10	1.00

Last Mountain Lake – Regina Beach Shoreline Water Chemistry – 2005				
Parameters	**June 6**	**July 7**	**Aug 8**	**Sept 25**
Nutrients (mg/L)				
Dissolved Organic Carbon	11.1	12.0	12.5	12.7
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	<0.02	<0.02	0.03	0.03
Total Kjedahl Nitrogen	1.2	1.0	1.7	1.3
Total Phosphorous	0.06	0.08	0.12	0.20
Ortho-Phosphate, as P	0.04	0.05	0.05	0.15
Solids (mg/L)				
Suspended, Fixed	7	3	4	3
Suspended, Volatile	3	3	9	3
Suspended, Total	9	6	13	6
Bacteria (orgs/100 mL)				
Fecal Coliform	60	70	50	10
Total Coliform	40	150	40	<10
Other				
Chlorophyll *a* (µg/L)	7.23	3.93	na	7.60
Turbidity (NTU)	3.5	3.5	14.0	3.3
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	5.1	<2.0
Chemical Oxygen Demand (mg/L)	26.6	25.0	38.4	36.2
Field Data				
Air Temperature (ºC)	15	25	20	18
Water Temperature (ºC)	17.0	20.9	22.5	16.2
Turbidity (NTU)	6.25	2.97	13.9	na
pH (pH units)	8.49	8.45	8.79	8.66
Secchi Disk (meters)	1.0	>1.2	0.9	>1.0

Wind Speed (km/hr)	SE 15	5	0	0
Cloud Cover (%)	95	50	90	0
Total Depth (m)	1.1	1.2	1.0	1.0

Last Mountain Lake – Valeport Dam Shoreline Water Chemistry – 2005			
Parameters	**June 6**	**July 6**	**Aug 8**
Nutrients (mg/L)			
Dissolved Organic Carbon	11.9	12.9	11.6
Nitrate, as Nitrogen	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.06	0.03	0.03
Total Kjedahl Nitrogen	1.3	1.0	2.2
Total Phosphorous	0.17	0.20	0.22
Ortho-Phosphate, as P	0.09	0.12	<0.02
Solids (mg/L)			
Suspended, Fixed	23	15	15
Suspended, Volatile	6	5	16
Suspended, Total	28	20	31
Bacteria (orgs/100 mL)			
Fecal Coliform	10	30	<10
Total Coliform	200	10	10
Other			
Chlorophyll *a* (µg/L)	19.75	4.52	211.71
Turbidity (NTU)	11.0	11.1	14.0
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	6.1
Chemical Oxygen Demand (mg/L)	34.1	28.9	44.4
Field Data			
Air Temperature (ºC)	20	30	18
Water Temperature (ºC)	18.1	23.3	20.5
Turbidity (NTU)	11.60	8.22	16.10
pH (pH units)	8.30	8.51	9.22

Secchi Disk (meters)	na	na	na
Wind Speed (km/hr)	N 20	SW 35	0
Cloud Cover (%)	75	50	0
Total Depth (m)	2.00	na	na

Last Mountain Lake – Qu'Appelle River Russell Hill Road 2005			
Parameters	**Jan 27**	**Feb 28**	**June 22**
Nutrients (mg/L)			
Dissolved Organic Carbon	9.7	10.9	9.5
Nitrate, as Nitrogen	0.30	0.57	0.18
Ammonia, as Nitrogen	9.57	19.26	0.03
Total Kjedahl Nitrogen	12.3	22.0	2.1
Total Phosphorous	0.20	0.31	0.52
Ortho-Phosphate, as P	0.10	0.14	0.03
Solids (mg/L)			
Dissolved, Total	1,022	1,072	642
Suspended, Fixed	6	7	236
Suspended, Volatile	2	2	34
Suspended, Total	8	10	270
Bacteria (orgs/100 mL)			
Fecal Coliform	<10	10	40
Total Coliform	10	380	200
Other			
Chlorophyll *a* (µg/L)	2.33	2.97	136.54
Turbidity (NTU)	6.2	6.3	140.0
Biochemical Oxygen Demand (mg/L)	<2.0	2.2	5.4
Chemical Oxygen Demand (mg/L)	27.7	29.9	44.9

End of 2005 data tables.

Last Mountain Lake – Arlington Beach Baseline Dissolved oxygen, temperature and conductivity profiles – 2006				
Date (d/m/y)	**Depth (m)**	**Dissolved Oxygen (mg/L)**	**Water Temperature (ºC)**	**Conductivity (µS/cm)**
24/01/06	0	13.90	0.3	1,200
	1	13.92	0.4	1,209
	2	13.56	0.5	1,208
	3	13.55	0.4	1,212
	4	13.85	0.5	1,216
	5	13.95	0.5	1,224
	6	13.57	0.7	1,237
	7	12.50	1.2	1,258
27/03/06	0	11.36	0.2	1,268
	1	12.01	0.2	1,273
	2	11.64	0.7	1,291
	3	11.50	1.0	1,298
	4	11.28	1.1	1,303
	5	10.74	1.3	1,310
	6	9.37	1.5	1,324
	7	8.07	1.8	1,340
23/05/06	0	10.41	15.2	1,545
	1	10.42	14.9	1,591
	2	10.36	14.7	1,594
	3	10.20	14.6	1,600
	4	10.24	14.2	1,585
	5	10.22	13.3	1,576
	6	10.80	12.9	1,623
	7	10.05	12.3	1,595
26/07/06	0	14.77	23.3	2,361
	1	15.32	21.7	2,349
	2	13.75	21.1	2,367
	3	12.08	20.8	2,371
	4	10.34	20.5	2,376
	5	9.10	20.2	2,379
	6	6.85	20.1	2,387
	7	3.98	19.3	2,469
19/09/06	0	8.12	13.2	2,185
	1	8.02	13.2	2,191
	2	7.63	13.1	2,190
	3	7.48	13.1	2,191
	4	7.49	13.1	2,191
	5	7.63	13.0	2,191

	6	8.02	12.2	2,193
	7	7.94	11.9	2,194

Last Mountain Lake – Arlington Beach Baseline Surface Water Chemistry – 2006					
Parameters	**Jan 24**	**Mar 27**	**May 23**	**July 26**	**Sept 19**
Nutrients (mg/L)					
Dissolved Organic Carbon	12.6	na	12.7	11.6	12.7
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.03	0.04	0.02	0.02	0.08
Total Kjedahl Nitrogen	1.0	1.0	1.2	1.7	1.6
Total Phosphorous	0.03	0.03	0.06	0.06	0.09
Ortho-Phosphate, as P	<0.02	<0.02	<0.02	0.02	0.04
Solids (mg/L)					
Total Dissolved	1,753	1,824	1,523	1,492	1,553
Suspended, Fixed	<1	1	3	3	1
Suspended, Volatile	2	1	2	7	5
Suspended, Total	2	1	5	10	6
Bacteria (orgs/100 mL)					
E. Coli	<1	<1	1	<10	<10
Total Coliform	<1	<1	11	495	3,076
Major Ions (mg/L)					
Alkalinity, Total	298	308	322	270	278
Alkalinity, Phenol	20	16	16	34	22
Bicarbonate	315	337	354	246	285
Calcium	57	61	51	46	49
Carbonate	24.0	19.2	19.2	40.8	26.4
Chloride	129.5	131.7	105.7	113.4	114.6
Hardness, Total	571	601	477	473	497
Magnesium	104	109	85	87	91
Potassium	30	32	25	25	26
Sodium	318	340	258	267	272
Sulphate	775.0	794.3	625.2	667.0	689.1
Other					
Chlorophyll *a* (µg/L)	5.47	1.41	7.29	32.79	30.56
Conductivity (µS/cm)	2,290	2,280	2,030	2,070	2,130
pH (pH units)	8.7	8.6	8.6	9.0	8.8
Turbidity (NTU)	0.50	0.47	1.90	7.20	3.50
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	<2.0	3.8	<2.0
Chemical Oxygen Demand (mg/L)	30.4	30.6	34.7	42.4	44.2
Field Data					
Air Temperature (ºC)	-8	2	19	27	6
pH (pH units)	8.670	9.100	na	8.974	na
Secchi Disk (meters)	na	4.50	2.00	1.20	1.50
Turbidity (N.T.U.)	0.00	0.00	2.20	7.68	3.28
Wind Speed (km/hr)	NW 25	SW 5	S 5	0	2

Cloud Cover (%)	90	5	100	5	20

Last Mountain Lake – Arlington Beach Baseline Surface Metal Concentrations – 2006					
Parameters	**Jan 24**	**Mar 27**	**May 23**	**July 26**	**Sept 19**
Metals (mg/L)					
Mercury (µg/L)	<0.05	<0.05	<0.05	<0.05	<0.05
Aluminum	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic (µg/L)	7.1	8.2	5.9	7.6	7.2
Barium	0.036	0.036	0.033	0.032	0.035
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	0.44	0.44	0.38	0.39	0.40
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	<0.001	<0.001	<0.001	<0.001	0.003
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	0.001	0.001	<0.001	<0.001	0.001
Iron	<0.001	<0.001	0.007	0.005	0.008
Lead	<0.002	<0.002	<0.002	<0.002	<0.002
Manganese	0.001	0.003	0.007	0.017	0.012
Molybdenum	0.002	0.002	0.003	0.002	0.002
Nickel	<0.001	<0.001	<0.001	0.001	<0.001
Phosphorous	0.02	0.03	0.03	0.03	0.03
Silicon, Soluble	0.49	0.62	0.87	1.8	3.7
Silver	<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	0.37	0.37	0.34	0.34	0.35
Titanium	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	<0.005	<0.005	<0.005	<0.005	<0.005
Zirconium	<0.001	<0.001	<0.001	<0.001	<0.001
Herbicides (µg/L)					
2,4,5-T	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-TP (silvex)	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoxynil (Buctril)	<0.5	<0.5	<0.5	<0.5	<0.5
Dicamba (Banvel)	<0.5	<0.5	<0.5	<0.5	<0.5
Diclofop-methyl (HoeGrass)	<1	<1	<1	<1	<1
MCPA	<0.5	<0.5	<0.5	<0.5	<0.5
Picloram (Tordon)	<1	<1	<1	<1	<1

Last Mountain Lake – Pelican Point Baseline Dissolved oxygen, temperature and conductivity profiles – 2006				
Date (d/m/y)	**Depth (m)**	**Dissolved Oxygen (mg/L)**	**Water Temperature (ºC)**	**Conductivity (µS/cm)**
24/01/06	0	14.77	0.4	1,215
	1	14.94	0.4	1,218
	2	14.36	0.7	1,225
	3	14.16	0.8	1,227
	4	14.91	0.8	1,234
	5	14.90	0.9	1,246
	6	12.45	1.7	1,314
27/03/06	0	13.01	0.4	1,282
	1	12.99	0.3	1,292
	2	13.32	0.3	1,301
	3	13.39	0.4	1,305
	4	13.31	0.5	1,309
	5	12.58	0.8	1,322
	6	12.32	1.3	1,392
08/06/06	0	7.73	16.7	1,788
	1	7.80	16.0	1,760
	2	7.75	16.0	1,765
	too windy to continue profile			
26/07/06	0	16.07	24.7	2,097
	1	15.40	24.5	2,098
	2	15.19	24.5	2,102
	3	15.79	22.6	2,370
	4	9.91	22.1	2,391
	5	4.65	21.5	2,403
	6	4.25	22.8	2,132
19/09/06	0	8.52	14.8	2,182
	1	8.57	14.7	2,187
	2	8.14	13.8	2,183
	3	7.66	13.4	2,192
	4	7.26	13.2	2,198
	5	6.52	13.0	2,205
	6	6.26	13.0	2,204

Last Mountain Lake – Pelican Point Baseline Surface Water Chemistry – 2006					
Parameters	**Jan 24**	**Mar 27**	**June 8**	**July 26**	**Sept 19**
Nutrients (mg/L)					
Dissolved Organic Carbon	12.4	na	12.5	11.3	12.3
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.04	<0.02	<0.02	0.03	0.04
Total Kjedahl Nitrogen	1.0	1.1	1.0	1.6	1.4
Total Phosphorous	0.04	0.04	0.05	0.07	0.16
Ortho-Phosphate, as P	<0.02	0.03	<0.02	0.02	0.11
Solids (mg/L)					
Total Dissolved	1,773	1,833	1,545	1,526	1,546
Suspended, Fixed	<1	1	3	19	2
Suspended, Volatile	1	1	2	8	5
Suspended, Total	1	2	4	27	7
Bacteria (orgs/100 mL)					
E. Coli	<1	<1	3	<10	63
Total Coliform	<1	<1	33	121	1,145
Major Ions (mg/L)					
Alkalinity, Total	302	316	278	266	286
Alkalinity, Phenol	20	20	8	28	24
Bicarbonate	320	337	320	256	290
Calcium	58	60	53	40	50
Carbonate	24.0	24.0	9.6	33.6	28.8
Chloride	130.3	134.3	111.6	114.8	113.8
Hardness, Total	573	586	499	487	495
Magnesium	104	106	89	94	90
Potassium	30	30	26	27	26
Sodium	326	330	273	286	272
Sulphate	781.0	811.3	662.8	674.2	675.7
Other					
Chlorophyll *a* (µg/L)	5.59	6.14	4.09	53.11	26.79
Conductivity (µS/cm)	2,300	2,330	2,080	2,060	2,140
pH (pH units)	8.7	8.6	8.5	8.9	8.8
Turbidity (N.T.U.)	0.51	0.80	1.70	38.00	3.60
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	<2.0	3.8	<2.0
Chemical Oxygen Demand (mg/L)	31.4	29.1	28.2	42.3	37.9
Field Data					
Air Temperature (ºC)	-3	2	17	24	12

pH (pH units)	8.62	9.17	8.598	8.918	na
Turbidity (NTU)	0.00	0.00	2.68	3.21	2.39
Secchi Disk Transparency (m)	4.0	2.7	1.6	3.5	1.8
Cloud Cover (%)	100	0	100	30	45
Wind Speed (Km/hr)	0	0	25	0	10

Last Mountain Lake – Pelican Point Baseline Surface Metal Concentrations – 2006					
Parameters	**Jan 24**	**Mar 27**	**June 8**	**July 26**	**Sept 25**
Metals (mg/L)					
Mercury (µg/L)	<0.05	<0.05	<0.05	<0.05	<0.05
Aluminum	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic (µg/L)	7.0	8.0	5.8	9.6	8.8
Barium	0.037	0.038	0.037	0.024	0.033
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	0.44	0.46	0.40	0.39	0.041
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	0.002	0.001	<0.001	<0.001	0.001
Iron	<0.001	0.004	0.016	0.019	0.018
Lead	<0.002	<0.002	<0.002	<0.002	<0.002
Manganese	0.002	0.003	0.008	0.013	0.014
Molybdenum	0.002	0.002	0.002	0.002	0.002
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001
Phosphorous	0.03	0.03	0.03	0.04	0.11
Silicon, Soluble	1.1	1.5	1.6	1.8	3.3
Silver	<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	0.37	0.38	0.35	0.28	0.34
Titanium	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	0.003
Zinc	<0.005	<0.005	<0.005	<0.005	<0.005
Zirconium	<0.001	<0.001	<0.001	<0.001	<0.001
Herbicides (µg/L)					
2,4,5-T	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-TP (silvex)	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoxynil (Buctril)	<0.5	<0.5	<0.5	<0.5	<0.5
Dicamba (Banvel)	<0.5	<0.5	<0.5	<0.5	<0.5
Diclofop-methyl (HoeGrass)	<1	<1	<1	<1	<1
MCPA	<0.5	<0.5	<0.5	<0.5	<0.5

Picloram (Tordon)	<1	<1	<1	<1	<1

Last Mountain Lake – Arlington Beach Baseline Water Chemistry – 2006				
Parameters	**May 23**	**June 8**	**July 25**	**Sept 20**
Nutrients (mg/L)				
Dissolved Organic Carbon	12.6	12.9	12.2	14.0
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	<0.02	0.02	0.03	0.05
Total Kjedahl Nitrogen	1.4	1.1	2.5	1.7
Total Phosphorous	0.07	0.06	0.12	0.12
Ortho-Phosphate, as P	<0.02	<0.02	0.02	0.04
Solids (mg/L)				
Suspended, Fixed	5	3	6	3
Suspended, Volatile	4	3	15	8
Suspended, Total	8	7	21	11
Bacteria (orgs/100 mL)				
E. Coli	<1	4	74	<10
Total Coliform	112	384	36,400	2,382
Other				
Chlorophyll *a* (µg/L)	7.82	9.96	41.18	38.85
Turbidity (N.T.U.)	3.7	2.9	14.0	6.9
Biochemical Oxygen Demand (mg/L)	2.8	<2.0	6.1	2.6
Chemical Oxygen Demand (mg/L)	38.3	39.0	47.9	47.1
Field Data				
Air Temperature (ºC)	19	15	26	10
Water Temperature (ºC)	13.9	16.1	23.5	13.2
Turbidity (NTU)	2.20	2.73	14.40	4.30
pH (pH units)	na	8.806	8.970	9.021
Secchi Disk (meters)	1	>0.8	2.7	>1.0
Wind Speed (km/hr)	0	10	N 15	SW 25
Cloud Cover (%)	100	100	25	100
Total Depth (m)	1.0	0.8	1.0	1.0

Last Mountain Lake – Colesdale Park Shoreline Water Chemistry – 2006				
Parameters	**May 23**	**June 8**	**July 25**	**Sept 20**
Nutrients (mg/L)				
Dissolved Organic Carbon	12.5	12.8	11.2	13.2
Nitrate, as Nitrogen	<0.04	<0.04	0.04	0.05
Ammonia, as Nitrogen	<0.02	0.02	0.05	0.19
Total Kjedahl Nitrogen	1.4	1.2	1.9	1.5
Total Phosphorous	0.06	0.05	0.10	0.21
Ortho-Phosphate, as P	<0.02	<0.02	<0.02	0.10
Solids (mg/L)				
Suspended, Fixed	2	5	5	5
Suspended, Volatile	3	4	10	5
Suspended, Total	5	8	14	10
Bacteria (orgs/100 mL)				
E. Coli	1	21	41	31
Total Coliform	116	1,515	191,800	3,255
Other				
Chlorophyll *a* (µg/L)	13.27	8.65	37.62	27.85
Turbidity (N.T.U.)	2.2	3.1	10.0	2.5
Biochemical Oxygen Demand (mg/L)	2.5	<2.0	5.9	<2.0
Chemical Oxygen Demand (mg/L)	33.6	37.1	39.1	37.3
Field Data				
Air Temperature (ºC)	20	15	28	8
Water Temperature (ºC)	12.0	15.8	22.9	15.5
Turbidity (NTU)	na	1.92	14.00	2.39
pH (pH units)	na	8.577	8.93	8.95
Secchi Disk (meters)	0.95	na	>1.0	>1.0
Wind Speed (km/hr)	SW 5-10	15	NW 20	S 15
Cloud Cover (%)	95	100	10	75
Total Depth (m)	0.95	na	1.00	1.0

Last Mountain Lake – Grandview Beach Shoreline Water Chemistry – 2006				
Parameters	**May 23**	**June 7**	**July 25**	**Sept 19**
Nutrients (mg/L)				
Dissolved Organic Carbon	13.0	12.8	11.1	12.2
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.05	<0.02	0.03	0.11
Total Kjedahl Nitrogen	0.8	1.0	2.2	1.4
Total Phosphorous	0.05	0.05	0.10	0.15
Ortho-Phosphate, as P	<0.02	<0.02	<0.02	0.10
Solids (mg/L)				
Suspended, Fixed	2	2	4	2
Suspended, Volatile	3	3	12	5
Suspended, Total	6	6	16	7
Bacteria (orgs/100 mL)				
E. Coli	<1	8	213	<10
Total Coliform	10	172	7,400	1,576
Other				
Chlorophyll *a* (µg/L)	9.78	4.55	61.77	28.88
Turbidity (NTU)	1.7	1.6	9.5	5.3
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	6.4	2.4
Chemical Oxygen Demand (mg/L)	35.2	33.3	50.0	40.8
Field Data				
Air Temperature (ºC)	15	27	27	10
Water Temperature (ºC)	11.9	17.8	24.9	16.5
Turbidity (N.T.U.)	na	1.82	12.10	2.77
pH (pH units)	8.490	8.782	9.038	na
Secchi Disk (meters)	>1.5	>1.1	>1.0	>1.0
Wind Speed (km/hr)	0	25	N 20	0
Cloud Cover (%)	100	10	15	0
Total Depth (m)	1.5	1.1	1.0	1.0

Last Mountain Lake – Little Arm Outlet Shoreline Water Chemistry – 2006				
Parameters	**May 23**	**June 7**	**July 25**	**Sept 20**
Nutrients (mg/L)				
Dissolved Organic Carbon	13.1	12.8	12.3	13.1
Nitrate, as Nitrogen	<0.04	<0.04	0.04	0.06
Ammonia, as Nitrogen	0.03	<0.02	0.07	0.06
Total Kjedahl Nitrogen	1.2	1.6	2.5	1.4
Total Phosphorous	0.11	0.07	0.15	0.18
Ortho-Phosphate, as P	0.04	<0.02	<0.02	0.10
Solids (mg/L)				
Suspended, Fixed	9	4	11	5
Suspended, Volatile	5	4	20	5
Suspended, Total	14	8	32	10
Bacteria (orgs/100 mL)				
E. Coli	7	5	31	10
Total Coliform	365	172	36,900	712
Other				
Chlorophyll *a* (µg/L)	13.64	5.34	101.64	25.97
Turbidity (N.T.U.)	7.7	3.5	22.0	3.8
Biochemical Oxygen Demand (mg/L)	3.1	2.1	13.9	<2.0
Chemical Oxygen Demand (mg/L)	37.9	34.9	53.4	39.3
Field Data				
Air Temperature (ºC)	19	24	27	5
Water Temperature (ºC)	16.8	19.5	26.4	14.0
Turbidity (NTU)	5.92	3.82	2.24	3.65
pH (pH units)	8.580	8.717	7.095	8.861
Secchi Disk (meters)	>1.3	>1.6	0.4	>1.0
Wind Speed (km/hr)	0	10	15 W	10
Cloud Cover (%)	100	20	5	100
Total Depth (m)	1.5	1.6	1.1	1.0

Last Mountain Lake – North Regional Park Shoreline Water Chemistry – 2006				
Parameters	**May 23**	**June 8**	**July 25**	**Sept 20**
Nutrients (mg/L)				
Dissolved Organic Carbon	12.7	13.1	16.7	15.2
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	<0.02	0.02	0.04	0.07
Total Kjedahl Nitrogen	1.3	1.3	2.6	1.9
Total Phosphorous	0.10	0.09	0.17	0.13
Ortho-Phosphate, as P	0.02	<0.02	0.04	0.05
Solids (mg/L)				
Suspended, Fixed	2	2	6	9
Suspended, Volatile	3	4	12	9
Suspended, Total	6	6	18	18
Bacteria (orgs/100 mL)				
E. Coli	10	24	213	20
Total Coliform	172	1,274	58,300	1,112
Other				
Chlorophyll *a* (µg/L)	5.51	10.49	36.54	31.55
Turbidity (NTU)	2.6	2.7	11.0	5.6
Biochemical Oxygen Demand (mg/L)	2.6	2.8	6.0	3.1
Chemical Oxygen Demand (mg/L)	34.4	36.2	56.0	47.9
Field Data				
Air Temperature (ºC)	22	15	24	12
Water Temperature (ºC)	15.2	16.3	23.2	13.0
Turbidity (NTU)	na	3.27	14.40	5.46
pH (pH units)	na	8.809	8.732	9.020
Secchi Disk (meters)	1.5	>0.9	0.7	>0.8
Wind Speed (km/hr)	5	20	NW 20	SW 20
Cloud Cover (%)	0	100	40	100
Total Depth (m)	1.5	0.9	1.2	0.8

Last Mountain Lake – Regina Beach Shoreline Water Chemistry – 2006				
Parameters	**May 23**	**June 7**	**July 26**	**Sept 20**
Nutrients (mg/L)				
Dissolved Organic Carbon	12.7	11.9	11.8	13.1
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.04	0.04	0.10	0.05
Total Kjedahl Nitrogen	0.8	1.6	2.2	1.4
Total Phosphorous	0.06	0.07	0.14	0.21
Ortho-Phosphate, as P	<0.02	<0.02	0.05	0.14
Solids (mg/L)				
Suspended, Fixed	4	3	4	5
Suspended, Volatile	3	3	11	6
Suspended, Total	7	6	15	11
Bacteria (orgs/100 mL)				
E. Coli	1	126	10	20
Total Coliform	24	517	1,935	441
Other				
Chlorophyll *a* (µg/L)	3.76	2.97	18.37	28.35
Turbidity (NTU)	3.1	3.1	14.0	4.9
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	6.3	2.4
Chemical Oxygen Demand (mg/L)	31.0	32.1	43.2	34.9
Field Data				
Air Temperature (ºC)	17	27	25	8
Water Temperature (ºC)	15.0	19.2	25.2	12.2
Turbidity (NTU)	2.80	2.88	19.8	4.99
pH (pH units)	8.570	8.554	8.927	8.930
Secchi Disk (meters)	>1.5	>0.9	0.8	>1.0
Wind Speed (km/hr)	10	20	0	0
Cloud Cover (%)	100	25	5	100

Total Depth (m)	1.5	0.9	1.1	1.0

Last Mountain Lake – Valeport Dam Shoreline Water Chemistry – 2006			
Parameters	**May 23**	**June 8**	**July 25**
Nutrients (mg/L)			
Dissolved Organic Carbon	12.1	12.0	12.0
Nitrate, as Nitrogen	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.02	0.02	0.13
Total Kjedahl Nitrogen	1.1	1.0	1.9
Total Phosphorous	0.11	0.10	0.19
Ortho-Phosphate, as P	0.03	0.03	0.08
Solids (mg/L)			
Suspended, Fixed	17	10	6
Suspended, Volatile	3	4	7
Suspended, Total	19	13	13
Bacteria (orgs/100 mL)			
E. Coli	12	3	10
Total Coliform	199	712	33,200
Other			
Chlorophyll *a* (µg/L)	9.07	7.77	21.92
Turbidity (NTU)	9.4	6.8	10.0
Biochemical Oxygen Demand (mg/L)	2.0	<2.0	4.3
Chemical Oxygen Demand (mg/L)	34.7	35.7	38.0
Field Data			
Air Temperature (ºC)	22	17	28
Water Temperature (ºC)	16.2	16.1	25.4
Turbidity (NTU)	na	8.69	10.49
pH (pH units)	na	8.648	8.990

Secchi Disk (meters)	na	>1.5	na
Wind Speed (km/hr)	SE 20	10	N 20
Cloud Cover (%)	95	100	25
Total Depth (m)	na	1.5	na

End of 2006 data tables.

Last Mountain Lake – Arlington Beach Baseline Dissolved oxygen, temperature and conductivity profiles – 2007				
Date (d/m/y)	**Depth (m)**	**Dissolved Oxygen (mg/L)**	**Water Temperature (ºC)**	**Conductivity (µS/cm)**
06/02/07	1	13.85	0.8	1,233
	2	13.77	0.4	1,237
	3	13.71	0.5	1,239
	4	12.65	0.5	1,239
	5	13.60	0.7	1,244
	6	13.38	0.7	1,245
20/03/07	1	13.17	0.5	1,259
	2	12.57	0.7	1,271
	3	12.27	0.7	1,272
	4	11.99	0.7	1,275
	5	11.32	0.9	1,281
	6	10.51	1.0	1,292
11/06/07	0	9.18	15.3	1,935
	1	9.24	15.2	1,939
	2	9.21	15.1	1,940
	3	9.16	15.1	1,940
	4	8.98	15.0	1,939
	5	9.01	15.0	1,935
	6	9.00	15.0	1,936
	7	8.89	14.9	1,938

30/07/07	0	11.35	24.8	2,011
	1	11.50	24.8	2,014
	2	11.45	24.7	2,014
	3	11.13	24.7	2,014
	4	11.32	24.7	2,011
	5	8.73	23.9	2,017
	6	8.98	24.0	2,018
	7	8.15	23.6	2,019
	8	6.90	23.5	2,018
	9	4.96	23.4	2,020
29/08/07	0	7.63	16.9	2,086
	1	7.60	16.7	2,092
	2	7.74	16.6	2,090
	3	7.99	16.4	2,089
	4	7.81	16.3	2,088
	5	7.71	16.3	2,088
	6	7.11	16.3	2,088
	7	7.37	16.3	2,087
	8	7.20	16.3	2,087

Last Mountain Lake – Arlington Beach Baseline Surface Water Chemistry – 2007					
Parameters	**Feb 6**	**Mar 20**	**Jun 11**	**Jul 30**	**Aug 29**
Nutrients (mg/L)					
Dissolved Organic Carbon	13.3	13.4	na	12.9	13.0
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.07	0.04	0.02	<0.02	0.03
Total Kjedahl Nitrogen	1.3	1.1	1.0	1.4	1.4
Total Phosphorous	0.03	0.03	0.04	0.08	0.07
Ortho-Phosphate, as P	0.02	0.02	<0.02	0.04	0.05
Solids (mg/L)					
Dissolved, Total	1,702	1,813	1,474	1,516	1,538
Suspended, Fixed	<1	<1	<1	1	1
Suspended, Volatile	<1	1	2	12	7
Suspended, Total	<1	1	2	13	8
Bacteria (orgs/100 mL)					
E. Coli	<10	<1	<1	<10	<10
Total Coliform	<10	<1	2	44,800	3,076
Major Ions (mg/L)					
Alkalinity, Total	288	306	256	262	265
Alkalinity, Phenol	20.0	16.0	12.0	40.0	24.4
Bicarbonate	303	334	283	222	264
Calcium	54	58	54	57	54
Carbonate	24.0	19.2	14.0	48.0	29.0
Chloride	121.8	133.8	104.5	111.0	113.3
Hardness, Total	555	590	505	542	522
Magnesium	102	108	90	97	94
Potassium	30	32	27	29	28
Sodium	314	331	265	276	273
Sulphate	753.4	796.7	636.9	675.8	682.6
Other					
Chlorophyll *a* (µg/L)	1.12	<0.20	4.68	50.55	25.57
Conductivity (µS/cm)	2,223	2,338	1,884	1,898	1,965
pH (pH units)	8.6	8.6	8.6	9.1	8.8
Turbidity (NTU)	0.820	0.510	0.997	11.100	4.000
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	na	5.8	2.6
Chemical Oxygen Demand (mg/L)	32.8	31.5	na	50.1	41.1
Field Data					
Air Temperature (ºC)	-20	-5	18	24	20
pH (pH units)	8.89	8.77	8.747	8.95	8.84
Secchi Disk (meters)	na	na	2.6	0.8	1.6
Turbidity (N.T.U.)	na	2.60	0.0	10.27	3.90
Wind Speed (km/hr)	30	36	15	75	20

Cloud Cover (%)	80	25	100	90	80
Ice Depth (cm)	85	80	0	0	0

Last Mountain Lake – Arlington Beach Baseline Bottom Water Chemistry – 2007					
Parameters	**Feb 6**	**Mar 20**	**Jun 11**	**Jul 30**	**Aug 29**
Nutrients (mg/L)					
Dissolved Organic Carbon	13.2	13.5	na	12.6	12.8
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	na	0.08	<0.02	<0.02	0.02
Total Kjedahl Nitrogen	1.2	1.0	1.1	1.2	1.4
Total Phosphorous	0.03	0.03	0.04	0.06	0.09
Ortho-Phosphate, as P	0.02	0.02	<0.02	0.05	0.05
Solids (mg/L)					
Dissolved, Total	1,723	1,816	1,474	1,538	1,534
Suspended, Fixed	<1	<1	<1	1	1
Suspended, Volatile	<1	1	2	5	7
Suspended, Total	<1	1	2	6	8
Bacteria (orgs/100 mL)					
E. Coli	<10	<1	1	<10	<10
Total Coliform	<10	<1	121	7,270	2,359
Major Ions (mg/L)					
Alkalinity, Total	296	306	255	264	265
Alkalinity, Phenol	22.0	14.0	11.0	29.0	24.8
Bicarbonate	307	339	284	251	263
Calcium	55	59	54	58	54
Carbonate	26.4	16.8	13.0	35.0	30.0
Chloride	126.4	134.0	104.2	111.3	113.0
Hardness, Total	561	596	505	548	522
Magnesium	103	109	90	98	94
Potassium	29	32	27	29	28
Sodium	316	330	265	276	270
Sulphate	760.5	796.6	636.5	679.3	682.2
Other					
Chlorophyll *a* (µg/L)	1.12	1.94	4.66	27.95	29.42
Conductivity (µS/cm)	2,286	2,339	1,881	1,909	1,969
pH (pH units)	8.7	8.6	8.5	8.9	8.8
Turbidity (NTU)	0.75	0.44	1.18	2.70	4.50
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	na	<2.0	2.8
Chemical Oxygen Demand (mg/L)	35.2	32.3	33.8	41.1	41.3

Last Mountain Lake – Arlington Beach Baseline Surface Metal Concentrations – 2007					
Parameters	**Feb 6**	**Mar 20**	**Jun 11**	**July 30**	**Aug 29**
Metals (mg/L)					
Mercury (µg/L)	<0.05	<0.05	<0.05	<0.05	<0.05
Aluminum	<0.005	<0.005	<0.005	<0.005	<0.005
Arsenic (µg/L)	9.4	7.6	5.3	8.0	8.1
Barium	0.039	0.038	0.036	0.042	0.041
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	0.44	0.43	0.36	0.39	0.39
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	<0.001	<0.001	<0.001	<0.001	<0.001
Iron	0.039	0.005	0.002	0.011	0.004
Lead	<0.002	<0.002	<0.002	<0.002	<0.002
Manganese	0.005	0.003	0.006	0.020	0.007
Molybdenum	0.002	0.002	0.002	0.002	0.003
Nickel	<0.001	<0.001	<0.001	<0.001	<0.001
Phosphorous	0.03	0.02	0.02	0.04	0.03
Silicon, Soluble	1.5	1.5	1.1	2.5	4.2
Silver	<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	0.40	0.37	0.35	0.39	0.36
Titanium	<0.001	<0.001	<0.001	<0.001	<0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	<0.005	<0.005	<0.005	<0.005	<0.005
Zirconium	<0.001	<0.001	<0.001	<0.001	<0.001
Herbicides (µg/L)					
2,4,5-T	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-TP (silvex)	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoxynil (Buctril)	<0.5	<0.5	<0.5	<0.5	<0.5
Dicamba (Banvel)	<0.5	<0.5	<0.5	<0.5	<0.5
Diclofop-methyl (HoeGrass)	<1	<1	<1	<1	<1
MCPA	<0.5	<0.5	<0.5	<0.5	<0.5
Picloram (Tordon)	<1	<1	<1	<1	<1

Last Mountain Lake – Pelican Point Baseline Dissolved oxygen, temperature and conductivity profiles – 2007				
Date (d/m/y)	**Depth (m)**	**Dissolved Oxygen (mg/L)**	**Water Temperature (ºC)**	**Conductivity (µS/cm)**
06/02/07	1	13.56	0.1	1,238
	2	13.51	0.1	1,238
	3	13.58	0.0	1,238
	4	13.74	0.3	1,243
	5	12.30	0.9	1,278
	6	11.95	1.2	1,331
20/03/07	1	9.74	1.2	na
	2	10.48	0.5	1,260
	3	11.21	0.5	1,270
	4	11.48	0.5	1,280
	5	10.90	1.0	1,310
12/06/07	0	8.26	16.4	2,126
	1	8.30	16.3	2,126
	2	8.21	16.2	2,128
	3	8.19	16.2	2,128
	4	8.03	16.2	2,128
	5	7.20	15.9	2,127
	6	4.05	14.4	2,104
30/07/07	0	13.27	24.3	2,095
	1	12.65	24.3	2,099
	2	11.37	24.2	2,102
	3	11.43	24.0	2,102
	4	11.05	23.9	2,101
	5	3.18	21.9	2,102
28/08/07	0	8.34	16.6	2,146
	1	8.02	16.6	2,146
	2	8.00	16.6	2,149
	3	7.95	16.6	2,150
	4	8.01	16.6	2,150
	5	8.04	16.6	2,153
	6	8.05	16.6	2,153
01/10/07	0	8.44	11.6	2,124
	1	8.42	11.7	2,126
	2	8.44	11.7	2,127
	3	8.43	11.8	2,128

	4	8.47	11.8	2,127
	5	8.51	11.8	2,128

Mountain Lake – Pelican Point Baseline Surface Water Chemistry – 2007						
Parameters	**Feb 6**	**Mar 20**	**June 12**	**July 30**	**Aug 28**	**Oct 1**
Nutrients (mg/L)						
Dissolved Organic Carbon	16.4	15.2	na	12.4	13.4	12.6
Nitrate, as Nitrogen	<0.04	0.33	1.10	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	0.05	0.33	<0.02	<0.02	0.03	<0.02
Total Kjedahl Nitrogen	1.2	1.5	1.1	1.4	1.5	1.3
Total Phosphorous	0.03	0.26	<0.02	0.11	0.16	0.15
Ortho-Phosphate, as P	0.02	0.20	0.04	0.04	0.11	0.13
Solids (mg/L)						
Dissolved, Total	1,745	940	1,621	1615	1,600	1,610
Suspended, Fixed	1	1	1	2	2	2
Suspended, Volatile	1	5	1	10	9	5
Suspended, Total	2	5	2	12	11	7
Bacteria (orgs/100 mL)						
E. Coli	<10	<1	<1	<10	<10	40
Total Coliform	<10	164	15	2,046	7,270	110
Major Ions (mg/L)						
Alkalinity, Total	306	178	281	275	281	286
Alkalinity, Phenol	24.0	na	11.0	42.0	34.0	28.7
Bicarbonate	315	217	316	233	260	279
Calcium	56	42	56	60	55	55
Carbonate	28.8	na	13.0	50.0	41.0	34.0
Chloride	127.0	61.2	116.6	118.2	119.4	120.1
Hardness, Total	564	348	539	586	549	537
Magnesium	103	59	97	106	100	97
Potassium	29	21	28	31	29	28
Sodium	322	150	293	307	289	287
Sulphate	764.0	389.0	701.8	709.6	706.9	710.2
Other						
Chlorophyll *a* (µg/L)	2.23	10.68	3.41	78.10	29.55	15.67
Conductivity (µS/cm)	2,323	1,272	2,048	1,988	2,037	2,060
pH (pH units)	8.7	8.3	8.5	9.1	9.0	8.8
Turbidity (N.T.U.)	0.57	0.13	1.38	12.6	3.7	2.4
Biochemical Oxygen Demand (mg/L)	<2.0	4.9	<2.0	5.5	2.4	2.5
Chemical Oxygen Demand (mg/L)	32.0	43.3	31.7	51.1	48.1	33.6
Field Data						
Air Temperature (ºC)	-21	4	4	16	16	na
pH (pH units)	9.08	7.95	7.95	8.669	9.03	9.53
Turbidity (NTU)	na	14	14	na	2.87	3.81
Secchi Disk Transparency (m)	na	na	na	2.2	1.2	1.65
Cloud Cover (%)	2	75	75	40	60	100

Wind Speed (Km/hr)	NW 25	25	25	calm	20-30	20
Ice Depth (cm)	70	80	80	0	0	30

Last Mountain Lake – Pelican Point Baseline Bottom Water Chemistry – 2007						
Parameters	**Feb 6**	**Mar 20**	**June 12**	**July 30**	**Aug 28**	**Oct 1**
Nutrients (mg/L)						
Dissolved Organic Carbon	13.1	13.5	na	12.5	13.5	12.8
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	na	0.05	<0.02	0.06	0.02	<0.02
Total Kjedahl Nitrogen	1.2	1.1	1.0	1.3	1.4	1.3
Total Phosphorous	0.03	0.04	0.05	0.12	0.17	0.16
Ortho-Phosphate, as P	0.02	0.03	<0.02	0.09	0.12	0.13
Solids (mg/L)						
Dissolved, Total	1,745	1,864	1,607	1,630	1,599	1,611
Suspended, Fixed	<1	2	1	2	2	2
Suspended, Volatile	1	5	1	6	9	6
Suspended, Total	1	7	2	8	11	8
Bacteria (orgs/100 mL)						
E. Coli	<10	<1	3	<10	<10	20
Total Coliform	<10	16	35	663	6,488	100
Major Ions (mg/L)						
Alkalinity, Total	310	318	0.05	279	281	286
Alkalinity, Phenol	24	14	<0.02	29.0	37.0	29.0
Bicarbonate	320	354	322	270	253	278
Calcium	56	61	55	60	56	55
Carbonate	28.8	16.8	7.0	35.0	44.0	35.0
Chloride	126.6	137.5	115.1	117.6	119.2	119.8
Hardness, Total	564	609	533	586	556	537
Magnesium	103	111	96	106	101	97
Potassium	29	32	28	31	29	28
Sodium	322	340	290	304	291	288
Sulphate	759.1	811.3	694.2	705.9	705.7	710.0
Other						
Chlorophyll *a* (µg/L)	1.70	1.04	6.66	30.08	37.03	13.22
Conductivity (µS/cm)	2,326	2,386	2,029	1,988	2,032	2,057
pH (pH units)	8.7	8.6	8.4	8.9	9.0	8.8
Turbidity (N.T.U.)	<2.00	1.10	1.76	4.81	3.90	2.50
Biochemical Oxygen Demand (mg/L)	<2.0	<2.0	<2.0	2.7	2.7	2.7
Chemical Oxygen Demand (mg/L)	36.6	32.6	31.7	42.5	48.9	23.8

Last Mountain Lake – Pelican Point Baseline Surface Metal Concentrations – 2007						
Parameters	**Feb 6**	**Mar 20**	**June 12**	**July 30**	**Aug 28**	**Oct 1**
Metals (mg/L)						
Mercury (µg/L)	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05
Aluminum	<0.005	0.025	<0.005	<0.005	0.006	<0.005
Arsenic (µg/L)	9.3	5.6	5.1	9.9	11.0	9.4
Barium	0.040	0.038	0.038	0.038	0.038	0.036
Beryllium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Boron	0.45	0.34	0.40	0.40	0.42	0.39
Cadmium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Chromium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Cobalt	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Copper	<0.001	<0.001	<0.001	0.001	<0.001	<0.001
Iron	0.004	0.083	0.010	0.015	0.030	0.032
Lead	<0.002	<0.002	<0.002	<0.002	<0.002	<0.002
Manganese	0.006	0.022	0.008	0.036	0.024	0.021
Molybdenum	0.003	<0.001	0.001	0.002	0.003	0.002
Nickel	<0.001	<0.001	0.001	0.002	<0.001	<0.001
Phosphorous	0.03	0.11	0.03	0.04	0.12	0.14
Silicon, Soluble	1.5	2.4	1.6	2.0	3.6	4.1
Silver	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Strontium	0.41	0.32	0.37	0.38	0.37	0.37
Titanium	<0.001	0.002	<0.001	<0.001	<0.001	0.001
Vanadium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Zinc	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
Zirconium	<0.001	<0.001	<0.001	<0.001	<0.001	<0.001
Herbicides (µg/L)						
2,4,5-T	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4,5-TP (silvex)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
2,4-D	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Bromoxynil (Buctril)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Dicamba (Banvel)	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5

Diclofop-methyl (HoeGrass)	<1	<1	<1	<1	<1	<1
MCPA	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5
Picloram (Tordon)	<1	<1	<1	<1	<1	<1

Last Mountain Lake – Arlington Beach Shoreline Water Chemistry – 2007				
Parameters	**Jun 11**	**July 30**	**Aug 29**	**Oct 2**
Nutrients (mg/L)				
Dissolved Organic Carbon	na	13.1	12.7	
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	
Ammonia, as Nitrogen	0.02	<0.02	0.03	
Total Kjedahl Nitrogen	1.0	1.3	1.5	
Total Phosphorous	0.03	0.06	0.09	
Ortho-Phosphate, as P	<0.02	0.04	0.05	
Solids (mg/L)				
Dissolved, Total	1,467	1,545	1,529	
Suspended, Fixed	1	<1	2	
Suspended, Volatile	3	9	11	
Suspended, Total	4	9	13	
Bacteria (orgs/100 mL)				
E. Coli	5	428	10	
Total Coliform	154	19,863	2,909	
Major Ions (mg/L)				
Alkalinity, Total	254	260	256	
Alkalinity, Phenol	10.0	38.0	36.1	
Bicarbonate	285	224	235	
Calcium	56	59	54	
Carbonate	12	46	43	
Chloride	102.7	111.4	114.1	
Hardness, Total	515	576	526	
Magnesium	91	104	95	
Potassium	27	31	28	
Sodium	264	291	271	
Sulphate	629.6	678.2	688.8	
Other				
Chlorophyll *a* (µg/L)	5.61	25.22	33.46	

Turbidity (N.T.U.)	1.56	4.30	4.40	
Biochemical Oxygen Demand (mg/L)	na	3.4	4.3	
Chemical Oxygen Demand (mg/L)	29.8	56.1	43.6	
Field Data				
Air Temperature (ºC)	24	22	20	
Water Temperature (ºC)	15.5	25.0	17.1	7.2
Turbidity (NTU)	0.00	5.35	5.00	2.95
pH (pH units)	8.664	9.029	9.000	9.035
Secchi Disk (meters)	1.10	1.01	na	>1.00
Wind Speed (km/hr)	0	25	20	15-20
Cloud Cover (%)	0	30	60	10

Last Mountain Lake – Colesdale Park Shoreline Water Chemistry – 2007				
Parameters	**June 11**	**July 30**	**Aug 29**	**Oct 2**
Nutrients (mg/L)				
Dissolved Organic Carbon	na	13.2	12.3	
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	
Ammonia, as Nitrogen	0.02	<0.02	0.09	
Total Kjedahl Nitrogen	1.2	1.2	1.4	
Total Phosphorous	0.04	0.06	0.12	
Ortho-Phosphate, as P	<0.02	0.03	0.08	
Solids (mg/L)				
Dissolved, Total	1,586	1,588	1,554	
Suspended, Fixed	<1	1	1	
Suspended, Volatile	1	7	7	
Suspended, Total	1	8	8	
Bacteria (orgs/100 mL)				
E. Coli	5	10	<10	
Total Coliform	137	11,900	2,613	
Major Ions (mg/L)				
Alkalinity, Total	272	272	277	
Alkalinity, Phenol	14.0	33.0	33.7	
Bicarbonate	298	251	256	
Calcium	55	59	55	
Carbonate	17	40	40	
Chloride	114.3	115.4	115.8	
Hardness, Total	533	571	529	
Magnesium	96	103	95	
Potassium	28	30	28	
Sodium	288	294	276	
Sulphate	689.5	696.0	688.2	
Other				
Chlorophyll *a* (µg/L)	5.50	45.74	77.86	
Turbidity (N.T.U.)	1.08	6.71	2.80	
Biochemical Oxygen Demand (mg/L)	na	3.6	2.7	
Chemical Oxygen Demand (mg/L)	na	44.1	40.2	
Field Data				
Air Temperature (ºC)	24	22	16	
Water Temperature (ºC)	16.8	23.4	20.2	13.3
Turbidity (NTU)	0.00	5.37	2.61	2.42
pH (pH units)	8.754	8.987	8.970	8.929
Secchi Disk (meters)	1.1	>1.0	na	>1.0
Wind Speed (km/hr)	20	15	15-20	5

Cloud Cover (%)	0	100	75	0

Last Mountain Lake – Grandview Beach Shoreline Water Chemistry – 2007				
Parameters	**Jun 12**	**July 30**	**Aug 28**	**Oct 1**
Nutrients (mg/L)				
Dissolved Organic Carbon	na	13.0	12.7	12.2
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	<0.02	0.03	0.04	<0.02
Total Kjedahl Nitrogen	1.1	1.1	1.6	1.2
Total Phosphorous	0.04	0.08	0.18	0.12
Ortho-Phosphate, as P	<0.02	0.05	0.07	0.08
Solids (mg/L)				
Dissolved, Total	1,594	1,596	1,571	1,588
Suspended, Fixed	1	1	2	4
Suspended, Volatile	1	6	10	5
Suspended, Total	2	7	12	9
Major Ions (mg/L)				
Alkalinity, Total	276	273	278	279
Alkalinity, Phenol	14.0	24.0	28.0	22.4
Bicarbonate	303	275	271	286
Calcium	55	59	57	54
Carbonate	17	29	34	27
Chloride	115.0	115.0	114.7	118.0
Hardness, Total	533	567	546	522
Magnesium	96	102	98	94
Potassium	28	30	29	27
Sodium	289	291	282	281
Sulphate	691.4	695.3	685.4	701.2
Bacteria (orgs/100 mL)				
E. Coli	3	30	187	<10
Total Coliform	57	15,531	6,488	520
Other				
Chlorophyll *a* (µg/L)	6.80	34.22	88.72	26.82
Turbidity (NTU)	1.17	6.97	7.00	2.80
Biochemical Oxygen Demand (mg/L)	<2.0	2.7	3.1	2.2
Chemical Oxygen Demand (mg/L)	31.0	39.7	46.7	15.3
Field Data				
Air Temperature (ºC)	16.8	22.0	18.0	na
Water Temperature (ºC)	15.3	22.0	18.6	12.1
Turbidity (N.T.U.)	na	4.04	4.23	3.64

pH (pH units)	8.710	8.792	8.900	8.942
Secchi Disk (meters)	>2.00	1.01	na	na
Wind Speed (km/hr)	5	15	30-40	33
Cloud Cover (%)	95	80	70	100

Last Mountain Lake – Little Arm Outlet Shoreline Water Chemistry – 2007				
Parameters	**June 11**	**July 30**	**Aug 28**	**Oct 1**
Nutrients (mg/L)				
Dissolved Organic Carbon	na	13.7	13.6	13.5
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	<0.02	0.02	0.02	<0.02
Total Kjedahl Nitrogen	1.3	2.0	1.4	1.5
Total Phosphorous	0.08	0.15	0.14	0.14
Ortho-Phosphate, as P	<0.02	0.05	0.10	0.08
Solids (mg/L)				
Dissolved, Total	1,613	1,590	1,610	1,660
Suspended, Fixed	2	15	2	5
Suspended, Volatile	4	16	7	11
Suspended, Total	6	31	9	16
Bacteria (orgs/100 mL)				
E. Coli	<1	<10	30	10
Total Coliform	51	15,531	9,208	550
Major Ions (mg/L)				
Alkalinity, Total	300	0.15	284	299
Alkalinity, Phenol	19.0	0.05	33.0	31.1
Bicarbonate	320	229	266	289
Calcium	62	42	57	61
Carbonate	23	36	40	37
Chloride	110.1	118.1	119.3	121.8
Hardness, Total	567	554	558	560
Magnesium	100	109	101	99
Potassium	27	31	29	28
Sodium	278	308	288	291
Sulphate	692.5	717.1	709.5	733.1
Other				
Chlorophyll *a* (µg/L)	24.36	108.53	25.71	32.26
Turbidity (N.T.U.)	5.0	23.7	4.6	6.5
Biochemical Oxygen Demand (mg/L)	3.5	10.1	3.0	5.3
Chemical Oxygen Demand (mg/L)	na	55.2	49.6	32.6
Field Data				

Air Temperature (ºC)	24	22	20	na
Water Temperature (ºC)	18.9	22.7	17.5	10.6
Turbidity (NTU)	na	31.40	3.74	6.15
pH (pH units)	8.746	9.089	9.010	9.076
Secchi Disk (meters)	0.80	0.30	na	0.90
Wind Speed (km/hr)	5	SE 10	25-35	20
Cloud Cover (%)	100	100	60	100

Last Mountain Lake – North Regional Park Shoreline Water Chemistry – 2007				
Parameters	**June 11**	**July 30**	**Aug 29**	**Oct 2**
Nutrients (mg/L)				
Dissolved Organic Carbon	na	15.1	15.0	
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	
Ammonia, as Nitrogen	0.02	0.03	0.03	
Total Kjedahl Nitrogen	1.2	1.7	1.9	
Total Phosphorous	0.05	0.09	0.13	
Ortho-Phosphate, as P	<0.02	0.05	0.06	
Solids (mg/L)				
Dissolved, Total	1,351	1,433	1,483	
Suspended, Fixed	<1	2	2	
Suspended, Volatile	3	12	13	
Suspended, Total	3	14	15	
Bacteria (orgs/100 mL)				
E. Coli	71	52	<10	
Total Coliform	548	52,100	36,400	
Major Ions (mg/L)				
Alkalinity, Total	247	236	247	
Alkalinity, Phenol	13.0	45.0	38.7	
Bicarbonate	270	178	207	
Calcium	58	51	53	
Carbonate	16	54	46	
Chloride	91.7	104.4	107.9	
Hardness, Total	491	535	544	
Magnesium	84	99	100	
Potassium	25	29	29	
Sodium	230	255	254	
Sulphate	575.9	662.9	686.5	
Other				
Chlorophyll *a* (µg/L)	5.54	41.33	24.97	
Turbidity (NTU)	1.68	9.98	8.50	
Biochemical Oxygen Demand (mg/L)	na	6.5	5.1	
Chemical Oxygen Demand (mg/L)	32.0	61.1	58.5	
Field Data				
Air Temperature (ºC)	24	22	20	na
Water Temperature (ºC)	16.7	25.8	17.2	13.5
Turbidity (NTU)	0.00	8.93	6.68	6.28
pH (pH units)	8.702	9.146	9.120	8.999
Secchi Disk (meters)	1.10	0.55	na	>1.00
Wind Speed (km/hr)	20	20	20	20

Cloud Cover (%)	0	80	75	25

Last Mountain Lake – Regina Beach Shoreline Water Chemistry – 2007				
Parameters	**June 12**	**July 30**	**August 28**	**October 1**
Nutrients (mg/L)				
Dissolved Organic Carbon	na	12.8	13.7	12.7
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	<0.04
Ammonia, as Nitrogen	<0.02	<0.02	0.03	<0.02
Total Kjedahl Nitrogen	1.1	1.5	1.5	1.3
Total Phosphorous	0.05	0.11	0.19	0.15
Ortho-Phosphate, as P	<0.02	0.06	0.11	0.12
Solids (mg/L)				
Dissolved, Total	1,621	1,613	1,605	1,613
Suspended, Fixed	1	1	4	2
Suspended, Volatile	2	4	10	5
Suspended, Total	3	5	14	7
Bacteria (orgs/100 mL)				
E. Coli	60	20	<10	20
Total Coliform	115	6,131	4,100	200
Major Ions (mg/L)				
Alkalinity, Total	282	0.11	282	286
Alkalinity, Phenol	10.0	0.06	38.0	29.3
Bicarbonate	320	255	251	277
Calcium	55	59	56	55
Carbonate	12	40	46	35
Chloride	116.6	118.2	119.9	120.6
Hardness, Total	537	576	556	537
Magnesium	97	104	101	97
Potassium	28	30	29	28
Sodium	290	298	293	287
Sulphate	702.1	708.3	708.7	713.6
Other				
Chlorophyll *a* (µg/L)	5.39	35.99	29.89	17.16
Turbidity (NTU)	2.04	7.04	6.10	2.90
Biochemical Oxygen Demand (mg/L)	<2.0	na	3.3	3.0
Chemical Oxygen Demand (mg/L)	31.6	49.8	48.6	19.4
Field Data				
Air Temperature (ºC)	24		15	
Water Temperature (ºC)	17.8	24.2	17.0	13.5
Turbidity (NTU)	na	6.88	4.82	6.28

pH (pH units)	8.578	8.923	9.060	8.999
Secchi Disk (meters)	>1.5	1.0	na	>1.0
Wind Speed (km/hr)	0-5	<5	0-5	15-20
Cloud Cover (%)	100	50	60	10

Last Mountain Lake – Valeport Dam Shoreline Water Chemistry – 2007				
Parameters	**June 11**	**July 30**	**August 28**	**October 1**
Nutrients (mg/L)				
Dissolved Organic Carbon	na	14.2	17.2	
Nitrate, as Nitrogen	<0.04	<0.04	<0.04	
Ammonia, as Nitrogen	<0.02	<0.02	0.07	
Total Kjedahl Nitrogen	1.1	1.3	1.7	
Total Phosphorous	0.10	0.19	0.20	
Ortho-Phosphate, as P	0.04	0.17	0.12	
Solids (mg/L)				
Dissolved, Total	1,628	1,631	1,352	
Suspended, Fixed	8	3	4	
Suspended, Volatile	4	7	6	
Suspended, Total	12	10	10	
Bacteria (orgs/100 mL)				
E. Coli	<1	20	10	
Total Coliform	411	32,700	1,553	
Major Ions (mg/L)				
Alkalinity, Total	285	284	246	
Alkalinity, Phenol	15.0	50.0	58.0	
Bicarbonate	311	224	159	
Calcium	58	57	42	
Carbonate	18	60	70	
Chloride	117.2	121.7	109.4	
Hardness, Total	553	583	463	
Magnesium	99	107	87	
Potassium	29	31	26	
Sodium	297	309	255	
Sulphate	699.1	721.4	603.7	
Other				
Chlorophyll *a* (µg/L)	9.82	26.33	21.50	
Turbidity (NTU)	7.13	4.36	6.20	
Biochemical Oxygen Demand (mg/L)	na	3.3	3.8	
Chemical Oxygen Demand (mg/L)	na	48.2	56.4	
Field Data				

Air Temperature (ºC)	24		15	
Water Temperature (ºC)	19.4	25.7	16.0	10.7
Turbidity (NTU)	0.00	4.61	6.32	12.80
pH (pH units)	8.714	9.116	9.90	9.278
Secchi Disk (meters)	1.1	1.1	na	na
Wind Speed (km/hr)	20	0	NW 40	5
Cloud Cover (%)	98	5	75	0

End of 2007 data tables.