FEASIBILITY EVALUATION OF ALUM SEDIMENT INACTIVATION IN WEST LAKE

Final Report – November 2021

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SECTION 1

INTRODUCTION

Lakes Regional Park, originally designed by Johnson Engineering (Johnson) is a premier recreation destination in Southwest Florida, attracting hundreds of visitors every day of the year. A general location map for Lakes Park is given on Figure 1-1. Lakes Park is located south of Ft. Myers and southeast of Cape Coral, approximately 0.25 miles west of S. Tamiami Trail (US 41). Lakes Park is centered around a 124-acre waterbody, referred to in this report as West Lake, which is the subject of this project. West Lake is a former rock mine converted into a lake that provides a dual purpose as part of the nutrient reduction system for Hendry Creek and recreational opportunities for residents.

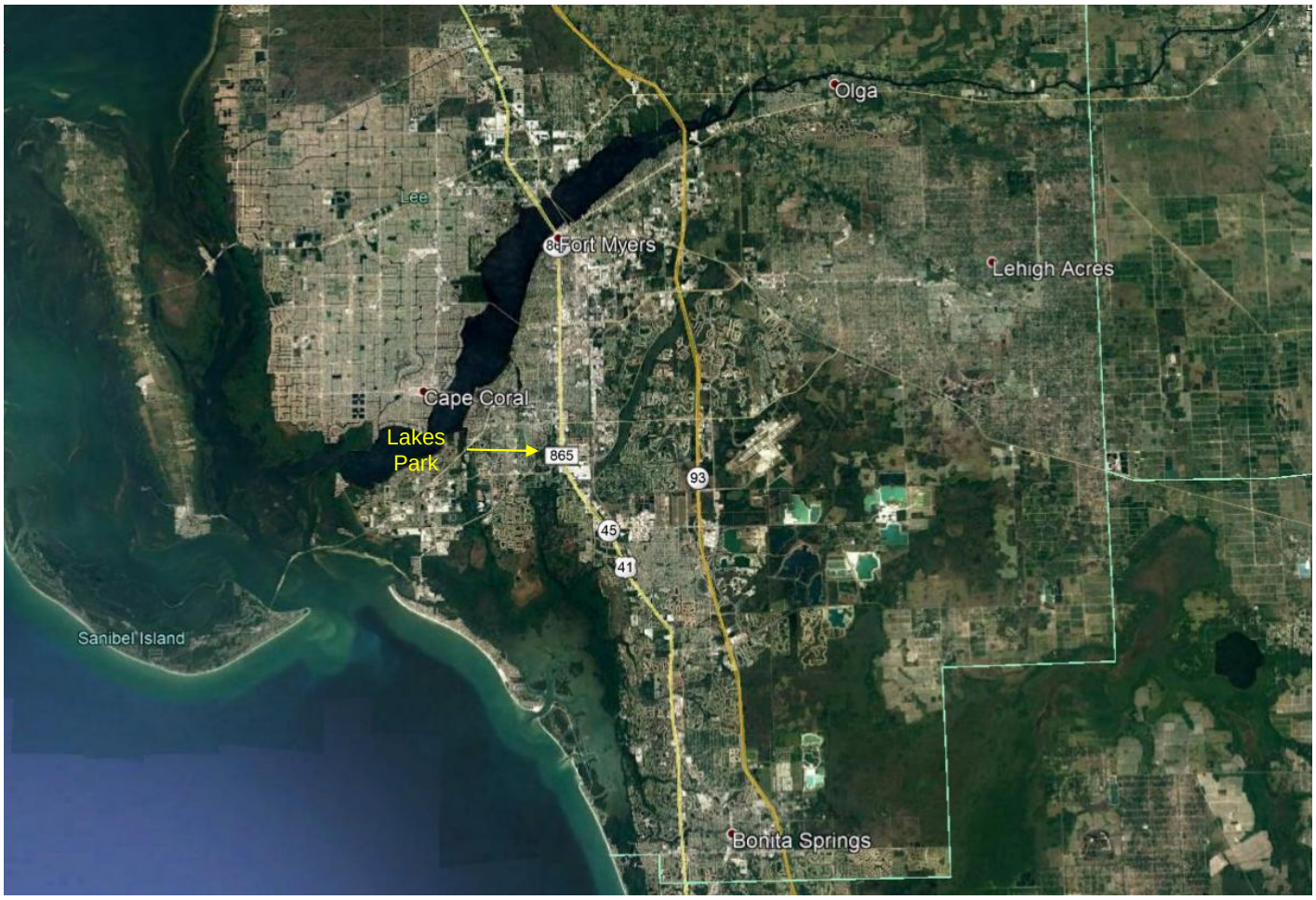


Figure 1-1. General Location Map for Lakes Park.

Lakes Park is located in the headwaters of Hendry Creek which is an Impaired waterbody, a tributary to the Estero Bay (Florida's first Aquatic Buffer Preserve) and an Outstanding Florida Water. The total drainage area contributing to Lakes Park is 1,750 acres of high-density residential and commercial land uses, many of which were built prior to implementation of current water quality standards.

An overview of West Lake is given on Figure 1-2. Water from upstream urban portions of Hendry Creek passes through a 30-acre created wetland filter marsh system and is diverted into West Lake for final treatment prior to discharging to tidal portions of Hendry Creek. The lake contains numerous remnant and created islands which have become overgrown with woody vegetation and Australian Pines. The islands and trees are home to thousands of permanent and migratory bird species which provide viewing opportunities for park visitors.

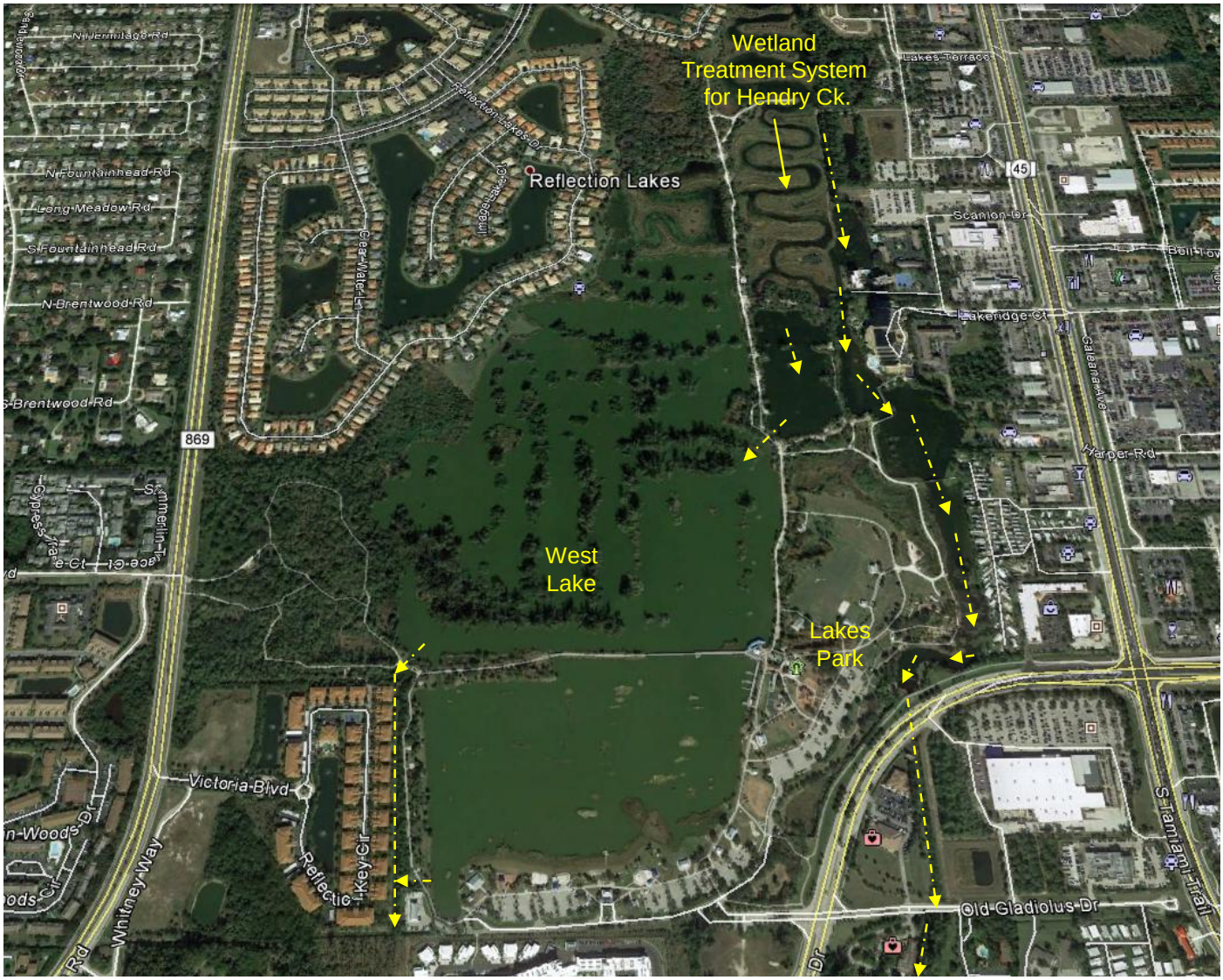


Figure 1-2. Overview of West Lake.

Flow patterns for the Hendry Creek wetland treatment system and West Lake are shown on Figure 1-3. The meandering flow way was constructed by back-filling portions of the borrow pit, creating peninsulas which increase the littoral area along the flow way, supporting native planting for water quality improvement. Three separate flow way systems have been constructed, with the initial filter marsh constructed in the early 2000s, and the final two filter marshes constructed during 2012.

Figure 1-3. Flow Patterns for the Hendry Creek Wetland Treatment System and West Lake.

New structures were also added to enhance water circulation which included an inflow structure at the north end of the West Lake (LPCT-4) and an outflow structure at the south end of the West Lake (LPCT-5). The inflow and outflow structures were modified with operable gates to achieve the overall permitted discharges and to prevent saltwater backflow through the existing outflow structure. The three existing spoil islands near the public beach area were modified to create littoral "benches" through the removal of excess spoil material and exotic vegetation and replacement with native wetland plantings.

1.1 Project Background

Water quality concerns have been a persistent issue at West Lake for several years, ranging from spikes in bacteria, to algae overgrowth, to high nutrient levels, and a public bathing beach on the south end of the lake was closed due to poor water quality. As a part of the Everglades West Coast Basin Management Action Plan (BMAP), Lee County was assigned a total nitrogen (TN) load reduction target in the Hendry Creek portion of the watershed with the ultimate goal of increasing downstream dissolved oxygen concentrations. Lee County has constructed numerous filter marshes and littoral zone enhancements, and long-term water quality data trends indicate these projects significantly improved nutrient levels.

However, in spite of these improvements, water quality concerns (including elevated nutrients and algae) persist in West Lake, and the water column has constant algal blooms and extremely poor clarity. In 2011 and 2013, Lee County commissioned studies to investigate the viability of using alum and ultra-violet (UV) treatment to reduce nitrogen concentrations and further improve water quality at West Lake. However, reducing nitrogen alone will not address the ongoing algae issues in West Lake, since cyanobacteria (the most common algal community in eutrophic lakes) is capable of extracting atmospheric nitrogen if the available inorganic nitrogen in the waterbody is depleted. Projects which primarily target nitrogen are not likely to improve water quality since the cyanobacteria can easily replace any nitrogen shortage by assimilating atmospheric nitrogen. In fact, there are no recoded accounts of any eutrophic lake being restored by focusing on nitrogen reduction. Therefore, water quality improvement in the West Lake can only be achieved by reducing phosphorus concentrations to create a phosphorus-limited system and starve the algae of a critical food source. As demonstrated in the 2011 pilot study by AIM Engineering, alum treatment can be an effective method of reducing levels of total nitrogen, total phosphorous, and other nutrients in the lake.

1.2 Current Project

During 2021, Lee County selected Johnson Engineering and sub-consultant Environmental Research & Design, Inc. (ERD) to evaluate and design a treatment system capable of improving water quality in West Lake. Water quality data collected by Lee County from 2016-2020 along Hendry Creek and within the Lakes Park area indicate an increase in concentrations of total nitrogen and total phosphorus within West Lake compared with nutrient concentrations entering the lake. Normally, lakes provide a significant reduction in nutrient concentrations due to uptake by algae and plants, especially a lake with a long residence time such as West Lake.

The fact that nutrient concentrations increase within the lake, in spite of removal through typical biological uptake mechanisms, indicates that a large additional nutrient loading is added to the water within the lake itself. The most likely sources of this additional nutrient loading are internal recycling from bottom sediments, bird wastes, and assimilation of atmospheric nitrogen by nitrogen-fixing cyanobacteria.

The primary objective of the proposed water quality improvement project is to reduce water column concentrations of phosphorus and create a phosphorus-limited system by reducing phosphorus loadings from internal recycling and supplemental inputs from bird wastes and other sources. As phosphorus concentrations in the lake decrease, the TN/TP ratio will increase which will favor non-cyanobacteria species such as green algae and diatoms. As the algal species shift, nitrogen loadings to the lake from atmospheric sources will be eliminated, and water column nitrogen concentrations and downstream loadings to Hendry Creek will be reduced. ERD has documented this process in multiple lake restoration projects.

The first phase of the proposed project is to reduce nutrient loadings from internal recycling which is the subject of this report. Reductions in phosphorus loadings from internal recycling can be achieved through sediment inactivation using alum. Not all sediment phosphorus is available for release into the overlying water column. Available sediment phosphorus is measured by collecting sediment core samples throughout the lake, and a sequential extraction procedure is used to measure the bonding mechanisms for phosphorus in the sediments. The amount of available phosphorus is measured at each sediment collection site, and a contour map of available sediment phosphorus is developed which serves as a guide for sediment treatment.

Sediment inactivation is accomplished by adding alum which forms an inert precipitate with phosphorus that prevents the sediment phosphorus from being released into the water column. The lake treatment is typically applied by watercraft with applied doses which vary depending on changes in sediment characteristics within the lake. ERD has conducted more than 60 of these projects in Florida and approximately 25% of the projects conducted worldwide. A well-planned application will have a longevity of 10-15 years.

ERD collected sediment core samples at 29 locations in West Lake on July 8, 2021. The sediment samples were returned to the ERD laboratory and evaluated for physical and chemical characteristics and sediment phosphorus speciation. The sediment data is used to develop a plan for sediment inactivation in West Lake, including chemical quantities and costs. Laboratory jar testing was conducted on water samples collected from the lake to evaluate the water column response to the proposed alum dose.

1.3 Report Organization

The work efforts discussed in this document have been divided into 3 separate sections for presentation of data and results. Section 1 provides an introduction to the report, a brief history of West Lake conditions, previous studies conducted on the lake, and an overview of work efforts performed by ERD. A discussion of historical water quality characteristics in West Lake is given in Section 2. Section 3 contains a discussion of sediment characteristics, and details of the alum sediment inactivation plan are given in Section 4. Appendices are also attached which contain raw data and other information used to support the results and conclusions provided in the report.

SECTION 2

HISTORICAL WATER QUALITY CHARACTERISTICS OF WEST LAKE

2.1 Data Availability

A large amount of water quality monitoring has been conducted within the wetland flow way treatment system for Hendry Creek and in West Lake beginning in 1989. An overview of historical water quality monitoring sites on the marsh flow way and in West Lake is given on Figure 2-1. The frequency of monitoring activities at these sites has typically been monthly, although fewer samples were collected during some years, especially during 2000-2001. However, since this project addresses West Lake, only sites representing inflow, in-lake, or outflow monitoring sites are included in this analysis. An overview of monitoring sites associated with West Lake is given on Figure 2-2. The site designated as LP-CT2 is also included to provide a comparison of the characteristics of discharges from the Hendry Creek treatment system and West Lake.

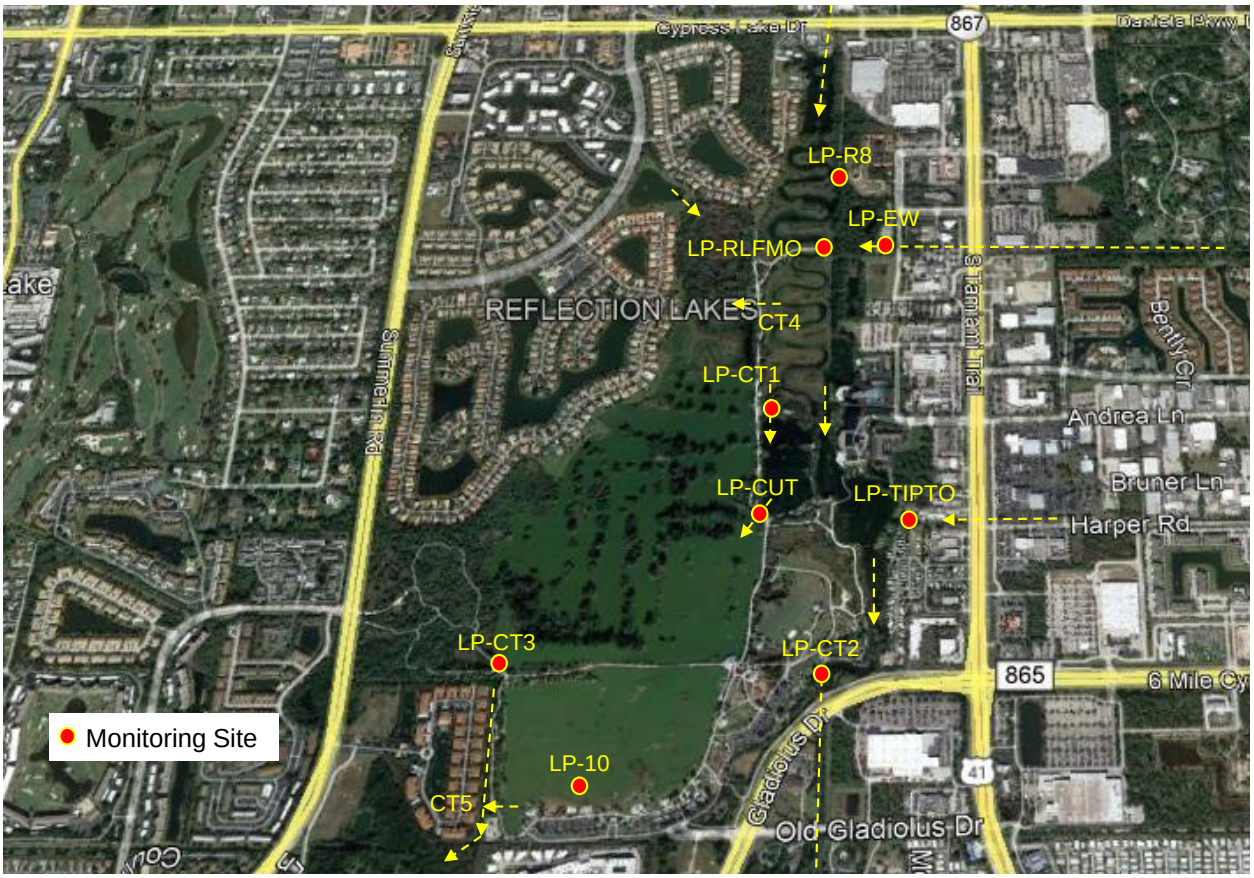


Figure 2- 1. Historical Water Quality Monitoring Sites.

Figure 2-2. Historical Water Quality Monitoring Sites Used for this Analysis.

Available historical water quality data were obtained by ERD from Lee County, STORET, and the WIN database for use with this project. The data were perused by ERD to remove duplicate entries and to flag data entries which appear unlikely or impossible.

A summary of available historical water quality data for West Lake monitoring sites is given in Table 2-1. Historical water quality data were evaluated for each of the 4 sites shown on Figure 2-2. Each of the sites summarized on Table 2-1 have data for the period from 1989-2020 which provides a large data set for evaluating water quality characteristics and trends.

2.2 Data Analysis

A complete listing of historical water quality data for the West Lake monitoring sites from 1989-2020 is given in Appendix A. Historical data which appear to be anomalies, reflect negative or impossible values, or are far out of line with other historical values are highlighted in **yellow** in Appendix A, and these data are not used in statistics analyses. Virtually all eliminated data were for nutrients.

TABLE 2-1

SUMMARY OF HISTORICAL WATER QUALITY DATA FOR WEST LAKE MONITORING SITES

COLLECTING AGENCY	STATION I.D.	PERIOD OF RECORD	MONITORING FREQUENCY	NUMBER OF EVENTS	TYPE OF DATA
Lee County	LP-CUT	5/89-5/20	Monthly to Semi-annual	351	General Parameters, Field Parameters, Nutrients, Micro Parameters, Metals
	LP-CT2	5/89-5/20	Monthly to Semi-annual	283	General Parameters, Field Parameters, Nutrients, Micro Parameters, Metals
	LP-10	5/89-5/20	Monthly to Semi-annual	348	General Parameters, Field Parameters, Nutrients, Micro Parameters, Metals
	LP-CT3	5/89-5/20	Monthly to Semi-annual	285	General Parameters, Field Parameters, Nutrients, Micro Parameters, Metals

ERD evaluated the historical data using a variety of methods. First, simple descriptive statistics, such as minimum and maximum values, were calculated for each site. Next, annual geometric mean values were calculated for each parameter and monitoring site for use in evaluating water quality trends and changes in water quality in different portions of the treatment system. Trend analyses were conducted for total nitrogen and total phosphorus at each monitoring site to evaluate water quality stability over the 32-year period from 1989-2020. In addition, graphics were generated which superimpose annual geometric mean values for measured parameters on the site map of water quality monitoring stations (provided in Figure 2-2) to provide an overview of spatial distribution for water quality parameters.

2.3 Data Summary

A summary of annual geometric mean values from 1989-2020 for each of the four monitoring sites included in the historical water quality program is given in Appendix A-2, and overall geometric mean values for historical West Lake monitoring sites from 2016-2020 are given on Table 2-2. The values summarized in this table reflect the arithmetic average of the annual geometric mean values for each site and parameter, summarized in Appendix A-2, from 2016-2020. This technique eliminates over-emphasis of years with more data points on water quality trends.

TABLE 2-2

GEOMETRIC MEAN CONCENTRATIONS AT WEST LAKE MONITORING SITES FROM 2016-2020

PARAMETER	UNITS	LP-CUT (Inflow)	LP-10 (In-Lake)	LP-CT3 (Outflow)	LP-CT2 (Flow way)
Field Temp.	°C	25.6	25.8	26.1	25.3
Field pH	s.u.	7.7	8.2	8.2	7.8
Specific Conductivity	µmho/cm	713	621	671	693
Dissolved Oxygen	mg/l	6.2	8.1	7.9	5.9
Dissolved Oxygen	% saturation	76	100	98	72
Alkalinity	mg/l	185	142	143	179
Ammonia	mg/l	0.009	0.008	0.008	0.009
Nitrate + Nitrite	mg/l	0.007	0.005	0.005	0.006
Organic Nitrogen	mg/l	0.561	1.089	1.122	0.510
Total Nitrogen	mg/l	0.580	1.105	1.137	0.530
SRP	mg/l	0.002	0.002	0.002	0.002
Total Phosphorus	mg/l	0.019	0.051	0.054	0.022
Color	Pt-Co	20	19	20	18
TSS	mg/l	2.4	11.0	11.3	2.0
Turbidity	NTU	1.5	7.4	7.5	1.4
Chloride	mg/l	91	88	93	84
Hardness	mg/l	234	189	201	235
BOD	mg/l	1.2	2.6	2.8	1.1
Aluminum	µg/l	6.2	6.6	7.2	9.6
Cadmium	µg/l	0.15	0.15	0.15	0.15
Chromium	µg/l	0.25	0.26	0.26	0.25
Copper	µg/	0.68	0.44	0.53	0.84
Iron	mg/l	0.02	0.01	0.01	0.04
Lead	µg/l	0.25	0.25	0.26	0.25
Nickel	µg/l	0.7	0.5	0.5	0.8
Zinc	µg/l	1.3	0.6	0.6	0.9
Fecal Coliform	cfu/100 ml	8	54	23	28
E. coli	cfu/100 ml	10	101	36	22
Enterococci	cfu/100 ml	6	57	13	19

Overall, samples collected from West Lake (LP-10 and LP-CT3) exhibit increases in pH, dissolved oxygen concentrations, and oxygen saturation compared with flow way samples (LP-CUT and LP-CT2), while lake samples have lower values for conductivity and alkalinity. A slight reduction in concentrations of ammonia and NO_x appears to occur within West Lake, presumably resulting from biological uptake of inorganic nitrogen. However, substantial increases were observed in West Lake, compared with the flow way inputs, for organic nitrogen, total nitrogen, and total phosphorus which double in value within the lake, suggesting internal sources of nitrogen and phosphorus. The elevated nutrients stimulate algal production which results in increases in TSS, turbidity, and BOD within West Lake. The vast majority of nitrogen (99%) in West Lake is present as organic nitrogen in the form of biological matter such as algae.

Measured concentrations of metals appear to be similar between the 4 monitoring sites, although slight in-lake reductions may occur for copper, iron, nickel, and zinc. Increases in fecal coliform, E. coli, and Enterococci also occur within West Lake compared with flow way values, and natural sources, such as waterfowl and wild animals, are most likely.

A graphical comparison of historical concentrations of NO_x, total nitrogen, and total phosphorus at West Lake monitoring sites is given on Figure 2-3 in the form of box and whisker plots. The monitoring sites are divided into West Lake inflow (LP-CUT), in-lake sites (LP-10 and LP-CT3), and flow way discharge (LP-CT2). Measured values for each of these parameters have been highly variable over the historical record with 2 orders of magnitude or more between minimum and maximum values at each site. Measured concentrations of NO_x (nitrite + nitrate) are extremely low in value and likely limit algal production within the lake. A reduction in concentrations of NO_x occurs within West Lake, with in-lake concentrations lower than concentrations at the flow way discharge (LP-CT2). Concentrations of both total nitrogen and total phosphorus are moderate to slightly elevated and typical of values observed in urban waterways.

Substantial increases occur in both total nitrogen and total phosphorus within West Lake compared with flow way values, and under current conditions, nitrogen loadings to Hendry Creek would be lower if West Lake was not part of the flow path for Hendry Creek. A comparison of geometric mean concentrations of total nitrogen and total phosphorus at the 4 monitoring sites from 2016-2020 is given on Figures 2-4 and 2-5. These values are calculated as the arithmetic average of the annual geomean values over the 5-year period.

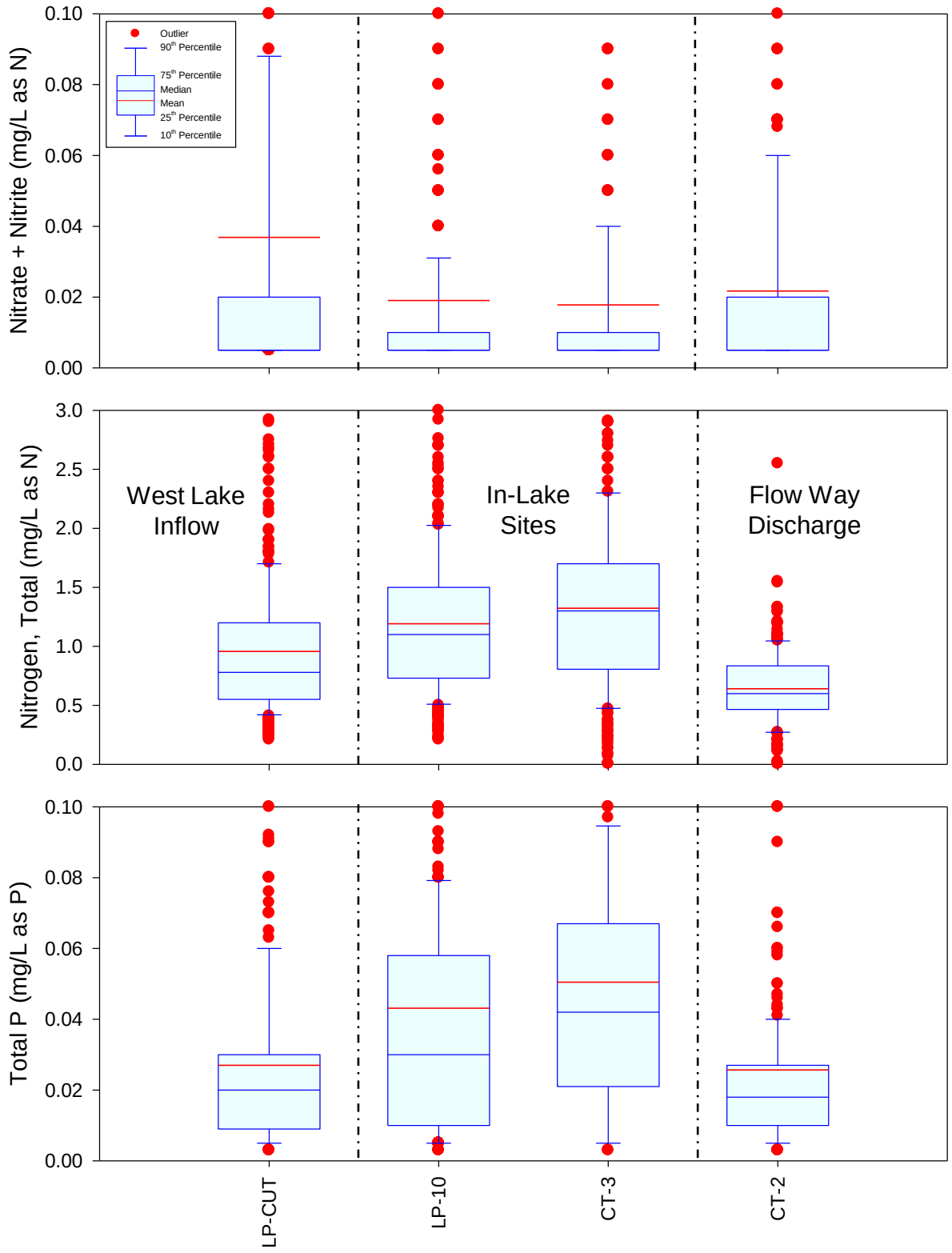


Figure 2-3. Comparison of Historical Concentrations of NO_x, Total Nitrogen, and Total Phosphorus at West Lake Monitoring Sites.

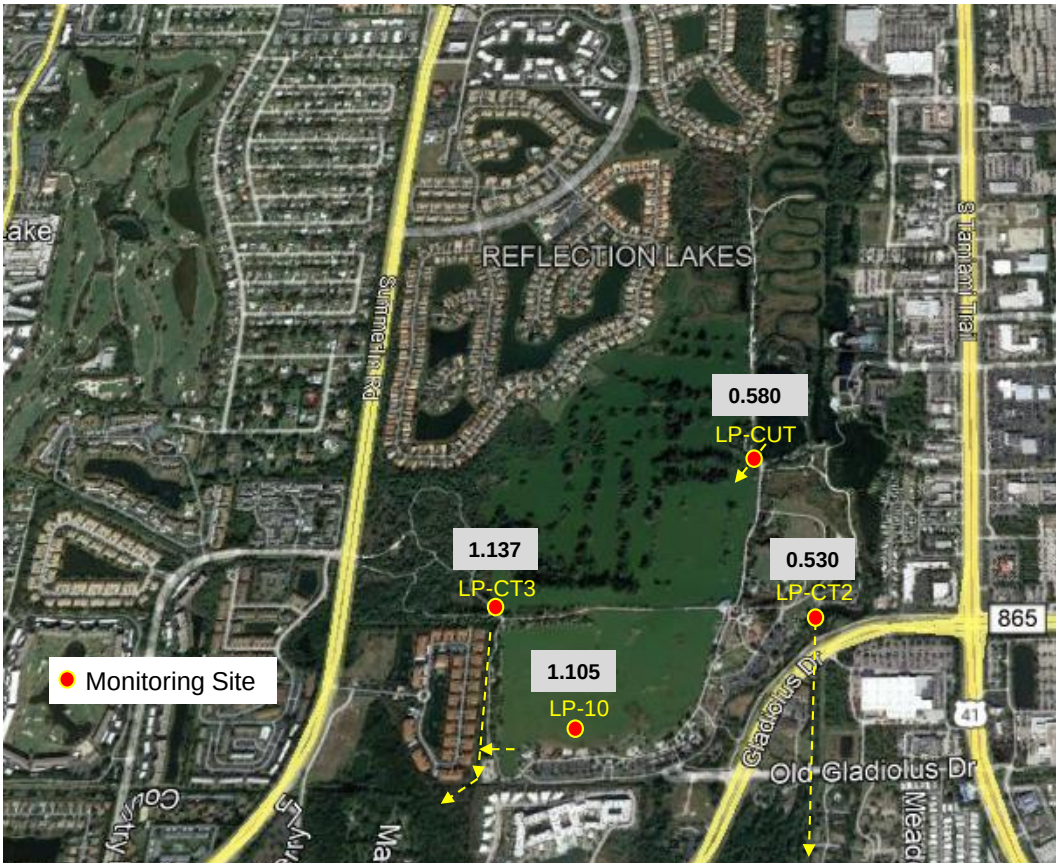


Figure 2-4.

Geometric Mean Concentrations of Total Nitrogen (mg/l) at West Lake Monitoring Sites from 2016-2020.

Figure 2-5.

Geometric Mean Concentrations of Total Phosphorus (mg/l) at West Lake Monitoring Sites from 2016-2020.

2.4 Trend Analyses

Historical water quality characteristics at the 4 West Lake monitoring sites were evaluated by ERD based upon an examination of the results of individual monitoring events as well as mean annual concentrations for NO_x, total nitrogen, and total phosphorus. Line plots of concentration over time were developed for each evaluated historical parameter, and mean annual geometric mean values are superimposed over the historical data to provide a less cluttered view of potential water quality trends at each site. A trend line is also provided to assist in identifying significant water quality trends which is obtained using linear regression techniques on the annual geometric mean values.

The calculated probability value (p-value) is provided for each parameter which indicates the level of significance associated with each regression model. A model which is significant at a 95% confidence level would be associated with a p value of 0.05. However, lakes exhibit normal seasonal cyclic variations in water quality which can reduce the statistical significance of the regression model. Therefore, when evaluating water quality trends in lakes, a p value of 0.1 or less is generally considered to indicate a significant statistical trend, while p values greater than 0.1 suggest an insignificant trend.

2.4.1 Flow Way Sites (LP-CUT and LP-CT2)

A summary of historical trends in NO_x, total nitrogen, and total phosphorus at the 2 flow way sites from 1989-2020 is given in Figure 2-6 and 2-7. Measured concentrations of NO_x, total nitrogen, and total phosphorus have been highly variable over the available historical record from 1989-2020. Measured concentrations of NO_x have decreased steadily over time at each of the 2 sites, with the probability of a significant trend equal to 99% at Site LP-CUT and 92% at Site LP-CT2.

Measured concentrations of total nitrogen at the 2 flow way sites have been highly variable over time with a large range of measured values. The slope of the regression line for total nitrogen over time at Site LP-CUT is positive which suggests an increase in concentrations over time. However, the p-value of 0.8650 indicates that the trend is not statistically significant. In contrast, the trend in nitrogen over time at Site LP-CT2 has a negative slope suggesting a decreasing trend, but the p-value of 0.4553 indicates that the trend is not statistically significant.

Measured concentrations of total phosphorus at the 2 flow site sites have also been highly variable over time with a large range of measured values. The slope of the regression line for Site LP-CUT has a positive slope, while the regression line for Site LP-CT2 has a negative slope. However, the p-values for each site indicate that the trends are not statistically significant.

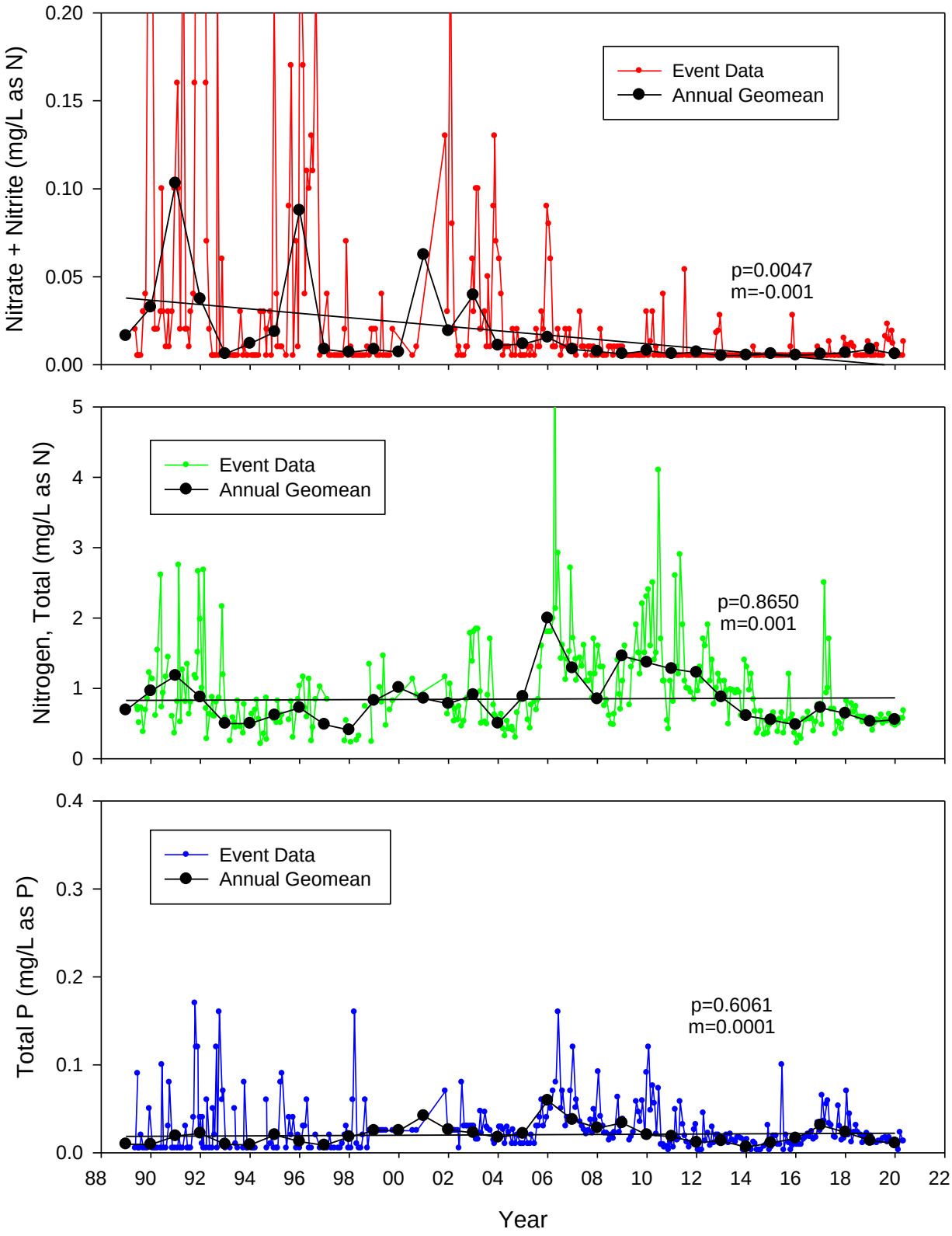


Figure 2-6. Trends in Concentrations of NO_x, Total Nitrogen, and Total Phosphorus at Site LP-CUT from 1989-2020.

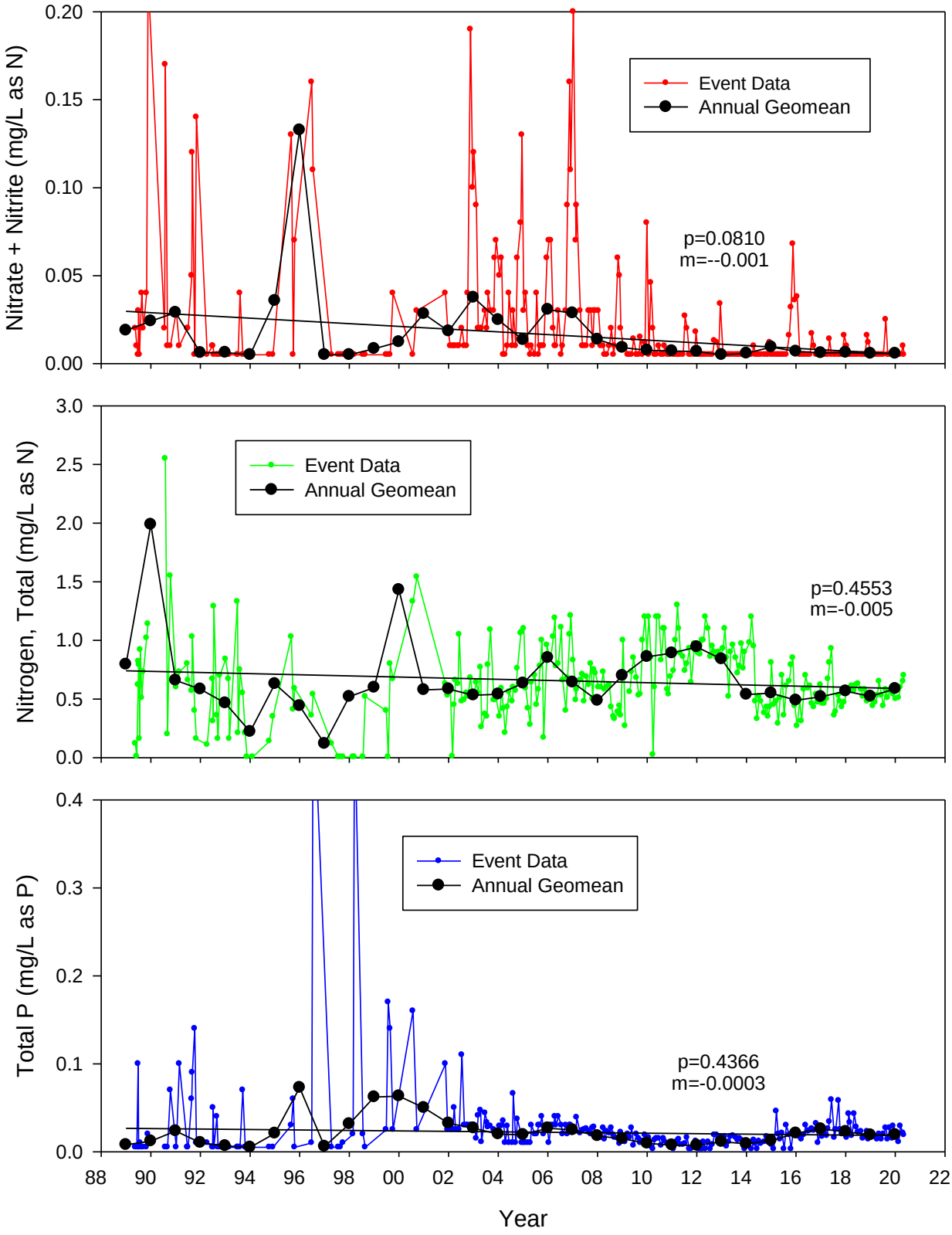


Figure 2-7. Trends in Concentrations of NO_x, Total Nitrogen, and Total Phosphorus at Site LP-CT2 from 1989-2020.

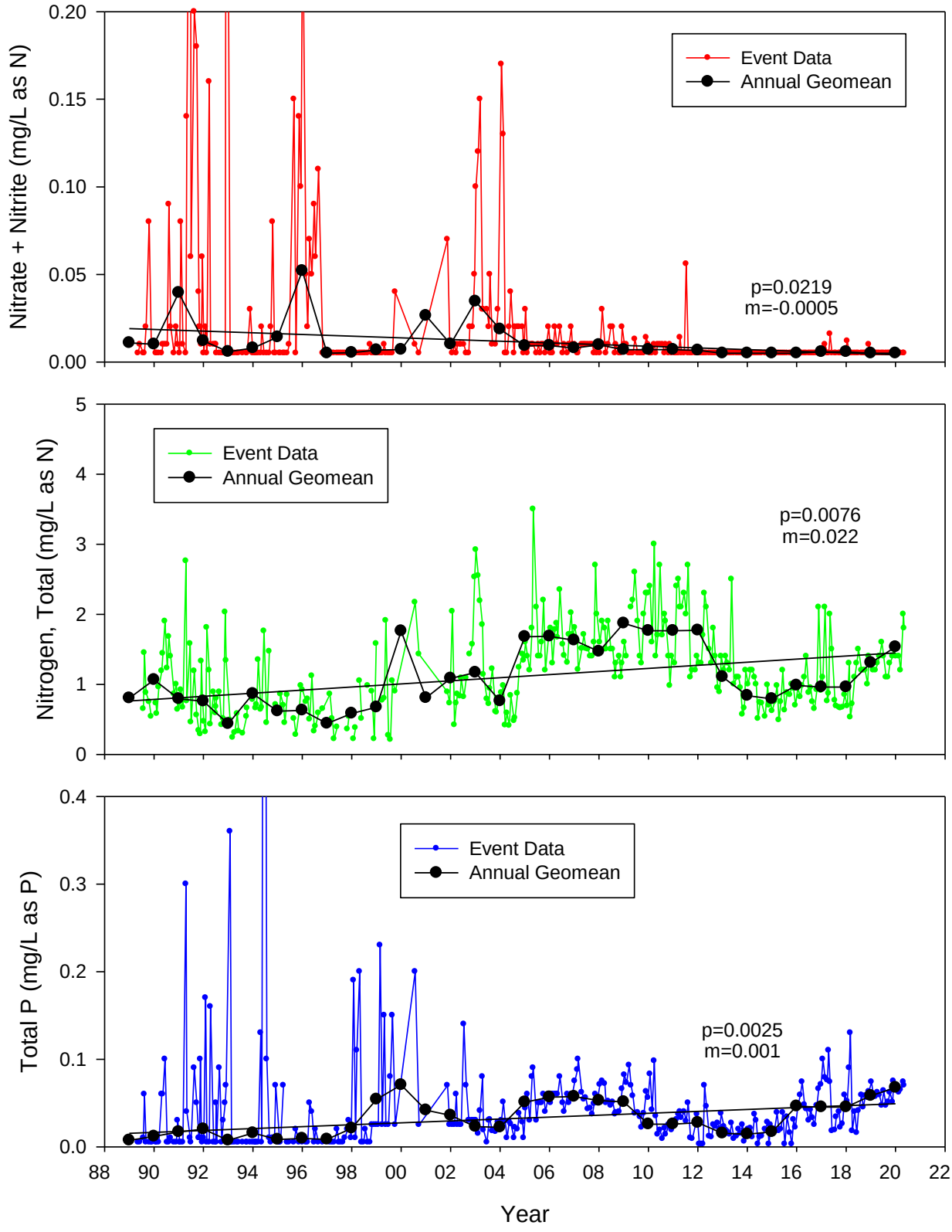


Figure 2-8. Trends in Concentrations of NO_x, Total Nitrogen, and Total Phosphorus at Site LP-10 from 1989-2020.

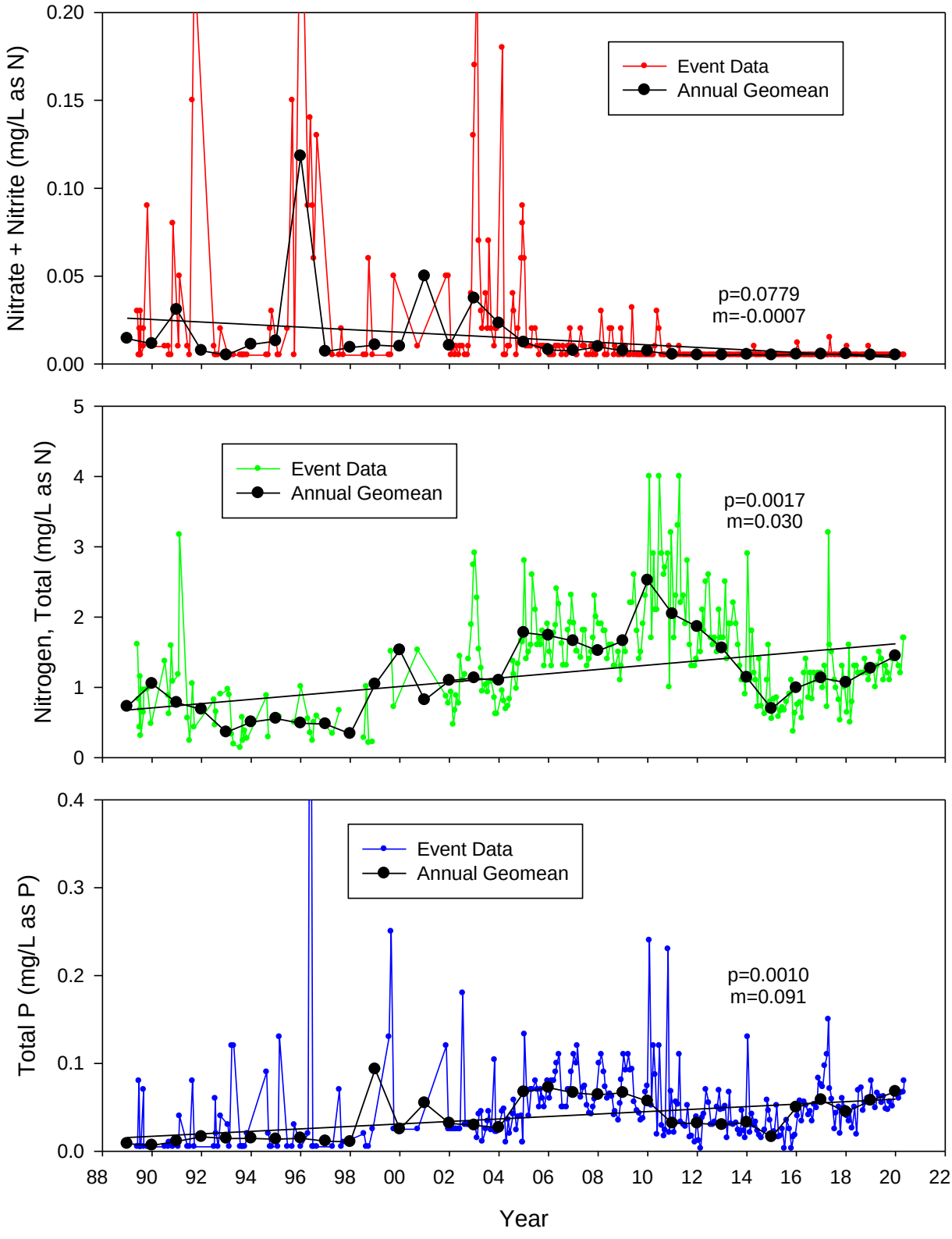


Figure 2-9. Trends in Concentrations of NO_x, Total Nitrogen, and Total Phosphorus at Site LP-CT3 from 1989-2020.

2.4.2 In-Lake Sites (LP-10 and LP-CT3)

A graphical summary of trends in measured concentrations of NOx, total nitrogen, and total phosphorus at the in-lake sites from 1989-2020 is given in Figure 2-8 for Site LP-10 and in Figure 2-9 for Site LP-CT3. Similar to the trends observed at the flow way sites, measured values for NO_x, total nitrogen, and total phosphorus have been highly variable over the period of record, with 2 orders of magnitude or more between minimum and maximum values for each parameter.

Measured concentrations of NO_x have been highly variable at each site. However, beginning in approximately 2002, the variability in NOx concentrations decreased substantially although it is not known if this is a trend of decreasing concentrations or improvements in lab detection limits. Both of the in-lake sites have negative slopes for the regression line with the probability of a significant trend equal to 98% at Site LP-10 and 92% at Site CT-3.

Measured concentrations of total nitrogen have exhibited a moderate degree of variability over time at each site. Peaks in total nitrogen concentrations occurred at each site from 2004-2012, followed by a decline in concentration. Overall, the trend lines for both sites have positive slopes, indicating an increase in total nitrogen over time, with a significance probability of 98% at Site LP-10 and 99% at Site LP-CT3. These observed increases are likely due to increasing loadings from internal sources over time.

Measured concentrations of total phosphorus have also exhibited a moderate degree of variability at the in-lake sites over time. The data suggest that in-lake concentrations of total phosphorus have increased more than 3-fold from concentrations present in the 1990s to current values. The slopes of the regression lines at each site are positive, indicating an increase in concentration over time, with a significance probability of 99% for both sites. The observed increases in total phosphorus over time are an indication of increasing loadings from internal sources.

2.5 Summary

The historical water quality indicates relatively stable concentrations of both total nitrogen and total phosphorus within the wetland flow way over time. However, concentrations of total nitrogen and total phosphorus in West Lake are more elevated than the inflows from the flow way. Generally, substantial reductions would be expected for both total nitrogen and total phosphorus within the lake, and the observed increases in concentration, in spite of removal processes, indicate a large internal nutrient loading source. The most likely sources of these loadings are waterfowl and internal sediment nutrient release. Currently, West Lake is discharging water to Hendry Creek with higher concentrations of total nitrogen and total phosphorus than would be present if the flow way discharged directly to Hendry Creek rather than flowing through West Lake.

SECTION 3

CHARACTERISTICS OF WEST LAKE SEDIMENTS

Sediment core samples were collected in West Lake by ERD to evaluate the characteristics of existing sediments, potential impacts on water quality within the lake, and to provide information to plan an alum sediment inactivation project. Locations of sediment sampling sites in West Lake are illustrated on Figure 3-1. Sediment sampling sites were established in a grid pattern within West Lake, and the site location map in Figure 3-1 indicates 31 potential monitoring sites. However, sediment core samples could not be collected at Sites 14 and 22 due to the bare rock substrate. Therefore, only 29 actual sediment core samples were collected. Sediment core samples were collected at 29 separate locations within the lake on July 8, 2021 by ERD personnel.

The base map and lake delineation shown in Figure 3-1 was obtained from the USGS 1:24,000 series maps, and the map was used by ERD to calculate the lake area for purposes of this analysis. The USGS map provides an outer boundary for the lake and delineates some of the larger island areas. Future mapping efforts are proposed which will better refine the lake area. However, for this analysis, the lake area is assumed to consist of the outer blue boundary minus the delineated island areas, although not all islands are included. The corresponding lake area is 124.3 acres, and this value is used in this analysis. Based on the estimated lake surface area of 124.3 acres, sediment samples were collected at a rate of one sample for every 4.3 acres of lake area.

3.1 Sampling Techniques

Sediment samples were collected at each of the 29 monitoring sites using a stainless steel split-spoon core device, which was penetrated into the sediments at each location to a minimum distance of approximately 0.5 m. After retrieval of the sediment sample, any overlying water was carefully decanted before the split-spoon device was opened to expose the collected sample. Visual characteristics of each sediment core sample were recorded, and the 0-10 cm layer was carefully sectioned off and placed into a 120-ml wide-mouth polyethylene container for transport to the ERD laboratory. Duplicate core samples were collected at each site, and the 0-10 cm layers were combined together to form a single composite sample for each of the 29 monitoring sites. The polyethylene containers utilized for storage of the collected samples were filled completely to minimize air space in the storage container above the composite sediment sample. Each of the collected samples was stored in ice and returned to the ERD laboratory for physical and chemical characterization.

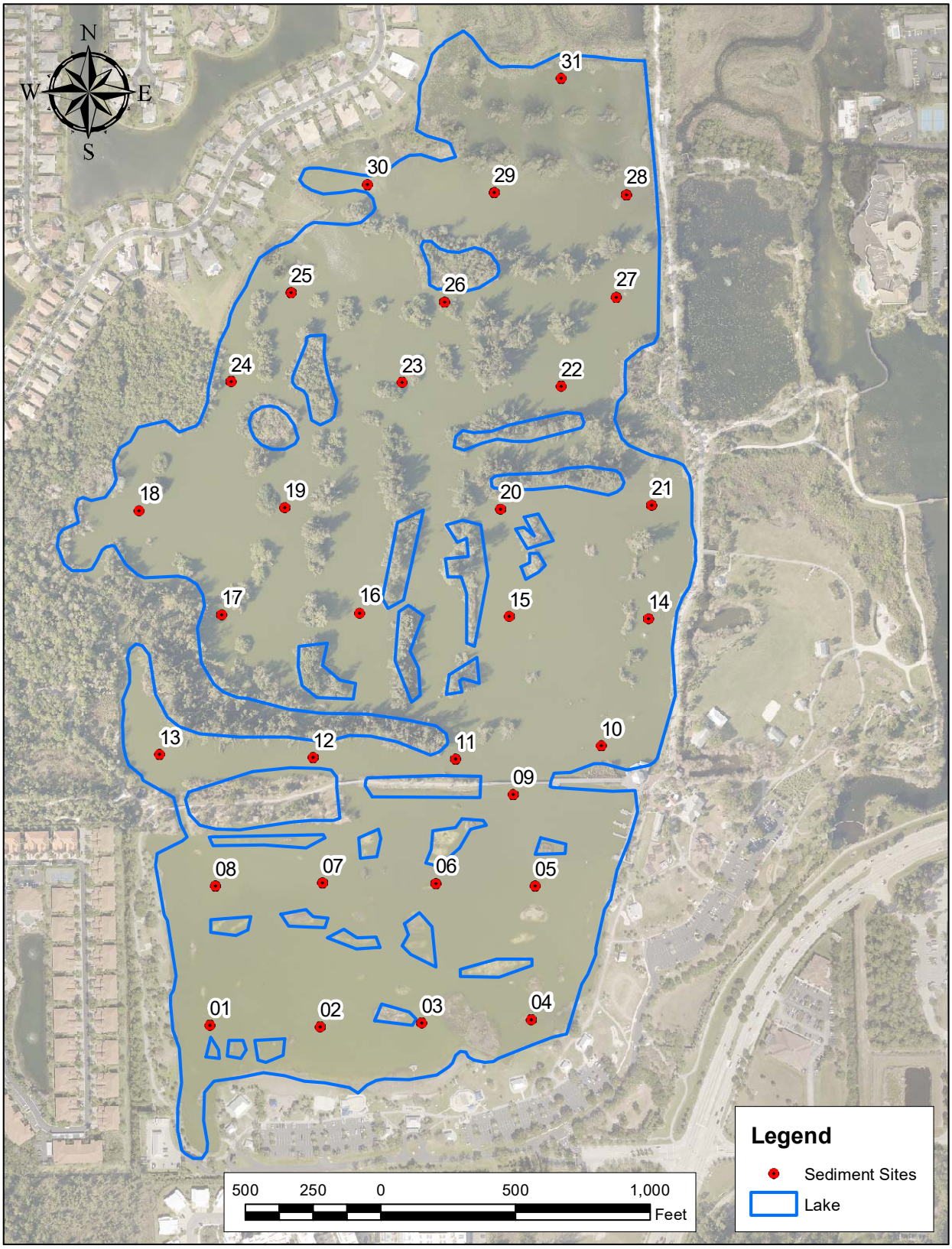


Figure 3-1. Sediment Core Sample Collection Sites in West Lake on July 8, 2021.

3.2 Sediment Characterization and Speciation Techniques

Each of the 29 collected sediment core samples was analyzed for a variety of general parameters, including moisture content, organic content, sediment density, total nitrogen, and total phosphorus. Methodologies utilized for preparation and analysis of the sediment samples for these parameters are outlined in Table 3-1.

TABLE 3-1

ANALYTICAL METHODS FOR SEDIMENT ANALYSES

MEASUREMENT PARAMETER	SAMPLE PREPARATION	ANALYSIS REFERENCE	REFERENCE PREPARATION/ ANALYSIS*	METHOD DETECTION LIMITS (MDLs)
pH	EPA 9045	EPA 9045	3 / 3	0.01 pH units
Moisture Content	p. 3-54	p. 3-58	1 / 1	0.1%
Organic Content (Volatile Solids)	p. 3-52	pp. 3-52 to 3-53	1 / 1	0.1%
Total Phosphorus	pp. 3-227 to 3-228 (Method C)	EPA 365.4	1 / 2	0.005 mg/kg
Total Nitrogen	p. 3-201	pp. 3-201 to 3-204	1 / 1	0.010 mg/kg
Specific Gravity (Density)	p. 3-61	pp. 3-61 to 3-62	1 / 1	NA

*REFERENCES:

1. Procedures for Handling and Chemical Analysis of Sediments and Water Samples, EPA/Corps of Engineers, EPA/CE-81-1, 1981.

2. Methods for Chemical Analysis of Water and Wastes, EPA 600/4-79-020, Revised March 1983.

3. Test Methods for Evaluating Solid Wastes, Physical-Chemical Methods, Third Edition, EPA-SW-846, Updated November 1990.

In addition to general sediment characterization, a fractionation procedure for inorganic soil phosphorus was conducted on each of the 29 collected sediment samples using a modified version of the Chang and Jackson Procedure developed by ERD. The modified Chang and Jackson Procedure allows the speciation of sediment phosphorus into saloid-bound phosphorus (defined as the sum of soluble plus easily exchangeable sediment phosphorus), iron-bound phosphorus, and aluminum-bound phosphorus. Although not used in this project, subsequent extractions of the Chang and Jackson procedure also provide calcium-bound and residual organic fractions.

The Chang and Jackson procedure was originally developed at the University of Wisconsin to evaluate phosphorus bonding in dried agricultural soils. However, drying of wet sediments will impact phosphorus speciation, particularly the soluble and iron-bound associations. Therefore, the basic Chang and Jackson method was adapted and modified by ERD in 1992 for wet sediments by adjusting solution concentrations and extraction timing to account for the liquid volume in the wet sediments and the reduced solids mass. This modified method has been used as the basis for all sediment inactivation projects which have been conducted in the State of Florida.

Saloid-bound phosphorus is considered to be available under all conditions at all times. Iron-bound phosphorus is relatively stable under aerobic environments, generally characterized by redox potentials greater than 200 mv (E_h), while unstable under anoxic conditions, characterized by redox potential less than 200 mv. Aluminum-bound phosphorus is considered to be stable under all conditions of redox potential and natural pH conditions. A schematic of the ERD Speciation Procedure for evaluating soil phosphorus bounding is given in Figure 3-2.

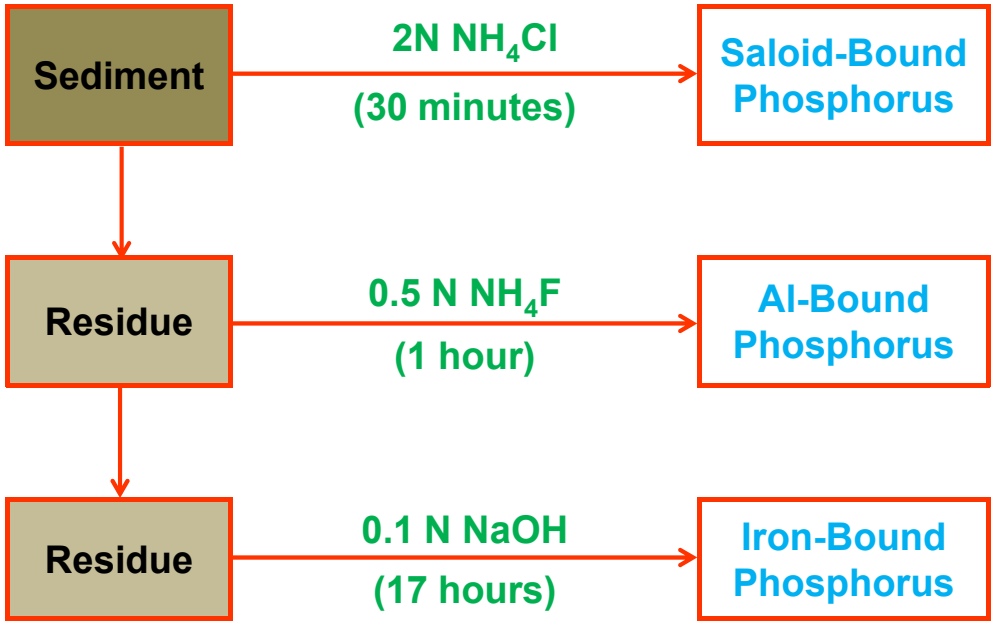


Figure 3-2. Schematic of ERD Speciation Procedure for Evaluating Soil Phosphorus Bonding.

For purposes of evaluating release potential, ERD typically assumes that potentially available inorganic phosphorus in soils/sediments, particularly those which exhibit a significant potential to develop reduced conditions below the sediment-water interface, is represented by the sum of the soluble inorganic phosphorus and easily exchangeable phosphorus fractions (collectively termed saloid-bound phosphorus), plus iron-bound phosphorus which can become solubilized under reduced conditions. Aluminum-bound phosphorus is generally considered to be unavailable in the typical sediment pH range of approximately 5.5-7.5 under a wide range of redox conditions.

Phosphorus speciation of the sediments provides information on potential water quality improvement options. Although TN/TP ratios may suggest that the lake is nitrogen-limited, highly eutrophic lakes can only be improved by controlling phosphorus, and one of the most common methods of phosphorus control is sediment inactivation. Phosphorus speciation of the sediments allows estimation of chemical quantities and costs for sediment treatment options.

3.3 Sediment Characteristics

3.3.1 Visual Characteristics

Visual characteristics of sediment core samples were recorded for each of the 29 sediment samples collected in West Lake during July 2021. A summary of visual characteristics of sediment core samples is given in Table 3-2. In general, a thin surficial layer of brown to yellow-brown unconsolidated organic muck was observed in West Lake at each of the monitoring sites, with measured depths ranging from 3-9 cm. This unconsolidated surficial layer is comprised primarily of fresh organic material (such as dead algal cells and waterfowl waste) and detritus which has recently accumulated onto the bottom of the lake and is easily disturbed by wind action or boating activities. Sediment core samples collected in northern portions of the lake exhibited an unusual reddish-brown appearance in the surficial layer.

At many sites with thick muck deposits, the organic muck becomes more consolidated beneath the surficial layer, with a consistency similar to pudding and a brown to yellow-brown appearance. These layers reflect older organic deposits which are resistant to further degradation and typically do not resuspend into the water column except during vigorous wind activity on the lake. Measured depths of the consolidated organic muck layer ranged from 5 cm to >25 cm. Light gray clay was observed beneath the unconsolidated and consolidated layers which appears to reflect the parent material after construction of the lake. The bottom substrate at Sites 14 and 22 was solid limerock, and no samples were obtained at these sites. Photographs of sediment core samples collected at each of the 29 sites in West Lake are given in Appendix B.

3.3.2 General Sediment Characteristics

After return to the ERD Laboratory, the collected sediment core samples were evaluated for general sediment characteristics, including pH, moisture content, organic content, sediment density, total nitrogen, and total phosphorus. A summary of general characteristics measured in each of the collected sediment core samples is given in Table 3-3. In general, sediments in West Lake were found to be near neutral to slightly alkaline in pH, with measured pH values ranging from 6.99-7.96 and an overall geometric mean of 7.38.

Isopleths of pH in the top 10 cm of sediments in West Lake are illustrated on Figure 3-3, based upon the information provided in Table 3-3. Northern portions of West Lake are characterized by pH values ranging from approximately 7.4-7.8, while areas south of the pedestrian bridge have lower pH values ranging from 7.0-7.2. In general, pH values in West Lake sediments are slightly higher than values commonly observed by ERD in eutrophic urban lakes, likely due to the origin of the lake as a limerock mine.

Measurements of sediment moisture content and organic content in West Lake were found to be highly variable throughout the lake. Many of the collected sediment samples are characterized by elevated moisture contents exceeding 80%, suggesting that these surficial sediments are comprised primarily of organic muck, while some areas have low moisture content, suggesting a sand substrate. Measured sediment moisture contents in West Lake sediments ranged from 20.6-92.9% with an overall geometric mean of 70.5%, reflecting extremely elevated values.

TABLE 3-2

VISUAL CHARACTERISTICS OF SEDIMENT CORE SAMPLES COLLECTED IN WEST LAKE ON JULY 8, 2021

SITE NO.	LAYER (cm)	VISUAL APPEARANCE
1	0 - 3 3 - 16 16 - >30	Yellow-brown unconsolidated organic muck Yellow-brown consolidated organic muck Light gray clay
2	0 - 3 3 - 25 25 - >36	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay
3	0 – 8 8 - >15	Fine brown sand with shells Light gray clay
4	0 – 4 4 – 17 17 - >27	Yellow-brown unconsolidated organic muck Yellow-brown consolidated organic muck Light gray clay
5	0 – 6 6 – 24 24 - >35	Yellow-brown unconsolidated organic muck Yellow-brown consolidated organic muck Light gray clay
6	0 - >17	Fine gray sand with benthic algae
7	0 – 5 5 – 30 30 - >35	Yellow-brown unconsolidated organic muck Yellow-brown consolidated organic muck Light gray clay
8	0 – 6 6 – 14 14 - >24	Yellow-brown unconsolidated organic muck Yellow-brown consolidated organic muck Light gray clay
9	0 – 6 6 – 19 19 - >31	Yellow-brown unconsolidated organic muck Yellow-brown consolidated organic muck Light gray clay
10	0 – 8 8 – 15 15 - >33	Yellow-brown unconsolidated organic muck Yellow-brown consolidated organic muck Light gray clay
11	0 - >10	Fine gray sand with rocks and benthic algae
12	0 – 5 5 – 13 13 - >31	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay
13	0 – 6 6 – 25 25 - >29	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay
14	--	Solid Rock – No Sample
15	0 – 5 5 – 12 12 - >28	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay
16	0 – 6 6 – 11 11 - >19	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay
17	0 – 4 4 - >13	Brown unconsolidated organic muck Light gray clay
18	0 – 4 4 – 14 14 - >17	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay

TABLE 3-2 -- CONTINUED

VISUAL CHARACTERISTICS OF SEDIMENT CORE SAMPLES COLLECTED IN WEST LAKE ON JULY 8, 2021

SITE NO.	LAYER (cm)	VISUAL APPEARANCE
19	0 – 8 8 - >25	Brown unconsolidated organic muck Light gray clay
20	0 – 8 8 – 15 15 - >17	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay
21	0 – 6 6 – 13 13 - >26	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay
22	---	Solid Rock – No Sample
23	0 – 2 2 – 16 16 - >29	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay
24	0 – 3 3 – 13 13 - >32	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay
25	0 - >22	Light gray clay with benthic algae
26	0 – 4 4 – 11 11 - >25	Brown unconsolidated organic muck Brown consolidated organic muck Light gray clay
27	0 – 3 3 – 18 18 - >24	Reddish-brown unconsolidated organic muck Reddish-brown consolidated organic muck Light gray clay
28	0 – 3 3 – 21 21 - >24	Reddish-brown unconsolidated organic muck Reddish-brown consolidated organic muck Light gray clay
29	0 – 9 9 - >17	Reddish-brown unconsolidated organic muck Light gray clay
30	0 – 4 4 – 22 22 - >28	Reddish-brown unconsolidated organic muck Reddish-brown consolidated organic muck Light gray clay
31	0 – 5 5 – 15 15 - >29	Reddish-brown unconsolidated organic muck Reddish-brown consolidated organic muck Light gray clay

Isopleths of sediment moisture content in West Lake are illustrated in Figure 3-4 based upon the information provided in Table 3-3. Areas of elevated moisture content are present throughout much of the lake. The lowest sediment organic contents, although still reflecting elevated values, were observed in southern-central and northwest areas of the lake. Sediment moisture contents in excess of 70% are often indicative of highly organic sediments, while moisture contents less than 70% reflect mixtures of sand and muck. Based on these criteria, sediments in West Lake consist almost exclusively of organic muck.

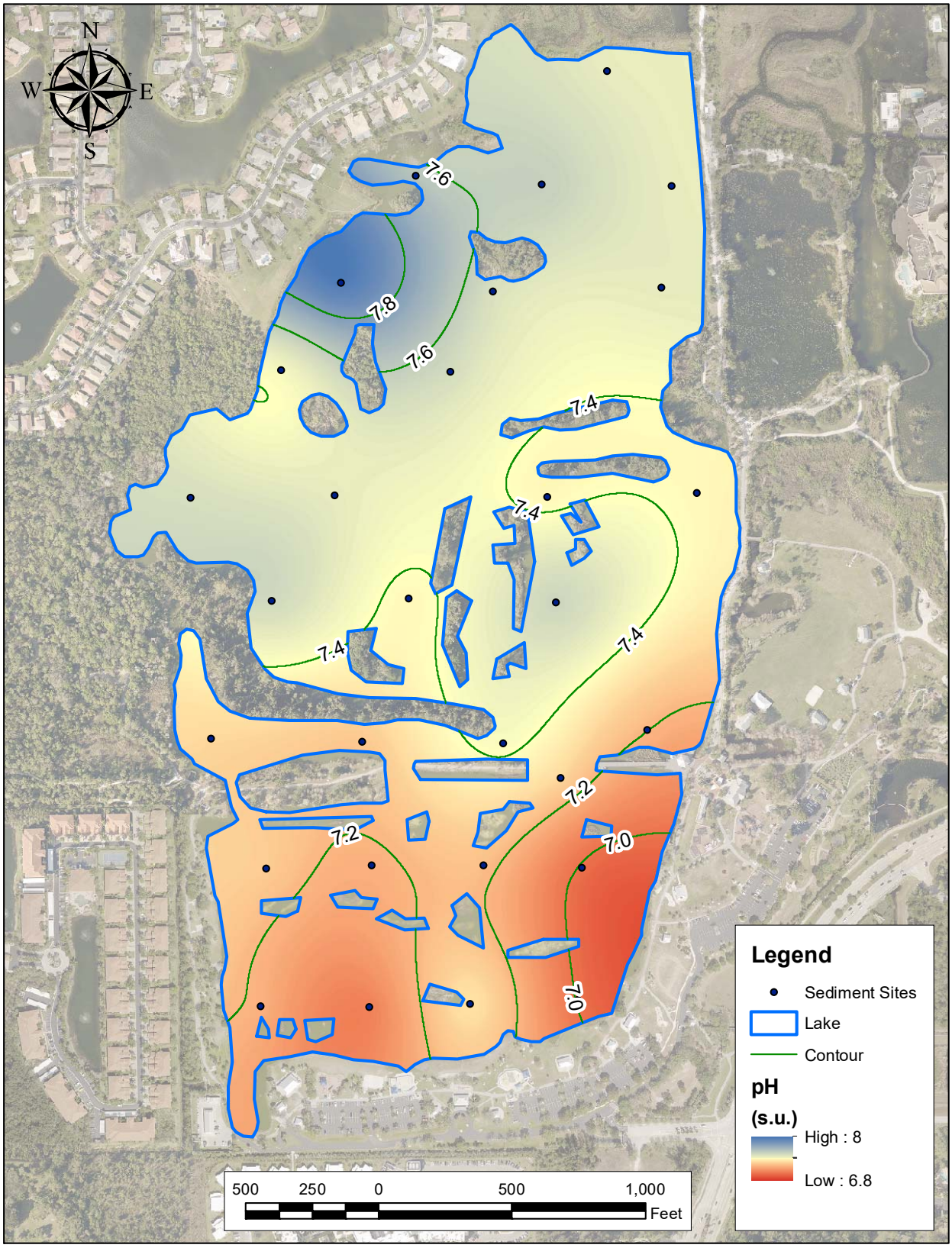


Figure 3-3. Isopleths of pH in the Top 10 cm of Sediments in West Lake During July 2021.

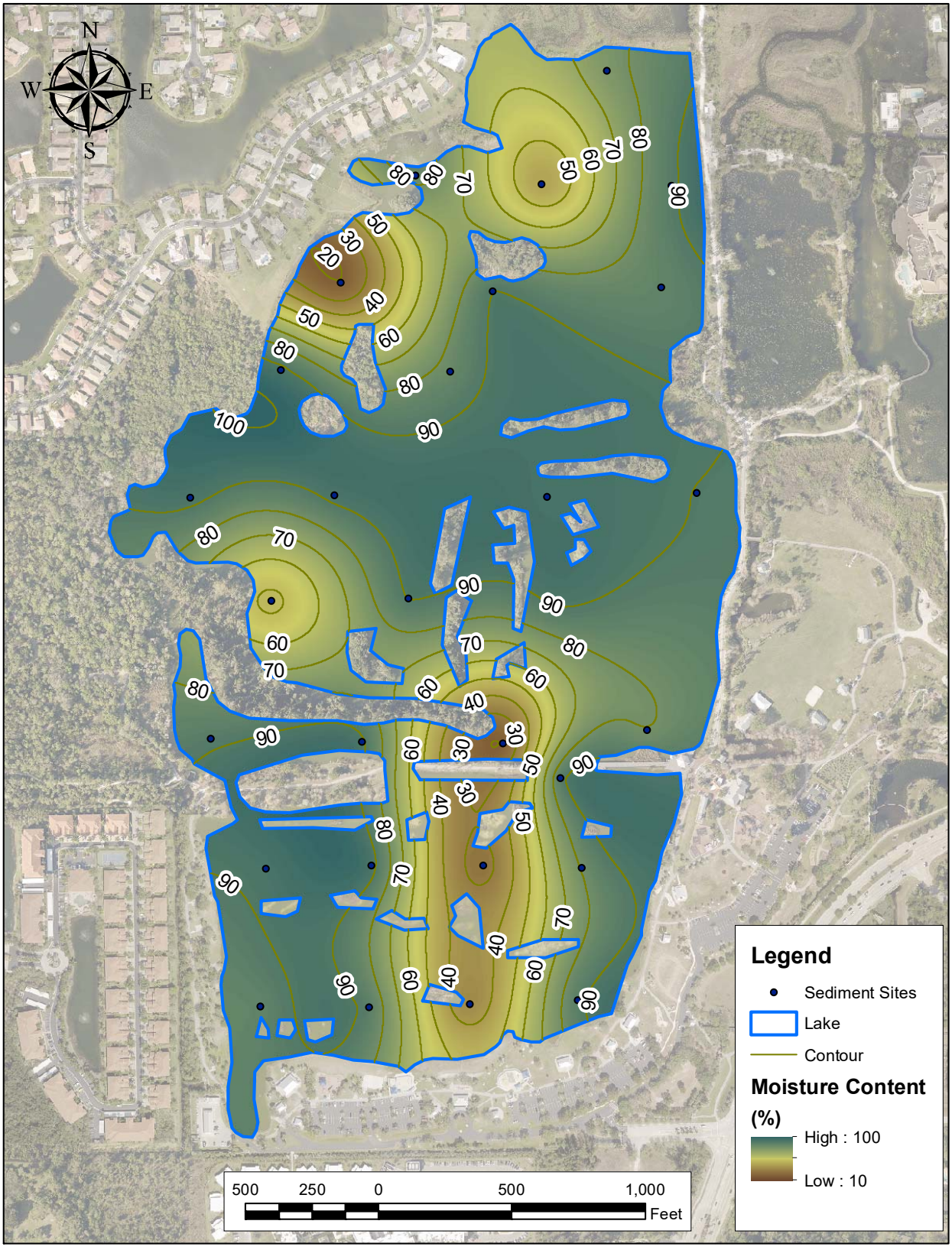


Figure 3-4. Isopleths of Moisture Content (%) in the Top 10 cm of Sediments in West Lake During July 2021.

TABLE 3-3

GENERAL CHARACTERISTICS OF SEDIMENT CORE SAMPLES COLLECTED IN WEST LAKE ON JULY 8, 2021

LAB I.D. (21-xxx)	SITE	pH (s.u.)	MOISTURE CONTENT (%)	ORGANIC CONTENT (%)	WET DENSITY (g/cm^3)	TOTAL NITROGEN ($\mu g/cm^3$)	TOTAL PHOSPHORUS ($\mu g/cm^3$)
130	1	7.18	85.5	16.3	1.18	942	160
131	2	7.04	87.5	19.2	1.15	1,003	124
132	3	7.32	34.7	1.8	1.96	522	310
133	4	6.99	87.8	28.1	1.13	945	131
134	5	6.99	80.5	16.1	1.25	1,091	166
135	6	7.22	27.3	2	2.07	123	33
136	7	7.18	91.9	26.9	1.09	940	105
137	8	7.26	92.3	32.3	1.08	1,066	113
138	9	7.29	87.3	21.7	1.15	1,054	163
139	10	7.2	80.4	11.7	1.26	972	247
140	11	7.42	20.6	1.3	2.18	577	815
141	12	7.25	91.1	28.2	1.10	1,135	142
142	13	7.29	88.7	22.2	1.13	993	140
--	14	No sample – solid rock					
143	15	7.56	90.7	26.4	1.10	977	171
144	16	7.38	89.9	23.6	1.12	1,062	301
145	17	7.55	48.3	4.3	1.74	608	170
146	18	7.53	91.9	32.6	1.08	1,081	97
147	19	7.48	92.1	32.4	1.08	1,179	150
148	20	7.38	92.9	34	1.07	1,083	188
149	21	7.38	89.9	23.2	1.12	972	133
--	22	No sample – solid rock					
150	23	7.54	83.1	19.3	1.20	1,119	335
151	24	7.43	92.4	37.4	1.07	1,075	207
152	25	7.96	20.6	1.4	2.17	104	329
153	26	7.52	89.7	25.4	1.12	953	167
154	27	7.48	85.3	18.4	1.18	1,016	201
155	28	7.48	88.5	23.1	1.13	989	151
156	29	7.59	42.7	2.4	1.84	123	77
157	30	7.63	83.2	13.6	1.22	813	84
158	31	7.48	76.5	10.4	1.32	837	411
Minimum Value:		**6.99**	**20.6**	**1.3**	**1.07**	**104**	**33**
Maximum Value:		**7.96**	**92.9**	**37.4**	**2.18**	**1,179**	**815**
Geometric Mean:		**7.38**	**70.5**	**13.6**	**1.28**	**760**	**168**

Isopleths of sediment organic content in West Lake are illustrated on Figure 3-5 based upon the information provided in Table 3-3. In general, sediment organic content values of 20% or more are indicative of organic muck type sediments, with values less than 20% representing either sand or mixtures of muck and sand. Based upon these criteria, areas of concentrated organic muck are apparent throughout most of West Lake, with the exceptions of southern-central and northwest areas of the lake. Measured sediment organic content within West Lake ranges from 1.3-37.4%, with an overall geometric mean of 13.6% which is much greater than organic contents commonly measured by ERD in highly eutrophic lakes.

Measured sediment density values are also useful in evaluating the general characteristics of sediments within a lake. Sediments with calculated wet densities between 1.0 g/cm^3 and 1.25 g/cm^3 are indicative of highly organic muck type sediments, while sediment densities of approximately 2.0 or greater are indicative of sandy sediment conditions. Values between 1.25 g/cm^3 and 2.0 g/cm^3 indicate mixtures of sand muck. Measured sediment wet density values in West Lake range from 1.07-2.18 g/cm^3, with an overall mean of 1.28 g/cm^3. Only 7 of the 29 sites had densities exceeding 1.25 g/cm^3.

Isopleths of wet density in West Lake sediments are given in Figure 3-6. Areas of low density sediments are apparent throughout the lake, with higher densities in the southern-central and northwest areas of the lake.

Measured concentrations of total phosphorus in West Lake sediments were found to be low to moderate in value and highly variable throughout the lake, ranging from 16-668 $\mu g/cm^3$, with an overall mean of 142 $\mu g/cm^3$. In general, sandy sediments are often characterized by low total phosphorus concentrations, while highly organic muck type sediments are characterized by elevated total phosphorus concentrations. The relatively low mean sediment phosphorus concentration of 142 $\mu g/cm^3$ in West Lake suggests a lack of the sediments to retain phosphorus under current conditions.

Isopleths of sediment phosphorus concentrations in West Lake are presented on Figure 3-7, based on information contained in Table 3-3. Areas of elevated sediment total phosphorus concentrations are present in central and extreme northern and southern portions of the lake. In general, overall total phosphorus concentrations observed in West Lake are low in value compared with sediment phosphorus concentrations typically observed in eutrophic urban lakes.

Sediment total nitrogen concentrations in West Lake appear to be moderate in value, with similar concentrations throughout the lake. Measured sediment nitrogen concentrations in the lake range from 104-1,179 $\mu g/cm^3$, with an overall mean of 760 $\mu g/cm^3$, and appear to be on the low end of values normally observed in urban lakes. The relatively low sediment nitrogen concentrations and apparent lack of accumulation in spite of elevated nitrogen inputs may be due to nitrogen loss through denitrification in the anoxic sediments. Isopleths of sediment nitrogen concentrations in West Lake are illustrated on Figure 3-8.

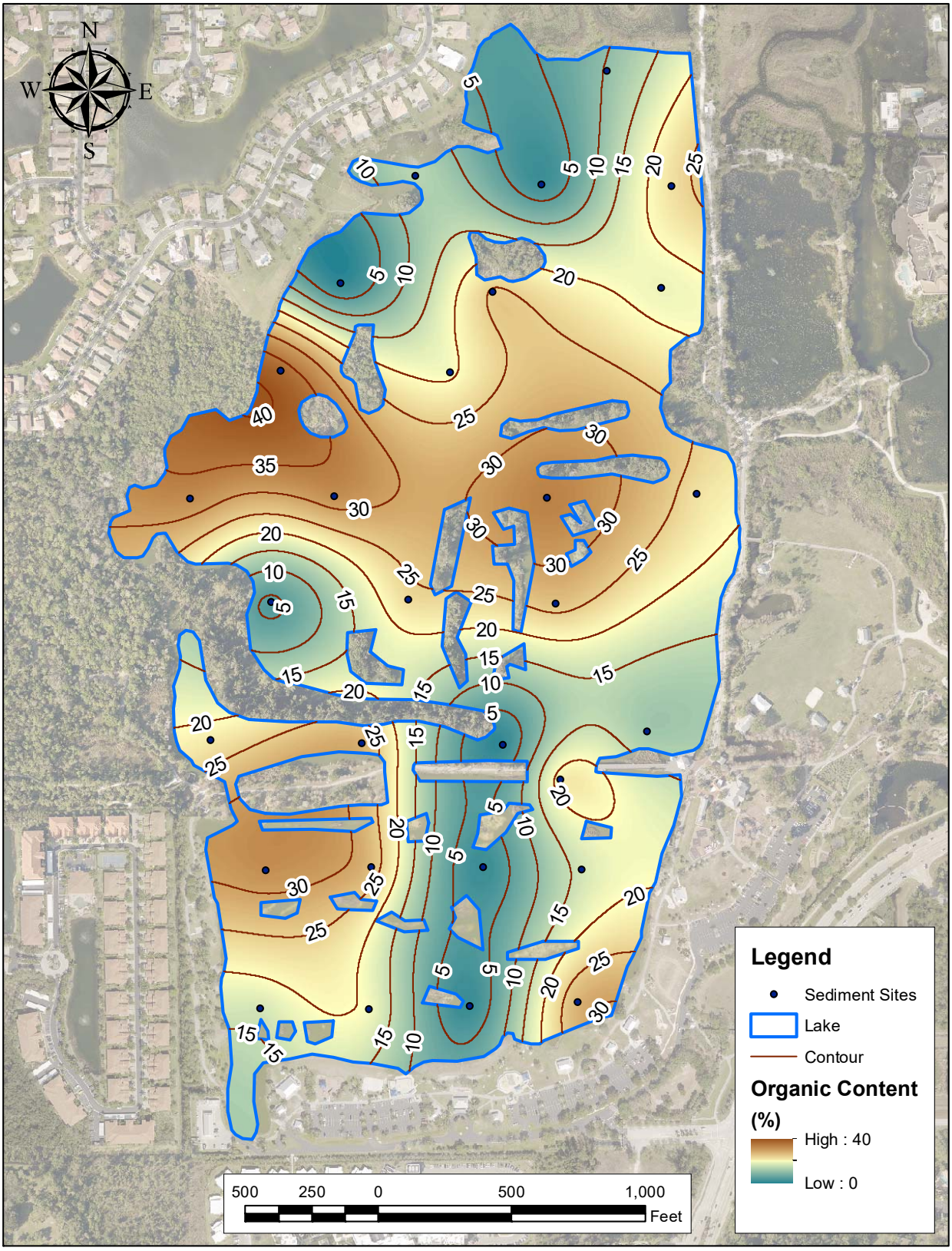


Figure 3-5. Isopleths of Organic Content (%) in the Top 10 cm of Sediments in West Lake During July 2021.

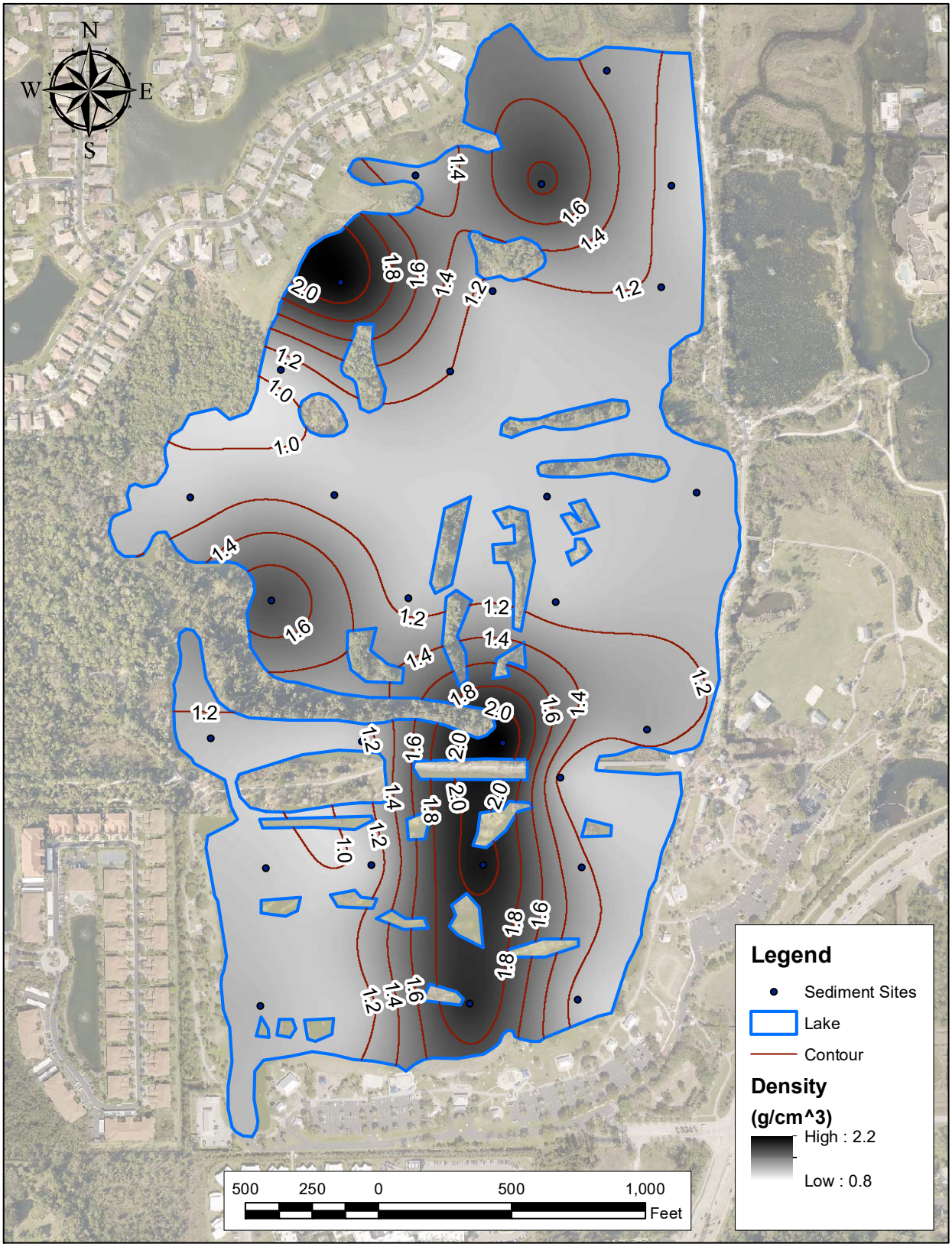


Figure 3-6. Isopleths of Wet Density (g/cm^3) in the Top 10 cm of Sediments in West Lake During July 2021.

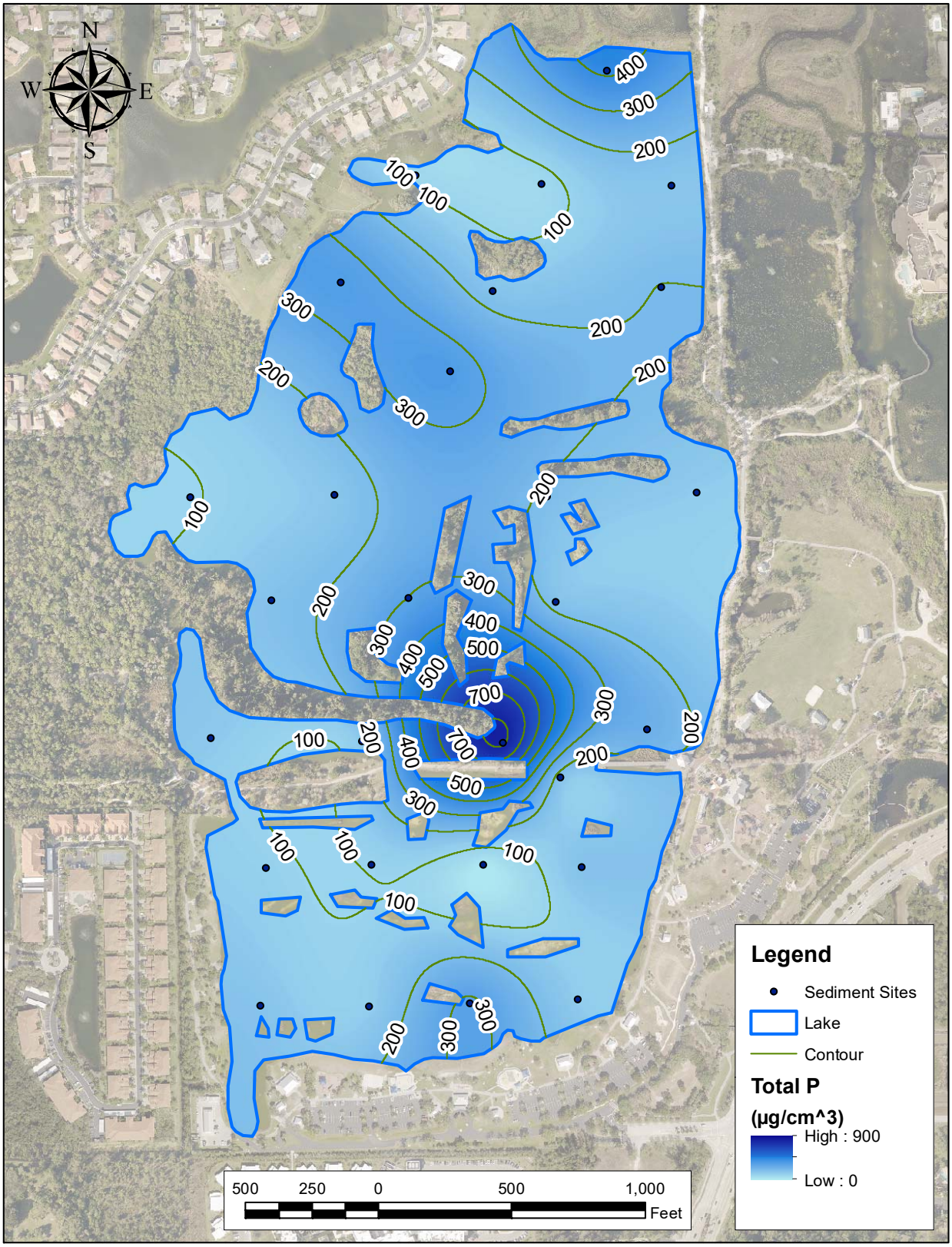


Figure 3-7. Isopleths of Total Phosphorus (µg/cm^3) in the Top 10 cm of Sediments in West Lake During July 2021.

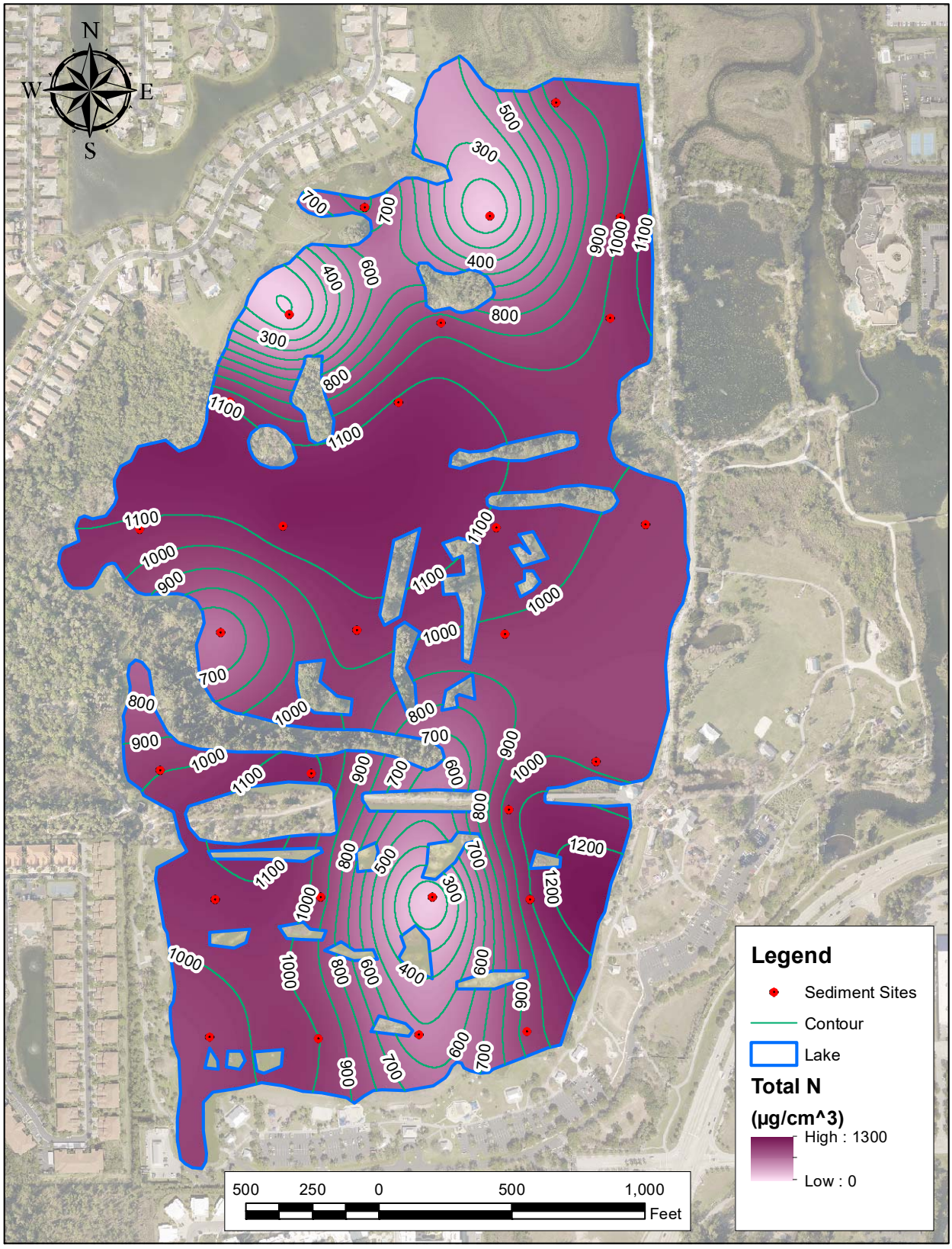


Figure 3-8. Isopleths of Total Nitrogen (µg/cm^3) in the Top 10 cm of Sediments in West Lake During July 2021.

3.3.3 Phosphorus Speciation

As discussed in Section 3.2, each of the collected sediment core samples was evaluated for phosphorus speciation based upon the modified Chang and Jackson speciation procedure developed by ERD. This procedure allows phosphorus within the sediments to be speciated with respect to bonding mechanisms which is useful in evaluating the stability of phosphorus in the sediments, the potential for release of phosphorus from the sediments under anoxic or other conditions, and as a tool for estimating alum requirements for sediment inactivation.

A summary of phosphorus speciation in sediment core samples collected from West Lake during July 2021 is given in Table 3-4. Saloid-bound phosphorus represents sediment phosphorus which is either soluble or easily exchangeable and is typically considered to be readily available for release from the sediments into the overlying water column. As seen in Table 3-4, saloid-bound phosphorus concentrations appear to be fairly uniform and elevated in value throughout much of West Lake. Measured values for saloid-bound phosphorus range from 1.8-33.1 $\mu g/cm^3$, with an overall mean of 17.1 $\mu g/cm^3$. This value is more than an order of magnitude greater than mean saloid phosphorus concentrations commonly measured by ERD in urban lakes.

Isopleths of saloid-bound phosphorus in the top 10 cm of sediments in West Lake are illustrated on Figure 3-9. Elevated concentrations of saloid-bound phosphorus are present throughout the lake, with the most elevated values in the northern-central and southern-central portions of the lake.

In general, iron-bound phosphorus associations in the sediments of West Lake appear to be low in value. Iron-bound phosphorus is relatively stable under oxidized conditions, but becomes unstable under a reduced environment, causing the iron-phosphorus bonds to separate, releasing the bound phosphorus directly into the water column. Iron-bound phosphorus concentrations in the sediments of West Lake range from 0.1-4.9 $\mu g/cm^3$, with an overall geomean of 1.0 $\mu g/cm^3$. This value is much lower than typical iron-bound phosphorus values commonly observed by ERD in eutrophic urban lakes.

Isopleths of iron-bound phosphorus in the top 10 cm of sediments in West Lake are illustrated on Figure 3-10. Iron-bound phosphorus is relatively uniform throughout the lake, with slightly higher values in the northern and southeastern portions of the lake.

Total available phosphorus represents the sum of the saloid-bound phosphorus and iron-bound phosphorus associations in each sediment core sample. Since the saloid-bound phosphorus is immediately available, and the iron-bound phosphorus is available under reduced conditions, the sum of these speciations represents the total phosphorus which is potentially available within the sediments, and this information can be utilized as a guide for future sediment inactivation procedures.

TABLE 3-4

PHOSPHORUS SPECIATION IN SEDIMENT CORE SAMPLES COLLECTED IN WEST LAKE ON JULY 8, 2021

LAB I.D. (21-xxx)	SITE	SALOID-BOUND P (µg/cm^3 wet wt.)	IRON-BOUND P (µg/cm^3 wet wt.)	TOTAL AVAILABLE P (µg/cm^3 wet wt.)	ALUMINUM-BOUND P (µg/cm^3 wet wt.)	PERCENT OF SEDIMENT P WHICH IS AVAILABLE (%)
130	1	18	1.8	20	60	12
131	2	22	1.8	24	61	19
132	3	25	1.2	26	65	8
133	4	18	3.2	22	72	17
134	5	22	4.2	27	101	16
135	6	2	3.2	5	15	15
136	7	14	1.9	16	39	15
137	8	17	0.1	17	29	15
138	9	21	1.9	23	70	14
139	10	20	0.1	20	133	8
140	11	17	2.5	19	181	2
141	12	15	0.1	15	45	11
142	13	13	0.1	13	59	9
--	14	No sample – solid rock				
143	15	20	0.1	20	87	12
144	16	11	1.9	12	124	4
145	17	18	2.2	20	52	12
146	18	17	2.3	19	45	20
147	19	16	1.7	18	74	12
148	20	22	1.6	24	100	13
149	21	22	2.1	24	96	18
--	22	No sample – solid rock				
150	23	33	0.1	33	180	10
151	24	24	2.5	27	97	13
152	25	31	2.9	34	35	10
153	26	20	2.7	23	118	14
154	27	30	0.1	30	91	15
155	28	27	2.7	30	79	20
156	29	7	0.2	7	53	9
157	30	9	2.2	11	45	13
158	31	22	4.9	26	227	6
Minimum Value:		**1.8**	**0.1**	**5**	**15**	**2**
Maximum Value:		**33.1**	**4.9**	**34**	**227**	**20**
Geometric Mean:		**17.1**	**1.0**	**19**	**72**	**12**

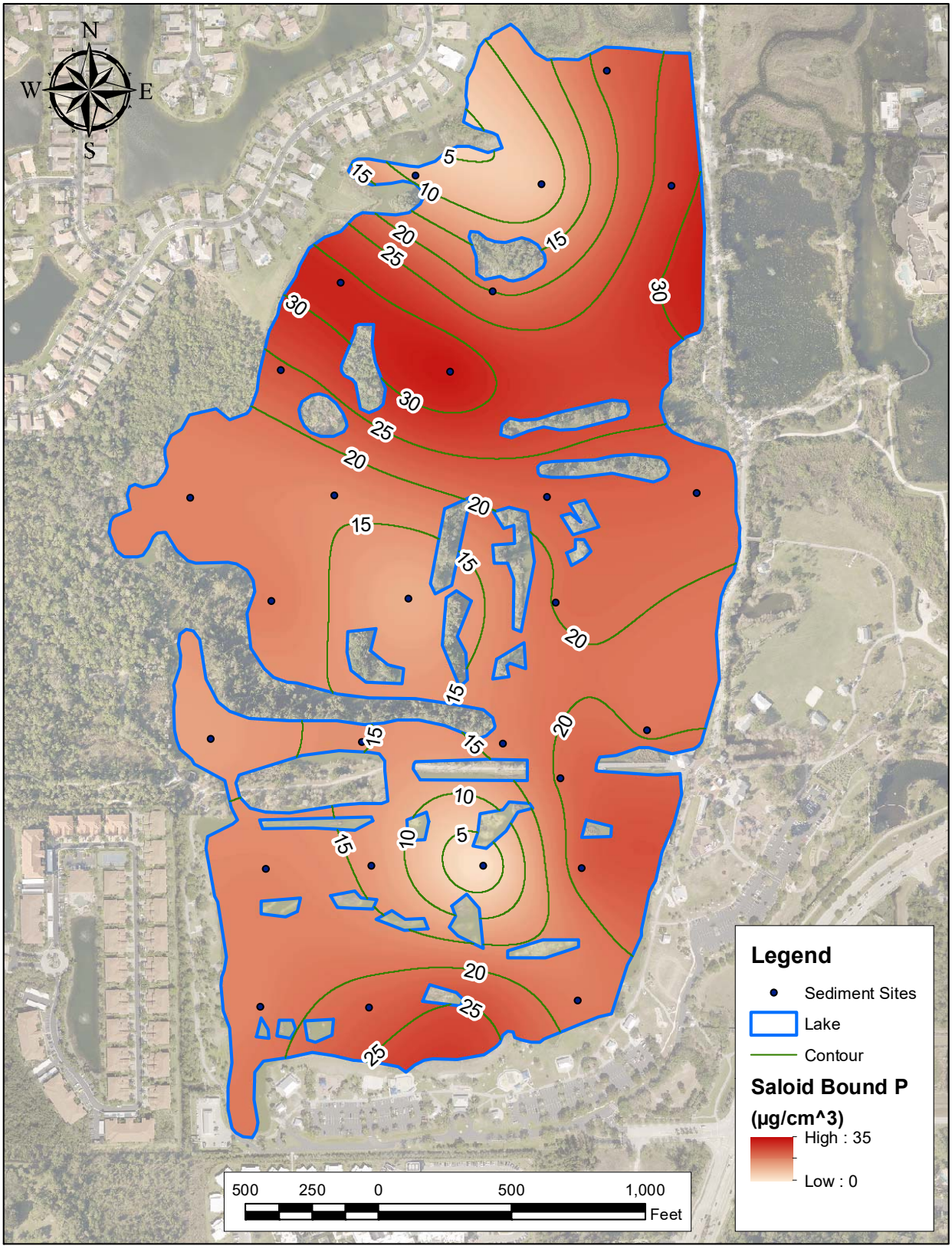


Figure 3-9. Isopleths of Saloid-Bound Phosphorus (µg/cm^3) in the Top 10 cm of Sediments in West Lake During July 2021.

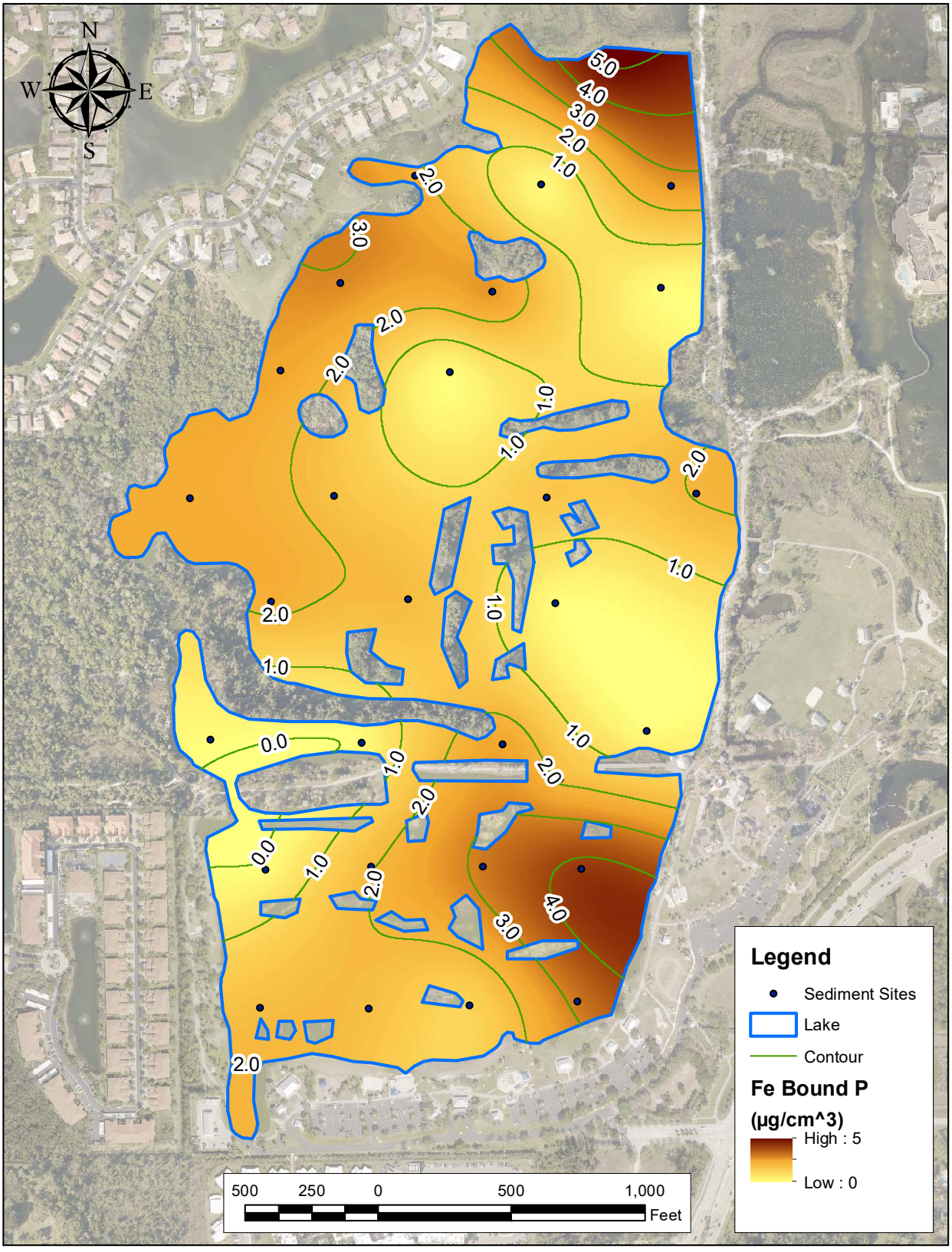


Figure 3-10. Isopleths of Iron-Bound Phosphorus (µg/cm^3) in the Top 10 cm of Sediments in West Lake During July 2021.

A summary of total available phosphorus in each of the 29 collected sediment core samples is also given in Table 3-4. Total available phosphorus concentrations within the lake sediments range from 5-34 $\mu g/cm^3$, with an overall geometric mean of 19 $\mu g/cm^3$. The mean sediment total available phosphorus in West Lake is much lower than the available sediment phosphorus concentrations commonly observed by ERD in urban lakes and suggests a low potential for retention of sediment phosphorus under current conditions.

Isopleths of total available phosphorus in the top 10 cm of sediments in West Lake are illustrated on Figure 3-11. Available phosphorus concentrations are relatively uniform throughout West Lake, with more elevated values in portions of the north lobe. The isopleths presented on Figure 3-11 can be utilized directly as a guide for future sediment inactivation activities, if desired.

Available sediment phosphorus is also expressed as a percentage of total phosphorus concentrations within the sediments. This value is calculated as the ratio of the total available phosphorus values listed for each site in Table 3-4 divided by the overall sediment phosphorus concentrations listed in Table 3-3. The percentage of available phosphorus within the sediments of West Lake ranges from approximately 3-20%, with an overall mean of 12%. This suggests that approximately 12% of the existing accumulation of phosphorus within the lake is potentially available for release into the overlying water column as a result of sediment agitation or anoxic conditions.

Isopleths of the percentage of available sediment phosphorus in the top 10 cm of sediments in West Lake are illustrated on Figure 3-12. The percentage of available sediment phosphorus appears to be relatively similar throughout the lake.

Aluminum-bound phosphorus represents an unavailable species of phosphorus within the sediments. Phosphorus bound with aluminum is typically considered to be inert under a wide range of pH and redox conditions within the sediments. Aluminum-bound phosphorus concentrations range from 15-227 $\mu g/cm^3$, with an overall mean of 72 $\mu g/cm^3$. These values appear to be similar to aluminum-bound phosphorus concentrations commonly observed by ERD in urban lake systems and suggest that approximately 43% of the existing phosphorus within the sediments is bound in sediment associations with aluminum which are considered to be unavailable.

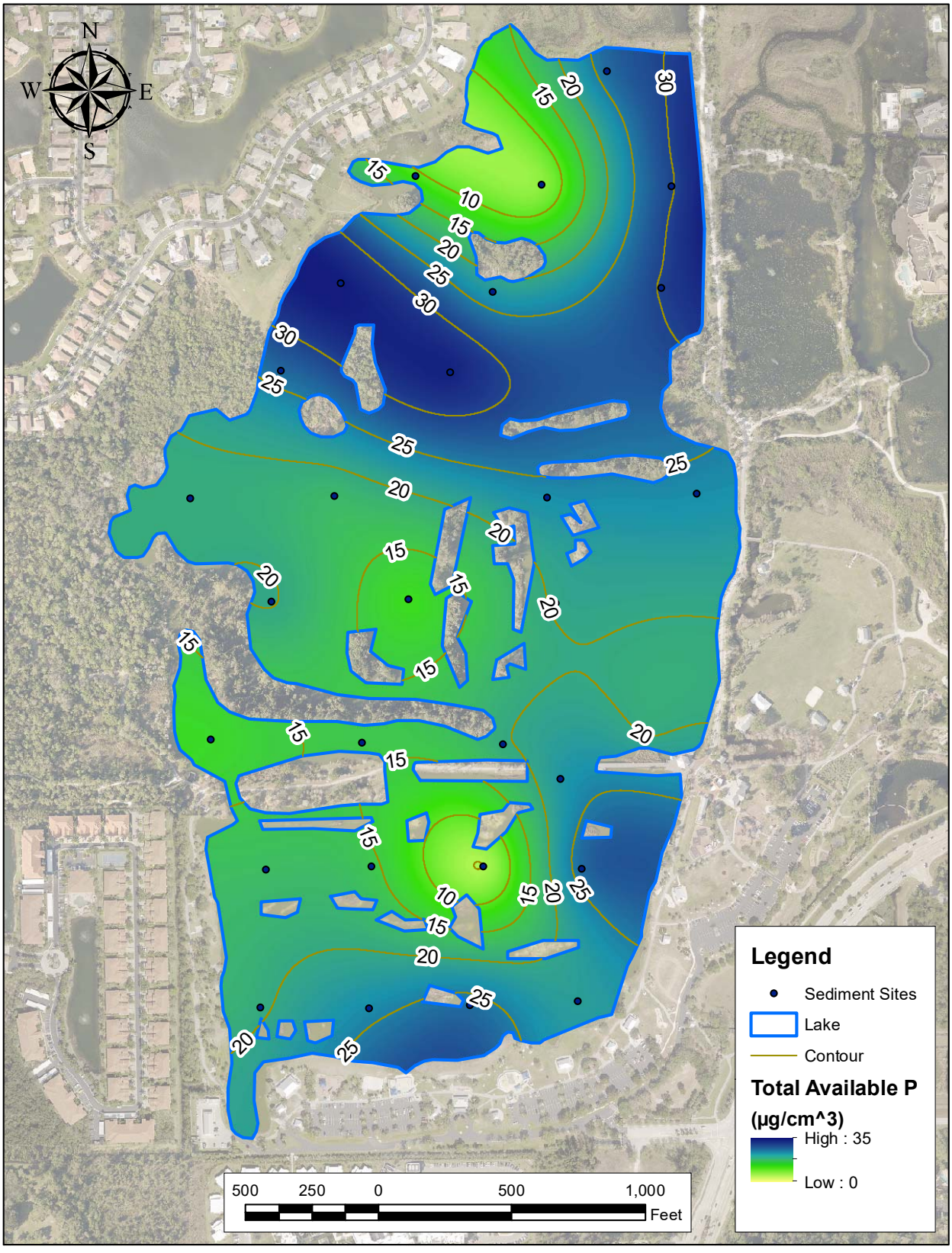


Figure 3-11. Isopleths of Total Available Phosphorus (µg/cm^3) in the Top 10 cm of Sediments in West Lake During July 2021.

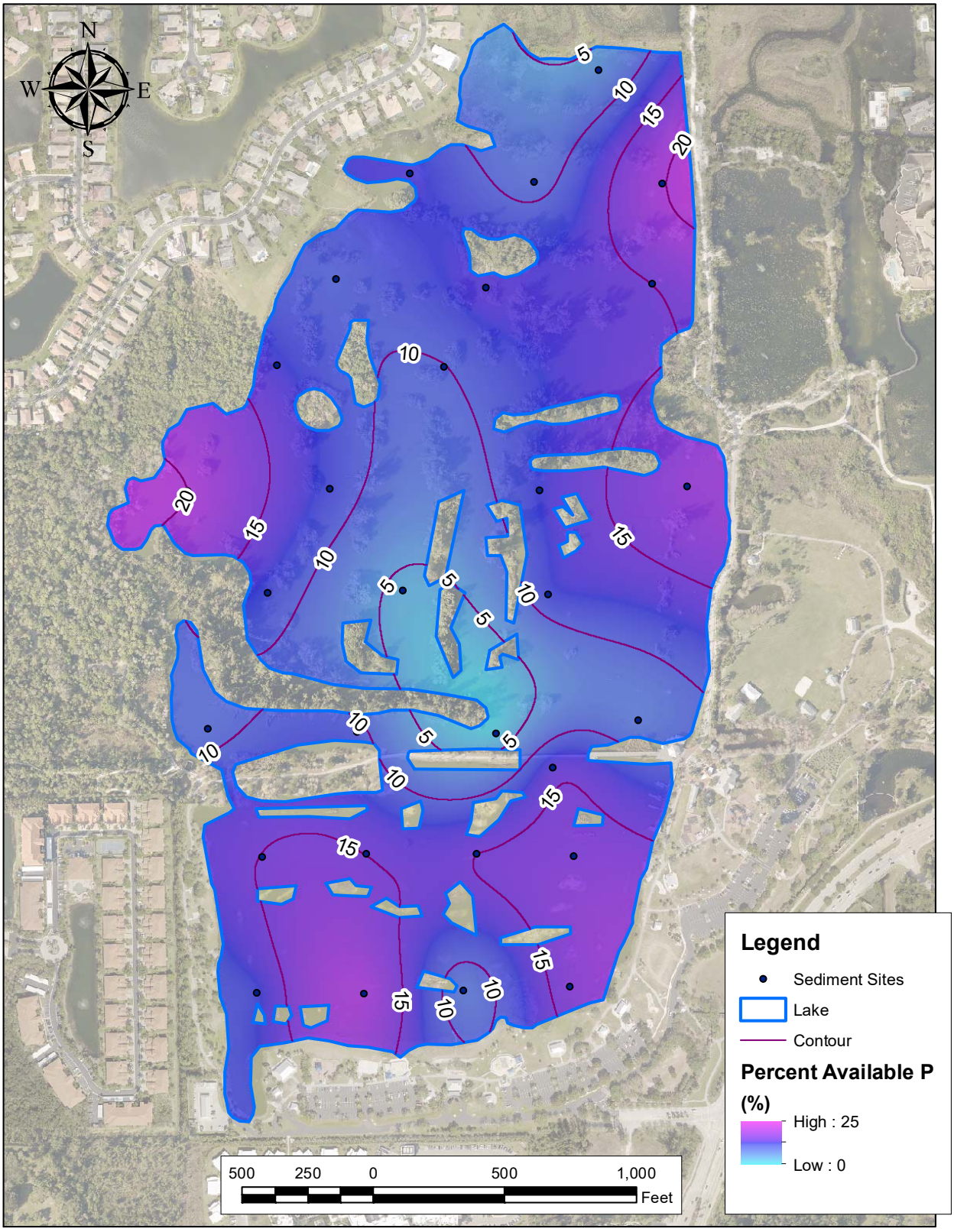


Figure 3-12. Isopleths of Percentage of Available Sediment Phosphorus (%) in the Top 10 cm of Sediments in West Lake During July 2021.

SECTION 4

SEDIMENT INACTIVATION PLAN

This section provides an analysis of chemical quantities and application costs for a sediment inactivation project for West Lake. Anticipated water column impacts are also discussed based on the results of laboratory jar testing.

Evaluating water column impacts requires information on the volume of West Lake. Vertical field profiles were collected in West Lake by ERD at 11 sites on July 8, 2021, and this information is discussed in Section 4.2.1. The average water depth at the 11 monitoring sites was 2.44 m or 8.0 ft. Using this value and the assumed lake area of 124.3 acres, the lake volume is assumed to be approximately 1,000 ac-ft, and this volume is used for evaluating water column impacts.

4.1 Sediment Inactivation

4.1.1 Introduction

Sediment inactivation is a lake restoration technique which is designed to reduce sediment phosphorus release by combining available phosphorus in the sediments with a metal salt to form an insoluble inert precipitate, rendering the sediment phosphorus unavailable for release into the overlying water column. Although salts of aluminum, calcium, and iron have all been used for sediment inactivation in previous projects, aluminum salts are the clear compounds of choice for this application. Inactivation of sediment phosphorus using aluminum is often a substantially less expensive option for reducing sediment phosphorus release since removal of the existing sediments is not required.

Sediment phosphorus inactivation is most often performed using aluminum sulfate, commonly called alum, which is applied at the surface in a liquid form using a boat or barge. Upon entering the water column, the alum forms an insoluble precipitate of aluminum hydroxide which attracts phosphorus, bacteria, algae, and suspended solids within the water column, settling these constituents into the bottom sediments. After reaching the bottom sediments, the residual aluminum binds tightly with phosphorus within the sediments (primarily saloid-bound and iron-bound associations), forming an inert precipitate which will not be re-released under any conceivable condition of pH or redox potential which could occur in a natural lake system.

It is generally recognized that the top 10 cm layer of the sediments is the most active in terms of release of phosphorus under anaerobic conditions, although the active layer may extend to 15 cm in highly fluid sediments. Therefore, the objective of a sediment inactivation project is to provide sufficient alum to bind the saloid- and iron-bound phosphorus associations in the top 10 cm of the sediments. More than 50 whole-lake sediment inactivation projects have been conducted within the State of Florida, with the first large-scale application conducted during 1992 on Lake Conine in Polk County. Previous sediment inactivation projects using alum have been effective from 7 to 25 years.

Due to differences in electronegativities, phosphorus preferentially attaches to iron and several other metals in sediments before aluminum. The concept behind inactivating sediment phosphorus using aluminum is based upon increasing aluminum concentrations within the sediments to the point where phosphorus would preferentially bind with aluminum rather than in a redox sensitive form with iron. The addition of aluminum to the sediments uses Le Chatelier's Principle which states that an increase in reactants (in this case aluminum) will drive the chemical reaction to increase the concentration of the products (aluminum-bound phosphorus). Once phosphorus is bound to aluminum, it is essentially removed from biological availability.

Previous sediment inactivation work conducted by ERD as well as other researchers has indicated that a molar Al:P ratio of 10:1 is typically sufficient to provide a driving force to allow aluminum to preferentially absorb phosphorus in sediments over iron. However, if the average available sediment phosphorus concentration is <50 $\mu g/cm^3$, the molar Al:P ratio is increased to 15:1, or 20:1 for available sediment phosphorus concentrations substantially less than 50 $\mu g/m^3$, to provide a sufficient driving force.

Estimates of chemical requirements for sediment inactivation projects are typically based upon the mass of total available phosphorus within the top 0-10 cm layer of the sediments. For sediment inactivation purposes, available phosphorus is defined as the sum of the saloid-bound phosphorus, defined as soluble + easily exchangeable, and iron-bound phosphorus associations. Phosphorus bound to iron in the sediments is stable under aerobic conditions, but solubilizes under anaerobic conditions and is subject to re-release from the sediments into the overlying water column.

Additional aluminum can be added to the sediments to create an active absorption mechanism for other phosphorus inputs into the water column as a result of groundwater seepage. Inputs of phosphorus from groundwater seepage into a lake can easily exceed inputs from internal recycling in only a few annual cycles. Carefully planned applications of alum can provide an abundance of aluminum which can intercept groundwater inputs of phosphorus, regardless of source, over a period of many years. As a result, alum applications can be used to eliminate phosphorus from the combined inputs from internal recycling as well as groundwater seepage.

4.1.2 Chemical Requirements and Costs

Estimates of the mass of total available phosphorus within the top 0-10 cm layer of the sediments in West Lake were generated by graphically integrating the isopleth map of total available phosphorus in the lake sediments (provided in Figure 3-11). Total available phosphorus contours on this map range from 5-35 $\mu g\ P/cm^3$. The top 0-10 cm layer of the sediments is considered to be the most active layer with respect to exchange of phosphorus between the sediments and the overlying water column, and inactivation of phosphorus within the 0-10 cm layer is typically sufficient to inactivate sediment release of phosphorus within a lake.

Recent data collected by ERD suggests that the required Al:P ratio to inactivate available sediment phosphorus is impacted by the concentration of available phosphorus in the sediments, with higher Al:P ratios required for lower available sediment phosphorus concentrations, generally in the range of 50 $\mu g/cm^3$ or less, to create a significant driving force to move phosphorus bonding from iron to aluminum. The geometric mean concentration for total available phosphorus in West Lake is 19 $\mu g/cm^3$, is less than half of the 50 $\mu g/cm^3$ guideline for a higher dose, so a 20:1 ratio is used for this evaluation.

A summary of estimated total available phosphorus in the sediments of West Lake and alum requirements for sediment inactivation is given in Table 4-1 On a mass basis, the sediments of West Lake contain approximately 1,054 kg of available phosphorus in the top 10 cm which equates to approximately 34,016 moles of phosphorus to be inactivated as part of the sediment inactivation process. Since the overall mean sediment available phosphorus concentration in West Lake of 17 $\mu g/cm^3$ is in the concentration range where a higher Al:P ratio may be required, the assumed Al:P ratio for West Lake is 20:1. Using an Al:P ratio of 20:1, sediment inactivation in West Lake would require approximately 82,691 gallons of alum, equivalent to 19.2 tanker loads containing 4,300 gallons each.

TABLE 4-1

WEST LAKE SEDIMENT INACTIVATION REQUIREMENTS

AVAILABLE P CONTOUR INTERVAL ($\mu g/cm^3$)	CONTOUR INTERVAL MID-POINT ($\mu g/cm^3$)	CONTOUR AREA (acres)	AVAILABLE PHOSPHORUS		ALUM REQUIREMENTS (Al:P Ratio = 20:1)	
			kg	moles	moles Al	gallons alum
5-10	7.5	5.08	15.4	498	9,953	1,210
10-15	12.5	13.62	68.9	2,224	44,473	5,406
15-20	17.5	38.74	274.5	8,855	177,095	21,526
20-25	22.5	33.75	307.5	9,918	198,365	24,111
25-30	27.5	23.35	260.0	8,387	167,737	20,388
30-35	32.5	9.74	128.2	4,134	82,690	10,051
Overall Totals:		124.3	1,054	34,016	680,312	82,691

Areal Aluminum Dose: 37 Al/m^2
Water Column Aluminum Dose: 14.9 mg Al/liter

Phosphorus loadings to lakes also originate from groundwater seeping into the sides and bottom of the lake. This inflow, referred to as groundwater seepage, is commonly measured by ERD during surface water evaluations. Based on seepage measurements in over 40 lakes, phosphorus influx has ranged from 0.02-0.25 g P/m^2-yr. A conservative value of 0.20 g P/m^2-yr is assumed for West Lake.

A summary of alum requirements for control of phosphorus loading from groundwater seepage entering West Lake is given in Table 4-2. Based on the assumed phosphorus influx rate of 0.20 g P /m^2-day, phosphorus loading from groundwater seepage over the assumed lake area of 124.3 acres is estimated to be approximately 119 kg/yr. For purposes of estimating chemical requirements, this analysis assumes that control of phosphorus in groundwater seepage is desired for a period of approximately 15 years. Therefore, the total mass of phosphorus from groundwater seepage which must be inactivated over the 15-year period is approximately 1,791 kg which equates to approximately 57,767 moles of total phosphorus. Assuming an Al:P ratio of 20:1 for adequate phosphorus adsorption of groundwater inflows, control of 57,767 moles of total phosphorus will require approximately 1,155,333 moles of aluminum which equates to an alum volume of 140,682 gallons.

TABLE 4-2

ALUM REQUIREMENTS FOR CONTROL OF PHOSPHORUS LOADING FROM GROUNDWATER SEEPAGE TO WEST LAKE

PARAMETER		UNITS	VALUE
Estimated Phosphorus Mass to be Controlled	Seepage Phosphorus Loading	g/m^2-yr	0.20
	Annual Phosphorus Loading from Seepage	kg/yr	119
	Desired Length of Control	years	15
	Total Phosphorus Mass to be Inactivated	kg	1,791
	Moles of Phosphorus to be Inactivated	moles	57,767
Alum Requirements	Inactivation Al:P Ratio	--	20
	Moles of Aluminum Required	moles	1,155,333
	Alum Required	gallons	140,682
	Number of Tankers @4500 gallons/tanker	--	32.7

The proposed alum treatment to West Lake would add sufficient alum to control both internal recycling and intercept phosphorus loadings from groundwater seepage. Assuming that approximately 82,691 gallons of alum are needed for sediment inactivation and 140,682 gallons of alum are needed for interception of groundwater seepage, the total amount of alum to be added to West Lake would be 223,373 gallons, equivalent to 51.95 tankers which is rounded up to 52 tankers and a total alum volume of 223,600 gallons (52 tankers x 4,300 gallons/tanker).

Based on the assumed lake volume of 1,000 ac-ft, the amount of alum for internal recycling and control of seepage inflows equates to a whole-lake alum dose of approximately 40.2 mg Al/liter which far exceeds the available buffering capacity in the lake to withstand reductions in water column pH if the entire alum volume was added at one time. West Lake is a well buffered waterbody with alkalinity values typically in excess of 150 mg/l, so pH control during alum addition is not a concern, provided that the alum application is divided into a series of smaller treatments.

Multiple smaller applications of alum rather than a single event also have water quality benefits and improves the effectiveness of phosphorus sequestration. Previous alum surface applications performed for inactivation of sediment phosphorus release by ERD have indicated that the greatest degree of improvement in surface water characteristics and the highest degree of inactivation of sediment phosphorus release are achieved through multiple applications of aluminum to the waterbody spaced at intervals of approximately 4-12 months. Each subsequent application results in additional improvements in water column quality and additional aluminum floc added to the sediments for long-term inactivation of sediment phosphorus release. Conducting multiple treatments also allows alkalinity to be restored naturally between treatments, reducing the need for supplemental buffering compounds, although this is not a concern for West Lake.

A summary of proposed alum requirements to control internal recycling and groundwater seepage in West Lake is given in Table 4-3. It is recommended that the required alum volume be divided into 4 separate applications, with approximately one-fourth of the required alum volume applied during each application. Supplemental lime additions for pH control will not be required due to the high alkalinity in the lake. Each treatment would be applied using a boat or barge to spread the chemicals over the lake surface based on the available phosphorus isopleth map given in Figure 3-11.

TABLE 4-3

SUMMARY OF ALUM REQUIREMENTS FOR CONTROL OF SEDIMENT PHOSPHORUS RELEASE AND GROUNDWATER SEEPAGE ENTERING WEST LAKE

PARAMETER		UNITS	VALUE
Overall Chemical Requirements	Alum to be Applied	gallons tankers*	223,373 52
	Applied Water Column Dose	mg Al/liter	40.2
	Applied Areal Dose	g Al/m^2	98.6
Alum Requirements per Treatment	Number of Treatments	--	4
	Alum Required per Treatment	gallons tankers	55,843 13
	Water Column Dose per Treatment	mg Al/liter	10.1

*Rounded up to nearest whole tanker load

The total recommended alum volume for treatment of internal recycling and seepage inflows is 223,373 gallons, equivalent to 52 tankers. Since 4 applications are proposed, each application will use 13 tankers each, with a total alum volume of 55,900 gallons per application.

A summary of estimated application costs for sediment inactivation and control of groundwater seepage in West Lake is given in Table 4-4. This estimate assumes an alum volume of 223,600 gallons (52 tankers) will be applied overall, with 55,900 gallons (13 tankers) applied during each of the 4 treatments. It is assumed that the alum is purchased directly by the County at the current contract price of $0.604/gallon. Planning and mobilization costs are estimated to be approximately $5,000 per application, which includes initial planning, mobilization of equipment to the site, demobilization at the completion of the application process, and clean-up. An hourly application rate of $680/man-hour is assumed which includes labor costs, daily water quality monitoring during the application, expenses, equipment rental, insurance, mileage, and application equipment fees.

TABLE 4-4

ESTIMATED APPLICATION COSTS FOR SEDIMENT INACTIVATION AND CONTROL OF GROUNDWATER SEEPAGE IN WEST LAKE

PARAMETER	QUANTITY/ TREATMENT	UNITS	UNIT COST ($)	COST PER TREATMENT ($)	TOTAL COST ($)
Alum	55,900	gallons	0.604[1]	33,764	135,054
Planning and Mobilization	1	each	5,000	5,000	20,000
Chemical Application	32.5	man-hours	680	22,100	88,400
Field Monitoring (pre/post)	1	each	1,000	1,000	4,000
Lab Analyses (pre/post)	8	samples	200	1,600	6,400
			TOTAL:	**$ 63,464**	**$ 253,854**

1. Assumed contract cost
2. Estimated volume; actual volume may vary
3. Includes chemical cost plus application

Chemical Costs:	**$ 135,054**
Application and Testing:	**$ 118,800**
Total Cost:	**$ 253,854**

The estimated cost for sediment inactivation and control of groundwater seepage in West Lake is $253,854 or approximately $63,464 per application, including all labor and chemical costs. Of the project cost, approximately 53% is for alum, with 47% for application and testing. Since the treatment will be a multi-year process, the treatment costs can be distributed over multiple fiscal cycles.

4.1.3 Benthic Impacts

Monitoring of benthic macroinvertebrates has been conducted on an annual basis in many of the lake systems which have received alum additions for sediment inactivation or stormwater treatment. Based upon this available data, long-term trends in benthic macroinvertebrate populations are now becoming apparent. Lake Mizell has received periodic addition of alum floc from multiple alum stormwater treatment systems since the mid-1990s. In addition, during 1998, Lake Mizell received a whole-lake alum treatment for sediment inactivation. Benthic monitoring was conducted at 3 sites in Lake Mizell using an Eckman dredge sampler. Three separate samples were collected at each site, and each of the 3 samples was processed, preserved, stored, and evaluated separately for each site.

A comparison of pre-treatment and post-treatment macroinvertebrate assemblages at monitoring Site 1 in Lake Mizell is given on Table 4-5. Site 1 is located in the northern portion of Lake Mizell which receives substantial alum inputs from an on-going alum stormwater treatment process in addition to the alum floc added as part of the whole-lake alum treatment.

TABLE 4-5

COMPARISON OF DOMINANT PRE-TREATMENT AND POST-TREATMENT MACROINVERTEBRATE ASSEMBLAGE AT SITE 1 IN LAKE MIZELL

TAXA	Pre-Treatment (1/28/97)		Post-Treatment Year 1 (1/29/98)		Post-Treatment Year 2 (1/27/99)		Post-Treatment Year 3 (1/31/00)	
	Mean (#/m^2)	%	Mean (#/m^2)	%	Mean (#/m^2)	%	Mean (#/m^2)	%
Chaborus punctipennis	4664	77.9	253	41.7	30	2.0	4502	66.3
Chironomus sp.	647	10.8	74	12.2	1095	73.2	119	1.7
Limnodrilus hoffmeisteri	396	6.6	--	--	74	4.9	592	8.7
Procladius bellus	15	0.2	148	24.4	--	--	252	3.7
Tanytarsus sp.	30	0.5	58	9.6	--	--	--	--
Ablabesmyia rhamphe group	--	--	44	7.2	--	--	--	--
Cladopelma sp.	--	--	15	2.2	--	--	30	0.4
Hyalella azteca	57	0.9	15	2.2	--	--	296	4.4
Dero Nivea	--	--	--	--	237	15.8	74	1.1
Dero Trifida	--	--	--	--	15	1.0	30	0.4
Unid. *Ceratopogonidae*	--	--	--	--	30	2.0	15	0.2
Thienemanniella sp.	--	--	--	--	15	1.0	--	--
Clyptotendipes paripes	--	--	--	--	--	--	726	10.7
Pristina sp.	--	--	--	--	--	--	59	0.9
Cryptochironomus sp.	--	--	--	--	--	--	59	0.2
Ablabesmyia peleensis	--	--	--	--	--	--	15	0.2
Chaetogastor diaphanus	--	--	--	--	--	--	15	0.2

Prior to the use of alum for stormwater treatment and sediment inactivation, the macroinvertebrate assemblage in Lake Mizell was dominated primarily by *Chaoborus punctipennis* and *Chironomus* sp., both of which are indicators of polluted systems. However, after completion of the whole-lake alum treatment, additional macroinvertebrate communities began to become established in Lake Mizell, although the overall organism density was reduced compared with the pre-treatment assemblage. Beginning approximately two years following the alum treatment, population densities began to increase along with introduction of more clean water indicator-type organisms. Approximately three years after the whole-lake alum treatment, the number of benthic species in Lake Mizell had more than doubled, including many pollution intolerant species, and organism densities were substantially greater than existed prior to the use of alum within the lake. This trend has been observed in all monitored lakes following alum addition for sediment inactivation.

A graphical comparison of pre- and post-treatment macroinvertebrate assemblages in Lake Mizell is given on Figure 4-1. Macroinvertebrate density, mean taxa, species diversity, and evenness increased after approximately three years in the north lobe which receives alum floc from both stormwater treatment as well as a whole-lake sediment inactivation process. Introduction of the alum floc into the sediments appears to improve conditions for the microorganisms, resulting in enhancements in the macroinvertebrate assemblages.

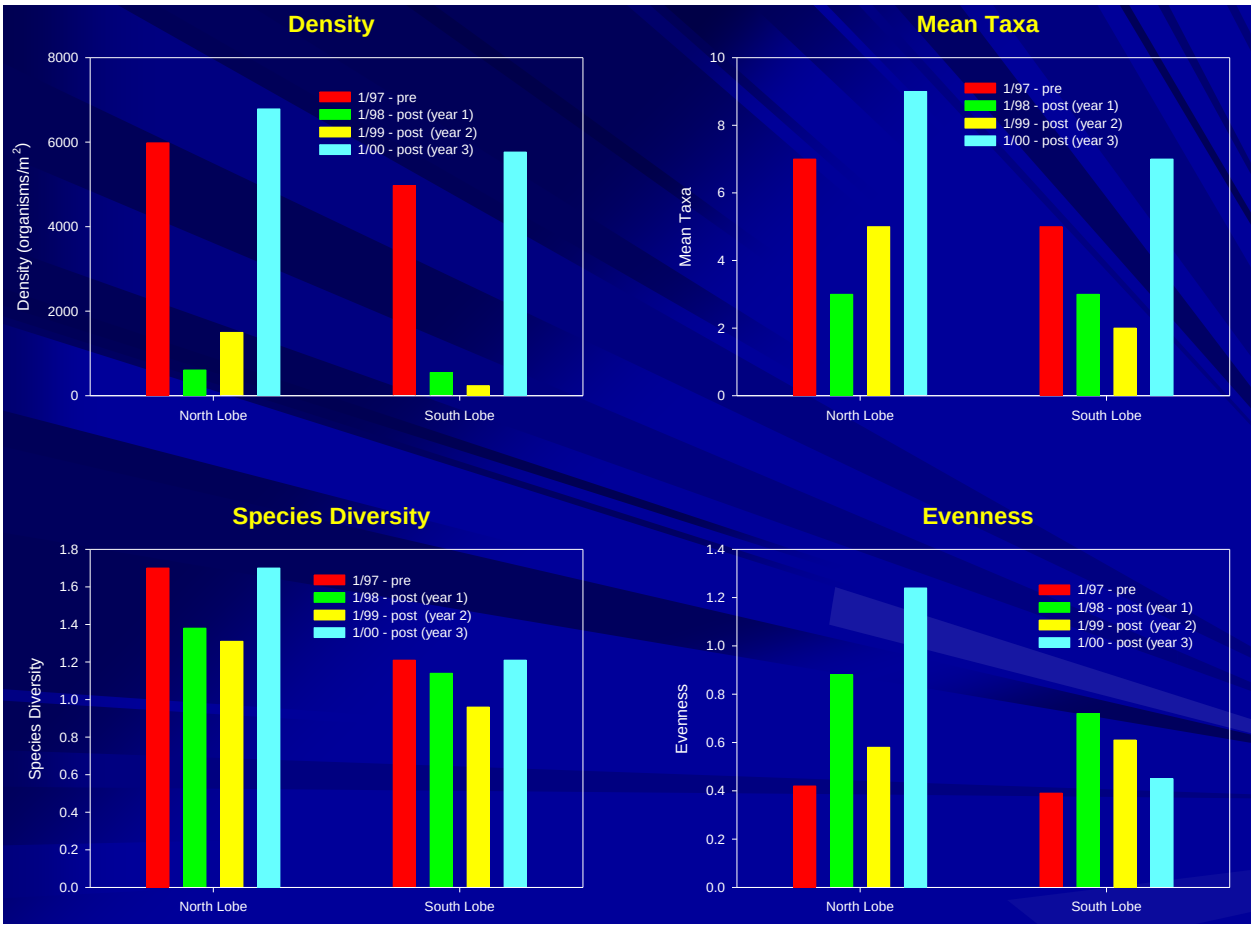


Figure 4-1. Comparison of Pre- and Post-Treatment Macroinvertebrate Assemblages in Lake Mizell.

4.1.4 Longevity of Treatment

After initial application, the alum precipitate will form a visible floc layer on the surface of the sediments within the lake. This floc layer will continue to consolidate for approximately 30-90 days, reaching maximum consolidation during that time. Due to the unconsolidated nature of the sediments in much of the lake, it is anticipated that a large portion of the floc will migrate into the existing sediments rather than accumulate on the surface as a distinct layer. This process is beneficial since it allows the floc to sorb soluble phosphorus during migration through the surficial sediments. Any floc remaining on the surface will provide a chemical barrier for adsorption of phosphorus which may be released from the sediments.

At least 50 previous sediment inactivation projects have been conducted by ERD in the State of Florida since 1992. Approximately half of these waterbodies have sufficient pre- and post-water quality data to evaluate the effectiveness of the alum sediment inactivation process. Based on these data, it appears that a properly planned and executed alum treatment project for West Lake would maintain a continuous level of effectiveness for a minimum of approximately 10-12 years or more.

4.2 Water Column Impacts During Applications

A series of laboratory jar tests were conducted to evaluate water quality impacts to West Lake from alum addition during the sediment inactivation project. Methods used to assess water quality impacts and results are discussed in the following sections.

4.2.1 Field Monitoring

Composite surface water samples were collected in West Lake on July 8 and August 9, 2021 for laboratory jar testing. During each event, vertical field profiles of temperature, pH, conductivity, dissolved oxygen (concentration and percent saturation), and oxidation-reduction potential (ORP) were measured at depths of 0.25 and 0.5 m and at 0.5 m intervals to the bottom at each location. Measurements of Secchi disk depth were also conducted at each site. Field monitoring was conducted at 11 sites throughout West Lake on July 8, 2021, and at 4 locations on August 9, 2021. The referenced monitoring sites are based on the sediment monitoring sites indicated on Figure 3-1. A complete listing of field measurements collected in West Lake during July and August 2021 is given in Appendix C.

A compilation of vertical field profiles collected in West Lake on July 8, 2021 at each of the 11 sites is given on Figure 4-2. Water depths at the monitoring sites ranged from 1.8-3.1 m (6-10 ft). Surface water temperatures were highly variable within the lake, ranging from 28.4-32.4 ^{o}C, with the warmest temperatures in stagnant northern portions of the lake and cooler water temperatures in open southern portions. Temperatures at all sites became more similar with increasing depth, reaching a relatively uniform temperature of approximately 27.5 ^{o}C at all sites at a depth of 2 m.

Surface (0.5 m) pH values were alkaline in value, ranging from 7.95-8.50. Measured pH values at all sites decreased steadily in lower portions of the water column and near the water-sediment interface. This type of pH pattern is common in highly productive lakes.

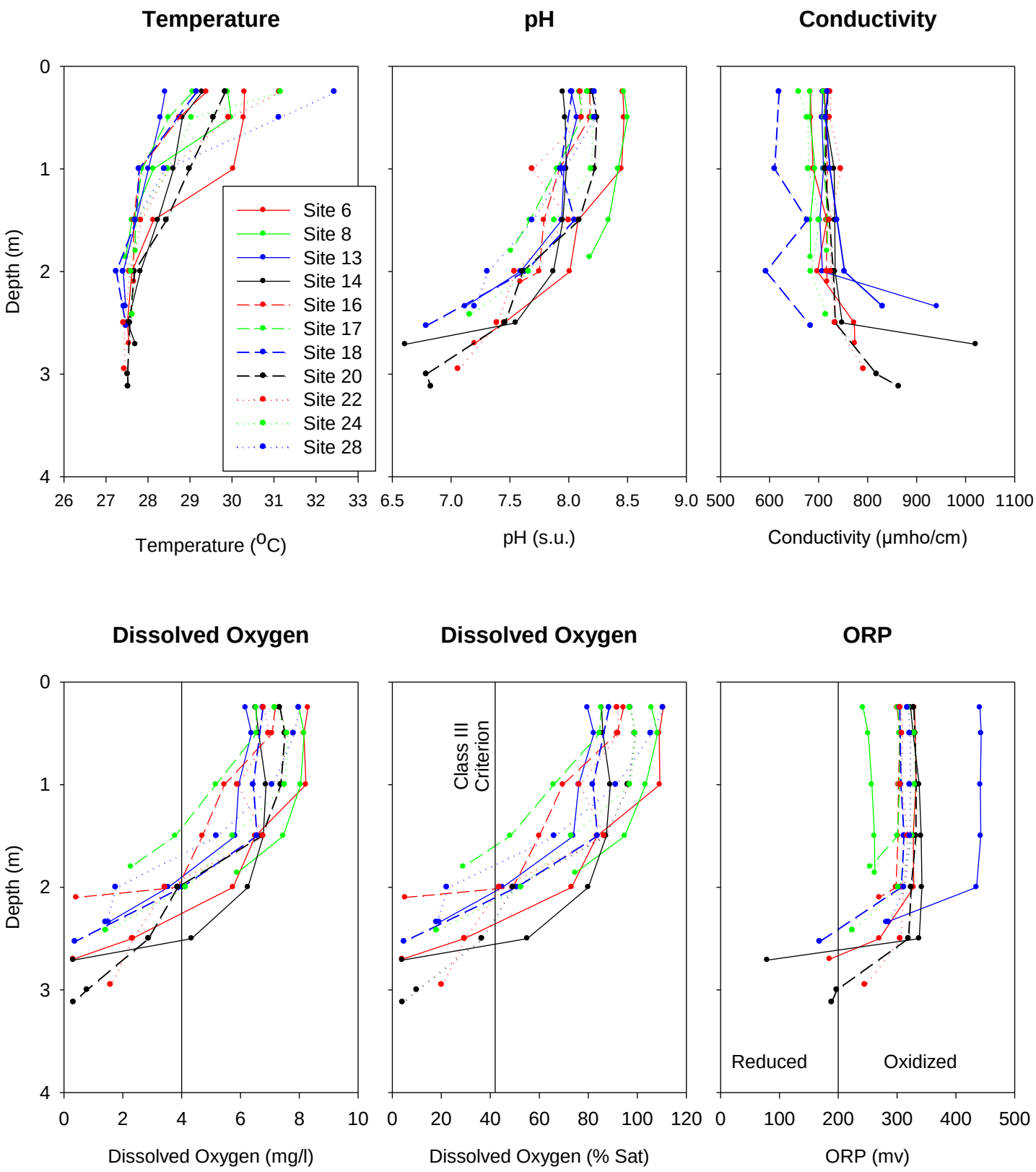


Figure 4-2. Vertical Field Profiles Collected in West Lake on July 8, 2021.

Surface (0.5 m) conductivity values ranged from 620-724 μmho/cm at the 11 monitoring sites which reflects a relatively high degree of variability for the size of West Lake. The observed variability in surface conductivity values is likely related to the multitude of external and internal sources impacting the lake. Relatively isograde conductivity profiles were observed at most sites with increasing water depth to approximately 2 m. At depths deeper than 2 m, conductivity increased rapidly to the water-sediment interface, with bottom conductivity values ranging from 684-1,021 μmho/cm. Increases in conductivity near the water-sediment interface are often an indication of internal recycling of ions from the sediments into the overlying water column or influx of high conductivity groundwater seepage.

Dissolved oxygen concentrations exhibited similar profiles at each of the monitored sites. Surface (0.5 m) oxygen concentrations ranged from 6.4-8.2 mg/l, with rapid decreases in concentrations with increasing water depth, reaching concentrations of 1 mg/l or less near the water-sediment interface. Oxygen saturation percentages exhibited a similar pattern, with surface (0.5 m) values ranging from 82-109% and bottom measurements ranging from 4-75%. The Class III oxygen criterion for West Lake is a minimum average saturation of 42% for measurements collected in the top 2 m of the water column, and saturation values at all sites easily met this criterion.

Oxidation-reduction potential (ORP) is a measure of the availability of free electrons in an aquatic system and regulates the possibility and speed of multiple biological processes (such as nitrification and denitrification) and chemical processes (such as the stability of iron-phosphorus bonding in the sediments). An oxidized environment is favorable for nitrification and maintaining iron-bound phosphorus in the sediments, while a reduced environment favors denitrification and sediment phosphorus release. Oxidized conditions were observed at all sites to a depth of 2-2.5 m, followed by a rapid decrease in ORP near the water-sediment interface with anaerobic or near-anaerobic conditions at most sites which indicates almost certain anaerobic conditions in the sediments.

A compilation of vertical field profiles collected at 4 locations on August 9, 2021 is given on Figure 4-3. In general, vertical profiles for temperature, pH, conductivity, dissolved oxygen, and ORP exhibited trends similar to those described previously for the July 8, 2021 event. Each of the sites met the Class III criterion of 42% minimum average saturation in the top 2 m.

Overall, vertical field profiles collected in West Lake are typical of values commonly observed in highly productive eutrophic lakes.

4.2.2 Laboratory Jar Testing

Laboratory jar testing was conducted on composite lake water samples collected from West Lake during July and August 2021 to evaluate the effectiveness of alum for reducing concentrations of nutrients and chlorophyll-a in the lake. The results of laboratory testing are described in this section, including the nutrient removal efficiencies achieved at various chemical doses and potential pH impacts from alum addition.

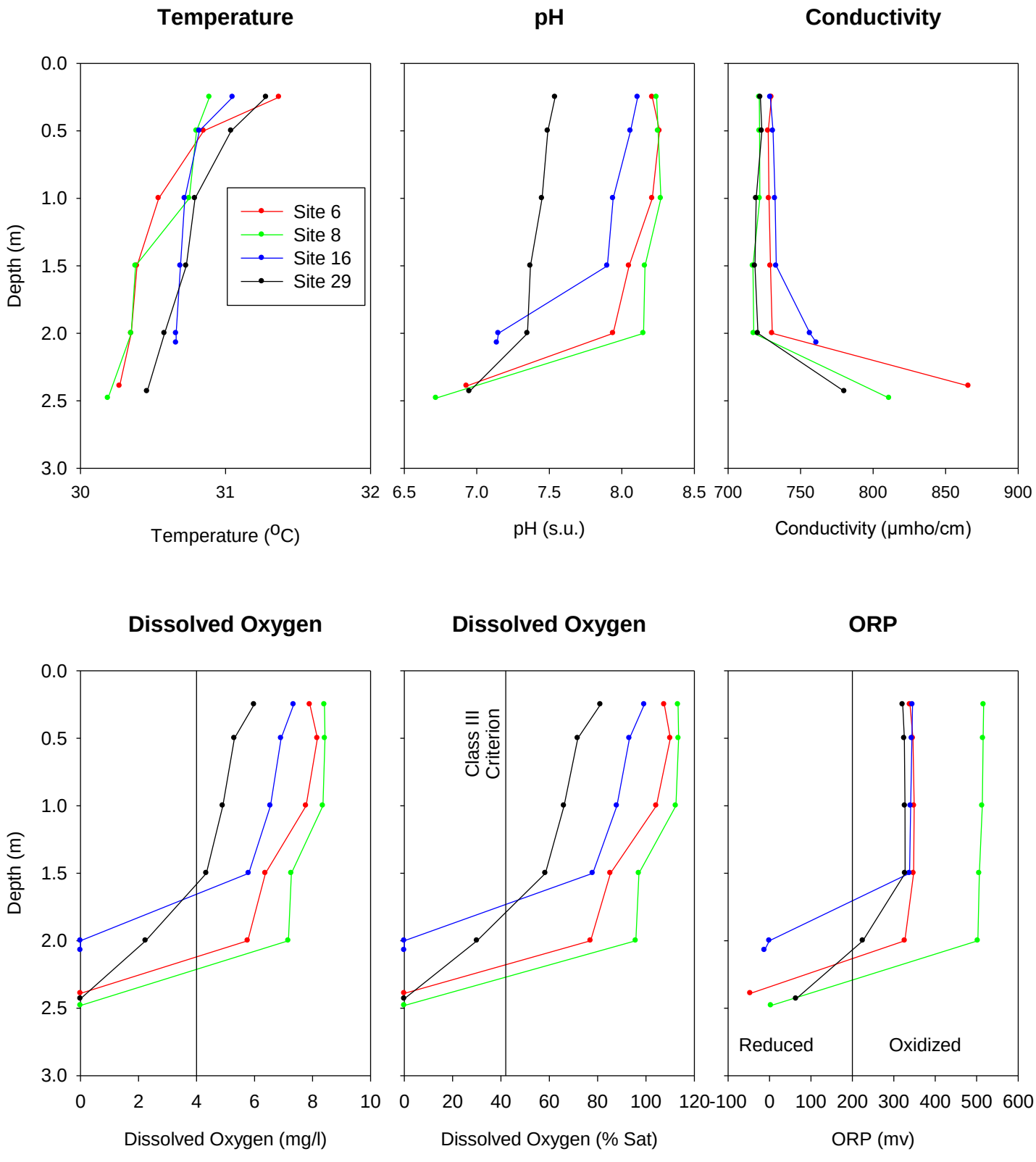


Figure 4-3. Vertical Field Profiles Collected in West Lake on August 9, 2021.

4.2.2.1 Jar Test Procedures

Composite surface water samples were collected from West Lake by ERD field personnel on July 8 and August 9, 2021 to evaluate ambient water quality characteristics and the effects of alum for reducing concentrations of nutrients in West Lake water. Composite samples were formed by combining equal quantities of surface water collected from top, middle, and bottom portions of the water column at 11 separate sites on July 8 and 4 sites on August 9. The composite samples were collected in 20-liter polyethylene carboys and returned in ice to the ERD Laboratory for testing. A single composite water sample was formed for the July 8 monitoring event by combining equal quantities of lake water from each site. Separate composite water samples were collected in northern and southern portions of the lake during the August 9 monitoring event.

Laboratory jar tests were conducted on each of the composite surface water samples collected from West Lake using alum at doses of 5, 10, 15, and 20 mg Al/liter, with a total of 5 test jars per sample composite (4 alum doses + 1 raw sample). The doses are designed to bracket the mean whole-lake alum water column dose of 10.1 mg Al/liter indicated in Table 4-3 and to account for variability in alum application due to changes in available sediment phosphorus (Figure 3-11).

At the beginning of each test, a 2-liter sample of test water is mixed using the Phipps and Bird paddle stirrer apparatus (shown on Figure 4-4). A pH probe was inserted into the sample for continuous monitoring of solution pH, and the initial pH is recorded. The specified alum dose is then added to the test solution, with measurements of pH taken at 1 minute, 1 hour, and 24 hours after addition of the alum. In general, the minimum pH level in alum treated water is achieved approximately 1 minute after the addition of the alum to the sample, and generally, the pH value of the treated water increases slowly following the alum addition for a period of approximately 24 hours, with a majority of the overall observed pH increase occurring within the first hour after the alum is added. The raw and alum treated samples were then allowed to settle for a period of 24 hours, simulating settling processes which would occur within the lake. At the end of the settling period, the clear supernatant was decanted carefully to exclude all floc prior to laboratory analysis.

All laboratory jar testing and associated lab analyses were conducted in the ERD NELAC-certified laboratory. Each of the raw and treated water samples were evaluated in the ERD Laboratory for general inorganic parameters, nutrients, suspended solids, and dissolved aluminum. A summary of analytical methods used by ERD (NELAC #E1031026) for laboratory measurements is given in Table 4-6. All results comply with the requirements and/or specifications of the NELAC standard and test methods. The results presented in this report relate only to the West Lake samples collected on July 8 and August 9, 2021. All NELAC-required QA/QC samples (including duplicates, spikes, continuing calibration standards, and method blanks) were conducted, and this information is retained for a minimum of 5 years.

4.2.2.2 Raw Lake Water Characteristics

A complete listing of the results of laboratory jar testing conducted on West Lake composite samples collected during July and August 2021 is given in Appendix C. Measured values are provided for all raw and alum treated samples.

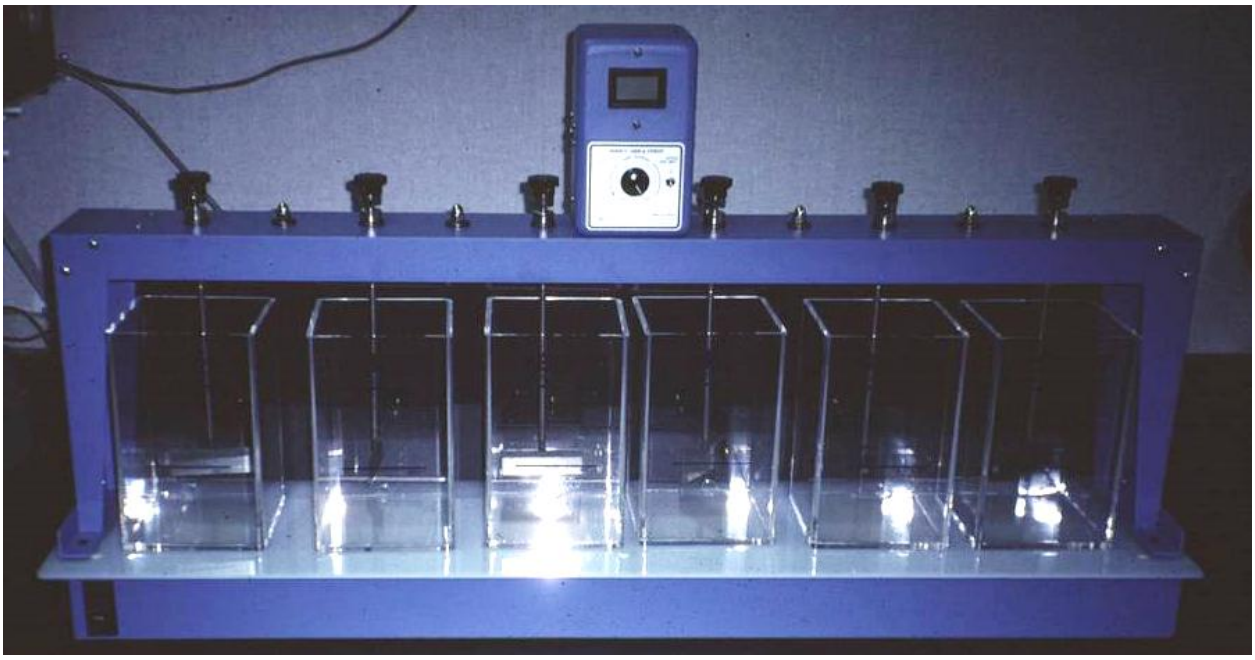


Figure 4-4. Jar Testing Apparatus.

TABLE 4-6

ANALYTICAL METHODS AND DETECTION LIMITS FOR LABORATORY ANALYSES CONDUCTED BY ENVIRONMENTAL RESEARCH AND DESIGN, INC.

MEASUREMENT PARAMETER		METHOD[1]	METHOD DETECTION LIMITS (MDLs)[2]
General Parameters	Hydrogen Ion (pH)	SM-22, Sec. 4500-H^+ B	N/A
	Alkalinity	SM-22, Sec. 2320 B	0.5 mg/l
	TSS	SM-22, Sec. 2540 D	0.7 mg/l
	Specific Conductivity	SM-22, Sec. 2510 B	0.2 μmho/cm
Nutrients	Ammonia-N (NH_4-N)	SM-22, Sec. 4500-NH3 G	0.005 mg/l
	Nitrate + Nitrite (NO_x-N)	SM-22, Sec. 4500-NO3 F	0.002 mg/l
	Total Nitrogen	SM-22, Sec. 4500-N C	0.002 mg/l
	Orthophosphorus	SM-22, Sec. 4500-P F	0.001 mg/l
	Total Phosphorus	SM-22, Sec. 4500-P B.5	0.002 mg/l
Aluminum	Dissolved Aluminum	SM-22, Sec. 3500-A1 E.	4 μg/l

1. Standard Methods for the Examination of Water and Wastewater, 22nd Ed., 2012.
2. MDLs are calculated based on the EPA method of determining detection limits.

A summary of the characteristics of raw composite lake water samples collected from West Lake during July and August 2021 is given in Table 4-7. Each of the composite lake samples was slightly alkaline in pH and extremely well buffered, with measured alkalinity values ranging from 130-153 mg//l. Conductivity values were moderate to slightly elevated compared with values observed by ERD in urban lakes.

TABLE 4-7

CHARACTERISTICS OF COMPOSITE RAW WATER SAMPLES COLLECTED IN WEST LAKE DURING JULY AND AUGUST 2021

PARAMETER	UNITS	JULY 8 COMPOSITE	AUGUST 9 COMPOSITE		MEAN VALUE
			North	South	
pH	s.u.	7.24	7.75	7.99	7.66
Alkalinity	mg/l	130	153	152	145
Conductivity	μmho/cm	539	459	448	482
Ammonia N	μg/l	284	5	7	99
NO_x-N	μg/l	66	12	14	31
Diss. Organic N	μg/l	757	481	1,230	823
Particulate N	μg/l	224	745	255	408
Total N	μg/l	1,331	1,243	1,506	1,360
SRP	μg/l	10	11	15	12
Diss. Organic P	μg/l	10	7	55	24
Particulate P	μg/l	47	70	33	50
Total P	μg/l	67	88	103	86
Turbidity	NTU	3.3	5.3	5.9	4.8
Color	Pt-Co	15	17	14	15
Chlorophyll-a	μg/l	35.9	48.1	53.4	45.8
Dissolved Al	μg/l	164	119	74	119

The composite lake water samples were characterized by extremely low to elevated levels of ammonia, with measured values ranging from 5-284 μg/l. Measured concentrations of NO_x were generally low in value, ranging from 14-66 μg/l. The observed wide swing in ammonia from July to August illustrates the highly dynamic and variable nature of West Lake. The dominant nitrogen species in 2 of the 3 composite samples was dissolved organic nitrogen which comprised approximately 39-82% of the total nitrogen present. Measured concentrations of particulate nitrogen were highly variable, ranging from 224-745 μg/l. Overall, total nitrogen concentrations in West Lake in the 2 composite samples were elevated in value and variable, ranging from 1,244-1,506 μg/l.

In general, measured concentrations of total phosphorus in West Lake in the 3 composite samples were elevated in value, ranging from 67-103 μg/l. Measured concentrations of SRP were also elevated in value, suggesting an abundance of inorganic phosphorus. The dominant phosphorus species in most samples was particulate phosphorus which comprised 58% of the overall mean total phosphorus concentration.

Measured concentrations of turbidity in the raw lake water samples were moderate in value, ranging from 3.4-5.9 NTU. The composite lake samples had low color but elevated chlorophyll-a concentrations ranging from 35.9-53.4 μg/l. Measured concentrations of dissolved aluminum were low to moderate in value, ranging from 74-164 μg/l.

4.2.2.3 Jar Test Results

4.2.2.3.1 pH and Floc Settling

A summary of pH measurements and observations on floc formation and settling during jar tests on composite samples collected on July 8 and August 9, 2021 is given in Table 4-8. Information is provided for the sample collection date, applied alum dose, pH measurements, and observations on floc settling.

TABLE 4-8

GENERAL CHARACTERISTICS OF LABORATORY JAR TESTING CONDUCTED ON WEST LAKE WATER SAMPLES COLLECTED DURING JULY AND AUGUST 2021

SAMPLE COLLECTION DATE	TYPE OF SAMPLE	ALUM DOSE (mg Al/liter)	MEASURED pH (s.u.)			OBSERVATIONS
			Initial	1 Hour	24 Hours	
7/8/21	Whole Lake Composite	Raw	7.30	7.28	7.24	Green, cloudy appearance
		5	7.30	7.02	7.03	Large floc, settled completely in 1 hour, water clear
		10	7.30	6.84	6.87	Large floc, settled completely in 1 hour, water clear
		15	7.30	6.55	6.59	Large floc, settled completely in 1 hour, water clear
		20	7.30	6.44	6.46	Large floc, settled completely in 1 hour, water clear
8/9/21	North Area Composite	Raw	7.84	7.81	7.75	Green, cloudy appearance
		5	7.84	7.09	6.97	Large floc, settled completely in 1 hour, water clear
		10	7.48	6.66	6.68	Large floc, settled completely in 1 hour, water clear
		15	7.48	6.41	6.42	Large floc, settled completely in 1 hour, water clear
		20	7.48	6.06	6.10	Large floc, settled completely in 1 hour, water clear
	South Area Composite	Raw	8.16	8.04	7.99	Green, cloudy appearance
		5	8.16	7.30	6.95	Large floc, settled completely in 1 hour, water clear
		10	8.16	6.80	6.68	Large floc, settled completely in 1 hour, water clear
		15	8.16	6.45	6.34	Large floc, settled completely in 1 hour, water clear
		20	8.16	6.09	6.05	Large floc, settled completely in 1 hour, water clear

Initial pH values of the raw samples ranged from 7.30-8.04. Alum addition resulted in slight decreases in pH with increases in alum dose, as commonly observed. Measured pH values remained above 6.0 even at the highest tested alum dose of 20 mg Al/liter. At the proposed whole-lake water column dose per application of 10 mg Al/liter, pH values measured 1 hour after alum addition ranged from 6.66-6.80 which also easily met the Class III pH criterion. Each of the tested alum doses generated a large floc which settled completely within the first hour, leaving a clear water column.

4.2.2.3.2 Chemical Characteristics of Alum Treated Samples

A summary of the results of laboratory jar tests conducted on lake water samples collected from West Lake is given in Appendix D. Alum coagulation of the lake water samples resulted in reductions in concentrations of virtually all measured parameters for all water samples. Substantial reductions in concentrations (> 50%) were observed for particulate nitrogen, orthophosphorus, dissolved organic phosphorus, particulate phosphorus, total phosphorus, color, chlorophyll-a, and TSS, with observed removal efficiencies increasing steadily with increasing alum dose. A summary of mean characteristics of laboratory jar testing conducted on West Lake composite lake samples collected during July and August 2021 is given in Table 4-9.

TABLE 4-9

MEAN CHARACTERISTICS FOR LABORATORY JAR TESTING CONDUCTED ON COMPOSITE WEST LAKE SAMPLES DURING JULY AND AUGUST 2021

PARAMETER	UNITS	RAW	ALUM DOSE (mg Al/liter)			
			5	10	15	20
pH	s.u.	7.65	6.98	6.74	6.45	6.20
Alkalinity	mg/l	145	131	108	80.6	61.8
Conductivity	µmho/cm	480	487	491	492	500
Ammonia N	µg/l	22	17	17	11	19
NO_x-N	µg/l	22	22	18	14	10
Diss. Organic N	µg/l	840	513	342	352	333
Particulate N	µg/l	472	164	97	58	43
Total N	µg/l	1,356	716	474	435	405
SRP	µg/l	12	9	5	4	4
Diss. Organic P	µg/l	18	4	2	2	1
Particulate P	µg/l	55	11	5	4	3
Total P	µg/l	85	24	12	10	8
Turbidity	NTU	4.7	1.7	1.0	0.7	0.7
Color	Pt-Co	15	7	4	3	2
Chlorophyll-a	µg/l	45.2	18.3	12.1	5.8	4.1
Dissolved Al.	µg/l	113	100	62	42	25

A graphical comparison of changes in pH, alkalinity, conductivity, and turbidity in alum treated samples collected from West Lake is given in Figure 4-5. In general, addition of alum to West Lake water resulted in a graphical decrease in pH with increasing coagulant dose, although the equilibrium pH value remained above the Class III minimum of 6.0 at all applied doses. Increases in alum dose also resulted in decreases in measured alkalinity with the treated samples. An equilibrium alkalinity value of approximately 61.8 mg/l was measured at the highest tested alum dose of 20 mg Al/liter which easily meets the minimum Class III alkalinity criterion of 20 mg/l. The test results indicate that additional buffering is not required for alum addition to West Lake and concerns over pH depression during application are minimal. The addition of alum resulted in slight increases in measured conductivity with each increasing coagulant dose due to the addition of sulfate ions in the solution. Alum treatment resulted in decreases in measured turbidity values with increasing alum dose.

A graphical comparison of changes in nitrogen species in alum treated samples collected from West Lake is given on Figure 4-6. The addition of alum to the West Lake samples had little impact on measured concentrations of ammonia or NO_x since alum has little affinity for removal of these species. However, the addition of alum resulted in substantial reductions in each of the remaining measured species of nitrogen and phosphorus. Alum addition resulted in decreases in concentrations of both dissolved organic nitrogen and particulate nitrogen which account for the majority of overall reductions observed for total nitrogen. Total nitrogen concentrations at the proposed whole-lake alum dose of 10 mg/l during sediment inactivation are less than 500 µg/l which is a large improvement in nitrogen concentrations discharging to Hendry Creek.

A graphical comparison of changes in phosphorus species in alum treated samples collected from West Lake is given on Figure 4-7. Alum addition resulted in substantial reductions in measured concentrations of phosphorus species at all applied doses. At the proposed mean application rate of 10 mg Al/liter, total phosphorus was reduced to 12 mg/l which reflects borderline oligotrophic/mesotrophic conditions, a substantial improvement from current conditions. A similar degree of removal was also observed for turbidity, color, and chlorophyll-a.

A graphical comparison of changes in dissolved aluminum in alum treated samples collected from West Lake is given on Figure 4-8. Reductions in dissolved aluminum were observed in each of the alum treated samples compared with the raw samples. The concentration of dissolved Al is a function of pH, with minimum concentrations in the pH range of 6.0-6.5, and the decreases in concentrations at higher doses are a direct result of modifying the pH of the water into the range of minimum solubility.

4.2.2.3.3 Removal Efficiencies

A summary of calculated removal efficiencies for jar testing using West Lake water samples collected during July and August 2021 is given on Table 4-10. As described previously, alum addition resulted in substantial reductions in nutrient concentrations, particularly for phosphorus species. Mean removal efficiencies at the recommended water column alum dose of 10 mg Al/liter are 65% for total nitrogen, 85% for total phosphorus, 73% for chlorophyll-a, and 45% for dissolved aluminum.

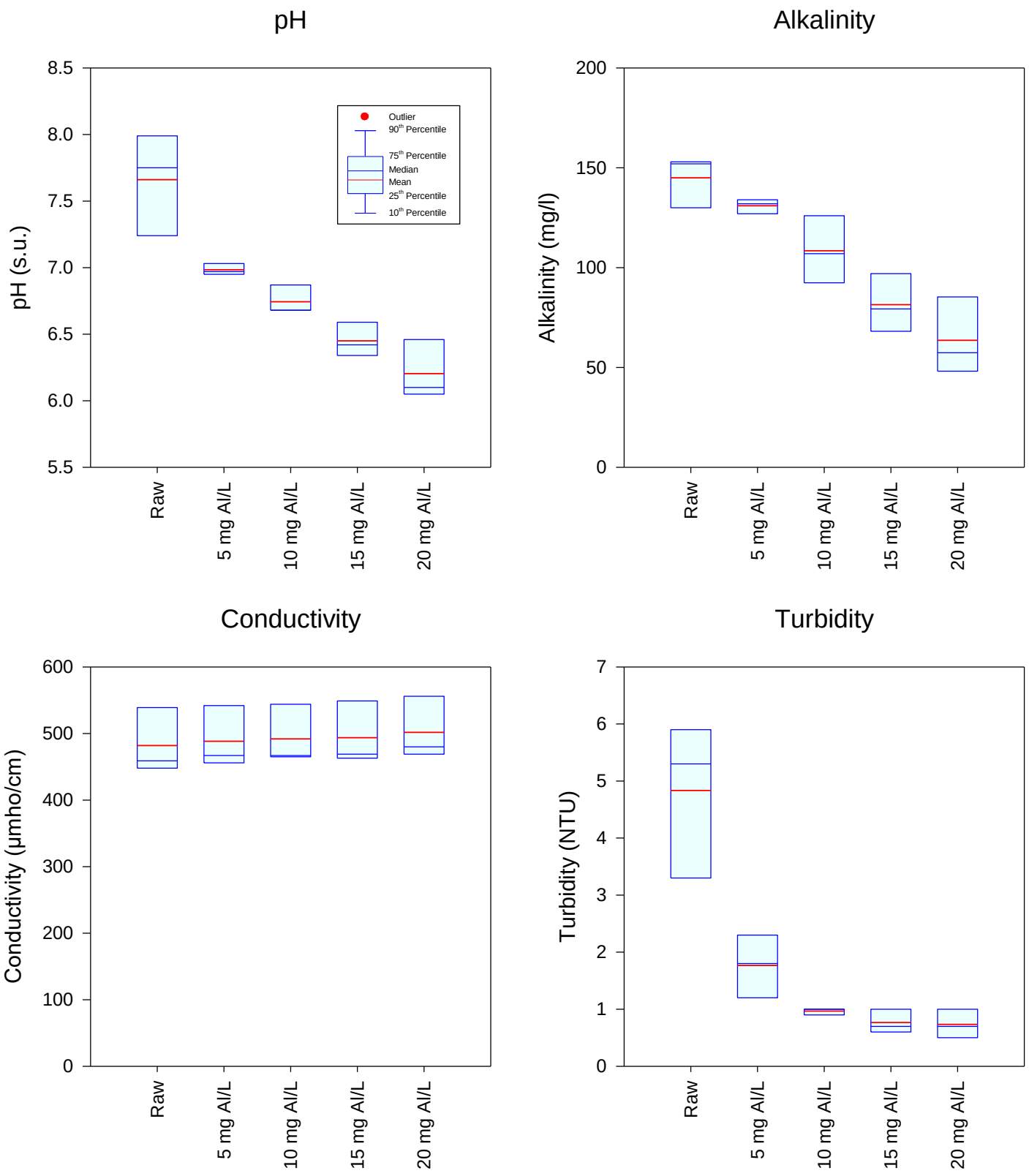


Figure 4-5. Changes in pH, Alkalinity, Conductivity, and Turbidity in Alum Treated Samples Collected from West Lake.

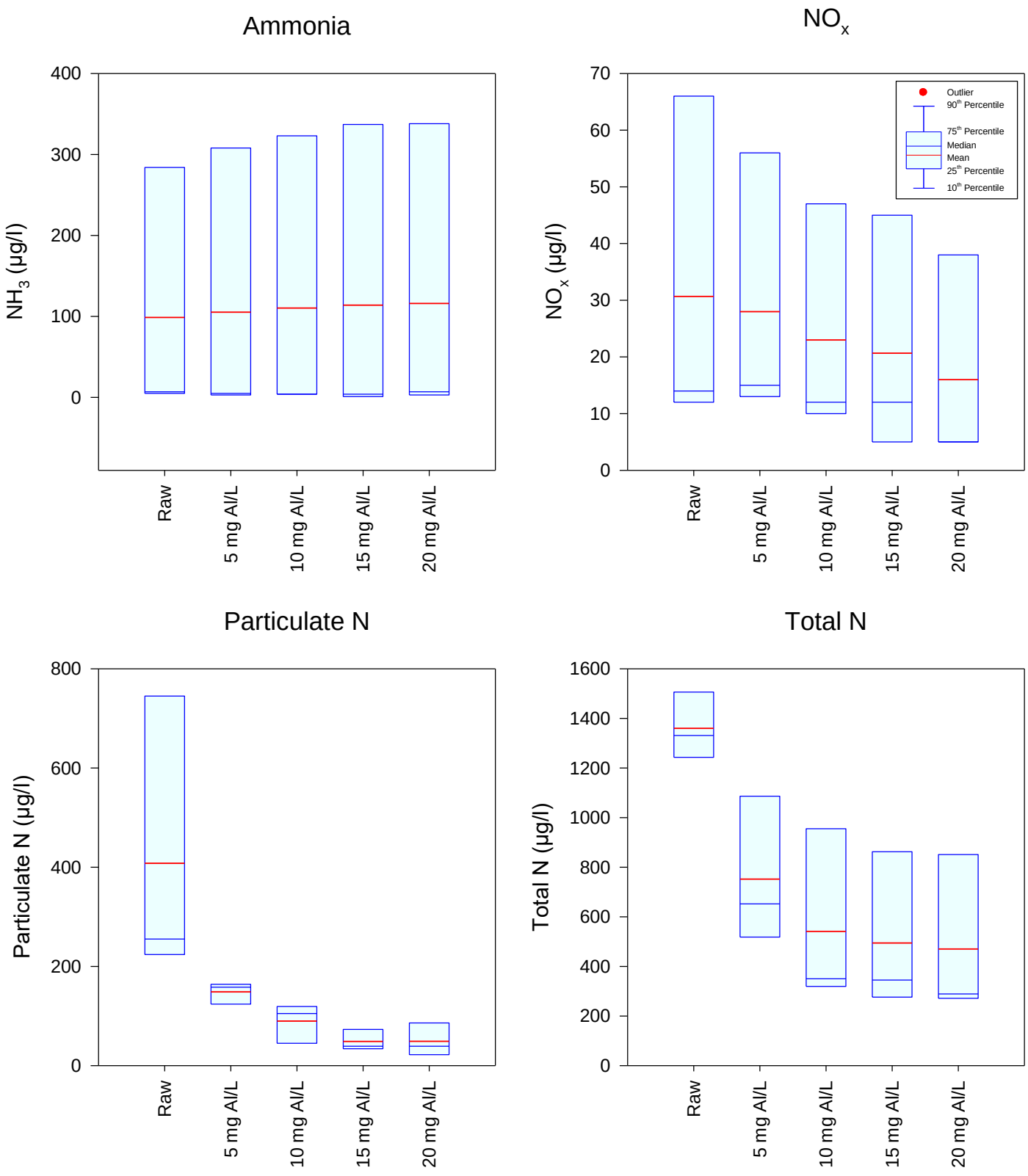


Figure 4-6. Changes in Nitrogen Species in Alum Treated Samples Collected from West Lake.

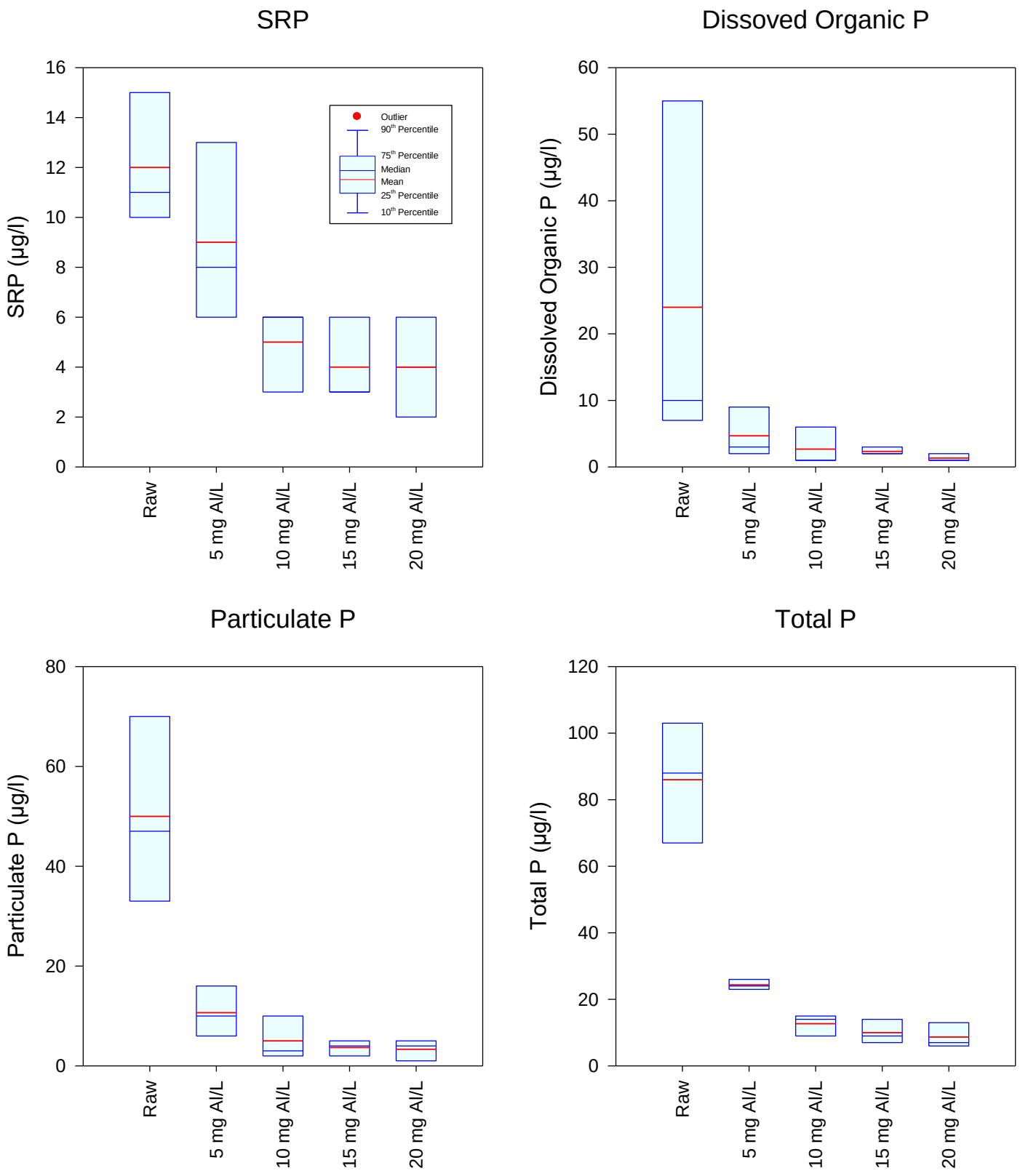


Figure 4-7. Changes in Phosphorus Species in Alum Treated Samples Collected from West Lake.

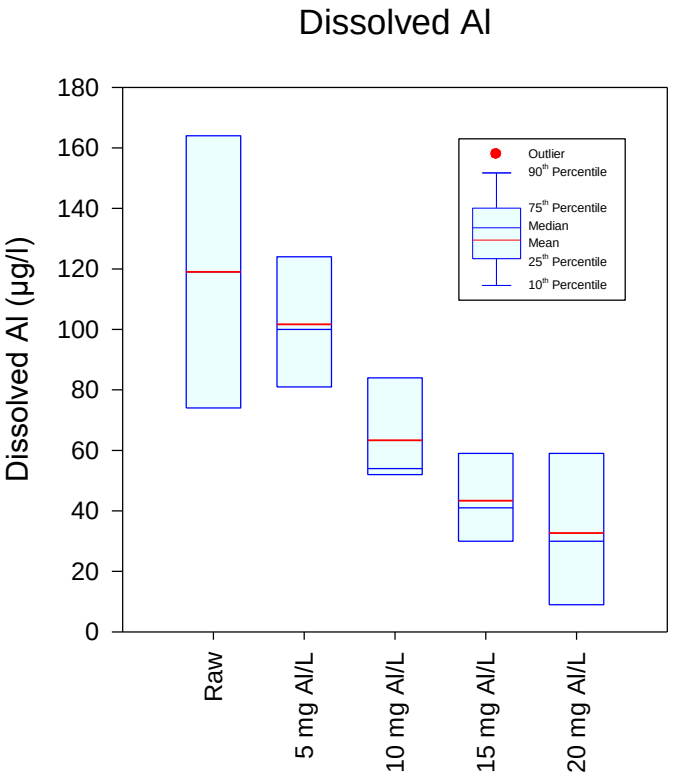


Figure 4-8.

Changes in Dissolved Aluminum in Alum Treated Samples Collected from West Lake.

TABLE 4-10

MEAN REMOVAL EFFICIENCIES FOR ALUM TREATMENT OF WEST LAKE SAMPLES COLLECTED DURING JULY AND AUGUST 2021

PARAMETER	PERCENT CHANGE BY ALUM DOSE (mg Al/liter)			
	5	10	15	20
pH	-9	-12	-16	-19
Alkalinity	-9	-26	-44	-57
Conductivity	1	2	2	4
Ammonia N	-23	-20	-49	-11
NO_x-N	-1	-20	-38	-56
Diss. Organic N	-39	-59	-58	-60
Particulate N	-65	-80	-88	-91
Total N	-47	-65	-68	-70
SRP	-28	-60	-68	-69
Diss. Organic P	-75	-87	-87	-93
Particulate P	-80	-90	-94	-94
Total P	-71	-85	-89	-90
Turbidity	-64	-79	-84	-85
Color	-55	-73	-84	-87
Chlorophyll-a	-59	-73	-87	-91
Dissolved Al.	-11	-45	-63	-78

4.3 Summary

Laboratory jar test samples were conducted on composite samples collected from West Lake during July and August 2021 at alum doses of 5, 10, 15, and 20 mg Al/liter to bracket the proposed whole-lake alum dose of 10.1 mg/l for the individual sediment treatments. All alum doses created a large floc which settled within 1 hour. Reductions in pH following alum addition were minimal due to the high alkalinity of the lake water, and additional pH buffering will not be necessary during the alum applications.

Alum addition resulted in substantial reductions in concentrations of particulate nitrogen, total nitrogen, SRP, particulate phosphorus, total phosphorus, turbidity, color, chlorophyll-a, and dissolved aluminum. Post-treatment concentrations of total nitrogen should be less than 500 μg/l, with total phosphorus and chlorophyll-a ranging from 10-15 μg/l. The treated water column will be clear with the bottom visible in most locations.

APPENDICES

APPENDIX A

WATER QUALITY DATA FOR THE WEST LAKE MONITORING SITES

A-1 Historical Water Quality Data for West Lake Monitoring Sites

A-2 Annual Geometric Mean Values for West Lake Monitoring Sites

A-1 Historical Water Quality Data for West Lake Monitoring Sites

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-10	Lakes Park (#10 Beach)	5/10/89				13.8			0.010	0.005	-0.005	0.010		0.005						2.0											
LP-10	Lakes Park (#10 Beach)	6/7/89				10.8			0.010	0.010	0.060	0.080		0.005						3.0											
LP-10	Lakes Park (#10 Beach)	7/28/89				9.8			0.330	0.005	0.315	0.650		0.010						1.0											
LP-10	Lakes Park (#10 Beach)	8/12/89				8.5			0.030	0.005	1.415	1.450		0.060						2.0											
LP-10	Lakes Park (#10 Beach)	9/6/89				10.4			0.010	0.020	0.850	0.880		0.005						0.5											
LP-10	Lakes Park (#10 Beach)	10/20/89				3.3			0.010	0.080	0.660	0.750		0.005						5.0											
LP-10	Lakes Park (#10 Beach)	11/20/89				8.8			0.090	0.010	0.440	0.540		0.005						2.0											
LP-10	Lakes Park (#10 Beach)	12/7/89				10.2			0.010	0.010	-0.010	0.010		0.005						2.0											
LP-10	Lakes Park (#10 Beach)	1/31/90				12.1			0.010	0.005	0.715	0.730		0.005						0.5											
LP-10	Lakes Park (#10 Beach)	2/12/90				11.6			0.010	0.005	0.565	0.580		0.005						1.0											
LP-10	Lakes Park (#10 Beach)	3/12/90				13.6			0.060	0.005	0.895	0.960		0.005						1.0											
LP-10	Lakes Park (#10 Beach)	4/25/90				11.1			0.130	0.005	1.055	1.190		0.060						2.0											
LP-10	Lakes Park (#10 Beach)	5/11/90				10.2			0.060	0.010	1.370	1.440		0.060						2.0											
LP-10	Lakes Park (#10 Beach)	6/11/90				4.8			0.010	0.010	1.880	1.900		0.100						0.5											
LP-10	Lakes Park (#10 Beach)	7/16/90				7.4			0.010	0.010	1.210	1.230		0.005						2.0											
LP-10	Lakes Park (#10 Beach)	8/9/90				9.6			0.010	0.090	1.580	1.680		0.005						2.0											
LP-10	Lakes Park (#10 Beach)	9/4/90				7.8			0.060	0.020	1.320	1.400		0.010						2.0											
LP-10	Lakes Park (#10 Beach)	10/25/90				8.9			0.030	0.005	0.825	0.860		0.005						2.0											
LP-10	Lakes Park (#10 Beach)	11/26/90				9.6			0.030	0.020	0.950	1.000		0.005						1.0											
LP-10	Lakes Park (#10 Beach)	12/17/90				13.6			0.010	0.010	0.620	0.640		0.030						1.0											
LP-10	Lakes Park (#10 Beach)	1/14/91				9.7			0.050	0.005	0.685	0.740		0.005						0.2											
LP-10	Lakes Park (#10 Beach)	2/4/91				12.1			0.010	0.080	0.830	0.920		0.005						0.6											
LP-10	Lakes Park (#10 Beach)	3/4/91				11.2			0.020	0.010	0.640	0.670		0.005						1.0											
LP-10	Lakes Park (#10 Beach)	4/19/91				10.5			0.080	0.005	2.675	2.760		0.300						1.3											
LP-10	Lakes Park (#10 Beach)	5/1/91				7.2			0.010	0.140	0.610	0.760		0.040						1.0											
LP-10	Lakes Park (#10 Beach)	6/20/91				8.7			0.080	0.400	1.100	1.580		0.010						3.3											
LP-10	Lakes Park (#10 Beach)	7/1/91				9.2			0.010	0.060	0.390	0.460		0.005						1.8											
LP-10	Lakes Park (#10 Beach)	8/19/91				7.4			0.030	0.200	0.960	1.190		0.090						2.0											
LP-10	Lakes Park (#10 Beach)	9/24/91				10.1			0.020	0.180	0.360	0.560		0.050						7.1											
LP-10	Lakes Park (#10 Beach)	10/25/91				9.5			0.120	0.040	0.180	0.340		0.010						0.8											
LP-10	Lakes Park (#10 Beach)	11/4/91	24.0	7.8		7.5			0.030	0.020	0.010	0.060		0.010						1.0											
LP-10	Lakes Park (#10 Beach)	11/18/91	74.0	8.2		13.7			0.010	0.020	0.260	0.290		0.100						1.1											
LP-10	Lakes Park (#10 Beach)	12/2/91	24.0	8.3		8.0			0.010	0.010	1.310	1.330		0.010						0.9											
LP-10	Lakes Park (#10 Beach)	12/16/91	22.0	8.5		8.5			0.070	0.060	0.680	0.810		0.005						2.0											
LP-10	Lakes Park (#10 Beach)	1/6/92	18.5	8.1		9.2			0.010	0.005	0.455	0.470		0.010						0.2											
LP-10	Lakes Park (#10 Beach)	2/3/92				9.9			0.040	0.020	0.260	0.320		0.170						0.4											
LP-10	Lakes Park (#10 Beach)	2/20/92	78.0	8.5		12.3			0.010	0.005	1.795	1.810		0.005						2.0											
LP-10	Lakes Park (#10 Beach)	3/26/92	25.0	8.5		9.3			0.130	0.160	0.910	1.200		0.005						0.9											
LP-10	Lakes Park (#10 Beach)	4/15/92	28.3	8.5		9.1			0.030	0.010	0.390	0.430		0.160						3.1											
LP-10	Lakes Park (#10 Beach)	5/29/92	27.8	8.5		9.2			0.010	0.010	0.870	0.890		0.005						1.5											
LP-10	Lakes Park (#10 Beach)	6/30/92	30.0	7.9		8.6			0.050	0.010	0.530	0.590		0.005						1.4											
LP-10	Lakes Park (#10 Beach)	7/6/92	33.0	8.5		7.0			0.080	0.010	0.590	0.680		0.050						1.9											
LP-10	Lakes Park (#10 Beach)	7/13/92	31.7	8.0		9.1			0.050	0.005	0.745	0.800		0.005						1.8											
LP-10	Lakes Park (#10 Beach)	8/25/92	29.4	7.6		4.3			0.010	0.005	0.875	0.890		0.090						1.6											
LP-10	Lakes Park (#10 Beach)	9/28/92	30.6	8.0		8.8			0.010	0.005	0.405	0.420		0.005						1.9											
LP-10	Lakes Park (#10 Beach)	10/22/92	24.4	7.8		8.2			0.010	0.005	0.495	0.510		0.030						1.3											
LP-10	Lakes Park (#10 Beach)	11/18/92	22.8	7.7		13.2			0.010	0.005	2.015	2.030		0.050						1.0											
LP-10	Lakes Park (#10 Beach)	12/2/92	20.0	7.9		11.6			0.010	0.530	0.800	1.340		0.070						1.1											
LP-10	Lakes Park (#10 Beach)	1/28/93	20.0	7.6		7.4			0.040	0.005	0.445	0.490		0.360						1.4											
LP-10	Lakes Park (#10 Beach)	2/19/93	21.1	7.9		8.7			0.040	0.005	-0.005	0.040		0.005						0.7											
LP-10	Lakes Park (#10 Beach)	3/10/93	22.0	7.6		8.6			0.010	0.005	0.225	0.240		0.005						2.3											
LP-10	Lakes Park (#10 Beach)	4/8/93	27.0	7.5		8.2			0.010	0.005	0.295	0.310		0.005						1.4											
LP-10	Lakes Park (#10 Beach)	5/14/93	27.0	8.1		8.1			0.020	0.005	0.555	0.580		0.005						0.7											
LP-10	Lakes Park (#10 Beach)	6/4/93	31.0	8.5		7.8			0.020	0.005	0.305	0.330		0.005						1.6											
LP-10	Lakes Park (#10 Beach)	8/5/93	32.8	8.7		6.0			0.010	0.005	0.285	0.300		0.005						2.1											
LP-10	Lakes Park (#10 Beach)	10/1/93	28.0	7.7		5.2			0.010	0.005	0.525	0.540		0.005						2.0											
LP-10	Lakes Park (#10 Beach)	10/8/93	30.0	8.3		4.4			0.010	0.005	0.645	0.660		0.005						3.0											
LP-10	Lakes Park (#10 Beach)	11/24/93	23.0	7.8		7.5			0.010	0.030	0.130	0.170		0.005						2.0											
LP-10	Lakes Park (#10 Beach)	12/30/93	19.0	8.0		8.4			0.010	0.005	0.765	0.780		0.005						1.0											
LP-10	Lakes Park (#10 Beach)	1/31/94	22.0	7.8		8.0			0.010	0.005	-0.010	0.005		0.005						1.2											
LP-10	Lakes Park (#10 Beach)	2/11/94	25.0	8.1		8.3			0.010	0.005	0.645	0.660		0.005						2.2											
LP-10	Lakes Park (#10 Beach)	2/25/94	27.0	7.8		6.8			0.050	0.005	0.655	0.710		0.005						1.2											
LP-10	Lakes Park (#10 Beach)	3/22/94	29.0	8.0		7.6			0.010	0.005	1.335	1.350		0.005						1.5											
LP-10	Lakes Park (#10 Beach)	4/27/94	29.0	8.2		6.5			0.010	0.005	0.625	0.640		0.130						1.5											
LP-10	Lakes Park (#10 Beach)	5/11/94	32.0	9.0		7.0			0.010	0.020	0.640	0.670		0.005						1.9											
LP-10	Lakes Park (#10 Beach)	6/14/94	31.0	8.9		6.4			0.010	0.005	1.745	1.760		1.200						1.9											
LP-10	Lakes Park (#10 Beach)	7/26/94	30.0	8.3		5.8			0.010	0.005	0.435	0.450		0.100						1.7											
LP-10	Lakes Park (#10 Beach)	8/31/94	31.0	8.3		5.8			0.030	0.005	1.435	1.470		0.010						1.6											
LP-10	Lakes Park (#10 Beach)	9/26/94	28.0	7.7		6.2			0.030	0.020	0.070	0.120		0.005						1.9											
LP-10	Lakes Park (#10 Beach)	10/20/94	25.0	7.8		6.7			0.020	0.080	0.100	0.200		0.010						1.3											
LP-10	Lakes Park (#10 Beach)	11/16/94	25.0	7.8		6.6			0.040	0.005	0.025	0.070		0.010						1.7											
LP-10	Lakes Park (#10 Beach)	12/5/94	25.0	7.7		6.4			0.050	0.005	0.655	0.710		0.070						1.1											

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-10	Lakes Park (#10 Beach)	1/31/95	17.0	7.9		7.4			0.060	0.005	0.585	0.650		0.005						0.6											
LP-10	Lakes Park (#10 Beach)	2/14/95	21.0	8.0		8.2			0.010	0.005	0.845	0.860		0.005						0.6											
LP-10	Lakes Park (#10 Beach)	3/28/95	27.0	8.5		9.1			0.010	0.005	0.685	0.700		0.070						0.9											
LP-10	Lakes Park (#10 Beach)	4/19/95	29.0	8.5		8.0			0.010	0.005	0.435	0.450		2.630						4.0											
LP-10	Lakes Park (#10 Beach)	5/24/95	30.0	8.5		8.2			0.010	0.005	0.835	0.850		0.005						2.2											
LP-10	Lakes Park (#10 Beach)	6/22/95	30.0	8.3	294	5.4			0.020	0.010	0.000	0.030	0.002	0.005		1.0	0.6	77		1.0				0.50		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	8/30/95	32.0	7.8	387	6.4			0.030	0.150	0.330	0.510	0.001	0.005		0.5	1.1	66		1.1				2.00		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	9/28/95	30.0	7.7	391	5.5			0.030	0.005	0.245	0.280	0.001	0.020		0.5	0.5	56		0.4				0.50		0.50		10.0			
LP-10	Lakes Park (#10 Beach)	11/16/95	20.0	7.9	381	8.0			0.010	0.140	0.470	0.620	0.001	0.005		0.5	0.4	59		1.0				5.00		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	12/13/95	19.0	7.5	451	7.5			0.060	0.100	0.820	0.980	0.001	0.010		1.0	0.5	60		1.3				0.50		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	1/4/96	19.0	7.8	402	8.2			0.050	0.270	0.600	0.920	0.001	0.005		0.5	0.6	58		0.5				0.50		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	2/26/96	25.0	8.0	442	10.0			0.010	0.050	0.690	0.750	0.006	0.005		0.5	0.6	62		1.5				0.50		0.50		10.0			
LP-10	Lakes Park (#10 Beach)	3/21/96	18.0	8.0	398	8.8			0.010	0.020	0.760	0.790	0.001	0.005		0.5	0.6	63		0.5				0.50		0.50		10.0			
LP-10	Lakes Park (#10 Beach)	4/18/96	25.0	8.2	365	9.6			0.010	0.070	0.420	0.500	0.001	0.050		0.5	0.5	65		1.9				0.50		4.00		5.0			
LP-10	Lakes Park (#10 Beach)	5/22/96	28.0	7.9	432	6.0			0.010	0.050	1.060	1.120	0.001	0.040		5.5	0.8	66		1.2				0.50		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	6/26/96	32.0	8.5	393	8.8			0.010	0.090	0.230	0.330	0.001	0.005		0.5	0.6	60		1.3				1.00		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	7/16/96	32.0	8.7	373	8.0			0.010	0.060	0.330	0.400	0.001	0.020		0.5	0.5	59		1.1				2.00		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	8/27/96	30.0	8.3	417	8.8			0.010	0.110	0.470	0.590	0.001	0.005		0.5	0.5	62		1.3				0.50		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	10/30/96	28.0	8.1	487	10.0			0.010	0.005	0.635	0.650	0.009	0.005		0.5	0.4	84		1.9				0.50		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	2/13/97	74.0	8.3	450	8.6			0.010	0.005	0.845	0.860	0.001	0.005		1.0	0.5	96		1.3				0.50		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	3/18/97	26.0	8.5	500	10.0			0.010	0.005	0.495	0.510	0.001	0.005		0.5	0.7	93		1.3				0.50		0.50		20.0			
LP-10	Lakes Park (#10 Beach)	4/17/97	25.0	8.4	458	7.6			0.010	0.005	0.205	0.220	0.001	0.005		0.5	0.5	88		1.1				0.50		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	5/29/97	30.0	8.3	469	6.4			0.010	0.005	0.375	0.390	0.001	0.020		0.5	0.7	95		0.5				9.00		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	6/25/97	30.0	8.2	434	8.2			0.020	0.005	0.005	0.030	0.001	0.005		10.0	1.0	47		1.0				0.50		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	7/24/97	31.0	8.3	522	8.3			0.010	0.005	-0.010	0.005	0.001	0.005		3.0	0.5	90		1.4				0.50		0.50		5.0			
LP-10	Lakes Park (#10 Beach)	8/25/97	31.0	8.1	575	9.1			0.010	0.005	0.105	0.120	0.001	0.005		2.0	0.4	92		0.5				0.50		0.50		5.0	10		
LP-10	Lakes Park (#10 Beach)	9/23/97	31.0	8.2	601	9.3			0.010	0.005	-0.010	0.005	0.001	0.010		1.0	0.5	91		0.5				0.50		3.00		5.0	30		
LP-10	Lakes Park (#10 Beach)	10/29/97	25.0	8.1	438	8.8			0.010	0.005	0.345	0.360	0.001	0.020		1.0	0.7	85		0.5				1.00		0.50		5.0	5		
LP-10	Lakes Park (#10 Beach)	11/20/97	22.0	8.1	512	9.2			0.010	0.005	0.525	0.540	0.001	0.030		0.5	0.4	83		0.5				0.50		0.50		5.0	5		
LP-10	Lakes Park (#10 Beach)	12/22/97	23.0	8.1	500	9.0			0.030	0.005	-0.030	0.005	0.017	0.010		1.0	0.5	78		1.5				0.50		0.50		5.0	50		
LP-10	Lakes Park (#10 Beach)	1/28/98	19.0	8.1	466	8.1			0.010	0.005	0.205	0.220	0.001	0.190		2.0	0.3	78		1.0				0.50		0.50		5.0	10		
LP-10	Lakes Park (#10 Beach)	2/25/98	21.0	8.1	455	8.9			0.010	0.005	0.365	0.380	0.001	0.010		2.0	0.4	72		1.8				0.50		0.50		5.0	20		
LP-10	Lakes Park (#10 Beach)	3/17/98	25.0	8.3	340	9.6			0.010	0.005	-0.010	0.005	0.003	0.110		0.5	0.8	76		1.1				0.50		0.50		5.0	50		
LP-10	Lakes Park (#10 Beach)	4/28/98	30.0	8.5	341	8.6			0.010	0.005	1.035	1.050	0.001	0.200		2.0	1.1	78		1.2				9.00		0.50		5.0	20		
LP-10	Lakes Park (#10 Beach)	5/27/98	30.0	8.6	445	7.6			0.010	0.005	0.495	0.510	0.002	0.005		5.0	0.6	86		0.5				3.00		0.50		5.0	5		
LP-10	Lakes Park (#10 Beach)	6/24/98	31.0	8.5	465	8.4			0.050	0.005	0.005	0.060	0.001	0.005		4.0	0.7	84		1.6				1.00		0.50		5.0	40		
LP-10	Lakes Park (#10 Beach)	7/22/98	28.0	7.9	346	6.4			0.010	0.005	0.075	0.090	0.018	0.020		0.5	0.5	73		1.3				1.00		0.50		10.0	80		
LP-10	Lakes Park (#10 Beach)	8/25/98	32.0	8.3	527	9.5			0.010	0.005	0.965	0.980	0.002	0.005		0.5	0.6	77		0.5				1.00		0.50		5.0	5		
LP-10	Lakes Park (#10 Beach)	9/29/98	30.0	7.8	480	7.6			0.010	0.010	-0.010	0.010	0.001	0.005		1.0	0.3	71		1.2				1.00		0.50		5.0	5		
LP-10	Lakes Park (#10 Beach)	10/26/98	26.0	8.0	471	8.6			0.010	0.005	0.885	0.900	0.001	0.025		2.0	0.6	75		1.1				1.00		0.50		5.0	10		
LP-10	Lakes Park (#10 Beach)	11/30/98	25.0	7.8	452	7.6			0.050	0.005	0.165	0.220	0.001	0.025		0.5	0.4	70		1.2				1.00		0.50		5.0	10		
LP-10	Lakes Park (#10 Beach)	12/29/98	24.0	7.8	458	8.0			0.010	0.005	1.565	1.580	0.001	0.025		1.0	0.4	68		0.5				1.00		0.50		5.0	5		
LP-10	Lakes Park (#10 Beach)	1/28/99	23.0	8.0	442	8.7			0.010	0.005	-0.010	0.005	0.001	0.025		2.0	0.4	65		0.5				1.00		0.50		5.0	20		
LP-10	Lakes Park (#10 Beach)	2/24/99	20.0	8.2	450	8.7			0.010	0.005	0.105	0.120	0.004	0.230		3.0	0.6	70		0.5				1.00		0.50		5.0	20		
LP-10	Lakes Park (#10 Beach)	3/30/99	27.0	8.5	345	9.6			0.010	0.005	0.755	0.770	0.001	0.025		3.0	0.6	78		0.8				1.00		0.50		5.0	5		
LP-10	Lakes Park (#10 Beach)	4/27/99	30.0	8.8	435	8.5			0.010	0.010	0.780	0.800	0.001	0.150		2.0	0.6	129		0.8				1.00		8.00		10.0	5		
LP-10	Lakes Park (#10 Beach)	5/20/99	30.0	8.3	677	8.0			0.010	0.005	1.895	1.910	0.001	0.025		1.0	0.4	155		0.8				6.00		1.00		10.0	10		
LP-10	Lakes Park (#10 Beach)	6/29/99	30.0	8.2	1,140	7.2			0.010	0.005	0.255	0.270	0.001	0.025		2.0	0.4	325		0.8				1.00		4.00		10.0	20		
LP-10	Lakes Park (#10 Beach)	7/27/99	32.0	8.0	1,130	7.4			0.080	0.005	0.125	0.210	0.002	0.080		2.0	0.6	219		0.8				1.00		1.00		10.0	50		
LP-10	Lakes Park (#10 Beach)	8/26/99	32.0	8.0	823	7.7			0.020	0.005	1.025	1.050	0.001	0.150		2.0	0.6	144		0.8				1.00		1.00		10.0	10		
LP-10	Lakes Park (#10 Beach)	10/6/99	27.0	7.6	617	2.7			0.010	0.040	0.850	0.900	0.008	0.025		2.0	0.5	97		0.8				1.00		1.00		5.0	5		
LP-10	Lakes Park (#10 Beach)	7/25/00	30.0	8.3	1,720	7.5			0.020	0.010	2.140	2.170	0.012	0.200		5.0	0.5	443		2.5				1.00		3.00		5.0	5		
LP-10	Lakes Park (#10 Beach)	9/21/00	30.0	7.9	1,100	8.1			0.040	0.005	1.385	1.430	0.023	0.025		5.0	2.2	220		3.4				0.50		0.50		5.0	50		
LP-10	Lakes Park (#10 Beach)	11/15/01	22.1	7.8	727	7.7			0.005	0.070	0.815	0.890	0.003	0.070		0.5	0.7	121		0.8				0.50		0.50		5.0	30		10
LP-10	Lakes Park (#10 Beach)	12/19/01	20.0	7.8	704	6.6			0.010	0.010	0.710	0.730	0.003	0.025	23	1.0	0.6	122	168	1.5				13.00		0.50		10.0	70		20
LP-10	Lakes Park (#10 Beach)	1/28/02	23.6	7.8	759	8.4			0.010	0.005	2.025	2.040	0.005	0.025	19	1.0	0.6	120		2.1				0.50		0.50		5.0	50		5
LP-10	Lakes Park (#10 Beach)	2/27/02	19.4	8.6	709	9.8			0.010	0.010	0.400	0.420	0.005	0.025	67	75.0	0.9	133		3.5				0.50		0.50		5.0	5		2,000
LP-10	Lakes Park (#10 Beach)	3/26/02	26.9	8.8	664	7.9			0.020	0.005	0.705	0.730	0.022	0.060	21	6.0	0.9	138	122	0.8				3.00		0.50		5.0	5		5
LP-10	Lakes Park (#10 Beach)	4/11/02	26.9	9.1	741	7.7			0.010	0.010	0.840	0.860	0.003	0.025	19	2.0	0.7	139		1.6				0.50		0.50		5.0	20		40
LP-10	Lakes Park (#10 Beach)	5/21/02	27.2	8.5	2,130	5.5			0.060	0.010	0.760	0.830	0.003	0.025	22	2.0	0.9	474	252	1.8				3.00		0.50		5.0	20		20
LP-10	Lakes Park (#10 Beach)	6/6/02	30.3	8.6	3,071	5.2			0.100	0.010	0.980	1.090	0.003	0.025	24	0.5	0.7	800	388	2.5				0.50		0.50		10.0	10		5
LP-10	Lakes Park (#10 Beach)	7/16/02	33.0	8.4	3,380	3.6			0.020	0.010	0.790	0.820	0.008	0.140	32	49.0	2.5	950	470	3.2				1.00		1.00		5.0	20		5
LP-10	Lakes Park (#10 Beach)	8/20/02	32.0	7.6	3,260				0.005	0.005	1.080	1.090	0.003	0.070	26	3.0	1.2	819	450	1.8				0.50		0.50		10.0	5		
LP-10	Lakes Park (#10 Beach)	9/26/02	30.4	7.8	2,720				0.110	0.005	-0.110	0.005	0.003	0.030	33	4.5	2.4	565	412	3.1				0.50		0.50		5.0	30		5
LP-10	Lakes Park (#10 Beach)	10/10/02	30.4	7.9	148	7.2			0.130	0.020	1.280	1.430	0.005	0.030	32	6.0	2.2	64	354	3.2				0.50		2.00		10.0	5		10
LP-10	Lakes Park (#10 Beach)	11/20/02	20.9	7.9	2,910	8.2			0.560	0.020	0.990	1.570	0.003	0.030	34	7.0	2.6	523		3.2				0.50		0.50		5.0	40		20
LP-10	Lakes Park (#10 Beach)	12/23/02	18.6	7.8	2,032	8.6			1.630	0.050	0.850	2.530	0.003	0.030	19	4.0	1.4	418	304	2.5				0.50		0.50		10.0	20		20

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-10	Lakes Park (#10 Beach)	1/9/03	17.2	7.8	2,032	8.1			1.600	0.100	1.220	2.920	0.003	0.030	18	11.0	2.1	463	456	2.4				0.50		0.50		5.0	30		10
LP-10	Lakes Park (#10 Beach)	2/13/03	20.1	7.8	1,972	7.9			1.590	0.120	0.840	2.550	0.011	0.015	20	4.5	1.1	473	342	3.2				0.50		0.50		5.0	10		5
LP-10	Lakes Park (#10 Beach)	3/13/03	27.1	7.9	2,237	8.9			0.360	0.150	1.680	2.190	0.009	0.041	32	6.8	1.3	449	350	2.7				0.50		1.00		10.0	10		30
LP-10	Lakes Park (#10 Beach)	4/17/03	27.0	8.0	2,284	8.2			0.170	0.030	1.650	1.850	0.003	0.080	37	1.2	2.8	533	326	3.7		0.38		303.00		0.50		10.0	5		5
LP-10	Lakes Park (#10 Beach)	5/1/03	26.9	8.3	2,519	8.5			0.020	0.030	1.090	1.140	0.003	0.019	24	2.5	2.7	550	318	2.9		0.38		0.50		0.50		10.0	30		20
LP-10	Lakes Park (#10 Beach)	6/23/03	27.1	7.7	1,949	6.4			0.010	0.030	0.750	0.790	0.003	0.005	18	3.0	1.9	400		2.0		0.38		0.50		0.50		5.0	100		290
LP-10	Lakes Park (#10 Beach)	7/22/03	32.4	8.0	2,010	9.4			0.010	0.020	0.690	0.720	0.003	0.030	22	1.2	0.8	467		2.8		0.38		0.50		0.50		5.0	10		40
LP-10	Lakes Park (#10 Beach)	8/5/03	31.7	8.0	1,879	9.0			0.005	0.050	0.885	0.940	0.003	0.031	24	3.2	0.9	406		2.5		0.38		0.50		0.50		5.0	110		30
LP-10	Lakes Park (#10 Beach)	9/8/03	31.3	8.2	1,310	7.2			0.041	0.010	1.169	1.220	0.006	0.018	19	2.8	1.2	263		2.4		0.38		0.50		0.50		5.0	20		5
LP-10	Lakes Park (#10 Beach)	10/28/03	27.1	7.8	935	7.4			0.005	0.010	0.595	0.610	0.009	0.017	12	5.5	1.6	139		2.6		0.38		0.50		0.50		5.0	320		50
LP-10	Lakes Park (#10 Beach)	11/13/03	25.7	7.7	789	8.0			0.013	0.020	0.567	0.600	0.005	0.021	25	8.5	2.5	135		4.7		0.38		0.50		0.50		5.0	10		5
LP-10	Lakes Park (#10 Beach)	12/2/03	19.6	7.6	856	7.7			0.010	0.030	0.760	0.800	0.008	0.028	34	5.0	2.3	148		3.9		0.38		0.50		0.50		5.0	10		5
LP-10	Lakes Park (#10 Beach)	1/22/04	17.9	7.6	878	7.5			0.025	0.170	0.685	0.880	0.008	0.030	25	6.5	0.6	139		1.5		0.25		0.50		1.00		5.0	60		10
LP-10	Lakes Park (#10 Beach)	2/19/04	17.3	7.3	862	5.3			0.074	0.130	0.776	0.980	0.019	0.051	22	1.2	0.5	149		0.5		0.25		0.50		1.00		5.0	5		5
LP-10	Lakes Park (#10 Beach)	3/18/04	21.5	7.9	706	6.2			0.025	0.005	0.385	0.415	0.008	0.029	25	3.5	1.9	91	210	2.9		0.25		0.50		0.50		20.0	10		20
LP-10	Lakes Park (#10 Beach)	4/13/04	24.7	7.9	835	4.6			0.028	0.005	0.557	0.590	0.015	0.010	21	5.3	0.6	151		2.2		0.25		0.50		0.50		5.0	60		20
LP-10	Lakes Park (#10 Beach)	5/17/04	26.3	7.9	585	6.2			0.004	0.020	0.386	0.410	0.004	0.029	15	1.2	0.6	111		1.3		0.25		0.50		0.50		5.0	30		10
LP-10	Lakes Park (#10 Beach)	6/9/04	30.0	7.7	861	3.9			0.152	0.040	0.648	0.840	0.004	0.026	21	2.0	1.1	154	176	0.7		0.25		3.00		0.50		5.0	140		1,300
LP-10	Lakes Park (#10 Beach)	7/27/04	30.2	7.2	601	6.3			0.031	0.005	0.441	0.477	0.004	0.010	18	1.2	0.3	108		0.6		0.25		0.50		0.50		5.0	120		60
LP-10	Lakes Park (#10 Beach)	8/10/04	28.1	7.2	673	3.6			0.045	0.020	0.455	0.520	0.013	0.022	18	1.2	0.2	99		0.6		0.25		0.50		0.50		5.0	5		5
LP-10	Lakes Park (#10 Beach)	9/15/04	28.6	7.8	690	7.3			0.052	0.020	0.798	0.870	0.004	0.020	25	3.2	1.9	115		2.8		0.25		0.50		0.50		5.0	5		5
LP-10	Lakes Park (#10 Beach)	10/11/04	27.2	8.1	744	7.7			0.049	0.020	1.171	1.240	0.004	0.038	21	23.0	6.0	122	192	2.9		0.25		1.20		1.30		5.0	140		60
LP-10	Lakes Park (#10 Beach)	11/29/04	23.6	7.9	1,010	8.5			0.078	0.020	1.332	1.430	0.004	0.028	19	6.0	2.3	188	244	1.0		0.25		1.50		0.50		5.0	20		5
LP-10	Lakes Park (#10 Beach)	12/15/04	17.1	7.8	1,180	10.3			0.089	0.005	1.246	1.340	0.011	0.010	20	4.5	6.0	256		2.1		0.25		0.50		0.50		5.0	20		5
LP-10	Lakes Park (#10 Beach)	1/12/05	23.3	8.1	1,220	9.1			0.099	0.030	1.471	1.600	0.004	0.044	19	17.5	6.0	281		2.6		0.25		0.50		0.50		5.0	100		70
LP-10	Lakes Park (#10 Beach)	2/10/05	21.1	8.2	1,435	9.9			0.038	0.005	1.357	1.400	0.019	0.060	17	19.5	1.8	303		3.6		0.25		0.50		0.50		2.0	440		70
LP-10	Lakes Park (#10 Beach)	3/16/05	25.0	8.3	1,620	11.5			0.007	0.010	1.184	1.200	0.004	0.030	16	27.3	3.2	396	274	3.6		0.20		6.70		0.50		2.0	30		10
LP-10	Lakes Park (#10 Beach)	4/18/05	23.2	8.2	1,550	11.3			0.007	0.010	1.784	1.800	0.004	0.080	24	22.0	14.6	338		6.8		0.20		0.50		0.50		2.0	30		10
LP-10	Lakes Park (#10 Beach)	5/5/05	25.8	8.1	1,320	6.9			0.007	0.010	3.484	3.500	0.008	0.090	25	22.0	9.1	332		5.4		0.20		0.50		0.50		2.0	50		70
LP-10	Lakes Park (#10 Beach)	6/23/05	28.6	8.1	1,048	7.2			0.007	0.005	2.089	2.100	0.004	0.030	23	16.0	5.7	218		3.2		0.20		0.50		0.50		5.0	50		10
LP-10	Lakes Park (#10 Beach)	7/21/05	32.0	8.2	918	9.0			0.017	0.010	1.373	1.400	0.002	0.050	25	11.3	4.9	159		2.9		0.20		0.50		0.50		5.0	110		5
LP-10	Lakes Park (#10 Beach)	8/18/05	33.2	7.9	833	11.0			0.007	0.005	1.389	1.400	0.002	0.050	19	14.5	4.9	148		3.2		0.20		0.50		0.50		5.0	160		5
LP-10	Lakes Park (#10 Beach)	9/8/05	30.8	7.6	821	10.0			0.033	0.010	1.557	1.600	0.004	0.050	23	17.2	6.2	145		4.0		0.20		0.50		0.50		5.0	10		5
LP-10	Lakes Park (#10 Beach)	10/6/05	28.7	8.3	801	8.8			0.027	0.010	2.163	2.200	0.002	0.060	22	34.3	5.2	140		4.2		0.20		0.50		0.50		5.0	160		5
LP-10	Lakes Park (#10 Beach)	11/1/05	22.9	8.1	734	8.9			0.020	0.005	1.175	1.200	0.002	0.040	21	9.5	4.8	122		3.6		0.20		0.50		0.50		5.0	90		40
LP-10	Lakes Park (#10 Beach)	12/20/05	20.1	7.8	761	7.7			0.070	0.020	1.610	1.700	0.002	0.060	20	13.0	3.8	118		3.4		0.20		0.50		0.50		5.0	30		30
LP-10	Lakes Park (#10 Beach)	1/18/06	18.9	7.7	801	9.4			0.019	0.005	1.776	1.800	0.002	0.050	17	41.8	4.4	125		3.5		0.20		0.50		0.50		5.0	80		5
LP-10	Lakes Park (#10 Beach)	2/16/06	17.7	7.9	935	10.9			0.007	0.005	1.289	1.300	0.002	0.060	20	15.0	4.4	175		3.8		0.20		0.50		0.50		5.0	10		10
LP-10	Lakes Park (#10 Beach)	3/22/06	26.5	7.8	1,300	9.1			0.007	0.020	1.754	1.780	0.002	0.060	20	20.0	6.0	270		3.8		0.20		0.50		0.50		5.0	30		5
LP-10	Lakes Park (#10 Beach)	4/17/06	27.1	8.4	2,060	9.9			0.024	0.010	1.836	1.870	0.002	0.060	30	21.0	9.3	368		4.0		0.20		0.50		0.50		5.0	70		60
LP-10	Lakes Park (#10 Beach)	5/3/06	26.4	8.6	2,950	10.1			0.024	0.010	1.636	1.670	0.002	0.060	46	24.0	7.2	755		3.5		0.20		0.50		0.50		5.0	40		10
LP-10	Lakes Park (#10 Beach)	6/5/06	32.6	8.6	5,080	10.7			0.029	0.020	2.301	2.350	0.005	0.080	61	17.5	10.6	1,450		6.1		0.20		0.50		0.50		5.0	30		10
LP-10	Lakes Park (#10 Beach)	7/19/06	31.6	8.1	5,900	8.3			0.031	0.005	1.534	1.570	0.002	0.050	57	17.0	3.9	1,760		2.1		0.15		0.50		0.50		5.0	40		5
LP-10	Lakes Park (#10 Beach)	8/8/06	31.2	8.3	4,950	6.8			0.027	0.010	1.373	1.410	0.002	0.040	23	8.5	3.6	1,240		2.9		0.15		0.50		0.50		5.0	10		5
LP-10	Lakes Park (#10 Beach)	9/25/06	31.1	8.2	3,940	8.9			0.022	0.005	1.283	1.310	0.002	0.060	27	7.3	6.3	848		3.2		0.15		0.50		0.50		2.5	340		10
LP-10	Lakes Park (#10 Beach)	10/17/06	26.8	8.0	3,610	8.3			0.007	0.010	1.693	1.710	0.002	0.050	63	14.0	6.9	648		3.2		0.15		0.50		0.50		2.5	10		5
LP-10	Lakes Park (#10 Beach)	11/20/06	20.6	8.2	3,430	8.6			0.007	0.020	1.993	2.020	0.002	0.060	55	14.5	9.8	1,190		3.3		0.15		0.50		0.50		2.5	30		20
LP-10	Lakes Park (#10 Beach)	12/4/06	24.4	8.4	3,280	9.9			0.007	0.010	1.693	1.710	0.002	0.060	35	13.3	5.6	840		4.4		0.15		0.50		0.50		2.5	250		60
LP-10	Lakes Park (#10 Beach)	1/9/07	23.1	8.2	3,450	7.4			0.018	0.010	1.782	1.810	0.005	0.075	63	13.5	10.9	860		1.8		0.15		0.50		0.50		2.5	60		20
LP-10	Lakes Park (#10 Beach)	2/19/07	16.4	8.5	3,830	9.6			0.007	0.005	1.598	1.610	0.002	0.088	23	14.3	7.0	832		4.4		0.15		0.50		0.50		2.5	50		40
LP-10	Lakes Park (#10 Beach)	3/1/07	24.3	8.3	3,840	8.9			0.007	0.005	1.198	1.210	0.002	0.100	21	25.3	5.2	891		4.2		0.15		0.50		0.50		2.5	20		5
LP-10	Lakes Park (#10 Beach)	4/23/07	25.0	8.2	4,790	11.1			0.026	0.010	1.474	1.510	0.005	0.062	17	21.8	10.4	1,230		3.4		0.15		0.50		0.50		2.5	10		10
LP-10	Lakes Park (#10 Beach)	5/24/07	26.9	8.2	4,620	7.7			0.067	0.010	1.633	1.710	0.007	0.054	22	12.0	11.9	1,500		4.3		0.15		0.50		0.50		2.5	10		5
LP-10	Lakes Park (#10 Beach)	6/21/07	32.5	7.8	5,230	8.4			0.007	0.010	1.493	1.510	0.002	0.056	12	11.8	7.2	1,810	35	3.1		0.15		1.32		0.50		2.5	150		30
LP-10	Lakes Park (#10 Beach)	7/23/07	29.7	8.0	5,810	7.6			0.007	0.010	1.483	1.500	0.002	0.043	16	17.3	5.7	1,780		2.2		0.15		0.50		0.50		2.5	90		380
LP-10	Lakes Park (#10 Beach)	8/28/07	30.9	8.3	4,930	6.8			0.007	0.010	1.383	1.400	0.002	0.044	16	7.0	5.5	1,330		4.9		0.15		0.50		0.50		2.5	220		110
LP-10	Lakes Park (#10 Beach)	9/25/07	29.4	8.2	4,330	8.3			0.007	0.010	1.383	1.400	0.002	0.037	17	6.8	5.1	1,240		4.1		0.15		0.50		0.50		2.5	60		30
LP-10	Lakes Park (#10 Beach)	10/22/07	29.6	8.3	4,850	6.1			0.024	0.005	1.571	1.600	0.002	0.049	13	23.9	8.7	1,250		4.5		0.15		0.50		0.50		2.5	50		40
LP-10	Lakes Park (#10 Beach)	11/13/07	23.1	8.5	4,990	9.6			0.061	0.010	2.629	2.700	0.002	0.060	17	14.4	1.4	1,230		4.7		0.15		0.50		0.50		2.5	5		5
LP-10	Lakes Park (#10 Beach)	12/4/07	24.6	8.4	4,880	7.8			0.007	0.005	1.988	2.000	0.002	0.050	15	10.9	8.0	1,240		3.9		0.15		0.50		0.50		2.5	10		5
LP-10	Lakes Park (#10 Beach)	1/15/08	20.0	8.5	4,610	10.8			0.007	0.005	1.588	1.600	0.004	0.071	16	70.7	7.2	1,280		5.5		0.15		0.50		0.50		2.5	10		5
LP-10	Lakes Park (#10 Beach)	2/19/08	23.8	8.3	4,690	8.5			0.056	0.030	1.814	1.900	0.002	0.075	16	20.4	6.4	1,190	604	5.0		0.15		1.02		0.50		2.5	2,001		70
LP-10	Lakes Park (#10 Beach)	3/27/08	21.8	8.4	4,730	8.5			0.007	0.010	1.783	1.800	0.002	0.072	19	15.6	8.1	1,330		6.5		0.15		0.50		0.50		2.5	10		5
LP-10	Lakes Park (#10 Beach)	4/15/08	24.3	8.3	4,180	7.0			0.045	0.005	1.450	1.500	0.004	0.050	17	24.1	13.9	1,170		5.4		0.15		0.50		0.50		2.5	30		10
LP-10	Lakes Park (#10 Beach)	5/19/08	29.9	8.3	5,010	7.1			0.051	0.010	1.839	1.900	0.002	0.052	10	17.9	8.7	1,170		3.9		0.15		0.50		0.50		2.5	210		40
LP-10	Lakes Park (#10 Beach)	6/25/08	30.4	8.1	4,760	5.6			0.015	0.020	1.465	1.500	0.002	0.047	15	10.6	7.7	1,230		4.6		0.15		0.50		0.50		2.5	140		130
LP-10	Lakes Park (#10 Beach)	7/23/08	30.9	7.9	3,670	5.5			0.007	0.020	1.473	1.500	0.005	0.051	26	7.8	7.9	964		5.4		0.15		0.50		0.50		2.5	110		5
LP-10	Lakes Park (#10 Beach)	8/27/08	31.3	8.4	3,090	9.3			0.007	0.005	1.088	1.100	0.002	0.037	24	5.1	4.4	758		3.9		0.15		0.50		0.50		2.5	280		20
LP-10	Lakes Park (#10 Beach)	9/9/08	30.0	8.2	3,350	6.1			0.007	0.010	1.283	1.300	0.002	0.039	21	7.6	5.4	733	308	4.8		0.15		2.28		0.50		2.5	90		10
LP-10	Lakes Park (#10 Beach)	10/29/08	22.1	8.2	2,440	8.6			0.077	0.005	1.318	1.400	0.002	0.040	23	5.8	6.4	558		3.6		0.15		0.50		0.50		2.5	40		5
LP-10	Lakes Park (#10 Beach)	11/24/08	18.4	8.2	2,260	8.9			0.023	0.005	1.072	1.100	0.002	0.053	20	9.5	4.3	574	360	3.2		0.15		0.25		0.50		0.5	10		10
LP-10	Lakes Park (#10 Beach)	12/10/08	20.0	8.2	2,370	9.4			0.007	0.020	1.273	1.300	0.002	0.066	19	16.0	4.9	573	353	3.1		0.15		4.04		0.25		2.1	20		5

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-10	Lakes Park (#10 Beach)	1/12/09	21.2	8.4	2,340	6.9			0.018	0.010	1.572	1.600	0.005	0.082	21	17.1	6.3	560	392	4.8		0.15		2.97		0.25		0.5	30		5
LP-10	Lakes Park (#10 Beach)	2/11/09	19.3	7.8	2,380	12.0			0.027	0.010	1.363	1.400	0.008	0.073	16	20.4	8.7	598	390	5.3	5.6	0.15	0.25	3.57		0.25	1.5	0.5	20		10
LP-10	Lakes Park (#10 Beach)	3/23/09	23.0	8.2	2,290	8.9			0.014	0.005	-0.019		0.002	0.093	21	18.1	11.8	628	382	6.7	9.0	0.15	0.25	4.74		0.25	1.6	1.5	220		10
LP-10	Lakes Park (#10 Beach)	4/22/09	26.2	8.0	2,530	9.0			0.017	0.005	2.078	2.100	0.002	0.070	20	18.2	11.3	723	297	6.7	10.3	0.15	0.25	5.78		0.25	1.7	0.5	100		170
LP-10	Lakes Park (#10 Beach)	5/19/09	26.7	8.4	3,100	8.0			0.007	0.005	2.188	2.200	0.002	0.058	24	20.7	14.2	788	433	5.6	2.5	0.15	0.25	4.40		0.25	1.3	0.5	211		80
LP-10	Lakes Park (#10 Beach)	6/15/09	32.8	8.5	3,350	7.7			0.017	0.013	2.570	2.600	0.002	0.038	20	13.5	9.0	854	431	5.1	6.7	0.15	0.25	8.90		0.25	1.0	4.7	250		40
LP-10	Lakes Park (#10 Beach)	7/29/09	30.6	8.4	2,930	7.8		164	0.007	0.005	1.888	1.900	0.002	0.039	21	10.6	7.3	707	434	4.7	7.2	0.15	0.25	2.68		0.25	0.4	1.1	30		5
LP-10	Lakes Park (#10 Beach)	8/31/09	31.3	8.5	2,620	8.1		165	0.007	0.005	1.388	1.400	0.002	0.034	20	7.6	5.7	618	411	3.9	2.5	0.15	0.25	2.83		0.25	1.2	0.5	80		5
LP-10	Lakes Park (#10 Beach)	9/23/09	30.5	8.3	2,180	7.3		162	0.007	0.005	1.288	1.300	0.002	0.022	18	7.9	4.4	523	366	3.0	5.1	0.15	0.25	3.18		0.25	1.3	0.5	494		5
LP-10	Lakes Park (#10 Beach)	10/26/09	26.1	8.5	2,110	8.3		179	0.007	0.005	1.988	2.000	0.002	0.038	18	9.6	5.3	492	362	4.5	5.7	0.15	0.25	2.07		0.25	1.5	0.5	3		8
LP-10	Lakes Park (#10 Beach)	11/30/09	20.5	8.5	2,120	9.5		192	0.007	0.014	2.279	2.300	0.005	0.063	18	13.5	7.1	495	208	4.5	2.5	0.15	0.25	2.55		0.25	1.2	0.5	3		9
LP-10	Lakes Park (#10 Beach)	12/28/09	19.7	8.5	1,860	9.9		192	0.007	0.010	2.283	2.300	0.005	0.056	19	13.5	5.9	486	363	4.4	2.5	0.15	0.25	1.43		0.25	1.5	0.5	38		60
LP-10	Lakes Park (#10 Beach)	1/26/10	20.6	8.5	1,980	10.7		182	0.007	0.005	2.388	2.400	0.012	0.083	18	15.7	6.8	483	384	5.4	2.5	0.15	0.25	1.88		0.25	1.8	5.0	94		67
LP-10	Lakes Park (#10 Beach)	2/25/10	18.6	8.5	1,920	10.0		177	0.007	0.005	1.588	1.600	0.002	0.042	18	19.1	10.1	482	366	6.1	5.3	0.15	0.25	1.11		0.25	0.4	0.5	94		66
LP-10	Lakes Park (#10 Beach)	3/29/10	22.4	8.5	1,690	8.8		159	0.007	0.010	2.983	3.000	0.002	0.098	18	20.3	9.8	430	319	5.6	2.5	0.15	0.25	2.07		0.25	1.4	0.5	1,483		800
LP-10	Lakes Park (#10 Beach)	4/22/10	26.2	8.6	1,820	11.1		155	0.007	0.005	1.388	1.400	0.005	0.035	15	31.5	15.1	414	303	5.7	2.5	0.15	0.25	1.92	0.01	0.25	1.0	2.0	113		20
LP-10	Lakes Park (#10 Beach)	5/19/10	29.3	8.3	1,810	8.2		152	0.007	0.010	1.683	1.700	0.004	0.014	16	15.2	6.9	418	303	4.8	5.3	0.15	0.74	1.22	0.00	0.25	0.9	0.5	400		370
LP-10	Lakes Park (#10 Beach)	6/21/10	31.0	8.6	1,780	9.7		134	0.007	0.010	2.683	2.700	0.002	0.019	24	21.6	12.3	425	285	7.8	2.5	0.15	0.25	3.04	0.00	0.25	1.1	0.5	369		60
LP-10	Lakes Park (#10 Beach)	7/29/10	31.2	8.5	1,600	9.3		133	0.007	0.010	1.683	1.700	0.004	0.009	25	14.6	9.4	378	289	7.3	6.4	0.15	0.25	1.91	0.01	0.25	1.2	0.5	1,160		107
LP-10	Lakes Park (#10 Beach)	8/31/10	29.6	8.5	1,430	9.0		135	0.023	0.005	1.972	2.000	0.005	0.021	27	16.0	7.7	329	275	6.9	7.9	0.15	0.25	1.41	0.01	0.25	1.0	1.2	593		
LP-10	Lakes Park (#10 Beach)	9/15/10	29.9	8.4	1,290	7.7		128	0.007	0.010	1.883	1.900	0.004	0.014	28	15.0	6.3	272	249	5.5	2.5	0.15	0.25	1.56	0.01	0.25	0.8	1.1	780		140
LP-10	Lakes Park (#10 Beach)	10/28/10	27.8	8.3	1,330	9.8		151	0.022	0.005	1.373	1.400	0.002	0.025	27	12.4	7.2	246	272	6.0	2.5	0.15	0.25	0.78	0.00	0.25	0.4	0.5	200		28
LP-10	Lakes Park (#10 Beach)	11/15/10	21.5	8.4	1,230	11.3		155	0.007	0.010	0.963	0.980	0.004	0.023	25	14.1	7.7	277	275	5.5	2.5	0.15	0.25	0.25	0.00	0.25	0.9	1.2	200		330
LP-10	Lakes Park (#10 Beach)	12/13/10	15.9	8.5	1,210	10.6		170	0.007	0.005	1.388	1.400	0.002	0.019	26	20.8	8.1	278	290	7.5	2.5	0.15	0.25	2.15	0.00	0.25	1.2	0.5	2,500		148
LP-10	Lakes Park (#10 Beach)	1/27/11	17.6	8.3	1,240	10.5		161	0.007	0.005	1.288	1.300	0.002	0.026	24	22.5	11.3	276	270	7.4	2.5	0.15	0.25	1.30	0.00	0.25	1.1	0.5	250		159
LP-10	Lakes Park (#10 Beach)	2/23/11	25.8	8.5	1,230	12.6		141	0.028	0.005	2.367	2.400	0.002	0.031	19	20.5	13.2	308	260	6.7	2.5	0.15	0.25	1.41	0.01	0.25	1.1	0.5	44		42
LP-10	Lakes Park (#10 Beach)	3/23/11	24.1	8.4	1,290	10.9		123	0.023	0.005	2.472	2.500	0.002	0.037	22	26.3	24.9	328	245	7.5	5.1	0.15	0.25	1.76	0.01	0.25	1.0	0.5	573		480
LP-10	Lakes Park (#10 Beach)	4/14/11	26.6	8.8	1,290	9.8		109	0.017	0.014	2.069	2.100	0.004	0.040	20	32.6	17.9	290	229	7.7	2.5	0.15	0.25	1.79	0.01	0.25	0.9	0.5	360		131
LP-10	Lakes Park (#10 Beach)	5/5/11	28.1	8.6	1,250	7.8		118	0.076	0.005	2.019	2.100	0.002	0.033	18	32.9	29.9	304	240	7.7	2.5	0.15	0.25	2.06	0.01	0.25	0.8	1.0	367		25
LP-10	Lakes Park (#10 Beach)	6/14/11	31.6	8.4	1,580	9.3		109	0.058	0.005	2.237	2.300	0.002	0.040	32	27.7	17.7	334	246	7.7	11.7	0.15	0.25	1.09	0.01	0.25	0.8	0.5	260		46
LP-10	Lakes Park (#10 Beach)	7/14/11	31.2	8.8	1,330	10.0		117	0.034	0.056	1.910	2.000	0.002	0.029	24	25.8	16.2	290	248	8.3	5.8	0.15	0.25	3.27	0.02	0.25	0.9	0.5	433		60
LP-10	Lakes Park (#10 Beach)	8/11/11	29.4	8.0	1,170	5.8		134	0.007	0.005	2.688	2.700	0.002	0.050	23	14.2	10.2	220	240	4.3	15.6	0.15	0.25	1.01	0.02	0.25	0.4	0.5	3,800		138
LP-10	Lakes Park (#10 Beach)	9/15/11	30.7	7.9	866	6.9		149	0.007	0.005	1.088	1.100	0.002	0.010	23	9.3	5.8	144	245	4.4	14.3	0.15	0.25	1.53	0.02	0.25	1.7	0.5	56		10
LP-10	Lakes Park (#10 Beach)	10/13/11	27.9	8.3	703	8.2		148	0.036	0.005	1.159	1.200	0.004	0.009	22	8.0	5.1	104	236	4.5	13.3	0.15	0.25	0.94	0.02	0.25	1.6	0.5	340		16
LP-10	Lakes Park (#10 Beach)	11/29/11	22.8	8.4	662	9.4		165	0.007	0.005	1.188	1.200	0.002	0.026	24	10.6	5.3	89	228	4.0	13.9	0.15	0.68	1.04	0.02	0.25	1.4	0.5	38		22
LP-10	Lakes Park (#10 Beach)	12/21/11	20.6	8.3	676	8.5		174	0.027	0.005	1.368	1.400	0.002	0.037	18	11.3	4.6	88	246	4.2	15.9	0.15	0.25	1.14	0.02	0.25	1.7	0.5	19		26
LP-10	Lakes Park (#10 Beach)	1/24/12	20.2	8.4	671	9.8		184	0.007	0.005	1.288	1.300	0.002	0.003	17	12.8	4.7	93	254	4.3	18.5	0.15	0.25	1.14	0.02	0.25	1.7	1.4	31		18
LP-10	Lakes Park (#10 Beach)	2/23/12	23.5	7.8	685	9.0		180	0.007	0.005	1.288	1.300	0.002	0.003	15	14.1	4.4	100	254	5.4	17.8	0.15	0.25	1.19	0.01	0.25	1.4	0.5	220		50
LP-10	Lakes Park (#10 Beach)	3/19/12	24.4	8.3	736	8.2		173	0.007	0.005	1.688	1.700	0.002	0.003	14	15.5	5.6	101	258	5.5	13.6	0.15	0.25	1.60	0.02	0.25	1.5	0.5	6		18
LP-10	Lakes Park (#10 Beach)	4/9/12	26.1	7.9	736	9.2		160	0.007	0.005	2.288	2.300	0.002	0.070	16	18.9	15.2	108	244	6.1	14.9	0.15	0.25	1.58	0.01	0.25	1.7	0.5	40		40
LP-10	Lakes Park (#10 Beach)	5/8/12	28.0	8.5	826	8.9		145	0.007	0.005	2.088	2.100	0.006	0.046	18	21.9	9.3	137	228	5.1	20.7	0.15	0.25	1.74	0.01	0.25	1.8	0.5	100		40
LP-10	Lakes Park (#10 Beach)	6/20/12	27.7	8.6	852	8.1	103	143	0.254	0.005	1.241	1.500	0.002	0.012	22	15.4	7.9	150	240	5.3	26.4	0.15	0.25	1.85	0.01	0.25	1.3	0.5	25		40
LP-10	Lakes Park (#10 Beach)	7/23/12	29.1	8.0	781	6.5	85	137	0.038	0.005	1.257	1.300	0.002	0.011	28	6.3	3.1	126	211	4.1	13.1	0.15	0.25	1.21	0.02	0.25	1.3	1.3	38		22
LP-10	Lakes Park (#10 Beach)	8/20/12	30.7	8.2	723	7.5	101	152	0.007	0.005	1.788	1.800	0.002	0.025	31	7.1	3.2	101	253	3.8	24.5	0.15	0.25	1.89	0.01	0.25	1.3	0.5	119		10
LP-10	Lakes Park (#10 Beach)	9/17/12	28.9	7.6	645	6.9	89	156	0.007	0.005	1.388	1.400	0.002	0.023	23	7.1	3.5	84	231	4.4	13.2	0.15	0.25	1.32	0.01	0.25	1.2	1.1	253		55
LP-10	Lakes Park (#10 Beach)	10/22/12	27.3	7.8	651	10.8	136	163	0.048	0.005	0.897	0.950	0.006	0.027	20	6.9	4.0	71	232	3.5	8.2	0.15	0.25	1.12	0.01	0.25	1.2	4.5	25		2
LP-10	Lakes Park (#10 Beach)	11/19/12	22.5	8.1	646	9.5	110	175	0.007	0.005	0.878	0.890	0.013	0.020	18	10.0	3.9	75	258	3.8	8.9	0.15	0.25	1.33	0.01	0.25	1.5	1.3	11		4
LP-10	Lakes Park (#10 Beach)	12/13/12	23.0	8.0	600	8.9	104	171	0.007	0.005	1.388	1.400	0.007	0.038	17	10.7	4.8	74	237	5.1	45.3	0.15	0.25	0.96	0.01	0.25	1.3	0.5	91		208
LP-10	Lakes Park (#10 Beach)	1/23/13	20.5	8.3	662	8.1	91	184	0.018	0.005	1.177	1.200	0.012	0.023	18	7.4	3.2	81	256	3.8	6.8	0.15	0.25	1.02	0.03	0.25	1.4	23.2	13		6
LP-10	Lakes Park (#10 Beach)	2/18/13	19.3	8.4	682	9.8	106	182	0.061	0.005	1.334	1.400	0.014	0.019	16	9.8	4.0	83	240	3.7	7.5	0.15	0.25	0.92	0.01	0.25	1.4	1.3	23		12
LP-10	Lakes Park (#10 Beach)	3/18/13	20.8	8.4	711	9.7	109	186	0.025	0.005	1.270	1.300	0.009	0.017	15	10.1	3.0	87	273	3.5	8.6	0.15	0.25	0.98	0.01	0.25	1.7	0.5	124		21
LP-10	Lakes Park (#10 Beach)	4/17/13	27.9	8.3	682	8.4	107	168	0.007	0.005	1.188	1.200	0.008	0.014	16	10.7	4.8	94	237	3.8	17.0	0.15	0.25	0.86	0.02	0.25	1.4	1.1	80		12
LP-10	Lakes Park (#10 Beach)	5/15/13	28.0	8.4	695	9.0	116	146	0.007	0.005	2.488	2.500	0.022	0.027	16	17.2	6.0	97	236	4.8	10.4	0.15	0.25	0.98	0.01	0.25	1.3	0.5	50		35
LP-10	Lakes Park (#10 Beach)	6/18/13	30.7	8.5	677	8.8	118	137	0.007	0.005	0.988	1.000	0.006	0.009	19	10.4	4.8	100	206	2.5	11.5	0.15	0.25	0.54	0.01	0.25	1.1	0.5	26		11
LP-10	Lakes Park (#10 Beach)	7/30/13	31.6	8.2	683	6.5	88	145	0.007	0.005	1.088	1.100	0.011	0.012	18	8.3	3.3	89	228	3.2	7.1	0.15	0.25	0.61	0.01	0.25	1.1	1.5	13		3
LP-10	Lakes Park (#10 Beach)	8/27/13	30.2	8.1	658	6.0	80	148	0.007	0.005	1.088	1.100	0.010	0.020	17	6.7	2.9	85	230	2.6	8.0	0.15	0.25	0.55	0.01	0.25	1.2	1.5	60		19
LP-10	Lakes Park (#10 Beach)	9/23/13	29.5	7.6	580	7.1	93	144	0.007	0.005	0.938	0.950	0.005	0.015	20	3.5	2.5	72	228	2.2	6.3	0.15	0.25	0.68	0.01	0.25	1.1	1.6	56		11
LP-10	Lakes Park (#10 Beach)	10/23/13	28.6	8.2	568	6.9	89	151	0.016	0.005	0.549	0.570	0.012	0.025	17	8.8	2.5	64	223	2.4	11.5	0.15	0.25	0.61	0.01	0.25	1.2	0.5	3		6
LP-10	Lakes Park (#10 Beach)	11/19/13	24.7	7.7	580	9.0	108	163	0.040	0.005	0.615	0.660	0.002	0.006	16	4.9	3.7	68	249	2.4	11.0	0.15	0.25	0.57	0.00	0.25	1.3	1.1	19		5
LP-10	Lakes Park (#10 Beach)	12/9/13	23.6	8.2	590	9.7	115	170	0.133	0.005	1.062	1.200	0.002	0.014	15	8.8	4.3	71	238	2.4	6.7	0.15	0.25	0.55	0.00	0.25	1.2	5.7	10		6
LP-10	Lakes Park (#10 Beach)	1/14/14	21.1	7.9	589	10.2	115	165	0.029	0.005	0.966	1.000	0.002	0.020	21	6.5	4.6	74	250	2.8	5.9	0.15	0.25	0.25	0.00	0.25	1.2	2.3	175		47
LP-10	Lakes Park (#10 Beach)	2/18/14	21.3	8.3	599	10.2	115	158	0.047	0.005	1.148	1.200	0.002	0.021	31	11.4	5.4	74	224	4.3	2.5	0.15	0.25	0.65	0.00	0.25	1.7	1.4	6		6
LP-10	Lakes Park (#10 Beach)	3/18/14	23.6	8.3	597	8.6	102	154	0.061	0.005	1.134	1.200	0.002	0.011	13	10.2	8.0	76	229	4.1	2.5	0.15	0.25	0.66	0.00	0.25	1.1	1.2	75		20
LP-10	Lakes Park (#10 Beach)	4/21/14	25.2	8.4	603	8.6	104	152	0.063	0.005	1.032	1.100	0.002	0.037	13	10.5	6.4	78	223	4.1	8.0	0.15	0.25	0.61	0.01	0.25	1.3	1.2	13		10
LP-10	Lakes Park (#10 Beach)	5/13/14	28.3	8.1	622	7.2	92	146	0.114	0.005	0.881	1.000	0.002	0.030	13	10.3	7.5	81	218	3.4	5.2	0.15	0.25	0.76	0.00	0.25	1.2	1.1	113		25
LP-10	Lakes Park (#10 Beach)	6/10/14	30.1	8.2	644	7.0	93	142	0.045	0.005	0.460	0.510	0.002	0.003	14	9.0	4.8	85	216	2.9	6.6	0.15	0.25	0.72	0.00	0.25	1.4	0.5	44		7
LP-10	Lakes Park (#10 Beach)	7/7/14	30.6	8.0	648	5.5	73	143	0.036	0.005	0.699	0.740	0.002	0.011	14	6.2	4.0	85	217	1.2	6.6	0.15	0.25	0.75	0.01	0.25	1.0	1.5	88		53
LP-10	Lakes Park (#10 Beach)	8/4/14	31.7	8.1	702	6.3	86	152	0.040	0.005	0.685	0.730	0.002	0.012	15	5.8	3.1	90	233	2.1	9.5	0.15	0.25	0.62	0.00	0.25	1.1	1.3	84		27
LP-10	Lakes Park (#10 Beach)	9/23/14	28.4	8.0	699	6.3	81	156	0.060	0.005	0.475	0.540	0.002	0.020	14	6.7	3.4	96	240	2.3	8.3	0.15	0.25	0.66	0.01	0.25	1.1	0.5	119		10
LP-10	Lakes Park (#10 Beach)	10/28/14	25.1	8.0	709	7.8	94	154	0.047	0.005	0.938	0.990	0.002	0.028	15	8.0	3.0	101	242	2.4	8.0	0.15	0.25	0.78	0.00	0.25	1.1	0.5	44		11
LP-10	Lakes Park (#10 Beach)	11/18/14	22.5	8.2	698	8.5	98	153	0.045	0.005	0.650	0.700	0.002	0.003	17	8.6	3.7	96	239	2.3	9.0	0.15	0.25	0.71	0.00	0.25	1.6	0.5	181		34
LP-10	Lakes Park (#10 Beach)	12/10/14	20.4	8.2	700	9.7	108	156	0.014	0.005	0.731	0.750	0.002	0.025	11	8.3	3.7	95	246	2.7	9.6	0.15	0.25	1.16	0.00	0.25	1.3	0.5	6		3

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-10	Lakes Park (#10 Beach)	1/5/15	24.2	8.2	704	9.2	110	181	0.028	0.005	0.587	0.620	0.002	0.016	31	13.8	7.7	108	259	3.3	6.7	0.15	0.25	0.85	0.00	0.25	1.3	0.5	94		13
LP-10	Lakes Park (#10 Beach)	2/9/15	19.1	8.2	684	10.1	110	173	0.037	0.005	0.708	0.750	0.002	0.020	65	10.2	6.2	114	254	3.1	8.2	0.15	0.25	0.75	0.01	0.25	2.5	0.5	107		86
LP-10	Lakes Park (#10 Beach)	3/18/15	26.1	8.4	680	8.6	106	162	0.026	0.005	0.949	0.980	0.002	0.039	14	12.8	7.6	112	243	3.1	6.5	0.15	0.25	0.71	0.00	0.25	1.2	4.7	119		68
LP-10	Lakes Park (#10 Beach)	4/14/15	28.1	8.2	702	7.8	100	159	0.007	0.005	0.478	0.490	0.002	0.018	17	4.9	3.9	114	247	2.3	16.4	0.15	0.25	0.25	0.00	0.25	1.0	0.5	44		28
LP-10	Lakes Park (#10 Beach)	5/13/15	28.8	8.2	701	7.8	101	152	0.007	0.005	0.738	0.750	0.002	0.020	17	5.8	4.9	121	226	2.6	7.5	0.15	0.25	0.82	0.00	0.25	0.9	1.0	63		84
LP-10	Lakes Park (#10 Beach)	6/11/15	29.3	8.3	682	7.8	103	137	0.007	0.005	1.188	1.200	0.002	0.039	14	6.0	3.8	115	204	1.7	13.3	0.15	0.25	0.90	0.03	0.25	0.9	0.5	138		111
LP-10	Lakes Park (#10 Beach)	7/9/15	30.7	8.1	667	6.9	92	120	0.007	0.005	0.618	0.630	0.002	0.003	15	2.9	2.6	53	197	1.1	10.7	0.15	0.25	0.90	0.00	0.25	0.9	0.5	25		9
LP-10	Lakes Park (#10 Beach)	8/11/15	31.2	7.9	683	5.8	78	130	0.040	0.005	0.835	0.880	0.002	0.034	19	4.8	2.1	110	213	1.5	2.5	0.15	0.25	0.72	0.01	0.25	0.9	0.5	280		121
LP-10	Lakes Park (#10 Beach)	9/24/15	29.9	7.8	626	6.7	89	146	0.007	0.005	0.838	0.850	0.007	0.016	20	3.6	1.4	91	234	1.4	2.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5	88		5
LP-10	Lakes Park (#10 Beach)	10/22/15	26.1	8.1	593	8.0	99	148	0.007	0.005	0.988	1.000	0.002	0.003	20	7.2	4.0	83	237	2.5	6.3	0.15	0.25	0.72	0.01	0.25	1.0	0.5	3		7
LP-10	Lakes Park (#10 Beach)	11/17/15	26.3	8.0	611	8.0	99	158	0.018	0.005	0.917	0.940	0.002	0.031	19	8.3	3.6	81	243	2.2	5.3	0.15	0.25	0.50	0.00	0.25	1.0	0.5	6		42
LP-10	Lakes Park (#10 Beach)	12/15/15	24.0	7.9	643	7.7	92	165	0.007	0.005	0.688	0.700	0.004	0.022	19	6.0	3.6	80	247	2.8	6.6	0.15	0.25	0.25	0.00	0.25	1.0	0.5	3		12
LP-10	Lakes Park (#10 Beach)	1/19/16	17.5	8.0	615	9.2	97	167	0.007	0.005	0.938	0.950	0.002	0.047	18	6.7	3.8	78	243	2.3	2.5	0.15	0.25	0.25	0.01	0.25	1.0	1.0	88		14
LP-10	Lakes Park (#10 Beach)	2/24/16	21.8	8.1	599	8.0	92	166	0.007	0.005	0.808	0.820	0.002	0.059	18	6.4	4.3	76	235	3.2	21.9	0.15	0.25	0.55	0.00	0.25	0.8	1.1	125		44
LP-10	Lakes Park (#10 Beach)	3/23/16	23.3	8.1	610	8.5	100	157	0.007	0.005	0.968	0.980	0.002	0.074	17	10.9	7.2	77	238	2.7	10.4	0.15	0.25	0.63	0.00	0.25	0.8	0.5	19		26
LP-10	Lakes Park (#10 Beach)	4/26/16	26.9	8.3	607	8.3	104	137	0.007	0.005	1.088	1.100	0.002	0.048	16	10.5	7.4	81	214	1.1	2.5	0.15	0.25	0.57	0.00	0.25	0.9	0.5	81		22
LP-10	Lakes Park (#10 Beach)	5/24/16	30.5	8.2	599	7.0	94	120	0.021	0.005	1.374	1.400	0.002	0.043	16	8.2	5.8	84	171	2.7	2.5	0.15	0.25	0.72	0.00	0.25	0.8	0.5	13		13
LP-10	Lakes Park (#10 Beach)	6/29/16	30.8	8.1	571	6.6	89	121	0.007	0.005	0.868	0.880	0.002	0.030	18	5.6	3.1	79	169	2.2	2.5	0.15	0.25	1.00	0.00	0.25	0.4	0.5	116		52
LP-10	Lakes Park (#10 Beach)	7/26/16	30.4	7.8	568	7.4	99	129	0.007	0.005	0.938	0.950	0.002	0.042	22	5.0	4.4	72	182	1.8	2.5	0.15	0.25	0.25	0.00	0.25	0.4	0.5		10	8
LP-10	Lakes Park (#10 Beach)	8/23/16	32.1	8.0	567	6.9	95	132	0.007	0.005	0.738	0.750	0.002	0.033	19	4.1	3.2	77	174	0.8	2.5	0.15	0.25	0.25	0.00	0.25	0.4	0.5		5	6
LP-10	Lakes Park (#10 Beach)	9/21/16	31.1	8.0	562	7.3	98	143	0.007	0.005	0.638	0.650	0.004	0.025	55	6.7	0.9	63	179	2.0	7.6	0.15	0.25	0.25	0.00	0.25	0.4	0.5		8	4
LP-10	Lakes Park (#10 Beach)	10/25/16	24.2	8.4	557	8.6	102	154	0.007	0.005	0.908	0.920	0.008	0.047	19	4.8	3.6	65	193	2.5	9.5	0.15	0.25	0.25	0.00	0.25	0.4	0.5		12	9
LP-10	Lakes Park (#10 Beach)	11/21/16	20.9	8.3	557	9.6	107	159	0.007	0.005	2.088	2.100	0.002	0.066	17	13.0	6.5	70	193	2.8	2.5	0.15	0.25	0.25	0.00	0.25	0.8	0.5		8	6
LP-10	Lakes Park (#10 Beach)	12/27/16	23.8	8.4	566	10.1	120	152	0.007	0.005	0.898	0.910	0.002	0.071	17	16.3	8.0	75	184	2.9	7.3	0.15	0.25	0.25	0.00	0.25	0.4	0.5		63	41
LP-10	Lakes Park (#10 Beach)	1/23/17	22.5	8.5	550	10.4	121	150	0.007	0.005	1.088	1.100	0.002	0.100	15	14.2	6.7	76	187	3.0	2.5	0.15	0.25	0.51	0.00	0.25	0.8	0.5		99	78
LP-10	Lakes Park (#10 Beach)	2/23/17	23.4	8.4	533	9.4	111	137	0.007	0.010	2.083	2.100	0.002	0.079	21	14.0	7.2	81	158	3.1	2.5	0.15	0.25	0.67	0.00	0.25	0.8	2.0		210	197
LP-10	Lakes Park (#10 Beach)	3/29/17	25.0	8.5	523	9.3	113	113	0.007	0.005	0.748	0.760	0.002	0.076	12	11.6	12.8	86	148	3.9	10.1	0.15	0.25	0.68	0.00	0.25	0.4	0.5		152	41
LP-10	Lakes Park (#10 Beach)	4/18/17	25.2	8.4	613	8.3	101	114	0.016	0.005	0.849	0.870	0.002	0.110	15	13.8	11.1	105	157	3.2	7.2	0.15	0.25	0.90	0.00	0.25	0.4	0.5		83	84
LP-10	Lakes Park (#10 Beach)	5/8/17	26.8	8.5	745	8.1	101	103	0.007	0.016	1.977	2.000	0.002	0.074	15	10.5	8.6	141	3,900	2.5	2.5	0.15	1.24	67.10	0.12	0.25	6.9	5.1		16	7
LP-10	Lakes Park (#10 Beach)	6/7/17	27.5	8.0	777	5.9	75	106	0.007	0.005	1.488	1.500	0.002	0.018	14	13.3	7.5	153	174	2.5	9.4	0.15	0.25	1.06	0.01	0.25	0.4	0.5		144	980
LP-10	Lakes Park (#10 Beach)	7/19/17	30.9	8.1	732	8.4	113	144	0.007	0.005	0.758	0.770	0.002	0.019	23	6.6	5.1	118	200	2.5	2.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5		26	5
LP-10	Lakes Park (#10 Beach)	8/8/17	31.3	7.9	709	7.2	97	151	0.036	0.005	0.649	0.690	0.002	0.034	22	6.9	4.3	660	193	2.4	2.5	0.15	0.25	0.85	0.01	0.25	0.4	0.5		44	20
LP-10	Lakes Park (#10 Beach)	9/20/17	29.6	7.7	450	5.9	78	122	0.007	0.005	0.658	0.670	0.002	0.040	29	4.6	2.8	42	148	1.8	7.3	0.15	0.25	0.86	0.02	0.25	0.4	1.3		17	20
LP-10	Lakes Park (#10 Beach)	10/9/17	28.9	7.9	475	6.9	90	147	0.007	0.005	0.648	0.660	0.002	0.022	27	4.7	3.3	35	165	1.9	2.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5		11	14
LP-10	Lakes Park (#10 Beach)	11/8/17	26.0	8.4	517	10.0	124	163	0.007	0.005	0.658	0.670	0.002	0.026	23	7.1	3.8	45	187	2.0	2.5	0.15	0.25	0.52	0.01	0.25	0.4	0.5		3	7
LP-10	Lakes Park (#10 Beach)	12/11/17	19.3	8.1	551	8.4	91	174	0.007	0.005	0.838	0.850	0.002	0.059	20	9.8	5.4	58	199	2.6	2.5	0.15	0.25	0.60	0.00	0.25	0.4	0.5		154	49
LP-10	Lakes Park (#10 Beach)	1/18/18	15.7	8.4	567	10.0	101	181	0.007	0.012	0.671	0.690	0.002	0.052	18	10.5	8.7	58	220	3.1	5.0	0.15	0.25	0.25	0.01	0.25	0.4	0.5		173	260
LP-10	Lakes Park (#10 Beach)	2/15/18	24.3	7.9	575	6.5	77	164	0.007	0.005	1.288	1.300	0.002	0.090	20	16.4	17.0	55	197	2.9	2.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5		155	119
LP-10	Lakes Park (#10 Beach)	3/5/18	22.3	8.2	554	9.3	107	158	0.007	0.005	0.518	0.530	0.002	0.130	24	14.5	12.8	59	182	3.2	2.5	0.15	0.25	0.25	0.00	0.25	0.4	0.5		47	41
LP-10	Lakes Park (#10 Beach)	4/3/18	26.0	8.1	551	8.1	100	136	0.021	0.005	0.694	0.720	0.002	0.018	54	13.1	10.2	69	166	3.5	7.0	0.15	0.25	0.78	0.01	0.25	1.2	1.6		71	32
LP-10	Lakes Park (#10 Beach)	5/7/18	27.4	8.1	602	7.7	98	111	0.019	0.005	1.076	1.100	0.002	0.040	21	18.2	16.4	93	152	3.5	15.7	0.15	0.25	0.73	0.02	0.25	0.4	0.5		140	121
LP-10	Lakes Park (#10 Beach)	6/7/18	30.3	8.1	663	6.3	83	125	0.007	0.005	1.288	1.300	0.002	0.016	25	12.2	8.3	99	169	3.5	31.3	0.15	0.25	0.67	0.03	0.25	0.4	0.5		29	53
LP-10	Lakes Park (#10 Beach)	7/2/18	30.9	8.1	695	7.6	102	143	0.007	0.005	1.488	1.500	0.002	0.041	24	7.1	4.1	109	180	2.4	12.8	0.15	0.25	0.63	0.01	0.25	0.4	0.5		72	20
LP-10	Lakes Park (#10 Beach)	8/16/18	30.0	8.4	650	8.3	110	152	0.007	0.005	1.188	1.200	0.002	0.059	36	12.5	8.3	90	193	2.9	8.8	0.15	0.25	2.15	0.01	0.25	0.4	0.5		138	38
LP-10	Lakes Park (#10 Beach)	9/12/18	30.2	8.3	640	8.1	107	145	0.007	0.005	1.188	1.200	0.002	0.045	17	11.0	7.3	70	199	2.9	6.0	0.15	0.25	0.25	0.01	0.25	0.4	0.5		68	14
LP-10	Lakes Park (#10 Beach)	10/9/18	27.1	8.1	645	7.6	96	158	0.007	0.005	1.188	1.200	0.002	0.058	24	10.6	6.6	82	201	1.2	11.9	0.15	0.25	0.70	0.01	0.25	0.8	0.5		119	23
LP-10	Lakes Park (#10 Beach)	11/15/18	26.4	8.1	635	7.7	96	150	0.007	0.005	0.988	1.000	0.002	0.056	15	9.9	5.4	91	191	2.6	15.2	0.15	0.25	0.57	0.01	0.25	0.4	0.5		2,420	659
LP-10	Lakes Park (#10 Beach)	12/3/18	22.5	8.2	668	8.3	96	156	0.007	0.010	1.383	1.400	0.002	0.063	19	12.5	6.3	78	212	2.8	10.1	0.15	0.25	0.56	0.01	0.25	0.4	0.5		435	203
LP-10	Lakes Park (#10 Beach)	1/10/19	19.6	8.4	679	9.2	101	155	0.007	0.005	1.288	1.300	0.002	0.074	16	15.6	11.2	105	204	3.1	25.5	0.15	0.25	0.53	0.01	0.25	0.4	0.5		326	435
LP-10	Lakes Park (#10 Beach)	2/7/19	22.0	8.4	677	9.4	107	148	0.007	0.005	1.188	1.200	0.002	0.059	14	14.0	10.5	95	190	2.7	7.2	0.15	0.25	1.53	0.01	0.25	1.5	0.5		172	99
LP-10	Lakes Park (#10 Beach)	3/12/19	25.3	8.3	677	8.7	107	154	0.007	0.005	1.188	1.200	0.002	0.057	17	10.3	8.7	102	197	2.6	6.9	0.15	0.25	1.41	0.01	0.25	1.7	0.5		210	192
LP-10	Lakes Park (#10 Beach)	4/9/19	26.6	8.0	698	6.7	84	154	0.007	0.005	1.288	1.300	0.002	0.062	15	12.9	11.9	108	207	3.3	9.6	0.15	0.25	1.29	0.01	0.25	1.6	0.5		687	1,553
LP-10	Lakes Park (#10 Beach)	5/9/19	29.5	8.2	672	8.2	108	131	0.017	0.005	1.378	1.400	0.002	0.059	15	17.4	12.6	114	189	3.7	13.3	0.15	0.25	0.25	0.01	0.25	0.4	0.5		231	150
LP-10	Lakes Park (#10 Beach)	6/13/19	31.1	8.0	684	6.8	92	125	0.007	0.005	1.588	1.600	0.002	0.047	22	14.7	10.5	114	182	3.9	17.6	0.15	0.25	0.25	0.01	0.25	0.4	0.5		613	344
LP-10	Lakes Park (#10 Beach)	7/11/19	30.5	7.9	678	7.0	93	127	0.007	0.005	1.388	1.400	0.002	0.064	25	12.9	10.3	114	188	2.9	7.2	0.15	0.25	0.25	0.01	0.25	0.4	0.5		2,420	1,300
LP-10	Lakes Park (#10 Beach)	8/14/19	29.8	8.1	651	6.8	90	138	0.007	0.005	1.088	1.100	0.002	0.047	33	10.4	7.8	98	187	2.3	6.8	0.15	0.25	0.25	0.01	0.25	0.4	0.5		727	345
LP-10	Lakes Park (#10 Beach)	9/12/19	29.9	8.2	639	7.8	103	147	0.007	0.005	1.088	1.100	0.002	0.051	19	15.3	13.0	92	182	2.3	18.0	0.15	0.25	0.25	0.01	0.25	0.4	0.5		150	70
LP-10	Lakes Park (#10 Beach)	10/10/19	28.5	8.2	626	7.8	101	139	0.007	0.005	1.288	1.300	0.002	0.062	16	18.4	11.5	82	185	2.3	9.2	0.15	0.25	0.25	0.01	0.25	0.4	0.5		649	214
LP-10	Lakes Park (#10 Beach)	11/19/19	21.9	8.4	654	10.2	117	160	0.007	0.005	1.388	1.400	0.002	0.051	16	13.9	9.5	108	188	2.2	7.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5		145	50
LP-10	Lakes Park (#10 Beach)	12/2/19	23.2	8.2	665	9.5	111	159	0.007	0.005	1.488	1.500	0.002	0.075	16	14.4	17.5	108	201	3.3	14.2	0.15	0.25	0.25	0.01	0.25	0.4	0.5		236	162
LP-10	Lakes Park (#10 Beach)	1/9/20	19.3	8.4	647	10.1	110	162	0.007	0.005	1.388	1.400	0.002	0.068	15	16.7	9.1	104	333	3.0	10.2	0.15	0.25	0.25	0.01	0.25	0.4	0.5		184	71
LP-10	Lakes Park (#10 Beach)	2/20/20	25.7	8.1	696	8.6	106	147	0.007	0.005	1.388	1.400	0.002	0.062	15	15.9	11.1	89	184	2.8	8.8	0.15	0.25	0.25	0.00	0.25	0.4	0.5		115	93
LP-10	Lakes Park (#10 Beach)	3/17/20	25.7	8.3	715	9.3	114	150	0.007	0.005	1.188	1.200	0.002	0.065	15	17.3	11.6	109	198	2.3	12.4	0.15	0.25	0.25	0.01	0.25	0.4	0.5		75	6
LP-10	Lakes Park (#10 Beach)	4/27/20	26.1	8.1	747	8.0	99	128	0.007	0.005	1.988	2.000	0.002	0.074	15	23.1	14.1	131	177	3.4	11.7	0.15	0.25	0.25	0.01	0.25	0.4	0.5		1,120	501
LP-10	Lakes Park (#10 Beach)	5/7/20	26.8	8.2	762	7.9	99	119	0.007	0.005	1.788	1.800	0.002	0.070	17	26.1	19.3	138	174	4.8	10.8	0.15	0.25	0.25	0.01	0.25	0.4	2.6		326	457
	Minimum Value:		15.7	7.2	148	2.7	73	103	0.004	0.005	0.125	0.210	0.001	0.003	10	0.5	0.2	35	122	0.2	2.5	0.15	0.25	0.25	0.00	0.25	0.4	0.5	3	3	2
	Maximum Value:		78.0	9.1	5,900	13.8	136	192	1.630	0.530	3.484	3.500	0.023	1.200	67	75.0	29.9	1,810	604	8.3	45.3	0.38	1.24	13.00	0.12	8.00	6.9	23.2	3,800	2,420	2,000
	Geometric mean:		26.1	8.1	963	8.2	99	149	0.016	0.009	0.975	1.041	0.002	0.025	20	6.7	3.3	171	237	2.2	6.7	0.17	0.26	0.75	0.01	0.38	0.8	1.8	41	101	26
	Geometric mean (2016-2020):		25.8	8.2	621	8.1	100	142	0.008	0.005	1.089	1.105	0.002	0.051	19	11.0	7.4	88	189	2.6	6.6	0.15	0.26	0.44	0.01	0.25	0.5	0.6	54	101	57

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CT2	Lakes Park (CT-2)	5/18/89				9.1			0.100	0.020	0.000	0.120		0.005						2.0											
LP-CT2	Lakes Park (CT-2)	6/9/89				7.1			0.010	0.010	-0.010	0.010		0.005						2.0											
LP-CT2	Lakes Park (CT-2)	6/29/89							0.010	0.005	0.605	0.620		0.100																	
LP-CT2	Lakes Park (CT-2)	7/6/89							0.010	0.030	0.780	0.820		0.005																	
LP-CT2	Lakes Park (CT-2)	7/13/89							0.200	0.005	0.585	0.790		0.005																	
LP-CT2	Lakes Park (CT-2)	7/20/89							0.160	0.005	-0.005	0.160		0.005																	
LP-CT2	Lakes Park (CT-2)	7/31/89				5.7			0.160	0.020	0.740	0.920		0.010						0.5											
LP-CT2	Lakes Park (CT-2)	8/22/89				2.8			0.030	0.040	0.440	0.510		0.005						1.0											
LP-CT2	Lakes Park (CT-2)	9/15/89				1.7			0.020	0.020	0.690	0.730		0.005						3.0											
LP-CT2	Lakes Park (CT-2)	10/31/89				6.1			0.040	0.040	0.940	1.020		0.005						1.0											
LP-CT2	Lakes Park (CT-2)	11/21/89				4.4			0.160	0.220	0.760	1.140		0.020						2.0											
LP-CT2	Lakes Park (CT-2)	7/23/90				7.2				0.020										2.0											
LP-CT2	Lakes Park (CT-2)	8/2/90				5.6			0.010	0.170	2.370	2.550		0.005						6.0											
LP-CT2	Lakes Park (CT-2)	9/4/90				0.4			0.080	0.010	0.110	0.200		0.005						3.0											
LP-CT2	Lakes Park (CT-2)	10/16/90				8.2			0.020	0.010	1.520	1.550		0.070						1.0											
LP-CT2	Lakes Park (CT-2)	1/11/91				9.2			0.010	0.030	0.560	0.600		0.005						2.0											
LP-CT2	Lakes Park (CT-2)	2/25/91				14.1			0.050	0.010	0.670	0.730		0.100						0.9											
LP-CT2	Lakes Park (CT-2)	6/24/91				7.6			0.070	0.020	0.710	0.800		0.005						2.3											
LP-CT2	Lakes Park (CT-2)	7/3/91				6.3			0.050	0.020	0.590	0.660		0.005						1.1											
LP-CT2	Lakes Park (CT-2)	8/27/91				1.6			0.090	0.050	0.430	0.570		0.060						1.0											
LP-CT2	Lakes Park (CT-2)	9/3/91				2.7			0.010	0.120	0.900	1.030		0.090						1.5											
LP-CT2	Lakes Park (CT-2)	10/10/91				0.3			0.010	0.005	0.385	0.400		0.140						0.4											
LP-CT2	Lakes Park (CT-2)	11/4/91	24.5	7.5		2.8			0.020	0.140	0.000	0.160		0.010						0.8											
LP-CT2	Lakes Park (CT-2)	4/10/92	26.5	8.5		9.2			0.020	0.005	0.085	0.110		0.010						0.6											
LP-CT2	Lakes Park (CT-2)	6/29/92	28.9	7.3		6.1			0.040	0.010	0.620	0.670		0.005						3.0											
LP-CT2	Lakes Park (CT-2)	7/6/92	32.0	7.3		5.5			0.050	0.010	0.250	0.310		0.050						1.5											
LP-CT2	Lakes Park (CT-2)	7/16/92	31.0	7.2		2.6			0.030	0.005	1.255	1.290		0.005						1.3											
LP-CT2	Lakes Park (CT-2)	8/31/92	30.0	7.2		1.0			0.010	0.005	0.345	0.360		0.040						1.1											
LP-CT2	Lakes Park (CT-2)	9/17/92	31.1	7.2		0.3			0.020	0.005	0.135	0.160		0.005						1.5											
LP-CT2	Lakes Park (CT-2)	10/14/92	26.7	7.3		1.2			0.080	0.005	0.615	0.700		0.005						1.0											
LP-CT2	Lakes Park (CT-2)	1/7/93	26.7	8.4		14.2			0.070	0.005	0.765	0.840		0.005						5.7											
LP-CT2	Lakes Park (CT-2)	2/19/93	20.0	7.8		8.6			0.090	0.005	0.575	0.670		0.005						2.2											
LP-CT2	Lakes Park (CT-2)	3/4/93	20.0	7.5		8.2			0.020	0.005	0.135	0.160		0.005						1.6											
LP-CT2	Lakes Park (CT-2)	6/30/93	33.0	9.3		7.3			0.010	0.005	1.315	1.330		0.005						1.5											
LP-CT2	Lakes Park (CT-2)	7/9/93	29.0	7.6		6.0			0.010	0.005	0.195	0.210		0.005						1.6											
LP-CT2	Lakes Park (CT-2)	8/5/93	31.1	7.4		5.2			0.010	0.040	0.700	0.750		0.005						1.2											
LP-CT2	Lakes Park (CT-2)	9/15/93	29.0	7.3		2.2			0.010	0.005	0.535	0.550		0.070						0.4											
LP-CT2	Lakes Park (CT-2)	10/20/93	28.0	7.6		6.1			0.010	0.005	0.195	0.210		0.005						1.6											
LP-CT2	Lakes Park (CT-2)	11/17/93	26.0	7.8		8.0			0.010	0.005	-0.010	0.005		0.005						3.0											
LP-CT2	Lakes Park (CT-2)	2/8/94	21.0	8.2		8.2			0.010	0.005	-0.010	0.005		0.005						1.4											
LP-CT2	Lakes Park (CT-2)	10/13/94	29.0	7.5		6.2			0.010	0.005	0.125	0.140		0.005						3.0											
LP-CT2	Lakes Park (CT-2)	12/5/94	24.0	7.3		4.6			0.010	0.005	0.335	0.350		0.005						1.4											
LP-CT2	Lakes Park (CT-2)	8/30/95	29.0	7.3	362	4.0			0.010	0.130	0.890	1.030	0.001	0.030		12.0	2.5	49		1.7				4.00	0.50		5.0				
LP-CT2	Lakes Park (CT-2)	9/28/95	29.0	7.4	400	1.5			0.010	0.005	0.395	0.410	0.010	0.060		5.0	3.4	29		1.8				0.50	0.50		10.0				
LP-CT2	Lakes Park (CT-2)	10/19/95	28.0	7.2	444	3.0			0.110	0.070	0.410	0.590	0.001	0.005		0.5	3.1	29		1.0				0.50	2.00		5.0				
LP-CT2	Lakes Park (CT-2)	6/26/96	31.0	7.4	463	5.6			0.010	0.160	0.190	0.360	0.001	0.010		0.5	0.8	50		1.6				1.00	0.50		5.0				
LP-CT2	Lakes Park (CT-2)	7/16/96	30.0	7.2	558	4.0			0.010	0.110	0.420	0.540	0.001	0.530		0.5	0.8	63		1.1				0.50	0.50		5.0				
LP-CT2	Lakes Park (CT-2)	4/17/97	25.0	8.3	327	7.6			0.010	0.005	0.105	0.120	0.001	0.005		0.5	0.4	52		1.1				0.50	0.50		5.0				
LP-CT2	Lakes Park (CT-2)	7/24/97	29.0	7.2	628	1.3			0.010	0.005	-0.010	0.005	0.002	0.005		2.0	0.6	76		1.0				0.50	0.50		5.0				
LP-CT2	Lakes Park (CT-2)	8/25/97	29.0	7.3	556	1.5			0.010	0.005	-0.010	0.005	0.001	0.005		1.0	0.8	51		0.5				3.00	0.50		5.0	20			
LP-CT2	Lakes Park (CT-2)	9/30/97	27.0	7.3	448	4.2			0.040	0.005	-0.040	0.005	0.005	0.010		3.0	1.8	54		1.3				2.00	2.00		5.0	160			
LP-CT2	Lakes Park (CT-2)	2/25/98	21.0	7.5	550	8.6			0.040	0.005	-0.040	0.005	0.003	0.020		0.5	0.5	64		1.7				0.50	0.50		5.0	5			
LP-CT2	Lakes Park (CT-2)	3/17/98	21.0	7.8	428	8.8			0.010	0.005	-0.010	0.005	0.001	0.500		0.5	0.4	78		0.5				0.50	0.50		10.0	5			
LP-CT2	Lakes Park (CT-2)	7/22/98	27.0	7.2	360	1.3			0.010	0.005	-0.010	0.005	0.025	0.020		6.0	5.4	56		1.4				1.00	0.50		10.0	580			
LP-CT2	Lakes Park (CT-2)	8/25/98	29.0	7.2	642	1.9			0.010	0.005	0.505	0.520	0.003	0.005		1.0	0.6	64		0.5				1.00	0.50		5.0	8			
LP-CT2	Lakes Park (CT-2)	6/29/99	28.0	7.2	553	2.5			0.010	0.005	0.385	0.400	0.001	0.025		1.0	1.6	63		0.8				1.00	1.00		10.0	10			
LP-CT2	Lakes Park (CT-2)	7/27/99	31.0	7.5	610	3.8			0.040	0.005	-0.040	0.005	0.004	0.170		3.0	0.6	55		0.8				1.00	1.00		5.0	5			
LP-CT2	Lakes Park (CT-2)	8/26/99	30.0	7.2	482	3.0			0.010	0.005	0.785	0.800	0.001	0.140		3.0	2.1	41		0.8				1.00	1.00		10.0	70			
LP-CT2	Lakes Park (CT-2)	10/6/99	26.0	7.2	438	1.8			0.010	0.040	0.620	0.670	0.009	0.025		4.0	2.8	33		0.8				1.00	1.00		10.0	20			
LP-CT2	Lakes Park (CT-2)	7/25/00	28.0	7.3	519	3.0			0.020	0.005	1.305	1.330	0.014	0.160		1.0	0.6	66		2.3				2.00	0.50		5.0	5			
LP-CT2	Lakes Park (CT-2)	9/21/00	29.0	7.3	438	3.7			0.050	0.030	1.460	1.540	0.021	0.025		2.0	1.4	39		0.8				0.50	0.50		5.0	100			
LP-CT2	Lakes Park (CT-2)	11/15/01	20.9	7.1	625	2.1			0.005	0.040	0.585	0.630	0.003	0.100		0.5	0.4	70		0.8				0.50	0.50		5.0	5			20
LP-CT2	Lakes Park (CT-2)	12/19/01	22.0	7.3	586	1.7			0.010	0.020	0.500	0.530	0.003	0.025	40	2.0	0.4	67	192	0.8				0.50	0.50		10.0	5			5
LP-CT2	Lakes Park (CT-2)	1/28/02	22.2	7.2	555	6.6			0.010	0.010	0.570	0.590	0.005	0.025	25	4.0	0.5	67		1.5				0.50	0.50		5.0	10			5
LP-CT2	Lakes Park (CT-2)	2/27/02	19.2	7.2	564	3.8			0.020	0.010	-0.020	0.010	0.005	0.025	27	1.0	0.4	71		1.6				0.50	0.50		5.0	5			5
LP-CT2	Lakes Park (CT-2)	3/26/02	24.3	7.3	470	5.6			0.040	0.010	0.400	0.450	0.014	0.050	30	1.0	0.5	75		2.3				0.50	0.50		5.0	5			5
LP-CT2	Lakes Park (CT-2)	4/11/02	23.9	7.5	525	3.6			0.030	0.010	0.620	0.660	0.003	0.025	34	2.0	0.6	72		0.8				0.50	0.50		5.0	10			10
LP-CT2	Lakes Park (CT-2)	5/21/02	26.2	7.4	473	1.7			0.030	0.010	0.590	0.630	0.003	0.025	41	1.0	1.0	62	122	0.8				6.00	0.50		5.0	40			50
LP-CT2	Lakes Park (CT-2)	6/6/02	28.2	7.5	486	2.0			0.060	0.010	0.980	1.050	0.003	0.025	39	0.5	0.6	63	128	1.8				0.50	0.50		10.0	70			60
LP-CT2	Lakes Park (CT-2)	7/16/02	30.0	7.1	897	2.3			0.010	0.020	0.450	0.480	0.003	0.110	35	3.0	1.3	123		1.5				0.50	0.50		5.0	80			40
LP-CT2	Lakes Park (CT-2)	8/20/02	29.5	7.7	825				0.005	0.010	0.475	0.490	0.003	0.030	24	2.0	0.7	106	262	0.8				0.50	0.50		10.0	10			
LP-CT2	Lakes Park (CT-2)	9/26/02	28.7	7.3	842				0.070	0.010	0.470	0.550	0.003	0.030	22	2.5	0.7	88		0.8				0.50	0.50		5.0	20			5
LP-CT2	Lakes Park (CT-2)	10/10/02	29.7	7.5	153	3.5			0.060	0.040	0.420	0.520	0.003	0.030	24	1.0	0.6	76	292	0.8				0.50	0.50		10.0	20			5
LP-CT2	Lakes Park (CT-2)	11/20/02	20.2	7.4	999	3.6			0.150	0.190	0.340	0.680	0.003	0.030	20	0.5	0.6	86		0.8				0.50	0.50		5.0	40			20
LP-CT2	Lakes Park (CT-2)	12/23/02	17.9	7.5	808	5.9			0.060	0.100	0.360	0.520	0.003	0.030	25	0.5	0.5	105	282	0.8				0.50	0.50		10.0	30			70

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CT2	Lakes Park (CT-2)	1/9/03	15.8	7.4	833	4.6			0.120	0.120	0.310	0.550	0.003	0.030	17	4.0	2.3	104		0.8				0.50		0.50		5.0	5		5
LP-CT2	Lakes Park (CT-2)	2/13/03	19.1	7.5	811	4.9			0.050	0.090	0.500	0.640	0.010	0.015	16	1.2	0.5	121		1.7				0.50		0.50		5.0	5		5
LP-CT2	Lakes Park (CT-2)	3/13/03	25.7	7.8	904	5.1			0.040	0.020	0.490	0.550	0.010	0.041	34	2.8	0.6	131	298	0.5				0.50		0.50		10.0	5		10
LP-CT2	Lakes Park (CT-2)	4/17/03	24.9	7.6	735	8.6			0.020	0.020	0.730	0.770	0.003	0.047	19	1.2	0.9	110		0.5		0.38		0.50		0.50		5.0	20		80
LP-CT2	Lakes Park (CT-2)	5/1/03	25.5	7.8	744	5.8			0.005	0.020	0.235	0.260	0.003	0.011	23	1.2	0.7	92	180	1.6		0.38		2.00		0.50		5.0	5		50
LP-CT2	Lakes Park (CT-2)	6/23/03	26.8	7.3	629	3.8			0.030	0.030	0.310	0.370	0.025	0.044	26	1.2	1.4	80		1.0		0.38		0.50		0.50		5.0	330		1,010
LP-CT2	Lakes Park (CT-2)	7/22/03	30.3	7.4	715	2.6			0.020	0.020	0.310	0.350	0.003	0.033	27	1.2	0.6	94	210	1.9		0.38		2.00		0.50		5.0	40		20
LP-CT2	Lakes Park (CT-2)	8/5/03	29.0	7.5	661	1.3			0.010	0.040	0.740	0.790	0.009	0.028	24	1.2	0.8	65		1.1		0.38		0.50		0.50		5.0	20		100
LP-CT2	Lakes Park (CT-2)	9/8/03	28.8	7.9	624	0.8			0.071	0.030	0.989	1.090	0.008	0.029	26	1.2	1.3	54		1.4		0.38		0.50		0.50		5.0	30		30
LP-CT2	Lakes Park (CT-2)	10/28/03	25.5	7.4	739	1.1			0.025	0.030	0.435	0.490	0.015	0.025	17	1.2	0.6	66		1.1		0.38		0.50		0.50		5.0	10		10
LP-CT2	Lakes Park (CT-2)	11/13/03	24.7	7.3	627	1.3			0.029	0.060	0.401	0.490	0.010	0.022	24	1.2	0.3	63		1.0		0.38		4.10		0.50		5.0	5		10
LP-CT2	Lakes Park (CT-2)	12/2/03	19.0	7.1	667	2.4			0.025	0.070	0.405	0.500	0.015	0.022	24	1.2	0.3	77		1.4		0.38		0.50		0.50		5.0	5		5
LP-CT2	Lakes Park (CT-2)	1/22/04	17.2	7.2	857	5.3			0.025	0.050	0.275	0.350	0.008	0.029	28	1.2	0.5	104		0.5		0.25		0.50		1.00		5.0	5		10
LP-CT2	Lakes Park (CT-2)	2/19/04	15.8	7.5	701	6.3			0.025	0.060	0.505	0.590	0.008	0.029	16	1.2	0.9	82		1.1		0.25		0.50		1.00		5.0	5		10
LP-CT2	Lakes Park (CT-2)	3/18/04	22.7	7.9	758	8.4			0.025	0.005	0.386	0.416	0.030	0.035	22	1.2	0.7	96	222	2.2		0.25		1.00		0.50		20.0	70		30
LP-CT2	Lakes Park (CT-2)	4/13/04	23.6	7.7	603	6.4			0.014	0.005	0.192	0.211	0.013	0.010	23	1.2	0.5	93	186	1.6		0.25		2.00		0.50		5.0	70		110
LP-CT2	Lakes Park (CT-2)	5/17/04	26.7	7.9	581	8.3			0.004	0.010	0.416	0.430	0.004	0.029	20	4.0	0.4	99		1.4		0.25		0.50		0.50		5.0	5		5
LP-CT2	Lakes Park (CT-2)	6/9/04	27.7	7.2	635	1.7			0.025	0.040	0.495	0.560	0.004	0.010	29	1.2	0.8	87		0.9		0.25		0.50		0.50		5.0	60		260
LP-CT2	Lakes Park (CT-2)	7/27/04	29.6	7.3	702	4.9			0.048	0.010	0.422	0.480	0.004	0.010	29	1.2	0.6	87		0.7		0.25		3.40		0.50		5.0	5		80
LP-CT2	Lakes Park (CT-2)	8/10/04	28.2	7.2	604	3.0			0.034	0.030	0.536	0.600	0.041	0.066	38	1.5	0.4	81	230	2.4		0.25		1.60		0.50		5.0	40		30
LP-CT2	Lakes Park (CT-2)	9/15/04	28.4	7.4	623	1.4			0.089	0.010	0.471	0.570	0.004	0.010	31	2.7	1.4	61	262	2.7		0.25		1.30		0.50		5.0	20		10
LP-CT2	Lakes Park (CT-2)	10/11/04	27.2	7.4	687	2.0			0.142	0.060	0.558	0.760	0.004	0.037	24	3.3	1.2	64		1.2		0.25		0.50		0.50		5.0	30		280
LP-CT2	Lakes Park (CT-2)	11/29/04	22.5	7.5	700	3.5			0.124	0.080	0.856	1.060	0.004	0.021	19	1.2	0.8	78		2.0		0.25		0.50		0.50		5.0	5		10
LP-CT2	Lakes Park (CT-2)	12/15/04	17.5	7.2	672	4.1			0.162	0.130	0.778	1.070	0.008	0.010	20	1.2	0.7	80		1.3		0.25		0.50		0.50		5.0	20		5
LP-CT2	Lakes Park (CT-2)	1/12/05	21.9	7.8	632	4.9			0.079	0.030	0.991	1.100	0.004	0.010	19	2.0	1.3	78		2.2		0.25		0.50		0.50		5.0	10		5
LP-CT2	Lakes Park (CT-2)	2/10/05	19.5	7.8	650	6.7			0.042	0.040	0.508	0.590	0.012	0.010	15	0.7	12.0	80		1.0		0.25		0.50		0.50		2.0	5		10
LP-CT2	Lakes Park (CT-2)	3/16/05	22.3	7.6	636	10.5			0.007	0.010	0.404	0.420	0.004	0.010	20	0.3	0.8	80	224	0.4		0.20		2.40		0.50		2.0	10		5
LP-CT2	Lakes Park (CT-2)	4/18/05	22.5	7.7	696	8.3			0.007	0.005	0.269	0.280	0.004	0.010	21	2.3	1.0	93		1.1		0.20		0.50		0.50		2.0	5		10
LP-CT2	Lakes Park (CT-2)	5/5/05	25.5	7.8	563	5.9			0.007	0.010	0.624	0.640	0.004	0.030	21	2.0	1.0	85		1.4		0.20		0.50		0.50		2.0	10		40
LP-CT2	Lakes Park (CT-2)	6/23/05	28.3	7.8	520	2.4			0.034	0.005	0.661	0.700	0.007	0.020	34	2.7	1.1	51		1.3		0.20		0.50		0.50		5.0	120		50
LP-CT2	Lakes Park (CT-2)	7/21/05	29.3	7.3	583	1.0			0.026	0.040	0.384	0.450	0.002	0.020	27	0.3	0.6	61		0.6		0.20		0.50		0.50		5.0	30		30
LP-CT2	Lakes Park (CT-2)	8/18/05	30.3	7.4	602	1.2			0.023	0.005	0.552	0.580	0.002	0.030	27	2.3	1.3	63		1.2		0.20		0.50		0.50		5.0	170		120
LP-CT2	Lakes Park (CT-2)	9/8/05	29.0	7.4	671	1.2			0.024	0.010	0.746	0.780	0.019	0.030	28	2.8	1.5	75		2.1		0.20		0.50		0.50		5.0	100		30
LP-CT2	Lakes Park (CT-2)	10/6/05	27.9	7.7	609	5.3			0.024	0.010	0.966	1.000	0.002	0.040	26	3.8	1.9	68		2.2		0.20		0.50		0.50		5.0	50		5
LP-CT2	Lakes Park (CT-2)	11/1/05	22.0	7.6	492	5.9			0.019	0.010	0.141	0.170	0.002	0.020	26	1.7	1.3	46		2.4		0.20		0.50		0.50		5.0	5		30
LP-CT2	Lakes Park (CT-2)	12/20/05	20.3	7.2	687	3.5			0.120	0.060	0.780	0.960	0.002	0.030	24	1.0	0.9	69		2.1		0.20		0.50		0.50		5.0	80		110
LP-CT2	Lakes Park (CT-2)	1/18/06	18.5	6.8	721	6.4			0.118	0.070	0.682	0.870	0.002	0.010	18	1.5	1.6	73		2.0		0.20		0.50		0.50		5.0	5		20
LP-CT2	Lakes Park (CT-2)	2/16/06	16.5	7.3	697	9.0			0.066	0.070	0.724	0.860	0.002	0.030	22	5.0	2.4	83		2.7		0.20		0.50		0.50		5.0	5		10
LP-CT2	Lakes Park (CT-2)	3/22/06	25.3	7.2	2,306	7.1			0.045	0.020	0.965	1.030	0.002	0.030	24	6.0	3.8	502		1.3		0.20		0.50		0.50		5.0	30		30
LP-CT2	Lakes Park (CT-2)	4/17/06	25.0	8.1	5,260	7.7			0.032	0.010	1.148	1.190	0.002	0.040	44	11.5	10.4	2,150		2.9		0.20		0.50		0.50		5.0	5		30
LP-CT2	Lakes Park (CT-2)	5/3/06	25.3	7.9	11,100	5.8			0.022	0.010	0.748	0.780	0.002	0.030	52	4.7	2.0	2,220		3.5		0.20		0.50		0.50		5.0	10		5
LP-CT2	Lakes Park (CT-2)	6/5/06	30.4	7.4	11,900	2.8			0.182	0.030	0.588	0.800	0.012	0.040	49	3.7	1.0	4,100		1.4		0.20		0.50		0.50		5.0	30		10
LP-CT2	Lakes Park (CT-2)	7/19/06	30.1	7.4	795	3.2			0.064	0.005	1.041	1.110	0.007	0.030	55	1.5	0.8	89		1.2		0.15		0.50		0.50		5.0	20		20
LP-CT2	Lakes Park (CT-2)	8/8/06	30.2	7.4	719	2.6			0.057	0.010	0.593	0.660	0.002	0.020	26	1.8	0.9	39		0.4		0.15		0.50		0.50		5.0	70		10
LP-CT2	Lakes Park (CT-2)	9/25/06	29.3	7.4	564	3.5			0.077	0.030	0.293	0.400	0.002	0.030	27	0.8	1.2	59		1.1		0.15		0.50		0.50		2.5	90		5
LP-CT2	Lakes Park (CT-2)	10/17/06	25.9	7.6	741	3.8			0.086	0.090	0.504	0.680	0.002	0.020	80	0.3	0.4	42		1.0		0.15		0.50		0.50		2.5	5		5
LP-CT2	Lakes Park (CT-2)	11/20/06	20.1	7.8	847	5.2			0.235	0.160	0.655	1.050	0.008	0.030	65	0.8	0.8	46		0.6		0.15		0.50		0.50		2.5	30		5
LP-CT2	Lakes Park (CT-2)	12/4/06	24.3	7.7	953	5.5			0.102	0.110	0.998	1.210	0.002	0.030	41	8.0	1.6	53		2.2		0.15		0.50		0.50		2.5	110		130
LP-CT2	Lakes Park (CT-2)	1/9/07	22.3	7.8	927	5.6			0.048	0.200	0.582	0.830	0.002	0.028	60	1.3	1.2	52		1.5		0.15		0.50		0.50		2.5	10		10
LP-CT2	Lakes Park (CT-2)	2/19/07	17.2	8.1	1,060	7.4			0.027	0.070	0.393	0.490	0.002	0.023	22	0.3	0.7	155	292	0.8		0.15		2.60		0.50		2.5	5		20
LP-CT2	Lakes Park (CT-2)	3/1/07	23.4	7.7	906	4.6			0.085	0.090	0.405	0.580	0.011	0.039	16	0.3	0.6	152	290	1.3		0.15		1.41		0.50		2.5	10		10
LP-CT2	Lakes Park (CT-2)	4/23/07	25.0	7.7	1,060	5.8			0.050	0.030	0.580	0.660	0.005	0.021	16	2.8	1.2	159		1.7		0.15		0.50		0.50		2.5	70		30
LP-CT2	Lakes Park (CT-2)	5/24/07	26.9	7.7	958	4.0			0.059	0.010	0.641	0.710	0.005	0.024	26	1.0	2.4	156		1.4		0.15		0.50		0.50		2.5	40		10
LP-CT2	Lakes Park (CT-2)	6/21/07	30.2	7.5	1,040	5.8			0.007	0.010	0.463	0.480	0.002	0.025	14	1.0	0.9	198		1.8		0.15		0.50		0.50		2.5	5		20
LP-CT2	Lakes Park (CT-2)	7/23/07	29.0	7.6	984	4.4			0.007	0.010	0.673	0.690	0.002	0.026	20	4.3	3.1	162		2.1		0.15		0.50		0.50		2.5	90		70
LP-CT2	Lakes Park (CT-2)	8/28/07	29.5	7.7	803	4.6			0.050	0.030	0.540	0.620	0.002	0.023	21	1.5	1.3	96		2.5		0.15		0.50		0.50		2.5	750		40
LP-CT2	Lakes Park (CT-2)	9/25/07	28.3	7.7	693	5.0			0.055	0.030	0.715	0.800	0.002	0.020	19	1.9	1.6	84		2.6		0.15		0.50		0.50		2.5	90		50
LP-CT2	Lakes Park (CT-2)	10/22/07	28.3	7.8	869	3.3			0.042	0.010	0.448	0.500	0.002	0.027	12	2.7	1.9	108	176	1.6		0.15		3.07		0.50		2.5	390		660
LP-CT2	Lakes Park (CT-2)	11/13/07	22.3	7.9	1,070	6.0			0.050	0.030	0.670	0.750	0.002	0.028	13	3.4	0.8	143		1.2		0.15		0.50		0.50		2.5	5		10
LP-CT2	Lakes Park (CT-2)	12/4/07	24.1	7.8	1,170	4.2			0.072	0.030	0.618	0.720	0.002	0.018	11	2.8	1.8	177		0.9		0.15		2.38		0.50		2.5	20		5
LP-CT2	Lakes Park (CT-2)	1/15/08	20.0	8.3	1,170	7.6			0.029	0.030	0.541	0.600	0.002	0.017	13	1.9	1.6	185		0.6		0.15		0.50		0.50		2.5	10		40
LP-CT2	Lakes Park (CT-2)	2/19/08	22.6	7.9	1,110	6.6			0.060	0.010	0.530	0.600	0.002	0.016	12	2.6	2.1	184	308	2.1		0.15		1.55		0.50		2.5	30		50
LP-CT2	Lakes Park (CT-2)	3/27/08	21.8	7.9	1,010	5.9			0.007	0.010	0.713	0.730	0.002	0.027	20	7.3	4.7	166		2.8		0.15		0.50		0.50		2.5	5		5
LP-CT2	Lakes Park (CT-2)	4/15/08	24.6	7.9	948	5.8			0.007	0.005	0.568	0.580	0.002	0.014	13	1.9	2.5	173		1.8		0.15		0.50		0.50		2.5	20		20
LP-CT2	Lakes Park (CT-2)	5/19/08	28.8	7.9	1,230	5.1			0.018	0.005	0.577	0.600	0.002	0.023	13	4.9	2.6	242		2.6		0.15		0.50		0.50		2.5	5		5
LP-CT2	Lakes Park (CT-2)	6/25/08	29.5	7.6	827	4.5			0.019	0.010	0.591	0.620	0.002	0.021	20	3.6	1.8	116		1.9		0.15		0.50		0.50		2.5	30		60
LP-CT2	Lakes Park (CT-2)	7/23/08	30.0	7.6	751	4.7			0.007	0.020	0.403	0.430	0.002	0.027	29	1.8	1.5	97		2.4		0.15		0.50		0.50		2.5	80		5
LP-CT2	Lakes Park (CT-2)	8/27/08	30.4	7.7	710	5.3			0.018	0.005	0.327	0.350	0.002	0.019	23	2.2	1.9	81		2.2		0.15		0.50		0.50		2.5	300		10
LP-CT2	Lakes Park (CT-2)	9/9/08	29.7	7.8	823	5.6			0.016	0.010	0.304	0.330	0.002	0.016	18	2.4	1.5	17		1.8		0.15		0.50		0.50		2.5	60		10
LP-CT2	Lakes Park (CT-2)	10/29/08	21.5	7.7	810	6.1			0.141	0.060	0.189	0.390	0.002	0.015	22	1.5	1.1	89		1.4		0.15		0.50		0.50		2.5	20		10
LP-CT2	Lakes Park (CT-2)	11/24/08	18.4	7.9	777	8.2			0.036	0.050	0.354	0.440	0.002	0.009	17	0.8	0.8	96	190	1.7		0.15		2.56		0.50		1.6	20		10
LP-CT2	Lakes Park (CT-2)	12/10/08	20.1	7.5	830	8.6			0.007	0.020	0.333	0.360	0.002	0.022	17	2.2	1.1	104	184	0.7		0.15		1.89		0.25		0.5	5		20

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CT2	Lakes Park (CT-2)	1/12/09	20.9	8.0	807	6.3			0.038	0.010	0.952	1.000	0.004	0.018	15	2.0	1.5	101	224	1.5		0.15		1.93		0.25		1.9	40		5
LP-CT2	Lakes Park (CT-2)	2/11/09	18.4	6.9	867	8.7			0.007	0.010	0.253	0.270	0.005	0.011	11	1.6	1.5	110	297	1.8	15.9	0.15	0.25	1.33		0.25	1.9	0.5	10		5
LP-CT2	Lakes Park (CT-2)	3/23/09	23.4	7.4	762	5.9			0.007	0.005	-0.012		0.006	0.020	15	3.8	2.2	113	271	1.9	12.2	0.32	0.25	1.97		0.25	1.9	1.5	5		5
LP-CT2	Lakes Park (CT-2)	4/22/09	25.5	7.4	789	7.0			0.007	0.005	0.548	0.560	0.002	0.016	13	4.3	2.1	128	359	2.5	15.4	0.15	0.25	2.03		0.25	2.1	1.3	10		10
LP-CT2	Lakes Park (CT-2)	5/19/09	26.4	7.7	835	4.8			0.007	0.005	0.718	0.730	0.002	0.027	20	5.4	3.0	126	241	2.9	8.7	0.15	0.25	1.52		0.25	1.4	0.5	140		240
LP-CT2	Lakes Park (CT-2)	6/15/09	31.9	7.9	912	5.1			0.007	0.014	0.829	0.850	0.002	0.007	19	3.2	2.0	127	275	2.2	53.5	0.15	0.25	1.60		0.25	1.3	1.9	5		5
LP-CT2	Lakes Park (CT-2)	7/29/09	29.7	7.9	820	5.7		198	0.007	0.005	0.668	0.680	0.002	0.020	22	3.4	2.5	103	278	2.2	32.3	0.15	0.25	0.95		0.25	1.2	1.2	360		30
LP-CT2	Lakes Park (CT-2)	8/31/09	30.1	7.6	700	5.6		182	0.007	0.005	0.518	0.530	0.002	0.015	22	1.8	1.9	77	252	1.7	23.6	0.15	0.25	1.33		0.25	1.4	1.1	110		20
LP-CT2	Lakes Park (CT-2)	9/23/09	29.5	7.6	706	5.6		196	0.007	0.015	0.518	0.540	0.002	0.010	24	1.8	1.6	80	261	1.5	23.2	0.15	0.25	1.80		0.25	1.6	1.5	92		5
LP-CT2	Lakes Park (CT-2)	10/26/09	25.3	8.1	809	6.4		224	0.007	0.005	0.988	1.000	0.002	0.012	20	2.3	2.0	93	306	1.6	10.0	0.15	0.25	1.07		0.25	2.1	0.5	12		14
LP-CT2	Lakes Park (CT-2)	11/30/09	19.6	8.0	839	7.2		206	0.007	0.012	1.181	1.200	0.002	0.019	18	2.6	2.4	103	250	1.4	8.4	0.15	0.25	1.11		0.25	1.6	0.5	256		8
LP-CT2	Lakes Park (CT-2)	12/28/09	18.8	7.9	736	7.4		226	0.041	0.080	0.769	0.890	0.002	0.013	18	0.3	1.5	98	305	0.7	8.2	0.15	0.25	1.38		0.25	1.9	0.5	13		6
LP-CT2	Lakes Park (CT-2)	1/26/10	19.8	8.2	814	9.1		217	0.043	0.005	1.152	1.200	0.002	0.016	18	2.6	2.0	102	308	1.8	7.1	0.15	0.25	1.66		0.25	2.5	0.5	21		40
LP-CT2	Lakes Park (CT-2)	2/25/10	18.5	8.0	795	8.2		221	0.007	0.046	0.797	0.850	0.002	0.006	15	0.3	1.4	99	328	1.4	5.9	0.15	0.25	1.35		0.25	1.2	0.5	23		46
LP-CT2	Lakes Park (CT-2)	3/29/10	22.4	7.8	722	7.0		194	0.007	0.020	-0.002	0.025	0.002	0.003	23	0.3	2.5	96	271	2.1	5.3	0.15	0.25	1.76		0.25	2.0	0.5	8		58
LP-CT2	Lakes Park (CT-2)	4/22/10	24.4	7.9	807	6.5		215	0.007	0.005	0.588	0.600	0.002	0.013	20	2.3	2.1	93	289	1.6	14.2	0.15	0.25	1.31	0.05	0.25	1.6	1.2	31		40
LP-CT2	Lakes Park (CT-2)	5/19/10	29.1	7.9	775	6.1		198	0.007	0.005	1.188	1.200	0.002	0.015	17	8.9	1.9	95	302	1.8	13.4	0.15	0.71	1.26	0.03	0.25	1.7	0.5	14		16
LP-CT2	Lakes Park (CT-2)	6/21/10	30.3	7.8	655	5.5		178	0.007	0.010	1.183	1.200	0.002	0.015	23	3.9	2.9	86	249	2.0	13.1	0.15	0.25	1.40	0.08	0.25	1.9	0.5	900		240
LP-CT2	Lakes Park (CT-2)	7/29/10	30.2	7.8	727	5.2		184	0.007	0.005	0.818	0.830	0.002	0.007	25	4.2	1.7	74	281	1.8	14.7	0.15	0.25	1.88	0.05	0.25	1.8	1.9	49		40
LP-CT2	Lakes Park (CT-2)	8/31/10	28.9	7.6	641	5.2		179	0.055	0.005	1.040	1.100	0.004	0.015	24	1.5	1.7	69	254	1.8	39.6	0.15	0.25	1.08	0.08	12.60	1.2	0.5	136		
LP-CT2	Lakes Park (CT-2)	9/15/10	28.6	7.4	505	4.3		143	0.021	0.010	1.069	1.100	0.004	0.012	35	2.4	1.7	50	196	1.4	6.7	0.15	0.25	1.16	0.18	0.25	1.0	1.7	220		34
LP-CT2	Lakes Park (CT-2)	10/28/10	27.4	7.8	771	5.6		198	0.035	0.005	0.540	0.580	0.002	0.009	20	6.0	1.4	78	292	1.6	8.0	0.43	0.25	1.45	0.03	0.25	1.3	0.5	21		4
LP-CT2	Lakes Park (CT-2)	11/15/10	21.4	7.9	732	7.5		208	0.007	0.005	0.528	0.540	0.002	0.008	18	2.4	1.9	90	305	1.6	7.4	0.15	0.25	1.00	0.03	0.25	1.6	8.0	8		8
LP-CT2	Lakes Park (CT-2)	12/13/10	15.8	8.0	710	8.7		219	0.007	0.005	0.678	0.690	0.002	0.008	18	4.0	2.2	108	309	1.8	7.3	0.15	0.25	1.88	0.03	0.25	1.9	1.5	50		42
LP-CT2	Lakes Park (CT-2)	1/27/11	17.5	7.8	722	8.3		202	0.007	0.005	0.728	0.740	0.002	0.003	19	2.6	2.0	65	271	2.2	2.5	0.15	0.25	1.61	0.01	0.25	1.6	0.5	26		400
LP-CT2	Lakes Park (CT-2)	2/23/11	23.0	8.2	741	9.0		201	0.007	0.005	0.988	1.000	0.002	0.010	16	3.6	4.6	107	295	3.3	7.2	0.15	0.25	1.69	0.04	0.25	2.1	0.5	1		1
LP-CT2	Lakes Park (CT-2)	3/23/11	23.6	7.9	791	7.8		192	0.007	0.005	1.288	1.300	0.002	0.012	18	1.9	2.6	116	283	2.6	21.7	1.91	0.25	2.59	0.04	0.25	2.1	3.2	22		80
LP-CT2	Lakes Park (CT-2)	4/14/11	26.7	8.0	761	6.2		191	0.007	0.005	1.088	1.100	0.002	0.014	18	1.8	1.4	97	269	2.1	6.4	0.15	0.25	1.38	0.02	0.25	1.9	0.5	6		10
LP-CT2	Lakes Park (CT-2)	5/5/11	28.6	8.1	748	6.3		185	0.047	0.005	0.838	0.890	0.002	0.008	14	0.9	1.8	102	275	1.7	26.8	0.15	0.25	1.63	0.02	0.25	1.5	1.1	216		24
LP-CT2	Lakes Park (CT-2)	6/14/11	30.6	7.8	820	6.1		168	0.079	0.005	0.776	0.860	0.002	0.008	15	1.6	1.8	100	262	2.0	17.7	0.15	0.25	1.22	0.03	0.25	1.5	1.4	101		18
LP-CT2	Lakes Park (CT-2)	7/14/11	30.0	7.6	764	5.2		180	0.028	0.027	0.685	0.740	0.002	0.009	25	2.0	1.7	95	280	2.2	2.5	0.50	0.25	2.06	0.07	0.25	1.6	0.5	63		26
LP-CT2	Lakes Park (CT-2)	8/11/11	28.0	7.6	661	4.5		153	0.007	0.020	0.773	0.800	0.002	0.016	27	1.1	1.5	71	232	1.4	20.0	0.15	0.25	1.38	0.09	0.25	1.0	2.3	26		860
LP-CT2	Lakes Park (CT-2)	9/15/11	30.0	7.5	612	4.6		177	0.023	0.005	0.902	0.930	0.002	0.003	25	1.0	1.4	59	263	1.5	2.5	0.15	0.25	1.18	0.09	0.25	2.2	0.5	32		16
LP-CT2	Lakes Park (CT-2)	10/13/11	27.6	7.6	588	5.4		171	0.026	0.005	0.609	0.640	0.002	0.003	24	1.9	1.3	58	252	2.1	2.5	0.15	0.25	1.08	0.11	0.25	2.1	0.5	75		24
LP-CT2	Lakes Park (CT-2)	11/29/11	22.1	7.8	657	6.4		195	0.007	0.005	0.958	0.970	0.002	0.008	19	0.3	1.0	65	263	1.0	9.0	0.15	0.25	1.29	0.04	0.25	1.9	0.5	30		10
LP-CT2	Lakes Park (CT-2)	12/21/11	20.3	7.9	689	6.8		203	0.021	0.018	0.871	0.910	0.002	0.012	17	0.8	1.0	73	295	1.2	2.5	0.15	0.25	1.47	0.02	0.25	2.3	0.5	20		4
LP-CT2	Lakes Park (CT-2)	1/24/12	19.7	8.0	674	8.5		199	0.053	0.005	0.832	0.890	0.002	0.003	14	4.7	1.7	81	287	2.0	27.8	0.15	0.25	2.27	0.03	0.25	2.1	3.0	44		2
LP-CT2	Lakes Park (CT-2)	2/23/12	22.6	7.2	658	7.8		179	0.007	0.005	0.868	0.880	0.002	0.003	13	1.0	1.1	85	264	1.3	9.3	0.15	0.25	1.76	0.02	0.25	1.6	0.5	1		2
LP-CT2	Lakes Park (CT-2)	3/19/12	24.1	7.9	676	6.8		152	0.007	0.005	0.988	1.000	0.002	0.003	16	1.1	1.1	88	239	1.4	11.1	0.15	0.25	2.10	0.02	0.25	1.5	1.6	7		2
LP-CT2	Lakes Park (CT-2)	4/9/12	25.7	7.4	661	7.4		137	0.041	0.005	0.954	1.000	0.002	0.011	26	0.8	1.1	94	216	1.2	17.0	0.68	0.25	2.10	0.02	0.25	1.7	4.2	6		4
LP-CT2	Lakes Park (CT-2)	5/8/12	27.4	8.0	657	9.2		121	0.007	0.005	1.188	1.200	0.002	0.003	29	0.8	0.8	98	194	1.8	16.1	0.15	0.25	2.04	0.02	0.25	1.7	1.3	58		80
LP-CT2	Lakes Park (CT-2)	6/20/12	27.5	7.7	608	5.4	69	134	0.023	0.005	1.072	1.100	0.002	0.011	27	0.3	0.7	81	215	1.4	70.3	0.15	0.25	1.62	0.02	0.25	1.4	1.0	10		14
LP-CT2	Lakes Park (CT-2)	7/23/12	28.0	7.3	526	2.8	36	162	0.048	0.005	0.807	0.860	0.002	0.003	30	0.3	1.0	44	206	1.6	5.8	0.15	0.25	0.51	0.14	0.25	1.5	0.5	47		26
LP-CT2	Lakes Park (CT-2)	8/20/12	29.9	7.5	510	5.4	72	160	0.007	0.005	0.938	0.950	0.002	0.008	26	0.3	0.9	44	226	1.3	319.0	0.15	0.52	1.27	0.09	0.25	1.5	0.5	127		20
LP-CT2	Lakes Park (CT-2)	9/17/12	27.2	6.9	343	3.7	47	117	0.020	0.013	0.867	0.900	0.002	0.019	25	0.3	1.7	28	158	1.7	13.0	0.15	0.25	0.99	0.16	0.25	1.0	2.4	480		400
LP-CT2	Lakes Park (CT-2)	10/22/12	26.8	7.4	670	6.2	78	199	0.057	0.012	0.781	0.850	0.002	0.019	24	2.7	1.7	59	272	2.0	84.5	0.15	0.25	1.02	0.14	0.25	1.0	2.2	81		5
LP-CT2	Lakes Park (CT-2)	11/19/12	22.4	7.5	688	6.1	70	200	0.031	0.005	0.864	0.900	0.012	0.014	19	1.4	2.1	71	288	0.2	9.6	0.15	0.25	1.55	0.10	0.25	1.7	2.1	11		3
LP-CT2	Lakes Park (CT-2)	12/13/12	23.3	7.3	631	4.9	58	184	0.065	0.034	0.761	0.860	0.012	0.017	20	1.1	1.5	70	262	1.6	8.7	0.15	0.25	1.22	0.13	0.25	1.6	0.5	87		284
LP-CT2	Lakes Park (CT-2)	1/23/13	19.9	8.0	729	7.2	80	198	0.015	0.005	0.910	0.930	0.011	0.016	18	0.9	0.9	89	270	1.2	8.5	0.15	0.25	2.11	0.05	0.25	1.7	32.9	4		12
LP-CT2	Lakes Park (CT-2)	2/18/13	18.5	8.0	731	7.9	85	184	0.022	0.005	1.073	1.100	0.015	0.017	18	0.3	0.9	92	253	0.9	2.5	0.15	0.25	1.57	0.03	0.25	1.5	2.1	20		36
LP-CT2	Lakes Park (CT-2)	3/18/13	20.2	7.9	759	7.5	83	186	0.007	0.005	0.838	0.850	0.005	0.006	16	1.2	0.8	88	249	1.0	14.4	0.15	0.25	2.07	0.03	0.25	1.5	1.1	4		20
LP-CT2	Lakes Park (CT-2)	4/17/13	28.2	7.9	716	7.0	90	161	0.007	0.005	0.508	0.520	0.007	0.011	17	0.8	0.9	101	243	1.0	94.2	0.15	0.25	1.51	0.03	0.25	1.5	1.1	6		12
LP-CT2	Lakes Park (CT-2)	5/15/13	27.9	7.8	714	6.2	79	144	0.007	0.005	0.888	0.900	0.002	0.017	24	1.2	0.8	102	233	1.1	28.0	0.15	0.25	1.52	0.02	0.25	1.5	1.0	7		2
LP-CT2	Lakes Park (CT-2)	6/18/13	30.6	7.7	683	4.4	59	147	0.007	0.005	0.948	0.960	0.008	0.018	19	1.2	0.9	93	218	1.9	30.1	0.15	0.25	1.01	0.05	0.25	1.4	0.5	100		4
LP-CT2	Lakes Park (CT-2)	7/30/13	31.0	7.8	745	4.6	62	192	0.007	0.005	0.838	0.850	0.013	0.016	21	2.1	1.0	81	286	1.5	11.2	0.15	0.25	0.64	0.04	0.25	1.6	1.1	37		236
LP-CT2	Lakes Park (CT-2)	8/27/13	28.0	7.5	527	4.1	52	157	0.030	0.005	0.685	0.720	0.012	0.013	25	2.5	1.8	57	204	1.5	15.1	0.15	0.25	0.97	0.11	0.25	1.2	2.2	160		475
LP-CT2	Lakes Park (CT-2)	9/23/13	28.8	7.3	572	5.5	72	171	0.007	0.005	0.768	0.780	0.006	0.015	25	0.8	1.3	54	257	1.5	5.8	0.15	0.25	0.82	0.10	0.25	1.3	1.7	109		33
LP-CT2	Lakes Park (CT-2)	10/23/13	28.6	7.9	649	5.2	67	194	0.021	0.005	0.944	0.970	0.008	0.013	21	1.6	1.6	61	279	1.5	9.6	0.15	0.25	0.77	0.05	0.25	1.6	1.6	29		16
LP-CT2	Lakes Park (CT-2)	11/19/13	24.5	7.3	674	5.4	65	207	0.053	0.005	0.702	0.760	0.002	0.007	17	1.3	1.4	72	316	1.4	17.8	0.15	0.25	0.85	0.04	0.25	1.7	1.3	460		19
LP-CT2	Lakes Park (CT-2)	12/9/13	23.1	7.8	691	6.7	79	212	0.121	0.005	0.774	0.900	0.002	0.003	15	5.2	2.1	76	295	1.7	13.4	0.15	0.25	1.40	0.04	0.25	1.6	22.2	43		6
LP-CT2	Lakes Park (CT-2)	2/18/14	20.7	7.9	698	7.0	78	197	0.053	0.005	0.922	0.980	0.002	0.010	15	3.4	1.5	79	283	2.2	2.5	0.15	0.25	1.14	0.03	0.25	2.3	2.7	22		17
LP-CT2	Lakes Park (CT-2)	3/18/14	23.3	8.1	707	6.8	80	198	0.048	0.005	1.147	1.200	0.002	0.003	13	3.5	2.9	81	299	2.6	5.6	0.15	0.25	1.29	0.03	0.25	1.6	1.4	49		29
LP-CT2	Lakes Park (CT-2)	4/21/14	24.6	8.0	689	6.3	76	190	0.061	0.010	0.879	0.950	0.002	0.013	15	3.8	1.9	80	281	2.7	16.0	0.15	0.25	1.28	0.03	0.25	1.7	2.1	40		20
LP-CT2	Lakes Park (CT-2)	5/13/14	27.8	7.9	720	6.1	78	186	0.059	0.005	0.416	0.480	0.002	0.009	15	4.5	2.5	85	284	2.0	12.3	0.15	0.25	0.97	0.03	0.25	1.8	1.6	140		7
LP-CT2	Lakes Park (CT-2)	6/10/14	29.5	7.7	647	4.7	62	169	0.069	0.005	0.256	0.330	0.002	0.003	23	2.7	2.2	70	256	1.9	18.0	0.15	0.25	1.14	0.05	0.25	1.8	1.2	5		27
LP-CT2	Lakes Park (CT-2)	7/7/14	30.1	7.7	643	4.7	62	173	0.040	0.005	0.475	0.520	0.002	0.012	26	1.8	1.1	66	256	1.1	24.3	0.15	0.25	0.92	0.05	0.25	1.3	1.5	33		84
LP-CT2	Lakes Park (CT-2)	8/4/14	30.5	7.8	784	4.9	65	189	0.041	0.005	0.434	0.480	0.002	0.009	22	2.2	1.5	89	282	1.4	9.2	0.15	0.25	1.01	0.04	0.25	1.7	1.1	208		160
LP-CT2	Lakes Park (CT-2)	9/23/14	27.6	7.7	730	4.9	62	190	0.060	0.005	0.315	0.380	0.002	0.011	20	1.2	1.9	86	279	1.5	18.6	0.15	0.25	0.85	0.02	0.25	1.2	1.5	83		24
LP-CT2	Lakes Park (CT-2)	10/28/14	24.0	7.7	715	5.6	67	184	0.038	0.005	0.387	0.430	0.002	0.017	21	2.0	1.4	85	273	1.4	6.8	0.15	0.25	1.11	0.02	0.25	1.4	68.8	32		4
LP-CT2	Lakes Park (CT-2)	11/18/14	22.5	7.9	722	6.1	70	206	0.051	0.005	0.294	0.350	0.002	0.012	19	4.4	1.8	95	283	2.0	9.8	0.46	0.25	1.51	0.05	0.25	2.2	1.6	45		51
LP-CT2	Lakes Park (CT-2)	12/10/14	20.4	7.7	697	6.7	75	205	0.019	0.012	0.399	0.430	0.002	0.013	14	1.6	1.2	70	293	1.3	8.7	0.15	0.25	1.36	0.03	0.25	1.7	1.7	25		5

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CT2	Lakes Park (CT-2)	1/5/15	23.5	7.7	738	6.5	77	194	0.029	0.005	0.776	0.810	0.002	0.008	17	1.5	1.3	81	311	1.4	10.0	0.15	0.25	0.78	0.03	0.25	1.7	0.5	56		20
LP-CT2	Lakes Park (CT-2)	2/9/15	18.8	7.8	733	7.6	82	227	0.030	0.005	0.415	0.450	0.002	0.003	15	4.0	1.2	101	316	1.1	13.3	0.15	0.25	1.13	0.02	0.25	1.6	0.5	21		39
LP-CT2	Lakes Park (CT-2)	3/18/15	26.0	8.0	679	5.7	70	198	0.032	0.005	0.443	0.480	0.002	0.046	16	3.0	0.9	89	280	1.0	7.1	0.15	0.25	1.19	0.02	0.25	1.5	1.0	7		13
LP-CT2	Lakes Park (CT-2)	4/14/15	27.2	7.8	686	6.5	82	188	0.007	0.005	0.278	0.290	0.002	0.020	17	2.0	0.9	94	275	1.2	19.5	0.15	0.25	0.64	0.02	0.25	3.8	0.5	101		1,553
LP-CT2	Lakes Park (CT-2)	5/13/15	28.1	7.9	667	6.2	79	176	0.007	0.005	0.498	0.510	0.002	0.014	17	1.1	1.7	97	254	2.0	22.9	0.15	0.25	1.10	0.02	0.25	1.1	1.3	20		8
LP-CT2	Lakes Park (CT-2)	6/11/15	28.5	7.8	660	5.4	70	174	0.007	0.005	0.688	0.700	0.002	0.021	19	2.6	1.5	92	234	0.9	14.2	0.15	0.25	0.94	0.02	0.25	1.2	1.1	30		201
LP-CT2	Lakes Park (CT-2)	7/9/15	29.0	7.4	742	3.8	49	160	0.022	0.005	0.333	0.360	0.002	0.003	26	2.3	1.4	98	266	1.0	91.3	0.15	0.25	1.09	0.05	0.25	1.3	0.5	30		19
LP-CT2	Lakes Park (CT-2)	8/11/15	29.3	7.5	651	3.3	43	170	0.007	0.005	0.598	0.610	0.002	0.030	28	2.6	2.5	83	261	1.1	14.3	0.15	0.25	0.99	0.12	0.25	1.3	0.5	132		131
LP-CT2	Lakes Park (CT-2)	9/24/15	28.2	7.4	647	3.5	44	186	0.057	0.016	0.577	0.650	0.008	0.019	26	2.4	1.8	75	284	0.8	2.5	0.15	0.25	0.25	0.10	0.25	0.4	0.5	500		58
LP-CT2	Lakes Park (CT-2)	10/22/15	24.9	8.0	675	6.5	78	203	0.007	0.032	0.751	0.790	0.002	0.003	20	1.9	1.1	65	336	0.9	14.4	0.15	0.25	0.92	0.02	0.25	1.7	1.4	76		11
LP-CT2	Lakes Park (CT-2)	11/17/15	25.1	8.0	727	7.0	85	223	0.059	0.068	0.723	0.850	0.002	0.022	18	3.7	1.8	80	340	1.1	10.8	0.15	0.25	0.75	0.02	0.25	1.6	1.4	108		32
LP-CT2	Lakes Park (CT-2)	12/15/15	23.6	7.9	718	6.7	80	214	0.017	0.036	0.387	0.440	0.002	0.021	19	4.0	1.0	79	307	1.2	36.0	0.15	0.25	0.74	0.03	0.25	1.5	1.1	132		11
LP-CT2	Lakes Park (CT-2)	1/19/16	17.9	7.7	622	6.6	70	163	0.016	0.038	0.216	0.270	0.002	0.018	22	2.8	1.6	77	251	0.9	14.2	0.15	0.25	1.27	0.10	0.25	1.2	1.6	56		32
LP-CT2	Lakes Park (CT-2)	2/24/16	21.7	7.9	692	7.7	87	219	0.007	0.005	0.478	0.490	0.002	0.017	21	3.3	1.9	76	313	1.7	12.3	0.15	0.25	1.09	0.06	0.25	1.3	1.4	8		3
LP-CT2	Lakes Park (CT-2)	3/23/16	21.9	7.9	706	7.4	84	209	0.007	0.005	0.298	0.310	0.002	0.014	18	1.4	1.4	75	316	1.1	24.7	0.15	0.25	1.06	0.03	0.25	1.2	0.5	7		11
LP-CT2	Lakes Park (CT-2)	4/26/16	25.8	8.1	718	6.8	84	197	0.007	0.005	0.568	0.580	0.002	0.019	15	3.3	3.4	83	297	0.7	8.6	0.15	0.25	1.03	0.02	0.25	1.5	0.5	38		19
LP-CT2	Lakes Park (CT-2)	5/24/16	29.4	8.0	648	6.2	81	170	0.007	0.005	0.688	0.700	0.002	0.030	19	2.4	2.6	72	221	1.4	2.5	0.15	0.25	0.85	0.03	0.25	1.5	0.5	45		33
LP-CT2	Lakes Park (CT-2)	6/29/16	29.2	7.6	647	5.1	66	176	0.007	0.005	0.578	0.590	0.002	0.023	25	3.0	2.3	70	229	1.5	10.2	0.15	0.25	1.18	0.06	0.25	1.1	1.0	99		308
LP-CT2	Lakes Park (CT-2)	7/26/16	28.8	7.5	485	5.8	75	144	0.007	0.005	0.598	0.610	0.002	0.024	25	2.3	1.8	46	185	0.8	11.6	0.15	0.25	0.68	0.14	0.25	0.8	0.5		77	110
LP-CT2	Lakes Park (CT-2)	8/23/16	30.3	7.6	615	5.1	68	178	0.031	0.017	0.412	0.460	0.002	0.026	25	1.3	1.3	67	225	0.9	2.5	0.15	0.25	1.17	0.08	0.25	1.1	0.5		72	980
LP-CT2	Lakes Park (CT-2)	9/21/16	30.0	7.7	624	5.8	77	193	0.007	0.010	0.413	0.430	0.002	0.024	23	2.5	1.0	58	219	1.0	15.2	0.15	0.25	0.89	0.07	0.25	0.9	1.0		142	55
LP-CT2	Lakes Park (CT-2)	10/25/16	23.1	8.0	631	6.9	80	193	0.007	0.005	0.528	0.540	0.002	0.032	21	1.1	1.2	63	239	1.1	25.1	0.15	0.25	0.83	0.05	0.25	1.0	0.5		6	3
LP-CT2	Lakes Park (CT-2)	11/21/16	19.6	8.0	630	8.1	88	196	0.007	0.005	0.458	0.470	0.002	0.010	17	1.5	0.4	72	237	1.1	6.2	0.15	0.25	0.84	0.04	0.25	1.0	0.5		13	3
LP-CT2	Lakes Park (CT-2)	12/27/16	23.1	8.2	664	7.9	92	192	0.007	0.005	0.608	0.620	0.002	0.027	17	4.8	1.9	70	231	2.8	15.9	0.15	0.25	1.11	0.03	0.25	1.1	0.5		30	2
LP-CT2	Lakes Park (CT-2)	1/23/17	21.8	8.1	656	7.9	90	193	0.007	0.005	0.448	0.460	0.002	0.017	14	1.4	1.3	83	234	1.3	6.4	0.15	0.25	1.02	0.03	0.25	1.2	0.5		60	32
LP-CT2	Lakes Park (CT-2)	2/23/17	21.8	7.9	631	7.4	85	178	0.007	0.005	0.448	0.460	0.002	0.022	13	3.5	1.4	89	223	1.2	6.2	0.15	0.25	1.38	0.03	0.25	1.2	0.5		81	21
LP-CT2	Lakes Park (CT-2)	3/29/17	24.3	8.1	691	7.3	88	163	0.007	0.005	0.488	0.500	0.002	0.018	11	3.4	2.3	102	227	1.9	16.9	0.15	0.25	1.09	0.03	0.25	1.1	0.5		16	5
LP-CT2	Lakes Park (CT-2)	4/18/17	24.2	8.2	729	7.7	92	169	0.018	0.005	0.647	0.670	0.002	0.026	12	4.0	2.6	109	222	4.6	18.4	0.15	0.25	1.83	0.03	0.25	1.3	1.6		25	8
LP-CT2	Lakes Park (CT-2)	5/8/17	25.0	8.0	681	7.1	87	91	0.007	0.014	0.789	0.810	0.002	0.034	15	2.7	1.4	96	213	1.0	8.9	0.15	0.25	1.09	0.03	0.25	1.1	1.4		17	30
LP-CT2	Lakes Park (CT-2)	6/7/17	27.0	7.5	571	4.6	58	139	0.007	0.005	0.918	0.930	0.002	0.059	24	4.6	2.9	61	186	1.3	14.4	0.15	0.25	1.27	0.13	0.25	0.9	0.5		1,046	2,420
LP-CT2	Lakes Park (CT-2)	7/19/17	29.0	7.3	590	3.9	50	155	0.007	0.005	0.348	0.360	0.002	0.016	31	2.5	2.4	61	201	1.1	12.0	0.15	0.25	1.32	0.15	0.25	0.8	1.8		579	31
LP-CT2	Lakes Park (CT-2)	8/8/17	30.5	7.4	640	4.5	60	178	0.030	0.005	0.355	0.390	0.002	0.025	24	3.1	1.8	69	214	1.2	7.1	0.15	0.25	0.82	0.09	0.25	0.8	2.5		57	74
LP-CT2	Lakes Park (CT-2)	9/20/17	28.8	7.5	522	1.6	21	161	0.007	0.005	0.518	0.530	0.004	0.058	35	3.8	1.9	43	183	1.2	8.2	0.15	0.25	0.84	0.19	0.25	0.4	1.2		9	60
LP-CT2	Lakes Park (CT-2)	10/9/17	28.4	7.6	639	5.4	70	195	0.007	0.005	0.468	0.480	0.002	0.025	27	2.6	1.2	43	233	0.9	6.9	0.15	0.25	0.74	0.07	0.25	0.8	0.5		7	10
LP-CT2	Lakes Park (CT-2)	11/8/17	25.4	7.7	641	5.2	64	211	0.007	0.005	0.418	0.430	0.002	0.020	20	1.5	1.3	53	250	1.4	2.5	0.15	0.25	0.86	0.05	0.25	1.0	0.5		1	3
LP-CT2	Lakes Park (CT-2)	12/11/17	19.7	7.7	668	6.1	67	193	0.027	0.016	0.427	0.470	0.002	0.022	17	2.1	1.2	78	234	0.9	10.3	0.15	0.25	0.75	0.04	0.25	0.8	2.9		20	11
LP-CT2	Lakes Park (CT-2)	1/18/18	16.1	8.0	712	7.8	80	195	0.007	0.010	0.553	0.570	0.002	0.016	15	3.3	1.6	94	256	1.5	6.2	0.15	0.25	1.16	0.03	0.25	0.8	0.5		4	16
LP-CT2	Lakes Park (CT-2)	2/15/18	24.8	7.9	753	6.2	75	186	0.007	0.005	0.548	0.560	0.002	0.043	13	4.2	1.9	102	257	1.1	12.3	0.15	0.25	1.18	0.04	0.25	0.9	1.8		13	16
LP-CT2	Lakes Park (CT-2)	3/5/18	22.9	7.8	757	6.6	77	188	0.007	0.005	0.578	0.590	0.002	0.033	15	11.1	5.8	105	259	2.1	9.1	0.15	0.25	0.89	0.04	0.25	1.0	1.4		1	6
LP-CT2	Lakes Park (CT-2)	4/3/18	25.7	7.7	788	6.4	79	178	0.029	0.005	0.576	0.610	0.002	0.018	13	3.4	1.9	116	265	1.5	9.2	0.15	0.25	1.44	0.04	0.25	0.9	4.3		12	9
LP-CT2	Lakes Park (CT-2)	5/7/18	28.0	8.0	831	6.6	84	169	0.007	0.005	0.558	0.570	0.002	0.043	14	5.2	2.9	132	245	1.1	11.4	0.15	0.25	1.54	0.04	0.25	1.0	1.6		40	167
LP-CT2	Lakes Park (CT-2)	6/7/18	29.9	7.6	776	5.0	66	176	0.037	0.005	0.578	0.620	0.002	0.028	28	2.6	1.7	106	246	1.3	8.2	0.15	0.25	1.14	0.08	0.25	0.4	0.5		10	132
LP-CT2	Lakes Park (CT-2)	7/2/18			698			182	0.007	0.005	0.618	0.630	0.002	0.022	25	2.9	1.8	96	241	1.5	12.9	0.15	0.25	0.78	0.05	0.25	0.8	0.5		15	25
LP-CT2	Lakes Park (CT-2)	8/16/18	29.6	7.8	677	5.8	76	193	0.007	0.005	0.568	0.580	0.002	0.023	26	3.7	2.1	80	228	1.6	12.8	0.15	0.25	1.07	0.07	0.25	0.4	2.5		138	201
LP-CT2	Lakes Park (CT-2)	9/12/18	29.7	7.9	695	6.3	83	193	0.007	0.005	0.508	0.520	0.002	0.015	22	4.0	1.8	80	258	1.0	10.2	0.15	0.25	0.56	0.07	0.25	0.4	0.5		38	33
LP-CT2	Lakes Park (CT-2)	10/9/18	27.3	7.7	656	5.9	74	194	0.007	0.005	0.568	0.580	0.002	0.017	22	1.4	1.0	69	228	0.2	11.1	0.15	0.25	1.18	0.04	0.25	0.9	1.2		20	1
LP-CT2	Lakes Park (CT-2)	11/15/18	26.4	7.8	724	5.8	73	186	0.007	0.016	0.457	0.480	0.002	0.023	16	2.3	0.8	95	239	0.9	28.5	0.15	0.25	0.85	0.03	0.25	0.8	2.8		10	3
LP-CT2	Lakes Park (CT-2)	12/3/18	22.2	7.8	782	7.1	81	190	0.007	0.012	0.501	0.520	0.002	0.014	15	1.0	0.4	104	254	1.0	9.7	0.15	0.25	1.13	0.03	0.25	0.9	1.1		10	4
LP-CT2	Lakes Park (CT-2)	1/10/19	20.5	7.9	798	6.8	75	189	0.007	0.005	0.478	0.490	0.002	0.021	14	2.2	1.8	116	261	1.1	9.5	0.15	0.25	0.78	0.03	0.25	0.8	0.5		28	199
LP-CT2	Lakes Park (CT-2)	2/7/19	21.4	7.8	727	7.8	89	184	0.014	0.005	0.421	0.440	0.002	0.017	18	2.3	1.7	84	241	2.2	5.6	0.15	0.25	1.62	0.08	0.25	2.1	1.8		21	4
LP-CT2	Lakes Park (CT-2)	3/12/19	25.1	7.9	764	6.8	83	191	0.007	0.005	0.458	0.470	0.002	0.017	16	2.2	1.5	104	241	1.1	5.2	0.15	0.25	2.13	0.03	0.25	2.3	0.5		1	17
LP-CT2	Lakes Park (CT-2)	4/9/19	26.5	7.9	799	6.1	76	187	0.007	0.005	0.518	0.530	0.002	0.014	14	1.1	2.2	115	264	1.3	7.3	0.15	0.25	0.74	0.03	0.25	1.9	1.0		16	58
LP-CT2	Lakes Park (CT-2)	5/9/19	28.8	7.9	790	6.1	79	172	0.007	0.005	0.638	0.650	0.002	0.020	14	2.9	2.3	124	234	1.3	17.0	0.15	0.25	0.77	0.03	0.25	0.4	1.0		33	73
LP-CT2	Lakes Park (CT-2)	6/13/19	30.4	7.9	755	6.2	83	166	0.007	0.005	0.518	0.530	0.002	0.014	17	1.8	1.8	113	218	1.1	30.8	0.15	0.25	0.53	0.03	0.25	0.4	1.2		126	40
LP-CT2	Lakes Park (CT-2)	7/11/19	29.4	7.5	672	5.8	76	173	0.007	0.005	0.428	0.440	0.002	0.020	21	2.4	1.9	86	217	1.1	47.7	0.15	0.25	0.25	0.06	0.25	0.4	1.0		66	687
LP-CT2	Lakes Park (CT-2)	8/14/19	29.1	7.4	683	3.9	51	186	0.037	0.025	0.518	0.580	0.002	0.027	27	1.3	0.6	79	222	0.4	10.8	0.15	0.25	0.25	0.08	0.25	0.4	0.5		1,046	96
LP-CT2	Lakes Park (CT-2)	9/12/19	30.2	7.6	691	4.6	61	191	0.007	0.005	0.498	0.510	0.002	0.014	22	0.3	0.7	77	231	1.0	7.9	0.15	0.25	0.66	0.04	0.25	0.4	2.5		10	6
LP-CT2	Lakes Park (CT-2)	10/10/19	28.2	7.6	666	4.2	54	178	0.007	0.005	0.558	0.570	0.002	0.027	21	1.0	0.9	76	254	0.8	9.7	0.15	0.25	0.25	0.05	0.25	0.4	0.5		48	15
LP-CT2	Lakes Park (CT-2)	11/19/19	21.2	7.5	667	5.1	57	199	0.015	0.005	0.540	0.560	0.002	0.015	18	0.3	1.3	92	211	0.8	20.7	0.15	0.25	0.25	0.02	0.25	0.4	0.5		25	15
LP-CT2	Lakes Park (CT-2)	12/2/19	22.6	7.5	693	4.7	54	202	0.020	0.005	0.515	0.540	0.002	0.029	18	0.3	1.3	93	225	1.5	5.7	0.15	0.25	0.62	0.02	0.25	0.4	1.3		22	3
LP-CT2	Lakes Park (CT-2)	1/9/20	19.8	7.7	743	6.4	70	200	0.007	0.005	0.488	0.500	0.002	0.021	19	0.3	0.1	106	282	0.9	2.5	0.15	0.25	0.60	0.03	0.25	0.4	0.5		2	2
LP-CT2	Lakes Park (CT-2)	2/20/20	26.0	7.7	806	6.3	78	187	0.007	0.005	0.498	0.510	0.002	0.011	16	0.3	0.2	62	240	1.2	2.5	0.15	0.25	0.25	0.03	0.25	0.4	0.5		3	1
LP-CT2	Lakes Park (CT-2)	3/17/20	25.2	7.9	808	6.9	84	179	0.007	0.005	0.588	0.600	0.002	0.029	14	3.1	1.0	114	231	0.8	6.9	0.15	0.25	0.64	0.02	0.25	0.4	1.1		1	1
LP-CT2	Lakes Park (CT-2)	4/27/20	26.6	7.5	832	4.5	56	158	0.019	0.010	0.621	0.650	0.002	0.021	16	1.4	0.7	132	215	0.7	8.3	0.15	0.25	0.25	0.02	0.25	0.4	0.5		91	8
LP-CT2	Lakes Park (CT-2)	5/7/20	28.1	7.6	872	5.6	72	158	0.007	0.005	0.688	0.700	0.002	0.019	14	0.9	0.9	141	201	1.4	12.3	0.15	0.25	1.03	0.02	0.25	0.4	2.9		31	25
	Minimum Value:		15.8	6.8	153	0.3	21	91	0.004	0.005	0.105	0.120	0.001	0.003	11	0.3	0.1	17	122	0.2	2.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5	1	1	1
	Maximum Value:		33.0	9.3	11,900	14.2	92	227	0.235	0.220	2.370	2.550	0.041	0.530	80	12.0	12.0	4,100	359	6.0	319.0	1.91	0.71	6.00	0.19	12.60	3.8	68.8	900	1,046	2,420
	Geometric mean:		25.2	7.6	710	4.8	70	182	0.019	0.011	0.571	0.627	0.003	0.016	21	1.7	1.3	85	250	1.3	11.3	0.17	0.25	0.89	0.04	0.35	1.2	1.9	26	22	20
	Geometric mean (2016-2020):		25.3	7.8	693	5.9	72	179	0.009	0.006	0.510	0.530	0.002	0.022	18	2.0	1.4	84	235	1.1	9.6	0.15	0.25	0.84	0.04	0.25	0.8	0.9	28	22	19

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CT3	Lakes Park (CT-3)	5/30/89				10.4			1.580	0.030	0.000	1.610		0.005						2.0											
LP-CT3	Lakes Park (CT-3)	6/22/89				9.9			0.010	0.005	0.815	0.830		0.080						1.0											
LP-CT3	Lakes Park (CT-3)	7/6/89							0.010	0.020	0.400	0.430		0.005																	
LP-CT3	Lakes Park (CT-3)	7/13/89				8.2			0.130	0.005	1.015	1.150		0.005																	
LP-CT3	Lakes Park (CT-3)	7/18/89							0.220	0.030	0.430	0.680		0.005						2.0											
LP-CT3	Lakes Park (CT-3)	7/20/89							0.090	0.005	0.215	0.310		0.005																	
LP-CT3	Lakes Park (CT-3)	8/30/89				9.3			0.010	0.010	0.620	0.640		0.070						2.0											
LP-CT3	Lakes Park (CT-3)	9/1/89				9.0			0.010	0.020	0.930	0.960		0.005						2.0											
LP-CT3	Lakes Park (CT-3)	10/26/89				8.2			0.010	0.090	0.870	0.970		0.005						2.0											
LP-CT3	Lakes Park (CT-3)	12/19/89				12.1			0.030	0.010	0.440	0.480		0.005						1.0											
LP-CT3	Lakes Park (CT-3)	7/11/90				7.8			0.030	0.010	1.330	1.370		0.005						2.0											
LP-CT3	Lakes Park (CT-3)	8/31/90				6.1			0.110	0.010	0.760	0.880		0.005						2.0											
LP-CT3	Lakes Park (CT-3)	9/11/90				1.6			0.040	0.005	0.575	0.620		0.010						2.0											
LP-CT3	Lakes Park (CT-3)	10/12/90				6.9			0.010	0.005	1.575	1.590		0.010						0.5											
LP-CT3	Lakes Park (CT-3)	11/6/90				9.3			0.010	0.080	0.990	1.080		0.005						2.0											
LP-CT3	Lakes Park (CT-3)	1/25/91				12.4			0.010	0.010	1.160	1.180		0.005						0.4											
LP-CT3	Lakes Park (CT-3)	2/11/91				9.8			0.040	0.050	3.080	3.170		0.040						0.6											
LP-CT3	Lakes Park (CT-3)	6/10/91				7.2			0.080	0.010	0.470	0.560		0.005						1.7											
LP-CT3	Lakes Park (CT-3)	7/10/91				9.1			0.010	0.005	0.225	0.240		0.005						2.8											
LP-CT3	Lakes Park (CT-3)	8/20/91				8.2			0.030	0.150	0.870	1.050		0.080						1.7											
LP-CT3	Lakes Park (CT-3)	9/16/91				7.9			0.020	0.230	0.180	0.430		0.005						7.0											
LP-CT3	Lakes Park (CT-3)	7/6/92	32.0	7.7		4.6			0.060	0.010	0.750	0.820		0.005						2.0											
LP-CT3	Lakes Park (CT-3)	7/20/92	31.7	7.5		4.7			0.040	0.005	0.415	0.460		0.060						2.4											
LP-CT3	Lakes Park (CT-3)	8/5/92	29.0	7.2		8.6			0.010	0.005	0.635	0.650		0.020						1.9											
LP-CT3	Lakes Park (CT-3)	9/2/92	29.4	7.6		8.9			0.010	0.005	-0.010	0.005		0.005						1.6											
LP-CT3	Lakes Park (CT-3)	10/9/92	27.0	7.4		7.1			0.070	0.020	0.810	0.900		0.040						1.0											
LP-CT3	Lakes Park (CT-3)	1/25/93	22.2	7.6		6.4			0.030	0.005	0.935	0.970		0.030						1.2											
LP-CT3	Lakes Park (CT-3)	2/15/93	19.4	7.6		8.3			0.010	0.005	0.875	0.890		0.005						1.4											
LP-CT3	Lakes Park (CT-3)	3/22/93	22.0	7.9		8.5			0.010	0.005	0.315	0.330		0.120						0.9											
LP-CT3	Lakes Park (CT-3)	4/20/93	23.3	7.8		8.0			0.010	0.005	0.175	0.190		0.120						1.1											
LP-CT3	Lakes Park (CT-3)	7/26/93	32.0	8.7		6.2			0.010	0.005	0.125	0.140		0.005																	
LP-CT3	Lakes Park (CT-3)	8/25/93	30.0	7.8		3.0			0.010	0.005	0.555	0.570		0.005						1.2											
LP-CT3	Lakes Park (CT-3)	9/3/93	29.0	7.5		4.8			0.050	0.005	0.185	0.240		0.005						0.9											
LP-CT3	Lakes Park (CT-3)	10/1/93	28.0	8.0		7.8			0.010	0.005	0.365	0.380		0.005						1.7											
LP-CT3	Lakes Park (CT-3)	11/4/93	23.0	7.4		4.5			0.050	0.005	0.215	0.270		0.020						1.8											
LP-CT3	Lakes Park (CT-3)	8/17/94	31.0	8.1		5.0			0.010	0.005	0.865	0.880		0.090						1.3											
LP-CT3	Lakes Park (CT-3)	9/14/94	28.0	7.3		3.0			0.010	0.005	0.275	0.290		0.020						1.6											
LP-CT3	Lakes Park (CT-3)	10/10/94	27.0	7.2		4.5			0.030	0.020	0.080	0.130		0.005						0.7											
LP-CT3	Lakes Park (CT-3)	11/1/94	27.0	7.6		5.2			0.010	0.030	0.050	0.090		0.005						1.5											
LP-CT3	Lakes Park (CT-3)	1/31/95	17.0	7.6		7.1			0.030	0.005	0.555	0.590		0.005						1.0											
LP-CT3	Lakes Park (CT-3)	2/21/95	22.0	7.6		7.5			0.010	0.005	0.565	0.580		0.130						2.2											
LP-CT3	Lakes Park (CT-3)	6/22/95	29.0	7.6	318	2.2			0.030	0.020	0.020	0.070	0.003	0.005		0.5	1.2	80		1.2				0.50		0.50		5.0			
LP-CT3	Lakes Park (CT-3)	8/30/95	31.0	7.9	382	6.0			0.010	0.150	0.440	0.600	0.001	0.005		0.5	2.8	63		2.7				0.50		0.50		5.0			
LP-CT3	Lakes Park (CT-3)	9/28/95	29.0	7.4	438	2.2			0.130	0.005	0.365	0.500	0.004	0.030		0.5	1.9	56		0.9				0.50		0.50		10.0			
LP-CT3	Lakes Park (CT-3)	1/4/96	18.0	7.7	424	7.6			0.060	0.310	0.640	1.010	0.001	0.005		0.5	0.8	58		1.3				0.50		0.50		5.0			
LP-CT3	Lakes Park (CT-3)	4/18/96	25.0	7.9	396	8.6			0.010	0.090	0.450	0.550	0.001	0.020		0.5	0.5	65		2.2				0.50		0.50		5.0			
LP-CT3	Lakes Park (CT-3)	5/22/96	29.0	8.5	385	11.0			0.010	0.140	0.200	0.350	0.001	0.840		0.5	0.7	64		1.6				0.50		0.50		5.0			
LP-CT3	Lakes Park (CT-3)	6/26/96	33.0	8.5	372	10.5			0.010	0.090	0.140	0.240	0.001	0.005		0.5	0.5	62		1.8				0.50		0.50		5.0			
LP-CT3	Lakes Park (CT-3)	7/16/96	31.0	8.5	373	7.5			0.010	0.060	0.430	0.500	0.001	0.005		0.5	1.4	60		1.5				0.50		0.50		5.0			
LP-CT3	Lakes Park (CT-3)	8/27/96	29.0	7.8	430	6.9			0.010	0.130	0.450	0.590	0.001	0.005		0.5	0.3	62		0.5				0.50		0.50		5.0			
LP-CT3	Lakes Park (CT-3)	4/17/97	27.0	8.6	485	1.0			0.010	0.005	0.325	0.340	0.001	0.005		0.5	0.5	94		0.5				0.50		0.50		5.0			
LP-CT3	Lakes Park (CT-3)	7/24/97	30.0	7.5	519	3.3			0.010	0.005	0.655	0.670	0.001	0.070		1.0	0.5	88		1.2				0.50		0.50		5.0			
LP-CT3	Lakes Park (CT-3)	8/25/97	30.0	7.7	590	5.1			0.010	0.020	0.140	0.170		0.005		6.0	0.5	91		0.5				0.50		0.50		5.0	5		
LP-CT3	Lakes Park (CT-3)	9/23/97	30.0	7.8	603	7.8			0.010	0.005	-0.010	0.005	0.001	0.010		0.5	0.5	92		0.5				0.50		1.00		5.0	5		
LP-CT3	Lakes Park (CT-3)	7/22/98	28.0	7.2	397	1.6			0.010	0.005	0.265	0.280	0.019	0.020		2.0	0.9	76		1.8				1.00		0.50		10.0	30		
LP-CT3	Lakes Park (CT-3)	8/25/98	30.0	7.4	569	3.0			0.010	0.005	0.995	1.010	0.002	0.005		1.0	0.5	77		0.5				1.00		0.50		5.0	10		
LP-CT3	Lakes Park (CT-3)	9/29/98	29.0	7.5	478	3.6			0.010	0.060	0.140	0.210	0.001	0.005		2.0	0.5	71		1.3				1.00		0.50		5.0	10		
LP-CT3	Lakes Park (CT-3)	11/30/98	25.0	7.7	497	6.2			0.010	0.005	0.205	0.220	0.001	0.025		0.5	0.4	67		1.3				1.00		0.50		5.0	10		
LP-CT3	Lakes Park (CT-3)	7/27/99	32.0	7.6	882	5.0			0.060	0.005	0.025	0.090	0.002	0.130		2.0	0.5	139		0.8				1.00		1.00		10.0	5		
LP-CT3	Lakes Park (CT-3)	8/26/99	32.0	7.4	717	4.5			0.010	0.005	1.495	1.510	0.001	0.250		1.0	0.7	117		0.8				12.00		1.00		10.0	10		
LP-CT3	Lakes Park (CT-3)	10/6/99	27.0	7.4	583	2.7			0.010	0.050	0.660	0.720	0.010	0.025		7.0	0.5	77		0.8				1.00		1.00		10.0	5		
LP-CT3	Lakes Park (CT-3)	9/21/00	30.0	7.6	886	5.4			0.090	0.010	1.430	1.530	0.029	0.025		6.0	3.2	184		3.4				0.50		0.50		5.0	70		
LP-CT3	Lakes Park (CT-3)	11/15/01	22.2	7.4	746	4.6			0.005	0.050	0.815	0.870	0.003	0.120		0.5	0.5	121	178	0.8				0.50		0.50		5.0	5		5
LP-CT3	Lakes Park (CT-3)	12/19/01	22.6	7.4	751	3.5			0.030	0.050	0.690	0.770	0.003	0.025	31	2.0	0.5	116	182	0.8				6.00		0.50		10.0	5		5
LP-CT3	Lakes Park (CT-3)	1/28/02	23.3	7.5	754	6.3			0.030	0.005	0.895	0.930	0.011	0.025	26	3.0	0.9	119		4.8				0.50		0.50		5.0	10		10
LP-CT3	Lakes Park (CT-3)	2/27/02	19.8	7.9	729	7.7			0.010	0.010	0.450	0.470	0.016	0.025	22	3.0	0.7	126		0.8				0.50		0.50		5.0	5		5
LP-CT3	Lakes Park (CT-3)	3/26/02	26.1	8.8	649	8.3			0.020	0.005	0.645	0.670	0.014	0.025	24	4.0	0.8	138		1.8				0.50		1.00		5.0	5		10
LP-CT3	Lakes Park (CT-3)	4/11/02	25.7	9.2	1,590	8.5			0.010	0.010	0.860	0.880	0.003	0.025	21	5.0	0.6	400		1.6				0.50		0.50		5.0	5		5
LP-CT3	Lakes Park (CT-3)	5/21/02	26.6	8.2	3,830	2.3			0.020	0.005	0.745	0.770	0.003	0.025	28	6.0	1.9	483	402	2.7				7.00		2.00		5.0	5		20
LP-CT3	Lakes Park (CT-3)	6/6/02	28.5	7.5	18,400	1.6			0.060	0.010	1.370	1.440	0.005	0.025	37	4.0	0.7	1,300	520	4.0				1.00		0.50		10.0	5		5
LP-CT3	Lakes Park (CT-3)	7/16/02	30.7	7.4	3,380	4.5			0.030	0.010	1.060	1.100	0.009	0.180	56	8.0	1.5	460	388	5.3				0.50		0.50		5.0	5		30
LP-CT3	Lakes Park (CT-3)	8/20/02	31.5	7.6	3,210				0.005	0.005	1.170	1.180	0.003	0.030	24	7.0	1.3	801	450	2.6				0.50		0.50		10.0	10		
LP-CT3	Lakes Park (CT-3)	9/26/02	29.6	7.4	2,620				0.130	0.005	-0.130	0.005	0.003	0.030	37	7.0	2.6	593	406	4.2				0.50		0.50		5.0	40		10
LP-CT3	Lakes Park (CT-3)	10/10/02	29.7	7.8	87	8.4			0.140	0.010	1.250	1.400	0.007	0.030	38	11.0	2.9	60	372	3.6				0.50		1.00		10.0	5		5
LP-CT3	Lakes Park (CT-3)	11/20/02	21.3	7.4	3,020	1.6			0.910	0.040	0.940	1.890	0.003	0.030	32	7.0	1.8	564		0.8				0.50		0.50		5.0	10		20
LP-CT3	Lakes Park (CT-3)	12/23/02	19.0	7.7	2,086	7.5			1.640	0.130	0.970	2.740	0.003	0.030	23	5.0	1.8	445	370	3.7				0.50		0.50		10.0	5		20

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CT3	Lakes Park (CT-3)	1/9/03	17.0	7.3	2,048	1.3			1.510	0.170	1.230	2.910	0.003	0.030	17	9.0	2.4	453	450	4.0				0.50		0.50		5.0	10		5
LP-CT3	Lakes Park (CT-3)	2/13/03	19.9	7.6	1,976	5.4			1.460	0.230	0.580	2.270	0.014	0.015	15	3.0	0.9	485	300	2.2				0.50		0.50		10.0	5		20
LP-CT3	Lakes Park (CT-3)	3/13/03	26.7	7.9	2,252	6.2			0.170	0.070	1.300	1.540	0.013	0.042	44	10.0	2.8	445	390	2.1				0.50		0.50		10.0	5		10
LP-CT3	Lakes Park (CT-3)	4/17/03	26.9	8.1	2,848	9.5			0.005	0.030	1.235	1.270	0.003	0.045	24	3.0	1.8	738	398	1.9		0.38		0.50		0.50		10.0	5		20
LP-CT3	Lakes Park (CT-3)	5/1/03	26.7	7.8	3,428	6.9			0.010	0.020	0.910	0.940	0.003	0.011	30	1.2	3.6	743	424	3.1		0.38		0.50		0.50		10.0	30		20
LP-CT3	Lakes Park (CT-3)	6/23/03	27.7	7.5	2,242	4.2			0.170	0.040	0.820	1.030	0.003	0.025	34	1.2	1.5	480		1.5		0.38		0.50		0.50		5.0	70		390
LP-CT3	Lakes Park (CT-3)	7/22/03	31.8	8.0	1,820	5.2			0.030	0.020	0.880	0.930	0.003	0.034	31	1.2	1.7	394		2.7		0.38		0.50		0.50		5.0	70		40
LP-CT3	Lakes Park (CT-3)	8/5/03	30.9	7.6	1,771	4.3			0.020	0.070	0.980	1.070	0.010	0.045	30	2.7	1.4	352		1.4		0.38		0.50		0.50		5.0	10		5
LP-CT3	Lakes Park (CT-3)	9/8/03	30.3	8.2	1,160	4.4			0.072	0.020	0.988	1.080	0.011	0.024	24	1.2	1.6	214		1.9		0.38		0.50		0.50		5.0	20		5
LP-CT3	Lakes Park (CT-3)	10/28/03	26.8	7.8	949	3.0			0.005	0.010	0.835	0.850	0.008	0.104	14	8.0	2.6	139		3.5		0.38		1.00		0.50		5.0	20		80
LP-CT3	Lakes Park (CT-3)	11/13/03	26.2	7.8	797	8.1			0.014	0.020	0.586	0.620	0.006	0.022	26	6.5	2.9	130		6.4		0.38		2.50		0.50		5.0	5		5
LP-CT3	Lakes Park (CT-3)	12/2/03	19.9	7.5	861	7.4			0.025	0.020	0.575	0.620	0.019	0.022	35	6.5	2.1	149		3.8		0.38		0.50		0.50		5.0	20		5
LP-CT3	Lakes Park (CT-3)	2/19/04	17.6	7.6	898	6.6			0.079	0.180	0.691	0.950	0.019	0.045	22	1.2	0.8	142	224	0.5		0.25		3.00		1.00		5.0	10		5
LP-CT3	Lakes Park (CT-3)	3/18/04	22.8	7.9	888	6.5			0.025	0.005	0.771	0.801	0.008	0.048	23	1.2	1.5	146	220	1.9		0.25		0.50		0.50		10.0	5		10
LP-CT3	Lakes Park (CT-3)	4/13/04	24.6	7.7	882	4.0			0.042	0.005	0.642	0.689	0.019	0.010	22	3.8	1.1	149	222	2.5		0.25		2.00		0.50		5.0	560		180
LP-CT3	Lakes Park (CT-3)	5/17/04	27.4	7.8	845	6.6			0.004	0.010	0.716	0.730	0.004	0.036	22	4.0	1.6	160		1.5		0.25		0.50		0.50		5.0	10		20
LP-CT3	Lakes Park (CT-3)	6/9/04	30.0	7.7	1,621	4.9			0.072	0.010	0.748	0.830	0.004	0.020	23	4.2	3.4	348		2.3		0.25		0.50		0.50		5.0	60		30
LP-CT3	Lakes Park (CT-3)	7/27/04	30.4	7.3	880	8.0			0.028	0.040	1.302	1.370	0.004	0.042	23	4.0	5.7	170		3.0		0.25		0.50		0.50		5.0	30		20
LP-CT3	Lakes Park (CT-3)	8/10/04	27.8	7.6	611	4.8			0.061	0.030	1.089	1.180	0.004	0.058	24	5.0	4.0	143		1.9		0.25		0.50		0.50		5.0	50		30
LP-CT3	Lakes Park (CT-3)	9/15/04	29.0	7.7	681	5.8			0.105	0.005	0.870	0.980	0.004	0.024	25	5.0	4.1	65		3.3		0.25		0.50		0.50		5.0	20		20
LP-CT3	Lakes Park (CT-3)	10/11/04	27.6	7.5	901	3.5			0.060	0.020	1.250	1.330	0.004	0.039	24	6.0	8.3	148		2.6		0.25		0.50		0.50		5.0	190		90
LP-CT3	Lakes Park (CT-3)	11/29/04	22.9	7.7	1,640	5.4			0.197	0.060	1.403	1.660	0.004	0.040	20	4.5	14.0	343		2.6		0.25		0.50		0.50		5.0	10		5
LP-CT3	Lakes Park (CT-3)	12/15/04	18.3	7.6	1,520	5.1			0.296	0.090	1.254	1.640	0.014	0.010	21	7.2	14.0	339		2.2		0.25		0.50		0.50		5.0	10		10
LP-CT3	Lakes Park (CT-3)	12/15/04	18.3	7.6	1,520	5.0			0.297	0.080	1.303	1.680	0.013	0.010	20	4.8	15.0	340		1.8		0.25		0.50		0.50		5.0	30		5
LP-CT3	Lakes Park (CT-3)	1/12/05	22.5	7.8	1,450	6.7			0.041	0.060	2.699	2.800	0.004	0.133	21	39.0	16.0	346		4.2		0.25		0.50		0.50		5.0	5		240
LP-CT3	Lakes Park (CT-3)	2/10/05	20.1	8.2	2,160	9.4			0.029	0.010	1.361	1.400	0.019	0.070	18	17.0	3.8	513		4.4		0.25		0.50		0.50		2.0	40		40
LP-CT3	Lakes Park (CT-3)	3/16/05	23.6	8.2	1,730	10.2			0.007	0.010	1.484	1.500	0.004	0.040	20	20.8	5.1	376	304	4.4		0.20		0.50		0.50		2.0	40		110
LP-CT3	Lakes Park (CT-3)	4/18/05	24.3	7.9	1,540	5.2			0.019	0.010	1.571	1.600	0.004	0.070	29	15.8	14.1	340		5.5		0.20		0.50		0.50		2.0	40		10
LP-CT3	Lakes Park (CT-3)	5/5/05	26.1	7.7	1,320	2.3			0.191	0.020	2.389	2.600	0.004	0.070	29	10.0	8.2	311		3.6		0.20		0.50		0.50		2.0	50		50
LP-CT3	Lakes Park (CT-3)	6/23/05	29.7	7.7	933	0.5			0.250	0.020	1.830	2.100	0.012	0.080	30	8.5	3.6	188		3.3		0.20		0.50		0.50		5.0	40		10
LP-CT3	Lakes Park (CT-3)	7/21/05	32.0	8.0	893	7.3			0.048	0.010	1.542	1.600	0.002	0.070	27	10.7	3.8	151		4.1		0.70		0.50		0.50		5.0	10		5
LP-CT3	Lakes Park (CT-3)	8/18/05	32.5	7.8	819	6.8			0.040	0.005	1.655	1.700	0.002	0.050	23	9.8	6.4	143		3.5		0.20		0.50		0.50		5.0	5		20
LP-CT3	Lakes Park (CT-3)	9/8/05	30.5	7.8	830	7.2			0.026	0.010	1.564	1.600	0.013	0.070	25	18.0	5.5	142		3.9		0.20		0.50		0.50		5.0	5		10
LP-CT3	Lakes Park (CT-3)	10/6/05	28.7	7.9	846	5.0			0.081	0.010	1.709	1.800	0.002	0.060	24	14.5	5.1	150		3.9		0.20		0.50		0.50		5.0	60		5
LP-CT3	Lakes Park (CT-3)	11/1/05	22.9	7.9	724	7.1			0.029	0.010	1.261	1.300	0.002	0.050	25	7.5	4.6	118		3.3		0.20		0.50		0.50		5.0	40		10
LP-CT3	Lakes Park (CT-3)	12/20/05	20.5	7.7	782	6.7			0.081	0.010	1.809	1.900	0.002	0.080	21	13.0	4.4	121		3.9		0.20		0.50		0.50		5.0	20		50
LP-CT3	Lakes Park (CT-3)	1/18/06	19.2	7.7	1,510	8.4			0.039	0.005	1.456	1.500	0.002	0.060	21	10.2	4.2	292		3.8		0.20		0.50		0.50		5.0	90		70
LP-CT3	Lakes Park (CT-3)	2/16/06	18.4	7.7	1,350	9.6			0.021	0.005	1.274	1.300	0.002	0.080	22	11.5	4.1	298		3.9		0.20		0.50		0.50		5.0	10		5
LP-CT3	Lakes Park (CT-3)	3/22/06	26.2	7.9	2,700	8.8			0.013	0.005	1.752	1.770	0.002	0.080	23	16.8	5.3	537		4.2		0.20		0.50		0.50		5.0	20		10
LP-CT3	Lakes Park (CT-3)	4/17/06	26.2	8.4	4,560	10.0			0.024	0.010	1.846	1.880	0.002	0.090	36	22.5	17.5	1,750		5.0		0.20		0.50		0.50		5.0	30		30
LP-CT3	Lakes Park (CT-3)	5/3/06	26.2	8.6	4,890	10.2			0.027	0.010	2.363	2.400	0.002	0.100	57	24.5	7.4	1,290		5.0		0.20		0.50		0.50		5.0	20		20
LP-CT3	Lakes Park (CT-3)	6/5/06	31.5	8.3	7,700	8.1			0.024	0.010	2.146	2.180	0.007	0.110	56	10.5	6.3	2,100		6.8		0.20		0.50		0.50		5.0	10		10
LP-CT3	Lakes Park (CT-3)	7/19/06	32.2	7.9	5,880	7.5			0.034	0.005	1.581	1.620	0.004	0.050	50	13.0	3.7	1,700		2.0		0.15		0.50		0.50		5.0	5		20
LP-CT3	Lakes Park (CT-3)	8/8/06	31.2	8.1	4,780	6.3			0.023	0.010	1.277	1.310	0.006	0.050	32	5.5	3.0	1,180		5.6		0.15		0.50		0.50		5.0	50		50
LP-CT3	Lakes Park (CT-3)	9/25/06	30.3	7.7	3,730	4.2			0.009	0.005	1.297	1.310	0.004	0.050	35	8.0	5.0	799		3.2		0.15		0.50		0.50		2.5	80		10
LP-CT3	Lakes Park (CT-3)	10/17/06	27.4	7.6	3,640	8.1			0.019	0.010	1.781	1.810	0.002	0.070	61	9.5	6.0	670		3.8		0.15		0.50		0.50		2.5	5		5
LP-CT3	Lakes Park (CT-3)	11/20/06	20.4	8.1	3,410	7.5			0.007	0.020	1.893	1.920	0.002	0.070	45	11.3	8.3	1,150		3.3		0.15		0.50		0.50		2.5	70		20
LP-CT3	Lakes Park (CT-3)	12/4/06	23.9	8.0	3,240	8.9			0.019	0.010	2.281	2.310	0.002	0.090	42	13.5	8.4	870		5.6		0.15		0.50		0.50		2.5	140		150
LP-CT3	Lakes Park (CT-3)	1/9/07	23.3	8.4	3,630	7.1			0.007	0.010	1.893	1.910	0.002	0.110	65	18.8	11.3	910		1.7		0.15		0.50		0.50		2.5	30		60
LP-CT3	Lakes Park (CT-3)	2/19/07	17.4	8.6	3,820	9.8			0.007	0.005	1.498	1.510	0.002	0.100	26	12.5	7.8	786		4.9		0.15		0.50		0.50		2.5	60		10
LP-CT3	Lakes Park (CT-3)	3/1/07	24.8	8.2	3,590	8.9			0.007	0.005	1.498	1.510	0.002	0.120	22	19.5	4.8	822		4.7		0.15		0.50		0.50		2.5	10		20
LP-CT3	Lakes Park (CT-3)	4/23/07	25.7	8.2	5,870	9.9			0.016	0.020	1.384	1.420	0.007	0.061	23	11.3	9.5	1,500		3.6		0.15		0.50		0.50		2.5	10		20
LP-CT3	Lakes Park (CT-3)	5/24/07	27.6	8.1	4,980	6.8			0.067	0.010	1.733	1.810	0.007	0.072	26	10.5	11.4	1,750		5.1		0.15		0.50		0.50		2.5	40		20
LP-CT3	Lakes Park (CT-3)	6/21/07	31.5	7.8	5,810	7.8			0.007	0.010	1.793	1.810	0.002	0.074	17	11.0	7.1	1,660		5.0		0.15		0.50		0.50		2.5	30		20
LP-CT3	Lakes Park (CT-3)	7/23/07	28.8	7.8	5,670	6.4			0.007	0.005	1.288	1.300	0.002	0.052	19	9.3	6.5	1,730		2.7		0.15		0.50		0.50		2.5	110		40
LP-CT3	Lakes Park (CT-3)	8/28/07	30.7	8.2	4,860	5.3			0.007	0.005	1.388	1.400	0.002	0.043	20	7.7	4.9	1,300		4.7		0.15		0.50		0.50		2.5	40		250
LP-CT3	Lakes Park (CT-3)	9/25/07	29.5	8.2	4,320	7.6			0.026	0.010	1.464	1.500	0.002	0.042	19	6.8	4.8	1,200		4.4		0.15		0.50		0.50		2.5	70		10
LP-CT3	Lakes Park (CT-3)	10/22/07	29.1	8.2	4,770	6.1			0.016	0.005	1.679	1.700	0.006	0.050	14	11.6	7.4	1,240		4.6		0.15		0.50		0.50		2.5	180		20
LP-CT3	Lakes Park (CT-3)	11/13/07	22.9	8.4	5,010	8.3			0.076	0.010	2.214	2.300	0.002	0.059	18	12.1	1.4	1,250		4.6		0.15		0.50		0.50		2.5	5		10
LP-CT3	Lakes Park (CT-3)	12/4/07	24.8	8.4	4,890	7.7			0.007	0.005	1.988	2.000	0.002	0.062	16	14.4	8.8	1,240		4.9		0.15		0.50		0.50		2.5	5		5
LP-CT3	Lakes Park (CT-3)	1/15/08	20.5	8.4	4,630	9.4			0.007	0.010	1.883	1.900	0.004	0.100	20	22.5	7.1	1,300		6.1		0.15		0.50		0.50		2.5	30		20
LP-CT3	Lakes Park (CT-3)	2/19/08	23.6	8.5	4,680	10.2			0.038	0.030	1.832	1.900	0.002	0.110	16	27.0	7.1	1,210		6.5		0.15		0.50		0.50		2.5	30		5
LP-CT3	Lakes Park (CT-3)	3/27/08	22.8	8.3	4,780	7.7			0.007	0.010	1.783	1.800	0.002	0.090	21	13.8	11.0	1,320		6.9		0.15		0.50		0.50		2.5	10		70
LP-CT3	Lakes Park (CT-3)	4/15/08	24.5	8.3	4,130	6.8			0.019	0.005	1.776	1.800	0.002	0.073	13	12.8	15.8	1,240		6.0		0.15		0.50		0.50		2.5	40		10
LP-CT3	Lakes Park (CT-3)	5/19/08	29.5	8.2	6,150	6.3			0.016	0.005	1.379	1.400	0.004	0.060	14	13.6	8.0	1,530		4.1		0.45		0.50		0.50		2.5	550		60
LP-CT3	Lakes Park (CT-3)	6/25/08	30.6	8.2	4,700	5.9			0.007	0.020	1.573	1.600	0.002	0.065	16	13.4	7.9	1,210		4.9		0.15		0.50		0.50		2.5	50		20
LP-CT3	Lakes Park (CT-3)	7/23/08	31.2	8.1	3,440	5.3			0.014	0.020	1.566	1.600	0.006	0.062	32	7.7	8.0	858		6.0		0.15		0.50		0.50		2.5	490		5
LP-CT3	Lakes Park (CT-3)	8/27/08	31.4	8.3	3,010	7.3			0.007	0.005	1.288	1.300	0.002	0.041	30	2.6	3.9	734		4.3		0.15		0.50		0.50		2.5	500		5
LP-CT3	Lakes Park (CT-3)	9/9/08	30.4	8.2	3,310	5.7			0.007	0.010	1.283	1.300	0.002	0.045	24	7.1	4.7	636		5.2		0.15		0.50		0.50		2.5	30		10
LP-CT3	Lakes Park (CT-3)	10/29/08	22.2	8.1	2,430	9.1			0.156	0.005	1.339	1.500	0.002	0.035	25	7.0	6.1	562		3.5		0.15		0.50		0.50		2.5	80		5
LP-CT3	Lakes Park (CT-3)	11/24/08	19.0	8.1	2,310	8.0			0.020	0.005	1.075	1.100	0.002	0.054	20	10.5	4.5	570	372	3.2		0.15		4.14		0.50		1.6	30		5
LP-CT3	Lakes Park (CT-3)	12/10/08	21.3	8.2	2,380	9.9			0.007	0.020	1.273	1.300	0.002	0.081	22	15.5	4.5	563	405	3.0		0.15		3.68		0.25		0.5	70		30

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CT3	Lakes Park (CT-3)	1/12/09	21.6	8.5	2,330	8.8			0.014	0.005	1.681	1.700	0.006	0.110	21	18.9	7.7	558	384	4.7		0.15		3.72		0.25		1.3	20		10
LP-CT3	Lakes Park (CT-3)	2/11/09	20.9	8.0	2,380	12.2			0.022	0.010	1.468	1.500	0.007	0.092	18	24.2	9.7	591	402	6.0	18.5	0.15	0.25	3.31		0.25	1.5	1.3	20		5
LP-CT3	Lakes Park (CT-3)	3/23/09	23.6	8.0	2,290	8.4			0.038	0.005			0.004	0.110	23	19.5	13.8	627	397	7.2	26.6	0.15	0.25	4.89		0.25	1.6	0.5	860		30
LP-CT3	Lakes Park (CT-3)	4/22/09	26.6	8.2	2,710	8.8			0.015	0.005	2.180	2.200	0.002	0.092	22	24.2	11.9	760	318	7.0	31.7	0.15	0.25	6.20		0.25	1.7	0.5	1,180		5
LP-CT3	Lakes Park (CT-3)	5/19/09	27.2	8.6	4,000	7.2			0.007	0.032	2.161	2.200	0.002	0.093	52	19.7	12.9	1,000	502	6.2	6.6	0.15	0.25	7.36		0.25	1.3	0.5	250		2
LP-CT3	Lakes Park (CT-3)	6/15/09	31.7	8.5	3,400	7.4			0.007	0.005	2.588	2.600	0.002	0.056	21	15.9	9.0	873	435	5.3	7.8	0.15	0.25	5.18		0.25	1.2	3.8	990		10
LP-CT3	Lakes Park (CT-3)	7/29/09	30.7	8.3	2,880	7.0		165	0.007	0.005	1.788	1.800	0.002	0.046	24	10.2	6.7	694	447	4.8	9.5	0.15	0.25	3.94		0.25	0.9	2.8	80		10
LP-CT3	Lakes Park (CT-3)	8/31/09	31.1	8.4	2,520	6.8		165	0.007	0.005	1.388	1.400	0.002	0.043	25	6.7	5.2	602	396	4.4	6.1	0.15	0.52	2.87		0.25	1.2	0.5	600		10
LP-CT3	Lakes Park (CT-3)	9/23/09	30.8	8.3	2,110	6.9		163	0.007	0.005	1.488	1.500	0.002	0.035	22	8.1	4.5	501	341	3.0	5.9	0.15	0.25	2.91		0.25	1.2	0.5	580		10
LP-CT3	Lakes Park (CT-3)	10/26/09	26.0	8.5	2,080	8.3		178	0.007	0.005	1.888	1.900	0.002	0.037	19	11.9	5.1	487	371	4.5	10.6	0.15	0.25	2.04		0.25	1.5	0.5	28		4
LP-CT3	Lakes Park (CT-3)	11/30/09	21.2	8.4	2,120	8.7		188	0.016	0.005	2.279	2.300	0.002	0.067	19	13.1	5.9	494	206	4.6	2.5	0.15	0.25	1.93		0.25	1.2	0.5	37		3
LP-CT3	Lakes Park (CT-3)	12/28/09	19.5	8.4	1,860	9.8		192	0.007	0.005	2.488	2.500	0.002	0.074	19	14.7	5.7	480	368	4.6	2.5	0.15	0.25	1.45		0.25	1.5	0.5	55		24
LP-CT3	Lakes Park (CT-3)	1/26/10	20.3	8.5	1,980	11.7		182	0.007	0.005	3.988	4.000	0.002	0.240	18	35.6	11.6	484	375	7.8	18.7	0.15	0.25	2.11		0.25	1.9	2.6	152		140
LP-CT3	Lakes Park (CT-3)	2/25/10	18.5	8.5	1,920	10.0		179	0.007	0.005	1.688	1.700	0.002	0.052	20	20.3	12.0	474	356	6.7	7.3	0.15	0.25	1.14		0.25	0.4	5.1	80		120
LP-CT3	Lakes Park (CT-3)	3/29/10	22.6	8.1	1,690	4.9		164	0.050	0.005	2.845	2.900	0.002	0.120	21	21.0	10.6	427	328	6.6	9.2	0.15	0.25	2.04		0.25	1.4	2.0	132		80
LP-CT3	Lakes Park (CT-3)	4/22/10	24.5	8.5	1,830	8.8		160	0.007	0.010	2.083	2.100	0.005	0.087	17	30.8	11.9	412	314	5.5	5.6	0.15	0.25	1.76	0.01	0.25	1.0	0.5	48		16
LP-CT3	Lakes Park (CT-3)	5/19/10	29.5	8.5	1,800	9.7		150	0.007	0.030	2.063	2.100	0.002	0.019	17	13.1	8.5	416	320	5.1	6.8	0.15	0.89	1.55	0.01	0.25	1.1	2.4	100		84
LP-CT3	Lakes Park (CT-3)	6/21/10	32.0	8.5	1,770	8.8		131	0.007	0.020	3.973	4.000	0.005	0.120	28	20.3	11.4	432	294	7.9	2.5	0.15	0.25	3.13	0.01	0.25	1.3	0.5	820		217
LP-CT3	Lakes Park (CT-3)	7/29/10	30.5	8.1	1,590	6.7		136	0.007	0.005	2.888	2.900	0.004	0.029	27	13.4	10.9	373	292	7.3	6.0	0.15	0.25	1.52	0.01	0.25	1.2	0.5	248		24
LP-CT3	Lakes Park (CT-3)	8/31/10	29.9	8.3	1,400	8.3		138	0.030	0.005	2.565	2.600	0.002	0.017	31	16.1	7.2	312	270	7.8	8.2	0.15	0.25	1.26	0.01	0.25	0.8	0.5	305		
LP-CT3	Lakes Park (CT-3)	9/15/10	29.8	8.1	1,220	6.0		130	0.007	0.005	2.688	2.700	0.006	0.024	34	12.0	6.7	256	244	5.5	2.5	0.15	0.25	1.46	0.01	0.25	0.8	0.5	160		28
LP-CT3	Lakes Park (CT-3)	10/28/10	27.5	8.2	1,330	6.4		149	0.027	0.005	2.868	2.900	0.002	0.230	30	21.0	6.5	258	273	7.1	8.3	0.39	0.25	0.99	0.01	0.25	0.4	0.5	184		12
LP-CT3	Lakes Park (CT-3)	11/15/10	22.1	8.4	1,240	10.1		156	0.007	0.010	0.983	1.000	0.004	0.021	28	16.8	8.2	253	281	6.0	6.0	1.05	0.25	1.94	0.01	0.25	1.0	3.1	58		8
LP-CT3	Lakes Park (CT-3)	12/13/10	15.8	8.4	1,200	9.8		170	0.007	0.005	3.188	3.200	0.002	0.068	26	19.4	7.2	277	287	6.5	2.5	0.15	0.25	2.36	0.01	0.25	1.1	1.6	151		36
LP-CT3	Lakes Park (CT-3)	1/27/11	18.0	8.2	1,270	10.3		163	0.007	0.005	1.688	1.700	0.002	0.021	26	22.6	10.4	281	269	7.4	2.5	0.15	0.25	1.31	0.00	0.25	1.1	0.5	1,140		410
LP-CT3	Lakes Park (CT-3)	2/23/11	23.6	8.6	1,230	12.4		142	0.037	0.005	2.258	2.300	0.002	0.056	20	24.6	12.4	314	266	7.2	2.5	0.15	0.25	1.34	0.01	0.25	1.1	0.5	53		8
LP-CT3	Lakes Park (CT-3)	3/23/11	23.9	8.3	1,310	8.3		126	0.071	0.005	3.224	3.300	0.002	0.053	21	27.1	23.7	322	248	7.5	6.9	0.15	0.25	1.56	0.01	0.25	1.0	0.5	25		32
LP-CT3	Lakes Park (CT-3)	4/14/11	26.8	8.9	1,280	10.8		106	0.067	0.010	3.923	4.000	0.002	0.110	23	33.3	19.7	289	226	7.7	6.2	0.15	0.25	1.31	0.02	0.25	0.9	7.1	40		16
LP-CT3	Lakes Park (CT-3)	5/5/11	28.5	8.8	1,240	10.0		116	0.081	0.005	2.114	2.200	0.002	0.033	26	33.5	28.9	304	258	7.3	13.5	0.15	0.25	2.05	0.02	0.25	0.8	1.2	600		11
LP-CT3	Lakes Park (CT-3)	6/14/11	30.9	8.4	3,120	7.5		112	0.032	0.005	2.263	2.300	0.002	0.030	29	25.4	15.7	353	257	7.6	12.0	0.15	0.25	0.94	0.01	0.25	0.8	0.5	53		4
LP-CT3	Lakes Park (CT-3)	7/14/11	30.0	8.2	1,290	5.1		120	0.039	0.005	1.856	1.900	0.002	0.028	29	17.3	13.5	273	254	8.2	5.2	0.15	0.25	3.94	0.02	0.25	1.0	0.5	123		44
LP-CT3	Lakes Park (CT-3)	8/11/11	28.9	7.5	1,150	2.6		137	0.092	0.005	2.703	2.800	0.002	0.052	26	13.0	8.9	208	239	4.9	18.6	0.15	0.25	1.14	0.02	0.25	0.4	0.5	1,660		80
LP-CT3	Lakes Park (CT-3)	9/15/11	30.6	7.9	864	5.8		149	0.030	0.005	1.565	1.600	0.002	0.016	27	9.0	5.1	143	250	4.7	2.5	0.15	0.25	1.49	0.01	0.25	1.6	0.5	80		16
LP-CT3	Lakes Park (CT-3)	10/13/11	28.4	8.4	687	9.0		148	0.048	0.005	1.247	1.300	0.002	0.017	24	7.6	4.1	100	243	5.1	6.4	0.15	0.25	1.03	0.02	0.25	1.7	0.5	88		32
LP-CT3	Lakes Park (CT-3)	11/29/11	22.8	8.2	667	8.6		168	0.025	0.005	1.270	1.300	0.009	0.010	19	8.8	4.8	87	222	4.1	14.0	0.15	0.82	0.99	0.01	0.25	1.4	0.5	100		12
LP-CT3	Lakes Park (CT-3)	12/21/11	21.1	8.2	679	8.2		176	0.136	0.005	1.259	1.400	0.002	0.039	19	10.5	4.5	90	247	4.7	7.4	0.15	0.25	1.08	0.01	0.25	1.7	0.5	80		16
LP-CT3	Lakes Park (CT-3)	1/24/12	20.5	8.4	673	9.8		185	0.007	0.005	1.888	1.900	0.002	0.012	27	9.3	4.5	96	247	4.3	7.6	0.15	0.25	0.94	0.00	0.25	1.6	0.5	144		84
LP-CT3	Lakes Park (CT-3)	2/23/12	22.9	7.8	693	6.5		182	0.007	0.005	1.488	1.500	0.002	0.003	16	16.3	4.9	100	258	6.0	35.1	0.15	0.25	1.57	0.03	0.25	1.4	0.5	28		12
LP-CT3	Lakes Park (CT-3)	3/19/12	24.8	8.3	741	7.5		173	0.007	0.005	2.088	2.100	0.002	0.038	17	19.4	6.5	106	259	6.2	44.1	0.15	0.51	1.79	0.05	0.25	1.7	1.3	25		16
LP-CT3	Lakes Park (CT-3)	4/9/12	26.4	7.9	873	8.7		160	0.039	0.005	1.756	1.800	0.002	0.042	18	25.1	12.0	144	266	6.5	33.9	0.15	0.25	1.97	0.03	0.25	1.9	1.1	56		4
LP-CT3	Lakes Park (CT-3)	5/8/12	27.9	8.4	951	8.5		146	0.007	0.005	2.488	2.500	0.002	0.070	20	23.3	8.6	170	241	5.2	27.3	0.15	0.25	2.13	0.02	0.25	1.7	1.8	120		24
LP-CT3	Lakes Park (CT-3)	6/20/12	28.2	8.5	871	7.5	96	144	0.191	0.005	2.404	2.600	0.002	0.055	23	14.2	7.4	154	239	5.3	37.1	0.15	0.25	1.84	0.02	0.25	1.3	1.3	48		44
LP-CT3	Lakes Park (CT-3)	7/23/12	29.3	7.8	731	5.6	73	234	0.038	0.005	1.657	1.700	0.002	0.030	31	7.6	3.1	109	230	3.6	28.9	0.15	0.25	1.39	0.03	0.25	1.5	1.2	80		116
LP-CT3	Lakes Park (CT-3)	8/20/12	30.6	8.0	718	6.5	88	161	0.049	0.005	1.546	1.600	0.002	0.030	28	8.6	3.2	94	251	4.4	27.1	0.15	0.25	1.97	0.02	0.25	1.4	0.5	65		12
LP-CT3	Lakes Park (CT-3)	9/17/12	29.4	7.7	650	5.3	70	159	0.042	0.005	1.653	1.700	0.002	0.033	23	8.6	3.8	81	236	4.0	21.9	0.15	0.25	1.43	0.02	0.25	1.3	2.2	240		143
LP-CT3	Lakes Park (CT-3)	10/22/12	27.6	7.9	653	8.8	112	167	0.007	0.005	1.488	1.500	0.005	0.050	21	6.7	3.9	69	233	4.1	7.7	0.15	0.25	1.00	0.01	0.25	1.2	3.3	18		8
LP-CT3	Lakes Park (CT-3)	11/19/12	22.5	8.1	647	8.6	99	174	0.007	0.005	2.088	2.100	0.017	0.069	18	9.4	4.0	75	252	3.3	16.6	0.15	0.25	2.56	0.01	0.25	1.5	1.7	7		3
LP-CT3	Lakes Park (CT-3)	12/13/12	23.1	8.0	609	6.5	76	172	0.007	0.005	1.688	1.700	0.017	0.047	45	5.8	4.6	74	240	5.3	12.8	0.15	0.25	1.02	0.02	0.25	1.4	0.5	46		81
LP-CT3	Lakes Park (CT-3)	1/23/13	20.8	8.2	663	7.4	82	185	0.015	0.005	1.680	1.700	0.012	0.048	17	7.1	3.5	81	262	4.1	10.3	0.15	0.25	1.01	0.02	0.25	1.5	12.5	15		10
LP-CT3	Lakes Park (CT-3)	2/18/13	19.8	8.3	685	9.1	100	186	0.056	0.005	2.439	2.500	0.018	0.051	17	14.0	4.0	79	274	3.7	15.2	0.15	0.25	0.96	0.01	0.25	1.5	1.3	23		16
LP-CT3	Lakes Park (CT-3)	3/18/13	20.8	8.4	716	9.1	102	189	0.025	0.005	1.370	1.400	0.002	0.015	16	13.6	4.6	87	272	3.6	26.3	0.15	0.25	1.13	0.02	0.25	1.7	0.5	6		35
LP-CT3	Lakes Park (CT-3)	4/17/13	28.3	8.3	690	7.8	101	170	0.007	0.005	1.888	1.900	0.009	0.067	16	9.3	5.1	92	244	3.8	20.6	0.15	0.25	0.80	0.01	0.25	1.5	1.5	18		11
LP-CT3	Lakes Park (CT-3)	5/15/13	28.2	8.4	701	8.9	115	153	0.007	0.005	1.888	1.900	0.010	0.031	59	15.2	5.0	92	238	4.4	16.0	0.15	0.53	1.03	0.01	0.25	1.6	1.8	24		6
LP-CT3	Lakes Park (CT-3)	6/18/13	31.5	8.5	684	7.3	99	137	0.007	0.005	2.188	2.200	0.002	0.030	18	10.9	4.3	101	210	4.3	12.7	0.15	0.25	0.63	0.01	0.25	1.1	1.3	11		248
LP-CT3	Lakes Park (CT-3)	7/30/13	31.4	8.1	691	5.5	75	148	0.007	0.005	1.888	1.900	0.013	0.032	19	12.0	2.8	88	241	3.2	13.4	0.15	0.25	0.72	0.01	0.25	1.2	3.3	1		2
LP-CT3	Lakes Park (CT-3)	8/27/13	29.8	8.1	658	5.6	74	147	0.007	0.005	1.588	1.600	0.014	0.024	18	7.6	2.8	83	235	3.5	11.3	0.15	0.25	0.64	0.01	0.25	1.2	5.3	56		17
LP-CT3	Lakes Park (CT-3)	9/23/13	29.4	7.6	585	5.8	76	144	0.023	0.005	1.272	1.300	0.002	0.019	21	8.3	2.7	71	231	2.5	7.2	0.15	0.25	0.70	0.01	0.25	1.1	2.0	13		28
LP-CT3	Lakes Park (CT-3)	10/23/13	28.7	8.1	573	5.8	75	233	0.040	0.005	1.055	1.100	0.013	0.046	18	19.9	2.9	62	222	3.4	12.7	0.15	0.25	0.56	0.01	0.25	1.2	0.5	12		2
LP-CT3	Lakes Park (CT-3)	11/19/13	24.2	7.8	582	8.5	102	240	0.036	0.005	1.059	1.100	0.002	0.023	16	7.7	3.3	68	247	2.8	11.9	0.15	0.25	0.50	0.01	0.25	1.3	1.0	12		4
LP-CT3	Lakes Park (CT-3)	12/9/13	23.9	8.2	596	8.0	95	172	0.123	0.005	0.772	0.900	0.002	0.015	15	8.5	3.7	71	241	2.7	11.6	0.15	0.25	0.60	0.01	0.25	1.2	4.2	23		1
LP-CT3	Lakes Park (CT-3)	1/14/14	21.2	8.0	591	9.4	105	171	0.040	0.005	2.855	2.900	0.002	0.130	16	30.5	12.1	74	260	5.2	29.0	0.15	0.25	0.70	0.03	0.25	1.3	1.7	80		24
LP-CT3	Lakes Park (CT-3)	2/18/14	22.0	8.3	603	9.8	112	160	0.044	0.005	1.051	1.100	0.002	0.021	13	10.0	4.6	75	235	4.3	2.5	0.15	0.25	0.60	0.00	0.25	1.7	1.4	12		8
LP-CT3	Lakes Park (CT-3)	3/18/14	23.6	8.3	602	8.0	94	157	0.038	0.005	1.757	1.800	0.002	0.042	14	10.5	9.4	76	241	4.3	11.9	0.15	0.25	0.67	0.01	0.25	1.2	1.6	35		12
LP-CT3	Lakes Park (CT-3)	4/21/14	25.2	8.4	605	8.7	105	151	0.074	0.010	1.116	1.200	0.002	0.029	15	21.5	11.2	79	236	4.7	20.8	0.15	0.25	0.73	0.02	0.25	1.3	2.3	20		12
LP-CT3	Lakes Park (CT-3)	5/13/14	28.6	8.1	626	7.4	96	148	0.067	0.005	1.028	1.100	0.002	0.033	13	10.4	5.9	83	224	3.3	14.3	0.15	0.25	0.71	0.01	0.25	1.2	1.3	88		8
LP-CT3	Lakes Park (CT-3)	6/10/14	29.7	8.0	669	6.5	86	142	0.056	0.005	0.659	0.720	0.002	0.023	15	8.8	5.7	84	214	3.1	16.3	0.15	0.25	0.76	0.01	0.25	1.6	0.5	40		16
LP-CT3	Lakes Park (CT-3)	7/7/14	30.7	7.9	657	5.1	68	142	0.042	0.005	1.353	1.400	0.002	0.018	15	6.3	4.3	85	219	2.2	8.7	0.15	0.25	0.77	0.01	0.25	1.0	1.7	60		88
LP-CT3	Lakes Park (CT-3)	8/4/14	31.7	8.0	710	4.9	66	154	0.046	0.005	0.679	0.730	0.002	0.015	16	5.4	3.2	91	229	2.1	11.9	0.15	0.25	0.60	0.00	0.25	1.2	1.8	19		40
LP-CT3	Lakes Park (CT-3)	9/23/14	28.3	7.9	709	6.1	79	157	0.047	0.005	0.568	0.620	0.002	0.024	15	8.3	3.3	98	241	2.6	11.5	0.15	0.25	0.60	0.01	0.25	1.0	0.5	50		44
LP-CT3	Lakes Park (CT-3)	10/28/14	25.2	8.1	712	7.7	94	161	0.055	0.005	1.040	1.100	0.002	0.058	23	14.3	3.6	17	253	3.0	27.4	0.15	0.25	1.02	0.02	0.25	1.2	3.5	24		2
LP-CT3	Lakes Park (CT-3)	11/18/14	22.4	8.2	703	7.8	91	156	0.070	0.005	1.525	1.600	0.002	0.046	52	15.0	4.2	93	242	3.2	18.4	0.15	0.25	0.72	0.01	0.25	1.6	0.5	32		200
LP-CT3	Lakes Park (CT-3)	12/10/14	20.7	8.1	705	8.8	98	157	0.007	0.005	0.778	0.790	0.002	0.035	12	16.2	4.0	96	245	3.4	34.0	0.15	0.25	1.19	0.03	0.25	1.4	0.5	25		32

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CT3	Lakes Park (CT-3)	1/5/15	23.8	8.2	705	8.6	102	179	0.056	0.005	0.489	0.550	0.002	0.020	14	24.9	7.9	110	261	4.5	15.0	0.15	0.25	0.75	0.01	0.25	1.3	1.5	13		12
LP-CT3	Lakes Park (CT-3)	2/9/15	19.2	8.1	686	9.2	99	174	0.062	0.005	0.763	0.830	0.002	0.022	16	14.1	5.5	115	246	3.3	11.4	0.15	0.25	0.75	0.01	0.25	1.1	0.5	240		560
LP-CT3	Lakes Park (CT-3)	3/18/15	26.1	8.3	687	8.3	102	162	0.031	0.005	0.814	0.850	0.002	0.052	57	10.6	5.4	113	245	3.1	8.7	0.15	0.25	0.71	0.00	0.25	1.3	0.5	15		36
LP-CT3	Lakes Park (CT-3)	4/14/15	28.2	8.1	705	7.7	99	160	0.018	0.005	0.557	0.580	0.002	0.016	19	10.8	4.4	113	239	2.5	21.9	0.15	0.25	0.25	0.01	0.25	1.0	0.5	38		84
LP-CT3	Lakes Park (CT-3)	5/13/15	29.5	8.1	708	7.3	96	154	0.007	0.005	0.648	0.660	0.002	0.017	16	11.0	7.7	124	232	2.9	11.0	0.15	0.25	0.87	0.01	0.25	0.9	1.1	3		26
LP-CT3	Lakes Park (CT-3)	6/11/15	29.0	8.1	687	6.6	86	139	0.007	0.005	0.698	0.710	0.002	0.025	15	9.6	4.9	115	203	2.0	24.1	0.15	0.25	0.87	0.00	0.25	1.0	0.5	36		411
LP-CT3	Lakes Park (CT-3)	7/9/15	30.8	8.0	683	7.3	97	120	0.014	0.005	0.651	0.670	0.002	0.003	17	4.8	2.4	560	209	1.7	9.6	0.15	0.25	0.86	0.00	0.25	1.0	0.5	184		22
LP-CT3	Lakes Park (CT-3)	8/11/15	30.8	8.0	698	6.7	90	140	0.030	0.005	0.755	0.790	0.002	0.035	22	5.8	3.1	170	232	1.9	7.4	0.15	0.25	0.75	0.01	0.25	1.0	0.5	14		16
LP-CT3	Lakes Park (CT-3)	9/24/15	29.5	7.9	626	6.6	87	144	0.039	0.005	0.856	0.900	0.009	0.025	21	6.3	4.6	91	238	1.5	2.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5	80		30
LP-CT3	Lakes Park (CT-3)	10/22/15	26.8	8.0	593	7.2	90	148	0.007	0.005	1.088	1.100	0.002	0.003	22	7.9	4.8	82	232	2.8	10.5	0.15	0.25	0.74	0.01	0.25	1.1	0.5	16		40
LP-CT3	Lakes Park (CT-3)	11/17/15	26.4	8.1	619	7.6	94	159	0.018	0.005	0.347	0.370	0.002	0.016	18	7.9	4.3	83	245	2.6	6.8	0.15	0.25	0.25	0.01	0.25	0.9	0.5	12		31
LP-CT3	Lakes Park (CT-3)	12/15/15	24.2	8.0	646	7.5	90	169	0.007	0.005	0.618	0.630	0.004	0.018	19	9.3	6.0	83	246	3.0	8.2	0.15	0.25	0.25	0.01	0.25	1.1	0.5	55		19
LP-CT3	Lakes Park (CT-3)	1/19/16	18.4	8.1	614	8.7	93	165	0.007	0.012	0.731	0.750	0.002	0.040	18	6.0	4.1	78	239	2.6	6.2	0.15	0.25	0.25	0.00	0.25	0.9	0.5	57		20
LP-CT3	Lakes Park (CT-3)	2/24/16	22.3	8.1	600	8.1	94	167	0.016	0.005	0.759	0.780	0.002	0.057	20	7.7	4.7	77	242	3.1	19.4	0.15	0.25	0.64	0.01	0.25	1.0	0.5	20		2
LP-CT3	Lakes Park (CT-3)	3/23/16	23.6	8.2	614	8.2	97	157	0.007	0.005	0.548	0.560	0.002	0.034	17	10.9	1.8	77	240	2.8	9.5	0.15	0.25	0.61	0.00	0.25	0.9	0.5	5		9
LP-CT3	Lakes Park (CT-3)	4/26/16	26.9	8.3	608	9.0	113	137	0.007	0.005	1.188	1.200	0.002	0.056	18	11.5	8.6	82	214	3.0	2.5	0.15	0.25	0.61	0.00	0.25	0.9	0.5	14		19
LP-CT3	Lakes Park (CT-3)	5/24/16	30.4	8.3	601	7.7	103	120	0.014	0.005	1.381	1.400	0.002	0.052	16	8.8	6.4	84	165	2.9	2.5	0.15	0.25	0.78	0.00	0.25	0.8	0.5	10		21
LP-CT3	Lakes Park (CT-3)	6/29/16	30.5	7.9	578	5.5	74	121	0.014	0.005	0.831	0.850	0.002	0.041	20	5.0	3.4	79	166	2.5	2.5	0.15	0.25	0.93	0.00	0.25	0.4	1.8	178		55
LP-CT3	Lakes Park (CT-3)	7/26/16	30.5	7.8	581	6.6	88	133	0.007	0.005	1.188	1.200	0.002	0.045	21	6.9	5.2	73	184	2.1	5.9	0.15	0.25	0.51	0.01	0.25	0.4	0.5		24	19
LP-CT3	Lakes Park (CT-3)	8/23/16	31.8	8.0	576	7.0	95	132	0.007	0.005	0.818	0.830	0.002	0.034	21	5.0	3.7	76	173	2.1	2.5	0.15	0.25	0.60	0.02	0.25	0.4	0.5		6	31
LP-CT3	Lakes Park (CT-3)	9/21/16	30.9	8.1	570	6.9	93	135	0.007	0.005	1.188	1.200	0.002	0.053	41	6.2	4.1	61	176	2.1	8.7	0.15	0.25	0.25	0.00	0.25	0.4	0.5		20	22
LP-CT3	Lakes Park (CT-3)	10/25/16	24.6	8.4	556	8.6	104	151	0.007	0.005	1.088	1.100	0.002	0.049	20	8.1	4.0	65	190	2.5	10.2	0.15	0.25	0.25	0.01	0.25	0.4	0.5		6	16
LP-CT3	Lakes Park (CT-3)	11/21/16	21.7	8.4	559	9.2	104	159	0.007	0.005	1.188	1.200	0.002	0.083	17	14.5	6.4	70	185	2.9	2.5	0.15	0.25	0.25	0.00	0.25	0.8	0.5		13	1
LP-CT3	Lakes Park (CT-3)	12/27/16	25.1	8.5	572	10.2	123	154	0.007	0.005	1.188	1.200	0.002	0.076	17	15.5	8.6	67	180	3.5	7.4	0.15	0.25	0.25	0.00	0.25	0.4	0.5		9	11
LP-CT3	Lakes Park (CT-3)	1/23/17	22.3	8.3	931	8.7	100	158	0.007	0.005	0.978	0.990	0.002	0.073	17	14.6	6.9	190	212	3.2	6.4	0.15	0.25	0.83	0.01	0.25	0.9	0.5		86	28
LP-CT3	Lakes Park (CT-3)	2/23/17	23.3	8.4	549	8.6	101	130	0.007	0.005	1.288	1.300	0.002	0.097	20	16.7	8.3	82	164	3.6	7.1	0.15	0.25	0.65	0.00	0.25	0.8	0.5		33	10
LP-CT3	Lakes Park (CT-3)	3/29/17	25.0	8.4	803	9.3	113	122	0.007	0.005	0.708	0.720	0.002	0.110	14	13.9	14.0	163	190	4.2	13.8	0.15	0.25	1.19	0.00	0.25	0.4	1.2		10	4
LP-CT3	Lakes Park (CT-3)	4/18/17	25.9	8.5	1,311	9.0	111	120	0.016	0.005	3.179	3.200	0.002	0.150	35	21.0	12.9	306	225	3.6	12.8	0.15	0.25	2.18	0.01	0.79	1.2	1.3		26	40
LP-CT3	Lakes Park (CT-3)	5/8/17	27.3	8.6	988	9.4	119	110	0.007	0.015	1.578	1.600	0.002	0.071	14	9.9	7.3	199	2,110	2.4	10.1	0.15	1.30	46.70	0.17	0.25	4.5	19.1		12	1
LP-CT3	Lakes Park (CT-3)	6/7/17	27.3	7.4	1,671	4.2	53	112	0.007	0.005	1.488	1.500	0.002	0.059	17	12.5	7.5	223	192	2.3	9.9	0.15	0.25	1.22	0.01	0.25	0.4	0.5		147	82
LP-CT3	Lakes Park (CT-3)	7/19/17	30.5	7.9	735	6.6	89	143	0.007	0.005	1.088	1.100	0.002	0.025	27	6.9	5.3	119	204	2.6	2.5	0.15	0.25	0.99	0.01	0.25	1.6	0.5		24	4
LP-CT3	Lakes Park (CT-3)	8/8/17	31.3	7.8	713	5.6	76	153	0.029	0.005	0.956	0.990	0.002	0.043	24	5.7	4.6	101	190	2.2	5.5	0.15	0.25	0.67	0.01	0.25	0.4	2.1		24	4
LP-CT3	Lakes Park (CT-3)	9/20/17	29.5	7.7	449	3.7	49	122	0.007	0.005	0.808	0.820	0.002	0.050	33	6.0	3.4	44	144	1.5	8.0	0.15	0.25	0.75	0.03	0.25	0.4	0.5		24	86
LP-CT3	Lakes Park (CT-3)	10/9/17	28.9	7.8	482	6.2	81	148	0.017	0.005	0.508	0.530	0.002	0.020	29	5.2	3.9	38	164	1.6	2.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5		9	19
LP-CT3	Lakes Park (CT-3)	11/8/17	26.2	8.3	510	9.2	114	158	0.007	0.005	1.288	1.300	0.002	0.060	55	6.2	4.8	45	187	2.4	8.8	0.15	0.25	0.64	0.01	0.25	0.4	1.2		4	9
LP-CT3	Lakes Park (CT-3)	12/11/17	20.0	8.0	552	6.8	75	173	0.007	0.005	0.988	1.000	0.002	0.049	33	10.4	4.9	56	194	2.6	5.7	0.15	0.25	0.52	0.01	0.25	0.4	0.5		29	9
LP-CT3	Lakes Park (CT-3)	1/18/18	16.1	8.3	567	9.3	94	179	0.007	0.010	0.623	0.640	0.002	0.040	35	11.5	9.7	51	209	3.5	7.6	0.15	0.25	0.62	0.01	0.25	0.4	0.5		12	10
LP-CT3	Lakes Park (CT-3)	2/15/18	24.9	8.1	573	7.4	89	159	0.016	0.005	1.579	1.600	0.002	0.034	16	16.8	17.8	52	198	3.2	8.0	0.15	0.25	0.51	0.01	0.25	0.4	0.5		17	7
LP-CT3	Lakes Park (CT-3)	3/5/18	23.2	8.4	557	9.3	109	158	0.007	0.005	0.488	0.500	0.002	0.045	44	13.7	10.9	57	185	3.9	2.5	0.15	0.25	0.25	0.00	0.25	0.4	0.5		17	4
LP-CT3	Lakes Park (CT-3)	4/3/18	26.1	8.1	865	7.8	96	143	0.007	0.005	0.778	0.790	0.011	0.026	21	20.5	14.0	167	208	4.0	14.1	0.15	0.25	0.99	0.01	0.25	0.4	0.5		61	15
LP-CT3	Lakes Park (CT-3)	5/7/18	28.1	8.3	882	7.7	98	128	0.026	0.005	1.269	1.300	0.002	0.050	16	18.4	12.1	173	193	4.1	17.7	0.15	0.25	0.71	0.01	0.25	0.4	0.5		29	11
LP-CT3	Lakes Park (CT-3)	6/7/18	30.1	7.9	670	5.8	77	126	0.007	0.005	1.288	1.300	0.002	0.019	24	8.4	5.6	107	174	3.0	10.7	0.15	0.25	1.45	0.02	0.25	0.4	5.0		65	27
LP-CT3	Lakes Park (CT-3)	7/2/18	30.9	8.0	701	7.3	98	138	0.007	0.005	1.188	1.200	0.002	0.069	22	10.0	5.3	107	191	2.6	18.8	0.15	0.25	0.64	0.01	0.25	0.4	0.5		146	100
LP-CT3	Lakes Park (CT-3)	8/16/18	30.5	8.3	655	7.9	106	149	0.007	0.005	1.188	1.200	0.002	0.072	22	14.0	9.4	88	202	3.3	9.2	0.15	0.25	0.51	0.02	0.25	0.4	0.5		48	6
LP-CT3	Lakes Park (CT-3)	9/12/18	30.5	8.3	646	8.0	107	148	0.007	0.005	1.188	1.200	0.002	0.046	19	9.4	6.2	65	194	2.7	2.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5		23	4
LP-CT3	Lakes Park (CT-3)	10/9/18	27.8	8.2	642	7.5	96	154	0.007	0.005	1.388	1.400	0.002	0.055	24	13.4	6.9	82	195	1.2	9.8	0.15	0.25	0.68	0.01	0.25	0.4	0.5		14	2
LP-CT3	Lakes Park (CT-3)	11/15/18	26.8	8.2	638	7.9	99	148	0.007	0.005	1.188	1.200	0.002	0.060	17	10.7	5.3	87	183	2.7	5.0	0.15	0.25	1.12	0.01	0.25	0.4	1.1		114	2
LP-CT3	Lakes Park (CT-3)	12/3/18	23.1	8.3	662	9.4	110	154	0.007	0.010	1.083	1.100	0.002	0.055	15	10.3	6.0	78	207	2.7	2.5	0.15	0.25	0.50	0.00	0.25	0.4	0.5		46	9
LP-CT3	Lakes Park (CT-3)	1/10/19	20.5	8.3	678	9.2	102	157	0.007	0.005	1.288	1.300	0.002	0.080	16	15.2	10.0	107	201	3.5	16.7	0.15	0.25	0.25	0.01	0.25	0.4	0.5		17	10
LP-CT3	Lakes Park (CT-3)	2/7/19	22.1	8.5	674	10.7	123	147	0.007	0.005	1.288	1.300	0.002	0.056	17	12.5	9.8	94	194	2.9	7.6	0.15	0.25	1.63	0.01	0.25	1.6	0.5		88	10
LP-CT3	Lakes Park (CT-3)	3/12/19	25.4	8.4	683	9.4	115	157	0.007	0.005	0.988	1.000	0.002	0.049	18	9.1	6.8	102	202	2.3	7.5	0.15	0.25	1.25	0.01	0.25	1.6	0.5		66	9
LP-CT3	Lakes Park (CT-3)	4/9/19	26.7	8.0	699	6.8	85	153	0.007	0.005	1.288	1.300	0.002	0.066	15	15.8	13.0	109	211	3.5	10.1	0.15	0.25	1.23	0.01	0.25	1.7	0.5		34	308
LP-CT3	Lakes Park (CT-3)	5/9/19	30.1	8.2	673	8.5	112	131	0.007	0.005	1.488	1.500	0.002	0.062	15	17.9	16.5	115	187	3.7	10.7	0.15	0.25	0.25	0.01	0.25	0.4	0.5		76	79
LP-CT3	Lakes Park (CT-3)	6/13/19	31.0	8.2	688	7.7	104	128	0.007	0.005	1.388	1.400	0.002	0.055	20	15.2	10.9	115	182	3.4	17.1	0.15	0.25	0.25	0.01	0.25	0.4	0.5		155	24
LP-CT3	Lakes Park (CT-3)	7/11/19	30.3	8.2	681	8.2	109	131	0.007	0.005	1.088	1.100	0.002	0.062	18	12.8	10.6	109	189	2.9	10.0	0.15	0.25	0.25	0.01	0.25	0.4	0.5		77	26
LP-CT3	Lakes Park (CT-3)	8/14/19	29.9	7.9	659	6.0	79	141	0.007	0.005	1.288	1.300	0.002	0.048	22	8.2	8.2	95	188	2.0	10.9	0.15	0.25	0.25	0.01	0.25	0.4	0.5		1,553	1,414
LP-CT3	Lakes Park (CT-3)	9/12/19	31.0	8.2	636	8.1	109	143	0.007	0.005	1.188	1.200	0.002	0.047	18	14.5	11.2	94	183	2.3	12.9	0.15	0.25	0.25	0.01	0.25	0.4	0.5		29	2
LP-CT3	Lakes Park (CT-3)	10/10/19	29.0	8.3	624	8.6	111	138	0.007	0.005	1.088	1.100	0.002	0.056	17	18.3	11.0	86	188	2.5	7.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5		60	9
LP-CT3	Lakes Park (CT-3)	11/19/19	21.8	8.4	654	10.0	115	160	0.007	0.005	1.388	1.400	0.002	0.051	16	14.5	8.6	108	185	2.0	7.4	0.15	0.25	0.25	0.00	0.25	0.4	0.5		56	11
LP-CT3	Lakes Park (CT-3)	12/2/19	23.2	8.2	668	9.4	110	159	0.007	0.005	1.388	1.400	0.002	0.068	15	13.4	17.5	108	197	3.3	14.0	0.15	0.25	0.25	0.00	0.25	0.4	0.5		102	11
LP-CT3	Lakes Park (CT-3)	1/9/20	20.1	8.5	643	10.6	117	160	0.007	0.005	1.388	1.400	0.002	0.067	15	17.4	8.6	104	237	3.1	2.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5		60	5
LP-CT3	Lakes Park (CT-3)	2/20/20	25.9	8.1	699	8.7	107	130	0.007	0.005	1.288	1.300	0.002	0.060	15	16.6	11.6	92	188	3.4	8.9	0.15	0.25	0.25	0.01	0.25	0.4	2.3		80	20
LP-CT3	Lakes Park (CT-3)	3/17/20	25.5	8.2	717	8.7	107	150	0.007	0.005	1.188	1.200	0.002	0.066	14	15.1	10.5	109	196	2.3	11.0	0.15	0.25	0.25	0.01	0.25	0.4	0.5		62	24
LP-CT3	Lakes Park (CT-3)	4/27/20	27.3	8.0	931	7.7	97	131	0.007	0.005	1.688	1.700	0.002	0.067	16	17.5	11.2	181	191	3.2	7.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5		66	15
LP-CT3	Lakes Park (CT-3)	5/7/20	27.4	8.2	804	9.1	115	121	0.007	0.005	1.688	1.700	0.002	0.080	49	23.8	17.6	146	177	4.6	6.0	0.15	0.25	0.25	0.01	0.25	0.4	0.5		47	55
	Minimum Value:		15.8	7.2	87	0.5	49	106	0.004	0.005	0.125	0.140	0.001	0.003	12	0.5	0.3	17	144	0.4	2.5	0.15	0.25	0.25	0.00	0.25	0.4	0.5	1	4	1
	Maximum Value:		33.0	9.2	18,400	12.4	123	240	1.640	0.310	3.988	4.000	0.029	0.840	65	39.0	28.9	2,100	2,110	8.2	44.1	1.05	1.30	46.70	0.17	2.00	4.5	19.1	1,660	1,553	1,414
	Geometric mean:		25.9	8.0	1,110	6.8	94	151	0.019	0.009	1.089	1.168	0.003	0.033	22	8.2	4.5	194	249	2.8	9.1	0.17	0.26	0.75	0.01	0.35	0.9	1.7	32	36	17
	Geometric mean (2016-2020):		26.1	8.2	671	7.9	98	143	0.008	0.005	1.122	1.137	0.002	0.054	20	11.3	7.5	93	201	2.8	7.2	0.15	0.26	0.53	0.01	0.26	0.5	0.6	23	36	13

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CUT	Lakes Park (I-C Cut)	5/19/89				10.3			0.030	0.020	0.000	0.050		0.005						1.0											
LP-CUT	Lakes Park (I-C Cut)	6/22/89				9.8			0.010	0.005	0.715	0.730		0.090						2.0											
LP-CUT	Lakes Park (I-C Cut)	6/29/89							0.010	0.005	0.675	0.690		0.660																	
LP-CUT	Lakes Park (I-C Cut)	7/6/89							0.010	0.005	0.175	0.190		0.005																	
LP-CUT	Lakes Park (I-C Cut)	7/13/89							0.210	0.005	0.295	0.510		0.005																	
LP-CUT	Lakes Park (I-C Cut)	7/20/89							0.130	0.005	0.025	0.160		0.005																	
LP-CUT	Lakes Park (I-C Cut)	8/12/89				7.4			0.010	0.005	0.705	0.720		0.020						2.0											
LP-CUT	Lakes Park (I-C Cut)	9/13/89				5.9			0.090	0.030	0.260	0.380		0.005						2.0											
LP-CUT	Lakes Park (I-C Cut)	10/19/89				4.9			0.010	0.040	0.640	0.690		0.005						2.0											
LP-CUT	Lakes Park (I-C Cut)	11/14/89				3.8			0.070	0.220	0.560	0.850		0.005						2.0											
LP-CUT	Lakes Park (I-C Cut)	12/11/89				3.6			0.010	0.270	0.940	1.220		0.050						1.0											
LP-CUT	Lakes Park (I-C Cut)	1/29/90				3.4			0.010	0.220	0.900	1.130		0.005						2.0											
LP-CUT	Lakes Park (I-C Cut)	2/28/90				11.4			0.030	0.020	0.170	0.220		0.005						1.0											
LP-CUT	Lakes Park (I-C Cut)	3/15/90				10.5			0.040	0.020	0.550	0.610		0.005						1.0											
LP-CUT	Lakes Park (I-C Cut)	4/12/90				9.4			0.080	0.020	1.440	1.540		0.005						2.0											
LP-CUT	Lakes Park (I-C Cut)	5/31/90				9.2			0.050	0.030	2.530	2.610		0.005						1.0											
LP-CUT	Lakes Park (I-C Cut)	6/15/90				2.4			0.010	0.100	0.620	0.730		0.100						4.0											
LP-CUT	Lakes Park (I-C Cut)	7/5/90				11.6			0.010	0.030	0.890	0.930		0.005						1.0											
LP-CUT	Lakes Park (I-C Cut)	8/14/90				4.6			0.030	0.010	1.120	1.160		0.005						1.0											
LP-CUT	Lakes Park (I-C Cut)	9/17/90				5.9			0.010	0.030	1.400	1.440		0.030						1.0											
LP-CUT	Lakes Park (I-C Cut)	10/2/90				5.6			0.010	0.010	0.080	0.100		0.080						1.0											
LP-CUT	Lakes Park (I-C Cut)	11/13/90				4.3			0.030	0.030	0.540	0.600		0.005						1.0											
LP-CUT	Lakes Park (I-C Cut)	12/20/90				8.8			0.020	0.100	0.240	0.360		0.005						3.0											
LP-CUT	Lakes Park (I-C Cut)	1/30/91				9.9			0.020	0.160	0.630	0.810		0.005						1.4											
LP-CUT	Lakes Park (I-C Cut)	2/18/91				9.2			0.040	0.100	2.610	2.750		0.020						1.0											
LP-CUT	Lakes Park (I-C Cut)	3/15/91				8.2			0.010	0.020	0.490	0.520		0.005						0.5											
LP-CUT	Lakes Park (I-C Cut)	4/17/91				10.6			0.010	0.300	0.950	1.260		0.005						2.7											
LP-CUT	Lakes Park (I-C Cut)	5/29/91				8.1			0.010	0.020	0.780	0.810		0.030						1.7											
LP-CUT	Lakes Park (I-C Cut)	6/25/91				10.5			0.020	0.020	1.300	1.340		0.005						1.4											
LP-CUT	Lakes Park (I-C Cut)	7/22/91				2.6			0.020	0.010	0.600	0.630		0.005						2.2											
LP-CUT	Lakes Park (I-C Cut)	8/14/91				1.7			0.040	0.030	0.730	0.800		0.005						2.0											
LP-CUT	Lakes Park (I-C Cut)	9/24/91				0.8			0.220	0.040	-0.070	0.190		0.040						6.4											
LP-CUT	Lakes Park (I-C Cut)	10/14/91				1.6			0.420	0.160	0.600	1.180		0.170						1.7											
LP-CUT	Lakes Park (I-C Cut)	11/4/91	24.0	7.4		3.2			0.260	0.830	0.050	1.140		0.120						2.4											
LP-CUT	Lakes Park (I-C Cut)	11/25/91				3.1			0.270	0.520	0.720	1.510		0.120						1.6											
LP-CUT	Lakes Park (I-C Cut)	12/2/91	24.0	7.6		4.8			0.100	0.740	1.820	2.660		0.020						0.6											
LP-CUT	Lakes Park (I-C Cut)	12/31/91	20.0	7.5		9.0			0.010	0.650	1.320	1.980		0.040						1.7											
LP-CUT	Lakes Park (I-C Cut)	1/27/92	18.0	7.5		10.5			0.080	0.680	0.240	1.000		0.010						1.7											
LP-CUT	Lakes Park (I-C Cut)	2/3/92				6.1			0.130	0.770	0.010	0.910		0.040						1.6											
LP-CUT	Lakes Park (I-C Cut)	2/20/92	76.0	7.7		5.2			0.010	0.400	2.270	2.680		0.005						1.2											
LP-CUT	Lakes Park (I-C Cut)	3/26/92	25.0	7.9		8.7			0.120	0.160	0.430	0.710		0.005						1.1											
LP-CUT	Lakes Park (I-C Cut)	4/7/92	24.4	7.5		9.5			0.010	0.070	0.200	0.280		0.060						1.0											
LP-CUT	Lakes Park (I-C Cut)	5/15/92	27.8	7.7		8.2			0.010	0.020	0.600	0.630		0.005						1.2											
LP-CUT	Lakes Park (I-C Cut)	6/26/92	28.9	7.4		3.5			0.050	0.005	0.815	0.870		0.005						0.9											
LP-CUT	Lakes Park (I-C Cut)	7/6/92	31.0	7.9		8.0			0.080	0.005	0.525	0.610		0.050						2.0											
LP-CUT	Lakes Park (I-C Cut)	7/30/92	25.0	7.4		6.7			0.020	0.005	0.575	0.600		0.020						1.5											
LP-CUT	Lakes Park (I-C Cut)	8/25/92	30.0	7.3		2.4			0.010	0.005	0.785	0.800		0.120						2.6											
LP-CUT	Lakes Park (I-C Cut)	9/8/92	29.5	7.3		3.7			0.010	0.230	-0.010	0.230		0.005						1.1											
LP-CUT	Lakes Park (I-C Cut)	10/5/92	26.7	7.3		1.2			0.100	0.005	0.755	0.860		0.160						2.1											
LP-CUT	Lakes Park (I-C Cut)	11/18/92	23.3	7.7		8.5			0.010	0.060	2.090	2.160		0.060						1.2											
LP-CUT	Lakes Park (I-C Cut)	12/4/92	21.0	7.8		7.4			0.010	0.005	1.175	1.190		0.070						0.8											
LP-CUT	Lakes Park (I-C Cut)	1/7/93	26.1	8.0		13.0			0.040	0.005	0.535	0.580		0.005						1.5											
LP-CUT	Lakes Park (I-C Cut)	2/11/93	21.0	7.8		7.8			0.010	0.005	-0.010	0.005		0.240						1.0											
LP-CUT	Lakes Park (I-C Cut)	3/18/93	19.4	7.8		8.4			0.010	0.005	0.235	0.250		0.005						0.4											
LP-CUT	Lakes Park (I-C Cut)	4/26/93	25.5	8.5		8.4			0.010	0.005	0.565	0.580		0.140						0.7											
LP-CUT	Lakes Park (I-C Cut)	5/20/93	27.0	8.3		7.4			0.010	0.005	0.495	0.510		0.050						6.0											
LP-CUT	Lakes Park (I-C Cut)	6/4/93	31.0	8.7		7.8			0.020	0.005	0.415	0.440		0.010						1.6											
LP-CUT	Lakes Park (I-C Cut)	7/6/93	33.0	8.5		7.3			0.010	0.005	0.805	0.820		0.005						1.1											
LP-CUT	Lakes Park (I-C Cut)	8/16/93	32.0	7.5		4.6			0.010	0.030	0.410	0.450		0.300						1.4											
LP-CUT	Lakes Park (I-C Cut)	9/27/93	30.0	7.5		3.0			0.010	0.005	0.345	0.360		0.005						1.2											
LP-CUT	Lakes Park (I-C Cut)	10/8/93	28.9	7.6		2.4			0.010	0.010	0.750	0.770		0.080						6.9											
LP-CUT	Lakes Park (I-C Cut)	11/18/93	27.0	7.7		5.9			0.010	0.005	-0.010	0.005		0.005						0.5											
LP-CUT	Lakes Park (I-C Cut)	12/2/93	22.0	7.7		4.6			0.010	0.005	-0.010	0.005		0.005						1.7											
LP-CUT	Lakes Park (I-C Cut)	1/31/94	22.0	7.8		7.8			0.010	0.005	0.615	0.630		0.005						1.0											
LP-CUT	Lakes Park (I-C Cut)	2/25/94	25.0	7.9		7.5			0.010	0.005	0.475	0.490		0.005						0.9											
LP-CUT	Lakes Park (I-C Cut)	3/22/94	28.0	8.3		7.8			0.010	0.005	0.675	0.690		0.005						1.3											
LP-CUT	Lakes Park (I-C Cut)	4/12/94	29.0	8.2		7.5			0.010	0.005	0.815	0.830		0.340						1.2											
LP-CUT	Lakes Park (I-C Cut)	5/12/94	32.0	8.7		8.5			0.010	0.005	0.545	0.560		0.120						1.5											
LP-CUT	Lakes Park (I-C Cut)	6/8/94	30.0	7.8		6.0			0.010	0.030	0.170	0.210		0.180						1.2											
LP-CUT	Lakes Park (I-C Cut)	7/26/94	29.0	7.4		3.5			0.010	0.030	0.310	0.350		0.220						1.3											
LP-CUT	Lakes Park (I-C Cut)	8/31/94	31.0	7.4		4.0			0.010	0.005	0.845	0.860		0.060						1.1											
LP-CUT	Lakes Park (I-C Cut)	9/7/94	33.0	7.5		5.0			0.010	0.020	0.240	0.270		0.005						2.2											
LP-CUT	Lakes Park (I-C Cut)	11/1/94	26.0	7.7		6.0			0.010	0.030	0.030	0.070		0.010						2.4											
LP-CUT	Lakes Park (I-C Cut)	11/16/94	25.0	7.6		4.0			0.030	0.005	0.015	0.050		0.020						1.3											
LP-CUT	Lakes Park (I-C Cut)	12/22/94	20.0	7.6		5.7			0.010	0.210	0.340	0.560		0.005						0.8											

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CUT	Lakes Park (I-C Cut)	1/31/95	17.0	7.5		6.8			0.080	0.040	0.390	0.510		0.005						0.7											
LP-CUT	Lakes Park (I-C Cut)	2/14/95	20.0	7.9		7.8			0.010	0.010	0.800	0.820		0.005						0.7											
LP-CUT	Lakes Park (I-C Cut)	3/28/95	25.0	7.6		7.2			0.010	0.010	0.490	0.510		0.080						1.0											
LP-CUT	Lakes Park (I-C Cut)	4/19/95	27.0	8.0		7.9			0.010	0.010	0.600	0.620		0.090						2.5											
LP-CUT	Lakes Park (I-C Cut)	6/22/95	28.0	7.3	408	1.7			0.020	0.005	-0.020	0.005	0.003	0.005		0.5	1.0	87		1.0				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	7/31/95	30.0	7.5	499	2.4			0.090	0.090	0.370	0.550	0.020	0.040		7.0	1.7	65		3.1				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	8/30/95	31.0	7.8	375	5.5			0.020	0.170	0.620	0.810	0.001	0.020		3.0	3.5	62		2.2				1.00		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	9/28/95	30.0	7.7	501	1.5			0.020	0.005	0.275	0.300	0.002	0.040		0.5	1.8	51		1.1				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	11/16/95	21.0	7.6	537	4.0			0.010	0.070	0.640	0.720	0.001	0.005		0.5	1.7	62		1.3				5.00		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	12/13/95	18.0	7.8	545	5.5			0.010	0.010	0.820	0.840	0.001	0.020		5.0	2.3	56		2.6				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	1/4/96	19.0	7.8	485	7.1			0.060	0.260	0.710	1.030	0.007	0.005		0.5	1.0	58		1.4				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	2/26/96	22.0	7.7	523	4.4			0.010	0.170	0.980	1.160	0.010	0.030		12.5	0.8	57		1.1				28.00		0.50		10.0			
LP-CUT	Lakes Park (I-C Cut)	3/21/96	20.0	8.0	483	8.2			0.010	0.040	0.670	0.720	0.010	0.030		0.5	0.5	57		0.5				0.50		0.50		20.0			
LP-CUT	Lakes Park (I-C Cut)	4/18/96	24.0	8.0	379	8.2			0.010	0.110	0.470	0.590	0.001	0.060		0.5	0.6	60		1.6				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	5/22/96	29.0	8.5	349	8.4			0.010	0.100	1.020	1.130	0.001	0.005		0.5	0.5	57		0.5				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	6/26/96	31.0	8.2	450	10.0			0.050	0.130	0.070	0.250	0.001	0.005		0.5	0.5	60		1.4				7.00		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	7/16/96	31.0	7.8	643	8.0			0.010	0.110	0.320	0.440	0.001	0.960		0.5	0.4	90		0.5				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	8/27/96	28.0	7.2	665	2.0			0.010	0.220	0.610	0.840	0.001	0.020		0.5	1.6	77		1.8				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	10/30/96	26.0	7.4	600	3.6			0.050	0.005	0.965	1.020	0.009	0.005		0.5	0.9	90		2.3				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	2/13/97	73.0	7.8	468	8.4			0.010	0.040	0.790	0.840	0.001	0.005		2.0	0.7	78		1.3				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	3/18/97	24.0	8.0	486	9.8			0.010	0.005	0.135	0.150	0.001	0.020		0.5	0.5	69	188	1.3				23.00		0.50		40.0			
LP-CUT	Lakes Park (I-C Cut)	4/17/97	25.0	8.1	387	8.6			0.010	0.005	0.045	0.060	0.001	0.005		0.5	0.4	68		1.1				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	5/29/97	30.0	8.1	373	8.1			0.010	0.005	-0.010	0.005	0.001	0.005		1.0	0.4	64		0.5				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	6/25/97	30.0	8.2	352	8.0			0.010	0.005	-0.010	0.005	0.001	0.300		0.5	0.6	67		1.4				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	7/24/97	30.0	7.6	689	6.8			0.010	0.005	-0.010	0.005	0.001	0.005		1.0	0.4	102		1.2				0.50		0.50		5.0			
LP-CUT	Lakes Park (I-C Cut)	8/25/97	30.0	7.4	674	1.8			0.010	0.005	-0.005	0.010	0.001	0.005		3.0	0.5	78		0.5				0.50		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	9/23/97	30.0	7.6	645	4.6			0.010	0.005	-0.010	0.005	0.001	0.010		2.0	0.7	76		1.0				0.50		4.00		5.0	30		
LP-CUT	Lakes Park (I-C Cut)	10/29/97	24.0	7.6	457	5.5			0.010	0.020	0.220	0.250	0.001	0.020		2.0	0.3	70		0.5				0.50		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	11/20/97	22.0	7.5	554	5.7			0.010	0.070	0.460	0.540	0.001	0.030		0.5	0.3	65		0.5				0.50		0.50		5.0	10		
LP-CUT	Lakes Park (I-C Cut)	12/22/97	21.0	7.9	530	7.6			0.030	0.005	-0.030	0.005	0.005	0.005		1.0	0.5	72		1.3				0.50		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	1/28/98	19.0	7.6	560	4.5			0.010	0.010	0.210	0.230	0.001	0.005		0.5	0.2	71		0.5				0.50		0.50		5.0	280		
LP-CUT	Lakes Park (I-C Cut)	2/25/98	21.0	7.8	578	5.6			0.010	0.005	0.085	0.100	0.002	0.060		2.0	0.6	73		1.5				0.50		0.50		10.0	5		
LP-CUT	Lakes Park (I-C Cut)	3/17/98	21.0	8.0	367	8.4			0.010	0.005	-0.010	0.005	0.002	0.160		0.5	0.5	64		0.5				0.50		0.50		10.0	10		
LP-CUT	Lakes Park (I-C Cut)	4/24/98	26.0	8.2	336	8.2			0.010	0.005	0.245	0.260	0.001	0.010		2.0	0.4	76		1.1				1.00		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	5/27/98	29.0	8.4	433	6.2			0.010	0.005	0.305	0.320	0.001	0.005		4.0	0.4	83		0.5				1.00		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	6/24/98	30.0	7.7	471	5.2			0.030	0.005	0.025	0.060	0.001	0.005		4.0	0.6	70		1.9				1.00		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	7/22/98	28.0	7.2	511	0.8			0.010	0.005	0.055	0.070	0.024	0.020		4.0	2.5	86		2.7				1.00		0.50		10.0	5		
LP-CUT	Lakes Park (I-C Cut)	8/25/98	30.0	7.6	651	2.2			0.010	0.005	0.725	0.740	0.011	0.060		1.0	1.0	72		1.0				8.00		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	9/29/98	29.0	7.4	500	3.2			0.010	0.010	-0.010	0.010	0.001	0.005		2.0	0.7	64		1.4				1.00		0.50		5.0	10		
LP-CUT	Lakes Park (I-C Cut)	10/26/98	26.0	7.4	596	8.6			0.070	0.005	1.265	1.340	0.002	0.025		1.0	0.5	66		0.5				1.00		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	11/30/98	24.0	7.8	528	2.2			0.010	0.020	0.210	0.240	0.001	0.025		0.5	0.7	70		1.1				1.00		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	12/29/98	23.0	7.6	554	4.6			0.010	0.020	-0.010	0.020	0.001	0.025		3.0	1.1	66		1.9				1.00		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	1/28/99	22.0	7.4	509	5.4			0.010	0.020	-0.010	0.020	0.002	0.025		2.0	0.8	63		1.0				1.00		0.50		10.0	10		
LP-CUT	Lakes Park (I-C Cut)	2/24/99	20.0	7.9	475	8.1			0.060	0.005	0.005	0.070	0.001	0.260		2.0	1.8	63		0.5				1.00		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	3/30/99	25.0	7.8	373	7.6			0.010	0.005	0.995	1.010	0.001	0.025		4.0	0.9	69		1.0				1.00		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	4/27/99	28.0	8.3	387	8.3			0.010	0.040	0.750	0.800	0.001	0.025		0.5	0.4	109		0.8				1.00		5.00		10.0	5		
LP-CUT	Lakes Park (I-C Cut)	5/20/99	28.0	8.9	383	7.8			0.010	0.005	1.445	1.460	0.001	0.025		2.0	0.5	74		2.2				1.00		1.00		10.0	5		
LP-CUT	Lakes Park (I-C Cut)	6/29/99	29.0	7.5	574	5.9			0.010	0.005	0.455	0.470	0.001	0.025		0.5	0.7	85		0.8				1.00		1.00		10.0	5		
LP-CUT	Lakes Park (I-C Cut)	7/27/99	32.0	7.6	661	7.6			0.030	0.005	-0.030	0.005	0.003	0.170		2.0	0.5	71		0.8				1.00		1.00		10.0	40		
LP-CUT	Lakes Park (I-C Cut)	8/26/99	31.0	7.4	591	5.0			0.010	0.005	0.675	0.690	0.001	0.270		2.0	1.6	58		1.5				1.00		1.00		10.0	40		
LP-CUT	Lakes Park (I-C Cut)	10/6/99	27.0	7.2	558	1.1			0.010	0.020	0.790	0.820	0.006	0.025		2.0	0.7	56		0.8				1.00		1.00		5.0	50		
LP-CUT	Lakes Park (I-C Cut)	7/25/00	29.0	7.3	670	3.7			0.010	0.005	1.115	1.130	0.013	0.025		2.0	0.5	104		2.8				0.50		0.50		5.0	10		
LP-CUT	Lakes Park (I-C Cut)	9/21/00	30.0	7.6	521	6.7			0.030	0.010	0.860	0.900	0.019	0.025		1.0	1.3	67		1.7				0.50		0.50		5.0	10		
LP-CUT	Lakes Park (I-C Cut)	11/15/01	22.2	7.3	707	1.7			0.330	0.130	0.700	1.160	0.003	0.070		0.5	0.5	75	242	0.8				0.50		0.50		5.0	5		40
LP-CUT	Lakes Park (I-C Cut)	12/19/01	22.3	7.2	750	1.5			0.140	0.030	0.460	0.630	0.003	0.025	41	22.0	1.1	89		5.8				0.50		0.50		10.0	5		10
LP-CUT	Lakes Park (I-C Cut)	1/28/02	22.5	7.2	775	4.9			0.130	0.250	0.680	1.060	0.005	0.025	21	1.0	0.6	78		0.8				0.50		0.50		5.0	5		10
LP-CUT	Lakes Park (I-C Cut)	2/27/02	20.1	7.4	767	3.8			0.050	0.080	0.620	0.750	0.005	0.025	23	1.0	0.5	87		1.5				0.50		0.50		5.0	5		5
LP-CUT	Lakes Park (I-C Cut)	3/26/02	25.3	7.6	698	3.3			0.050	0.020	0.460	0.530	0.013	0.025	28	11.0	0.9	92		1.6				0.50		0.50		5.0	5		5
LP-CUT	Lakes Park (I-C Cut)	4/11/02	24.9	7.5	738	2.9			0.050	0.020	0.630	0.700	0.003	0.025	25	0.5	0.6	89		0.8				0.50		0.50		5.0	5		40
LP-CUT	Lakes Park (I-C Cut)	5/21/02	26.6	7.8	612	3.6			0.010	0.005	0.535	0.550	0.003	0.025	24	2.0	0.6	94		0.8				0.50		0.50		5.0	5		10
LP-CUT	Lakes Park (I-C Cut)	6/6/02	29.5	7.8	595	1.5			0.060	0.010	0.670	0.740	0.003	0.005	23	0.5	0.6	98	128	1.7				0.50		0.50		10.0	10		50
LP-CUT	Lakes Park (I-C Cut)	7/16/02	30.7	7.7	664	4.5			0.010	0.005	0.445	0.460	0.003	0.080	29	1.0	0.7	109	164	1.7				0.50		0.50		5.0	10		10
LP-CUT	Lakes Park (I-C Cut)	8/20/02	30.1	7.4	817				0.080	0.005	0.445	0.530	0.003	0.030	24	1.0	1.1	124		1.9				0.50		0.50		5.0	5		
LP-CUT	Lakes Park (I-C Cut)	9/26/02	29.3	7.3	1,610				0.060	0.010	0.770	0.840	0.003	0.030	39	7.0	2.0	248		3.2				0.50		0.50		5.0	30		10
LP-CUT	Lakes Park (I-C Cut)	10/10/02	28.5	7.5	141	3.9			0.090	0.010	0.760	0.860	0.003	0.030	34	4.0	1.9	74	306	0.8				0.50		0.50		10.0	5		5
LP-CUT	Lakes Park (I-C Cut)	11/20/02	20.6	7.4	2,890	1.6			0.840	0.040	0.900	1.780	0.003	0.030	44	9.0	3.5	444		3.1				0.50		0.50		5.0	10		10
LP-CUT	Lakes Park (I-C Cut)	12/23/02	18.7	7.6	1,890	6.1			0.600	0.060	0.720	1.380	0.003	0.030	28	4.0	1.8	198	290	4.0				0.50		0.50		10.0	5		40

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CUT	Lakes Park (I-C Cut)	1/9/03	16.5	7.4	1,070	1.7			1.150	0.030	0.620	1.800	0.023	0.030	22	0.5	1.4	196	336	0.8				0.50		0.50		5.0	5		5
LP-CUT	Lakes Park (I-C Cut)	2/13/03	19.1	7.5	918	5.1			1.470	0.100	0.270	1.840	0.009	0.015	16	1.2	0.6	158		4.0				0.50		0.50		5.0	5		10
LP-CUT	Lakes Park (I-C Cut)	3/13/03	26.4	7.7	1,051	3.9			0.820	0.100	0.920	1.840	0.026	0.015	28	4.2	1.6	167	300	2.6				0.50		0.50		5.0	10		5
LP-CUT	Lakes Park (I-C Cut)	4/17/03	25.3	7.8	942	8.9			0.020	0.020	0.910	0.950	0.003	0.047	18	1.2	1.5	285		1.0		0.38		0.50		0.50		5.0	5		10
LP-CUT	Lakes Park (I-C Cut)	5/1/03	25.9	7.7	1,007	5.5			0.020	0.020	0.460	0.500	0.003	0.022	22	1.2	14.1	140		1.7		0.38		1.00		0.50		5.0	5		150
LP-CUT	Lakes Park (I-C Cut)	6/23/03	28.0	7.4	826	4.7			0.020	0.030	0.470	0.520	0.003	0.046	22	1.2	0.7	116	238	1.2		0.38		17.00		0.50		5.0	10		5
LP-CUT	Lakes Park (I-C Cut)	7/22/03	31.2	7.5	800	3.6			0.005	0.010	0.475	0.490	0.003	0.029	33	10.5	0.7	106		1.6		0.38		0.50		0.50		5.0	5		30
LP-CUT	Lakes Park (I-C Cut)	8/5/03	30.0	7.5	899	4.2			0.005	0.050	0.845	0.900	0.008	0.027	24	1.2	0.6	85		1.0		0.38		0.50		0.50		5.0	5		10
LP-CUT	Lakes Park (I-C Cut)	9/8/03	29.4	7.8	650	2.9			0.058	0.010	1.632	1.700	0.008	0.025	28	2.5	1.0	69		1.0		0.38		0.50		0.50		5.0	5		10
LP-CUT	Lakes Park (I-C Cut)	10/28/03	26.3	7.6	571	2.8			0.041	0.090	0.629	0.760	0.011	0.014	10	1.2	0.9	60		1.8		0.38		1.00		0.50		5.0	5		30
LP-CUT	Lakes Park (I-C Cut)	11/13/03	24.6	7.4	563	4.1			0.035	0.130	0.455	0.620	0.006	0.010	20	1.2	0.7	66		1.2		0.38		1.10		0.50		5.0	5		10
LP-CUT	Lakes Park (I-C Cut)	12/2/03	18.9	7.2	634	5.5			0.025	0.070	0.495	0.590	0.008	0.020	27	1.2	1.2	102	210	2.5		0.38		4.00		0.50		5.0	10		5
LP-CUT	Lakes Park (I-C Cut)	1/22/04	17.2	7.4	660	5.5			0.025	0.060	0.435	0.520	0.008	0.029	20	1.2	0.3	79		1.2		0.25		0.50		1.00		5.0	30		5
LP-CUT	Lakes Park (I-C Cut)	2/19/04	16.0	7.4	652	7.7			0.025	0.040	0.565	0.630	0.008	0.029	17	1.2	0.4	84	218	1.1		0.25		4.00		1.00		5.0	5		20
LP-CUT	Lakes Park (I-C Cut)	3/18/04	21.7	7.8	704	8.7			0.118	0.005	0.299	0.422	0.008	0.026	19	5.5	1.3	96	206	3.4		0.25		0.50		0.50		10.0	5		10
LP-CUT	Lakes Park (I-C Cut)	4/13/04	24.9	7.7	668	6.5			0.028	0.010	0.282	0.320	0.011	0.010	21	1.2	0.7	108	218	2.2		0.25		2.00		0.50		5.0	40		150
LP-CUT	Lakes Park (I-C Cut)	5/17/04	26.2	7.9	604	6.3			0.004	0.010	0.516	0.530	0.004	0.029	21	1.2	0.7	110		1.4		0.25		0.50		0.50		5.0	5		5
LP-CUT	Lakes Park (I-C Cut)	6/9/04	29.5	7.4	641	5.4			0.035	0.010	0.375	0.420	0.004	0.023	26	1.2	0.7	101		1.1		0.25		0.50		0.50		5.0	10		50
LP-CUT	Lakes Park (I-C Cut)	7/27/04	30.1	7.1	627	8.0			0.015	0.005	0.426	0.446	0.004	0.010	18	1.2	0.4	111		1.2		0.25		0.50		0.50		5.0	140		50
LP-CUT	Lakes Park (I-C Cut)	8/10/04	28.4	7.1	632	3.0			0.041	0.020	0.339	0.400	0.008	0.026	18	1.2	0.1	96		1.4		0.25		0.50		0.50		5.0	5		5
LP-CUT	Lakes Park (I-C Cut)	9/15/04	28.3	7.7	550	5.8			0.032	0.005	0.263	0.300	0.004	0.010	19	1.2	0.3	73		1.6		0.25		0.50		0.50		5.0	5		5
LP-CUT	Lakes Park (I-C Cut)	10/11/04	26.8	7.8	543	6.0			0.028	0.020	0.602	0.650	0.008	0.020	16	1.2	0.6	76		1.7		0.25		0.50		1.00		5.0	5		5
LP-CUT	Lakes Park (I-C Cut)	11/29/04	22.4	7.7	589	7.2			0.010	0.005	0.823	0.838	0.004	0.010	15	1.2	0.4	88		2.0		0.25		0.50		0.50		5.0	5		10
LP-CUT	Lakes Park (I-C Cut)	12/15/04	15.3	7.4	595	8.7			0.030	0.005	0.843	0.878	0.004	0.010	14	1.2	0.6	95		1.1		0.25		0.50		0.50		5.0	5		10
LP-CUT	Lakes Park (I-C Cut)	1/12/05	22.9	7.8	593	7.6			0.026	0.005	0.889	0.920	0.004	0.010	15	0.6	0.6	94		1.7		0.25		0.50		0.50		5.0	10		10
LP-CUT	Lakes Park (I-C Cut)	2/10/05	19.3	7.8	689	6.6			0.059	0.005	0.796	0.860	0.012	0.020	14	3.5	0.6	116		1.8		0.25		0.50		0.50		2.0	5		40
LP-CUT	Lakes Park (I-C Cut)	3/16/05	23.6	7.7	614	9.2			0.013	0.010	0.527	0.550	0.004	0.010	14	3.3	0.6	97	168	1.4		0.20		1.10		0.50		2.0	60		30
LP-CUT	Lakes Park (I-C Cut)	4/18/05	22.3	7.8	678	7.8			0.007	0.005	0.419	0.430	0.004	0.010	16	1.3	0.4	103		0.8		0.20		0.50		0.50		2.0	5		5
LP-CUT	Lakes Park (I-C Cut)	5/5/05	25.9	7.8	576	7.0			0.007	0.010	0.744	0.760	0.004	0.020	17	0.3	0.7	100		1.5		0.20		0.50		0.50		2.0	5		5
LP-CUT	Lakes Park (I-C Cut)	6/23/05	28.4	7.6	609	2.2			0.007	0.005	0.799	0.810	0.005	0.010	31	1.0	0.7	78		1.7		0.20		0.50		0.50		5.0	5		10
LP-CUT	Lakes Park (I-C Cut)	7/21/05	30.7	7.6	601	6.9			0.028	0.020	0.642	0.690	0.002	0.030	25	1.5	0.9	76		1.9		0.20		0.50		0.50		5.0	5		20
LP-CUT	Lakes Park (I-C Cut)	8/18/05	31.8	7.5	578	4.4			0.089	0.010	0.741	0.840	0.002	0.030	26	3.2	1.3	78		1.9		0.20		0.50		0.50		5.0	20		30
LP-CUT	Lakes Park (I-C Cut)	9/8/05	29.4	7.6	621	5.5			0.037	0.010	1.253	1.300	0.010	0.040	31	7.7	3.6	84		3.8		0.20		0.50		0.50		5.0	70		20
LP-CUT	Lakes Park (I-C Cut)	10/6/05	27.9	7.9	627	5.3			0.069	0.030	1.501	1.600	0.002	0.060	25	10.7	5.7	114		3.3		0.20		0.50		0.50		5.0	110		5
LP-CUT	Lakes Park (I-C Cut)	11/1/05	21.9	7.7	569	7.0			0.041	0.020	0.059	0.120	0.002	0.030	29	5.5	3.6	64		3.4		0.20		0.50		0.50		5.0	50		40
LP-CUT	Lakes Park (I-C Cut)	12/20/05	19.3	7.4	659	6.6			0.461	0.090	1.249	1.800	0.002	0.040	18	8.5	3.5	74		3.2		0.20		0.50		0.50		5.0	20		20
LP-CUT	Lakes Park (I-C Cut)	1/18/06	18.1	7.3	724	6.8			0.246	0.080	1.474	1.800	0.002	0.060	22	8.2	5.3	99		3.3		0.20		0.50		0.50		5.0	50		270
LP-CUT	Lakes Park (I-C Cut)	2/16/06	16.3	7.5	642	9.5			0.386	0.060	1.354	1.800	0.002	0.050	24	39.0	23.0	83		4.1		0.20		0.50		0.50		5.0	10		30
LP-CUT	Lakes Park (I-C Cut)	3/22/06	23.9	7.5	651	4.4			0.091	0.010	1.889	1.990	0.002	0.070	21	22.5	6.7	88		5.5		0.20		0.50		0.50		5.0	50		360
LP-CUT	Lakes Park (I-C Cut)	4/17/06	22.2	7.2	1,720	2.0			0.513	0.010	6.137	6.660	0.002	0.320	27	234.0	35.2	306		6.7		0.20		0.50		0.50		5.0	330		460
LP-CUT	Lakes Park (I-C Cut)	5/3/06	23.9	8.0	3,990	5.1			1.430	0.010	0.690	2.130	0.009	0.080	39	9.0	1.6	155		3.7		0.20		0.50		0.50		5.0	50		240
LP-CUT	Lakes Park (I-C Cut)	6/5/06	25.7	7.0	2,640	0.2			0.234	0.020	2.666	2.920	0.007	0.160	57	15.5	5.6	506		3.0		0.20		0.50		0.50		5.0	280		2,001
LP-CUT	Lakes Park (I-C Cut)	7/19/06	31.1	8.0	5,370	6.2			0.057	0.005	1.358	1.420	0.005	0.050	49	7.8	3.4	1,620		2.2		0.15		0.50		0.50		5.0	60		10
LP-CUT	Lakes Park (I-C Cut)	8/8/06	30.4	8.0	4,180	3.2			0.028	0.010	1.572	1.610	0.006	0.070	28	6.8	3.8	1,120		4.8		0.15		0.50		0.50		5.0	20		20
LP-CUT	Lakes Park (I-C Cut)	9/25/06	30.2	7.8	2,770	3.3			0.009	0.020	1.092	1.120	0.002	0.030	28	7.3	5.6	525		2.0		0.15		0.50		0.50		2.5	230		10
LP-CUT	Lakes Park (I-C Cut)	10/17/06	26.1	7.8	2,720	6.5			0.007	0.010	1.393	1.410	0.002	0.040	68	11.5	7.5	572		3.0		0.15		0.50		0.50		2.5	5		10
LP-CUT	Lakes Park (I-C Cut)	11/20/06	20.1	8.0	2,590	7.2			0.007	0.020	1.493	1.520	0.002	0.040	60	9.0	6.6	528		2.4		0.15		0.50		0.50		2.5	60		30
LP-CUT	Lakes Park (I-C Cut)	12/4/06	23.9	8.0	3,170	7.6			0.018	0.010	2.682	2.710	0.002	0.070	43	17.3	5.8	780		4.0		0.15		0.50		0.50		2.5	160		90
LP-CUT	Lakes Park (I-C Cut)	1/9/07	22.2	8.2	3,390	7.1			0.023	0.010	1.677	1.710	0.002	0.120	69	15.0	10.7	845		1.5		0.15		0.50		0.50		2.5	140		330
LP-CUT	Lakes Park (I-C Cut)	2/19/07	16.1	8.4	2,840	10.1			0.018	0.010	1.382	1.410	0.002	0.051	23	11.3	5.7	600		3.2		0.15		0.50		0.50		2.5	30		20
LP-CUT	Lakes Park (I-C Cut)	3/1/07	23.5	7.9	2,880	5.4			0.024	0.005	1.081	1.110	0.002	0.060	18	24.5	6.6	554		4.2		0.15		0.50		0.50		2.5	140		80
LP-CUT	Lakes Park (I-C Cut)	4/23/07	23.3	8.0	2,600	11.4			0.347	0.030	1.053	1.430	0.006	0.035	14	14.5	3.2	577		1.9		0.15		0.50		0.50		2.5	20		510
LP-CUT	Lakes Park (I-C Cut)	5/24/07	26.3	8.0	3,420	6.1			0.137	0.010	1.163	1.310	0.005	0.030	20	7.0	4.2	545		2.6		0.15		0.50		0.50		2.5	50		110
LP-CUT	Lakes Park (I-C Cut)	6/21/07	31.1	7.8	3,920	8.9			0.007	0.010	1.593	1.610	0.002	0.026	7	7.3	3.3	465		3.4		0.15		0.50		0.50		2.5	30		80
LP-CUT	Lakes Park (I-C Cut)	7/23/07	29.7	7.6	3,100	5.6			0.007	0.005	1.088	1.100	0.002	0.021	13	11.0	5.2	380		1.7		0.15		0.50		0.50		2.5	20		20
LP-CUT	Lakes Park (I-C Cut)	8/28/07	30.1	8.2	4,360	4.7			0.007	0.010	1.083	1.100	0.002	0.025	15	8.7	7.3	288		3.4		0.15		0.50		0.50		2.5	160		30
LP-CUT	Lakes Park (I-C Cut)	9/25/07	28.6	8.2	3,890	5.4			0.007	0.010	1.183	1.200	0.002	0.037	20	13.7	5.7	298		3.9		0.15		0.50		0.50		2.5	50		50
LP-CUT	Lakes Park (I-C Cut)	10/22/07	28.8	8.0	4,440	2.9			0.025	0.005	0.830	0.860	0.002	0.022	8	11.2	5.8	217	332	2.5		0.15		1.87		0.50		2.5	860		590
LP-CUT	Lakes Park (I-C Cut)	11/13/07	22.3	8.1	4,270	5.1			0.023	0.010	1.667	1.700	0.002	0.049	10	18.7	1.4	231		2.7		0.15		0.50		0.50		2.5	10		20
LP-CUT	Lakes Park (I-C Cut)	12/4/07	23.8	8.2	4,120	5.1			0.007	0.005	1.188	1.200	0.002	0.037	10	12.0	5.6	252		2.5		0.15		0.50		0.50		2.5	10		5
LP-CUT	Lakes Park (I-C Cut)	1/15/08	18.6	8.4	1,600	8.9			0.007	0.005	1.588	1.600	0.002	0.092	12	13.5	7.1	482		3.5		0.15		0.50		0.50		2.5	60		60
LP-CUT	Lakes Park (I-C Cut)	2/19/08	22.8	8.3	2,260	8.5			0.057	0.020	1.223	1.300	0.002	0.041	8	21.4	7.2	280		3.7		0.15		0.50		0.50		2.5	180		70
LP-CUT	Lakes Park (I-C Cut)	3/27/08	21.1	8.2	1,320	7.9			0.007	0.005	1.288	1.300	0.002	0.030	14	10.6	5.5	270	308	4.4		0.15		0.50		3.10		2.5	5		5
LP-CUT	Lakes Park (I-C Cut)	4/15/08	23.6	8.2	966	7.9			0.019	0.005	0.726	0.750	0.002	0.022	8	7.9	6.5	183		2.5		0.15		0.50		0.50		2.5	10		5
LP-CUT	Lakes Park (I-C Cut)	5/19/08	29.3	8.1	1,790	6.2			0.033	0.005	0.792	0.830	0.002	0.022	10	10.6	4.5	399		3.0		0.15		0.50		0.50		2.5	70		240
LP-CUT	Lakes Park (I-C Cut)	6/25/08	30.2	8.1	961	6.6			0.024	0.010	0.576	0.610	0.002	0.014	11	5.0	2.5	161		2.1		0.15		0.50		0.50		2.5	20		30
LP-CUT	Lakes Park (I-C Cut)	7/23/08	30.7	7.7	805	5.7			0.007	0.010	0.473	0.490	0.002	0.020	23	3.2	1.7	113		2.1		0.15		0.50		0.50		2.5	10		5
LP-CUT	Lakes Park (I-C Cut)	8/27/08	30.9	8.2	1,080	6.9			0.007	0.005	0.468	0.480	0.002	0.016	20	4.5	2.5	117		2.7		0.15		0.50		0.50		2.5	550		30
LP-CUT	Lakes Park (I-C Cut)	9/9/08	29.5	8.1	1,640	5.8			0.007	0.010	0.613	0.630	0.002	0.023	15	7.8	2.7	167		3.2		0.15		0.50		0.50		2.5	30		10
LP-CUT	Lakes Park (I-C Cut)	10/29/08	21.7	7.9	2,160	8.0			0.150	0.010	1.240	1.400	0.002	0.063	25	8.0	5.4	519		3.6		0.15		0.50		0.50		2.5	420		120
LP-CUT	Lakes Park (I-C Cut)	11/24/08	17.9	8.0	1,990	8.3			0.021	0.005	0.884	0.910	0.002	0.023	16	12.9	3.9	240	256	3.3		0.15		2.65		0.50		1.7	5		5
LP-CUT	Lakes Park (I-C Cut)	12/10/08	20.0	7.9	1,120	9.4			0.007	0.010	0.683	0.700	0.002	0.030	16	10.2	3.6	192	188	1.4		0.15		10.00		0.25		0.5	200		10

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CUT	Lakes Park (I-C Cut)	1/12/09	21.5	8.3	1,160	7.3			0.019	0.010	1.071	1.100	0.006	0.038	14	18.8	4.6	174	240	2.8		0.15		1.87		0.25		1.9	10		5
LP-CUT	Lakes Park (I-C Cut)	2/11/09	18.6	6.9	1,980	10.5			0.017	0.005	1.578	1.600	0.006	0.130	18	22.0	7.4	568	396	6.6	13.3	0.15	0.25	3.14		0.25	1.4	1.3	30		20
LP-CUT	Lakes Park (I-C Cut)	3/23/09	22.1	7.6	1,170	7.5			0.007	0.005	-0.012		0.006	0.130	21	17.6	11.7	557	384	7.2	15.6	0.15	0.25	4.25		0.25	1.5	0.5	220		90
LP-CUT	Lakes Park (I-C Cut)	4/22/09	25.1	7.4	1,060	0.4			0.019	0.005	0.736	0.760	0.002	0.014	14	4.7	3.4	220	341	3.3	14.6	0.15	0.25	2.22		0.25	1.8	1.1	5		20
LP-CUT	Lakes Park (I-C Cut)	5/19/09	26.1	8.0	1,130	6.9			0.007	0.005	1.288	1.300	0.005	0.018	21	6.3	4.9	219	262	2.4	2.5	1.30	0.25	2.35		0.25	1.4	1.9	80		31
LP-CUT	Lakes Park (I-C Cut)	6/15/09	31.9	8.2	1,680	6.8			0.007	0.005	1.388	1.400	0.002	0.023	15	7.5	4.7	210	274	3.1	26.9	0.72	0.25	1.72		0.25	1.2	2.9	210		20
LP-CUT	Lakes Park (I-C Cut)	7/29/09	30.2	8.1	2,470	5.7		169	0.007	0.005	1.888	1.900	0.002	0.058	23	10.9	7.5	581	396	5.5	16.5	0.43	0.25	2.67		0.25	1.0	2.3	228		20
LP-CUT	Lakes Park (I-C Cut)	8/31/09	31.0	8.1	2,310	4.5		172	0.007	0.005	1.488	1.500	0.002	0.046	22	12.2	5.8	507	367	4.4	26.0	0.15	0.25	2.57		0.25	1.2	0.5	136		76
LP-CUT	Lakes Park (I-C Cut)	9/23/09	30.0	8.2	1,160	6.7		180	0.007	0.005	1.188	1.200	0.002	0.035	17	6.5	2.9	212	280	2.1	22.3	0.34	0.25	1.82		0.25	1.4	4.5	251		8
LP-CUT	Lakes Park (I-C Cut)	10/26/09	25.4	8.3	1,260	7.2		183	0.007	0.005	2.188	2.200	0.002	0.059	20	13.1	6.0	435	343	4.7	13.4	0.15	0.25	2.00		0.25	1.5	0.5	38		4
LP-CUT	Lakes Park (I-C Cut)	11/30/09	20.1	8.1	1,930	6.3		192	0.007	0.005	1.488	1.500	0.002	0.018	14	4.1	3.5	228	221	1.9	2.5	0.53	0.25	1.33		0.25	1.4	3.0	20		1
LP-CUT	Lakes Park (I-C Cut)	12/28/09	18.9	8.2	1,640	7.5		196	0.007	0.030	2.263	2.300	0.004	0.091	18	14.4	6.2	414	357	1.1	5.6	0.15	0.25	1.37		0.25	1.5	0.5	243		238
LP-CUT	Lakes Park (I-C Cut)	1/26/10	19.8	8.2	1,280	8.4		183	0.007	0.005	2.388	2.400	0.002	0.120	18	17.0	8.2	452	358	5.7	2.5	0.15	0.25	1.45		0.25	1.7	0.5	231		280
LP-CUT	Lakes Park (I-C Cut)	2/25/10	18.3	8.2	1,300	8.7		177	0.007	0.013	1.580	1.600	0.002	0.048	18	24.3	4.3	452	350	7.0	8.3	0.15	0.25	1.00		0.25	0.4	0.5	226		244
LP-CUT	Lakes Park (I-C Cut)	3/29/10	22.6	8.0	1,300	6.0		189	0.158	0.030	2.312	2.500	0.002	0.076	18	27.5	6.7	254	294	6.2	6.4	0.80	0.25	1.77		0.25	2.3	1.3	80		242
LP-CUT	Lakes Park (I-C Cut)	4/22/10	24.7	8.1	1,330	6.0		168	0.018	0.005	1.377	1.400	0.006	0.056	18	26.4	13.2	369	317	6.1	11.8	0.15	0.25	1.80	0.01	0.25	1.1	1.1	197		540
LP-CUT	Lakes Park (I-C Cut)	5/19/10	29.3	8.0	1,020	6.6		168	0.007	0.010	1.483	1.500	0.005	0.021	20	20.1	9.2	350	313	1.8	7.0	0.15	0.72	1.08	0.01	0.25	1.1	0.5	149		103
LP-CUT	Lakes Park (I-C Cut)	6/21/10	31.3	8.1	928	7.0		156	0.007	0.005	4.088	4.100	0.002	0.073	31	13.2	10.2	333	295	7.1	2.5	0.15	0.25	2.45	0.01	0.25	1.2	1.5	1,180		530
LP-CUT	Lakes Park (I-C Cut)	7/29/10	30.5	8.0	1,160	4.8		170	0.007	0.005	1.688	1.700	0.002	0.009	17	10.3	3.4	153	267	3.9	13.9	0.15	0.25	1.09	0.02	0.25	1.5	0.5	275		6
LP-CUT	Lakes Park (I-C Cut)	8/31/10	29.5	8.0	741	7.2		177	0.047	0.040	1.013	1.100	0.002	0.009	19	4.8	2.3	100	261	3.0	37.0	0.15	0.25	0.97	0.02	0.25	1.3	0.5	137		
LP-CUT	Lakes Park (I-C Cut)	9/15/10	29.5	7.9	684	5.7		160	0.007	0.005	1.088	1.100	0.002	0.006	21	5.5	2.5	84	233	1.9	6.7	0.15	0.25	1.31	0.03	0.25	1.1	1.2	229		16
LP-CUT	Lakes Park (I-C Cut)	10/28/10	27.6	7.9	1,060	4.8		179	0.043	0.005	0.492	0.540	0.004	0.007	19	7.3	7.7	93	263	2.4	7.4	0.15	0.25	0.77	0.02	0.25	1.0	0.5	40		4
LP-CUT	Lakes Park (I-C Cut)	11/15/10	21.2	8.0	718	8.8		186	0.007	0.005	0.408	0.420	0.002	0.003	16	4.9	4.3	98	270	2.1	2.5	0.15	0.25	0.25	0.01	0.25	1.2	5.1	40		2
LP-CUT	Lakes Park (I-C Cut)	12/13/10	15.4	8.1	803	8.7		198	0.007	0.005	1.088	1.100	0.002	0.012	16	8.5	3.5	116	271	2.7	2.5	0.15	0.25	1.14	0.01	0.25	1.5	0.5	38		1
LP-CUT	Lakes Park (I-C Cut)	1/27/11	17.0	8.0	764	9.6		198	0.007	0.005	0.798	0.810	0.002	0.006	13	11.0	5.6	118	263	4.1	2.5	0.15	0.25	1.03	0.00	0.25	1.6	0.5	820		219
LP-CUT	Lakes Park (I-C Cut)	2/23/11	24.0	8.2	745	9.6		140	0.022	0.005	2.573	2.600	0.002	0.049	20	29.7	14.9	301	262	7.6	6.1	0.15	0.25	1.54	0.01	0.25	1.1	0.5	58		34
LP-CUT	Lakes Park (I-C Cut)	3/23/11	23.8	8.0	947	7.6		176	0.007	0.005	1.288	1.300	0.002	0.014	11	20.3	10.8	143	263	4.4	10.9	0.15	0.25	0.98	0.01	0.25	1.4	0.5	3		4
LP-CUT	Lakes Park (I-C Cut)	4/14/11	26.6	8.1	819	7.0		176	0.007	0.005	1.188	1.200	0.002	0.016	11	10.6	5.1	124	256	4.2	9.3	0.15	0.25	0.96	0.02	0.25	1.6	1.3	18		14
LP-CUT	Lakes Park (I-C Cut)	5/5/11	27.6	8.2	801	7.1		122	0.075	0.005	2.820	2.900	0.004	0.058	36	34.7	27.4	286	253	7.7	15.3	0.15	0.25	1.92	0.01	0.25	0.9	0.5	1,780		204
LP-CUT	Lakes Park (I-C Cut)	6/14/11	30.9	8.0	883	7.7		118	0.127	0.005	1.768	1.900	0.005	0.032	38	27.8	14.5	293	248	7.6	13.8	0.15	0.25	1.07	0.01	0.25	0.9	1.5	234		56
LP-CUT	Lakes Park (I-C Cut)	7/14/11	30.6	7.9	776	6.9		154	0.051	0.054	0.995	1.100	0.002	0.019	22	6.4	4.7	143	256	4.6	2.5	0.15	0.25	2.28	0.03	0.25	1.4	0.5	194		110
LP-CUT	Lakes Park (I-C Cut)	8/11/11	29.3	7.8	771	5.5		166	0.007	0.005	0.988	1.000	0.002	0.012	22	2.2	1.3	92	256	1.9	16.5	0.15	0.25	1.42	0.03	0.25	0.9	0.5	587		33
LP-CUT	Lakes Park (I-C Cut)	9/15/11	30.3	7.6	663	6.5		169	0.007	0.005	0.978	0.990	0.002	0.006	26	3.1	1.5	78	253	2.0	7.1	0.15	0.25	1.70	0.04	0.25	2.1	0.5	65		28
LP-CUT	Lakes Park (I-C Cut)	10/13/11	28.1	8.0	629	7.7		164	0.021	0.005	0.914	0.940	0.004	0.011	22	14.0	2.2	76	259	3.7	5.6	0.15	0.25	1.24	0.04	0.25	1.9	0.5	120		30
LP-CUT	Lakes Park (I-C Cut)	11/29/11	22.4	8.1	669	8.0		172	0.007	0.005	0.828	0.840	0.002	0.026	21	12.1	5.0	85	238	4.6	7.5	0.15	0.25	1.14	0.01	0.25	1.4	0.5	350		14
LP-CUT	Lakes Park (I-C Cut)	12/21/11	20.2	8.1	684	7.1		180	0.084	0.005	1.111	1.200	0.002	0.032	19	8.4	4.5	85	259	3.6	2.5	0.15	0.25	1.09	0.01	0.25	1.7	0.5	194		56
LP-CUT	Lakes Park (I-C Cut)	1/24/12	19.9	8.2	683	8.4		206	0.072	0.005	0.883	0.960	0.002	0.003	14	3.7	1.9	82	286	2.1	15.1	0.15	0.25	1.22	0.01	0.25	2.0	0.5	2		4
LP-CUT	Lakes Park (I-C Cut)	2/23/12	22.7	7.4	683	7.5		183	0.007	0.005	1.288	1.300	0.002	0.003	17	18.8	5.1	99	265	5.5	124.0	0.15	0.25	2.35	0.11	1.35	1.7	1.6	108		52
LP-CUT	Lakes Park (I-C Cut)	3/19/12	23.6	8.2	726	7.4		182	0.007	0.005	1.088	1.100	0.002	0.003	15	8.3	2.6	89	277	2.9	24.3	0.15	0.25	1.90	0.03	0.25	1.7	1.1	15		12
LP-CUT	Lakes Park (I-C Cut)	4/9/12	25.5	7.5	737	7.3		170	0.042	0.005	1.653	1.700	0.002	0.045	16	11.6	9.4	104	270	4.2	16.7	0.15	0.25	1.49	0.01	0.25	1.9	0.5	80		60
LP-CUT	Lakes Park (I-C Cut)	5/8/12	28.3	8.3	753	7.7		169	0.007	0.005	1.588	1.600	0.004	0.013	32	8.0	3.6	102	254	3.5	46.7	0.15	0.25	1.57	0.02	0.25	2.1	1.1	137		186
LP-CUT	Lakes Park (I-C Cut)	6/20/12	27.5	8.1	829	5.1	65	164	0.088	0.005	1.807	1.900	0.002	0.022	37	10.2	5.8	137	272	4.2	81.6	0.15	0.25	1.84	0.02	0.25	1.5	1.1	88		64
LP-CUT	Lakes Park (I-C Cut)	7/23/12	28.6	7.5	752	4.4	57	163	0.051	0.005	1.044	1.100	0.002	0.008	33	3.3	1.9	97	246	2.2	40.2	0.15	0.25	1.42	0.06	0.25	1.7	0.5	45		16
LP-CUT	Lakes Park (I-C Cut)	8/20/12	30.5	7.8	703	4.6	62	165	0.053	0.005	1.342	1.400	0.002	0.029	26	3.4	1.9	88	269	2.4	175.0	0.15	0.25	2.25	0.02	0.25	1.6	0.5	660		103
LP-CUT	Lakes Park (I-C Cut)	9/17/12	29.0	7.3	615	6.5	84	163	0.007	0.005	0.758	0.770	0.002	0.011	20	5.4	3.6	72	247	2.1	29.3	0.15	0.25	1.46	0.02	0.25	1.3	1.3	263		77
LP-CUT	Lakes Park (I-C Cut)	10/22/12	26.6	7.6	754	7.8	97	198	0.059	0.018	0.923	1.000	0.010	0.020	25	2.5	2.8	79	285	1.8	29.4	0.15	0.25	1.22	0.03	0.25	0.8	2.1	15		4
LP-CUT	Lakes Park (I-C Cut)	11/19/12	21.5	7.7	745	7.7	88	212	0.028	0.019	1.153	1.200	0.015	0.020	20	4.9	3.9	80	311	0.5	39.9	0.15	0.25	1.76	0.03	0.25	2.4	2.0	220		10
LP-CUT	Lakes Park (I-C Cut)	12/13/12	23.5	7.5	700	7.4	87	209	0.014	0.028	1.058	1.100	0.008	0.018	18	2.5	3.4	79	294	2.2	29.8	0.15	0.25	1.40	0.03	0.25	1.8	0.5	32		23
LP-CUT	Lakes Park (I-C Cut)	1/23/13	19.8	8.2	769	8.1	89	209	0.016	0.005	0.839	0.860	0.008	0.015	17	3.4	1.9	95	297	1.8	15.5	0.15	0.25	1.48	0.04	0.25	1.7	26.8	1		4
LP-CUT	Lakes Park (I-C Cut)	2/18/13	18.8	8.3	785	8.6	93	206	0.028	0.005	1.067	1.100	0.014	0.015	16	3.4	2.1	96	264	1.5	15.5	0.15	0.25	1.46	0.01	0.25	1.7	1.4	6		12
LP-CUT	Lakes Park (I-C Cut)	3/18/13	20.7	8.1	790	7.6	85	198	0.023	0.005	0.932	0.960	0.002	0.020	15	4.2	2.1	93	264	2.2	18.9	0.15	0.25	1.29	0.01	0.25	1.6	0.5	14		16
LP-CUT	Lakes Park (I-C Cut)	4/17/13	27.8	8.2	777	6.8	86	194	0.007	0.005	0.478	0.490	0.010	0.011	15	6.0	1.7	103	265	1.7	65.4	0.15	0.25	1.22	0.02	0.25	1.8	0.5	18		19
LP-CUT	Lakes Park (I-C Cut)	5/15/13	27.4	8.3	789	7.4	94	182	0.007	0.005	0.968	0.980	0.020	0.021	67	6.9	2.6	100	285	2.3	37.1	0.15	0.25	1.38	0.02	0.25	1.8	0.5	32		31
LP-CUT	Lakes Park (I-C Cut)	6/18/13	30.7	8.1	719	7.6	102	161	0.007	0.005	0.958	0.970	0.009	0.014	15	7.5	2.3	95	240	2.6	50.3	0.15	0.25	1.31	0.02	0.25	1.9	0.5	50		148
LP-CUT	Lakes Park (I-C Cut)	7/30/13	31.3	7.9	795	6.0	81	190	0.007	0.005	0.918	0.930	0.011	0.012	19	3.0	1.6	94	301	1.3	17.5	0.15	0.25	0.88	0.02	0.25	1.6	1.3	1		20
LP-CUT	Lakes Park (I-C Cut)	8/27/13	29.1	7.6	648	5.3	70	136	0.019	0.005	0.946	0.970	0.016	0.017	21	4.5	2.1	77	243	1.6	24.7	0.15	0.25	1.06	0.08	0.25	1.4	1.9	85		106
LP-CUT	Lakes Park (I-C Cut)	9/23/13	29.4	7.4	617	6.8	89	164	0.018	0.005	0.917	0.940	0.006	0.017	26	4.5	1.8	68	259	1.3	13.9	0.15	0.25	1.04	0.05	0.25	1.4	1.4	136		56
LP-CUT	Lakes Park (I-C Cut)	10/23/13	29.2	7.9	691	5.4	71	197	0.026	0.005	0.579	0.610	0.012	0.016	19	11.0	2.4	70	278	1.9	26.1	0.15	0.25	1.05	0.04	0.25	1.6	1.5	5		4
LP-CUT	Lakes Park (I-C Cut)	11/19/13	24.6	7.5	701	7.6	91	209	0.039	0.005	0.606	0.650	0.002	0.003	16	3.4	2.7	80	314	1.6	455.0	0.15	0.25	0.86	0.02	0.25	1.8	1.2	22		4
LP-CUT	Lakes Park (I-C Cut)	12/9/13	23.3	8.0	706	7.1	83	208	0.099	0.005	1.296	1.400	0.002	0.014	16	6.0	2.7	82	301	1.8	18.1	0.15	0.25	1.03	0.02	0.25	1.5	15.7	15		2
LP-CUT	Lakes Park (I-C Cut)	1/14/14	20.9	7.6	676	8.7	97	192	0.025	0.005	1.270	1.300	0.002	0.015	17	0.3	3.3	80	290	2.1	10.0	0.15	0.25	0.69	0.01	0.25	1.6	1.6	40		108
LP-CUT	Lakes Park (I-C Cut)	2/18/14	21.1	8.0	700	8.3	93	194	0.051	0.005	0.914	0.970	0.002	0.006	14	5.6	2.5	84	286	1.9	12.2	0.15	0.25	1.03	0.02	0.25	2.3	1.8	13		2
LP-CUT	Lakes Park (I-C Cut)	3/18/14	23.6	8.1	722	7.1	84	198	0.041	0.005	1.154	1.200	0.002	0.003	13	4.0	2.8	88	298	2.1	10.5	0.15	0.25	1.12	0.02	0.25	1.8	1.1	54		28
LP-CUT	Lakes Park (I-C Cut)	4/21/14	24.9	8.1	707	7.4	90	186	0.062	0.010	0.768	0.840	0.002	0.012	13	4.2	2.8	88	282	2.4	14.5	0.15	0.25	1.03	0.02	0.25	1.7	1.9	7		12
LP-CUT	Lakes Park (I-C Cut)	5/13/14	28.0	8.0	714	6.9	88	177	0.066	0.005	0.599	0.670	0.002	0.010	13	5.9	2.3	92	266	1.7	13.8	0.15	0.25	0.97	0.01	0.25	1.7	1.4	132		4
LP-CUT	Lakes Park (I-C Cut)	6/10/14	30.3	7.9	742	6.6	88	166	0.054	0.005	0.301	0.360	0.002	0.003	18	5.1	2.5	93	269	1.7	29.9	0.15	0.25	1.31	0.03	0.25	1.8	0.5	73		20
LP-CUT	Lakes Park (I-C Cut)	7/7/14	31.0	7.8	779	6.0	81	169	0.038	0.005	0.367	0.410	0.002	0.003	21	1.9	2.5	101	274	1.7	20.0	0.15	0.25	1.10	0.02	0.25	1.3	4.3	58		160
LP-CUT	Lakes Park (I-C Cut)	8/4/14	31.1	7.8	824	5.8	78	174	0.037	0.005	0.628	0.670	0.002	0.003	20	3.5	1.9	104	277	1.6	10.3	0.15	0.25	0.97	0.02	0.25	1.5	2.9	191		16
LP-CUT	Lakes Park (I-C Cut)	9/23/14	28.3	7.8	799	5.8	75	195	0.050	0.005	0.285	0.340	0.002	0.007	19	3.0	2.2	100	309	1.4	16.1	0.15	0.25	0.71	0.02	0.25	1.3	1.6	45		12
LP-CUT	Lakes Park (I-C Cut)	10/28/14	24.4	7.8	792	7.1	85	190	0.045	0.005	0.490	0.540	0.002	0.009	19	2.3	1.3	103	305	1.2	10.2	0.15	0.25	0.89	0.01	0.25	1.4	0.5	40		4
LP-CUT	Lakes Park (I-C Cut)	11/18/14	22.7	8.0	783	7.5	87	214	0.059	0.005	0.296	0.360	0.002	0.031	18	2.3	1.5	89	295	1.6	9.8	0.15	0.25	2.31	0.02	0.25	2.3	0.5	19		32
LP-CUT	Lakes Park (I-C Cut)	12/10/14	19.4	7.8	753	7.5	82	197	0.026	0.005	0.439	0.470	0.002	0.003	14	0.3	1.1	91	300	1.2	8.2	0.15	0.25	1.32	0.02	0.25	1.7	1.0	4		2

Historical Water Quality Data Collected in the Vicinity of Park Lake

SAMPLE_LOC CODE	SAMPLE_LOCDESCR	Sample collection Data	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmhos/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
LP-CUT	Lakes Park (I-C Cut)	1/5/15	23.8	7.9	781	7.2	85	196	0.039	0.005	0.506	0.550	0.002	0.006	16	3.5	1.9	103	322	1.7	11.5	0.15	0.25	0.81	0.01	0.25	1.8	0.5	13		4
LP-CUT	Lakes Park (I-C Cut)	2/9/15	19.0	8.0	746	8.5	92	206	0.033	0.005	0.612	0.650	0.002	0.019	16	8.9	4.2	113	299	2.4	11.9	0.15	0.25	0.89	0.01	0.25	1.5	0.5	37		31
LP-CUT	Lakes Park (I-C Cut)	3/18/15	26.3	8.1	735	6.7	83	215	0.031	0.005	0.504	0.540	0.002	0.019	16	8.2	2.7	99	300	1.7	13.8	0.15	0.25	1.02	0.02	0.25	1.6	0.5	28		33
LP-CUT	Lakes Park (I-C Cut)	4/14/15	27.9	8.0	742	7.2	92	200	0.007	0.005	0.368	0.380	0.002	0.009	28	4.5	3.3	104	298	1.4	21.0	0.15	0.25	0.25	0.01	0.25	1.4	0.5	11		31
LP-CUT	Lakes Park (I-C Cut)	5/13/15	28.5	8.1	734	6.4	83	185	0.007	0.005	0.548	0.560	0.002	0.009	14	4.5	3.8	115	266	2.1	24.3	0.15	0.25	1.00	0.01	0.25	1.1	0.5	14		32
LP-CUT	Lakes Park (I-C Cut)	6/11/15	29.4	8.2	726	7.1	93	174	0.007	0.005	0.638	0.650	0.002	0.100	13	5.4	3.3	117	240	1.2	17.0	0.15	0.25	1.00	0.01	0.25	1.2	0.5	57		117
LP-CUT	Lakes Park (I-C Cut)	7/9/15	29.7	7.6	887	6.1	81	170	0.007	0.005	0.348	0.360	0.002	0.003	22	3.0	1.9	130	302	1.3	51.7	0.15	0.25	1.20	0.02	0.25	1.4	0.5	22		8
LP-CUT	Lakes Park (I-C Cut)	8/11/15	30.3	7.6	774	5.4	71	180	0.024	0.005	0.491	0.520	0.002	0.020	26	6.0	2.4	110	295	1.1	9.3	0.15	0.25	0.96	0.03	0.25	1.4	0.5	42		20
LP-CUT	Lakes Park (I-C Cut)	9/24/15	28.4	7.4	673	5.0	64	184	0.036	0.005	1.159	1.200	0.009	0.011	26	2.1	1.3	87	286	0.9	2.5	0.15	0.25	0.25	0.04	0.25	0.4	0.5	91		34
LP-CUT	Lakes Park (I-C Cut)	10/22/15	25.4	7.9	705	7.5	92	196	0.007	0.010	0.543	0.560	0.002	0.003	22	0.3	0.6	86	311	0.6	9.3	0.15	0.25	0.76	0.01	0.25	1.6	1.3	8		3
LP-CUT	Lakes Park (I-C Cut)	11/17/15	25.5	7.9	741	7.5	92	221	0.054	0.028	0.538	0.620	0.002	0.008	20	2.7	0.7	87	328	0.6	6.5	0.15	0.25	0.59	0.01	0.25	1.5	0.5	1		5
LP-CUT	Lakes Park (I-C Cut)	12/15/15	23.9	7.8	737	7.8	92	217	0.007	0.005	0.348	0.360	0.002	0.012	21	2.4	0.1	84	306	1.0	22.3	0.15	0.25	0.58	0.01	0.25	1.4	1.1	11		2
LP-CUT	Lakes Park (I-C Cut)	1/19/16	17.3	7.9	669	8.8	92	179	0.007	0.005	0.208	0.220	0.002	0.009	20	2.9	0.9	85	261	1.5	14.3	0.15	0.25	0.81	0.04	0.25	1.2	0.5	11		2
LP-CUT	Lakes Park (I-C Cut)	2/24/16	22.1	7.8	737	7.7	88	216	0.007	0.005	0.308	0.320	0.002	0.009	22	1.3	0.5	89	309	1.0	14.3	0.15	0.25	0.91	0.03	0.25	1.3	0.5	7		1
LP-CUT	Lakes Park (I-C Cut)	3/23/16	22.9	7.9	760	6.1	71	210	0.007	0.005	0.268	0.280	0.002	0.009	18	5.7	1.3	89	314	1.1	18.4	0.15	0.25	0.80	0.01	0.25	1.1	0.5	1		6
LP-CUT	Lakes Park (I-C Cut)	4/26/16	26.7	7.8	739	2.6	32	188	0.007	0.005	0.548	0.560	0.002	0.015	16	1.3	1.3	91	288	0.5	2.5	0.15	0.25	0.91	0.01	0.25	1.2	0.5	9		5
LP-CUT	Lakes Park (I-C Cut)	5/24/16	30.4	7.8	638	8.8	117	138	0.007	0.005	0.538	0.550	0.002	0.017	17	1.3	0.9	84	190	1.1	2.5	0.15	0.25	0.80	0.01	0.25	1.2	0.5	10		4
LP-CUT	Lakes Park (I-C Cut)	6/29/16	29.9	7.6	714	4.8	64	177	0.007	0.005	0.648	0.660	0.002	0.021	26	3.3	2.0	86	238	1.8	2.5	0.15	0.25	1.11	0.03	0.25	1.0	0.5	53		1,733
LP-CUT	Lakes Park (I-C Cut)	7/26/16	29.7	7.5	622	5.3	69	172	0.007	0.005	0.548	0.560	0.002	0.018	24	2.3	1.9	69	224	1.1	6.9	0.15	0.25	0.56	0.05	0.25	0.9	0.5		19	11
LP-CUT	Lakes Park (I-C Cut)	8/23/16	31.0	7.5	673	5.0	67	181	0.007	0.005	0.558	0.570	0.002	0.024	25	3.4	2.0	83	236	1.0	2.5	0.15	0.25	1.44	0.04	0.25	1.0	0.5		6	10
LP-CUT	Lakes Park (I-C Cut)	9/21/16	30.5	7.6	667	5.8	78	200	0.007	0.005	0.378	0.390	0.007	0.015	31	3.5	1.2	71	224	1.1	27.2	0.15	0.25	0.60	0.03	0.25	0.9	0.5		23	3
LP-CUT	Lakes Park (I-C Cut)	10/25/16	23.6	7.8	692	6.6	78	204	0.007	0.005	0.508	0.520	0.002	0.017	21	2.4	1.2	138	251	1.3	21.6	0.15	0.25	0.69	0.02	0.25	1.0	0.5		2	1
LP-CUT	Lakes Park (I-C Cut)	11/21/16			739			227	0.007	0.010	0.743	0.760	0.002	0.034	18	2.5	1.3	102	267	1.3	6.9	0.15	0.25	0.53	0.01	0.25	1.0	0.5		4	2
LP-CUT	Lakes Park (I-C Cut)	12/27/16	23.7	8.2	751	7.4	87	226	0.007	0.005	0.758	0.770	0.002	0.025	16	8.8	3.7	85	267	1.3	14.6	0.15	0.25	0.73	0.02	0.25	1.2	6.0		9	3
LP-CUT	Lakes Park (I-C Cut)	1/23/17	22.4	8.1	692	7.9	91	211	0.007	0.005	0.468	0.480	0.002	0.065	15	11.9	5.0	88	246	2.1	12.0	0.15	0.25	0.80	0.02	0.25	1.2	1.7		119	34
LP-CUT	Lakes Park (I-C Cut)	2/23/17	22.7	8.1	656	7.9	92	203	0.007	0.005	2.488	2.500	0.002	0.036	14	11.8	5.9	92	233	2.0	12.0	0.15	0.25	1.13	0.02	0.25	1.2	7.9		44	11
LP-CUT	Lakes Park (I-C Cut)	3/29/17	24.3	8.0	648	7.1	84	161	0.007	0.005	0.918	0.930	0.002	0.055	12	15.8	13.1	92	216	3.8	17.4	0.15	0.25	0.84	0.01	0.25	1.0	3.6		12	5
LP-CUT	Lakes Park (I-C Cut)	4/18/17	24.7	8.2	668	9.0	108	152	0.023	0.005	0.972	1.000	0.002	0.059	14	15.4	10.4	101	208	2.0	15.4	0.15	0.25	1.57	0.02	0.25	1.1	0.5		13	19
LP-CUT	Lakes Park (I-C Cut)	5/8/17	26.5	8.4	634	11.4	142	133	0.007	0.013	1.680	1.700	0.002	0.033	16	21.2	13.1	83	185	6.5	13.8	0.15	0.25	1.13	0.02	0.25	1.0	1.6		2	4
LP-CUT	Lakes Park (I-C Cut)	6/7/17	27.6	8.2	612	8.1	103	129	0.007	0.005	0.688	0.700	0.002	0.031	17	17.5	8.8	90	176	6.2	17.9	0.15	0.25	1.04	0.02	0.25	1.0	2.7		84	101
LP-CUT	Lakes Park (I-C Cut)	7/19/17	29.6	7.3	664	4.8	63	163	0.007	0.005	0.688	0.700	0.002	0.018	27	4.0	3.3	75	213	1.3	6.1	0.15	0.25	1.11	0.04	0.25	1.1	0.5		12	13
LP-CUT	Lakes Park (I-C Cut)	8/8/17	31.1	7.5	690	5.8	79	176	0.030	0.005	0.315	0.350	0.002	0.017	24	2.6	2.1	85	213	1.3	5.4	0.15	0.25	1.06	0.03	0.25	0.8	2.4		6	27
LP-CUT	Lakes Park (I-C Cut)	9/20/17	28.6	7.6	461	3.9	51	193	0.007	0.005	0.508	0.520	0.008	0.053	37	5.4	2.8	42	156	0.9	14.1	0.15	0.25	1.36	0.20	0.25	0.4	2.7		26	25
LP-CUT	Lakes Park (I-C Cut)	10/9/17	28.8	7.6	625	6.3	82	191	0.007	0.005	0.488	0.500	0.002	0.030	27	3.5	1.7	48	221	1.1	2.5	0.15	0.25	0.77	0.05	0.25	0.4	5.0		6	6
LP-CUT	Lakes Park (I-C Cut)	11/8/17	24.9	7.7	711	7.0	85	230	0.007	0.005	0.408	0.420	0.002	0.014	21	1.3	1.2	79	265	1.1	2.5	0.15	0.25	0.53	0.03	0.25	1.0	0.5		6	3
LP-CUT	Lakes Park (I-C Cut)	12/11/17	19.6	7.9	728	7.6	84	225	0.016	0.015	0.549	0.580	0.002	0.016	19	3.3	1.8	82	259	1.1	7.4	0.15	0.25	0.59	0.02	0.25	0.9	0.5		15	11
LP-CUT	Lakes Park (I-C Cut)	1/18/18	15.2	8.1	723	9.1	91	191	0.007	0.011	0.802	0.820	0.004	0.070	82	9.7	6.8	60	228	3.2	9.0	0.15	0.25	0.58	0.01	0.25	0.4	0.5		161	105
LP-CUT	Lakes Park (I-C Cut)	2/15/18	24.3	8.0	752	6.7	80	214	0.026	0.005	0.599	0.630	0.002	0.020	15	5.9	3.5	89	267	1.3	13.1	0.15	0.25	0.94	0.02	0.25	1.1	0.5		1	3
LP-CUT	Lakes Park (I-C Cut)	3/5/18	22.2	7.9	661	7.6	87	170	0.014	0.011	0.615	0.640	0.002	0.044	17	15.9	10.2	69	205	3.0	8.5	0.15	0.25	0.66	0.02	0.25	0.4	0.5		291	185
LP-CUT	Lakes Park (I-C Cut)	4/3/18	25.4	7.7	683	5.8	71	180	0.015	0.012	0.753	0.780	0.002	0.012	13	6.9	5.5	102	205	1.9	6.4	0.15	0.25	1.14	0.01	0.25	0.4	0.5		2	7
LP-CUT	Lakes Park (I-C Cut)	5/7/18	27.1	8.0	673	6.0	76	147	0.028	0.010	0.622	0.660	0.002	0.023	18	11.1	7.4	105	200	2.1	13.1	0.15	0.25	1.25	0.03	0.25	0.4	0.5		4	16
LP-CUT	Lakes Park (I-C Cut)	6/7/18	30.2	7.6	762	5.9	78	164	0.015	0.005	0.720	0.740	0.002	0.031	27	6.5	2.3	107	235	1.4	6.5	0.15	0.25	1.00	0.05	0.25	0.4	0.5		17	1,553
LP-CUT	Lakes Park (I-C Cut)	7/2/18	30.4	7.4	747	6.2	83	180	0.007	0.005	0.578	0.590	0.002	0.023	24	2.9	0.7	97	232	1.4	2.5	0.15	0.25	0.69	0.02	0.25	0.8	0.5		16	7
LP-CUT	Lakes Park (I-C Cut)	8/16/18	29.9	7.7	686	6.0	79	200	0.007	0.005	0.578	0.590	0.002	0.020	21	2.3	1.1	85	238	1.4	2.5	0.15	0.25	0.58	0.02	0.25	0.4	3.4		6	2
LP-CUT	Lakes Park (I-C Cut)	9/12/18	30.0	7.7	724	6.0	79	191	0.007	0.005	0.508	0.520	0.002	0.011	21	2.3	1.0	88	243	1.0	2.5	0.15	0.25	0.87	0.03	0.25	0.4	4.5		6	1
LP-CUT	Lakes Park (I-C Cut)	10/9/18	27.6	7.7	689	5.7	73	192	0.007	0.005	0.578	0.590	0.002	0.019	21	2.3	1.0	86	224	0.4	9.9	0.15	0.25	0.71	0.02	0.25	0.9	2.3		4	1
LP-CUT	Lakes Park (I-C Cut)	11/15/18	26.5	7.8	742	5.6	69	202	0.007	0.005	0.558	0.570	0.002	0.022	18	3.6	1.3	94	249	1.0	22.5	0.15	0.25	0.69	0.01	0.25	0.8	3.6		12	3
LP-CUT	Lakes Park (I-C Cut)	12/3/18	22.7	7.8	777	6.7	78	204	0.007	0.013	0.510	0.530	0.002	0.012	16	1.2	0.3	100	256	0.9	5.5	0.15	0.25	0.96	0.01	0.25	0.8	2.6		5	1
LP-CUT	Lakes Park (I-C Cut)	1/10/19	19.8	7.9	788	7.3	80	207	0.007	0.005	0.478	0.490	0.002	0.019	16	1.8	1.2	108	258	1.0	2.5	0.15	0.25	0.92	0.01	0.25	0.8	2.4		11	4
LP-CUT	Lakes Park (I-C Cut)	2/7/19	21.6	7.7	852	7.6	86	185	0.007	0.005	0.388	0.400	0.002	0.011	18	1.0	0.5	115	250	1.4	2.5	0.15	0.25	2.01	0.03	0.25	2.1	2.2		7	1
LP-CUT	Lakes Park (I-C Cut)	3/12/19	25.3	7.9	827	7.3	88	218	0.007	0.005	0.498	0.510	0.002	0.012	19	1.4	0.1	110	271	0.9	2.5	0.15	0.25	2.01	0.01	0.25	2.5	0.5		3	4
LP-CUT	Lakes Park (I-C Cut)	4/9/19	26.9	7.8	800	6.0	75	202	0.007	0.011	0.532	0.550	0.002	0.011	17	0.7	1.6	110	264	1.0	2.5	0.15	0.25	0.59	0.01	0.25	2.4	2.6		7	10
LP-CUT	Lakes Park (I-C Cut)	5/9/19	29.2	7.7	757	5.9	77	174	0.014	0.005	0.521	0.540	0.002	0.013	15	0.9	1.1	114	227	1.0	6.8	0.15	0.25	0.25	0.01	0.25	0.4	3.9		9	6
LP-CUT	Lakes Park (I-C Cut)	6/13/19	31.6	7.7	742	6.5	88	168	0.007	0.005	0.608	0.620	0.002	0.013	17	1.1	1.0	113	220	1.5	9.6	0.15	0.25	0.25	0.01	0.25	0.4	5.3		17	3
LP-CUT	Lakes Park (I-C Cut)	7/11/19	30.3	7.4	695	5.2	69	166	0.007	0.005	0.488	0.500	0.002	0.016	21	1.6	0.7	92	222	1.1	23.7	0.15	0.25	1.08	0.02	0.25	0.4	1.3		14	11
LP-CUT	Lakes Park (I-C Cut)	8/14/19	29.5	7.3	720	2.7	36	183	0.035	0.016	0.499	0.550	0.002	0.017	25	0.3	0.5	87	215	0.4	2.5	0.15	0.25	0.25	0.04	0.25	0.4	2.3		411	135
LP-CUT	Lakes Park (I-C Cut)	9/12/19	30.2	7.4	708	3.8	51	194	0.016	0.023	0.491	0.530	0.002	0.012	22	0.3	0.3	81	246	0.9	2.5	0.15	0.59	0.77	0.03	0.25	0.4	2.1		9	3
LP-CUT	Lakes Park (I-C Cut)	10/10/19	28.3	7.5	736	3.7	48	201	0.024	0.014	0.592	0.630	0.002	0.017	21	0.3	1.0	91	246	0.9	2.5	0.15	0.25	0.25	0.02	0.25	0.4	2.3		21	3
LP-CUT	Lakes Park (I-C Cut)	11/19/19	21.3	7.6	748	5.7	64	216	0.015	0.019	0.516	0.550	0.002	0.013	19	0.3	1.0	106	241	0.7	11.3	0.15	0.25	0.25	0.01	0.25	0.4	3.4		2	1
LP-CUT	Lakes Park (I-C Cut)	12/2/19	22.7	7.5	767	6.3	73	215	0.007	0.012	0.471	0.490	0.002	0.013	18	0.3	0.9	110	243	1.5	2.5	0.15	0.25	0.25	0.01	0.25	0.4	1.9		11	1
LP-CUT	Lakes Park (I-C Cut)	1/9/20	19.4	7.7	812	6.5	70	204	0.007	0.005	0.458	0.470	0.002	0.013	19	0.3	0.1	124	326	0.7	2.5	0.15	0.25	0.25	0.02	0.25	0.4	3.7		2	1
LP-CUT	Lakes Park (I-C Cut)	2/20/20	25.7	7.7	864	7.6	93	206	0.007	0.005	0.488	0.500	0.002	0.003	17	9.3	0.1	100	259	1.1	2.5	0.15	0.25	0.25	0.01	0.25	0.4	1.7		5	1
LP-CUT	Lakes Park (I-C Cut)	3/17/20	24.5	7.6	815	7.5	90	185	0.007	0.005	0.558	0.570	0.002	0.023	15	0.8	1.1	119	222	0.4	2.5	0.15	0.25	0.25	0.01	0.25	0.4	0.5		37	1
LP-CUT	Lakes Park (I-C Cut)	4/27/20	26.1	7.4	757	4.3	53	134	0.014	0.005	0.551	0.570	0.002	0.013	14	0.3	0.6	128	185	0.7	2.5	0.15	0.25	0.25	0.01	0.25	0.4	3.3		31	3
LP-CUT	Lakes Park (I-C Cut)	5/7/20	27.4	7.5	759	6.9	88	123	0.026	0.013	0.641	0.680	0.002	0.013	16	0.9	0.7	131	176	1.1	10.2	0.15	0.25	0.25	0.01	0.25	0.4	4.1		1	4
	Minimum Value:		15.2	6.9	141	0.2	32	118	0.004	0.005	0.070	0.210	0.001	0.003	7	0.3	0.1	42	128	0.4	2.5	0.2	0.3	0.3	0.0	0.3	0.4	0.5	1	1	1
	Maximum Value:		76.0	8.9	5,370	13.0	142	230	1.470	0.830	6.137	6.660	0.026	0.170	82	234.0	35.2	1,620	396	7.7	455.0	1.3	0.7	28.0	0.2	5.0	2.5	40.0	1,780	411	2,001
	Geometric mean:		25.4	7.8	819	5.7	79	182	0.020	0.012	0.709	0.809	0.003	0.018	20	3.3	1.8	117	259	1.7	10.2	0.2	0.3	0.8	0.0	0.4	1.1	2.2	24	10	16
	Geometric mean (2016-2020):		25.6	7.7	713	6.2	76	185	0.009	0.007	0.561	0.580	0.002	0.019	20	2.4	1.5	91	234	1.2	6.2	0.2	0.3	0.7	0.02	0.25	0.7	1.3	8	10	6

A-2 Annual Geometric Mean Values for West Lake Monitoring Sites

Annual Geometric Mean Values for Historical Water Quality Monitoring Sites in West Lake at Lakes Park

Sample Site Description	Sample Collection Date	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmho/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
Annual Geometric Mean Values for Site LP-10 (Beach) from 1989 - 2020	1989	-	-	-	8.9	-	-	0.023	0.011	0.643	0.804	-	0.007	-	-	-	-	-	1.8	-	-	-	-	-	-	-	-	-	-	-
	1990	-	-	-	9.7	-	-	0.023	0.010	1.016	1.064	-	0.012	-	-	-	-	-	1.3	-	-	-	-	-	-	-	-	-	-	-
	1991	31.1	8.2	-	9.4	-	-	0.027	0.040	0.650	0.793	-	0.017	-	-	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-
	1992	28.7	8.1	-	9.0	-	-	0.021	0.012	0.678	0.758	-	0.020	-	-	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-
	1993	25.1	8.0	-	7.1	-	-	0.015	0.006	0.416	0.437	-	0.007	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-	-	-
	1994	27.7	8.1	-	6.8	-	-	0.016	0.008	0.839	0.866	-	0.016	-	-	-	-	-	1.6	-	-	-	-	-	-	-	-	-	-	-
	1995	24.9	8.1	377	7.3	-	-	0.019	0.014	0.539	0.617	0.001	0.008	-	0.7	0.6	63	-	1.1	-	-	-	1.05	-	0.50	-	5.7	-	-	-
	1996	25.8	8.2	411	8.6	-	-	0.012	0.052	0.528	0.629	0.001	0.009	-	0.7	0.6	64	-	1.1	-	-	-	0.63	-	0.63	-	5.8	-	-	-
	1997	29.8	8.2	494	8.5	-	-	0.012	0.005	0.424	0.441	0.001	0.009	-	1.1	0.6	84	-	0.8	-	-	-	0.69	-	0.59	-	5.7	13	-	-
	1998	26.4	8.1	433	8.2	-	-	0.013	0.005	0.551	0.585	0.001	0.021	-	1.3	0.5	75	-	1.0	-	-	-	1.11	-	0.50	-	5.3	14	-	-
	1999	27.6	8.2	618	7.2	-	-	0.014	0.007	0.609	0.674	0.001	0.054	-	2.0	0.5	124	-	0.7	-	-	-	1.22	-	1.17	-	7.3	12	-	-
	2000	30.0	8.1	1,375	7.8	-	-	0.028	0.007	1.722	1.762	0.017	0.071	-	5.0	1.0	312	-	2.9	-	-	-	0.71	-	1.22	-	5.0	16	-	-
	2001	21.0	7.8	715	7.1	-	-	0.007	0.026	0.761	0.806	0.003	0.042	23	0.7	0.6	121	168	1.1	-	-	-	2.55	-	0.50	-	7.1	46	-	14
	2002	26.2	8.2	1,374	6.9	-	-	0.048	0.010	0.904	1.086	0.004	0.036	27	4.6	1.2	307	321	2.3	-	-	-	0.71	-	0.59	-	6.3	14	-	16
	2003	25.6	7.9	1,615	8.0	-	-	0.043	0.035	0.931	1.170	0.005	0.023	23	3.7	1.6	329	355	2.9	-	0.4	-	0.50	-	0.53	-	5.9	24	-	16
	2004	23.9	7.7	786	6.2	-	-	0.040	0.019	0.675	0.760	0.007	0.022	21	3.2	1.1	135	204	1.3	-	0.3	-	0.68	-	0.61	-	5.6	27	-	17
	2005	25.9	8.1	1,046	9.2	-	-	0.018	0.009	1.638	1.679	0.004	0.051	21	17.6	5.2	206	274	3.7	-	0.2	-	0.62	-	0.50	-	3.7	67	-	16
	2006	25.8	8.2	2,685	9.2	-	-	0.014	0.009	1.657	1.685	0.002	0.057	34	16.1	6.1	614	-	3.5	-	0.2	-	0.50	-	0.50	-	4.0	41	-	11
	2007	25.9	8.2	4,584	8.2	-	-	0.014	0.008	1.602	1.629	0.003	0.057	19	13.8	6.5	1,229	-	3.6	-	0.2	-	0.54	-	0.50	-	2.5	34	-	21
	2008	24.8	8.2	3,620	7.8	-	-	0.016	0.010	1.432	1.468	0.002	0.053	18	13.2	6.7	913	392	4.5	-	0.2	-	0.68	-	0.47	-	2.2	63	-	13
	2009	25.2	8.3	2,449	8.5	-	175	0.010	0.007	1.851	1.871	0.003	0.051	20	13.5	7.6	612	366	4.8	4.8	0.2	0.25	3.36	-	0.25	1.2	0.7	51	-	15
	2010	24.8	8.5	1,568	9.6	-	152	0.009	0.007	1.748	1.766	0.003	0.026	22	17.5	8.6	360	299	6.1	3.4	0.2	0.27	1.40	0.00	0.25	0.9	0.8	388	-	111
	2011	24.8	8.5	1,568	9.6	-	152	0.009	0.007	1.748	1.766	0.003	0.026	22	17.5	8.6	360	299	6.1	3.4	0.2	0.27	1.40	0.00	0.25	0.9	0.8	388	-	111
	2012	26.0	8.4	1,065	9.0	-	136	0.020	0.007	1.734	1.770	0.002	0.028	22	18.0	11.2	207	244	6.0	6.7	0.2	0.27	1.43	0.01	0.25	1.0	0.5	203	-	52
	2013	25.9	8.2	645	8.1	101	159	0.016	0.005	1.073	1.107	0.008	0.015	17	8.3	3.6	82	236	3.0	9.0	0.2	0.25	0.72	0.01	0.25	1.3	1.4	26	-	10
	2014	25.4	8.1	649	7.8	96	152	0.045	0.005	0.783	0.839	0.002	0.014	15	8.3	4.5	85	231	2.7	6.3	0.2	0.25	0.66	0.00	0.25	1.2	0.9	49	-	15
	2015	26.8	8.1	664	7.8	98	152	0.013	0.005	0.772	0.794	0.002	0.017	20	6.5	3.8	96	233	2.2	6.7	0.2	0.25	0.57	0.00	0.25	1.0	0.6	40	-	29
	2016	25.7	8.1	581	8.1	99	144	0.008	0.005	0.973	0.986	0.002	0.046	19	7.5	4.3	74	196	2.1	4.5	0.2	0.25	0.38	0.00	0.25	0.6	0.6	54	12	15
	2017	26.1	8.2	588	8.1	100	133	0.009	0.006	0.942	0.960	0.002	0.045	19	9.0	5.9	92	173	2.6	3.7	0.2	0.29	0.59	0.01	0.25	0.5	0.7	-	44	35
	2018	26.1	8.2	588	8.1	100	133	0.009	0.006	0.942	0.960	0.002	0.045	19	9.0	5.9	92	173	2.6	3.7	0.2	0.29	0.59	0.01	0.25	0.5	0.7	-	44	35
	2019	26.2	8.2	666	8.1	101	144	0.008	0.005	1.296	1.309	0.002	0.058	18	14.0	11.0	103	191	2.8	10.8	0.2	0.25	0.41	0.01	0.25	0.5	0.5	-	371	240
	2020	24.5	8.2	712	8.7	105	140	0.007	0.005	1.521	1.533	0.002	0.068	15	19.4	12.6	113	206	3.2	10.7	0.2	0.25	0.25	0.01	0.25	0.4	0.7	-	225	98
Annual Geometric Mean Values for Site CT-2 from 1989 - 2020	1989	-	-	-	4.7	-	-	0.046	0.019	0.677	0.795	-	0.008	-	-	-	-	-	1.4	-	-	-	-	-	-	-	-	-	-	-
	1990	-	-	-	3.4	-	-	0.025	0.024	1.898	1.988	-	0.012	-	-	-	-	-	2.4	-	-	-	-	-	-	-	-	-	-	-
	1991	24.5	7.5	-	3.5	-	-	0.027	0.029	0.585	0.660	-	0.024	-	-	-	-	-	1.1	-	-	-	-	-	-	-	-	-	-	-
	1992	29.4	7.4	-	2.2	-	-	0.029	0.006	0.529	0.583	-	0.010	-	-	-	-	-	1.3	-	-	-	-	-	-	-	-	-	-	-
	1993	26.6	7.8	-	6.6	-	-	0.017	0.006	0.427	0.465	-	0.007	-	-	-	-	-	1.7	-	-	-	-	-	-	-	-	-	-	-
	1994	24.4	7.7	-	6.2	-	-	0.010	0.005	0.205	0.221	-	0.005	-	-	-	-	-	1.8	-	-	-	-	-	-	-	-	-	-	-
	1995	28.7	7.3	401	2.6	-	-	0.022	0.036	0.524	0.629	0.001	0.021	-	3.1	3.0	35	-	1.5	-	-	-	1.00	-	0.79	-	6.3	-	-	-
	1996	30.5	7.3	508	4.7	-	-	0.010	0.133	0.282	0.441	0.001	0.073	-	0.5	0.8	56	-	1.3	-	-	-	0.71	-	0.50	-	5.0	-	-	-
	1997	27.4	7.5	476	2.8	-	-	0.014	0.005	0.105	0.120	0.001	0.006	-	1.3	0.8	57	-	0.9	-	-	-	1.11	-	0.71	-	5.0	57	-	-
	1998	24.2	7.4	483	3.7	-	-	0.014	0.005	0.505	0.520	0.003	0.032	-	1.1	0.9	65	-	0.9	-	-	-	0.71	-	0.50	-	7.1	18	-	-
	1999	28.7	7.3	517	2.7	-	-	0.014	0.008	0.572	0.599	0.002	0.062	-	2.4	1.5	46	-	0.8	-	-	-	1.00	-	1.00	-	8.4	16	-	-
	2000	28.5	7.3	477	3.3	-	-	0.032	0.012	1.380	1.431	0.017	0.063	-	1.4	0.9	51	-	1.3	-	-	-	1.00	-	0.50	-	5.0	22	-	-
	2001	21.4	7.2	605	1.9	-	-	0.007	0.028	0.541	0.578	0.003	0.050	40	1.0	0.4	68	192	0.8	-	-	-	0.50	-	0.50	-	7.1	5	-	10
	2002	24.6	7.4	577	3.5	-	-	0.031	0.018	0.493	0.585	0.003	0.032	28	1.3	0.6	81	202	1.1	-	-	-	0.62	-	0.50	-	6.3	19	-	14
	2003	24.2	7.5	719	2.8	-	-	0.027	0.038	0.448	0.532	0.008	0.027	23	1.4	0.7	85	224	1.1	-	0.4	-	0.75	-	0.50	-	5.3	13	-	24
	2004	23.4	7.4	673	4.0	-	-	0.038	0.025	0.457	0.540	0.007	0.020	24	1.6	0.7	83	223	1.3	-	0.3	-	0.83	-	0.56	-	5.6	17	-	27
	2005	24.6	7.6	609	3.7	-	-	0.023	0.013	0.584	0.634	0.004	0.019	23	1.4	1.4	69	224	1.3	-	0.2	-	0.57	-	0.50	-	3.7	24	-	21
	2006	24.6	7.5	1,523	4.8	-	-	0.074	0.031	0.702	0.851	0.003	0.027	38	2.4	1.5	181	-	1.4	-	0.2	-	0.50	-	0.50	-	4.0	19	-	13
	2007	25.2	7.8	953	4.9	-	-	0.037	0.029	0.550	0.642	0.003	0.025	19	1.5	1.3	129	246	1.5	-	0.2	-	0.83	-	0.50	-	2.5	33	-	25
	2008	24.4	7.8	902	6.0	-	-	0.019	0.014	0.426	0.486	0.002	0.018	18	2.4	1.7	110	221	1.7	-	0.2	-	0.70	-	0.47	-	2.1	22	-	14
	2009	24.5	7.7	796	6.2	-	205	0.009	0.009	0.672	0.699	0.003	0.015	17	2.2	2.0	104	274	1.7	16.0	0.2	0.25	1.46	-	0.25	1.7	0.9	34	-	11
	2010	24.2	7.8	716	6.4	-	195	0.012	0.008	0.833	0.860	0.002	0.010	21	2.2	1.9	85	280	1.7	9.9	0.2	0.27	1.40	0.05	0.35	1.6	0.9	40	-	31
	2011	25.3	7.8	709	6.2	-	184	0.015	0.007	0.858	0.891	0.002	0.008	19	1.3	1.7	82	269	1.8	6.7	0.2	0.25	1.50	0.04	0.25	1.8	0.8	27	-	25
	2012	25.2	7.5	599	5.9	59	159	0.022	0.007	0.903	0.944	0.003	0.007	22	0.8	1.2	66	232	1.3	21.4	0.2	0.27	1.43	0.05	0.25	1.5	1.3	28	-	13
	2013	25.4	7.7	679	5.8	72	178	0.015	0.005	0.809	0.840	0.006	0.011	19	1.2	1.1	79	257	1.3	14.0	0.2	0.25	1.18	0.04	0.25	1.5	2.1	30	-	21
	2014	25.3	7.8	704	5.7	70	189	0.047	0.006	0.477	0.538	0.002	0.009	18	2.6	1.7	80	279	1.8	10.2	0.2	0.25	1.13	0.03	0.25	1.6	2.2	41	-	22
	2015	25.8	7.8	693	5.5	68	192	0.017	0.009	0.512	0.550	0.002	0.013	19	2.4	1.4	86	287	1.1	14.8	0.2	0.25	0.82	0.03	0.25	1.4	0.8	57	-	39
	2016	24.7	7.8	637	6.5	79	185	0.008	0.007	0.466	0.489	0.002	0.021	20	2.2	1.5	68	244	1.2	10.0	0.2	0.25	0.98	0.05	0.25	1.1	0.7	28	35	23
	2017	25.3	7.7	636	5.3	65	165	0.010	0.006	0.500	0.519	0.002	0.026	19	2.8	1.7	71	217	1.3	8.7	0.2	0.25	1.04	0.06	0.25	0.9	1.0	-	33	26
	2018	25.3	7.8	736	6.3	77	186	0.009	0.006	0.549	0.568	0.002	0.023	18	3.1	1.6	97	248	1.1	11.0	0.2	0.25	1.04	0.04	0.25	0.7	1.2	-	14	17
	2019	25.9	7.7	724	5.6	69	185	0.010	0.006	0.504	0.523	0.002	0.019	18	1.1	1.4	95	234	1.1	11.4	0.2	0.25	0.57	0.04	0.25	0.6	0.9	-	31	30
	2020	25.0	7.7	811	5.9	71	176	0.009	0.006	0.572	0.587	0.002	0.019	16	0.8	0.4	107	232	1.0	5.3	0.2	0.25	0.48	0.02	0.25	0.4	0.8	-	6	3

Annual Geometric Mean Values for Historical Water Quality Monitoring Sites in West Lake at Lakes Park

Sample Site Description	Sample Collection Date	Field Temp. (°C)	Field pH (s.u.)	Spec. Cond., Field (µmho/cm)	Diss O_2 (mg/L)	Diss O_2 (% satn.)	Alkalinity (mg/L)	Ammonia (mg/L as N)	Nitrate + Nitrite (mg/L as N)	Nitrogen, Organic (mg/L as N)	Nitrogen, Total (mg/L as N)	SRP (mg/L as P)	Total P (mg/L as P)	Color (Pt-Co)	TSS (mg/L)	Turbidity (NTU)	Chloride (mg/L)	Hardness (mg/L)	BOD (mg/L)	Aluminum (µg/L)	Cadmium (µg/L)	Chromium (µg/L)	Copper (µg/L)	Iron (mg/L)	Lead (µg/L)	Nickel (µg/L)	Zinc (µg/L)	Coliform, Fecal (cfu/100mL)	E.coli (cfu/100mL)	Enterococci (cfu/100mL)
Annual Geometric Mean Values for Site CT-3 from 1989 - 2020	1989	-	-	-	9.5	-	-	0.027	0.014	0.574	0.725	-	0.009	-	-	-	-	-	1.6	-	-	-	-	-	-	-	-	-	-	-
	1990	-	-	-	5.5	-	-	0.027	0.011	0.981	1.051	-	0.007	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-	-	-
	1991	-	-	-	9.0	-	-	0.024	0.031	0.624	0.781	-	0.011	-	-	-	-	-	1.5	-	-	-	-	-	-	-	-	-	-	-
	1992	29.8	7.5	-	6.5	-	-	0.028	0.008	0.633	0.685	-	0.016	-	-	-	-	-	1.7	-	-	-	-	-	-	-	-	-	-	-
	1993	25.1	7.8	-	6.1	-	-	0.016	0.005	0.329	0.362	-	0.014	-	-	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-
	1994	28.2	7.5	-	4.3	-	-	0.013	0.011	0.488	0.505	-	0.015	-	-	-	-	-	1.2	-	-	-	-	-	-	-	-	-	-	-
	1995	25.0	7.6	376	4.3	-	-	0.026	0.013	0.486	0.555	0.002	0.014	-	0.5	1.9	66	-	1.5	-	-	-	0.50	-	0.50	-	6.3	-	-	-
	1996	27.0	8.1	396	8.6	-	-	0.013	0.118	0.341	0.490	0.001	0.015	-	0.5	0.6	62	-	1.4	-	-	-	0.50	-	0.50	-	5.0	-	-	-
	1997	29.2	7.9	547	3.4	-	-	0.010	0.007	0.461	0.477	0.001	0.012	-	1.1	0.5	91	-	0.6	-	-	-	0.50	-	0.59	-	5.0	5	-	-
	1998	27.9	7.4	481	3.2	-	-	0.010	0.009	0.295	0.338	0.002	0.011	-	1.2	0.6	73	-	1.1	-	-	-	1.00	-	0.50	-	5.9	13	-	-
	1999	30.2	7.5	717	3.9	-	-	0.018	0.011	0.993	1.043	0.002	0.093	-	2.4	0.6	108	-	0.8	-	-	-	2.29	-	1.00	-	10.0	6	-	-
	2000	30.0	7.6	886	5.4	-	-	0.090	0.010	1.430	1.530	0.029	0.025	-	6.0	3.2	184	-	3.4	-	-	-	0.50	-	0.50	-	5.0	70	-	-
	2001	22.4	7.4	748	4.0	-	-	0.012	0.050	0.750	0.818	0.003	0.055	31	1.0	0.5	118	180	0.8	-	-	-	1.73	-	0.50	-	7.1	5	-	5
	2002	25.6	7.9	1,709	4.7	-	-	0.051	0.010	0.902	1.094	0.005	0.032	29	5.4	1.3	331	413	2.5	-	-	-	0.66	-	0.63	-	6.3	7	-	10
	2003	25.5	7.8	1,674	4.9	-	-	0.050	0.037	0.876	1.131	0.006	0.029	25	3.3	2.0	336	389	2.6	-	0.4	-	0.61	-	0.50	-	6.3	14	-	16
	2004	24.3	7.6	1,016	5.4	-	-	0.064	0.023	0.964	1.098	0.007	0.027	22	3.8	4.0	185	222	2.0	-	0.3	-	0.65	-	0.53	-	5.3	29	-	18
	2005	25.8	7.9	1,096	5.1	-	-	0.045	0.012	1.700	1.777	0.004	0.067	24	13.8	5.9	213	304	4.0	-	0.2	-	0.50	-	0.50	-	3.7	21	-	22
	2006	25.7	8.0	3,548	7.9	-	-	0.019	0.008	1.707	1.738	0.003	0.072	37	12.1	5.9	887	-	4.2	-	0.2	-	0.50	-	0.50	-	4.0	26	-	20
	2007	26.0	8.2	4,705	7.5	-	-	0.013	0.007	1.631	1.658	0.003	0.066	21	11.6	6.4	1,241	-	4.1	-	0.2	-	0.50	-	0.50	-	2.5	29	-	21
	2008	25.2	8.2	3,654	7.5	-	-	0.014	0.010	1.482	1.520	0.002	0.064	20	11.0	6.8	915	388	4.8	-	0.2	-	0.70	-	0.47	-	2.1	69	-	13
	2009	26.0	8.2	4,705	7.5	-	-	0.013	0.007	1.631	1.658	0.003	0.066	21	11.6	6.4	1,241	-	4.1	-	0.2	-	0.50	-	0.50	-	2.5	29	-	21
	2010	24.7	8.3	1,556	8.2	-	153	0.010	0.007	2.496	2.520	0.003	0.057	24	19.0	9.1	354	301	6.6	5.9	0.2	0.28	1.69	0.01	0.25	0.9	1.1	149	-	43
	2011	25.8	8.3	1,123	7.7	-	137	0.044	0.005	1.979	2.042	0.002	0.032	24	17.0	10.3	205	248	6.2	6.6	0.2	0.28	1.39	0.01	0.25	1.0	0.7	129	-	23
	2012	25.9	8.1	727	7.4	86	170	0.017	0.005	1.825	1.862	0.003	0.032	23	11.4	5.1	102	246	4.7	21.8	0.2	0.27	1.56	0.02	0.25	1.5	1.1	50	-	23
	2013	26.1	8.2	650	7.3	90	173	0.018	0.005	1.513	1.557	0.006	0.030	19	10.6	3.6	80	242	3.4	13.4	0.2	0.27	0.75	0.01	0.25	1.3	1.9	13	-	10
	2014	25.5	8.1	656	7.3	90	154	0.043	0.005	1.082	1.140	0.002	0.033	16	11.6	5.3	74	236	3.3	14.5	0.2	0.25	0.74	0.01	0.25	1.3	1.2	34	-	21
	2015	26.8	8.1	669	7.5	94	153	0.018	0.005	0.665	0.696	0.002	0.016	20	9.3	4.8	122	235	2.5	9.9	0.2	0.25	0.54	0.01	0.25	1.0	0.6	29	-	44
	2016	26.0	8.2	585	7.9	98	143	0.008	0.005	0.975	0.990	0.002	0.050	20	8.2	4.7	74	194	2.6	5.2	0.2	0.25	0.44	0.00	0.25	0.6	0.6	23	11	12
	2017	26.2	8.1	743	7.0	87	136	0.009	0.005	1.113	1.131	0.002	0.058	24	9.7	6.3	105	228	2.6	6.9	0.2	0.29	1.11	0.01	0.28	0.7	1.0	-	23	11
	2018	26.1	8.2	665	7.9	98	148	0.008	0.006	1.052	1.067	0.002	0.045	22	12.6	8.4	86	195	3.0	7.3	0.2	0.25	0.61	0.01	0.25	0.4	0.6	-	36	8
	2019	26.5	8.2	668	8.5	105	145	0.007	0.005	1.255	1.267	0.002	0.058	17	13.6	10.8	103	192	2.8	10.6	0.2	0.25	0.38	0.01	0.25	0.5	0.5	-	78	24
	2020	25.1	8.2	752	8.9	108	138	0.007	0.005	1.433	1.446	0.002	0.068	19	17.9	11.5	122	197	3.2	6.4	0.2	0.25	0.25	0.01	0.25	0.4	0.7	-	62	18
Annual Geometric Mean Values for Site LP-CUT from 1989 - 2020	1989	-	-	-	6.0	-	-	0.027	0.016	0.553	0.688	-	0.010	-	-	-	-	-	1.6	-	-	-	-	-	-	-	-	-	-	-
	1990	-	-	-	6.5	-	-	0.021	0.033	0.852	0.962	-	0.009	-	-	-	-	-	1.4	-	-	-	-	-	-	-	-	-	-	-
	1991	22.6	7.5	-	4.6	-	-	0.043	0.103	0.917	1.179	-	0.019	-	-	-	-	-	1.6	-	-	-	-	-	-	-	-	-	-	-
	1992	27.8	7.6	-	5.6	-	-	0.027	0.037	0.682	0.873	-	0.022	-	-	-	-	-	1.4	-	-	-	-	-	-	-	-	-	-	-
	1993	26.6	8.0	-	6.1	-	-	0.012	0.006	0.476	0.499	-	0.009	-	-	-	-	-	1.4	-	-	-	-	-	-	-	-	-	-	-
	1994	27.2	7.8	-	5.9	-	-	0.011	0.012	0.447	0.498	-	0.009	-	-	-	-	-	1.3	-	-	-	-	-	-	-	-	-	-	-
	1995	25.1	7.7	473	4.1	-	-	0.016	0.019	0.545	0.617	0.002	0.020	-	1.5	1.9	63	-	1.5	-	-	-	0.82	-	0.50	-	5.0	-	-	-
	1996	25.2	7.8	498	6.0	-	-	0.017	0.088	0.523	0.723	0.002	0.013	-	0.7	0.7	66	-	1.1	-	-	-	1.05	-	0.50	-	6.3	-	-	-
	1997	28.9	7.8	498	6.3	-	-	0.011	0.009	0.431	0.484	0.001	0.008	-	1.0	0.5	73	188	0.9	-	-	-	0.71	-	0.60	-	6.0	8	-	-
	1998	25.2	7.7	499	4.2	-	-	0.013	0.007	0.380	0.407	0.001	0.018	-	1.5	0.6	71	-	1.0	-	-	-	1.00	-	0.50	-	5.9	8	-	-
	1999	26.6	7.8	491	5.6	-	-	0.014	0.009	0.800	0.824	0.001	0.025	-	1.6	0.8	70	-	0.9	-	-	-	1.00	-	0.95	-	7.9	11	-	-
	2000	29.5	7.4	591	5.0	-	-	0.017	0.007	0.979	1.008	0.016	0.025	-	1.4	0.8	83	-	2.2	-	-	-	0.50	-	0.50	-	5.0	10	-	-
	2001	22.2	7.2	728	1.6	-	-	0.215	0.062	0.567	0.855	0.003	0.042	41	3.3	0.7	82	242	2.1	-	-	-	0.50	-	0.50	-	7.1	5	-	20
	2002	25.2	7.5	806	3.3	-	-	0.073	0.019	0.621	0.782	0.003	0.026	28	2.1	1.0	122	208	1.5	-	-	-	0.50	-	0.50	-	5.9	7	-	12
	2003	24.7	7.5	808	4.1	-	-	0.054	0.040	0.613	0.908	0.007	0.023	22	1.6	1.2	116	266	1.5	-	0.4	-	0.96	-	0.50	-	5.0	6	-	12
	2004	23.3	7.5	620	6.4	-	-	0.025	0.011	0.447	0.501	0.006	0.017	18	1.4	0.4	92	214	1.5	-	0.3	-	0.67	-	0.59	-	5.3	10	-	13
	2005	24.9	7.7	617	6.0	-	-	0.031	0.012	0.814	0.882	0.004	0.022	21	2.5	1.2	88	168	2.0	-	0.2	-	0.53	-	0.50	-	3.7	16	-	15
	2006	23.9	7.7	2,106	3.9	-	-	0.071	0.015	1.693	1.995	0.003	0.059	36	15.3	6.5	354	-	3.5	-	0.2	-	0.50	-	0.50	-	4.0	58	-	76
	2007	25.1	8.0	3,547	6.1	-	-	0.020	0.009	1.223	1.287	0.002	0.038	15	12.1	4.9	400	332	2.7	-	0.2	-	0.56	-	0.50	-	2.5	50	-	63
	2008	24.2	8.1	1,395	7.4	-	-	0.016	0.007	0.814	0.847	0.002	0.028	14	8.5	4.0	231	246	2.8	-	0.2	-	0.74	-	0.55	-	2.1	44	-	21
	2009	24.6	7.9	1,512	5.4	-	182	0.009	0.006	1.439	1.458	0.003	0.034	18	10.1	5.3	326	316	3.3	11.2	0.3	0.25	2.16	-	0.25	1.4	1.3	67	-	18
	2010	24.4	8.0	998	6.7	-	176	0.013	0.008	1.326	1.367	0.003	0.020	19	11.7	5.4	195	289	3.7	6.4	0.2	0.27	1.12	0.01	0.25	1.2	0.8	143	-	37
	2011	25.5	8.0	757	7.4	-	160	0.019	0.006	1.236	1.276	0.002	0.018	20	11.2	5.5	133	255	4.3	6.8	0.2	0.25	1.31	0.01	0.25	1.4	0.6	142	-	39
	2012	25.4	7.8	722	6.7	76	181	0.024	0.007	1.176	1.222	0.003	0.012	22	5.6	3.4	91	272	2.4	40.7	0.2	0.25	1.62	0.03	0.29	1.7	0.9	59	-	28
	2013	25.6	8.0	730	7.0	86	186	0.018	0.005	0.846	0.874	0.007	0.013	19	4.9	2.1	87	275	1.8	30.8	0.2	0.25	1.15	0.03	0.25	1.6	1.6	14	-	16
	2014	25.2	7.9	748	7.0	85	187	0.044	0.005	0.551	0.609	0.002	0.006	16	2.3	2.1	92	287	1.7	12.9	0.2	0.25	1.07	0.02	0.25	1.7	1.3	35	-	14
	2015	26.3	7.9	747	6.8	84	195	0.016	0.006	0.521	0.549	0.002	0.011	19	3.3	1.6	102	295	1.2	13.1	0.2	0.25	0.70	0.01	0.25	1.3	0.6	18	-	14
	2016	25.8	7.8	699	6.0	74	191	0.007	0.005	0.467	0.481	0.002	0.016	21	2.7	1.3	88	253	1.1	7.9	0.2	0.25	0.79	0.02	0.25	1.1	0.6	8	8	6
	2017	25.7	7.9	645	7.0	86	178	0.009	0.006	0.703	0.724	0.002	0.031	19	6.8	4.2	77	214	1.9	8.8	0.2	0.25	0.95	0.03	0.25	0.9	1.7	-	15	13
	2018	25.8	7.8	712	6.4	79	184	0.011	0.007	0.623	0.642	0.002	0.023	22	5.1	2.5	88	229	1.4	7.0	0.2	0.25	0.80	0.02	0.25	0.5	1.0	-	10	11
	2019	26.1	7.6	760	5.4	67	193	0.011	0.009	0.504	0.527	0.002	0.014	19	0.6	0.7	102	241	1.0	4.2	0.2	0.27	0.53	0.02	0.25	0.6	2.2	-	12	4
	2020	24.4	7.6	800	6.4	77	167	0.010	0.006	0.536	0.553	0.002	0.011	16	0.9	0.3	120	228	0.7	3.3	0.2	0.25	0.25	0.01	0.25	0.4	2.1	-	6	1

APPENDIX B

PHOTOGRAPHS OF SEDIMENT CORE SAMPLES COLLECTED IN WEST LAKE ON JULY 8, 2021

West Lake Sediment Photos
Sites 1 - 4

Site 1

Site 2

Site 3

Site 4

West Lake Sediment Photos
Sites 5 - 8

Site 5

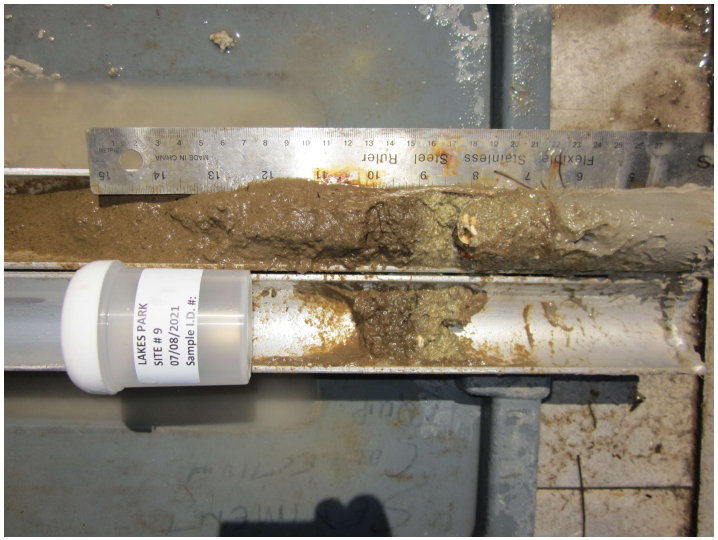
Site 6

Site 7

Site 8

West Lake Sediment Photos

Sites 9 - 12



Site 9

Site 10

Site 11

Site 12

West Lake Sediment Photos
Sites 13 - 16

Site 13

Rock substrate; no sample

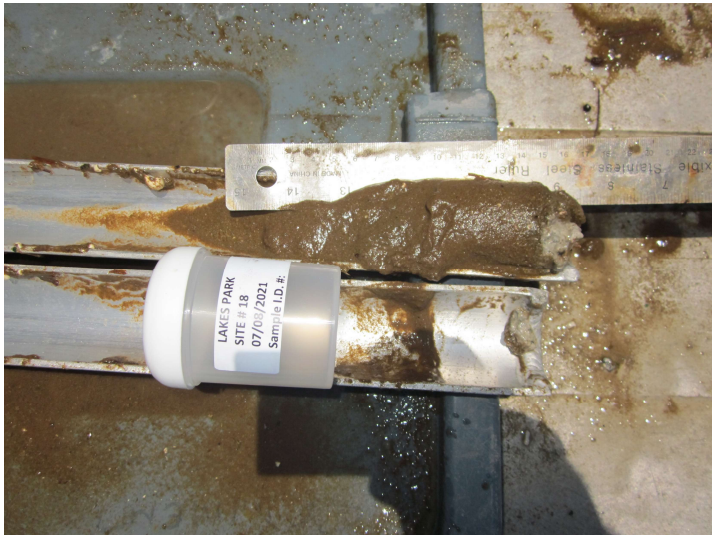
Site 14

Site 15

Site 16

West Lake Sediment Photos
Sites 17 - 20

Site 17



Site 18

Site 19

Site 20

West Lake Sediment Photos
Sites 21 - 24

Rock substrate; no sample

Site 21

Site 22

Site 23

Site 24

West Lake Sediment Photos
Sites 25 - 28

Site 25

Site 26

Site 27

Site 28

West Lake Sediment Photos
Sites 29 - 31

Site 29

Site 30

Site 31

APPENDIX C

VERTICAL FIELD PROFILES COLLECTED IN WEST LAKE DURING JULY AND AUGUST 2021

Vertical Field Profiles Collected In West Lake During July and August 2021

Site	Date	Time	Depth (m)	Temp. (°C)	pH (s.u.)	Cond. (µmho/cm)	TDS (mg/L)	Diss. O_2 (mg/L)	Diss. O_2 (% Sat.)	ORP (mV)	Secchi (m)
Site 6	7/8/21	15:36	0.25	30.30	8.46	684	438	8.3	111	330	0.35
		15:36	0.5	30.28	8.47	685	438	8.2	109	331	
		15:37	1.0	30.03	8.45	689	441	8.2	109	332	
		15:37	1.5	28.13	8.08	717	459	6.5	84	328	
		15:38	2.0	27.62	8.01	698	447	5.8	73	329	
		15:38	2.5	27.51	7.45	773	495	2.3	29	270	
		15:39	2.7	27.55	7.20	774	495	0.3	4	186	
Site 8	7/8/21	15:46	0.25	29.90	8.47	683	437	8.0	106	242	0.33
		15:46	0.5	29.98	8.50	682	437	8.2	108	251	
		15:47	1.0	28.13	8.42	693	444	8.1	103	257	
		15:48	1.5	27.62	8.34	683	437	7.5	95	262	
		15:48	1.9	27.47	8.18	684	438	5.9	75	262	
Site 13	7/8/21	12:03	0.25	28.41	8.02	709	454	6.2	80	441	0.32
		12:03	0.5	28.30	8.07	707	452	6.4	82	443	
		12:04	1.0	28.01	7.96	710	454	5.9	76	442	
		12:04	1.5	27.72	7.94	703	450	5.8	74	443	
		12:05	2.0	27.41	7.59	708	453	3.6	45	435	
		12:06	2.3	27.47	7.12	941	602	1.5	19	282	
Site 14	7/8/21	12:21	0.25	29.29	7.95	712	455	6.5	85	323	0.43
		12:21	0.5	28.82	7.97	715	457	6.6	86	327	
		12:23	1.0	28.61	7.98	732	468	6.9	89	338	
		12:23	1.5	28.24	7.95	733	469	6.8	87	341	
		12:24	2.0	27.82	7.87	734	470	6.3	80	342	
		12:25	2.5	27.52	7.55	748	479	4.3	55	338	
		12:26	2.7	27.70	6.61	1021	653	0.3	4	79	
Site 16	7/8/21	12:47	0.25	29.39	8.18	712	456	7.2	94	300	0.42
		12:48	0.5	28.75	8.18	713	456	7.1	92	304	
		12:50	1.0	27.81	7.92	718	460	5.5	70	302	
		12:50	1.5	27.66	7.79	716	458	4.7	60	302	
		12:51	2.0	27.66	7.75	716	458	3.9	49	299	
		12:52	2.1	27.67	7.59	718	459	0.4	5	270	
Site 17	7/8/21	13:00	0.25	29.07	8.09	710	455	6.5	85	301	0.52
		13:01	0.5	28.49	8.11	712	456	6.6	85	304	
		13:02	1.0	27.86	7.90	712	455	5.2	66	304	
		13:02	1.5	27.68	7.67	719	460	3.8	48	301	
		13:03	1.8	27.71	7.51	717	459	2.3	29	255	
Site 18	7/8/21	13:08	0.25	29.16	8.03	620	397	6.8	89	305	0.41
		13:09	0.50	28.54	8.08	624	399	6.7	88	306	
		13:10	1.0	27.79	7.93	611	391	6.4	82	307	
		13:11	1.5	27.72	8.05	677	433	6.6	84	312	
		13:12	2.0	27.25	7.63	593	380	4.0	51	308	
		13:13	2.5	27.48	6.79	684	438	0.4	5	169	
Site 20	7/8/21	13:36	0.25	29.84	8.20	719	460	7.3	97	329	0.34
		13:37	0.5	29.56	8.24	717	459	7.5	99	331	
		13:37	1.0	28.99	8.22	713	457	7.4	96	333	
		13:38	1.5	28.44	8.09	722	462	6.7	87	332	
		13:38	2.0	27.68	7.61	731	468	3.9	49	324	
		13:39	2.5	27.57	7.46	734	470	2.9	37	320	
		13:40	3.0	27.52	6.79	819	524	0.8	10	198	
		13:40	3.1	27.53	6.83	864	553	0.3	4	189	

Vertical Field Profiles Collected In West Lake During July and August 2021

Site	Date	Time	Depth (m)	Temp. (°C)	pH (s.u.)	Cond. (µmho/cm)	TDS (mg/L)	Diss. O_2 (mg/L)	Diss. O_2 (% Sat.)	ORP (mV)	Secchi (m)
Site 22	7/8/21	13:58	0.25	31.13	8.10	724	463	6.8	92	306	0.59
		13:58	0.5	29.92	8.11	723	462	7.0	92	308	
		13:59	1.0	28.47	7.69	746	477	5.9	76	306	
		14:01	1.5	27.83	8.00	722	462	6.8	87	318	
		14:01	2.0	27.56	7.54	724	464	3.4	44	310	
		14:02	2.5	27.42	7.39	734	470	2.3	30	306	
		14:03	3.0	27.44	7.06	792	507	1.6	20	245	
Site 24	7/8/21	14:21	0.25	31.16	8.16	660	422	7.2	97	319	0.61
		14:23	0.5	29.04	8.20	677	433	7.6	99	330	
		14:23	1.0	28.48	8.19	679	435	7.5	97	330	
		14:24	1.5	27.72	7.88	701	449	5.7	73	326	
		14:24	2.0	27.60	7.66	684	438	4.1	53	302	
		14:25	2.4	27.63	7.16	715	458	1.4	18	224	
Site 28	7/8/21	14:51	0.25	32.44	8.22	718	460	8.0	111	318	0.60
		14:51	0.5	31.12	8.22	715	457	7.8	106	322	
		14:53	1.0	28.39	7.96	723	463	7.1	91	322	
		14:53	1.5	27.70	7.69	738	472	5.2	66	322	
		14:54	2.0	27.41	7.31	753	482	1.8	22	312	
		14:54	2.3	27.43	7.20	831	532	1.4	18	286	

Vertical Field Profiles Collected In West Lake During July and August 2021

Site	Date	Time	Depth (m)	Temp. (°C)	pH (s.u.)	Cond. (µmho/cm)	TDS (mg/L)	Diss. O_2 (mg/L)	Diss. O_2 (% Sat.)	ORP (mV)	Secchi (m)
Site 8	8/9/21	11:31	0.25	30.89	8.24	722	462	8.4	113	517	0.30
		11:32	0.5	30.80	8.25	722	462	8.4	114	516	
		11:32	1.0	30.75	8.27	722	462	8.4	112	514	
		11:33	1.5	30.38	8.16	717	459	7.3	97	506	
		11:33	2.0	30.35	8.15	718	459	7.2	96	503	
		11:37	2.5	30.19	6.72	811	519	0	0	4	
Site 6	8/9/21	11:42	0.25	31.37	8.21	730	467	7.9	108	339	0.33
		11:43	0.5	30.85	8.26	728	466	8.2	110	346	
		11:43	1.0	30.54	8.21	728	466	7.8	104	349	
		11:44	1.5	30.39	8.05	729	467	6.4	85	348	
		11:45	2.0	30.35	7.94	731	468	5.8	77	327	
		11:48	2.4	30.27	6.93	866	554	0	0	-46	
Site 16	8/9/21	12:00	0.25	31.05	8.11	729	467	7.4	99	345	0.48
		12:01	0.5	30.82	8.06	731	468	6.9	93	343	
		12:01	1.0	30.72	7.94	732	469	6.6	88	341	
		12:02	1.5	30.69	7.90	733	469	5.8	78	338	
		12:05	2.0	30.66	7.15	757	484	0	0	0	
		12:06	2.1	30.66	7.14	761	487	0	0	-12	
Site 29	8/9/21	12:14	0.25	31.28	7.54	722	462	6	81	321	0.55
		12:14	0.5	31.04	7.49	723	463	5.3	72	325	
		12:15	1.0	30.79	7.45	719	460	4.9	66	327	
		12:16	1.5	30.73	7.37	719	460	4.3	58	327	
		12:17	2.0	30.58	7.35	721	461	2.3	30	225	
		12:20	2.4	30.46	6.95	780	499	0	0	64	

APPENDIX D

RESULTS OF LABORATORY JAR TESTS CONDUCTED ON WEST LAKE SURFACE WATER SAMPLES COLLECTED DURING JULY AND AUGUST 2021

Results of Laboratory Jar Testing Conducted on West Lake During July and August 2021

Lab ID	Sample Site	Date Collected	Sample Type	pH (s.u.)[1]	Alkalinity (mg/L)	Cond. (µmho/cm)	NH3-N (µg/L)	NOx-N (µg/L)	Diss.Org. N (µg/L)	Part. N (µg/L)	Total N (µg/L)	Diss. TN (µg/L)	SRP (µg/L)	Diss.Org. P (µg/L)	Part. P (µg/L)	Total P (µg/L)	Diss. TP (µg/L)	Turbidity (NTU)	Color (Pt-Co)	Chyl-a (µg/L)	Diss. Al (µg/L)
1261	Whole Lake Composite	7/8/21	Raw	7.24	130	539	284	66	757	224	1331	1107	10	10	47	67	20	3.3	15	35.9	164
1262			5 mg Al/L	7.03	127	542	308	56	598	124	1086	962	8	9	6	23	17	1.2	9	10.6	124
1263			10 mg Al/L	6.87	126	544	323	47	480	105	955	850	6	6	3	15	12	1.0	6	13.0	84
1264			15 mg Al/L	6.59	97.0	549	337	45	446	34	862	828	6	3	5	14	9	0.6	4	6.1	59
1265			20 mg Al/L	6.46	85.3	556	338	38	389	86	851	765	6	2	5	13	8	0.7	4	2.3	59
1357	North Lobe Composite	8/9/21	Raw	7.75	153	459	5	12	481	745	1243	498	11	7	70	88	18	5.3	17	48.1	119
1358			5 mg Al/L	6.97	132	456	3	13	338	164	518	354	6	2	16	24	8	1.8	6	26.4	81
1359			10 mg Al/L	6.68	107	465	4	10	260	45	319	274	6	1	2	9	7	0.9	4	12.0	54
1360			15 mg Al/L	6.42	79.3	469	4	5	228	39	276	237	3	2	2	7	5	0.7	2	4.1	30
1361			20 mg Al/L	6.10	48.1	480	7	5	238	39	289	250	4	1	1	6	5	0.5	1	6.2	9
1362	South Lobe Composite	8/9/21	Raw	7.99	152	448	7	14	1230	255	1506	1251	15	55	33	103	70	5.9	14	53.4	74
1363			5 mg Al/L	6.95	134	467	5	15	474	158	652	494	13	3	10	26	16	2.3	6	21.9	100
1364			10 mg Al/L	6.68	92.4	467	4	12	215	119	350	231	3	1	10	14	4	1.0	3	11.3	52
1365			15 mg Al/L	6.34	68.1	463	1	12	259	73	345	272	3	2	4	9	5	1.0	2	7.8	41
1366			20 mg Al/L	6.05	57.4	469	3	5	241	22	271	249	2	1	4	7	3	1.0	2	4.9	30
	Geometric Mean Values		Raw	7.65	145	480	22	22	840	472	1,356	884	12	18	55	85	29	4.7	15	45.2	113
			5 mg Al/L	6.98	131	487	17	22	513	164	716	552	9	4	11	24	13	1.7	7	18.3	100
			10 mg Al/L	6.74	108	491	17	18	342	97	474	378	5	2	5	12	7	1.0	4	12.1	62
			15 mg Al/L	6.45	80.6	492	11	14	352	58	435	377	4	2	4	10	6	0.7	3	5.8	42
			20 mg Al/L	6.20	61.8	500	19	10	333	43	405	362	4	1	3	8	5	0.7	2	4.1	25
	Geometric Mean Values		Raw	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
			5 mg Al/L	-9	-9	1	-23	-1	-39	-65	-47	-38	-28	-75	-80	-71	-56	-64	-55	-59	-11
			10 mg Al/L	-12	-26	2	-20	-20	-59	-80	-65	-57	-60	-87	-90	-85	-76	-79	-73	-73	-45
			15 mg Al/L	-16	-44	2	-49	-38	-58	-88	-68	-57	-68	-87	-94	-89	-79	-84	-84	-87	-63
			20 mg Al/L	-19	-57	4	-11	-56	-60	-91	-70	-59	-69	-93	-94	-90	-83	-85	-87	-91	-78