AECOM

Lake of Bays Association

Lake of Bays Water Quality Report 2007-2008

Prepared by:

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Project Number:

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Date:

September 11, 2009

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September 11, 2009 Project Number: 107857/80236

Deb Cumming
Environment Committee
Lake of Bays Association
PO Box 8
Baysville, ON P0B 1A0

Dear Ms. Cumming:

Re: Lake of Bays Water Quality Monitoring 2007-2008 report

Once again, it has been a pleasure to assist the Lake of Bays Association (LOBA) with their water quality monitoring program for Lake of Bays. The attached report summarizes results of the LOBA sampling results from 2007 and 2008 as well as a summary of all of the data collected by the association since the inception of the program.

I trust that your sampling program went well in the 2009 season and I look forward to seeing the results. Please do not hesitate to contact me if you have any questions about this report or require any assistance with interpretation of the 2009 data or the sampling strategy for 2010.

Sincerely,
AECOM Canada Ltd.

Tammy Karst-Riddoch, Ph.D.
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TKR:tkr
Encl.

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Executive Summary

The Lake of Bays Association has been facilitating a volunteer-based water quality monitoring program in Lake of Bays since 2002. The aim of the program is to characterize phosphorus and bacteria levels as an indication of general lake and watershed health while fostering community involvement and education.

Each year, volunteers have collected water samples for analysis of total phosphorus concentrations and bacteria (*E. coli*, total coliforms) levels at approximately 2-week intervals over the summer season. A total of x sites have been monitored over the past seven years encompassing deep water, nearshore undisturbed and disturbed, river and river-influenced locations to provide a broad assessment of phosphorus and bacteria patterns in the lake and its contributing rivers (Oxtongue and Hollow Rivers).

Overall, total phosphorus concentrations are indicative of low lake productivity (mean annual total phosphorous = 5.2 μg/L) in Lake of Bays. There has been little variability in phosphorus concentrations between sites types or over the summer season at the inlake sites. Rivers and river-influenced sites typically display higher phosphorus concentrations than the inlake sites due to the natural sensitivity of rivers to phosphorus loads. All river sites, however, have displayed total phosphorus concentrations that are well below the Provincial Water Quality Objective of 30 μg/L for recreational waters.

There is a significant increasing trend in mean summer total phosphorus concentrations in Lake of Bays since 2002. The cause of this trend is difficult to ascertain at this time, but there are several possible explanations. For example, the trend may be part of a regional trend to higher phosphorus concentrations that has been observed in other area lakes, possibly due to climate change, and/or acid deposition. Another possibility is that the observed increase is part of longer term natural variability in the lake. Finally, the lake may be responding to increased phosphorus loads from human disturbance in the watershed. Continued monitoring will help to identify the cause or causes of the increase in phosphorus concentration in Lake of Bays over the past 7 years.

Bacteria levels throughout Lake of Bays have been consistently low such that levels do not pose a human health risk from recreational body contact with water.

The Lake of Bays Water Quality Monitoring Program has continued to provide good quality total phosphorus concentration and bacteria data from a wide range of site locations for 7 years. These data provide a valuable resource to inform lake management and identify potential water quality issues related to phosphorus and bacteria in Lake of Bays.

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1. Introduction

Since 2002, the Lake of Bays Association (LOBA) has championed a volunteer-based water quality monitoring program in Lake of Bays. The aim of the program is to characterize phosphorus and bacteria levels as an indication of general lake and watershed health while fostering community involvement and education.

Until the summer of 2000, monitoring in Lake of Bays was limited to tracking water clarity and spring phosphorus concentrations under the Ministry of the Environment's Lake Partner Program. LOBA's monitoring program began with a pilot study in 2000 to monitor bacteria (*E. coli*, total coliforms) levels in the lake during the summer. This pilot project was successful and LOBA expanded the area of study in the summer of 2001 to include nearshore areas adjacent to developed and undeveloped properties and areas influenced by wetlands and rivers. In 2004, the program was again expanded to monitor phosphorus concentrations in nearshore areas. Over the course of the program, site selection has changed reflecting changes in focus with an ever-increasing understanding of water quality conditions in Lake of Bays. General testing, however, has been repeated at various sites around the lake to maintain the data record for background levels and to consider variations in water quality due to natural conditions and land use.

For recreational lakes on the Canadian Shield, like Lake of Bays, water quality concerns are most often associated with nutrient enrichment due to increased human phosphorus sources. Phosphorus is a nutrient that limits growth of algae in most freshwater systems on the Canadian Shield. Phosphorus is a natural element in the environment and enters lakes from the atmosphere through precipitation, through stream and overland flow, and to a lesser degree through groundwater. Increases in phosphorus loads to lakes from human sources can result in a deterioration of water quality due to increased algal production, which may cause taste and odour problems, lower water clarity and decrease deep-water oxygen concentrations that affect coldwater fish habitat.

Bacteria in surface waters can also be a concern for recreational water quality. Coliform is a group of naturally occurring bacteria that are found in the intestines of warm-blooded animals. The presence of coliform in water potentially indicates the presence of disease-causing (pathogenic) micro-organisms. *Escherichia coli* (*E. coli*) is one of several types of coliform bacteria and is a more specific indicator of fecal contamination. Some strains of *E. coli* are capable of causing disease under certain conditions, for example, when the immune system is compromised. Most strains of *E. coli* will not cause disease symptoms, and coexist within us as part of our normal microbial population.

There is great variability in total coliform and *E. coli* concentrations that naturally occur in surface waters. Natural sources of these bacteria include waterfowl and wildlife and therefore higher levels are often found in wetlands and along the shorelines of lakes and rivers. Human waste also contains coliform bacteria that are found in the intestinal tract. Bacterial concentrations that are elevated above natural levels in areas of high human activity may represent the discharge of improperly treated sewage or grey water to the lake. Coliform bacteria can remain active for a short period of time in surface water before they are degraded by ultraviolet light and temperature gradients. They may exist for longer periods in the sediments.

This report assesses the results of the 2007 and 2008 monitoring programs for bacteria and total phosphorus levels, and provides a summary of all data collected by the association since 2000.

2. Methods

Volunteers, coordinated by the LOBA Environment Committee, collected samples for analysis of bacteria and total phosphorus concentrations on five occasions during the summers of 2007 (July 2, 23, August 6, 20, and 31) and 2008 (June 30, July 14, August 4, 18 and 29). The sampling and analytical methods in 2007 and 2008 are consistent with those used in previous monitoring years, and are summarized below. Detailed sampling instructions that are provided to the volunteers are provided in Appendix A.

2.1 Sample Sites

Total phosphorus and bacteria levels have been sampled at numerous locations throughout Lake of Bays to include deep, open water locations, nearshore sites adjacent to developed and undeveloped shorelines, and other areas of interest e.g.inlet river locations, near lagoon discharges. Sites monitored over the course of the program are illustrated in Figure 1.

In 2007, three new sites were added to the program (Hollow River Lagoon (E6 P/B), Narrows East (E 25 P/B) and Narrows West (E 26 P/B)) for a total of 19 sampling sites that included 9 open water sites, 2 nearshore developed sites, 6 nearshore undeveloped sites and 2 river sites. In 2008, a total of 23 sites were sampled with two new sites including Hollow River Lagoon Upstream (E 6A P/B) and Oxtongue Delta (N 30 P/B).

2.2 Phosphorous

At each site, a surface water sample was collected from the euphotic zone[1] (two times the Secchi depth) and filtered using a nitex mesh filter. Samples were submitted to the Trent University lab at the Ministry of the Environment's Dorset Environmental Science Centre in glass tubes for analysis of total phosphorus concentration.

[1] *The ephotic zone is the depth in the water column where there is sufficient penetration of light such that photosynthesis can occur.*

Figure 1. Lake of Bays Monitoring Sites 2007, 2008.

Phosphorus concentrations in Lake of Bays are compared to the MOE's Interim PWQO (1994) guidelines, which state that:

1. Average total phosphorus concentrations for the ice-free period should not exceed 20 µg/L to avoid nuisance concentrations of algae in lakes.
2. A high level of protection against aesthetic deterioration will be provided by a total phosphorus concentration for the ice-free period of 10 µg/L or less. This should apply to all lakes naturally below this value.
3. Excessive plant growth in rivers and streams should be eliminated at a total phosphorus concentration below 30 µg/L.

2.3 Bacteria

The bacterial enumeration methodology is based on the use of "Coliplates" (EBPI). Coliplates are a manufactured product in which 96 cells are inoculated with sampled water, incubated for a 24-hour period and then assessed for both total coliform and *Escherichia coli* (*E. coli*) concentration based on comparison of the colorimetric response of each cell against a Most Probable Numbers chart. The detection limit for the Coliplate methodology is 3 colony forming units (cfu) in 100 mL of water. This means that if zero Coliplate cells turn colour after incubation, the lowest number of bacteria that can be reported is <3 cfu/100 mL. For the LOBA data, values of <3 cfu/100 mL are reported as 1 cfu/100 mL for statistical evaluation of the data, but note that the actual value can be 0 to 2 cfu/100 mL.

Bacteria levels are assessed relative to the Provincial Water Quality Objectives (PWQO) for recreational water use (MOE, 1994). For total coliforms, the PWQO is 1,000 cfu per 100 mL (based on a geometric mean for a series of water samples). It should be noted that the MOE recommends that this objective be used as a guideline only, and that bacterial assessments of water quality should be based on more specific fecal bacteria indicators such as *E. coli*. The PWQO for *E. coli* is 100 cfu per 100 mL, based on a geometric mean of at least five samples taken from one site within one month. This objective is intended to protect swimming and bathing beaches for recreational use. Where testing indicates sewage or fecal contamination, a site–specific judgment must be made as to the severity of the problem and the appropriate course of action.

2.4 Quality Control (QC)

Three quality control measures were again conducted in 2007 and 2008 and included:

1. The inclusion of a sample of distilled water by one volunteer sampler at one selected site for each sample date for bacterial analysis as a field blank;

2. The inclusion of a field duplicate on at least one sampling date for each site for analysis of bacteria and phosphorus; and
3. Submission of water samples to the Central Ontario Analytical Laboratory (COAL), an accredited laboratory in Orillia, Ontario, for membrane filtration analysis of total coliform and *E. coli* for comparison with the Coliplate method. COAL has a reportable range from 0 to >80 cfu/100 mL for potable water samples and <4 to >8 cfu/100 mL for recreational water samples.

3. 2007/2008 Monitoring Results

3.1 Total Phosphorus

Total phosphorus concentrations at all of the sampling sites monitored in 2007 and 2008 were relatively low reflecting low primary productivity or 'oligotrophic' conditions in Lake of Bays (Table 1, Figures 2 and 3). The mean total phosphorus concentration of all of the samples was 5.5 mg/L and 5.9 μg/L for 2007 and 2008, respectively. Overall, concentrations varied little over the summer sampling season, with mean concentrations less than 10 μg/L at all of the sites except Narrows East (E25) in 2007 and the Hollow River (E6a) in 2009 (Table 1). Narrows East (E25) is a nearshore site and so it is more susceptible to fluctuations in total phosphorus concentrations due to variability in phosphorus inputs (e.g., increased runoff containing phosphorus following a storm event). This site is not directly influenced by human disturbance at the shoreline and the more elevated total phosphorus concentrations observed over the 2007 summer season relative to 2008 is therefore likely related to natural variability. The highest observed total phosphorus concentration in the Hollow River (24.5 μg/L) occurred at the upstream sampling site (Site E6a) on July 14th, 2008. By comparison, total phosphorus concentrations from the Hollow River (E6, E6a) and near the outlet of the river in Lake of Bays (E18) were less than 10.1 μg/L on all other sampling occasions in 2007 and 2008. It is possible that the July 14th 2008 sample was contaminated, resulting in the relatively high total phosphorus concentration. Alternately, the high total phosphorus concentration may have resulted from a naturally occurring influx of phosphorus near the time the sample was collected. Longer term sampling records for the Hollow River would be required to determine whether this sample should be excluded from the database due to suspected contamination or whether the result is acceptable and within natural variability of the system.

Table 1. Total Phosphorus Concentrations in Lake of Bays, 2007 and 2008.

Site ID	Site Name	Site Type	Total Phosphorus (mg/L)											
			2007						2008					
			2-Jul	23-Jul	6-Aug	20-Aug	31-Aug	Average	30-Jun	14-Jul	4-Aug	18-Aug	29-Aug	Average
B1	Bigwin East	Deep water	3.7	4.8	5.1	2.9	6.1	4.5	4.4	9.0	7.4	6.0	5.2	6.2
B2	Fairview	Deep water	3.3	5.7	4.1	2.4	12.5	5.6	3.7	6.8	7.5	6.0	6.3	6.3
B3	Bigwin North	Disturbed	5.4	5.7		8.3	5.6	6.3	3.9	8.0	5.6	7.1	6.0	6.1
B4	Bigwin Bay	Disturbed									6.4	5.2	4.9	5.5
E1	Trading Bay	Deep water	2.9	6.1	6.2	3.6	4.6	4.5	4.0	5.8	4.8	5.6	6.7	5.4
E13	Haystack Bay	Deep water	4.0	4.3	11.8	2.6	5.0	6.6	5.1	4.8	5.6	5.6		5.3
E18	Hollow River Mouth	River	3.9	6.6	5.7	3.9	5.7	5.2		10.1	5.5	5.8		7.1
E20	Little Trading Bay	Deep water	4.8	7.9	7.6	7.9	7.0	7.0	7.4	7.0	8.3	6.5	9.4	7.7
E25	Narrows East	Nearshore Undisturbed	3.9	7.2	16.9	12.9	16.1	11.4		4.9	6.3	4.3	7.2	5.7
E26	Narrows West	Nearshore Undisturbed	4.5	6.2	6.7	5.7	4.4	5.8		2.4	5.5	5.3	5.5	4.8
E30	Ten Mile Bay	Deep water	3.4	4.9	5.8	4.6	6.2	5.0	5.1	5.8	5.3	6.6	6.0	5.8
E6	Hollow River Lagoon	River	3.6	5.7	5.7	5.1	6.5	5.3		8.1	5.2	5.5		6.3
E6a	Hollow River-upstream	River								24.7	6.5	5.3		12.2
N1	Dwight Bay	Deep water	4.3	6.1	9.6	4.3	5.3	5.7		6.1	6.3	6.0	6.0	6.1
N10	Gull Rock	Deep water	4.1	5.3	4.9	4.8	4.6	4.7	4.3		5.7	4.1	5.7	5.0
N11	Britannia	Disturbed	3.5	5.8	3.8	5.3	5.1	4.7	4.2	4.4	8.4	4.1	6.2	5.5
N13	Moffat's	Nearshore Undisturbed	3.8	5.0	15.1	2.7	3.7	6.1	5.1	4.7	6.3		4.7	5.2
N2	Oxtongue mouth	River									8.3	6.9	6.6	7.3
N24	Boothby's	Nearshore Undisturbed	3.8	7.8	7.3	3.0	4.3	5.2	5.3	5.8	5.4	5.9	4.7	5.4
N30	Oxtongue Delta	Nearshore Undisturbed									5.9	5.0	9.7	6.9
S1	Adamson's Island	Nearshore Undisturbed	2.5	4.2	4.1	2.0	3.7	3.3	4.6	4.3	6.2	3.0	4.4	4.5
S2	Menominee Bay	Nearshore Undisturbed	2.7	3.8	6.0	2.7	4.2	3.9	4.8	7.0	8.0	5.8	4.3	6.0
S3	Price's Point	Deep water	5.2	4.0	3.6	4.2	5.3	4.5	3.8	3.6	5.1	5.0	6.0	4.6
Average Total Phosphorus (µg/L)			3.9	5.7	7.4	4.6	6.1	5.5	4.7	7.0	6.4	5.4	6.0	5.9

Note: For sites where additional samples were collected for QA/QC, values represent mean concentrations of all measured values.

Figure 2. Total phosphorus concentrations in Lake of Bays, 2007.

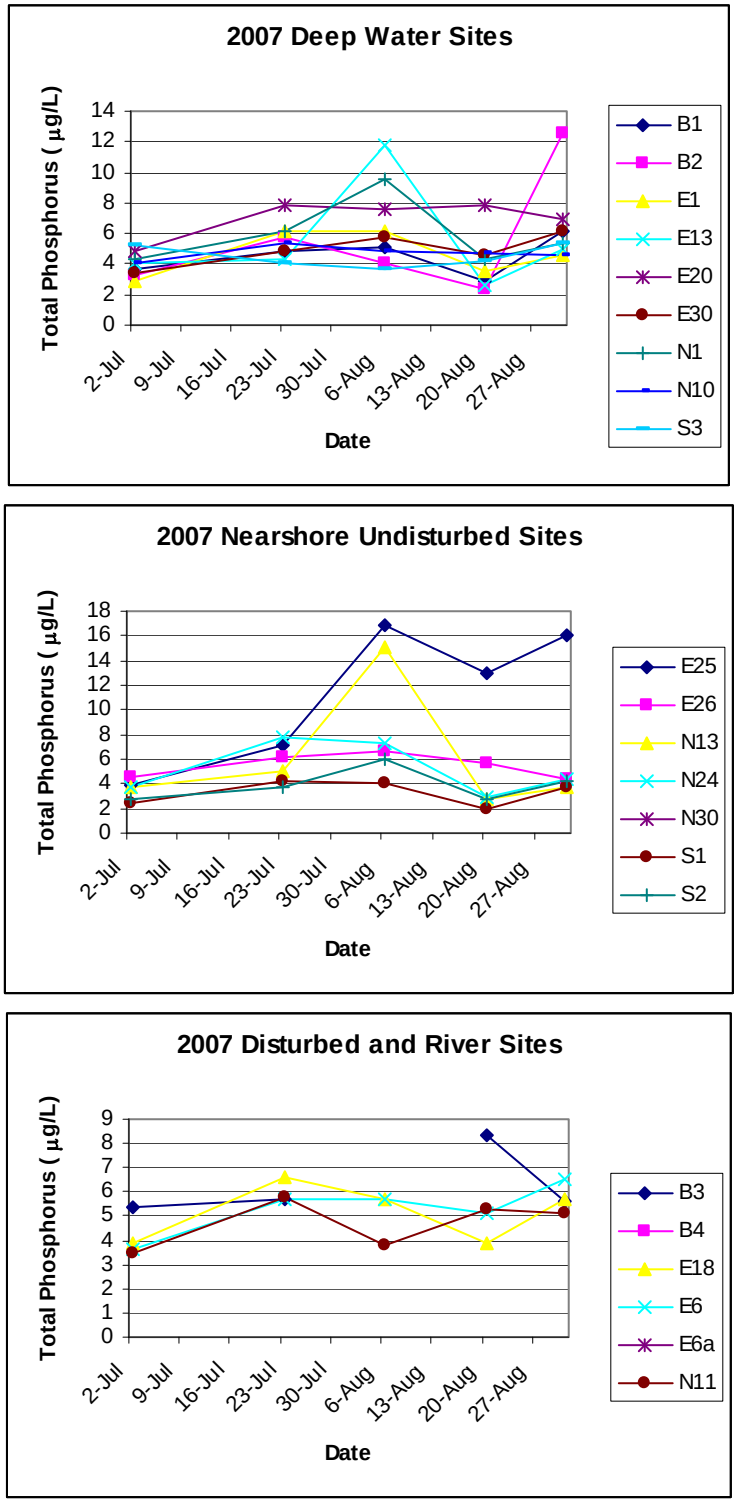
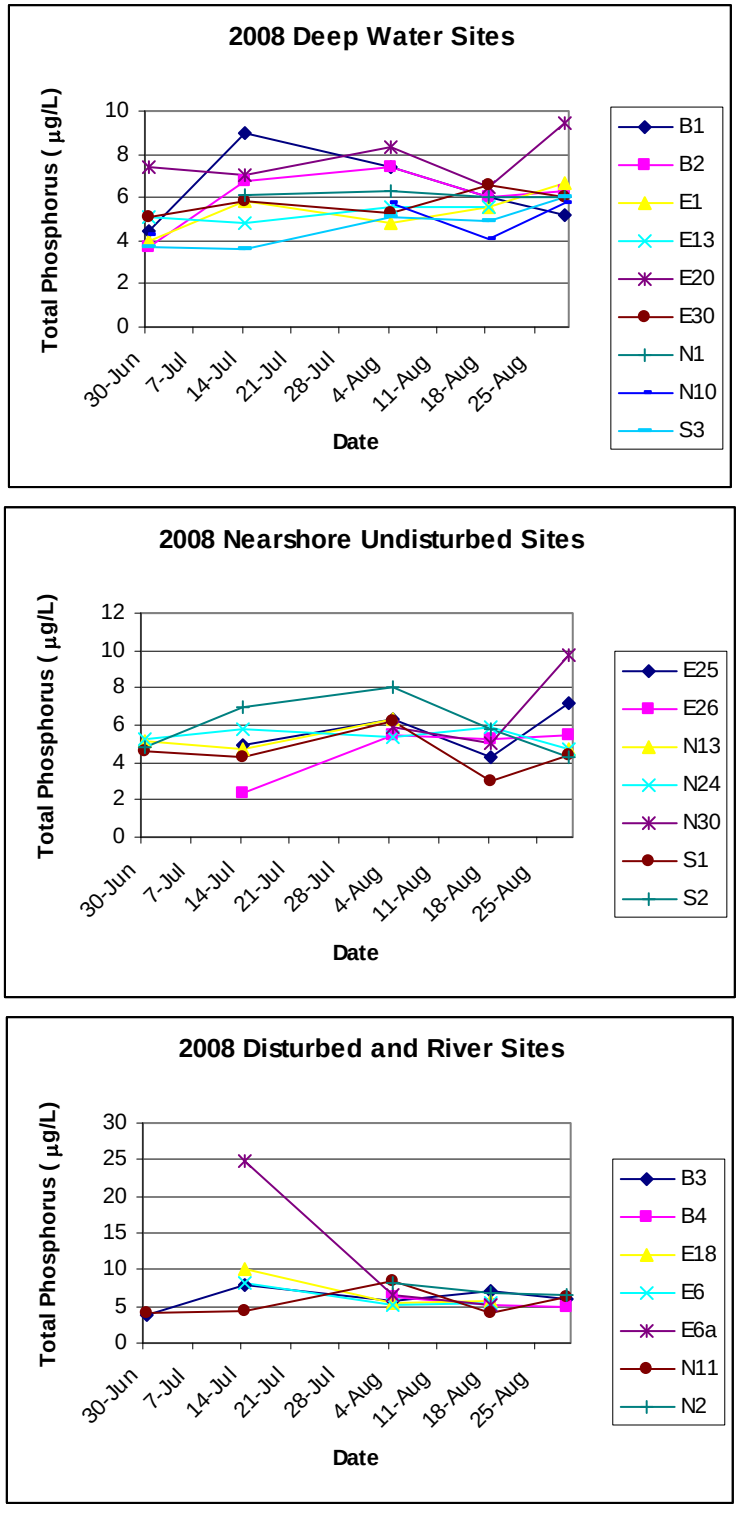


Figure 3. Total phosphorus concentrations in Lake of Bays, 2008.



3.2 Bacteria

In 2007 and 2008, *E.coli* did not exceed the Provincial Water Quality Objective (PWQO) of 100 cfu/100 mL for recreational body contact at any of the in-lake sites. *E. coli* was present in very low numbers at all of the lake sampling stations, and in most cases (76% of the samples in 2007 and 60% of the samples in 2008), were below detection limits of the Coliplate method (<3 cfu/100 mL). The highest geomean summer *E. coli* values occurred in the river samples, which ranged from 10 to 23 cfu/100 mL, but still, values at all of the sites were well below the PWQO (Table 2).

As with *E. coli*, geomean summer counts for total coliform in 2007 and 2008 were low at all of the sampling locations ranging from 2 to 24 cfu/100 mL in the lake samples, and 37 to 130 cfu/100 mL in the river sample (Table 2).

Overall, the observed bacteria levels suggest that contamination by bacteria did not pose a significant human health risk with respect to exposure from recreational activity in Lake of Bays during the summers of 2007 and 2008. The relatively higher bacteria levels observed in the river sites most likely reflects the influence of wildlife activity near the rivers.

3.3 Quality Control (QC)

The quality control program in 2007 and 2008 yielded positive results that provide a high degree of confidence in the sampling protocol and analysis for total phosphorus and bacteria. For phosphorus, the difference between field duplicates ranged from 0.5 to 4.1 μg/L and 0.0 to 1.3 μg/L for lab dublicates. The mean difference between sample pairs was 1.1 μg/L, which represents an average error of 18%. This is an acceptable error for total phosphorus measurements.

There is variability between bacteria duplicate samples collected in 2007 and 2008, which is expected because these organisms can be present in samples as clumps (groups of organisms). Despite this expected variability, field and laboratory duplicates for both total coliform and *E. coli* lie near the 1:1 line, and with the exception of one laboratory duplicate from the Hollow River, variability between sample pairs is acceptable thereby providing confidence in the sample results (Figure 4). For the Hollow River, the field duplicate samples collected on August 6th, 2007 had a total coliform counts of 110 cfu/100 mL and 108 cfu/100 mL based on the Coliplate method, but returned a much higher reading from the laboratory of 600 cfu/100 mL. It is possible that the bacteria in the sample multiplied prior to analysis by the laboratory resulting in higher counts from the lab.

Table 2. *E. coli* and Total Coliform Concentrations in Lake of Bays, 2007 and 2008

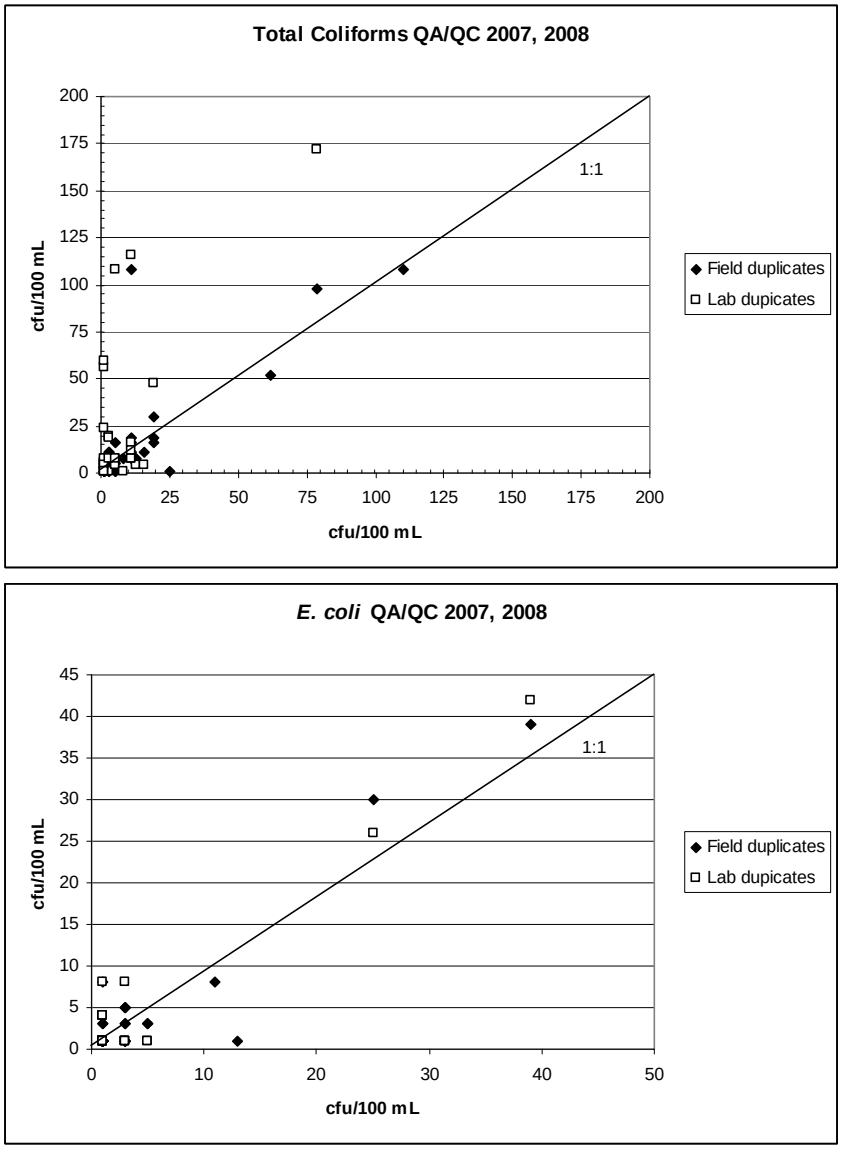
Site ID	Site Name	2007 Geomean		2008 Geomean	
		E. coli (cfu/100 mL)	Total Coliforms (cfu/100 mL)	E. coli (cfu/100 mL)	Total Coliforms (cfu/100 mL)
Deep Water Sites					
B1 P/B	Bigwin East	1	3	1	3
B2 P/B	Fairview	1	3	1	2
E1 P/B	Trading Bay	1	3	2	8
E13 P/B	Haystack Bay	1	4	2	6
E20 P/B	Little Trading Bay	2	14	2	24
E30 P/B	Ten Mile Bay	1	2	2	10
N1 P/B	Dwight Bay	1	5	1	
N10 P/B	Gull Rock	1	3	1	2
S3 P/B	Price's Point	1	2	1	2
	Geomean	***1***	***3***	***1***	***5***
Nearshore Disturbed Sites					
B3 P/B	Bigwin North	1	5	3	10
B4 P/B	Bigwin Bay			3	10
N11 P/B	Britannia	2	6	4	7
	Geomean	***1***	***5***	***3***	***9***
Nearshore Undisturbed Sites					
E25	Narrows East	1	4	2	11
E26	Narrows West	2	6	2	7
N13	Moffat's	1	3	1	2
N24	Boothby's	1	5	2	6
S1	Adamson's Island	1	2	1	4
S2	Menominee Bay	2	8	2	7
N30	Oxtongue Delta	n/a	n/a	2	4
	Geomean	***1***	***4***	***2***	***5***
Other					
E18	Hollow River Mouth	10	66	20	45
E 6	Hollow River Lagoon	21	130	7	37
E 6a	Hollow River-upstream	n/a	n/a	15	46
N 2	Oxtongue mouth	n/a	n/a	23	43
	Geomean	***15***	***93***	***15***	***42***
	All Sites Geomean	***2***	***5***	***3***	***8***

Note: Values below the Coliplate detection limit of 3 cfu/mL were set to 1 cfu/100mL to calculate geomean values.

Table 3. Duplicate Field and Laboratory Results for Total Phosphorus Concentrations in Lake of Bays, 2007 and 2008

Site ID	Site Name	Site Type	Date	Total Phosphorous (µg/L)			
				Initial Sample	Field Duplicate	Lab Duplicate	Absolute Difference
E1	Trading Bay	Deep water	20-Aug-07	3.8	3.3		0.5
N1	Dwight Bay	Deep water	20-Aug-07	4.6	4.0		0.6
E26	Narrows West	Nearshore Undisturbed	23-Jul-07	8.2	4.1		4.1
B1	Bigwin East	Deep water	29-Aug-08	5.4	5.0		0.4
N10	Gull Rock	Deep water	20-Aug-07	4.1	5.4		1.3
E1	Trading Bay	Deep water	18-Aug-08	5.3	5.8		0.5
E26	Narrows West	Nearshore Undisturbed	18-Aug-08	4.6	5.9		1.3
E26	Narrows West	Nearshore Undisturbed	6-Aug-07	7.0	6.4		0.6
E30	Ten Mile Bay	Deep water	14-Jul-08	4.7	6.9		2.2
B2	Fairview	Deep water	4-Aug-08	6.5	8.4		1.9
E13	Haystack Bay	Deep water	6-Aug-07	10.8	12.8		2.0
S3	Price's Point	Deep water	30-Jun-08	3.6		3.9	0.3
S2	Menominee Bay	Nearshore Undisturbed	29-Aug-08	4.3		4.3	0.0
N24	Boothby's	Nearshore Undisturbed	30-Jun-08	5.9		4.6	1.3
S3	Price's Point	Deep water	18-Aug-08	5.0		4.9	0.1
N24	Boothby's	Nearshore Undisturbed	4-Aug-08	5.8		5.0	0.8
S2	Menominee Bay	Nearshore Undisturbed	4-Aug-08	8.5		7.5	1.0
			Mean	5.8	6.2	5.0	1.1
			Maximum				4.1
			Minimum				0.0

Figure 4. Duplicate Field and Laboratory Results for Bacteria Counts in Lake of Bays, 2007 and 2008



4. Water Quality Data Overview

The Lake of Bays Water Quality Monitoring Program has been consistently collecting data over the summer season for 7 years at numerous locations throughout the lake such that sufficient data exist to assess trends and variability in total phosphorus and bacteria levels. Since 2002, 22 sites have been monitored for total phosphorus and/or bacteria (*E. coli* and total coliforms) at approximately 2 week intervals, usually from June to September (Figure 5). Sample sites have included deep water sites in open water basins of the lake, nearshore disturbed (developed) and undisturbed sites, as well as river sites (including instream river sites and in-lake sites near river inlets). A total of 414 total phosphorus samples and 436 bacteria samples have now been analyzed under the program (Table 4). All data collected under the program are provided in Appendix B.

Table 4. Number of Samples Collected by the Lake of Bays Monitoring Program (2002-2008) for Total Phosphorus and Bacteria

Year	Number of Samples				
	Deep water	Disturbed	Nearshore Undisturbed	River	All Site Types
Total Phosphorous					
2002	30	15	4	-	49
2003	39	22	7	16	84
2006	51	-	22	-	73
2007	49	9	32	10	100
2008	48	13	35	12	108
Total	**217**	**59**	**100**	**38**	**414**
Bacteria					
2002	13	7	7	7	34
2003	12	7	6	13	38
2006	57	-	29	-	86
2007	61	13	47	16	137
2008	68	15	44	14	141
Total	**211**	**42**	**133**	**50**	**436**

Note: sample numbers include QA/QC samples

Figure 5. Lake of Bays Water Quality Monitoring Program Study Sites (2002-2008)

4.1 Total Phosphorus

Since 2002, mean summer total phosphorus concentrations in Lake of Bays have ranged between 3.5 and 6.4 μg/L, with an overall mean concentration of 5.2 μg/L (Figure 6). These concentrations are low and reflect low primary productivity[2] or 'oligotrophic' conditions in Lake of Bays. Oligotrophic lakes usually have good water clarity and high dissolved oxygen concentrations. Water clarity in Lake of Bays, measured as Secchi depth, has ranged from 4 to 7 m since 1992 (Lake Partner Program Data, Ministry of the Environment) (Figure 7).

There is little variability in mean summer phosphorus concentrations between site types (deep water, nearshore disturbed and undisturbed locations) within the lake. River sites, which include sites near the inlets of rivers, have been sampled less frequently than inlake sites, but these sites typically display higher total phosphorus concentrations (5.2 – 9.7 μg/L, mean = 6.9 μg/L) (Figure 6). This is a common observation as total phosphorus concentrations are generally higher and more variable in rivers than in lakes within the same drainage basin.

Mean annual total phosphorus concentration in Lake of Bays displays a significant increasing trend from 2002 to 2008 (regression, $p<0.05$), and has increased over the long term mean concentration of ~4 μg/L from 1985 to 2002 (based on Ministry of the Environment (1988) and Ministry of the Environment's Lake Partner Program data (1992-2002)) (Figure 8). Water clarity over the same time period displays a significant decreasing trend (regression, $p<0.05$), which may indicate lowering water clarity as a result of increased algal production with increasing total phosphorus concentrations (Figure 8). The recent total phosphorus increase in Lake of Bays (2002 to 2008) may reflect broader regional variations in total phosphorus concentrations observed for lakes in the Dorset area (MOE, Dorset Environmental Science Centre) that have shown decreases in phosphorus concentrations between circa 1976 and 1991 with increases since 1991 back toward historic levels (Mr. Bev Clark, former LPP program coordinator, pers.comm). The reason for this regional increase is still not well understood, but may be due to a combination of climate and acid rain.

[2] *Primary productivity refers to the production of plants and algae*

Figure 6. Mean Annual Total Phosphorus Concentrations in Lake of Bays (2002-2008)

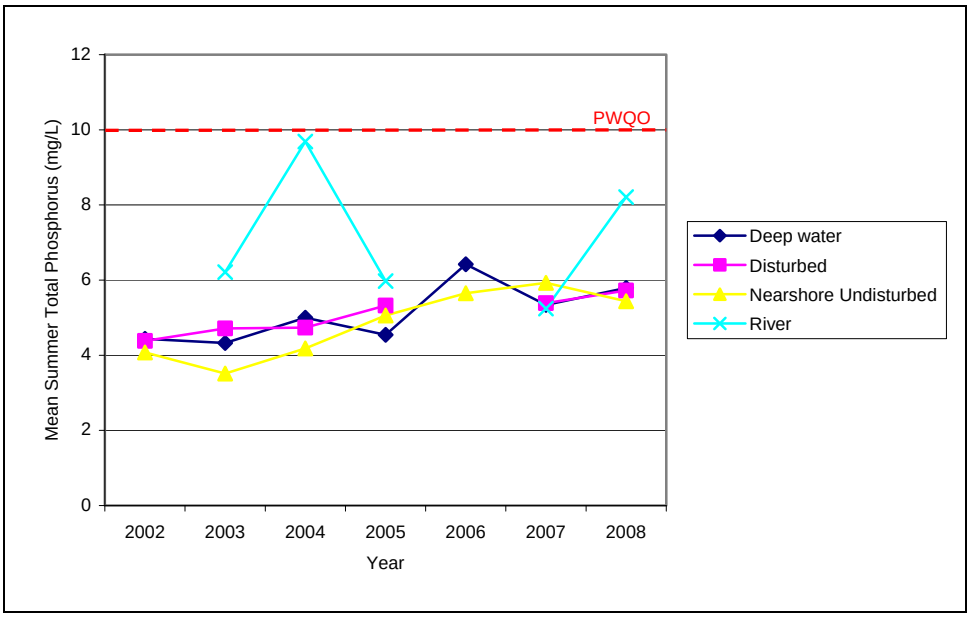


Figure 7. Mean Secchi Depth in Lake of Bays (1992-2008) (MOE Lake Partner Program Data)

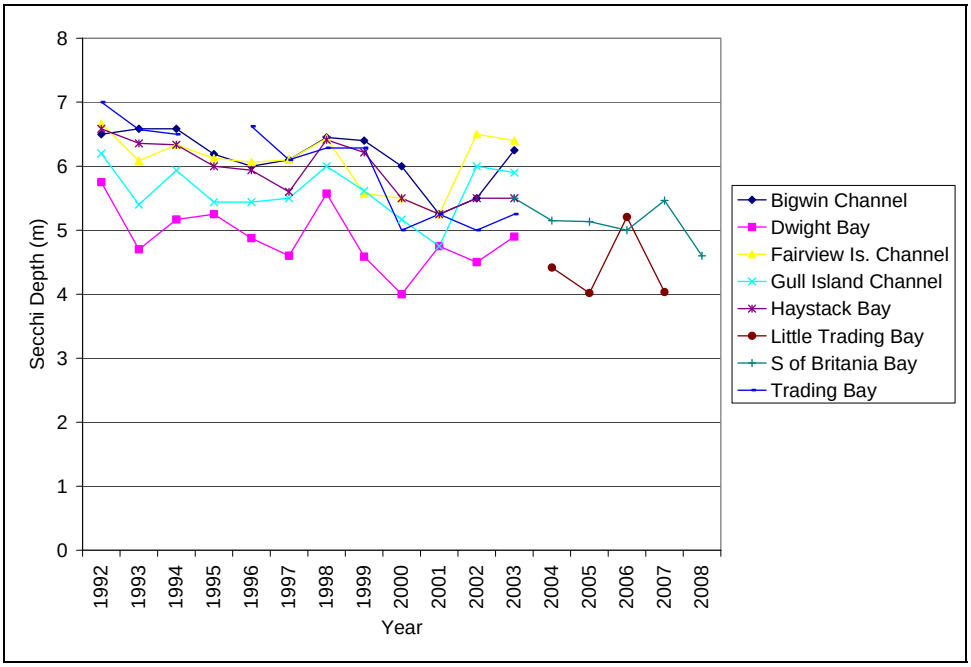
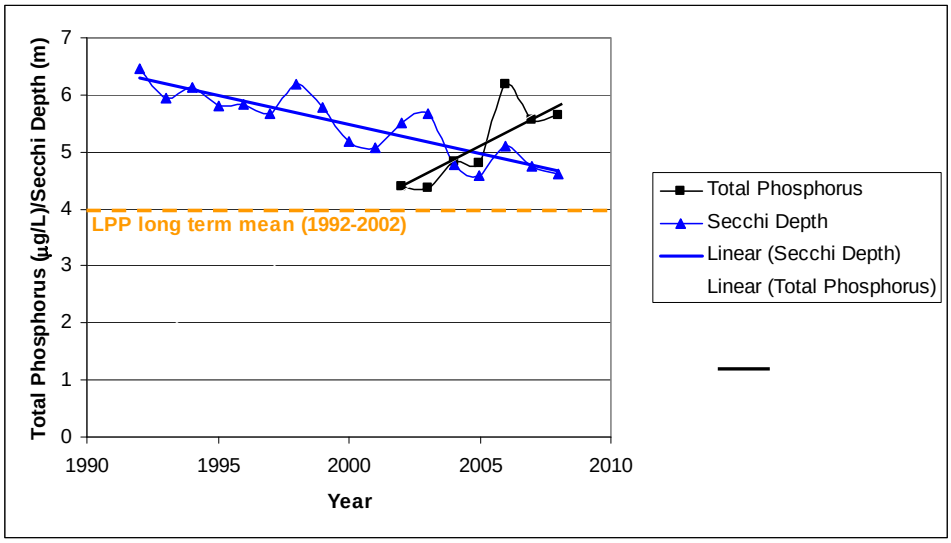


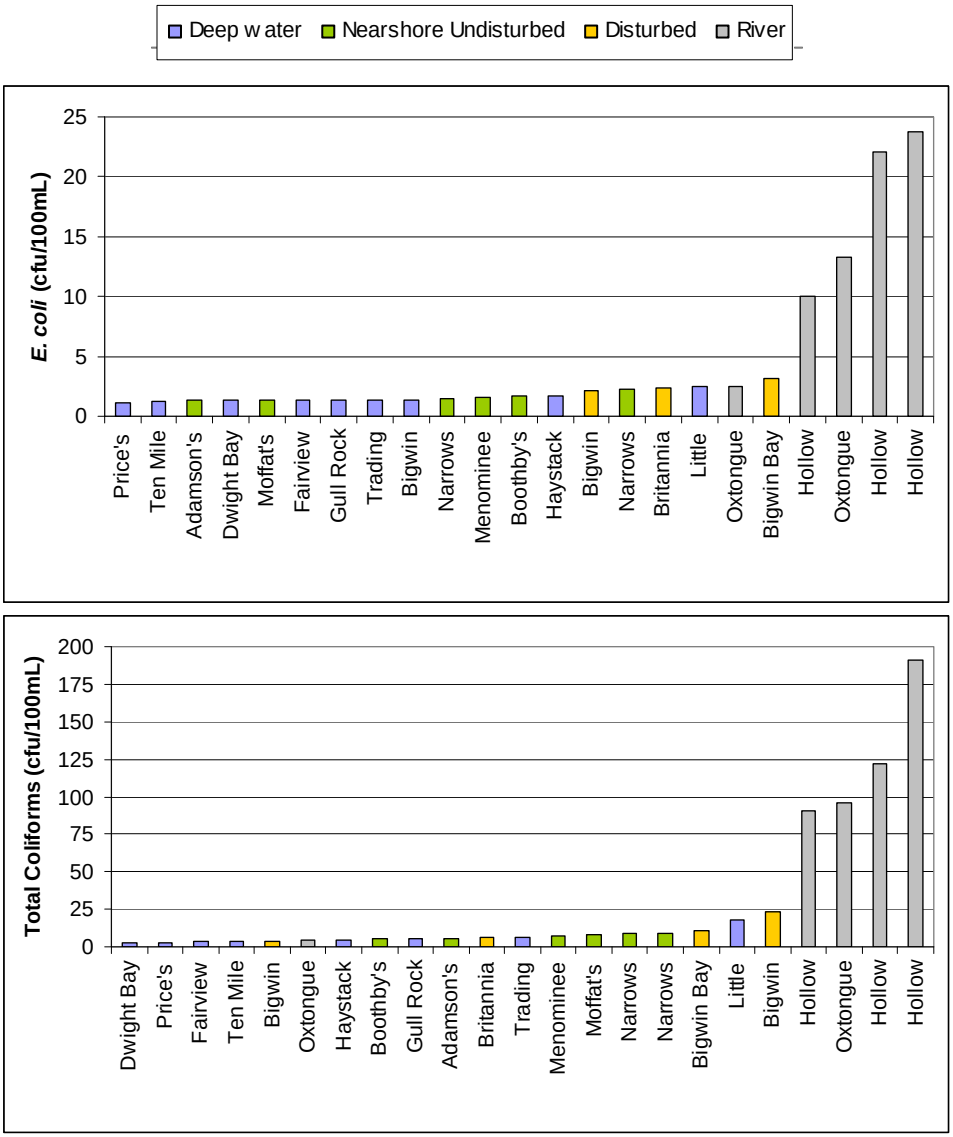
Figure 8. Long-term Mean Annual Total Phosphorus Concentrations and Secchi Depth in Lake of Bays



4.2 Bacteria

Bacteria levels in Lake of Bays have consistently been low with geomean concentrations below 5 cfu/100 mL for *E. coli* and 25 cfu/100 mL for total coliforms in the lake samples regardless of location (i.e., deep water, nearshore undisturbed and disturbed sites) (Figure 9). River and river influenced sites typically display higher bacteria levels (geomean *E. coli* range of 10 to 24 cfu/100 mL; geomean total coliforms range of 91 to 191 cfu/100 mL), likely due to greater wildlife activity in and near these river systems. Overall, bacteria levels in Lake of Bays are considered to pose no risk to human health due to recreational body contact. Despite these low levels, it is strongly recommended that untreated water from Lake of Bays, as with any surface water source, not be consumed by humans.

Figure 9. Geomean *E. coli* (top panel) and Total Coliforms (bottom panel) in Lake of Bays and Contributing Rivers (2002-2008)



5. Summary

The water quality monitoring program successfully sampled and analyzed 19 sites in 2007 and 23 sites in 2008 for total phosphorus and bacteria at approximately 2-week intervals over the summer season. Results were consistent with previous years' data and suggest the following:

- Total phosphorus concentrations are characteristic of lakes with low primary productivity and are similar throughout Lake of Bays, with no significant difference between site types (deep water, nearshore undisturbed and disturbed),
- Total phosphorus concentrations in rivers and river influenced sites are relatively higher than in lake sites, but are well below Provincial Water Quality Guidelines,
- There is a significant increasing trend in total phosphorus concentrations since 2002, which may be part of a broad, regional scale change observed in many lakes in the area or part of natural variability that occurs over a longer period of time.
- Bacteria levels are low and do not pose a human health risk from recreational body contact,
- Bacteria levels are greater in the river and river influenced sites likely due to greater wildlife activity

6. References

Ontario Ministry of the Environment 1988:
Muskoka Lakes Project – 1986 Progress Report. Queen's Printer for Ontario, 58 pp.

Appendix A

Lake of Bays Monitoring Program

Sampling Methods

WATER QUALITY SAMPLING PROCEDURES

General:

1. Check for equipment, including:
   -metre depth pole (if required)
   -thermometer
   -cooler and ice packs
   -sterilized jars, phosphorus tubes, duplicates
   -secchi depth disc and jar (if required)
   -data sheets and pen
2. verify that you have the appropriate boating safety equipment on board and that the weather is safe for sampling
3. record air temperature on data sheet as you leave the dock. Then attach thermometer to a rope in preparation for taking water temperature at sampling sites.
4. at each site, complete the data sheet, recording any factors or conditions that may make the sampling trip unusual or that may have an influence on sample results (eg. cloudy water, unusual activity in the area, presence of waterfowl)

Coliform and E coli testing

Near shore sample collected 22 – 30 cm. below the surface in water that is 1 m. in depth
Deep water samples also collected 22 – 30 cm. below the surface of the water.

1. Carefully and correctly assemble the jars required for the specific site (all should be named and number coded)
2. Remove the cap/lid from the jar/bottle **without touching the inside of the lid or jar**, and place carefully, upside down on a flat stable surface
3. Grip the bottle at the base and plunge it into the water in a downward motion to the a depth of 22 – 30 cm. (9 – 15 in). The bottle goes in **upside down** (open end to lake bottom) and the appropriate depth is roughly around your elbow.
4. Adjust the bottle position in your hand so that the bottle is now parallel to lake surface and lake bottom, facing forward and **collect sample by sweeping the bottle forward** (forward, not up). This directional motion is important so that the water being collected in the bottle/jar does not pass over your hand. Collect water from that 22 – 30 cm. depth and then bring bottle to surface.
5. Empty it slightly (if it is full to the brim) and then recap bottle.
6. Store in the cooler chest.

7. **re quality control sample (lab and field duplicates).** Quality assurance is necessary to validate that the sampling and processing protocols have been followed appropriately. It is very important that these procedures are followed in order to ensure high quality results …

   If we are running duplicates (field and lab) on your site, there will be a large sampling jar, clearly marked, as well as a smaller one. Using the large jar, take your sample as per the steps outlined above. As soon as the sample is obtained, recap the jar (without touching interior of lid or jar) and shake it two or three times to ensure a uniform distribution of the discreet bacteria in the water sample. Immediately transfer some of the sample to the smaller jar. Cap both jars and store both jars. The contents of the

small jar are the sample, part of the remaining content of the large jar becomes the field duplicate and the balance of water in the large jar is sent for a quality control test at the Central Ontario Analytical Laboratory in Orillia.

The last part of quality assurance is distilled water. After the site sample and field duplicate have been collected, open the distilled water jug and fill the collection jar marked Distilled Water. Cap the glass bottle and place it in the cooler with the ice pack. Distilled water is, or should be, free of coliforms and e coli, and running a distilled water sample through our process (sterilized jars, sampling volunteers, Deb working the coliplates) is an excellent test of the scientific rigour of our program.

Near shore Phosphorus testing:

sample collected 22 – 30 cm. below the surface in water that is 1 m. in depth

There are always a test tube **and** a PET jar associated with each phosphorus site (and sometimes extra test tubes for quality assurance purposes). The PET jar is used to actually collect the sample, which is then transferred to the test tube(s).

1. Carefully and correctly assemble the jars required for the specific site (all should be named and number coded)
2. Remove the top from the PET jar without touching the inside of top or jar and place in a flat, stable place.
3. **Rinse the jar in surface water at site.**
4. Rinse the filter (plastic funnel and filter cloth) in surface site water (filter stored in freezer bag.)
5. Grip the bottle at the base and plunge it into the water in a downward motion to the a depth of 22 – 30 cm. (9 – 15 in). The bottle goes in **upside down** (open end to lake bottom) and the appropriate depth is roughly around your elbow.
6. Adjust the bottle position in your hand so that the bottle is now parallel to lake surface and lake bottom, facing forward and **collect sample by sweeping the bottle forward** (forward, not up). This directional motion is important so that the water being collected in the bottle/jar does not pass over your hand. Collect water from that 22 – 30 cm. depth and then bring bottle to surface.
7. Take the top off the test tube, being careful not to touch the inside of the top or the test tube interior.
8. Gently swirl the water in the PET jar (don't spill it!) and then filter the water from the PET jar into the test tube using the filter (funnel plus filter cloth) provided. Fill the test tube to the line marked near the top of the test tube (want a tiny bit of air space in the tube for the lab to add some material.) Be prepared … the filter cloth is a pain in the neck but it is important to filter out zooplankton which can distort phosphorus readings.
9. Cap tightly – both test tube and PET jar – and put both in the cooler.

Note: be careful with the filters … they are light and blow away easily and it is also easy to lose/damage the filter cloths. **There is one filter per sampler for the entire summer!**

Deep Water Phosphorus Testing

sample is collected 10 – 15 m.(metres, not centimeters) below the surface in deep water

While the process of collecting and filtering the sample is the same as that for near shore phosphorus, the sample is collected from further down in the water column. The process is as follows:

1. Attach the rope to the Secchi disc and measure the secchi depth by lowering the disc over the side of the boat until it disappears from view. It may take a bit of playing with it to verify when it actually disappears. Haul it up until you see it again and then slowly lower it. (Know that in 8 years of doing this, I have NEVER had a secchi reading anywhere on Lake of Bays of less than 4.5 metres, and have occasionally had them up to 8 metres.) As you pull the disc back to the surface, count the number of metres (the rope is calibrated in 1 metre intervals.) Record this number. Redo to double check.
2. Record the colour of the water (orangey brown, bluey-green, etc.)
3. Attach the calibrated rope to the container for the secchi collection jar.
4. Rinse the collection jar in surface site water.
5. Lower the bottle (now in the weighted container to a distance that is **2 X** the secchi depth you observed and recorded above (the sample is being collected at a level to which light penetrates and given the refraction of light, that distance is 2 X the depth at which you could last see the disc.) The bottle should be lowered in a quick, smooth, but controlled motion (Don't let it free fall.)
6. Pull the container and collection jar back to the surface at a steady pace.
7. Use this water to rinse and fill the PET jar.
8. Swirl the water in the PET jar and then pour into the test tube **through the filter.** Fill test tube to the indicated line (just shy of full.)
9. Cap and place test tube and PET jar in cooler.

Re quality assurance for phosphorus … near shore and deep water:

Quality assurance is necessary to validate that the sampling and processing protocols have been followed appropriately. It is very important that these procedures are followed in order to ensure high quality results …

1. If we are running phosphorus duplicates on your site, there will be an extra test tube, clearly marked as the field duplicate. Simply fill that second test tube in the same manner as the first, taking the time to gently swirl the contents of the PET jar before pouring water into the second test tube through the funnel and filter cloth Cap test tubes and PET jar and store in cooler.

2. The last part of quality assurance is distilled water. After the site sample and field duplicate have been collected, open the distilled water jug and fill the clearly marked test tube to the line ($7/8^{th}$ full). Cap and store with rest of samples from that particular site.

Appendix B

Lake of Bays Monitoring Program

Total Phosphorus and Bacteria Data

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
B1P	B1	Bigwin East	Deep water	2002	1-Jul-02	4.4		
B1P	B1	Bigwin East	Deep water	2002	15-Jul-02	5.8		
B1P	B1	Bigwin East	Deep water	2002	5-Aug-02	4.3		
B1P	B1	Bigwin East	Deep water	2002	19-Aug-02	3.7		
B1P	B1	Bigwin East	Deep water	2002	2-Sep-02	2.7		
B1P	B1	Bigwin East	Deep water	2003	8-Jun-03			
B1P	B1	Bigwin East	Deep water	2003	30-Jun-03	4.6		
B1P	B1	Bigwin East	Deep water	2003	14-Jul-03	5.5		
B1P	B1	Bigwin East	Deep water	2003	4-Aug-03	4.1		
B1P	B1	Bigwin East	Deep water	2003	18-Aug-03	5.2		
B1P	B1	Bigwin East	Deep water	2003	1-Sep-03	2.9		
B1P	B1	Bigwin East	Deep water	2003	28-Sep-03	2.7		
B1P	B1	Bigwin East	Deep water	2004	5-Jul-04	2.7		
B1P	B1	Bigwin East	Deep water	2004	19-Jul-04	5.3		
B1P	B1	Bigwin East	Deep water	2004	2-Aug-04	4.2		
B1P	B1	Bigwin East	Deep water	2004	23-Aug-04	5.1		
B1P	B1	Bigwin East	Deep water	2004	6-Sep-04	3.6		
B1P	B1	Bigwin East	Deep water	2005	4-Jul-05	2.8		
B1P	B1	Bigwin East	Deep water	2005	18-Jul-05	4.8		
B1P	B1	Bigwin East	Deep water	2005	1-Aug-05	3.7		
B1P	B1	Bigwin East	Deep water	2005	14-Aug-05	4.8		
B1P	B1	Bigwin East	Deep water	2005	1-Sep-05	3.8		
B1P	B1	Bigwin East	Deep water	2006	3-Jul-06	6.1	1	1
B1P	B1	Bigwin East	Deep water	2006	17-Jul-06	6.3	3	5
B1P	B1	Bigwin East	Deep water	2006	7-Aug-06	3.3	1	8
B1P	B1	Bigwin East	Deep water	2006	21-Aug-06	6.1	3	15
B1P	B1	Bigwin East	Deep water	2006	1-Sep-06	4.1	3	8
B1P FD	B1	Bigwin East	Deep water	2006	17-Jul-06		5	13
B1P FD	B1	Bigwin East	Deep water	2006	7-Aug-06	4.3		
B1P FD	B1	Bigwin East	Deep water	2006	21-Aug-06	7.4		
B1P FD	B1	Bigwin East	Deep water	2006	1-Sep-06	5.4	1	3
B1P LD	B1	Bigwin East	Deep water	2006	17-Jul-06		4	4
B1 P/B	B1	Bigwin East	Deep water	2007	2-Jul-07	3.7	1	1
B1 P/B	B1	Bigwin East	Deep water	2007	23-Jul-07	4.8	1	1
B1 P/B	B1	Bigwin East	Deep water	2007	6-Aug-07	5.1	1	5
B1 P/B	B1	Bigwin East	Deep water	2007	20-Aug-07	2.9	1	1
B1 P/B	B1	Bigwin East	Deep water	2007	31-Aug-07	6.1	1	3
B1P FD	B1	Bigwin East	Deep water	2007	23-Jul-07		1	3
B1P LD	B1	Bigwin East	Deep water	2007	23-Jul-07		4	56
B1 P/B	B1	Bigwin East	Deep water	2008	30-Jun-08	4.4	1	1
B1 P/B	B1	Bigwin East	Deep water	2008	14-Jul-08	9.0	5	8
B1 P/B	B1	Bigwin East	Deep water	2008	4-Aug-08	7.4	1	16
B1 P/B	B1	Bigwin East	Deep water	2008	18-Aug-08	6.0	1	1
B1 P/B	B1	Bigwin East	Deep water	2008	29-Aug-08	5.4	1	3
B1P FD	B1	Bigwin East	Deep water	2008	14-Jul-08		3	8
B1P FD	B1	Bigwin East	Deep water	2008	29-Aug-08	5.0		
B1P LD	B1	Bigwin East	Deep water	2008	14-Jul-08		1	1
B2 P/B	B2	Fairview	Deep water	2002	1-Jul-02	2.2		
B2 P/B	B2	Fairview	Deep water	2002	15-Jul-02	2.3		
B2 P/B	B2	Fairview	Deep water	2002	5-Aug-02	4.2		
B2 P/B	B2	Fairview	Deep water	2002	19-Aug-02	3.3		
B2 P/B	B2	Fairview	Deep water	2002	2-Sep-02	2.1		
B2 P/B	B2	Fairview	Deep water	2003	8-Jun-03	4.4		
B2 P/B	B2	Fairview	Deep water	2003	30-Jun-03	4.0		
B2 P/B	B2	Fairview	Deep water	2003	14-Jul-03	4.2		
B2 P/B	B2	Fairview	Deep water	2003	4-Aug-03	4.2		
B2 P/B	B2	Fairview	Deep water	2003	18-Aug-03	3.2		
B2 P/B	B2	Fairview	Deep water	2003	1-Sep-03	2.4		
B2 P/B	B2	Fairview	Deep water	2003	28-Sep-03	2.6		
B2 P/B	B2	Fairview	Deep water	2004	5-Jul-04	1.7		
B2 P/B	B2	Fairview	Deep water	2004	19-Jul-04	4.8		
B2 P/B	B2	Fairview	Deep water	2004	2-Aug-04	5.3		
B2 P/B	B2	Fairview	Deep water	2004	23-Aug-04	4.4		
B2 P/B	B2	Fairview	Deep water	2004	6-Sep-04	3.9		

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
B2 P/B	B2	Fairview	Deep water	2005	4-Jul-05			
B2 P/B	B2	Fairview	Deep water	2005	18-Jul-05	7.2		
B2 P/B	B2	Fairview	Deep water	2005	1-Aug-05	3.5		
B2 P/B	B2	Fairview	Deep water	2005	14-Aug-05	4.0		
B2 P/B	B2	Fairview	Deep water	2005	1-Sep-05	4.2		
B2 P/B	B2	Fairview	Deep water	2006	3-Jul-06	4.7	5	5
B2 P/B	B2	Fairview	Deep water	2006	17-Jul-06	6.3	1	1
B2 P/B	B2	Fairview	Deep water	2006	7-Aug-06	4.3	3	8
B2 P/B	B2	Fairview	Deep water	2006	21-Aug-06	6.7	1	5
B2 P/B	B2	Fairview	Deep water	2006	1-Sep-06	4.1	1	5
B2P FD	B2	Fairview	Deep water	2006	7-Aug-06	7.5	3	3
B2P FD	B2	Fairview	Deep water	2006	21-Aug-06	7.5		
B2P LD	B2	Fairview	Deep water	2006	7-Aug-06		4	12
B2 P/B	B2	Fairview	Deep water	2007	2-Jul-07	3.3	1	3
B2 P/B	B2	Fairview	Deep water	2007	23-Jul-07	5.7	1	1
B2 P/B	B2	Fairview	Deep water	2007	6-Aug-07	4.1	1	5
B2 P/B	B2	Fairview	Deep water	2007	20-Aug-07	2.4	1	5
B2 P/B	B2	Fairview	Deep water	2007	31-Aug-07	12.5	1	3
B2 P/B FD	B2	Fairview	Deep water	2007	6-Aug-07		1	1
B2 P/B LD	B2	Fairview	Deep water	2007	6-Aug-07		4	8
B2 P/B	B2	Fairview	Deep water	2008	30-Jun-08	3.7	1	1
B2 P/B	B2	Fairview	Deep water	2008	14-Jul-08	6.8	3	5
B2 P/B	B2	Fairview	Deep water	2008	4-Aug-08	6.5	1	1
B2 P/B	B2	Fairview	Deep water	2008	18-Aug-08	6.0	1	3
B2 P/B	B2	Fairview	Deep water	2008	29-Aug-08	6.3	1	11
B2 P/B FD	B2	Fairview	Deep water	2008	30-Jun-08		1	1
B2 P/B FD	B2	Fairview	Deep water	2008	4-Aug-08	8.4		
B3 P/B	B3	Bigwin North	Disturbed	2002	26-May-02		0.5	3
B3 P/B	B3	Bigwin North	Disturbed	2002	1-Jul-02	8.8	52	94
B3 P/B	B3	Bigwin North	Disturbed	2002	15-Jul-02	5.1	0.5	8
B3 P/B	B3	Bigwin North	Disturbed	2002	5-Aug-02	6.2	11	213
B3 P/B	B3	Bigwin North	Disturbed	2002	19-Aug-02	2.7	0.5	43
B3 P/B	B3	Bigwin North	Disturbed	2002	2-Sep-02	2.3	0.5	33
B3 P/B	B3	Bigwin North	Disturbed	2002	29-Sep-02		0.5	39
B3 P/B	B3	Bigwin North	Disturbed	2003	8-Jun-03	4.5		
B3 P/B	B3	Bigwin North	Disturbed	2003	30-Jun-03	4.0	1	8
B3 P/B	B3	Bigwin North	Disturbed	2003	14-Jul-03	5.3	1	33
B3 P/B	B3	Bigwin North	Disturbed	2003	4-Aug-03	4.4	1	19
B3 P/B	B3	Bigwin North	Disturbed	2003	4-Aug-03	4.5	1	19
B3 P/B	B3	Bigwin North	Disturbed	2003	14-Aug-03	2.7	1	43
B3 P/B	B3	Bigwin North	Disturbed	2003	1-Sep-03	3.3	3	87
B3 P/B	B3	Bigwin North	Disturbed	2003	28-Sep-03	2.7	1	11
B3 P/B	B3	Bigwin North	Disturbed	2004	5-Jul-04	3.4	8	141
B3 P/B	B3	Bigwin North	Disturbed	2004	19-Jul-04	7.7	5	280
B3 P/B	B3	Bigwin North	Disturbed	2004	2-Aug-04	5.1	16	72
B3 P/B	B3	Bigwin North	Disturbed	2004	23-Aug-04	27.7	1	65
B3 P/B	B3	Bigwin North	Disturbed	2004	6-Sep-04	5.1	3	83
B3 P/B FD	B3	Bigwin North	Disturbed	2004	6-Sep-04		3	76
B3 P/B LD	B3	Bigwin North	Disturbed	2004	6-Sep-04		1	80
B3 P/B	B3	Bigwin North	Disturbed	2005	4-Jul-05	3.9	5	33
B3 P/B	B3	Bigwin North	Disturbed	2005	18-Jul-05	9.3	8	25
B3 P/B	B3	Bigwin North	Disturbed	2005	1-Aug-05	3.5	3	49
B3 P/B	B3	Bigwin North	Disturbed	2005	14-Aug-05		5	46
B3 P/B	B3	Bigwin North	Disturbed	2005	1-Sep-05	3.9	8	28
B3 P/B	B3	Bigwin North	Disturbed	2007	2-Jul-07	5.4	1	5
B3 P/B	B3	Bigwin North	Disturbed	2007	23-Jul-07	5.7	1	1
B3 P/B	B3	Bigwin North	Disturbed	2007	6-Aug-07	97.7	1	3
B3 P/B	B3	Bigwin North	Disturbed	2007	20-Aug-07	8.3	1	8
B3 P/B	B3	Bigwin North	Disturbed	2007	31-Aug-07	5.6	3	28
B3 P/B	B3	Bigwin North	Disturbed	2008	30-Jun-08	3.9	1	28
B3 P/B	B3	Bigwin North	Disturbed	2008	14-Jul-08	8.0	8	30
B3 P/B	B3	Bigwin North	Disturbed	2008	4-Aug-08	5.6	5	19
B3 P/B	B3	Bigwin North	Disturbed	2008	18-Aug-08	7.1	1	1
B3 P/B	B3	Bigwin North	Disturbed	2008	29-Aug-08	6.0	3	5

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
B4 P/B	B4	Bigwin Bay	Disturbed	2002	1-Jul-02	3.1		
B4 P/B	B4	Bigwin Bay	Disturbed	2002	15-Jul-02	9.6		
B4 P/B	B4	Bigwin Bay	Disturbed	2002	5-Aug-02	5.4		
B4 P/B	B4	Bigwin Bay	Disturbed	2002	19-Aug-02	3.1		
B4 P/B	B4	Bigwin Bay	Disturbed	2002	2-Sep-02	2.9		
B4 P/B	B4	Bigwin Bay	Disturbed	2003	8-Jun-03	4.9		
B4 P/B	B4	Bigwin Bay	Disturbed	2003	30-Jun-03	3.5		
B4 P/B	B4	Bigwin Bay	Disturbed	2003	14-Jul-03	5.1		
B4 P/B	B4	Bigwin Bay	Disturbed	2003	4-Aug-03	4.8		
B4 P/B	B4	Bigwin Bay	Disturbed	2003	18-Aug-03	7.3		
B4 P/B	B4	Bigwin Bay	Disturbed	2003	1-Sep-03	2.1		
B4 P/B	B4	Bigwin Bay	Disturbed	2003	28-Sep-03	5.4		
B4 P/B	B4	Bigwin Bay	Disturbed	2004	5-Jul-04	3.6		
B4 P/B	B4	Bigwin Bay	Disturbed	2004	19-Jul-04	6.6		
B4 P/B	B4	Bigwin Bay	Disturbed	2004	2-Aug-04	4.9		
B4 P/B	B4	Bigwin Bay	Disturbed	2004	23-Aug-04			
B4 P/B	B4	Bigwin Bay	Disturbed	2004	6-Sep-04	4.3		
B4 P/B	B4	Bigwin Bay	Disturbed	2008	4-Aug-08	6.4	11	87
B4 P/B	B4	Bigwin Bay	Disturbed	2008	18-Aug-08	5.2	1	1
B4 P/B	B4	Bigwin Bay	Disturbed	2008	29-Aug-08	4.9	3	13
E1 P/B	E1	Trading Bay	Deep water	2002	26-May-02		0.5	3
E1 P/B	E1	Trading Bay	Deep water	2002	1-Jul-02	4.6	0.5	11
E1 P/B	E1	Trading Bay	Deep water	2002	15-Jul-02	4.2	0.5	3
E1 P/B	E1	Trading Bay	Deep water	2002	5-Aug-02	5.9	0.5	5
E1 P/B	E1	Trading Bay	Deep water	2002	19-Aug-02	17.7	0.5	13
E1 P/B FD	E1	Trading Bay	Deep water	2002	2-Sep-02	1.8	0.5	8
E1 P/B FD	E1	Trading Bay	Deep water	2002	29-Sep-02		0.5	59
E1 P/B	E1	Trading Bay	Deep water	2003	8-Jun-03			
E1 P/B	E1	Trading Bay	Deep water	2003	30-Jun-03	4.3	3	8
E1 P/B	E1	Trading Bay	Deep water	2003	14-Jul-03	4.9	1	3
E1 P/B	E1	Trading Bay	Deep water	2003	4-Aug-03	6.9	1	1
E1 P/B	E1	Trading Bay	Deep water	2003	18-Aug-03	2.9	1	5
E1 P/B	E1	Trading Bay	Deep water	2003	1-Sep-03	2.4	1	1
E1 P/B	E1	Trading Bay	Deep water	2003	28-Sep-03	2.8	1	3
E1 P/B	E1	Trading Bay	Deep water	2004	5-Jul-04	1.9	3	19
E1 P/B	E1	Trading Bay	Deep water	2004	19-Jul-04	12.3	3	16
E1 P/B	E1	Trading Bay	Deep water	2004	2-Aug-04	7.8	3	22
E1 P/B	E1	Trading Bay	Deep water	2004	23-Aug-04	5.8		
E1 P/B	E1	Trading Bay	Deep water	2004	6-Sep-04	3.9	1	22
E1 P/B	E1	Trading Bay	Deep water	2005	4-Jul-05	6.7	5	8
E1 P/B	E1	Trading Bay	Deep water	2005	18-Jul-05	5.3	8	16
E1 P/B	E1	Trading Bay	Deep water	2005	1-Aug-05	2.6	5	11
E1 P/B	E1	Trading Bay	Deep water	2005	14-Aug-05		5	16
E1 P/B	E1	Trading Bay	Deep water	2005	1-Sep-05	6.0	3	8
E1 P/B FD	E1	Trading Bay	Deep water	2005	18-Jul-05	4.5		
E1 P/B	E1	Trading Bay	Deep water	2006	3-Jul-06	5.4	1	5
E1 P/B	E1	Trading Bay	Deep water	2006	17-Jul-06	7.3	1	1
E1 P/B	E1	Trading Bay	Deep water	2006	7-Aug-06	3.3	1	8
E1 P/B	E1	Trading Bay	Deep water	2006	21-Aug-06	11.0	3	5
E1 P/B	E1	Trading Bay	Deep water	2006	1-Sep-06	5.6	3	13
E1 P/B FD	E1	Trading Bay	Deep water	2006	17-Jul-06	4.5		
E1 P/B FD	E1	Trading Bay	Deep water	2006	21-Aug-06		5	13
E1 P/B LD	E1	Trading Bay	Deep water	2006	21-Aug-06		4	4
E1 P/B	E1	Trading Bay	Deep water	2007	2-Jul-07	2.9	1	5
E1 P/B	E1	Trading Bay	Deep water	2007	23-Jul-07	6.1	1	16
E1 P/B	E1	Trading Bay	Deep water	2007	6-Aug-07	6.2	1	1
E1 P/B	E1	Trading Bay	Deep water	2007	20-Aug-07	3.8	1	1
E1 P/B	E1	Trading Bay	Deep water	2007	31-Aug-07	4.6	1	1
E1 P/B FD	E1	Trading Bay	Deep water	2007	6-Aug-07		1	8
E1 P/B FD	E1	Trading Bay	Deep water	2007	20-Aug-07	3.3		
E1 P/B LD	E1	Trading Bay	Deep water	2007	6-Aug-07		1	6
E1 P/B	E1	Trading Bay	Deep water	2008	30-Jun-08	4.0	1	33
E1 P/B	E1	Trading Bay	Deep water	2008	14-Jul-08	5.8	3	5
E1 P/B	E1	Trading Bay	Deep water	2008	4-Aug-08	4.8	3	5

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
E1 P/B	E1	Trading Bay	Deep water	2008	18-Aug-08	5.3	1	5
E1 P/B	E1	Trading Bay	Deep water	2008	29-Aug-08	6.7	1	5
E1 P/B FD	E1	Trading Bay	Deep water	2008	14-Jul-08		5	16
E1 P/B FD	E1	Trading Bay	Deep water	2008	4-Aug-08		1	8
E1 P/B FD	E1	Trading Bay	Deep water	2008	18-Aug-08	5.8		
E1 P/B LD	E1	Trading Bay	Deep water	2008	4-Aug-08		1	8
E13 P/B	E13	Haystack Bay	Deep water	2002	1-Jul-02	3.5		
E13 P/B	E13	Haystack Bay	Deep water	2002	15-Jul-02	6.1		
E13 P/B	E13	Haystack Bay	Deep water	2002	5-Aug-02	4.9		
E13 P/B	E13	Haystack Bay	Deep water	2002	19-Aug-02	4.1		
E13 P/B	E13	Haystack Bay	Deep water	2002	2-Sep-02	2.5		
E13 P/B	E13	Haystack Bay	Deep water	2003	8-Jun-03	4.8		
E13 P/B	E13	Haystack Bay	Deep water	2003	30-Jun-03	5.2		
E13 P/B	E13	Haystack Bay	Deep water	2003	14-Jul-03	5.9		
E13 P/B	E13	Haystack Bay	Deep water	2003	4-Aug-03	4.9		
E13 P/B	E13	Haystack Bay	Deep water	2003	14-Aug-03	4.2		
E13 P/B	E13	Haystack Bay	Deep water	2003	1-Sep-03	3.0		
E13 P/B	E13	Haystack Bay	Deep water	2003	28-Sep-03	2.7		
E13 P/B	E13	Haystack Bay	Deep water	2004	5-Jul-04	2.4		
E13 P/B	E13	Haystack Bay	Deep water	2004	19-Jul-04	5.9		
E13 P/B	E13	Haystack Bay	Deep water	2004	2-Aug-04	5.9		
E13 P/B	E13	Haystack Bay	Deep water	2004	23-Aug-04	4.3		
E13 P/B	E13	Haystack Bay	Deep water	2004	6-Sep-04			
E13 P/B	E13	Haystack Bay	Deep water	2006	3-Jul-06	5.6	3	3
E13 P/B	E13	Haystack Bay	Deep water	2006	17-Jul-06	5.7	3	8
E13 P/B	E13	Haystack Bay	Deep water	2006	7-Aug-06		1	5
E13 P/B	E13	Haystack Bay	Deep water	2006	21-Aug-06	9.1	3	3
E13 P/B	E13	Haystack Bay	Deep water	2006	1-Sep-06	14.1	3	5
E13 P/B FD	E13	Haystack Bay	Deep water	2006	21-Aug-06		5	11
E13 P/B LD	E13	Haystack Bay	Deep water	2006	21-Aug-06		4	8
E13 P/B	E13	Haystack Bay	Deep water	2007	2-Jul-07	4.0	1	3
E13 P/B	E13	Haystack Bay	Deep water	2007	23-Jul-07	4.3	1	5
E13 P/B	E13	Haystack Bay	Deep water	2007	6-Aug-07	10.8	1	13
E13 P/B	E13	Haystack Bay	Deep water	2007	20-Aug-07	2.6	1	1
E13 P/B	E13	Haystack Bay	Deep water	2007	31-Aug-07	5.0	1	5
E13 P/B FD	E13	Haystack Bay	Deep water	2007	6-Aug-07	12.8		
E13 P/B	E13	Haystack Bay	Deep water	2008	30-Jun-08	5.1	1	1
E13 P/B	E13	Haystack Bay	Deep water	2008	14-Jul-08	4.8	3	11
E13 P/B	E13	Haystack Bay	Deep water	2008	4-Aug-08	5.6	1	3
E13 P/B	E13	Haystack Bay	Deep water	2008	18-Aug-08	5.6	3	3
E13 P/B	E13	Haystack Bay	Deep water	2008	29-Aug-08		3	11
E13 P/B FD	E13	Haystack Bay	Deep water	2008	14-Jul-08		1	16
E13 P/B FD	E13	Haystack Bay	Deep water	2008	4-Aug-08		3	5
E13 P/B LD	E13	Haystack Bay	Deep water	2008	14-Jul-08		1	8
E13 P/B LD	E13	Haystack Bay	Deep water	2008	4-Aug-08		1	20
E18 P/B	E18	Hollow River Mouth	River	2003	30-Jun-03	7.4	30	166
E18 P/B	E18	Hollow River Mouth	River	2003	14-Jul-03	6.2	46	307
E18 P/B	E18	Hollow River Mouth	River	2003	4-Aug-03	5.1	94	489
E18 P/B	E18	Hollow River Mouth	River	2003	14-Aug-03	4.3	52	226
E18 P/B	E18	Hollow River Mouth	River	2003	1-Sep-03	4.3		
E18 P/B	E18	Hollow River Mouth	River	2004	5-Jul-04	6.0	141	694
E18 P/B	E18	Hollow River Mouth	River	2004	19-Jul-04	25.1	33	166
E18 P/B	E18	Hollow River Mouth	River	2004	2-Aug-04	7.1	62	1038
E18 P/B	E18	Hollow River Mouth	River	2004	23-Aug-04		52	132
E18 P/B FD	E18	Hollow River Mouth	River	2004	2-Aug-04		119	1174
E18 P/B LD	E18	Hollow River Mouth	River	2004	2-Aug-04		38	80
E18 P/B LD	E18	Hollow River Mouth	River	2005	4-Jul-05	11.0	16	72
E18 P/B LD	E18	Hollow River Mouth	River	2005	18-Jul-05	6.3	11	102
E18 P/B LD	E18	Hollow River Mouth	River	2005	1-Aug-05	3.0	8	59
E18 P/B LD	E18	Hollow River Mouth	River	2005	14-Aug-05		28	182
E18 P/B LD	E18	Hollow River Mouth	River	2005	1-Sep-05	3.8	19	114
E18 P/B	E18	Hollow River Mouth	River	2007	2-Jul-07	3.9	1	177
E18 P/B	E18	Hollow River Mouth	River	2007	23-Jul-07	6.6	28	72
E18 P/B	E18	Hollow River Mouth	River	2007	6-Aug-07	5.7	30	79

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
E18 P/B	E18	Hollow River Mouth	River	2007	20-Aug-07	3.9	25	30
E18 P/B	E18	Hollow River Mouth	River	2007	31-Aug-07	5.7	5	43
E18 P/B	E18	Hollow River Mouth	River	2008	14-Jul-08	10.1	50	90
E18 P/B	E18	Hollow River Mouth	River	2008	4-Aug-08	5.5	33	62
E18 P/B	E18	Hollow River Mouth	River	2008	18-Aug-08	5.8	5	16
E20 P/B	E20	Little Trading Bay	Deep water	2005	4-Jul-05	5.9	8	28
E20 P/B	E20	Little Trading Bay	Deep water	2005	18-Jul-05	5.8	5	11
E20 P/B	E20	Little Trading Bay	Deep water	2005	1-Aug-05	5.2	3	19
E20 P/B	E20	Little Trading Bay	Deep water	2005	14-Aug-05		1	33
E20 P/B	E20	Little Trading Bay	Deep water	2005	1-Sep-05	4.8	3	33
E20 P/B FD	E20	Little Trading Bay	Deep water	2005	18-Jul-05		3	8
E20 P/B LD	E20	Little Trading Bay	Deep water	2005	18-Jul-05		1	4
E20 P/B	E20	Little Trading Bay	Deep water	2006	3-Jul-06	11.9	3	13
E20 P/B	E20	Little Trading Bay	Deep water	2006	17-Jul-06	6.1	5	19
E20 P/B	E20	Little Trading Bay	Deep water	2006	8-Aug-06	4.4	3	19
E20 P/B	E20	Little Trading Bay	Deep water	2006	21-Aug-06	6.5		
E20 P/B	E20	Little Trading Bay	Deep water	2006	1-Sep-06	10.3	3	11
E20 P/B FD	E20	Little Trading Bay	Deep water	2006	17-Jul-06		5	19
E20 P/B LD	E20	Little Trading Bay	Deep water	2006	17-Jul-06		4	20
E20 P/B	E20	Little Trading Bay	Deep water	2007	2-Jul-07	4.8	1	25
E20 P/B	E20	Little Trading Bay	Deep water	2007	23-Jul-07	7.9	8	65
E20 P/B	E20	Little Trading Bay	Deep water	2007	6-Aug-07	7.6	3	8
E20 P/B	E20	Little Trading Bay	Deep water	2007	20-Aug-07	7.9	1	8
E20 P/B	E20	Little Trading Bay	Deep water	2007	31-Aug-07	7.0	1	5
E20 P/B	E20	Little Trading Bay	Deep water	2008	30-Jun-08	7.4	1	59
E20 P/B	E20	Little Trading Bay	Deep water	2008	14-Jul-08	7.0	1	16
E20 P/B	E20	Little Trading Bay	Deep water	2008	4-Aug-08	8.3	8	22
E20 P/B	E20	Little Trading Bay	Deep water	2008	18-Aug-08	6.5	1	3
E20 P/B	E20	Little Trading Bay	Deep water	2008	29-Aug-08	9.4	3	62
E20 P/B FD	E20	Little Trading Bay	Deep water	2008	29-Aug-08		5	52
E25 P/B	E25	Narrows East	Nearshore Undisturbed	2007	2-Jul-07	3.9	1	16
E25 P/B	E25	Narrows East	Nearshore Undisturbed	2007	23-Jul-07	7.2	1	3
E25 P/B	E25	Narrows East	Nearshore Undisturbed	2007	6-Aug-07	16.9	1	11
E25 P/B	E25	Narrows East	Nearshore Undisturbed	2007	20-Aug-07	12.9	3	8
E25 P/B	E25	Narrows East	Nearshore Undisturbed	2007	31-Aug-07	16.1	1	1
E25 P/B FD	E25	Narrows East	Nearshore Undisturbed	2007	23-Jul-07		1	3
E25 P/B FD	E25	Narrows East	Nearshore Undisturbed	2007	31-Aug-07		1	5
E25 P/B LD	E25	Narrows East	Nearshore Undisturbed	2007	23-Jul-07		1	1
E25 P/B	E25	Narrows East	Nearshore Undisturbed	2008	30-Jun-08		1	5
E25 P/B	E25	Narrows East	Nearshore Undisturbed	2008	14-Jul-08	4.9	3	19
E25 P/B	E25	Narrows East	Nearshore Undisturbed	2008	4-Aug-08	6.3	1	3
E25 P/B	E25	Narrows East	Nearshore Undisturbed	2008	18-Aug-08	4.3	1	16
E25 P/B	E25	Narrows East	Nearshore Undisturbed	2008	29-Aug-08	7.2	5	16
E25 P/B FD	E25	Narrows East	Nearshore Undisturbed	2008	14-Jul-08		1	19
E25 P/B FD	E25	Narrows East	Nearshore Undisturbed	2008	14-Jul-08		3	8
E25 P/B LD	E25	Narrows East	Nearshore Undisturbed	2008	4-Aug-08		1	19
E25 P/B LD	E25	Narrows East	Nearshore Undisturbed	2008	4-Aug-08		1	16
E26 P/B	E26	Narrows West	Nearshore Undisturbed	2007	2-Jul-07	4.5	1	65
E26 P/B	E26	Narrows West	Nearshore Undisturbed	2007	23-Jul-07	8.2	1	1
E26 P/B	E26	Narrows West	Nearshore Undisturbed	2007	6-Aug-07	7.0	13	25
E26 P/B	E26	Narrows West	Nearshore Undisturbed	2007	20-Aug-07	5.7	1	1
E26 P/B	E26	Narrows West	Nearshore Undisturbed	2007	31-Aug-07	4.4	1	8
E26 P/B FD	E26	Narrows West	Nearshore Undisturbed	2007	23-Jul-07	4.1		
E26 P/B FD	E26	Narrows West	Nearshore Undisturbed	2007	6-Aug-07	6.4	1	1
E26 P/B FD	E26	Narrows West	Nearshore Undisturbed	2007	6-Aug-07		8	13
E26 P/B	E26	Narrows West	Nearshore Undisturbed	2008	30-Jun-08		3	8
E26 P/B	E26	Narrows West	Nearshore Undisturbed	2008	14-Jul-08	2.4	5	8
E26 P/B	E26	Narrows West	Nearshore Undisturbed	2008	4-Aug-08	5.5	13	69
E26 P/B	E26	Narrows West	Nearshore Undisturbed	2008	18-Aug-08	4.6	1	1
E26 P/B	E26	Narrows West	Nearshore Undisturbed	2008	29-Aug-08	5.5	3	11
E26 P/B FD	E26	Narrows West	Nearshore Undisturbed	2008	18-Aug-08	5.9	1	1
E26 P/B LD	E26	Narrows West	Nearshore Undisturbed	2008	18-Aug-08		1	24
E30 P/B	E30	Ten Mile Bay	Deep water	2006	3-Jul-06	6.4	1	1
E30 P/B	E30	Ten Mile Bay	Deep water	2006	17-Jul-06	7.7	1	3

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
E30 P/B	E30	Ten Mile Bay	Deep water	2006	7-Aug-06	6.0	1	1
E30 P/B	E30	Ten Mile Bay	Deep water	2006	21-Aug-06	10.2	1	8
E30 P/B	E30	Ten Mile Bay	Deep water	2006	1-Sep-06	4.2	1	5
E30 P/B FD	E30	Ten Mile Bay	Deep water	2006	21-Aug-06	10.2		
E30 P/B	E30	Ten Mile Bay	Deep water	2007	2-Jul-07	3.4	1	3
E30 P/B	E30	Ten Mile Bay	Deep water	2007	23-Jul-07	4.9	1	1
E30 P/B	E30	Ten Mile Bay	Deep water	2007	6-Aug-07	5.8	1	1
E30 P/B	E30	Ten Mile Bay	Deep water	2007	20-Aug-07	4.6	1	3
E30 P/B	E30	Ten Mile Bay	Deep water	2007	31-Aug-07	6.2	1	1
E30 P/B FD	E30	Ten Mile Bay	Deep water	2007	23-Jul-07		1	3
E30 P/B LD	E30	Ten Mile Bay	Deep water	2007	23-Jul-07		1	4
E30 P/B	E30	Ten Mile Bay	Deep water	2008	30-Jun-08	5.1	8	28
E30 P/B	E30	Ten Mile Bay	Deep water	2008	14-Jul-08	4.7	5	11
E30 P/B	E30	Ten Mile Bay	Deep water	2008	14-Jul-08	6.9		
E30 P/B	E30	Ten Mile Bay	Deep water	2008	4-Aug-08	5.3	1	5
E30 P/B	E30	Ten Mile Bay	Deep water	2008	18-Aug-08	6.6	1	11
E30 P/B	E30	Ten Mile Bay	Deep water	2008	29-Aug-08	6.0	1	3
E30 P/B FD	E30	Ten Mile Bay	Deep water	2008	14-Jul-08		3	11
E30 P/B FD	E30	Ten Mile Bay	Deep water	2008	18-Aug-08		1	19
E30 P/B LD	E30	Ten Mile Bay	Deep water	2008	14-Jul-08		1	8
E30 P/B LD	E30	Ten Mile Bay	Deep water	2008	18-Aug-08		1	16
E 6 P/B	E6	Hollow River Lagoon	River	2002	26-May-02		3	43
E 6 P/B	E6	Hollow River Lagoon	River	2002	1-Jul-02		13	166
E 6 P/B	E6	Hollow River Lagoon	River	2002	15-Jul-02		11	188
E 6 P/B	E6	Hollow River Lagoon	River	2002	5-Aug-02		8	1174
E 6 P/B	E6	Hollow River Lagoon	River	2002	19-Aug-02		22	587
E 6 P/B	E6	Hollow River Lagoon	River	2002	2-Sep-02		0.5	2424
E 6 P/B FD	E6	Hollow River Lagoon	River	2002	15-Jul-02		16	256
E 6 P/B	E6	Hollow River Lagoon	River	2003	30-Jun-03	11.4	25	240
E 6 P/B	E6	Hollow River Lagoon	River	2003	14-Jul-03	8.5	11	388
E 6 P/B	E6	Hollow River Lagoon	River	2003	4-Aug-03	7.7	25	619
E 6 P/B	E6	Hollow River Lagoon	River	2003	14-Aug-03	5.2	3	469
E 6 P/B	E6	Hollow River Lagoon	River	2003	1-Sep-03	5.2		
E 6 P/B	E6	Hollow River Lagoon	River	2003	28-Sep-03	5.1		
E 6 P/B LD	E6	Hollow River Lagoon	River	2003	4-Aug-03		24	76
E 6 P/B	E6	Hollow River Lagoon	River	2007	2-Jul-07	3.6	3	263
E 6 P/B	E6	Hollow River Lagoon	River	2007	23-Jul-07	5.7	25	79
E 6 P/B	E6	Hollow River Lagoon	River	2007	6-Aug-07	5.7	39	110
E 6 P/B	E6	Hollow River Lagoon	River	2007	20-Aug-07	5.1	25	79
E 6 P/B	E6	Hollow River Lagoon	River	2007	31-Aug-07	6.5	8	52
E 6 P/B FD	E6	Hollow River Lagoon	River	2007	6-Aug-07		39	108
E 6 P/B FD	E6	Hollow River Lagoon	River	2007	20-Aug-07		30	98
E 6 P/B LD	E6	Hollow River Lagoon	River	2007	6-Aug-07		42	600
E 6 P/B LD	E6	Hollow River Lagoon	River	2007	20-Aug-07		26	172
E 6 P/B	E6	Hollow River Lagoon	River	2008	14-Jul-08	8.1	25	65
E 6 P/B	E6	Hollow River Lagoon	River	2008	4-Aug-08	5.2	11	39
E 6 P/B	E6	Hollow River Lagoon	River	2008	18-Aug-08	5.5	1	19
E 6 P/B FD	E6	Hollow River Lagoon	River	2008	18-Aug-08		8	30
E 6 P/B LD	E6	Hollow River Lagoon	River	2008	18-Aug-08		8	48
E 6A P/B	E6a	Hollow River lagoon-upstream	River	2003	30-Jun-03	7.3	30	177
E 6A P/B	E6a	Hollow River lagoon-upstream	River	2003	14-Jul-03	6.5	102	534
E 6A P/B	E6a	Hollow River lagoon-upstream	River	2003	4-Aug-03	6.4	403	619
E 6A P/B	E6a	Hollow River lagoon-upstream	River	2003	14-Aug-03	4.4	30	271
E 6A P/B	E6a	Hollow River lagoon-upstream	River	2003	1-Sep-03	4.4		
E 6A P/B	E6a	Hollow River upstream	River	2007	20-Aug-07		3	25
E 6A P/B	E6a	Hollow River upstream	River	2007	31-Aug-07		3	11
E 6A P/B	E6a	Hollow River-upstream	River	2008	14-Jul-08	24.7	39	98
E 6A P/B	E6a	Hollow River-upstream	River	2008	4-Aug-08	6.5	19	39
E 6A P/B	E6a	Hollow River-upstream	River	2008	18-Aug-08	5.3	5	25
N1 P	N1	Dwight Bay	Deep water	2002	1-Jul-02	6.7		
N1 P	N1	Dwight Bay	Deep water	2002	15-Jul-02	5.7		
N1 P	N1	Dwight Bay	Deep water	2002	5-Aug-02	4.8		
N1 P	N1	Dwight Bay	Deep water	2002	19-Aug-02	3.8		
N1 P	N1	Dwight Bay	Deep water	2002	2-Sep-02	1.8		

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
N1 P	N1	Dwight Bay	Deep water	2003	8-Jun-03			
N1 P	N1	Dwight Bay	Deep water	2003	30-Jun-03	5.4		
N1 P	N1	Dwight Bay	Deep water	2003	14-Jul-03	0.7		
N1 P	N1	Dwight Bay	Deep water	2003	4-Aug-03	2.0		
N1 P	N1	Dwight Bay	Deep water	2003	18-Aug-03	5.0		
N1 P	N1	Dwight Bay	Deep water	2003	1-Sep-03	5.6		
N1 P	N1	Dwight Bay	Deep water	2003	28-Sep-03	3.1		
N1 P	N1	Dwight Bay	Deep water	2004	19-Jul-04	7.7		
N1 P	N1	Dwight Bay	Deep water	2004	2-Aug-04	6.3		
N1 P	N1	Dwight Bay	Deep water	2004	23-Aug-04	4.4		
N1 P	N1	Dwight Bay	Deep water	2004	6-Sep-04			
N1 P	N1	Dwight Bay	Deep water	2005	18-Jul-05	6.1		
N1 P	N1	Dwight Bay	Deep water	2005	1-Aug-05	3.3		
N1 P	N1	Dwight Bay	Deep water	2005	14-Aug-05	5.9		
N1 P	N1	Dwight Bay	Deep water	2005	1-Sep-05	3.4		
N1 P	N1	Dwight Bay	Deep water	2006	3-Jul-06	5.0	1	1
N1 P	N1	Dwight Bay	Deep water	2006	17-Jul-06	4.5	8	8
N1 P	N1	Dwight Bay	Deep water	2006	21-Aug-06	6.7	1	1
N1 P	N1	Dwight Bay	Deep water	2006	1-Sep-06	9.2	3	13
N1 P/B FD	N1	Dwight Bay	Deep water	2006	17-Jul-06	4.5		
N1 P/B FD	N1	Dwight Bay	Deep water	2006	21-Aug-06		3	3
N1 P/B FD	N1	Dwight Bay	Deep water	2006	1-Sep-06	31.9		
N1 P/B LD	N1	Dwight Bay	Deep water	2006	21-Aug-06		4	8
N1 P/B	N1	Dwight Bay	Deep water	2007	2-Jul-07	4.3	1	5
N1 P/B	N1	Dwight Bay	Deep water	2007	23-Jul-07	6.1	1	13
N1 P/B	N1	Dwight Bay	Deep water	2007	6-Aug-07	9.6	1	5
N1 P/B	N1	Dwight Bay	Deep water	2007	20-Aug-07	4.6	1	1
N1 P/B	N1	Dwight Bay	Deep water	2007	31-Aug-07	5.3	1	5
N1 P/B FD	N1	Dwight Bay	Deep water	2007	23-Jul-07		1	8
N1 P/B FD	N1	Dwight Bay	Deep water	2007	6-Aug-07		1	5
N1 P/B FD	N1	Dwight Bay	Deep water	2007	20-Aug-07	4.0		
N1 P/B LD	N1	Dwight Bay	Deep water	2007	23-Jul-07		1	4
N1 P/B LD	N1	Dwight Bay	Deep water	2007	6-Aug-07		1	8
N1 P/B	N1	Dwight Bay	Deep water	2008	30-Jun-08		1	1
N1 P/B	N1	Dwight Bay	Deep water	2008	14-Jul-08	6.1	1	1
N1 P/B	N1	Dwight Bay	Deep water	2008	4-Aug-08	6.3	1	1
N1 P/B	N1	Dwight Bay	Deep water	2008	18-Aug-08	6.0	1	1
N1 P/B	N1	Dwight Bay	Deep water	2008	29-Aug-08	6.0	1	8
N1 P/B FD	N1	Dwight Bay	Deep water	2008	18-Aug-08		1	1
N1 P/B LD	N1	Dwight Bay	Deep water	2008	18-Aug-08		1	1
N10 P/B	N10	Gull Rock	Deep water	2002	26-May-02		0.5	0.5
N10 P/B	N10	Gull Rock	Deep water	2002	1-Jul-02	4.6	3	25
N10 P/B	N10	Gull Rock	Deep water	2002	15-Jul-02	4.9		
N10 P/B	N10	Gull Rock	Deep water	2002	5-Aug-02	4.3	5	52
N10 P/B	N10	Gull Rock	Deep water	2002	19-Aug-02	3.8	0.5	30
N10 P/B	N10	Gull Rock	Deep water	2002	2-Sep-02	2.4	0.5	33
N10 P/B	N10	Gull Rock	Deep water	2002	28-Sep-02		0.5	3
N10 P/B	N10	Gull Rock	Deep water	2003	8-Jun-03	5.0		
N10 P/B	N10	Gull Rock	Deep water	2003	30-Jun-03	4.8	19	30
N10 P/B	N10	Gull Rock	Deep water	2003	14-Jul-03	16.9	1	5
N10 P/B	N10	Gull Rock	Deep water	2003	4-Aug-03	6.1	1	8
N10 P/B	N10	Gull Rock	Deep water	2003	18-Aug-03	4.4	5	8
N10 P/B	N10	Gull Rock	Deep water	2003	1-Sep-03	2.1	1	1
N10 P/B	N10	Gull Rock	Deep water	2003	28-Sep-03	2.7	1	13
N10 P/B	N10	Gull Rock	Deep water	2004	5-Jul-04	6.2	1	52
N10 P/B	N10	Gull Rock	Deep water	2004	19-Jul-04	5.0	1	11
N10 P/B	N10	Gull Rock	Deep water	2004	2-Aug-04	5.4	1	11
N10 P/B	N10	Gull Rock	Deep water	2004	23-Aug-04	4.7	1	8
N10 P/B	N10	Gull Rock	Deep water	2004	6-Sep-04	4.1		
N10 P/B	N10	Gull Rock	Deep water	2005	4-Jul-05	4.1	5	8
N10 P/B	N10	Gull Rock	Deep water	2005	18-Jul-05	5.0	1	5
N10 P/B	N10	Gull Rock	Deep water	2005	1-Aug-05	2.7	3	8
N10 P/B	N10	Gull Rock	Deep water	2005	14-Aug-05	5.6	1	3
N10 P/B	N10	Gull Rock	Deep water	2005	1-Sep-05	4.4	1	3

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
N10 P/B FD	N10	Gull Rock	Deep water	2005	18-Jul-05		3	8
N10 P/B FD	N10	Gull Rock	Deep water	2005	1-Sep-05		1	1
N10 P/B LD	N10	Gull Rock	Deep water	2005	18-Jul-05		1	3
N10 P/B LD	N10	Gull Rock	Deep water	2005	1-Sep-05		1	1
N10 P/B	N10	Gull Rock	Deep water	2006	3-Jul-06	4.7	1	3
N10 P/B	N10	Gull Rock	Deep water	2006	17-Jul-06	4.2	1	1
N10 P/B	N10	Gull Rock	Deep water	2006	8-Aug-06	4.3	1	8
N10 P/B	N10	Gull Rock	Deep water	2006	21-Aug-06	6.7	5	13
N10 P/B	N10	Gull Rock	Deep water	2006	1-Sep-06	8.3	1	3
N10 P/B FD	N10	Gull Rock	Deep water	2006	3-Jul-06		3	5
N10 P/B	N10	Gull Rock	Deep water	2007	2-Jul-07	4.1	1	1
N10 P/B	N10	Gull Rock	Deep water	2007	23-Jul-07	5.3	1	1
N10 P/B	N10	Gull Rock	Deep water	2007	6-Aug-07	4.9	1	5
N10 P/B	N10	Gull Rock	Deep water	2007	20-Aug-07	4.1	1	1
N10 P/B	N10	Gull Rock	Deep water	2007	31-Aug-07	4.6	1	3
N10 P/B FD	N10	Gull Rock	Deep water	2007	2-Jul-07		1	8
N10 P/B FD	N10	Gull Rock	Deep water	2007	20-Aug-07	5.4		
N10 P/B LD	N10	Gull Rock	Deep water	2007	2-Jul-07		1	8
N10 P/B	N10	Gull Rock	Deep water	2008	30-Jun-08	4.3	1	1
N10 P/B	N10	Gull Rock	Deep water	2008	14-Jul-08		3	13
N10 P/B	N10	Gull Rock	Deep water	2008	4-Aug-08	5.7	1	1
N10 P/B	N10	Gull Rock	Deep water	2008	18-Aug-08	4.1	1	1
N10 P/B	N10	Gull Rock	Deep water	2008	29-Aug-08	5.7	1	3
N10 P/B FD	N10	Gull Rock	Deep water	2008	18-Aug-08		1	1
N10 P/B LD	N10	Gull Rock	Deep water	2008	18-Aug-08		1	1
N11 P/B	N11	Britannia	Disturbed	2002	1-Jul-02	3.3		
N11 P/B	N11	Britannia	Disturbed	2002	15-Jul-02	4.7		
N11 P/B	N11	Britannia	Disturbed	2002	5-Aug-02	3.8		
N11 P/B	N11	Britannia	Disturbed	2002	19-Aug-02	2.7		
N11 P/B	N11	Britannia	Disturbed	2002	2-Sep-02	2.0		
N11 P/B	N11	Britannia	Disturbed	2003	8-Jun-03	4.8		
N11 P/B	N11	Britannia	Disturbed	2003	30-Jun-03	5.6		
N11 P/B	N11	Britannia	Disturbed	2003	14-Jul-03	3.6		
N11 P/B	N11	Britannia	Disturbed	2003	4-Aug-03	3.8		
N11 P/B	N11	Britannia	Disturbed	2003	14-Aug-03	5.3		
N11 P/B	N11	Britannia	Disturbed	2003	1-Sep-03	12.6		
N11 P/B	N11	Britannia	Disturbed	2003	28-Sep-03	3.5		
N11 P/B	N11	Britannia	Disturbed	2004	5-Jul-04	2.8		
N11 P/B	N11	Britannia	Disturbed	2004	19-Jul-04	5.1		
N11 P/B	N11	Britannia	Disturbed	2004	2-Aug-04	4.6		
N11 P/B	N11	Britannia	Disturbed	2004	23-Aug-04	3.6		
N11 P/B	N11	Britannia	Disturbed	2004	6-Sep-04			
N11 P/B	N11	Britannia	Disturbed	2005	4-Jul-05			
N11 P/B	N11	Britannia	Disturbed	2005	18-Jul-05	2.1		
N11 P/B	N11	Britannia	Disturbed	2005	18-Jul-05	4.7		
N11 P/B	N11	Britannia	Disturbed	2005	1-Aug-05			
N11 P/B	N11	Britannia	Disturbed	2005	14-Aug-05	5.8		
N11 P/B	N11	Britannia	Disturbed	2005	1-Sep-05	9.4		
N11 P/B	N11	Britannia	Disturbed	2007	2-Jul-07	3.5	3	5
N11 P/B	N11	Britannia	Disturbed	2007	23-Jul-07	5.8	1	3
N11 P/B	N11	Britannia	Disturbed	2007	6-Aug-07	3.8	1	5
N11 P/B	N11	Britannia	Disturbed	2007	20-Aug-07	5.3	5	11
N11 P/B	N11	Britannia	Disturbed	2007	31-Aug-07	5.1	1	3
N11 P/B FD	N11	Britannia	Disturbed	2007	2-Jul-07		3	8
N11 P/B FD	N11	Britannia	Disturbed	2007	31-Aug-07		1	11
N11 P/B LD	N11	Britannia	Disturbed	2007	2-Jul-07		1	4
N11 P/B	N11	Britannia	Disturbed	2008	30-Jun-08	4.2	11	19
N11 P/B	N11	Britannia	Disturbed	2008	14-Jul-08	4.4	5	13
N11 P/B	N11	Britannia	Disturbed	2008	4-Aug-08	8.4	3	3
N11 P/B	N11	Britannia	Disturbed	2008	18-Aug-08	4.1	3	8
N11 P/B	N11	Britannia	Disturbed	2008	29-Aug-08	6.2	1	1
N11 P/B FD	N11	Britannia	Disturbed	2008	30-Jun-08		8.0	16.0
N11 P/B FD	N11	Britannia	Disturbed	2008	4-Aug-08		3.0	11.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2002	26-May-02		0.5	0.5

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2002	1-Jul-02	5.6	0.5	11.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2002	15-Jul-02	5.1	0.5	33.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2002	5-Aug-02	36.7	0.5	123.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2002	19-Aug-02	3.8	0.5	55.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2002	2-Sep-02	1.8	0.5	55.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2002	29-Sep-02		0.5	8.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2003	8-Jun-03	5.2		
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2003	30-Jun-03	4.0	1.0	1.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2003	14-Jul-03	4.9	1.0	11.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2003	4-Aug-03	3.5	1.0	7.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2003	14-Aug-03	2.9	3.0	5.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2003	1-Sep-03	1.8	1.0	16.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2003	28-Sep-03	2.3	1.0	5.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2004	5-Jul-04	2.8	8.0	19.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2004	19-Jul-04	5.8	1.0	13.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2004	2-Aug-04	4.3	1.0	28.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2004	23-Aug-04	3.3	3.0	33.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2004	6-Sep-04	4.7	1.0	127.0
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2004	2-Aug-04		3.0	13.0
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2004	23-Aug-04		1.0	33.0
N13 P/B LD	N13	Moffat's	Nearshore Undisturbed	2004	2-Aug-04		1.0	8.0
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2005	4-Jul-05	5.7	3	16
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2005	18-Jul-05	2.8	5	39
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2005	1-Aug-05		3	43
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2005	14-Aug-05	4.4	3	19
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2005	1-Sep-05	3.5	8	22
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2005	4-Jul-05	4.0		
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2005	18-Jul-05		3	30
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2005	1-Aug-05		5	28
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2005	14-Aug-05		3	22
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2005	1-Sep-05		8	28
N13 P/B LD	N13	Moffat's	Nearshore Undisturbed	2005	18-Jul-05		1	56
N13 P/B LD	N13	Moffat's	Nearshore Undisturbed	2005	14-Aug-05		1	8
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2006	3-Jul-06	4.8	1	1
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2006	17-Jul-06	4.3	5	13
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2006	7-Aug-06	4.2	3	5
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2006	21-Aug-06	6.7	1	3
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2006	1-Sep-06	4.7	3	5
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2006	3-Jul-06		3	11
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2006	17-Jul-06		3	11
N13 P/B LD	N13	Moffat's	Nearshore Undisturbed	2006	17-Jul-06		4	16
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2007	2-Jul-07	3.8	1	1
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2007	23-Jul-07	5.0	3	3
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2007	6-Aug-07	15.1	1	11
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2007	20-Aug-07	2.7	1	1
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2007	31-Aug-07	3.7	1	1
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2007	2-Jul-07		1	5
N13 P/B LD	N13	Moffat's	Nearshore Undisturbed	2007	2-Jul-07		1	4
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2008	30-Jun-08	5.1	1	1
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2008	14-Jul-08	4.7	1	1
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2008	4-Aug-08	6.3	1	1
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2008	18-Aug-08		1	3
N13 P/B	N13	Moffat's	Nearshore Undisturbed	2008	29-Aug-08	4.7	1	3
N13 P/B FD	N13	Moffat's	Nearshore Undisturbed	2008	29-Aug-08		1	3
N 2P/B	N2	Oxtongue mouth	River	2004	5-Jul-04			
N 2P/B	N2	Oxtongue mouth	River	2004	19-Jul-04	7.9	16	156
N 2P/B	N2	Oxtongue mouth	River	2004	2-Aug-04	8.1	46	350
N 2P/B	N2	Oxtongue mouth	River	2004	23-Aug-04	7.1	1	69
N 2P/B	N2	Oxtongue mouth	River	2004	6-Sep-04	6.5	1	206
N 2P/B	N2	Oxtongue mouth	River	2005	4-Jul-05			
N 2P/B	N2	Oxtongue mouth	River	2005	18-Jul-05	7.2	28	132
N 2P/B	N2	Oxtongue mouth	River	2005	1-Aug-05	4.2		
N 2P/B	N2	Oxtongue mouth	River	2005	14-Aug-05	6.2	52	87
N 2P/B	N2	Oxtongue mouth	River	2005	1-Sep-05	6.1		

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
N 2P/B	N2	Oxtongue mouth	River	2008	4-Aug-08	8.3	30	52
N 2P/B	N2	Oxtongue mouth	River	2008	18-Aug-08	6.9	16	33
N 2P/B	N2	Oxtongue mouth	River	2008	29-Aug-08	6.6	25	46
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2005	4-Jul-05		3	8
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2005	18-Jul-05	6.2	3	11
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2005	1-Aug-05		3	16
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2005	14-Aug-05	10.3	1	1
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2005	1-Sep-05		1	8
N24 P/B FD	N24	Boothby's	Nearshore Undisturbed	2005	4-Jul-05		3	11
N24 P/B FD	N24	Boothby's	Nearshore Undisturbed	2005	18-Jul-05		5	8
N24 P/B FD	N24	Boothby's	Nearshore Undisturbed	2005	1-Aug-05		5	8
N24 P/B FD	N24	Boothby's	Nearshore Undisturbed	2005	14-Aug-05		3	8
N24 P/B FD	N24	Boothby's	Nearshore Undisturbed	2005	1-Sep-05		1	13
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2006	3-Jul-06	3.9	1	1
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2006	17-Jul-06	7.7	1	1
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2006	7-Aug-06	5.7	1	33
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2006	21-Aug-06	5.7	1	8
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2006	1-Sep-06		3	3
N24 P/B FD	N24	Boothby's	Nearshore Undisturbed	2006	3-Jul-06		1	1
N24 P/B FD	N24	Boothby's	Nearshore Undisturbed	2006	7-Aug-06		3	22
N24 P/B LD	N24	Boothby's	Nearshore Undisturbed	2006	7-Aug-06		1	54
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2007	2-Jul-07	3.8	1	1
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2007	23-Jul-07	7.8	1	5
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2007	6-Aug-07	7.3	1	5
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2007	20-Aug-07	3.0	1	3
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2007	31-Aug-07	4.3	1	3
N24 P/B FD	N24	Boothby's	Nearshore Undisturbed	2007	6-Aug-07		1	8
N24 P/B FD	N24	Boothby's	Nearshore Undisturbed	2007	20-Aug-07		1	1
N24 P/B LD	N24	Boothby's	Nearshore Undisturbed	2007	6-Aug-07		1	108
N24 P/B LD	N24	Boothby's	Nearshore Undisturbed	2007	20-Aug-07		1	8
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2008	30-Jun-08	5.9	1	5
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2008	14-Jul-08	5.8	28	43
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2008	4-Aug-08	5.8	1	11
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2008	18-Aug-08	5.9	1	1
N24 P/B	N24	Boothby's	Nearshore Undisturbed	2008	29-Aug-08	4.7	1	1
N24 P/B FD	N24	Boothby's	Nearshore Undisturbed	2008	4-Aug-08		3	8
N24 P/B LD	N24	Boothby's	Nearshore Undisturbed	2008	30-Jun-08	4.6		
N24 P/B LD	N24	Boothby's	Nearshore Undisturbed	2008	4-Aug-08	5.0		
N24 P/B LD	N24	Boothby's	Nearshore Undisturbed	2008	4-Aug-08		4	12
N30 P/B	N30	Oxtongue Delta	River	2008	4-Aug-08	5.9	3	8
N30 P/B	N30	Oxtongue Delta	River	2008	18-Aug-08	5.0	1	1
N30 P/B	N30	Oxtongue Delta	River	2008	29-Aug-08	9.7	5	11
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2005	4-Jul-05	6.5	3	8
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2005	18-Jul-05	4.0	1	5
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2005	1-Aug-05		1	11
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2005	14-Aug-05		1	5
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2005	1-Sep-05	3.7	1	3
S1 P/B FD	S1	Adamson's Island	Nearshore Undisturbed	2005	18-Jul-05	4.6		
S1 P/B FD	S1	Adamson's Island	Nearshore Undisturbed	2005	1-Aug-05		1	8
S1 P/B FD	S1	Adamson's Island	Nearshore Undisturbed	2005	1-Sep-05		1	8
S1 P/B LD	S1	Adamson's Island	Nearshore Undisturbed	2005	1-Sep-05		1	4
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2006	3-Jul-06	3.7	1	43
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2006	17-Jul-06	5.1	1	3
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2006	7-Aug-06	5.6	1	5
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2006	21-Aug-06	5.2	3	5
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2006	1-Sep-06	7.7	5	16
S1 P/B FD	S1	Adamson's Island	Nearshore Undisturbed	2006	7-Aug-06		1	25
S1 P/B FD	S1	Adamson's Island	Nearshore Undisturbed	2006	1-Sep-06	4.1		
S1 P/B FD	S1	Adamson's Island	Nearshore Undisturbed	2006	1-Sep-06	4.1		
S1 P/B LD	S1	Adamson's Island	Nearshore Undisturbed	2006	7-Aug-06		1	17
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2007	2-Jul-07	2.5	1	5
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2007	23-Jul-07	4.2	1	1
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2007	6-Aug-07	4.1	1	13
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2007	20-Aug-07	2.0	1	3

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2007	31-Aug-07	3.7	1	1
S1 P/B FD	S1	Adamson's Island	Nearshore Undisturbed	2007	2-Jul-07		1	1
S1 P/B LD	S1	Adamson's Island	Nearshore Undisturbed	2007	2-Jul-07		1	1
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2008	30-Jun-08	4.6	1	1
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2008	14-Jul-08	4.3	8	65
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2008	4-Aug-08	6.2	1	3
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2008	18-Aug-08	3.0	1	13
S1 P/B	S1	Adamson's Island	Nearshore Undisturbed	2008	29-Aug-08	4.4	1	3
S1 P/B FD	S1	Adamson's Island	Nearshore Undisturbed	2008	29-Aug-08		1	1
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2005	4-Jul-05	11.0	1	5
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2005	18-Jul-05	2.4	1	3
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2005	1-Aug-05		1	16
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2005	14-Aug-05	3.9	1	8
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2005	1-Sep-05	2.9	1	5
S2 P/B FD	S2	Menominee Bay	Nearshore Undisturbed	2005	14-Aug-05		1	11
S2 P/B LD	S2	Menominee Bay	Nearshore Undisturbed	2005	14-Aug-05		1	12
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2006	3-Jul-06	4.8	1	1
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2006	17-Jul-06	3.9	1	8
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2006	7-Aug-06	2.8	3	19
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2006	21-Aug-06	5.6	3	3
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2006	1-Sep-06	15.9	1	5
S2 P/B FD	S2	Menominee Bay	Nearshore Undisturbed	2006	3-Jul-06		3	3
S2 P/B FD	S2	Menominee Bay	Nearshore Undisturbed	2006	1-Sep-06	8.1		
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2007	2-Jul-07	2.7	1	1
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2007	23-Jul-07	3.8	1	1
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2007	6-Aug-07	6.0	3	5
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2007	20-Aug-07	2.7	3	11
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2007	31-Aug-07	4.2	1	3
S2 P/B FD	S2	Menominee Bay	Nearshore Undisturbed	2007	23-Jul-07		1	1
S2 P/B FD	S2	Menominee Bay	Nearshore Undisturbed	2007	20-Aug-07		5	108
S2 P/B LD	S2	Menominee Bay	Nearshore Undisturbed	2007	23-Jul-07		4	60
S2 P/B LD	S2	Menominee Bay	Nearshore Undisturbed	2007	20-Aug-07		8	116
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2008	30-Jun-08	4.8	1	8
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2008	14-Jul-08	7.0	13	83
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2008	4-Aug-08	8.5	1	1
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2008	18-Aug-08	5.8	1	16
S2 P/B	S2	Menominee Bay	Nearshore Undisturbed	2008	29-Aug-08	4.3	1	3
S2 P/B FD	S2	Menominee Bay	Nearshore Undisturbed	2008	29-Aug-08		1	3
S2 P/B LD	S2	Menominee Bay	Nearshore Undisturbed	2008	4-Aug-08	7.5		
S2 P/B LD	S2	Menominee Bay	Nearshore Undisturbed	2008	29-Aug-08	4.3		
S3 P/B	S3	Price's Point	Deep water	2005	4-Jul-05		1	11
S3 P/B	S3	Price's Point	Deep water	2005	18-Jul-05	3.7	1	8
S3 P/B	S3	Price's Point	Deep water	2005	1-Aug-05		1	5
S3 P/B	S3	Price's Point	Deep water	2005	14-Aug-05	2.4	1	11
S3 P/B	S3	Price's Point	Deep water	2005	1-Sep-05	4.1	1	8
S3 P/B FD	S3	Price's Point	Deep water	2005	14-Aug-05		1	3
S3 P/B FD	S3	Price's Point	Deep water	2005	1-Sep-05		1	5
S3 P/B LD	S3	Price's Point	Deep water	2005	14-Aug-05		1	1
S3 P/B LD	S3	Price's Point	Deep water	2005	1-Sep-05		1	1
S3 P/B	S3	Price's Point	Deep water	2006	3-Jul-06	5.9	1	5
S3 P/B	S3	Price's Point	Deep water	2006	17-Jul-06	4.9	1	1
S3 P/B	S3	Price's Point	Deep water	2006	7-Aug-06	4.1	1	16
S3 P/B	S3	Price's Point	Deep water	2006	21-Aug-06	6.5	3	3
S3 P/B	S3	Price's Point	Deep water	2006	1-Sep-06	8.5	1	5
S3 P/B	S3	Price's Point	Deep water	2007	2-Jul-07	5.2	1	1
S3 P/B	S3	Price's Point	Deep water	2007	23-Jul-07	4.0	1	1
S3 P/B	S3	Price's Point	Deep water	2007	6-Aug-07	3.6	1	3
S3 P/B	S3	Price's Point	Deep water	2007	20-Aug-07	4.2	1	1
S3 P/B	S3	Price's Point	Deep water	2007	31-Aug-07	5.3	1	3
S3 P/B FD	S3	Price's Point	Deep water	2007	2-Jul-07		1	4
S3 P/B LD	S3	Price's Point	Deep water	2007	2-Jul-07		1	1
S3 P/B	S3	Price's Point	Deep water	2008	30-Jun-08	3.6	1	1
S3 P/B	S3	Price's Point	Deep water	2008	14-Jul-08	3.6	3	16
S3 P/B	S3	Price's Point	Deep water	2008	4-Aug-08	5.1	1	3

Site Code	Site ID	Site Name	Site Type	Year	Date	Total Phosphorous (µg/L)	*E. coli* (cfu/100 mL)	Total Coliform (cfu/100 mL)
S3 P/B	S3	Price's Point	Deep water	2008	18-Aug-08	5.0	1	1
S3 P/B	S3	Price's Point	Deep water	2008	29-Aug-08	6.0	1	1
S3 P/B FD	S3	Price's Point	Deep water	2008	14-Jul-08		1	11
S3 P/B FD	S3	Price's Point	Deep water	2008	4-Aug-08		1	1
S3 P/B LD	S3	Price's Point	Deep water	2008	30-Jun-08	3.9		
S3 P/B LD	S3	Price's Point	Deep water	2008	14-Jul-08		1	4
S3 P/B LD	S3	Price's Point	Deep water	2008	4-Aug-08		1	1
S3 P/B LD	S3	Price's Point	Deep water	2008	18-Aug-08	4.9		