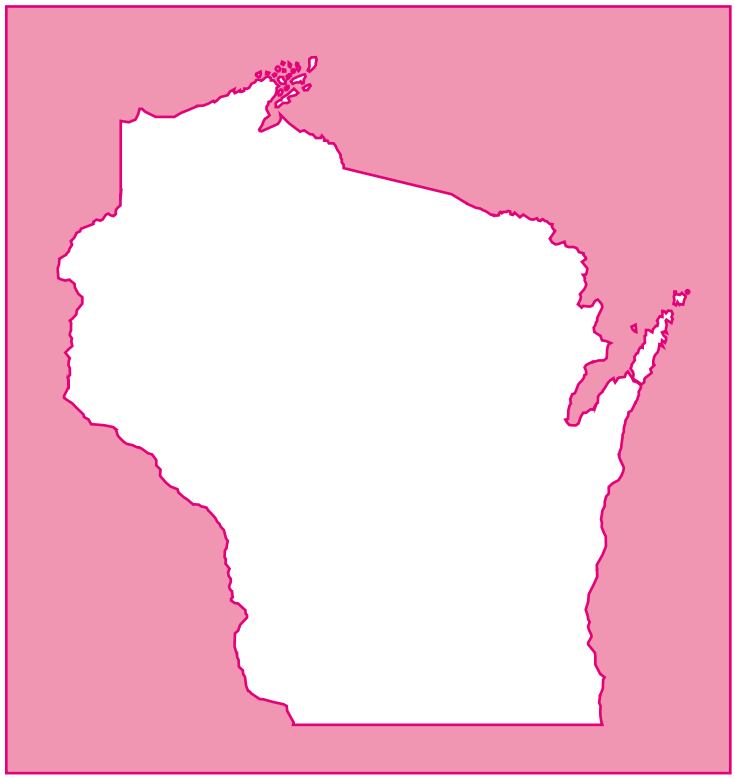
Water-Quality and Lake-Stage Data for Wisconsin Lakes, Water Year 2007



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Open-File Report 2008–1182

Prepared in cooperation with the
State of Wisconsin and local agencies

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Water-Quality and Lake-Stage Data for Wisconsin Lakes, Water Year 2007

A report by the Wisconsin Water Science Center Lake-Studies Team–
W.J. Rose (team leader), H.S. Garn, G.L. Goddard, S.B. Marsh, D.L. Olson, and D.M. Robertson

Open-File Report 2008–1182

Prepared in cooperation with the State of Wisconsin and with other agencies

Middleton, Wisconsin
2008

U.S. DEPARTMENT OF THE INTERIOR
DIRK KEMPTHORNE, Secretary

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CONVERSION FACTORS, VERTICAL DATUM, AND ABBREVIATED WATER-QUALITY UNITS

Multiply	By	To Obtain
mile (mi)	1.609	kilometer
pound (lb)	453.6	gram
acre	0.4048	hectare
foot (ft)	0.3048	meter
meter (m)	3.281	foot
gallon (gal)	3.785	liter
square mile (mi^2)	2.590	square kilometer

Temperature, in degrees Celsius (°C) can be converted to degrees Fahrenheit (°F) by use of the following equation

$$°F = 1.8(°C) + 32$$

Sea level: In this report "sea level" refers to the National Geodetic Vertical Datum of 1929 (NGVD of 1929)–a geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called Sea Level Datum of 1929.

Abbreviated water-quality units: Chemical concentrations and water temperature are given in metric units. Chemical concentration is given in milligrams per liter (mg/L) or micrograms per liter (µg/L). Milligrams per liter is a unit expressing the concentration of chemical constituents in solution as weight (milligrams) of solute per unit volume (liter) of water. One thousand micrograms per liter is equivalent to one milligram per liter. For water with dissolved-solids concentrations less than 7,000 mg/L, the numerical values for concentrations expressed as mg/L and µg/L are the same as for concentrations in parts per million and parts per billion, respectively.

Specific conductance of water is expressed in microsiemens per centimeter at 25 degrees Celsius (µS/cm). This unit is equivalent to micromhos per centimeter (mmho/cm) at 25 degrees Celsius, formerly used by the U.S. Geological Survey.

WATER-QUALITY AND LAKE-STAGE DATA FOR WISCONSIN LAKES, WATER YEAR 2007

By Wisconsin Water Science Center
Lake-Studies Team

INTRODUCTION

The U.S. Geological Survey (USGS), in cooperation with local and other agencies, collects data at selected lakes throughout Wisconsin. These data, accumulated over many years, provide a data base for developing an improved understanding of the water quality of lakes. To make these data available to interested parties outside the USGS, the data are published annually in this report series. The locations of water-quality and lake-stage stations in Wisconsin for water year 2007 are shown in figure 1. A water year is the 12-month period from October 1 through September 30. It is designated by the calendar year in which it ends. Thus, the period October 1, 2005 through September 30, 2007 is called “water year 2007.”

The purpose of this report is to provide information about the chemical and physical characteristics of Wisconsin lakes. Data that have been collected at specific lakes, and information to aid in the interpretation of those data, are included in this report. Data collected include measurements of in-lake water quality and lake stage. Time series of Secchi depths, surface total phosphorus and chlorophyll *a* concentrations collected during non-frozen periods are included for all lakes. Graphs of vertical profiles of temperature, dissolved oxygen, pH, and specific conductance are included for sites where these parameters were measured. Descriptive information for each lake includes: location of the lake, area of the lake’s watershed, period for which data are available, revisions to previously published records, and pertinent remarks. Additional data, such as streamflow and water quality in tributary and outlet streams of some of the lakes, are published in another volume: “Water Resources Data-Wisconsin, 2007."

Water-resources data, including stage and discharge data at most streamflow-gaging stations, are available through the World Wide Web on the Internet. The Wisconsin Water Science Center’s home page is at http://wi.water.usgs.gov/. Information on the Wisconsin Water Science Center’s Lakes Program is found at wi.water.usgs.gov/lake/index.html and wi.water.usgs.gov/projects/index.html.

Figure 1. Location of USGS lake water-quality and lake-stage stations in Wisconsin.

The USGS has done cooperative lake monitoring with local and other agencies since 1983. Cooperators in 2007 included:

Barron County Soil and Water Conservation Department
Big Cedar Lake Protection and Rehabilitation District
City of Delafield
Dane County
Delavan Lake Sanitary District
Geneva Lake Environmental Agency
Green Lake Sanitary District
Lake Beulah Management District
Lake Puckaway Protection and Rehabilitation District
Little Cedar Lake Protection and Rehabilitation District
Middle Genesee Lake District
Potter's Lake Protection and Rehabilitation District
Powers Lake District
Rock County Public Works Department
Town of Minocqua (Minocqua/Kawaguesaga Lake Protection Association)
Town of Wascott (Whitefish Lake Conservation Organization)
U.S. Army Corps of Engineers
Village of Oconomowoc Lake
Wind Lake Management District
Wisconsin Department of Natural Resources

Lake data-collection sites are identified by a unique identification number. Lake water-quality sites are identified by a 15-digit number that is a concatenation of the site's latitude, longitude, and a two-digit sequence number. The sequence number is used to distinguish between sites located at the same latitude-longitude designation. The site identification number is permanently assigned to the site; actual latitude and longitude of the site are subject to update and are stored separately. For some lakes, which have historical records of lake stage, an eight-to-ten digit number is assigned according to downstream order. Gaps are left in the numerical series to allow for new stations; hence, the numbers are not consecutive. The first two digits of the complete eight-to-ten digit number, such as 04087000 or 054310157, designate the major river basin. For example, "04" designates the St. Lawrence River Basin and "05" designates the Upper Mississippi River Basin.

The water-quality lake stations that were discontinued prior to water year 2007 are listed in table 1. Discontinued lake-stage stations are not included in this table.

This report is the culmination of a concerted effort by a number of people who collected, compiled, analyzed, verified, and organized the data, and who typed, edited, and assembled the report. The authors had primary responsibility for assuring that the information contained herein is accurate, complete, and adheres to USGS policy and established guidelines. Technicians in charge of the field offices are: B.W. Olson (Merrill), and S.A. March (Middleton). The data were collected and processed by G.L. Goddard, D.E. Housner, S.B. Manteufel, B.W. Olson, D.L. Olson, P.C. Reneau, J.G. Schuler, and B.J. Siebers. S.B. Manteufel assembled, edited, and formatted the report. Additional assistance in preparation of the report was provided by J.L. Bruce, M.M. Greenwood, and D.L. Olson.

METHODS OF DATA COLLECTION

Depth profiles of water temperature, dissolved oxygen, pH, and specific conductance were collected using multi-parameter meters. Prior to measurements, the meters were calibrated using standards for pH and conductance, and dissolved oxygen was calibrated using the air calibration method. Generally, field measurements in profiles were made at 0.5-m intervals if the maximum depth of the lake was 5 m or less and at 1.0-m intervals if the maximum depth was greater than 5 m.

Table 1. Discontinued lake stations

Station name	Site identification number	Period of record
Alma Lake near St. Germain	455426089254700	Oct. 1984–Sept. 1990, May 1992–Sept.1996
Balsam Lake, off Cedar Island, at Balsam Lake	452755092264600	Feb. 1991–Aug. 1994
off Little Narrows, near Balsam Lake	452858092265300	May 1991–Aug. 1994
off Rock Island, near Balsam Lake	452754092234300	May 1991–Aug. 1994
Balsam Lake near Birchwood	453907091345800	Mar. 1993–Aug. 1994, Mar. 1996–Aug. 1997, Mar.–Sept. 2001
Bass Lake near Shawano	445215088300300	Feb. 1990–Aug. 1992
Bear Lake at Deep Hole near Haugen	453754091490900	Mar. 1992–Aug. 1993
Beaver Dam Lake, South end, at Beaver Dam	432814088515000	June–Oct. 1991
North end, near Beaver Dam	433122088545700	June–Oct. 1991
Benedict Lake near Powers Lake	423201088180800	May 1998–Aug. 2000
Big Blacksmith Lake near Keshena	445401088334500	Feb. 1990–Aug. 1992
Big Hills (Hills) Lake near Wild Rose	440912089092000	June 1983–Aug. 1984, Feb.–Aug. 1987, Feb.–Aug. 1990, Feb.–Aug. 1993, Feb.–Aug. 1996, Feb.–Aug. 1999
Big Muskego Lake, at North Site, near Muskego	425301088061300	Feb.–Aug. 1988
Research Base, near Muskego	425235088075300	May–June 1994
Big Round Lake near Milltown	453142092180100	Feb.–Sept. 2001
Big St. Germain Lake, near St. Germain	455557089311000	Feb. 1992–Aug. 1996
near Lake Tomahawk	05390750	1991–2001
Big Sand Lake, Deep Hole, near Hertel	454910092134000	Feb.–Sept. 2001
East Site, near Hertel	454921092124300	Feb.–Sept. 2001
Big Sissabagama Lake, near Stone Lake	454724091303600	Apr. 1986–Sept. 1996, Oct. 1997–Sept. 2002
North Site, near Stone Lake	454800091312900	Mar. 1998–Sept. 2001
Booth Lake near East Troy	424800088254800	Feb. 1992–Aug. 1994, Feb. 2001–Aug. 2003
Buffalo Lake, Center Site, at Packwaukee	434558089260600	May 1998–Sept. 2001
East End, at Montello	434720089201600	May 1998–Sept. 2001
West End, near Endeavor	434414089282400	May 1998–Sept. 2001

Table 1. Discontinued lake stations--continued

Station name	Site identification number	Period of record
Butternut Lake, near Park Falls	455854090310300	Oct. 2002–Oct. 2004
Deep Hole, near Park Falls	455803090310800	Mar. 2003–Sept. 2004
North Site, near Butternut	455904090303400	Mar. 2003–Sept. 2004
Far South Site, near Park Falls	455651090312700	Mar. 2003–Sept. 2004
Denoon Lake at Wind Lake	425044088100300	Feb. 1991–Aug. 1996
Druid Lake near Hartford	431643088243300	Feb. 1991–Sept. 1996
Eagle Lake near Kansasville	05544500	1936–64, 1975–77, 1979, Feb. 1993–Sept. 1996
Eagle Lake, at Deep Hole, near Kansasville	424207088072400	Feb. 1993–Aug. 1996
Eagle Spring Lake at Eagleville	425103088261500	Apr. 1991–Sept. 2001
Elizabeth Lake near Twin Lakes	423051088155300	Feb. 1995–Sept. 1997
Fish Lake near Sauk City	05406050	Nov. 1966–Sept. 1981, Apr. 1985–May 1987, May 1988, Apr. 1989–Oct. 1990, Oct. 1990–Nov. 1996, Nov. 1996–Sept. 2004
Forest Lake near Dundee	433632088100200	Mar. 1994–Aug. 1996, May–Aug. 2004, Feb. – Aug. 2005
Fowler Lake, Center, at Oconomowoc	430653088294601	Jan.–Dec. 1984, Oct. 1986–Sept. 1996
Fox Lake Deep Hole at Fox Lake	433458088560600	June 1991–Mar. 1993
Geneva Lake, Geneva Bay, at Lake Geneva	423455088263800	Apr. 1997–Feb. 1999
Williams Bay, at Williams Bay	423420088320500	Apr. 1997–Feb. 1999
Center, near Lake Geneva	423402088301400	Apr. 1997–Mar. 1999
East End, near Lake Geneva	423421088272300	Apr. 1997–May 2000
Hemlock Lake near Mikana	453421091333700	Mar. 1993–Aug. 1994, Mar. 1996–Aug. 1997, Mar.–Sept. 2001
Hooker Lake at Salem	423335088060300	Feb. 1992–Aug. 1993
Kawaguesaga, South Site, near Minocqua	455145089442600	May–Sept. 2003
Kirby Lake near Cumberland	453554092042101	Nov. 1995–Oct. 1996
(Site 1) near Cumberland	453608092035801	Nov. 1995–Nov. 1996
(Site 2) near Cumberland	453601092035301	Nov. 1995–Nov. 1996

Table 1. Discontinued lake stations--continued

Station name	Site identification number	Period of record
(Site 3) near Cumberland	453612092034901	Nov. 1995–Nov. 1996
(Site 4) near Cumberland	453603092035701	Nov. 1995–Nov. 1996
(Site 5) near Cumberland	453608092041201	Nov. 1995–Nov. 1996
(Site 6) near Cumberland	453555092040901	Nov. 1995–Nov. 1996
Lac La Belle at Oconomowoc	430733088305900	Feb. 1984–Aug. 1985, Apr. –Aug. 1991, Feb. 2001–Aug. 2003
NW, at Oconomowoc	430809088313900	Feb. 1984–Aug. 1985
SE, at Oconomowoc	430707088301400	Feb. 1984–Aug. 1985
Lake Blass at Lake Delton	433545089482400	Mar. 1989–Aug. 1990
Lake Desair near Rice Lake	453446091465100	Aug. 2004
Lake Keesus, East Bay, near Merton	430957088183400	Apr. 1991–Aug. 1995
North Bay, near Merton	431006088191000	Apr. 1991–Aug. 1995
Lake Morris at Mount Morris	440654089120500	Jun. 1983–Sept. 1989
Lake Nebagamon, Northeast Bay, at Lake Nebagamon	463050091412300	May 1992–Aug. 1995
Southeast Bay, at Lake Nebagamon	462928091413500	Mar. 1992–Sept. 1995
West Bay, at Lake Nebagamon	463034091425300	May 1992–Aug. 1995
Lake Noquebay near Crivitz	451511087550900	Feb. 1987–Aug. 1988, Apr. 1991–Aug. 1994
East End, near Crivitz	451540087525700	Apr. 1991–Aug. 1994
Lamotte Lake near Shawano	445305088361200	Feb. 1990–Aug. 1992
Lauderdale Lakes at Lauderdale	424554088332700	Oct. 1993–Oct. 1994
Green, Auxiliary, Number 1, near Lauderdale	424640088341900	June 1999–Sept. 2000
Green, near Lauderdale	424652088341500	Nov. 1993–Nov. 1994, Aug. 2002
Middle Lake at Lauderdale	424621088335500	Nov. 1993–Nov. 1994, Feb. 1999–Sept. 2005
Mill, at Lauderdale	424555088335700	Nov. 1993–Nov. 1994, Aug. 2002
Legend Lake (site 1) near Shawano	445342088312700	Feb. 1990–Feb. 1992
Little Arbor Vitae near Woodruff	455446089370300	Feb. 1991–Sept. 2002
Little Green Lake, at Center, near Markesan	434412088590700	Feb. 1991–Aug. 2003
Little Muskego Lake at Muskego	425425088083500	Oct. 1986–Aug. 2002
Little Rock Lake near Woodruff	455946089415702	Oct. 1983–Sept. 1996
Little St. Germain Lake, near Eagle River	05390700	(a)
Upper East Bay, at St. Germain	455532089253900	Dec. 1996–Mar. 97, Mar. 1999, Mar. 2000–Aug. 2003

Table 1. Discontinued lake stations--continued

Station name	Site identification number	Period of record
Northeast Bay, near St. Germain	455545089262500	Apr. 1991–Aug. 1994, Aug. 1996–Aug. 1997, Mar. 1999–Aug. 2003
South Bay, near St. Germain	455437089270800	Apr. 1991–Aug. 1994, Aug. 1996–Aug. 1997, Mar. 1999–Aug. 2003
West Bay, at St. Germain	455428089282400	Apr. 1991–Aug. 1994, Aug. 1996–Aug. 1997, Mar. 1999–Aug. 2003
Little Sand Lake - Site No. 2 - near Mole Lake	452826088544101	May1996–Sept. 2003
Long (Kee Nong Go-Mong) Lake at Wind Lake	424937088103400	Feb. 1988–Aug. 1989, Feb. 1991–Aug. 1996
Loon Lake near Shawano	445009088303700	Feb. 1991–Aug. 1993
Lost Lake near Beaver Dam	432640088580500	June–Oct. 1991
McKenzie Lakes		
McKenzie (Big McKenzie)		
Deep Hole, near Spooner	455507092013500	Feb. 1987–Aug. 1998
Northern Site, near Spooner	455540092022000	June 1997–Aug. 1998
South Site, near Spooner	455437092022300	June 1997–Aug. 1998
Lower McKenzie, near Webb Lake	455902092011900	June 1997–Aug. 1998
Middle McKenzie, near Spooner	455635092021800	June 1997–Aug. 1998
Mary (Marie) Lake at Twin Lakes	423128088151200	Feb. 1995–Aug. 1997
Max Lake near Woodruff	460128089423501	Mar. 1988–Dec. 1996
Mead Lake, East Bay near Willard	444720090445000	Apr. 1991–Aug. 1995
West Bay near Willard	444733090460100	Feb. 1991–Sept. 1995
Minocqua, South Bay, at Minocqua	455206089425200	May–Sept. 2003
Montello Lake at Montello	434748089195800	Feb. 1995–Aug. 1998
Moon Lake near St. Germain	455504089260500	Feb. 1992–Aug. 1996
Morgan Lake near Fence	454622088324801	Oct. 1987–Sept. 1998.
Moshawquit Lake near Shawano	445352088295800	Feb. 1990–Aug. 1992
Muskego (Big Muskego)		
Auxiliary Number 1, near Muskego	425329088054000	June 1996–Aug. 2000
Bass Bay, near Muskego	425344008807010	Feb. 1988–Aug. 2002

Table 1. Discontinued lake stations--continued

Station name	Site identification number	Period of record
near Wind Lake	425109088075000	Oct. 1987–Sept. 1989, Jan. 1991–Sept. 2002
South Site, near Muskego	425212088072800	Feb. 1988–Aug. 2002
Muskellunge Lake near Eagle River	455700089224900	June 2000–Aug. 2001
Muskellunge Lake, near Lake Outlet near Eagle River	455706089232400	Nov. 2000–Oct. 2001
Nagawicka Lake, at Deep Hole, at Delafield	430417088230300	Feb. 2003–Sept. 2004
Namekagon Lakes		
Garden, near Cable	461224091033200	Mar. 1998–Aug. 1999
Jackson, near Cable	461457091065900	Mar. 1998–Aug. 1999
Namekagon		
Deep Hole, near Cable	461308091065100	Mar. 1998–Aug. 1999
East Basin, near Cable	461228091044300	Mar. 1998–Aug. 1999
Northeast Basin, near Cable	461410091050700	Mar. 1998–Aug. 1999
Park Lake (site 1) at Pardeeville	433239089175800	Feb. 1986–Aug. 1987, May–Nov. 1993
(site 2) at Pardeeville	433226089175500	May–Nov. 1993
(site 3) at Pardeeville	433245089173000	May–Nov. 1993
(site 4) at Pardeeville	433257089165100	May–Nov. 1993
Pike Lake near Hartford	431916088200501	Dec. 1998–Dec. 2000
Pike Lake-QW Site-near Hartford	431835088200600	Feb.–Aug. 2000
Pine Lake at Chenequa	430707088230500	Apr. 2005–Sept. 2006
Pretty Lake, at Deep Hole, near Dousman	425722088295000	Feb. 1993–Aug. 1997
Red Cedar Lake, at Mikana	453522091360600	Mar. 1993–Aug. 1994, Mar. 1996–Aug. 1997, Oct. 2000–Sept. 2001
Deep Hole, near Mikana	453725091345100	Mar. 1993–Aug. 1994, Mar. 1996–Aug. 1997, Mar. –Sept. 2001
South End, at Mikana	453519091352500	Mar. 1993–Aug. 1994, Mar. 1996–Aug. 1997, Mar. –Sept. 2001
Rice Lake at Deep Hole near Whitewater	424629088415700	Apr.–Nov. 1991
Round Lake near Shawano	445328088335000	Feb. 1990–Aug. 1992
Sand Lake (Deep Hole) near Keshena	445321088323101	June–Aug. 1992
Shell Lake at Shell Lake	05334000	Aug. 1936–Sept. 1999

Table 1. Discontinued lake stations--continued

Station name	Site identification number	Period of record
Silver Lake near Cumberland	453420091551600	Oct. 2004–Sept. 2006
Deep Hole, near Cumberland	453502091551700	Oct. 2004–Sept. 2006
At Beach	453424091551600	Oct. 2004–Sept. 2006
NE Bay	453535091550800	Oct. 2004–Sept. 2006
Southeast wetland	453441091545300	Oct. 2004–Sept. 2006
Whitefish Lake near Gordon	461231091524900	Oct. 2004–Sept. 2006
North Basin	461321091520900	Oct. 2004–Sept. 2006
South Basin (Deep Hole)	461212091523200	Oct. 2004–Sept. 2006
Silver Lake near Oconomowoc	430436088293300	Apr. 1992–Aug. 1996
Silver Lake near West Bend	432322088125000	Feb. 1996–Aug. 1997
Sinissippi Lake, off Anthony Is., at Hustisford	432113088361100	Feb. 1991–Aug. 1993
off Butternut Is., near Hustisford	432240088363900	Apr. 1991–Aug. 1993
off Sam Point, near Hustisford	432300088374200	Apr. 1991–Aug. 1993
Spirit Lake near Keshena	445400088320100	Apr.–Aug. 1992
Spooner Lake, Deep Hole, near Spooner	455034091493300	June 2002–Aug. 2004
Southeast Site, near Spooner	454945091483900	June 2002–Aug. 2004
Stewart Lake at Mt. Horeb	430117089442701	May 1992–Sept. 1993
Tichigan Lake near Waterford	424854088123300	Mar. 1994–Aug. 1996, Apr. 2003–Aug. 2004
Tombeau Lake near Powers Lake	423153088184800	May 1998–Aug. 2000
Twin Lake, East Twin, near Westfield	435430089350700	June 2002–Aug. 2004
West Twin, near Westfield	435438089352300	June 2002–Aug. 2004
Upper Nemahbin, Center, near Delafield	430400088254900	June 1993–Oct. 1995, Feb. –Sept. 2005

(a) Wisconsin Valley Improvement Co. currently collects stage data for this site.

In most lakes, water samples were collected at two depths - near the surface and near the bottom. Chemical analyses of water samples were performed using standard analytical methods by either the USGS National Water Quality Laboratory (Wershaw and others, 1987; Fishman and Friedman, 1989; Fishman, 1993) or the Wisconsin State Laboratory of Hygiene (Wisconsin State Laboratory of Hygiene, 1993). Analyses for dissolved constituents were performed on samples that were filtered in the field through a 0.45-mm (micrometer) pore-size filter. Total or total recoverable constituents were determined by analyzing unfiltered water samples. Preservation and shipment of samples followed standard protocols established by the

laboratories. Water-quality data were archived in the Water Quality Data Base (QWDATA) of the National Water Information System (NWIS). Additional descriptive information about water-quality data is available in the data report: "Water Resources Data – Wisconsin, 2007". NWIS parameter codes and minimum laboratory reporting levels for chemical constituents are given in table 2. The parameter code for turbidity has changed from 00076 to 63676 because the method of testing has changed.

Records of lake stage are considered complete when one or more manual or automatic measurements were obtained per day. Partial records of lake stage result when measurements were less frequent than daily. A complete description of manual or automatic measurements of lake stage is described by Rantz and others (1982).

Table 2. Parameter identification numbers and laboratory reporting levels (LRL) for chemical parameters commonly measured in lakes, and analyzed at the National Water Quality Laboratory (NWQL) or the Wisconsin State Laboratory of Hygiene (WSLH)

				(NWQL)				(WSLH)	
				Standard Analysis		Low-Level Analysis			
Parameter Name	Units	CAS Number[1]	Parameter Code[2]	LRL	Lab Code	LRL	Lab Code	LRL	Test Code
Calcium, diss. (Ca)	mg/L	7440-70-2	00915	0.020	659	0.002	1895	0.02	I230IUD
Magnesium, diss. (Mg)	mg/L	7439-95-4	00925	0.004	663	0.001	1897	0.02	I390IUD
Sodium, diss. (Na)	mg/L	7440-23-5	00930	0.09	675	0.025	1898	0.09	I80IUD
Potassium, diss. (K)	mg/L	7440-09-7	00935	0.24	54	0.01	833	0.3	I540IUD
Sulfate, diss. (SO4)	mg/L	14808-79-8	00945	0.31	1572	0.01	1263	1.0	I600DLD
Chloride, diss. (Cl)	mg/L	16887-00-6	00940	0.29	1571	0.01	1259	0.1	I240ELD
Fluoride, diss. (F)	mg/L	16984-48-8	00950	0.100	31	0.01	1260	0.03	I330FLD
Iron, diss. (Fe)	(µg/L)	7439-89-6	01046	10	645	3	1896	10	I370IUD
Manganese, diss. (Mn)	(µg/L)	7439-96-5	01056	2.2	648	1	1793	0.4	I400IUD
Silica, diss. (SiO2)	mg/L	7631-86-9	00955	0.1	56	0.02	1899	0.008	I560LLD
Nitrogen, NO2+NO3, diss.	mg/L	--	00631	0.05	1975	0.005	1979	0.01	I460MLD
Nitrogen, ammonia, diss.	mg/L	7664-41-7	00608	0.02	1976	0.002	1980	0.013	I440NLD
Nitrogen, amm.+org., total[4]	mg/L	17778-88-0	00625	0.100	1985	--	--	0.2	I470BLT
Nitrogen, amm.+org.,diss.	mg/L	--	00623	--	--	--	--	--	I470DLD
Nitrogen, total[5]	mg/L	--	00600	--	--	--	--	--	--
Nitrogen, dissolved	mg/L	--	00602	--	--	--	--	--	--
Phosphorus, total	mg/L	7723-14-0	00665	0.05	1984	0.004	2333	0.005	I520PLT
Phosphorus, ortho, diss.	mg/L	14265-44-2	00671	0.01	1262	0.002	1978	0.002	I530CLD
Chlorophyll a, phytoplankton	(µg/L)	479-61-8	70953	0.1	586	--	--	--	--
Chlorophyll a, phytoplankton	(µg/L)	479-61-8	32210	--	--	--	--	0.26	I250UNF

1: CAS (Chemical Abstracting Services) number = unique identification for each constituent

2: Parameter Code - unique number for storage of data in database

3: Calculated as difference between total ammonia + organic nitrogen and ammonia nitrogen

4: Also known as Total Kjeldahl Nitrogen (TKN)

5: Calculated as sum of TKN + Nitrogen as (NO2+NO3)

EXPLANATION OF PHYSICAL AND CHEMICAL CHARACTERISTICS OF LAKES

Following are brief, generalized explanations of some of the common measurements of water quality and some of the physical processes occurring in lakes that influence these measures of water quality. More detailed explanations of water-quality data and lake processes are given by Wetzel (1983), Hem (1985), and Shaw and others (1993).

Water Temperature and Thermal Stratification

Water temperature in lakes is important because of its role in stratification and because of the temperature dependence of many chemical reactions and life processes of aquatic organisms. The extent of thermal stratification in lakes depends on the interaction between the lake's shape, water clarity, solar heating, and wind-driven mixing. Complete mixing of the lake is usually inhibited by thermal stratification in summer and by ice cover in winter. Thermal stratification affects water quality and the distribution of organisms in the lake. Summer thermal stratification can occur in any lake, but in Wisconsin it commonly occurs in lakes deeper than about 6 m (Shaw and others, 1993).

The density of water increases with decreasing temperature down to a temperature of 4°C, then decreases with decreasing temperature between 4°C and the freezing point of water (0°C). For a brief period in the spring after the ice is out, water temperature is usually uniform through the entire water column and wind action causes the lake to mix completely. This process is known as "spring turnover." As the lake absorbs the sun's energy, the surface water becomes warmer and its density decreases, making it more resistant to complete mixing. The difference in density caused by different water temperatures can prevent warm and cold water from mixing. In most lakes, therefore, a density "barrier" forms between the warmer surface water (epilimnion) and the underlying colder water (hypolimnion). This barrier is often marked by a sharp temperature gradient known as the "thermocline (metalimnion)." During the stratified summer period, these three distinct layers of lake water are often present. As the temperature difference between surface and deep water increases, this "stratified" condition stabilizes and can persist until surface temperatures decrease in the fall, which decreases the stability of the stratification. The mixing of the lake water in the fall is known as "fall turnover."

Thermal stratification may also occur under ice cover in the winter. In the winter, the coldest water (near 0°C) under the ice at the surface of the lake is less dense than water deeper in the lake with warmer temperatures.

Specific Conductance

Specific conductance is a measure of the ability of water to conduct an electrical current and is an indicator of the concentration of dissolved solids in the water. Because conductance is temperature related, reported values are normalized at 25°C and are termed specific conductance. As the concentration of dissolved minerals increases, specific conductance increases. During winter and summer thermal stratification, concentrations of dissolved constituents near the lake bottom increase due to the decomposition of materials settling from the epilimnion, or release of dissolved materials (such as iron, manganese, and phosphorus) from the bottom sediments during anoxic periods. Therefore, differences in specific conductance with depth indicate differences in concentrations of dissolved solids.

Water Clarity

Water clarity, or transparency, is commonly measured using a Secchi disc. The range of depths within which photosynthetic activity occurs depends largely on depth of light penetration, which is influenced by water clarity. A Secchi disc, most commonly an 20-cm.-diameter disc with alternating black-and-white quadrants, is lowered to a depth at which it is no longer visible. This depth is referred to as the Secchi depth. Clarity can be reduced by algae, zooplankton, water color, and suspended sediment. Algae are often the most dominant influence on clarity in lakes and, therefore, Secchi depth is usually correlated with the algal abundance. Secchi depths are generally the least during summer when algal populations are largest.

pH

The pH is a measure of the acidity of the water. It is defined as the negative logarithm of hydrogen-ion concentration and varies over a 14-unit log scale, with a pH of 7 being neutral. Values less than 7 indicate acidic conditions; the lower the value, the stronger the acidity. Values greater than 7 indicate alkaline conditions. The pH of water is influenced in part by photosynthesis and respiration of planktonic algae and aquatic plants. It is important because it affects the solubility of many chemical constituents, and because aquatic organisms have

limited pH tolerances. Planktonic algae and aquatic plants produce oxygen and consume carbon dioxide as they photosynthesize during daytime; they consume oxygen and produce carbon dioxide when they respire at night. Carbon dioxide combines with the water molecule to form carbonic acid; therefore respiration causes a decrease in pH at night and photosynthesis during the day causes an increase in pH. The result is a daily cycle in pH. Because phytoplankton are usually concentrated in the near-surface water, changes in pH in the epilimnion are more extreme than in the hypolimnion, where less photosynthesis usually occurs.

Lakes having good fish populations and productivity generally have a pH between 6.7 and 8.2. Values of pH greater than 8.5 have been shown to cause the release of phosphorus from lake sediments (James and Barko, 1991).

Dissolved Oxygen

Dissolved oxygen is one of the most critical factors affecting a lake ecosystem because it is essential to most aquatic organisms, and it is involved in many chemical reactions. Very low dissolved oxygen concentrations can control some types of chemical reactions. The solubility of oxygen in water is inversely related to temperature–that is, oxygen solubility decreases as water temperature increases. This relation is important because at warmer temperatures the metabolic rate of organisms increases but less oxygen is available for respiration. The primary sources of dissolved oxygen are from the air and from photosynthesis. The minimum dissolved oxygen concentration specified in national water-quality criteria for early life stages of warmwater aquatic life is 5.0 mg/L (U.S. Environmental Protection Agency, 1986).

In early summer, if thermal stratification develops, the metalimnion restricts the surface supply of dissolved oxygen to the hypolimnion. The hypolimnion can become isolated from the atmosphere. Thus, as summer progresses, the dissolved oxygen concentration can decrease in response to decomposition of dead algae that settle from the epilimnion and in response to the biological and chemical oxygen demand of the sediments. The oxygen demand from these processes may completely deplete the oxygen (anoxia) in the water near the lake bottom. The oxygen depletion then progresses upward but usually is confined to the hypolimnion.

Anoxia in the hypolimnion is common in stratified eutrophic (nutrient-rich) lakes in Wisconsin. Complete anoxia, however, is often not detected because of meter constraints. During anoxic conditions, many aquatic organisms cannot survive, but many other species

(primarily bacteria) actually function only in such conditions. Therefore, a shift from oxic to anoxic conditions produces a rapid and dramatic change in the biological community and chemical environment. Anoxia also can cause release of phosphorus from the bottom sediments. This phosphorus then mixes throughout the water column during spring and fall turnover.

Phosphorus

Phosphorus is one of the essential nutrients for plant growth. High phosphorus concentrations can cause dense algal populations (blooms) and can therefore be a major cause of eutrophication in lakes. When phosphorus concentrations exceed 0.025 mg/L at the time of spring overturn in lakes and reservoirs, these water bodies may occasionally experience excess or nuisance growth of algae or other aquatic plants (U.S. Environmental Protection Agency, 1986). In many regions of the country, including the upper Midwest, other nutrients, particularly nitrogen, tend to be in abundant supply. Phosphorus is often the nutrient in shortest supply, therefore limiting or controlling plant growth. About 90 percent of the lakes in Wisconsin are limited by phosphorus (Shaw and others, 1993). In water, dissolved orthophosphate is that part of total phosphorus that is most readily available for use by algae.

Internal phosphorus recycling occurs in many lakes. Phosphorus used by algae, aquatic plants, fish, and zooplankton is stored within these organisms. As these organisms die and decompose, this phosphorus is returned to the lake water and sediments. Anoxia in the hypolimnion makes phosphorus more soluble, adding further to the release of phosphorus from the falling particles and the lake sediments. During spring and fall turnover the phosphorus, which was released from the bottom sediments into the hypolimnion during anoxia, is mixed throughout the lake. The phosphorus is then available for algal growth. These phenomena are part of the internal-recycling processes of lakes.

Nitrogen

Nitrogen, like phosphorus, is an essential nutrient for plant and algal growth. Usually in Wisconsin lakes, nitrogen is in abundant supply from the atmosphere and other sources. If phosphorus is abundant relative to algal needs, nitrogen can become the limiting nutrient. In that case, algal blooms are more likely to be triggered by increases in nitrogen than by increases in phosphorus. Some bluegreen algal species can fix nitrogen from the atmosphere

(Wetzel, 1983). Therefore, in situations where other types of algae are excluded because of a shortage of nitrogen, the nitrogen-fixing bluegreen algae have a competitive advantage and may be present in abundance.

Lakes with a nitrogen to phosphorus ratio larger than 15 to 1 near the surface may generally be considered phosphorus limited; a ratio from 10 to 1 to 15 to 1 indicates a transition situation; and a ratio smaller than 10 to 1 generally indicates nitrogen limitation. Total nitrogen is the sum of ammonia, organic nitrogen, and nitrate-plus-nitrite nitrogen. The near-surface concentration is commonly used to compute the total nitrogen to phosphorus ratio because most algal species grow near the lake surface.

Chlorophyll *a*

Chlorophyll *a* is a photosynthetic pigment found in algae (Wetzel, 1983) and other green plants. Its concentration, therefore, is commonly used as a measure of the density of the algal population in a lake. Chlorophyll *a* concentrations are generally highest during summer when algal populations are highest. Moderate populations of desirable algae are important in the food chain; however, excessive populations or algal blooms are undesirable. Algal blooms can cause taste and odor problems, and limit light penetration needed to support growth of submerged aquatic plants. Certain species of bluegreen algae can produce toxins (Rapavich and others, 1987).

CLASSIFICATION OF LAKES

Two methods are commonly used to classify and evaluate Wisconsin lakes according to their water quality or trophic state: Lillie and Mason's (1983) water-quality index and Carlson's (1977) trophic state index (TSI). In previous USGS data reports, a modification of Carlson's trophic state index for Wisconsin lakes by Lillie and others (1993) had been used; however, this approach did not properly classify oligotrophic and highly euthrophic lakes and, therefore, was discontinued.

Lillie and Mason's (1983) water quality indices for Wisconsin lakes were developed based on summer measurements of total phosphorus and chlorophyll *a* concentrations, and Secchi depth from a random set of lakes in Wisconsin. These data were used to classify the lakes's water quality as shown below:

Water-quality index	Total phosphorus range (mg/L)	Chlorophyll *a* range (µg/L)	Water clarity range (Secchi depth, in meters)
"Excellent"	<0.001	<1.0	>6.0
"Very good"	.001-.009	1.0-4.9	3.0-6.0
"Good"	.010-.029	5.0-9.9	2.0-2.9
"Fair"	.030-.049	10.0-14.9	1.5-1.9
"Poor"	.050-.149	15.0-30.0	1.0-1.4
"Very poor"	>.150	>30.0	<1.0

Carlson's (1977) TSI approach to lake classification assigns numerical ranges to the three trophic conditions generally used to describe the wide range of lake water-quality conditions. Oligotrophic lakes are typically clear, algal populations and phosphorus concentrations are low, and the deepest water is likely to contain oxygen throughout the year. Mesotrophic lakes typically have a moderate supply of nutrients, experience moderate algal blooms, and have occasional oxygen depletions at depth. Eutrophic lakes are nutrient rich with relatively severe water-quality problems, such as frequent seasonal algal blooms, oxygen depletion in lower parts of the lakes, and poor clarity. When eutrophic conditions are very severe, the lake is considered hypereutrophic.

Carlson's (1977) TSI values are also based on near-surface total phosphorus and chlorophyll *a* concentrations, and Secchi depths. The indices were developed to place these three characteristics on similar scales to allow comparison of different lakes. TSI values based on phosphorus concentrations (TSI_P), Secchi depths (TSI_{SD}), and chlorophyll *a* concentrations (TSI_C) typically are computed only for measurements collected during the open-water period.

TSI values for a lake can be calculated using the following equations (Carlson, 1977):

$TSI_P = 4.15 + 14.42 \times (\ln [\text{total phosphorus concentration} \times 1{,}000])$

$TSI_{SD} = 60.0 - 14.41 \times (\ln \text{Secchi depth})$

$TSI_C = 30.6 + 9.81 \times (\ln \text{chlorophyll } a \text{ concentration})$

where: total phosphorus is in milligrams per liter,
Secchi depth is in meters, and
chlorophyll *a* is in micrograms per liter.

The three main trophic conditions are defined with the following boundaries for total phosphorus, Secchi disc, and chlorophyll *a*:

Trophic level	Trophic State Index	Total phosphorus (mg/L)	Secchi depth (m)	Chlorophyll *a* (µg/L)
Eutrophic				
----------	---------50----------	-------0.024--------	---------2.0---------	---------7.2---------
Mesotrophic				
----------	---------40----------	-------0.012--------	---------4.0---------	---------2.6---------
Oligotrophic				

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LAKE DATA

Remarks codes and symbols used in the following tables:

[<, less than; M, present but not quantified; --, not available; E, estimated]

424840088241600 LAKE BEULAH AT DEEP HOLE NEAR EAST TROY, WI

LOCATION.--Lat 42°48'40", long 88°24'16", in SW ¼ NW ¼ NW ¼ sec.17, T.4 N., R.18 E., Walworth County, Hydrologic Unit 07120006, near East Troy.

SURFACE AREA.--1.30 mi^2.

PERIOD OF RECORD.--August 2007.

REMARKS.--Lake sampled at the deep hole at a depth of 19 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 30, 2007

(Milligrams per liter unless otherwise indicated)

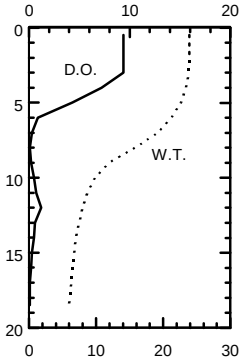
Parameter Code	Parameter Name			August 30		
00065	Lake stage (ft)			--		
32210	Chlorophyll a, phytoplankton (µg/L)			4.05		
00078	Secchi-depth (m)			4.65		
00098	Sampling depth (m)	2.0	8.0	14.0	17.0	18.0
00010	Water temperature (ºC)	23.9	15.8	7.0	6.3	6.1
00400	pH (standard units)	8.3	7.5	7.4	7.4	7.4
00095	Specific conductance (µS/cm)	475	553	558	562	574
00300	Dissolved oxygen	9.4	0.1	0.5	0.1	0.1
00665	Phosphorus, total (as P)	0.015	0.014	0.014	0.018	0.032
00671	Orthophosphate, dissolved (as P)	<0.002	0.004	0.003	0.003	0.005
00631	Nitrite + nitrate, dissolved (as N)	<0.019	0.369	0.957	0.6	<0.019
00608	Ammonia, dissolved (as N)	0.019	0.259	0.038	0.239	0.817
00625	Ammonia + org-N, total, diss. (as N)	0.42	0.64	0.41	0.69	1.4
00600	Total nitrogen	--	1.0	1.4	1.3	--
00900	Hardness (as CaCO3)	230	260	290	280	280
00915	Calcium, dissolved (Ca)	41	51.6	58.7	57.7	58.3
00925	Magnesium, dissolved (Mg)	31.2	32	33.7	33	32.6
00930	Sodium, dissolved (Na)	8.5	8.6	9.1	8.9	8.8
00935	Potassium, dissolved (K)	1.4	1.6	1.7	1.7	1.7
00417	ANC (as CaCO3)	193	223	231	235	243
00940	Chloride, dissolved (Cl)	20.4	21.2	21.5	21.5	21.5
00945	Sulfate, dissolved (SO4)	26.2	28.6	29.2	29	27.1
00955	Silica, dissolved (SiO2)	15.3	10.9	13.2	14.4	17.3
01046	Iron (µg/L)	<100	<100	<100	<100	<100
01056	Manganese (µg/L)	<0.5	30	50	150	490
63675	Turbidity, white light (NTU)	<1.0	--	--	--	--

424840088241600 LAKE BEULAH AT DEEP HOLE NEAR EAST TROY, WI

LAKE-DEPTH PROFILES, AUGUST 30, 2007

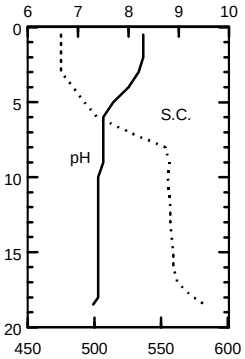
08-30-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

424929088231300 LAKE BEULAH STATION 2 NEAR EAST TROY, WI

LOCATION.--Lat 42°49'29", long 88°23'13", in SE ¼ NE ¼ NE ¼ sec.8, T.4 N., R.18 E., Walworth County, Hydrologic Unit 07120006, near East Troy.

SURFACE AREA.--1.30 mi^2.

PERIOD OF RECORD.--August 2007.

REMARKS.--Lake sampled at a depth of 15 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 30, 2007

(Milligrams per liter unless otherwise indicated)

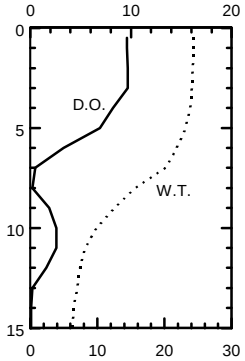
Parameter Code	Parameter Name			August 30		
00065	Lake stage (ft)			--		
32210	Chlorophyll a, phytoplankton (µg/L)			4.87		
00078	Secchi-depth (m)			3.05		
00098	Sampling depth (m)	2.0	8.0	12.0	14.0	15.0
00010	Water temperature (ºC)	24.2	15.6	7.4	6.5	6.3
00400	pH (standard units)	8.4	7.4	7.4	7.4	7.4
00095	Specific conductance (µS/cm)	444	493	496	505	509
00300	Dissolved oxygen	9.7	0.2	1.6	0.1	0.1
00665	Phosphorus, total (as P)	0.013	0.013	0.012	0.022	0.027
00671	Orthophosphate, dissolved (as P)	0.006	0.006	0.007	0.007	0.006
00631	Nitrite + nitrate, dissolved (as N)	<0.019	<0.019	0.133	<0.019	<0.019
00608	Ammonia, dissolved (as N)	<0.015	0.117	0.213	0.429	0.534
00625	Ammonia + org-N, total, diss. (as N)	0.54	0.63	0.67	0.98	1.3
00600	Total nitrogen	--	--	0.8	--	--
00900	Hardness (as CaCO3)	220	240	240	240	250
00915	Calcium, dissolved (Ca)	34.4	41.9	43.7	44.7	45.2
00925	Magnesium, dissolved (Mg)	31.7	32.5	31.9	32.2	32.2
00930	Sodium, dissolved (Na)	10.1	10.4	10.1	10.1	10
00935	Potassium, dissolved (K)	1.7	1.8	1.8	1.8	1.8
00417	ANC (as CaCO3)	171	194	199	202	205
00940	Chloride, dissolved (Cl)	22.9	24.1	23.6	23.9	23.7
00945	Sulfate, dissolved (SO4)	25.3	26.9	26.3	25.7	24.6
00955	Silica, dissolved (SiO2)	13	8.15	8.75	11	12.3
01046	Iron (µg/L)	<100	<100	<100	<100	<100
01056	Manganese (µg/L)	<0.5	20	20	170	250
63675	Turbidity, white light (NTU)	<1.0	--	--	--	--

424929088231300 LAKE BEULAH STATION 2 NEAR EAST TROY, WI

LAKE-DEPTH PROFILES, AUGUST 30, 2007

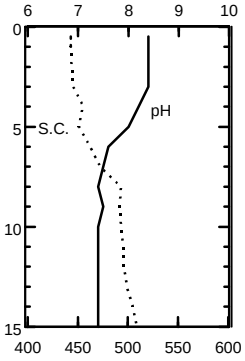
08-30-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

432409088151600 BIG CEDAR LAKE, NORTH SITE, NEAR WEST BEND, WI

LOCATION.--Lat 43°24'09", long 88°15'16", in NE ¼ SW ¼ sec.20, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, near West Bend.

SURFACE AREA.—1.46 mi^2.

PERIOD OF RECORD.--February 2000 to current year.

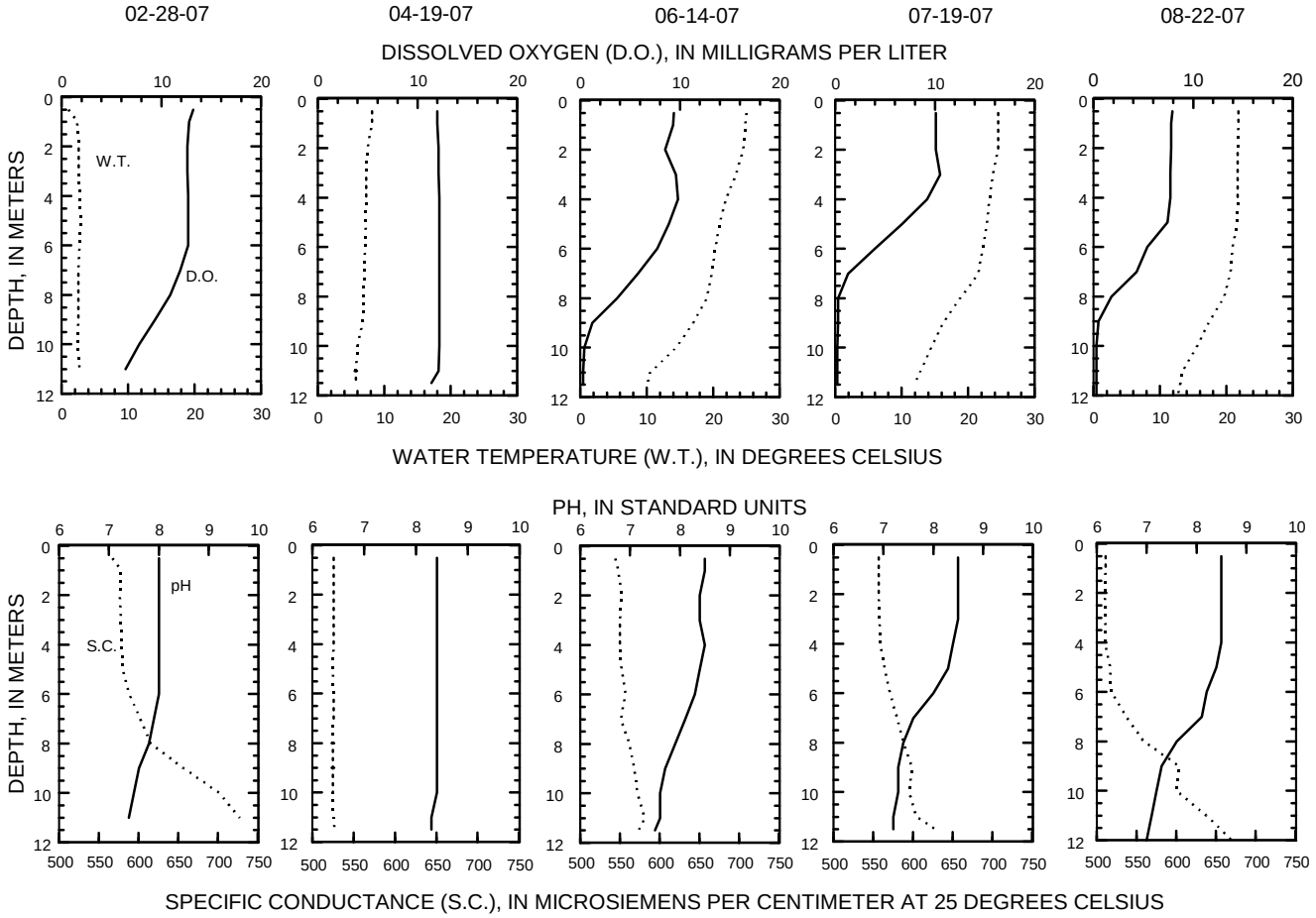
REMARKS.--Lake sampled on north side at a depth of 12 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

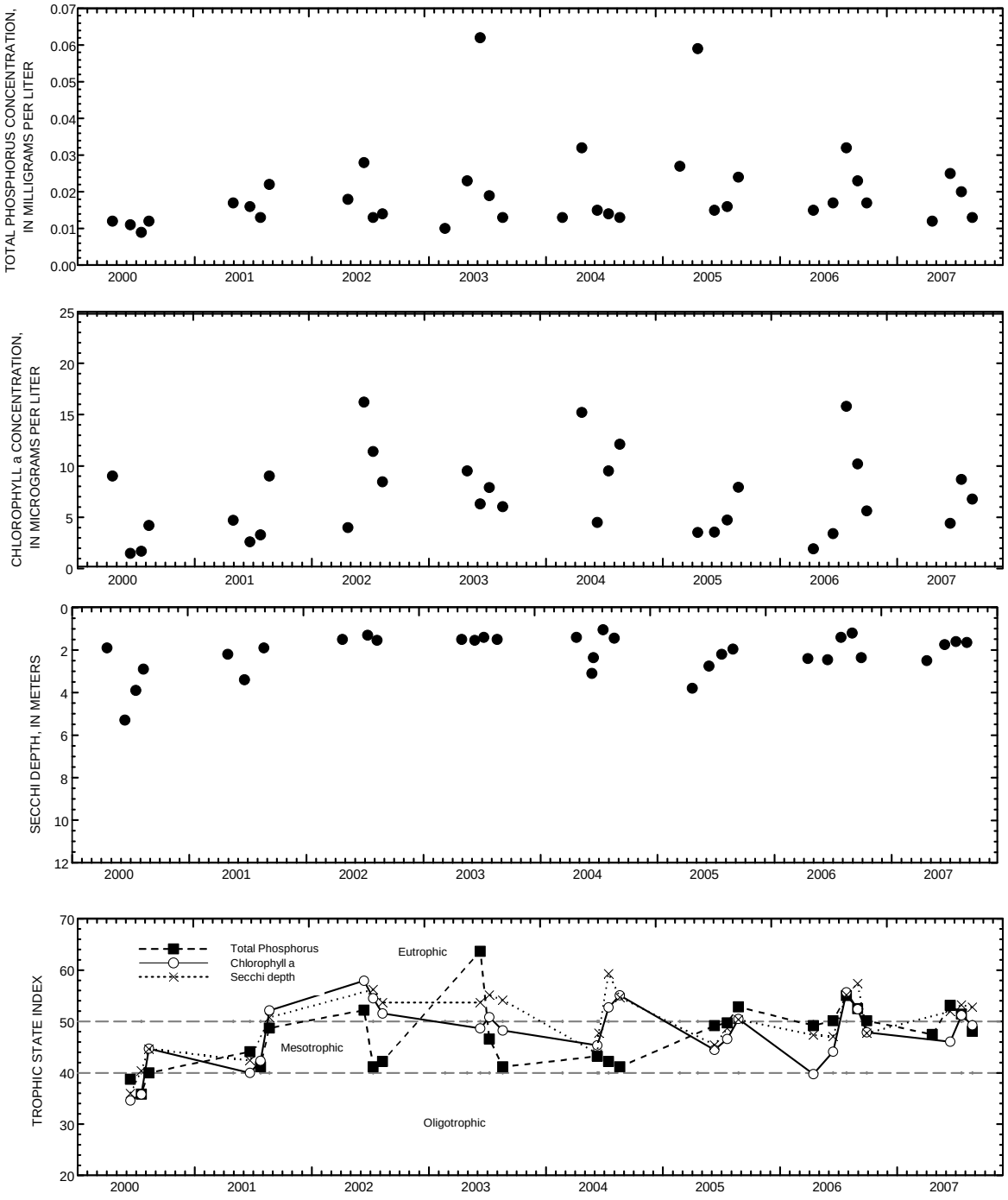
WATER-QUALITY DATA, FEBRUARY 28 TO AUGUST 22, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	February 28		April 19		June 14		July 19		August 22	
32210	Chlorophyll a, phytoplankton (µg/L)	--		--		4.42		8.69		6.76	
00078	Secchi-depth (m)	2.5		--		1.75		1.6		1.65	
00098	Sampling depth (m)	0.5	11.0	0.5	11.5	0.5	11.5	0.5	11.5	0.5	12.0
00010	Water temperature, ºC	1.0	2.7	8.2	5.7	25.0	10.1	24.5	11.8	21.8	12.7
00400	pH (standard units)	8.0	7.4	8.4	8.3	8.5	7.5	8.5	7.2	8.5	7.0
00095	Specific conductance (µS/cm)	567	727	526	527	544	573	557	627	511	670
00300	Dissolved oxygen	13.2	6.4	12.0	11.4	9.4	0.3	10.1	0.2	7.9	0.3
00665	Phosphorus, total (as P)	0.015	0.012	0.012	0.015	0.025	0.019	0.020	0.045	0.013	0.047

432409088151600 BIG CEDAR LAKE, NORTH SITE, NEAR WEST BEND, WI

LAKE-DEPTH PROFILES, FEBRUARY 28 TO AUGUST 22, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Big Cedar Lake, North Site, near West Bend, Wisconsin.

432224088154900 BIG CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

LOCATION.--Lat 43°22'24", long 88°15'49", in NE ¼ SE ¼ sec.31, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, near West Bend.

SURFACE AREA.--1.46 mi^2.

PERIOD OF RECORD.--February 2000 to current year.

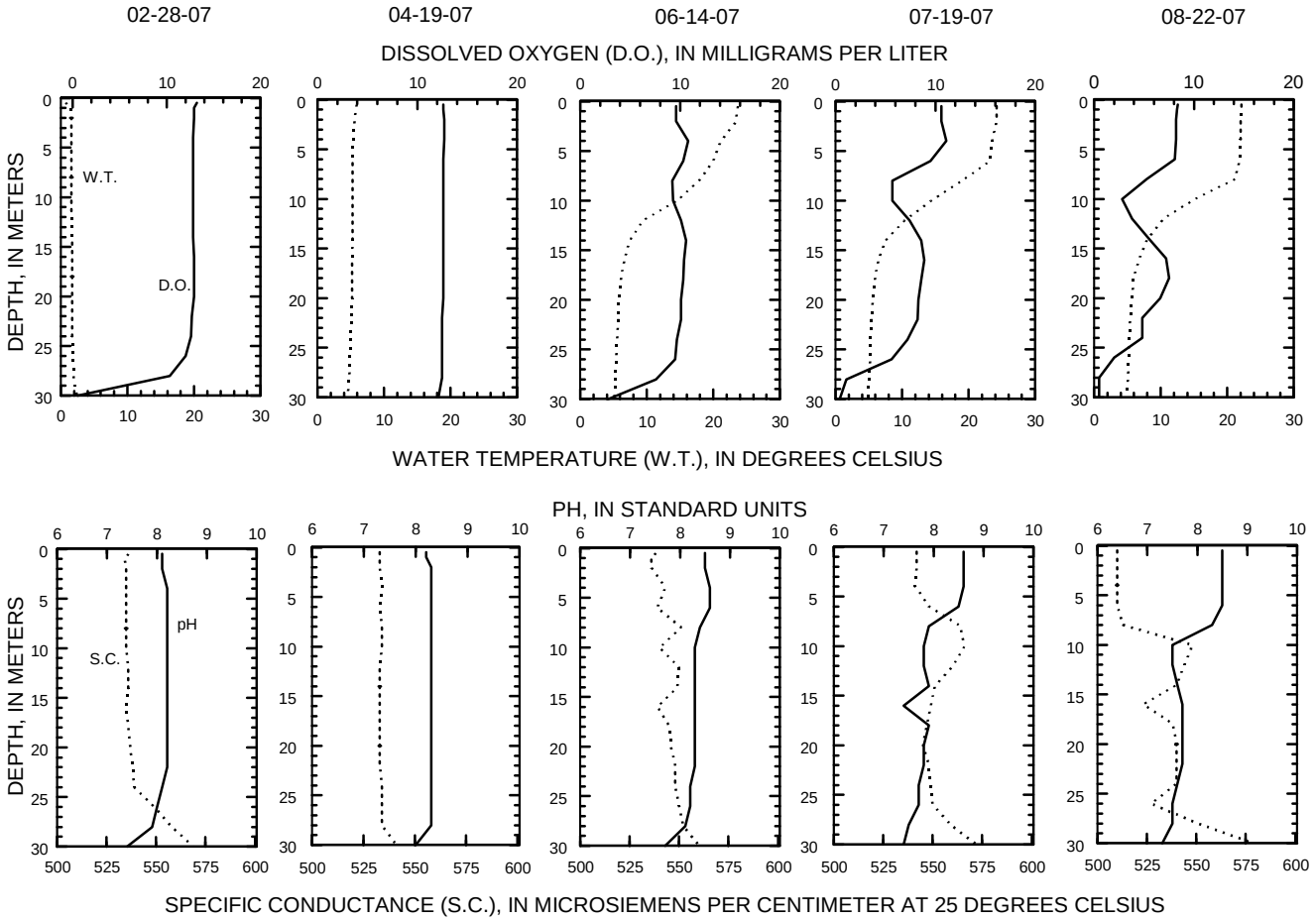
REMARKS.--Lake sampled on south side at deep hole. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

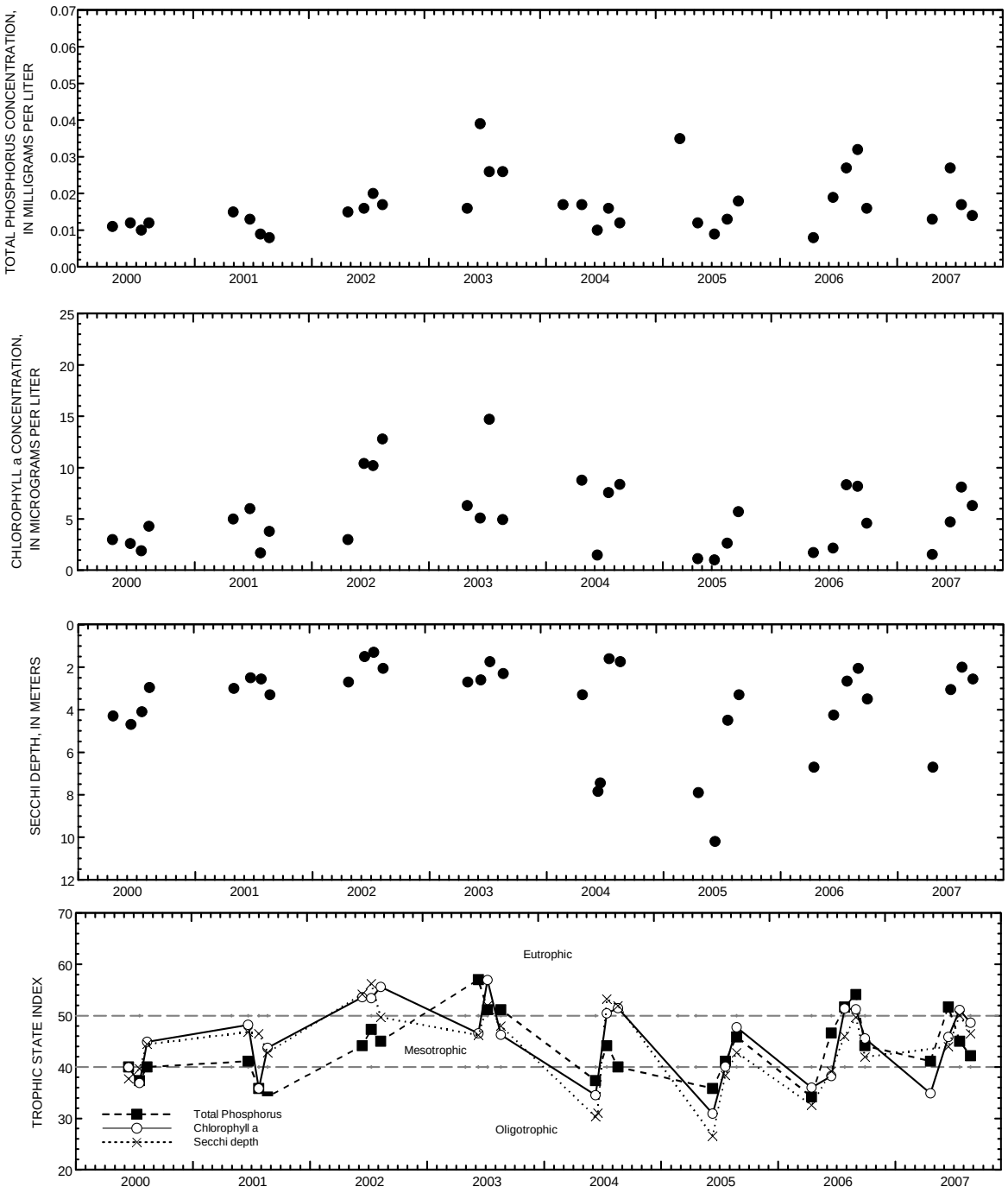
WATER-QUALITY DATA, FEBRUARY 28 TO AUGUST 22, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	February 28		April 19		June 14		July 19		August 22	
32210	Chlorophyll a, phytoplankton (µg/L)	--		1.55		4.72		8.09		6.29	
00078	Secchi-depth (m)	--		6.7		3.0		2.0		2.6	
00098	Sampling depth (m)	0.5	30	0.5	30	0.5	30	0.5	30	0.5	30
00010	Water temperature (ºC)	0.7	2.4	5.9	4.5	23.7	5.1	24.2	4.9	22.1	4.9
00400	pH (standard units)	8.1	7.4	8.2	8	8.5	7.7	8.6	7.4	8.5	7.3
00095	Specific conductance (µS/cm)	536	569	533	541	538	560	542	572	510	579
00300	Dissolved oxygen	13.2	0.5	12.6	12.1	9.6	2.8	10.6	0.4	8.4	0.5
00665	Phosphorus, total (as P)	0.014	0.019	0.013	0.013	0.027	0.061	0.017	0.020	0.014	0.020
00671	Orthophosphate, dissolved (as P)		--	0.005	--	--	--	0.002	--	--	--
00631	Nitrite + nitrate, dissolved (as N)		--	0.273	--	--	--	< 0.019	--	--	--
00608	Ammonia, dissolved (as N)		--	0.053	--	--	--	<0.015	--	--	--
00625	Ammonia + org-N, total, diss. (as N)		--	0.57	--	--	--	--	--	--	--
00600	Total nitrogen		--	0.84	--	--	--	--	--	--	--
00076	Tubidity (NTU)		--	1.3	--	--	--	--	--	--	--
00081	Apparent color (PTU)		--	5	--	--	--	--	--	--	--
00900	Hardness (as CaCO3)		--	230	--	--	--	--	--	--	--
00915	Calcium, dissolved (Ca)		--	35.1	--	--	--	--	--	--	--
00925	Magnesium, dissolved (Mg)		--	33.5	--	--	--	--	--	--	--
00930	Sodium, dissolved (Na)		--	20.9	--	--	--	--	--	--	--
00935	Potassium, dissolved (K)		--	1.7	--	--	--	--	--	--	--
00417	ANC (as CaCO3)		--	187	--	--	--	--	--	--	--
00940	Chloride, dissolved (Cl)		--	48.3	--	--	--	--	--	--	--
00945	Sulfate, dissolved (SO4)		--	21.3	--	--	--	--	--	--	--
00955	Silica, dissolved (SiO2)		--	1.68	--	--	--	--	--	--	--
01046	Iron (µg/L)		--	<100	--	--	--	--	--	--	--
01056	Manganese (µg/L)		--	<0.5	--	--	--	--	--	--	--
70300	Solids, dissolved (at 180 ºC)		--	296	--	--	--	--	--	--	--

432224088154900 BIG CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

LAKE-DEPTH PROFILES, FEBRUARY 28 TO AUGUST 22, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Big Cedar Lake, South Site, near West Bend, Wisconsin.

455011089445600 BLUE LAKE, EAST BASIN, NEAR HAZELHURST, WI

LOCATION.--Lat 45°50'11", long 89°44'56", in NE ¼ SW ¼ sec.28, T.29 N., R.6 E., Oneida County, Hydrologic Unit 07070001, near Hazelhurst.

SURFACE AREA.--0.71 mi^2.

PERIOD OF RECORD.--July 2007

REMARKS.--Lake sampled in the east basin at a depth of 7.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 18, 2007
(Milligrams per liter unless otherwise indicated)

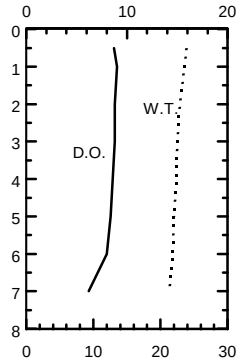
Parameter Code	Parameter Name	July 18	
00078	Secchi-depth (m)	4.0	
00098	Sampling depth (m)	0.5	7.0
00010	Water temperature (ºC)	23.9	21.3
00400	pH (standard units)	8.3	8.0
00095	Specific conductance (µS/cm)	81	83
00300	Dissolved oxygen	8.7	6.2
00665	Phosphorus, total (as P)	0.012	0.013

455011089445600 BLUE LAKE, EAST BASIN, NEAR HAZELHURST, WI

LAKE-DEPTH PROFILES, JULY 18, 2007

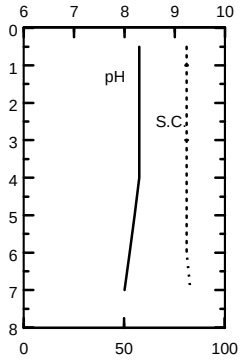
07-18-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

455024089454400 BLUE LAKE, WEST BASIN, NEAR HAZELHURST, WI

LOCATION.--Lat 45°50'24", long 89°45'44", in SW ¼ NE ¼ sec.29, T.39 N., R.6 E., Oneida County, Hydrologic Unit 07070001, near Hazelhurst.

SURFACE AREA.--0.71 mi^2.

PERIOD OF RECORD.--July 2007

REMARKS.--Lake sampled in the west basin at a depth of 13.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 18, 2007
(Milligrams per liter unless otherwise indicated)

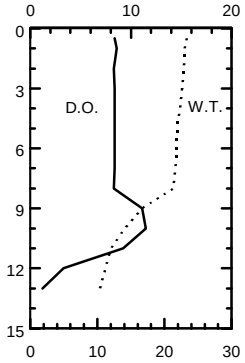
Parameter Code	Parameter Name	July 18	
00078	Secchi-depth (m)	8.7	
00098	Sampling depth (m)	0.5	13.0
00010	Water temperature (ºC)	23.3	10.4
00400	pH (standard units)	8.1	7.4
00095	Specific conductance (µS/cm)	72	80
00300	Dissolved oxygen	8.4	1.2
00665	Phosphorus, total (as P)	<0.005	0.021

455024089454400 BLUE LAKE, WEST BASIN, NEAR HAZELHURST, WI

LAKE-DEPTH PROFILES, JULY 18, 2007

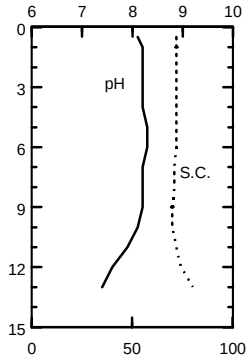
07-18-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

423706088363400 DELAVAN LAKE NEAR DELAVAN, WI

LOCATION.--Lat 42°36′27″, long 88°36′19″ referenced to North American Datum of 1927, in SW ¼ NE ¼ sec.28, T.2 N., R.16 E., Walworth County, WI, Hydrologic Unit 07090001, at Delavan Lake Sanitary District Lift Station No. 2 at Delavan Lake Yacht Club, 1.0 mi southeast of outlet, and 2.7 mi southeast of Delavan.

SURFACE AREA.--3.24 mi^2.

DRAINAGE AREA.--41.4 mi^2, of which 2.30 mi^2 probably is noncontributing.

PERIOD OF RECORD.--October 1983 to current year. October 1983 to September 1985 data published in Water Resources Investigation series report "Water Quality and Hydrology of Delavan Lake in Southeastern Wisconsin" by Stephen J. Field and Marvin D. Duerk.

GAGE.--Water-stage recorder. Datum of gage is 922.92 ft above NGVD of 1929. Prior to Sept. 5, 1989, staff gage at bridge on North Shore Drive at same datum.

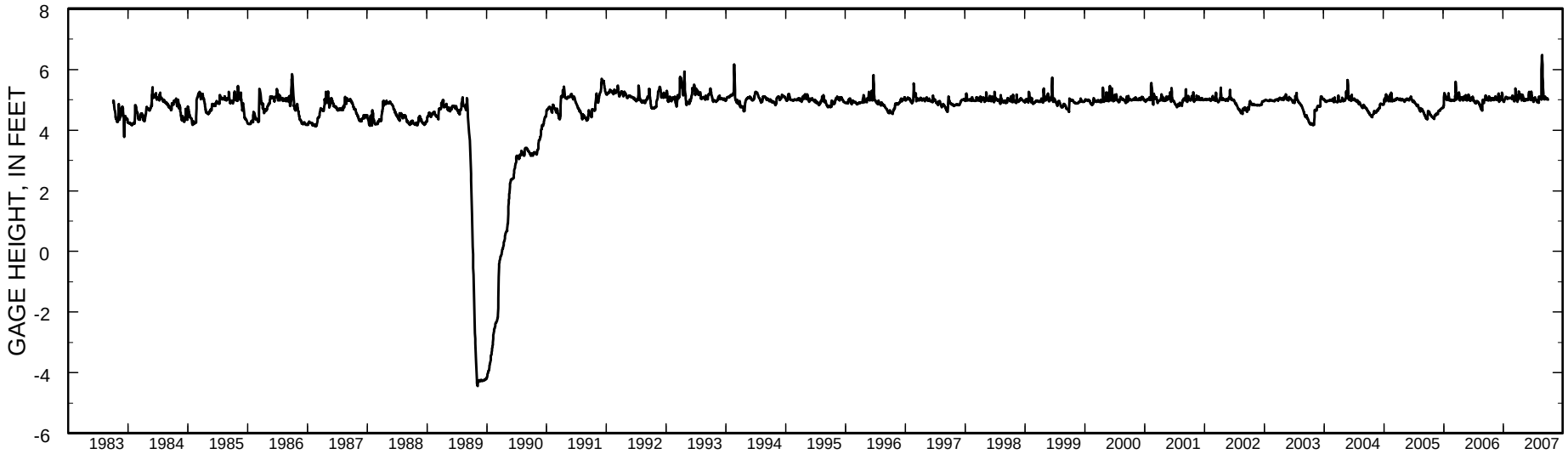
REMARKS.--Lake was ice covered from Jan. 17 to Mar. 25. Lake levels controlled by Delavan Lake Sanitary District.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 6.53 ft, Aug. 27, 2007; minimum daily, -4.44 ft, Nov. 6, 1989 (lake drawn down for lake rehabilitation program).

EXTREMES FOR CURRENT YEAR.--Maximum gage height, 6.53 ft, Aug. 27; minimum, 4.87 ft, Aug. 4.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	4.97	5.00	5.21	4.95	5.07	5.04	5.08	5.07	5.01	4.96	4.96	5.07
2	4.99	5.00	5.15	4.94	5.07	5.02	5.09	5.06	5.06	4.94	4.95	5.05
3	5.08	4.99	5.05	4.93	5.07	5.00	5.20	5.03	5.08	4.93	4.93	5.03
4	5.11	4.99	4.95	4.94	5.06	4.97	5.28	4.98	5.16	5.04	4.91	5.03
5	5.09	4.99	4.94	4.97	5.06	4.96	5.22	4.98	5.26	5.03	5.09	5.02
6	5.06	5.00	4.96	4.98	5.06	4.95	5.12	4.97	5.20	5.03	5.08	5.03
7	5.03	5.00	4.97	4.99	5.06	4.95	5.04	4.96	5.12	5.02	5.11	5.04
8	5.01	5.01	4.98	5.00	5.06	4.96	5.04	4.97	5.13	5.01	5.07	5.04
9	5.01	5.02	4.98	5.02	5.05	4.96	5.05	4.98	5.08	5.02	5.07	5.02
10	5.01	5.05	4.99	5.02	5.05	4.99	5.05	4.99	5.04	5.07	5.05	5.04
11	5.04	5.11	5.00	5.02	5.05	5.08	5.11	5.00	5.01	5.09	5.04	5.11
12	5.02	5.11	5.04	5.04	5.06	5.20	5.17	4.99	5.00	5.07	5.06	5.11
13	4.99	5.11	5.11	5.05	5.07	5.34	5.17	4.98	5.00	5.04	5.05	5.10
14	4.98	5.11	5.12	5.06	5.07	5.38	5.19	4.97	5.00	5.02	5.06	5.08
15	4.98	5.09	5.06	5.10	5.07	5.30	5.18	4.98	4.99	5.00	5.06	5.06
16	4.98	5.05	5.02	5.10	5.07	5.18	5.15	5.02	4.99	4.99	5.05	5.04
17	5.04	5.00	5.00	5.10	5.07	5.09	5.12	5.03	4.99	4.99	5.03	5.02
18	5.06	5.00	5.01	5.09	5.07	5.03	5.08	5.02	5.02	4.99	5.00	5.02
19	5.06	5.01	5.03	5.08	5.07	5.04	5.04	5.01	5.26	5.00	5.27	5.02
20	5.04	5.01	5.04	5.07	5.06	5.04	5.00	5.01	5.21	4.98	6.00	5.02
21	5.01	5.01	5.05	5.07	5.05	5.09	4.98	5.01	5.11	4.96	6.28	5.03
22	5.03	5.01	5.11	5.07	5.04	5.16	4.98	5.01	5.08	4.95	6.28	5.04
23	5.02	5.02	5.24	5.06	5.03	5.10	5.00	5.01	5.02	4.94	6.45	5.03
24	5.00	5.01	5.19	5.05	5.05	5.01	5.01	5.00	5.01	4.93	6.48	5.02
25	5.00	5.00	5.10	5.04	5.13	4.94	5.08	4.99	5.00	4.92	6.35	5.03
26	5.01	4.99	5.03	5.03	5.14	4.94	5.15	5.01	5.00	4.93	6.16	5.04
27	5.05	5.00	5.00	5.03	5.12	4.96	5.17	5.01	5.01	4.98	5.96	5.04
28	5.06	5.06	4.99	5.04	5.06	4.98	5.14	5.00	5.00	4.98	5.76	5.03
29	5.04	5.10	4.97	5.05	---	4.99	5.10	4.99	4.99	4.97	5.58	5.01
30	5.02	5.19	4.96	5.06	---	5.00	5.09	4.99	4.98	4.97	5.40	5.00
31	5.01	---	4.95	5.06	---	5.01	---	5.00	---	4.97	5.21	---
Mean	5.03	5.03	5.04	5.03	5.07	5.05	5.10	5.00	5.06	4.99	5.41	5.04
Max	5.11	5.19	5.24	5.10	5.14	5.38	5.28	5.07	5.26	5.09	6.48	5.11
Min	4.97	4.99	4.94	4.93	5.03	4.94	4.98	4.96	4.98	4.92	4.91	5.00



Stage hydrograph for Delavan Lake, 1983 – 2007.

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

LOCATION.--Lat 42°35'56", long 88°36'50", in SE ¼ SW ¼ sec.28, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

SURFACE AREA.--3.24 mi^2.

DRAINAGE AREA.--41.4 mi^2, of which 2.3 mi^2 is non-contributing.

PERIOD OF RECORD.--October 1983 to current year.

REMARKS.--Lake ice-covered during February measurements. Water-quality analyses done by the U.S. Geological Survey National Water Quality Laboratory. Samples for determination of chlorophyll *a* concentration are collected from the top 0.5 m of the lake and analyzed by the Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, OCTOBER 3, 2006 TO DECEMBER 28, 2006

(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Oct 3	Oct 9	Oct 18	Oct 24	Oct 30	Nov 6	Nov 14	Nov 20		Nov 27	Dec 28
00065	Lake stage (ft)	5.08	5.01	5.06	5.00	5.02	5.00	5.11	5.01		5.00	4.99
32210	Chlorophyll a, phytoplankton (µg/L)	--	--	--	--	--	--	--	6.64		--	--
00078	Secchi-depth (m)	1.7	1.8	2.4	2.7	2.7	4.0	4.3	3.8		5.6	5.9
00098	Sampling depth (m)	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	16.0	0.5	0.5
00010	Water temperature (ºC)	16.0	15.0	12.0	10.0	9.0	7.5	7.0	6.4	6.2	6.0	2.0
00400	pH (standard units)	--	--	--	--	--	--	--	8.3	8.2	--	--
00095	Specific conductance (µS/cm)	--	--	--	--	--	--	--	538	540	--	--
00300	Dissolved oxygen	--	--	--	--	--	--	--	11.2	10.2	--	--
00665	Phosphorus, total (as P)	0.102	0.101	0.088	0.091	0.091	0.078	0.076	0.079	0.084	0.078	0.079
00671	Orthophosphate, dissolved (as P)	--	--	--	--	--	--	--	0.038	0.045	--	--
00631	Nitrite + nitrate, dissolved (as N)	--	--	--	--	--	--	--	0.056	--	--	--
00608	Ammonia, dissolved (as N)	--	--	--	--	--	--	--	0.046	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	--	--	--	--	--	--	--	0.72	--	--	--
00600	Total nitrogen	--	--	--	--	--	--	--	0.78	--	--	--

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

WATER-QUALITY DATA, JANUARY 5 TO MAY 8, 2007

(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Jan 5	Feb 22		Mar 27	Apr 16		May 3	May 8
00065	Lake stage (ft)	4.97	5.04		4.96	5.15		5.03	4.97
32210	Chlorophyll a, phytoplankton (µg/L)	--	3.63		--	3.26		--	--
00078	Secchi-depth (m)	5.9	4.6		2.4	4.3		5.8	5.9
00098	Sampling depth (m)	0.5	0.5	16.0	0.5	0.5	16.0	0.5	0.5
00010	Water temperature (ºC)	2.5	1.6	3.0	5.0	6.7	5.3	11.0	13.5
00400	pH (standard units)	--	8.3	7.5	--	8.6	8.5	--	--
00095	Specific conductance (µS/cm)	--	565	844	--	593	597	--	--
00300	Dissolved oxygen	--	13.8	4.2	--	13.4	12.5	--	--
00665	Phosphorus, total (as P)	0.076	0.069	0.234	0.069	0.038	0.044	0.038	0.026
00671	Orthophosphate, dissolved (as P)	--	0.043	0.183	--	0.014	0.015	--	--
00631	Nitrite + nitrate, dissolved (as N)	--	0.426	--	--	0.417	0.397	--	--
00608	Ammonia, dissolved (as N)	--	0.049	--	--	E 0.019	0.031	--	--
00625	Ammonia + org-N, total, diss. (as N)	--	0.61	--	--	0.53	0.55	--	--
00600	Total nitrogen	--	1	--	--	0.95	0.94	--	--
63676	Tubidity, white light (NTRU)	--	--	--	--	<2.0	<2.0	--	--
00080	Color, filtered (PTU)	--	--	--	--	8	8	--	--
00900	Hardness (as CaCO3)	--	--	--	--	230	230	--	--
00915	Calcium, dissolved (Ca)	--	--	--	--	39.6	40	--	--
00925	Magnesium, dissolved (Mg)	--	--	--	--	32.3	32.4	--	--
00930	Sodium, dissolved (Na)	--	--	--	--	30.3	30.7	--	--
00935	Potassium, dissolved (K)	--	--	--	--	2.8	2.79	--	--
90410	ANC, lab (as CaCO3)	--	--	--	--	186	186	--	--
00940	Chloride, dissolved (Cl)	--	--	--	--	62.4	62.2	--	--
00945	Sulfate, dissolved (SO4)	--	--	--	--	24.5	24.4	--	--
00950	Fluoride, dissolved (F)	--	--	--	--	0.17	0.17	--	--
00955	Silica, dissolved (SiO2)	--	--	--	--	<0.2	E 0.1	--	--
01046	Iron (µg/L)	--	--	--	--	E 4	< 6	--	--
01056	Manganese (µg/L)	--	--	--	--	0.9	2.5	--	--
70300	Solids, dissolved (at 180 ºC)	--	--	--	--	319	321	--	--

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

WATER-QUALITY DATA, MAY 16 TO JULY 30, 2007

(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	May 16				May 30	Jun 6	Jun 12				Jun 28
00065	Lake stage (ft)		5.02			4.99	5.20		5.00			5.00
32210	Chlorophyll a, phytoplankton (µg/L)		1.04			--	--		13.6			--
00078	Secchi-depth (m)		6.6			4.6	4.0		2.5			3.8
00098	Sampling depth (m)	0.5	6.0	12.0	16.0	0.5	0.5	0.5	4.0	13.0	16.0	0.5
00010	Water temperature (ºC)	16.1	15.9	13.0	10.7	19.0	20.0	23.1	20.9	14.9	13.8	24.5
00400	pH (standard units)	8.7	8.7	8.4	7.9	--	--	8.8	8.7	7.8	7.6	--
00095	Specific conductance (µS/cm)	606	606	612	622	--	--	577	581	606	616	--
00300	Dissolved oxygen	11.3	11.2	10.4	5.8	--	--	11.9	10.4	1.1	0.2	--
00665	Phosphorus, total (as P)	0.029	0.028	0.040	0.109	0.034	0.034	0.046	0.039	0.120	0.308	0.032
00671	Orthophosphate, dissolved (as P)	E 0.003	E 0.003	E 0.005	0.056	--	--	E 0.004	<0.006	0.103	0.265	--
00631	Nitrite + nitrate, dissolved (as N)	0.186	--	--	--	--	--	0.113	--	--	--	--
00608	Ammonia, dissolved (as N)	E 0.018	--	--	--	--	--	0.025	--	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	0.6	--	--	--	--	--	0.72	--	--	--	--
00600	Total nitrogen	0.79	--	--	--	--	--	0.83	--	--	--	--

Parameter Code	Parameter Name	Jul 5		Jul 18			Jul 30
00065	Lake stage (ft)	5.03		4.99			4.97
32210	Chlorophyll a, phytoplankton (µg/L)	--		10.8			--
00078	Secchi-depth (m)	2.9		2.3			2.5
00098	Sampling depth (m)	0.5	0.5	6.0	10.0	16.0	0.5
00010	Water temperature (ºC)	25.0	24.6	24.4	17.6	14.2	27.0
00400	pH (standard units)	--	8.6	8.6	7.6	7.3	--
00095	Specific conductance (µS/cm)	--	565	566	598	624	--
00300	Dissolved oxygen	--	9.9	9.7	0.1	0.1	--
00665	Phosphorus, total (as P)	0.028	0.027	0.031	0.149	0.500	0.022
00671	Orthophosphate, dissolved (as P)	--	<0.006	<0.006	0.051	0.355	--
00631	Nitrite + nitrate, dissolved (as N)	--	E 0.008	--	--	--	--
00608	Ammonia, dissolved (as N)	--	0.033	--	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	--	0.66	--	--	--	--

423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

WATER-QUALITY DATA, AUGUST 13 TO SEPTEMBER 26, 2007

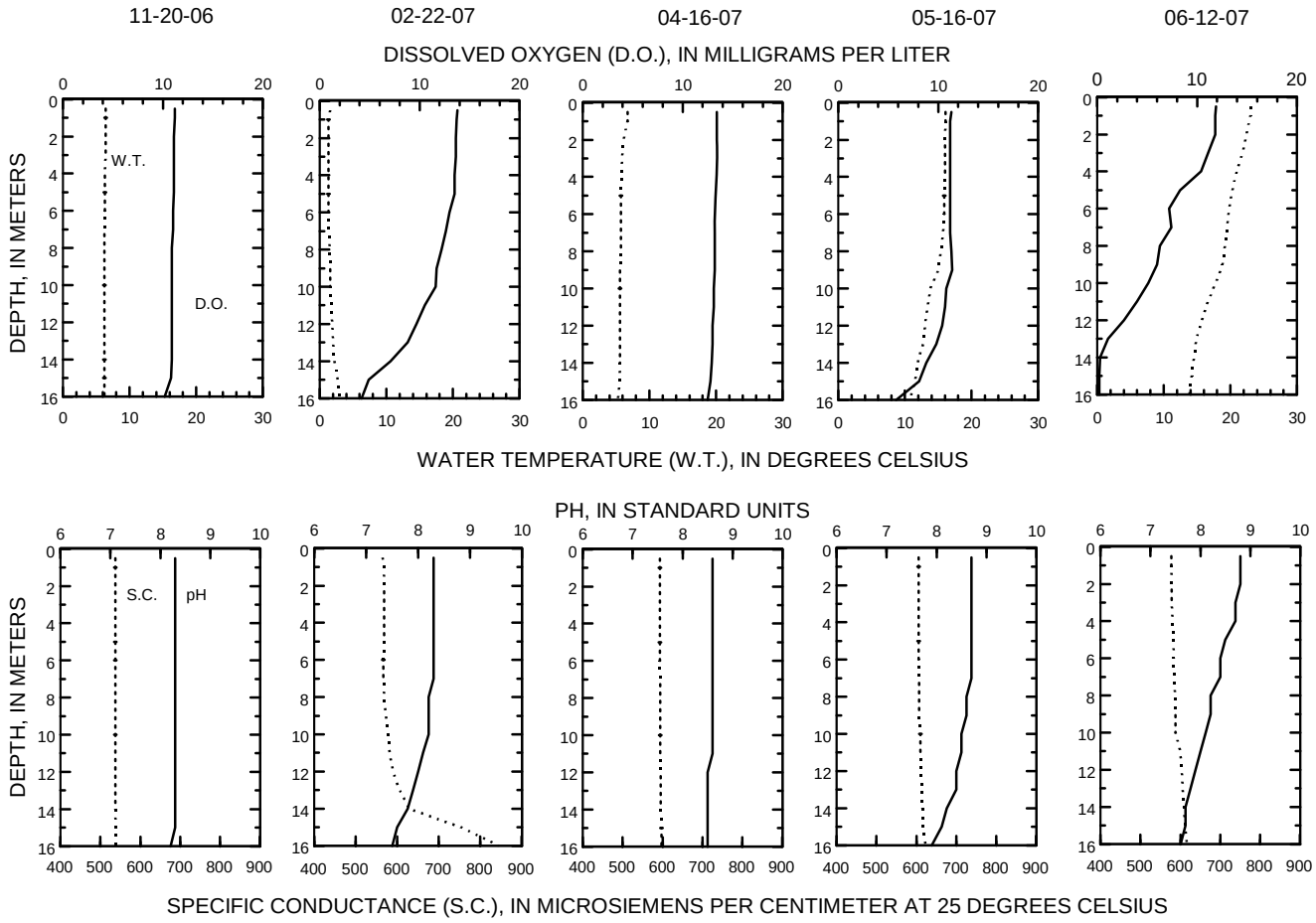
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Aug 13								Aug 22	
00065	Lake stage (ft)				5.05					6.28	
32210	Chlorophyll a, phytoplankton (µg/L)				9.81					--	
00078	Secchi-depth (m)				2.0					1.9	
00098	Sampling depth (m)	0.5	5.0	7.0	9.0	12.0	14.0	15.0	16.0	0.5	9.0
00010	Water temperature (ºC)	26.7	26.4	24.2	22.0	16.0	14.7	14.4	14.1	24.2	20.7
00400	pH (standard units)	8.6	8.5	7.8	7.7	7.4	7.3	7.2	7.2	8.4	7.6
00095	Specific conductance (µS/cm)	549	551	569	580	610	621	630	638	538	429
00300	Dissolved oxygen	8.9	7.4	0.2	0.2	0.2	0.1	0.1	0.1	8.6	2.6
00665	Phosphorus, total (as P)	0.030	0.027	0.028	0.041	0.267	0.450	0.530	0.590	0.035	0.107
00671	Orthophosphate, dissolved (as P)	E 0.003	E 0.005	--	--	0.188	--	--	0.538	--	--
00631	Nitrite + nitrate, dissolved (as N)	<0.016	--	--	--	--	--	--	--	--	--
00608	Ammonia, dissolved (as N)	E 0.019	--	--	--	--	--	--	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	0.68	--	--	--	--	--	--	--	--	--

Parameter Code	Parameter Name		Aug 30		Sept 5	Sept 12		Sept 19			Sept 20	Sept 26
00065	Lake stage (ft)		5.40		5.02	5.11		5.02			--	--
32210	Chlorophyll a, phytoplankton (µg/L)		--		--	--		22.8			--	--
00078	Secchi-depth (m)		2.5		1.2	1.2		1.7			1.7	2.4
00098	Sampling depth (m)	0.5	9.5	16.0	0.5	0.5	0.5	11.0	14.0	16.0	0.5	0.5
00010	Water temperature (ºC)	24.4	20.9	14.2	25.0	21.0	20.4	19.1	14.9	14.4	20.0	20.0
00400	pH (standard units)	8.7	7.6	7.2	--	--	8.5	8.0	7.1	7.1	--	--
00095	Specific conductance (µS/cm)	523	520	644	--	--	523	546	634	642	--	--
00300	Dissolved oxygen	11.3	0.4	0.1	--	--	9.8	4.4	0.3	0.3	--	--
00665	Phosphorus, total (as P)	0.041	0.079	0.610	0.046	0.040	0.056	0.146	0.510	0.600	0.050	0.050
00671	Orthophosphate, dissolved (as P)	--	--	--	--	--	E 0.003	0.046	0.468	0.573	--	--
00631	Nitrite + nitrate, dissolved (as N)	--	--	--	--	--	<0.016	--	--	--	--	--
00608	Ammonia, dissolved (as N)	--	--	--	--	--	<0.020	--	--	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	--	--	--	--	--	0.68	--	--	--	--	--

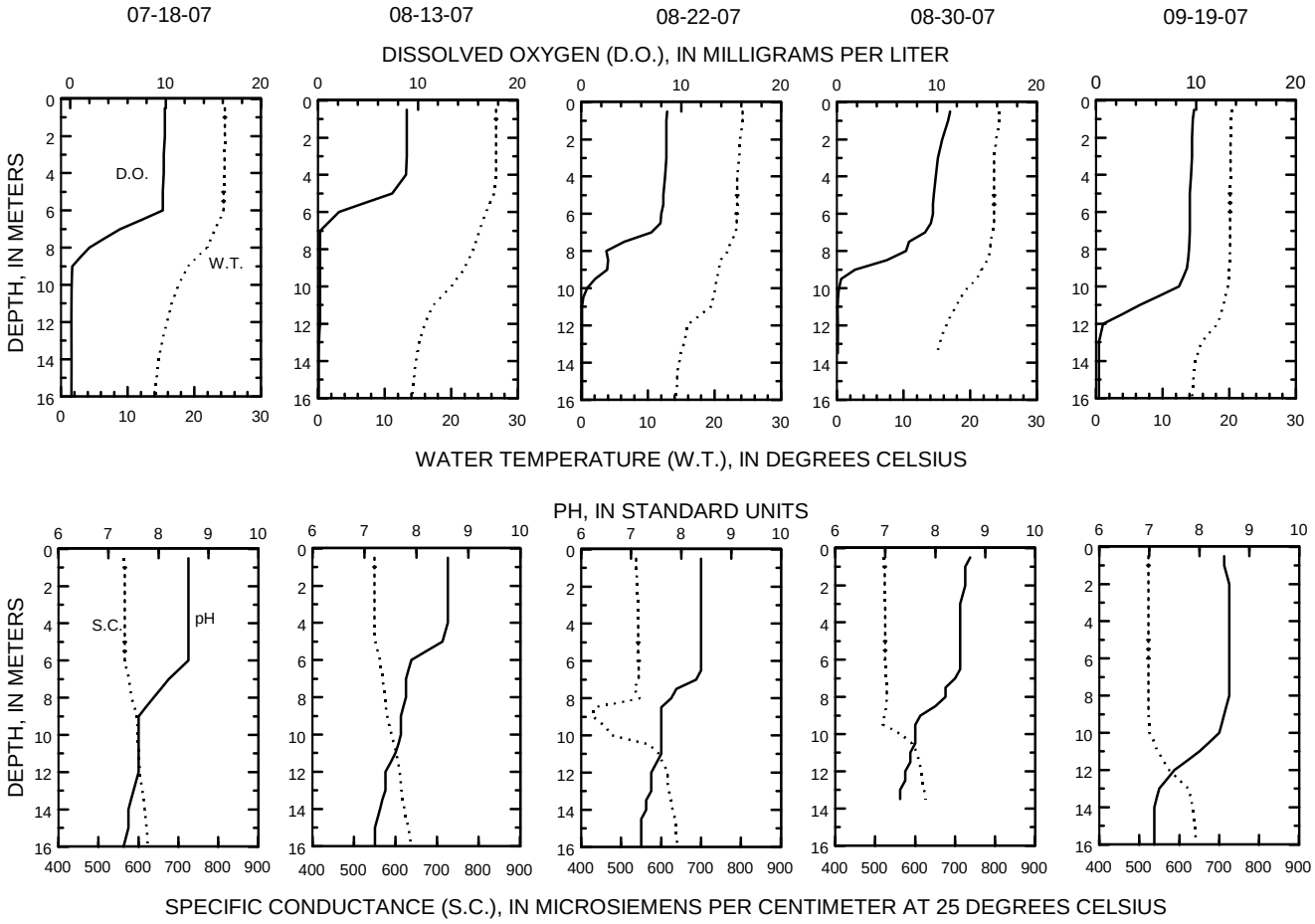
423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

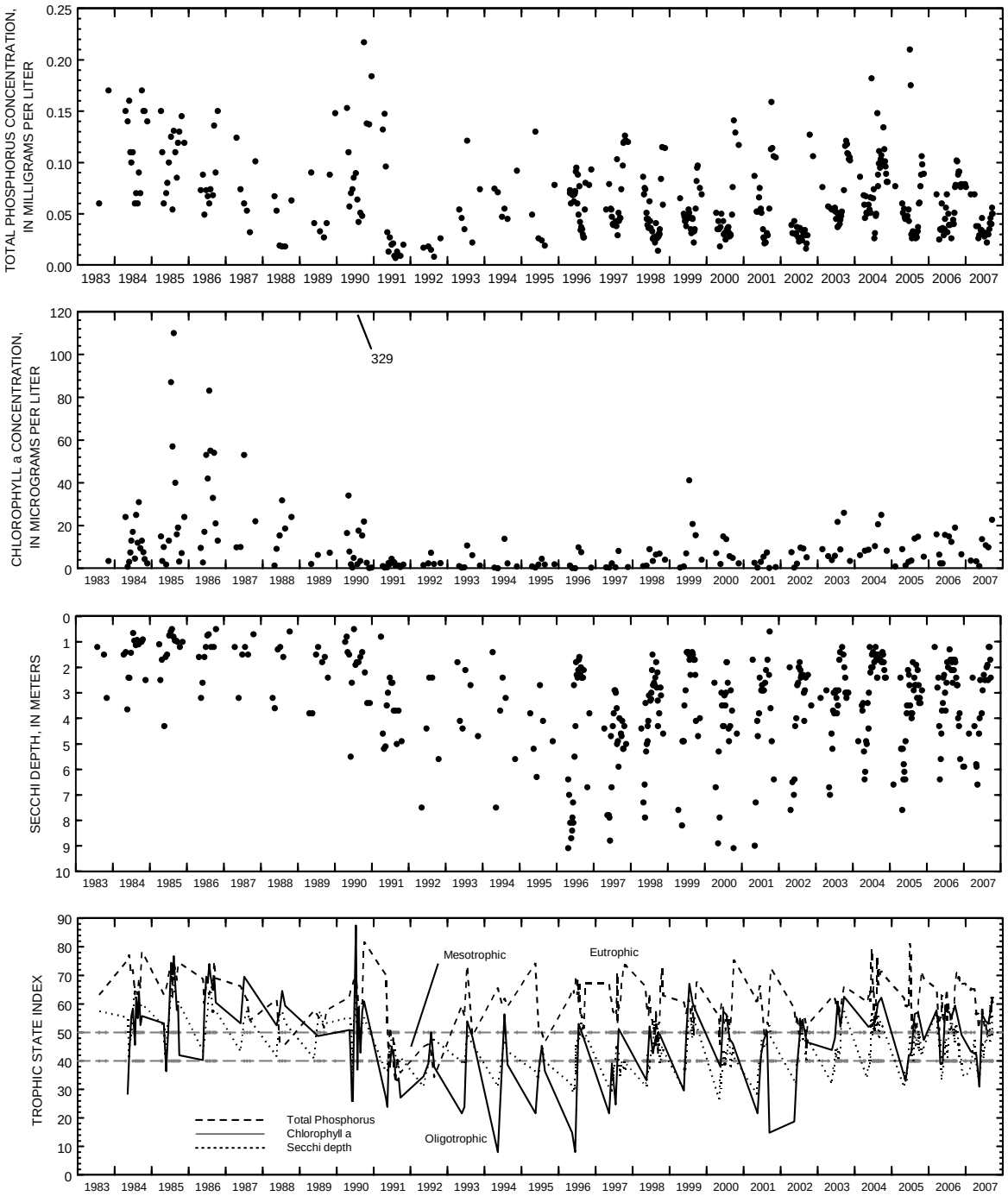
LAKE-DEPTH PROFILES, NOVEMBER 20, 2006 TO JUNE 12, 2007



423556088365001 DELAVAN LAKE AT CENTER NEAR DELAVAN LAKE, WI

LAKE-DEPTH PROFILES, JULY 18 TO SEPTEMBER 19, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Delavan Lake, at Center, near Delavan, Wisconsin.

423659088354401 DELAVAN LAKE, AT NORTH END, NEAR LAKE LAWN, WI

LOCATION.--Lat 42°36'59", long 88°35'44", in NW ¼ SW ¼ sec.22, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

SURFACE AREA--3.24 mi^2.

DRAINAGE AREA.--41.4 mi^2, of which 2.3 mi^2 is non-contributing.

PERIOD OF RECORD.--October 1983 to current year.

Parameter Code	Parameter Name	June 12	July 18	August 13	September 19
00078	Secchi-depth (m)	2.3	2.5	1.8	1.9

423526088380101 DELAVAN LAKE, AT SW END, NEAR DELAVAN LAKE, WI

LOCATION.--Lat 42°35'26", long 88°38'01", in SE ¼ NW ¼ sec.32, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, 2.6 mi southeast of Delavan.

SURFACE AREA--3.24 mi^2.

DRAINAGE AREA.--41.4 mi^2, of which 2.3 mi^2 is non-contributing.

PERIOD OF RECORD.--October 1983 to current year.

Parameter Code	Parameter Name	June 12	July 18	August 13	September 19
00078	Secchi-depth (m)	2.4	2.0	1.8	1.7

423534088373700 DELAVAN LAKE (SITE A4) NEAR DELAVAN LAKE, WI

LOCATION.--Lat 42°35'34", long 88°37'37", referenced to North American Datum, in SW ¼ NE ¼ sec.32, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, near southwest end of lake.

SURFACE AREA--3.24 mi^2.

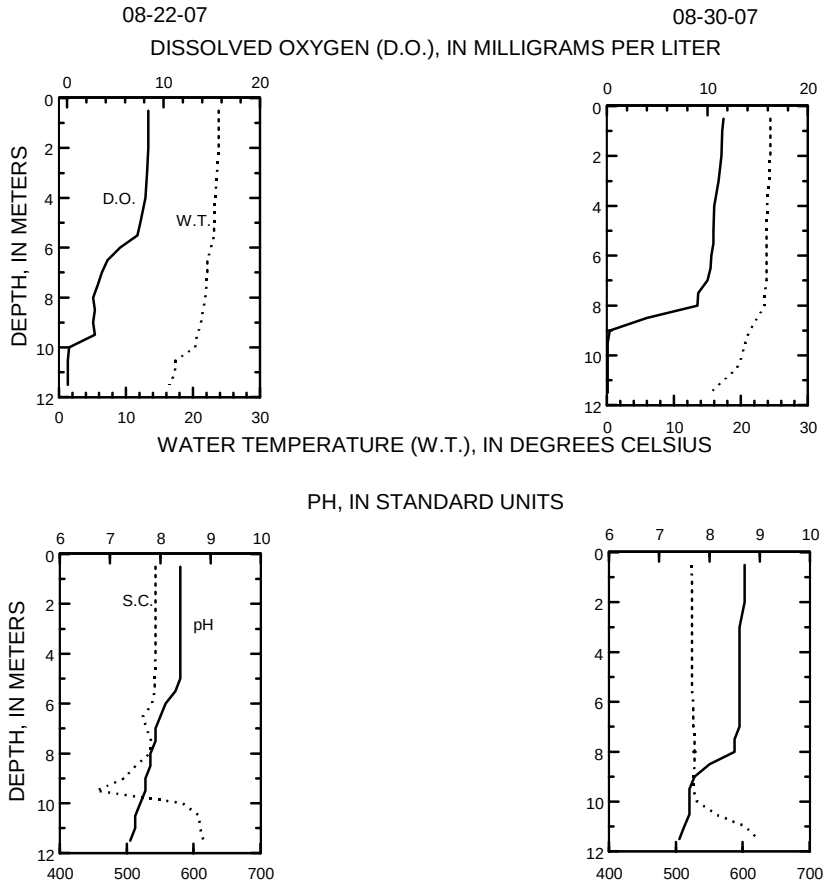
DRAINAGE AREA.--41.4 mi^2, of which 2.3 mi^2 is non-contributing.

PERIOD OF RECORD.--August 2007.

WATER-QUALITY DATA, AUGUST 22 AND 30, 2007

(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	August 22	August 30
00065	Gage height (ft)	6.28	5.40
00078	Secchi-depth (m)	2.0	2.6



423642088355300 DELAVAN LAKE (SITE A5) NEAR DELAVAN LAKE, WI

LOCATION.--Lat 42°36'42", long 88°35'53", referenced to North American Datum, in SW ¼ SW ¼ sec.22, T.2 N., R.16 E., Walworth County, Hydrologic Unit 07090001, near northeast end of lake.

SURFACE AREA--3.24 mi^2.

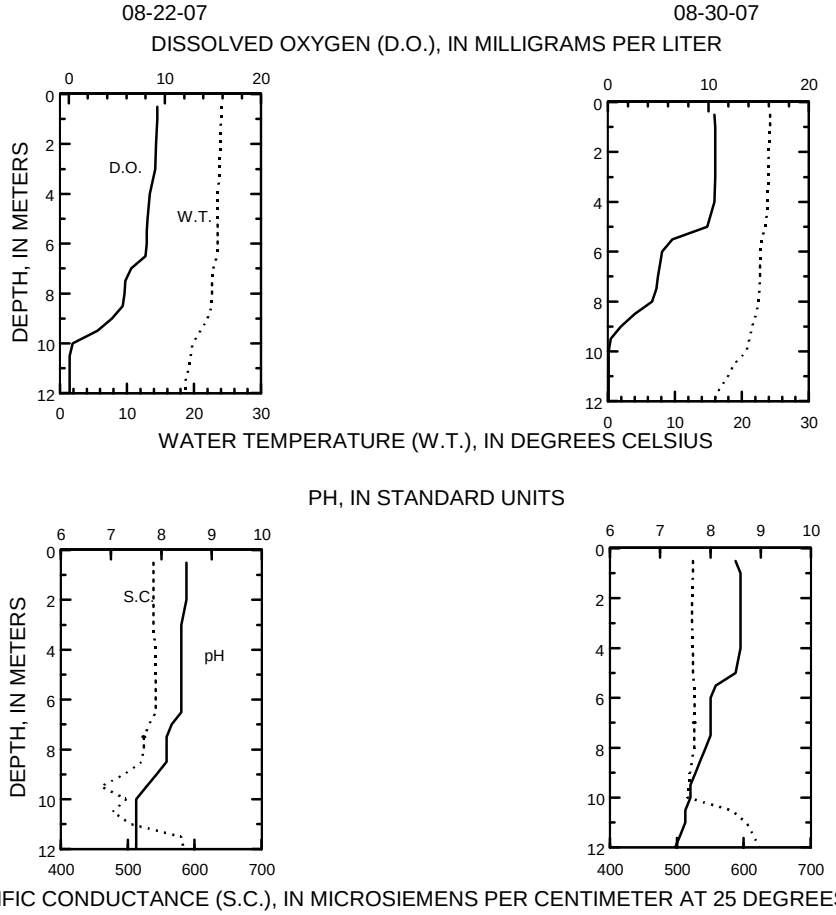
DRAINAGE AREA.--41.4 mi^2, of which 2.3 mi^2 is non-contributing.

PERIOD OF RECORD.--August 2007.

WATER-QUALITY DATA, AUGUST 22 AND 30, 2007

(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	August 22	August 30
00065	Gage height (ft)	6.28	5.40
00078	Secchi-depth (m)	1.7	2.3



05404500 DEVILS LAKE NEAR BARABOO, WI

LOCATION.--Lat 43°25′35″, long 89°43′40″ referenced to North American Datum of 1927, in SW ¼ SE ¼ sec.13, T.11 N., R.6 E., Sauk County, WI, Hydrologic Unit 07070004, in Devils Lake State Park, 3.5 mi south of Baraboo.

SURFACE AREA.--0.56 mi^2.

DRAINAGE AREA.--4.79 mi^2.

PERIOD OF RECORD.--June 1922 to August 1930, June to August 1932, June 1934 to September 1981 (fragmentary). October 1981 to September 1984, data unpublished in district files. October 1984 to current year.

REVISED RECORDS.--WDR WI-78-1: Drainage area.

GAGE.--Water-stage recorder installed July 17, 1991. Datum of gage is 955.00 ft, above NGVD of 1929.

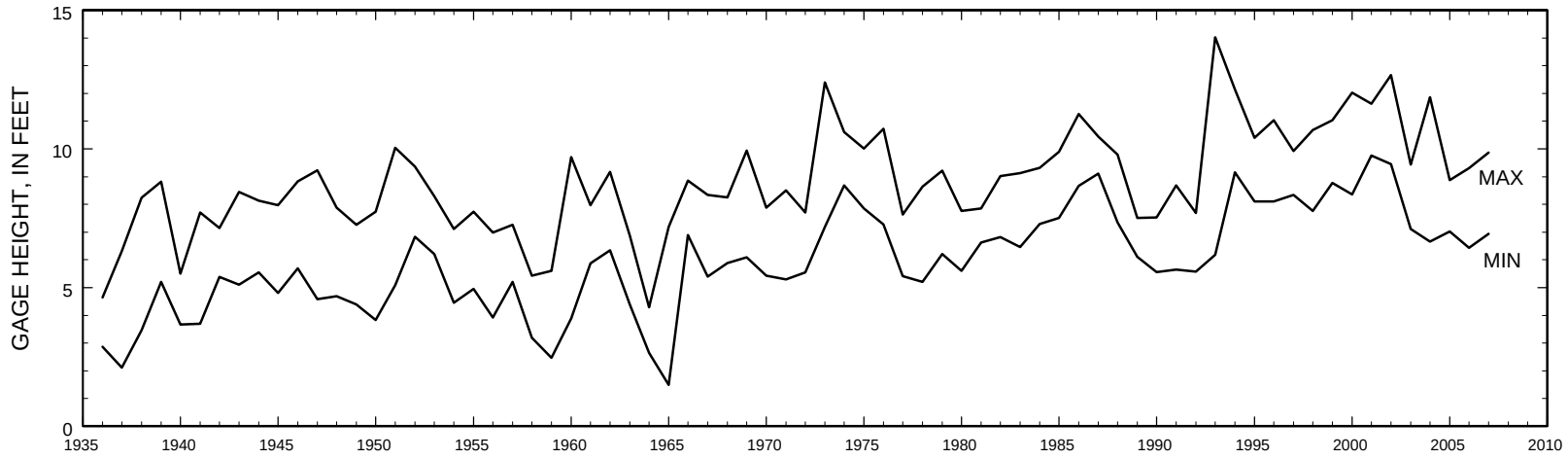
REMARKS.--Lake has no surface outlet. Water removed from lake by siphon October 1-16 and September 6-22, 24-30. Water was diverted into lake (during runoff events) during the year.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 14.13 ft, July 18, 1993; minimum observed, 1.49 ft Feb. 8, 1965.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 9.89 ft, May 3 and 5; minimum recorded, 6.93 ft, Nov. 25-27.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	7.56	7.11	7.13	7.36	7.39	7.52	9.21	9.86	9.37	8.64	7.94	9.50
2	7.54	7.09	7.13	7.37	7.39	7.55	9.25	9.85	9.37	8.60	7.91	9.47
3	7.51	7.08	7.12	7.38	7.39	7.55	9.38	9.85	9.36	8.58	7.88	9.45
4	7.52	7.07	7.12	7.38	7.39	7.55	9.44	9.84	9.35	8.59	7.88	9.43
5	7.50	7.06	7.12	7.38	7.38	7.55	9.45	9.83	9.32	8.57	8.05	9.39
6	7.46	7.06	7.10	7.39	7.38	7.55	9.46	9.81	9.30	8.55	8.06	9.35
7	7.43	7.05	7.09	7.39	7.38	7.55	9.46	9.79	9.28	8.53	8.18	9.38
8	7.39	7.05	7.09	7.39	7.37	7.55	9.46	9.77	9.25	8.50	8.17	9.36
9	7.35	7.04	7.08	7.38	7.37	7.55	9.46	9.76	9.22	8.48	8.15	9.32
10	7.33	7.04	7.08	7.38	7.37	7.56	9.46	9.75	9.20	8.46	8.13	9.31
11	7.32	7.05	7.08	7.38	7.37	7.56	9.53	9.72	9.17	8.42	8.12	9.30
12	7.29	7.05	7.09	7.38	7.37	7.57	9.56	9.70	9.15	8.37	8.13	9.26
13	7.26	7.04	7.10	7.37	7.36	7.63	9.56	9.71	9.12	8.34	8.12	9.22
14	7.23	7.04	7.10	7.37	7.36	7.76	9.57	9.70	9.09	8.31	8.13	9.16
15	7.22	7.03	7.10	7.39	7.35	7.86	9.59	9.70	9.06	8.27	8.13	9.11
16	7.20	7.02	7.10	7.39	7.35	7.93	9.61	9.70	9.04	8.25	8.12	9.07
17	7.21	7.01	7.09	7.39	7.35	7.97	9.61	9.68	9.01	8.23	8.09	9.03
18	7.21	7.00	7.09	7.38	7.34	8.01	9.62	9.66	9.00	8.21	8.12	9.00
19	7.20	6.99	7.09	7.38	7.34	8.05	9.62	9.63	8.98	8.19	8.86	8.97
20	7.19	6.99	7.09	7.38	7.34	8.11	9.62	9.61	8.95	8.15	9.17	8.94
21	7.19	6.98	7.13	7.40	7.33	8.18	9.63	9.58	8.92	8.13	9.35	8.92
22	7.23	6.97	7.19	7.40	7.33	8.38	9.63	9.56	8.91	8.10	9.45	8.91
23	7.22	6.96	7.25	7.40	7.33	8.49	9.65	9.54	8.87	8.07	9.50	8.88
24	7.20	6.95	7.26	7.40	7.41	8.56	9.67	9.53	8.85	8.05	9.52	8.85
25	7.20	6.95	7.27	7.40	7.48	8.76	9.73	9.51	8.82	8.03	9.53	8.83
26	7.19	6.94	7.28	7.40	7.50	8.87	9.76	9.49	8.80	8.01	9.52	8.81
27	7.18	6.97	7.28	7.39	7.51	8.93	9.81	9.47	8.77	8.05	9.53	8.77
28	7.16	7.05	7.29	7.40	7.50	8.98	9.82	9.45	8.74	8.02	9.55	8.73
29	7.15	7.11	7.29	7.40	---	9.01	9.83	9.43	8.70	8.00	9.55	8.70
30	7.15	7.13	7.30	7.40	---	9.03	9.84	9.40	8.67	7.98	9.54	8.67
31	7.12	---	7.34	7.40	---	9.07	---	9.38	---	7.96	9.52	---
Mean	7.29	7.03	7.16	7.39	7.38	8.07	9.58	9.65	9.05	8.28	8.64	9.10
Max	7.56	7.13	7.34	7.40	7.51	9.07	9.84	9.86	9.37	8.64	9.55	9.50
Min	7.12	6.94	7.08	7.36	7.33	7.52	9.21	9.38	8.67	7.96	7.88	8.67



Annual minimum and maximum water levels for Devils Lake, 1936-2007.

423525088260400 GENEVA LAKE AT LAKE GENEVA, WI

LOCATION.--Lat 42°35′25″, long 88°26′04″ referenced to North American Datum of 1927, in SE ¼ NW ¼ sec.36, T.2 N., R.17 E., Walworth County, WI, Hydrologic Unit 07120006, at Geneva Lake dam at Center Street at Lake Geneva.

SURFACE AREA.--8.22 mi^2.

DRAINAGE AREA.--28.7 mi^2.

PERIOD OF RECORD.--October 1997 to August 2002, December 2002 to current year.

GAGE.--Water-stage recorder. Datum of gage is 862.08 ft above NGVD of 1929. Intermittent staff-gage readings January to March.

REMARKS.--Gage-height telemeter at station.

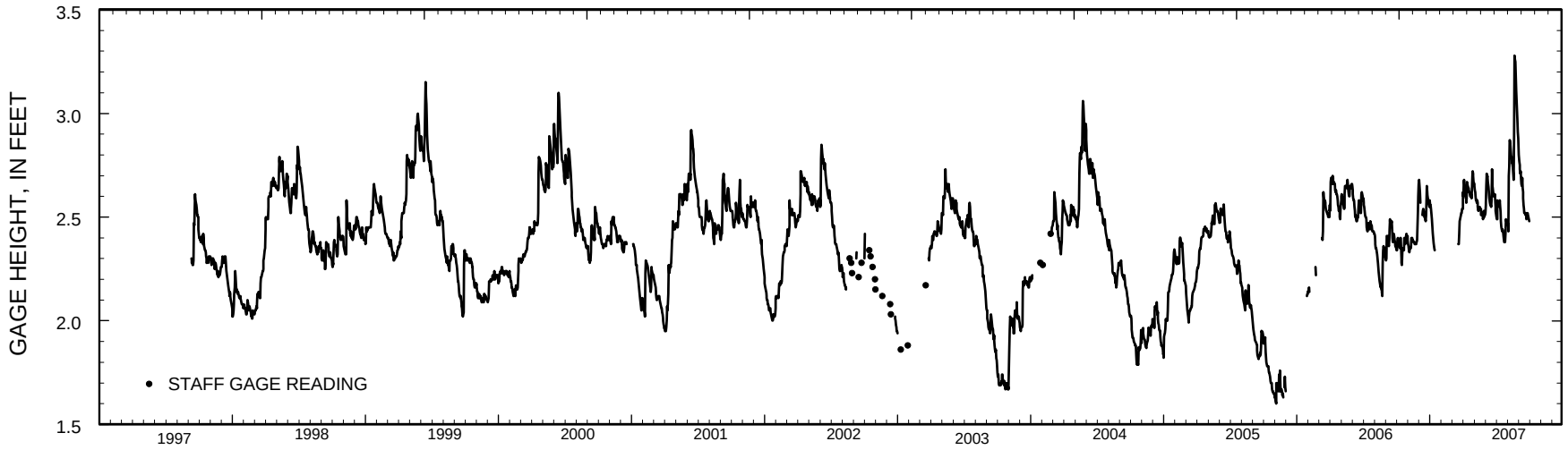
EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 3.35 ft, Aug. 20, 2007; minimum gage height, 1.44 ft, Nov. 5, 2005 (affected by wind).

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 3.35 ft, Aug. 20; minimum gage height, 1.82 ft, Feb. 22, but may have been lower during period of missing record.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.34	2.39	2.66	2.58	---	---	2.62	2.66	2.52	2.50	2.47	2.81
2	2.34	2.37	2.68	2.56	---	---	2.60	2.65	2.56	2.49	2.47	2.79
3	2.39	2.36	2.65	2.56	---	---	2.67	2.63	2.57	2.49	2.45	2.77
4	2.40	2.34	2.62	2.54	---	---	2.68	2.62	2.65	2.58	2.43	2.75
5	2.39	2.33	e2.57	2.51	---	---	2.65	2.60	2.71	2.57	2.70	2.73
6	2.39	2.34	---	2.49	---	---	2.63	2.58	2.69	2.56	2.74	2.71
7	2.38	2.34	---	2.47	---	e2.12	2.61	2.58	2.70	2.56	2.87	2.72
8	2.38	2.35	---	2.46	---	---	2.59	2.57	2.67	2.56	2.87	2.68
9	2.36	2.35	---	2.43	---	---	2.59	2.58	2.65	2.55	2.85	2.66
10	2.35	2.35	---	2.40	---	---	2.57	2.57	2.63	2.58	2.82	2.65
11	2.40	2.40	e2.51	2.39	---	---	2.59	2.55	2.61	2.55	2.79	2.69
12	2.40	2.40	2.53	2.37	---	---	2.67	2.54	2.59	2.52	2.79	2.64
13	2.36	2.40	2.54	2.35	---	e2.23	2.66	2.53	2.58	2.49	2.76	2.62
14	2.30	2.39	2.53	2.34	---	---	2.65	2.55	2.57	2.48	2.77	2.59
15	2.28	2.39	2.52	---	---	---	2.64	2.54	2.56	2.45	2.75	2.56
16	2.27	2.39	2.51	---	---	---	2.64	2.55	2.56	2.44	2.74	2.54
17	2.33	2.38	2.50	e2.30	---	---	2.62	2.54	2.55	2.43	2.71	2.52
18	2.34	2.38	2.50	---	---	---	2.62	2.54	2.58	2.44	2.68	2.52
19	2.35	2.38	2.49	---	---	2.37	2.61	2.54	2.73	2.43	2.89	2.52
20	2.35	2.37	2.48	---	---	2.37	2.61	2.51	2.69	2.41	3.28	2.51
21	2.34	2.37	2.51	---	---	2.42	2.60	2.51	2.65	2.39	3.26	2.52
22	2.40	2.37	2.59	---	e1.82	2.48	2.60	2.51	2.64	2.39	3.25	2.50
23	2.39	2.37	2.65	---	---	2.49	2.61	2.52	2.62	2.38	3.25	2.49
24	2.38	2.37	2.62	---	---	2.50	2.59	2.52	2.60	2.38	3.20	2.50
25	2.37	2.38	2.61	---	---	2.51	2.64	2.49	2.60	2.38	3.14	2.51
26	2.38	2.38	2.60	---	---	2.52	2.70	2.51	2.60	2.42	3.07	2.52
27	2.41	2.39	2.58	---	---	2.52	2.72	2.53	2.61	2.49	3.01	2.51
28	2.42	2.46	2.57	---	---	2.52	2.71	2.50	2.57	2.48	2.97	2.50
29	2.40	2.53	2.56	---	---	2.54	2.70	2.50	2.55	2.48	2.91	2.49
30	2.41	2.60	2.55	---	---	2.54	2.67	2.51	2.53	2.47	2.88	2.48
31	2.41	---	2.56	---	---	2.54	---	2.51	---	2.47	2.85	---
Mean	2.37	2.39	---	---	---	---	2.64	2.55	2.61	2.48	2.86	2.60
Max	2.42	2.60	---	---	---	---	2.72	2.66	2.73	2.58	3.28	2.81
Min	2.27	2.33	---	---	---	---	2.57	2.49	2.52	2.38	2.43	2.48



Stage hydrograph for Geneva Lake, 1997-2007.

423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

LOCATION.--Lat 42°33'29", long 88°32'33", in NE ¼ SE ¼ sec.12, T.1 N., R.16 E., Walworth County, Hydrologic Unit 07120006, 1.3 mi south of Williams Bay.

SURFACE AREA.--8.22 mi^2.

DRAINAGE AREA.--28.7 mi^2.

PERIOD OF RECORD.--April 1997 to current year.

REMARKS.--Lake sampled at deep hole at a depth of about 43 m. Water-quality analyses done by Wisconsin State Laboratory of Hygiene. Samples for determination of chlorophyll *a* concentration are collected from the top 0.5 m of the lake.

WATER-QUALITY DATA, NOVEMBER 20, 2006 TO JUNE 12, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	November 20		April 16				June 12			
00065	Lake stage (ft)	2.35		2.64				2.59			
32210	Chlorophyll a, phytoplankton (µg/L)	1.75		3.49				1.00			
00078	Secchi-depth (m)	8.4		6.6				6.9			
00098	Sampling depth (m)	0.5	42.0	0.5	43.0	0.5	8.0	20.0	32.0	37.0	42.0
00010	Water temperature (ºC)	7.9	7.8	3.9	3.8	21.6	18.6	8.7	7.2	6.8	6.6
00400	pH (standard units)	8.2	8.2	8.5	8.5	8.6	8.6	8.6	8.4	8.3	8.2
00095	Specific conductance (µS/cm)	507	507	536	540	522	525	534	540	541	543
00300	Dissolved oxygen	10.0	9.6	14.6	14.0	9.4	9.9	11.1	9.8	9.1	8.0
00665	Phosphorus, total (as P)	0.014	0.014	0.008	0.009	<0.005	0.008	0.008	0.008	0.006	0.010
00671	Orthophosphate, dissolved (as P)	0.006	--	0.003	0.005	<0.002	--	--	--	--	--
00631	Nitrite + nitrate, dissolved (as N)	0.059	--	0.038	0.038	<0.019	--	--	--	--	--
00608	Ammonia, dissolved (as N)	<0.015	--	<0.015	<0.015	<0.015	--	--	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	0.32	--	0.29	0.35	0.95	--	--	--	--	--
00600	Total nitrogen	0.38	--	0.33	0.39	--	--	--	--	--	--
00076	Turbidity (NTU)	--	--	0.9	1.5	--	--	--	--	--	--
00081	Apparent color (PTU)	--	--	5	< 5	--	--	--	--	--	--
00900	Hardness (as CaCO3)	--	--	220	230	--	--	--	--	--	--
00915	Calcium, dissolved (Ca)	--	--	33.5	34.6	--	--	--	--	--	--
00925	Magnesium, dissolved (Mg)	--	--	34	34.8	--	--	--	--	--	--
00930	Sodium, dissolved (Na)	--	--	18.8	19.5	--	--	--	--	--	--
00935	Potassium, dissolved (K)	--	--	1.9	1.9	--	--	--	--	--	--
00417	ANC (as CaCO3)	--	--	185	184	--	--	--	--	--	--
00940	Chloride, dissolved (Cl)	--	--	41.3	41.1	--	--	--	--	--	--
00945	Sulfate, dissolved (SO4)	--	--	30.3	30.1	--	--	--	--	--	--
00955	Silica, dissolved (SiO2)	--	--	1.66	1.71	--	--	--	--	--	--
01046	Iron (µg/L)	--	--	< 100	< 100	--	--	--	--	--	--
01056	Manganese (µg/L)	--	--	< 0.5	< 0.5	--	--	--	--	--	--
70300	Solids, dissolved (at 180 ºC)	--	--	282	288	--	--	--	--	--	--

423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

WATER-QUALITY DATA, JULY 18 TO AUGUST 22, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	July 18					
00065	Lake stage (ft)			2.44			
32210	Chlorophyll a, phytoplankton (µg/L)			1.38			
00078	Secchi-depth (m)			4.6			
00098	Sampling depth (m)	0.5	8.0	18.0	32.0	37.0	41.0
00010	Water temperature (ºC)	23.8	23.1	9.7	7.2	6.7	6.6
00400	pH (standard units)	8.5	8.5	8.2	8.0	7.9	7.8
00095	Specific conductance (µS/cm)	522	522	522	525	527	530
00300	Dissolved oxygen	9.1	9.0	10.5	8.8	8.5	6.3
00665	Phosphorus, total (as P)	0.009	0.010	0.009	0.016	0.009	0.013
00671	Orthophosphate, dissolved (as P)	<0.002	--	--	--	--	--
00631	Nitrite + nitrate, dissolved (as N)	<0.019	--	--	--	--	--
00608	Ammonia, dissolved (as N)	<0.015	--	--	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	0.56	--	--	--	--	--

Parameter Code	Parameter Name	August 22					
00065	Lake stage (ft)			3.25			
32210	Chlorophyll a, phytoplankton (µg/L)			2.16			
00078	Secchi-depth (m)			4.9			
00098	Sampling depth (m)	0.5	10.0	18.0	34.0	39.0	42.5
00010	Water temperature (ºC)	23.6	23.3	10.0	7.1	6.7	6.6
00400	pH (standard units)	8.6	8.5	8.0	7.8	7.6	7.6
00095	Specific conductance (µS/cm)	506	507	524	527	533	535
00300	Dissolved oxygen	8.7	8.3	7.9	6.4	2.4	1.2
00665	Phosphorus, total (as P)	0.008	0.011	0.009	0.008	0.021	0.040
00671	Orthophosphate, dissolved (as P)	<0.002	--	--	--	--	--
00631	Nitrite + nitrate, dissolved (as N)	<0.019	--	--	--	--	--
00608	Ammonia, dissolved (as N)	0.044	--	--	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	0.48	--	--	--	--	--

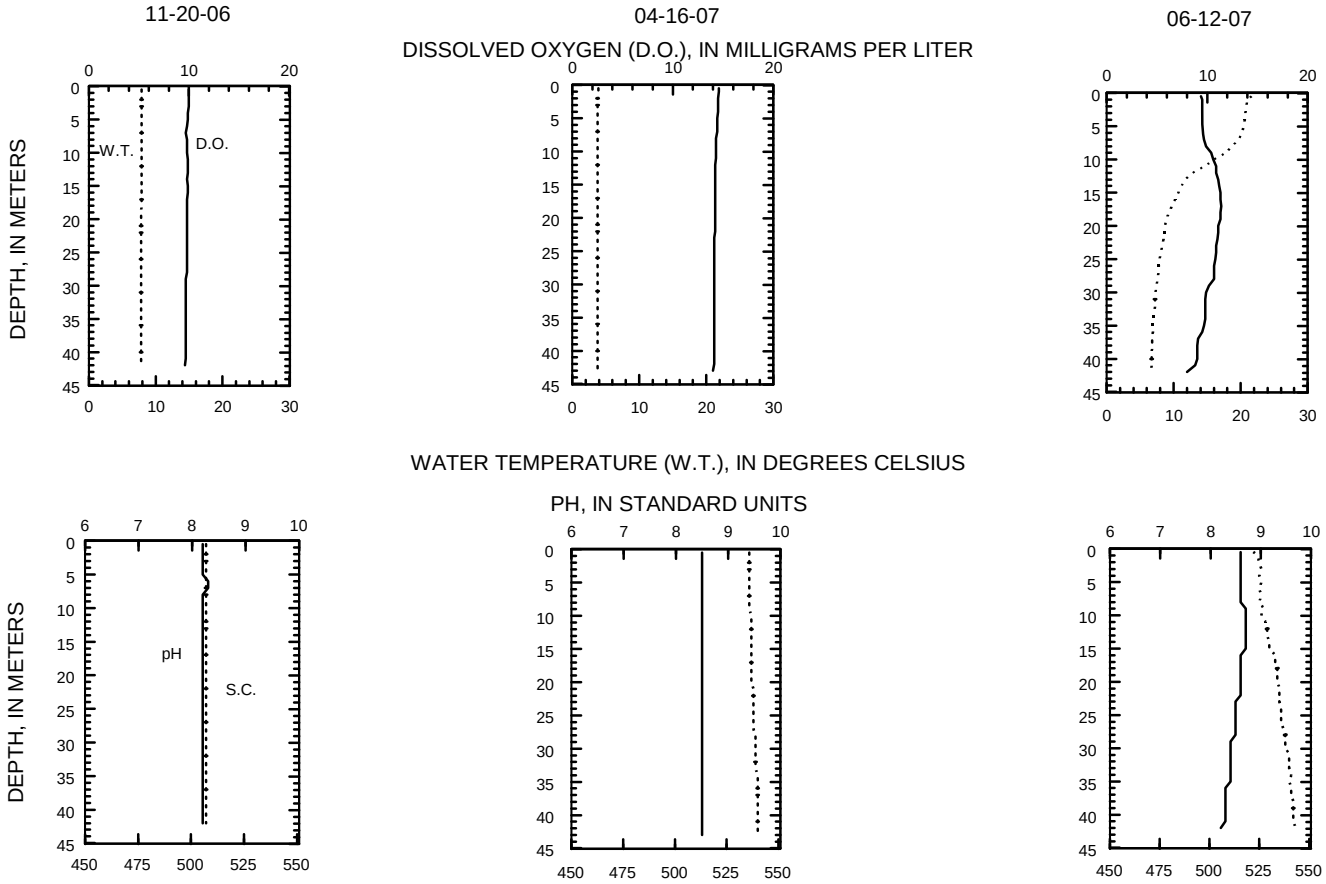
423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

WATER-QUALITY DATA, SEPTEMBER 19, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	September 19					
00065	Lake stage (ft)			2.52			
32210	Chlorophyll a, phytoplankton (µg/L)			3.29			
00078	Secchi-depth (m)			5.2			
00098	Sampling depth (m)	0.5	11.0	15.0	33.0	38.0	42.0
00010	Water temperature (ºC)	20.2	20.0	11.7	7.2	6.8	6.7
00400	pH (standard units)	8.4	8.4	7.7	7.6	7.4	7.4
00095	Specific conductance (µS/cm)	506	506	523	526	529	530
00300	Dissolved oxygen	8.9	8.7	4.8	3.6	1.2	0.2
00665	Phosphorus, total (as P)	0.008	0.008	0.010	0.019	0.036	0.053
00671	Orthophosphate, dissolved (as P)	<0.002	<0.002	<0.002	0.014	0.032	0.045
00631	Nitrite + nitrate, dissolved (as N)	<0.019	<0.019	<0.019	0.265	0.273	0.090
00608	Ammonia, dissolved (as N)	<0.015	<0.015	<0.015	<0.015	0.059	0.169
00625	Ammonia + org-N, total, diss. (as N)	0.59	0.5	0.41	0.42	0.4	0.58

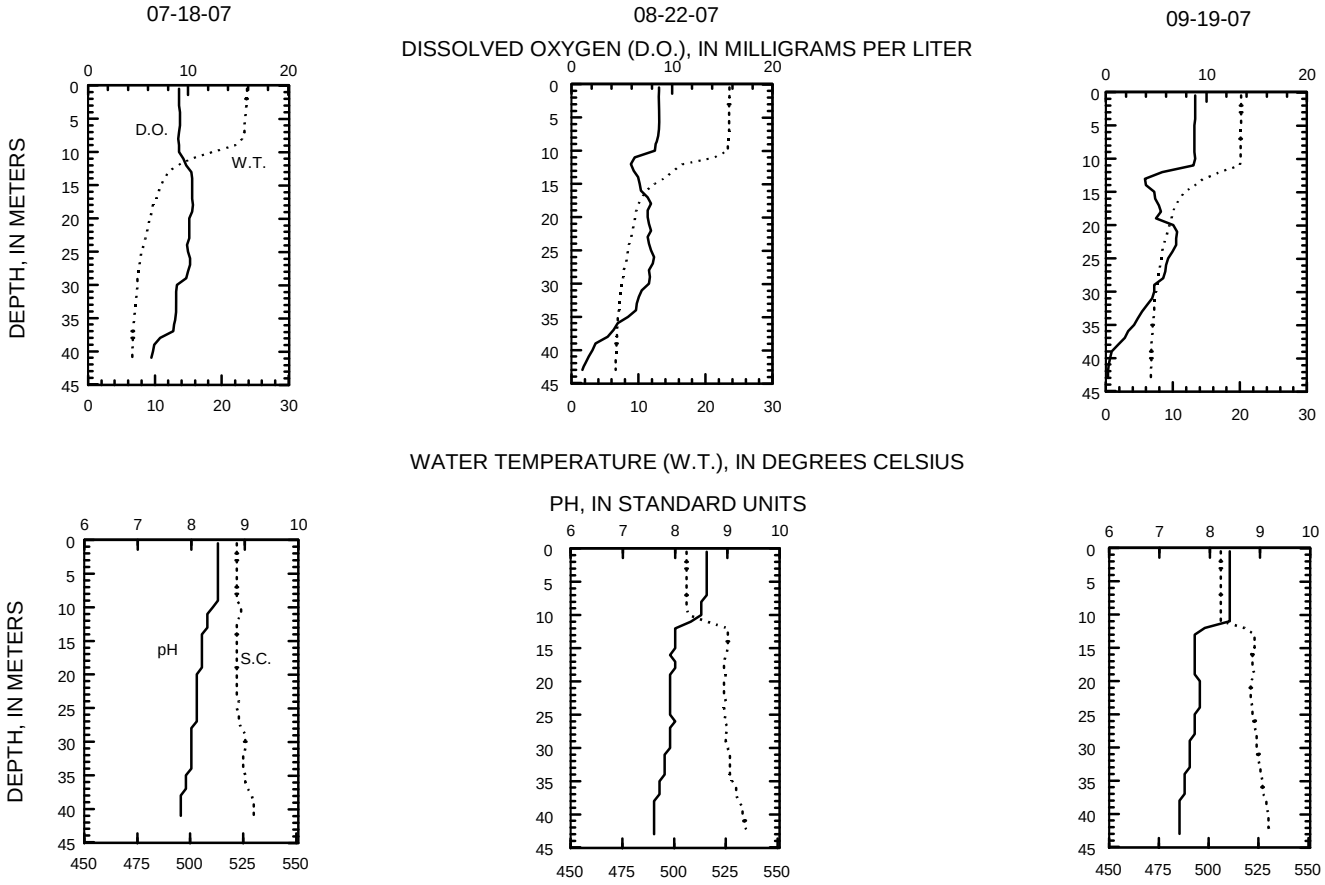
423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

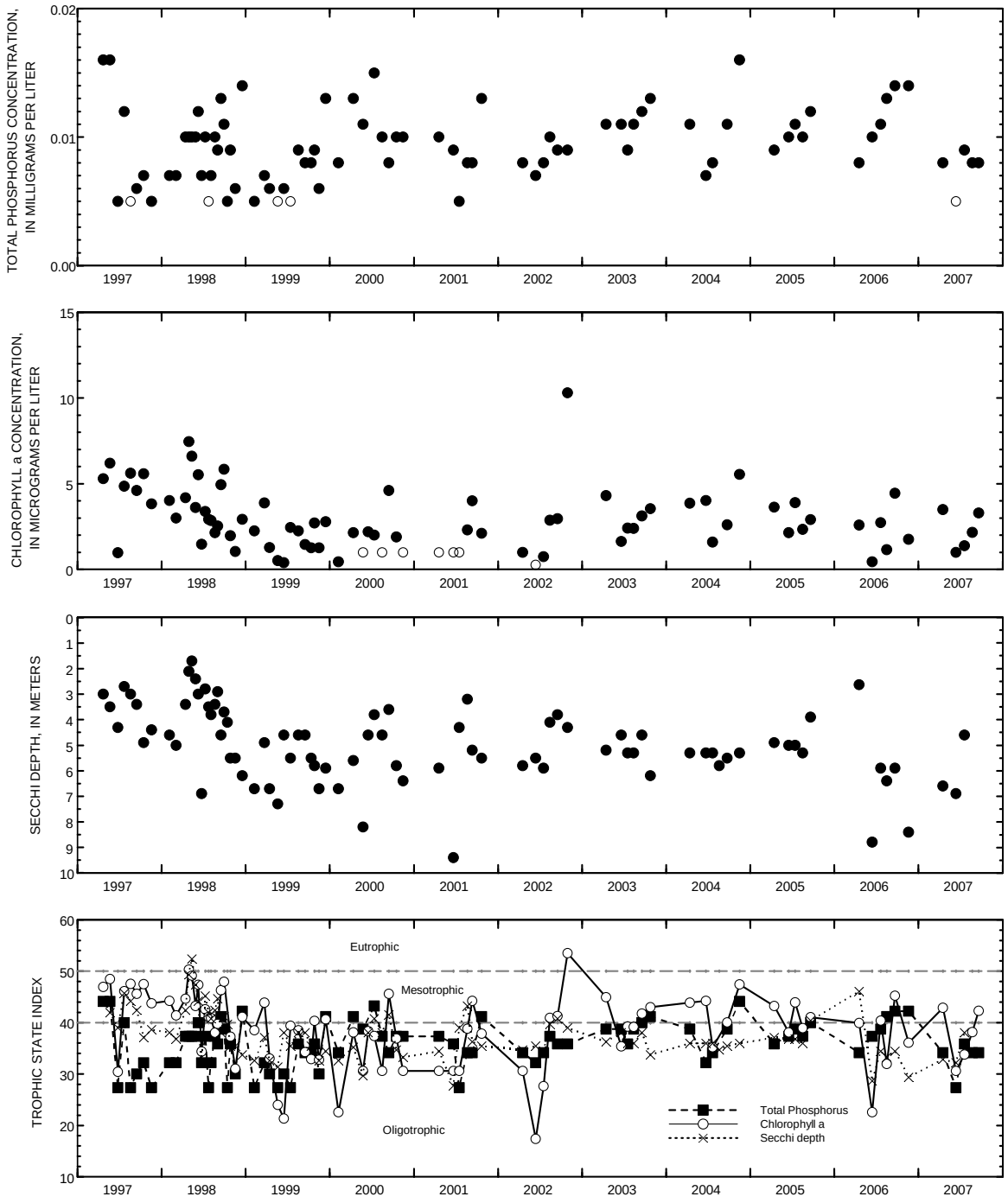
LAKE-DEPTH PROFILES, NOVEMBER 20, 2006 TO JUNE 12, 2007



423329088323300 GENEVA LAKE AT WEST END NEAR WILLIAMS BAY, WI

LAKE-DEPTH PROFILES, JULY 18 TO SEPTEMBER 19, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Geneva Lake, West End, near Williams Bay, Wisconsin.

(Open circles on the first two plots indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

434928088553601 GREEN LAKE AT COUNTY TRUNK HIGHWAY A NEAR GREEN LAKE, WI

LOCATION.--Lat 43°49′28″, long 88°55′36″ referenced to North American Datum of 1927, in NE ¼ SE ¼ SE ¼ sec.27, T.16 N., R.13 E., Green Lake County, WI, Hydrologic Unit 04030201, on left bank at downstream side of County Trunk Highway A, 2.3 mi southeast of Green Lake.

SURFACE AREA.--11.48 mi^2.

DRAINAGE AREA.--103 mi^2; Area of Green Lake, 7,346 acres.

PERIOD OF RECORD.--October 1993 to current year.

GAGE.--Water-stage recorder. Datum of gage is 790.00 ft above sea level.

REMARKS.--Lake level regulated by dam at outlet at Green Lake. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded gage height, 7.64 ft, Jun 17, 2004; minimum recorded, 5.27 ft, Nov. 5, 2005.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 6.82 ft, Apr. 4; minimum recorded gage height, 5.69 ft, Oct. 13.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5.93	5.94	6.08	6.21	6.15	6.18	6.75	6.64	6.52	6.27	6.14	6.42
2	5.94	5.92	6.10	6.21	6.14	6.22	6.75	6.64	6.53	6.27	6.13	6.40
3	5.95	5.90	6.09	6.21	6.13	6.25	6.75	6.63	6.54	6.30	6.11	6.40
4	5.96	5.89	6.07	6.21	6.12	6.24	6.77	6.63	6.58	6.36	6.09	6.40
5	5.98	5.89	6.05	6.22	6.11	6.24	6.74	6.63	6.57	6.36	6.13	6.39
6	5.98	5.89	6.05	6.23	6.11	6.24	6.73	6.63	6.56	6.35	6.14	6.39
7	5.97	5.89	6.04	6.22	6.11	6.25	6.72	6.62	6.56	6.35	6.16	6.43
8	5.96	5.89	6.02	6.23	6.10	6.25	6.70	6.61	6.54	6.34	6.15	6.45
9	5.94	5.89	6.01	6.24	6.10	6.25	6.69	e6.60	6.54	6.34	6.14	6.43
10	5.93	5.88	6.01	6.21	6.09	6.26	6.68	6.59	6.53	6.34	6.13	6.42
11	5.99	5.90	6.01	6.20	6.08	6.26	6.68	6.58	6.51	6.31	6.12	6.41
12	5.99	5.89	6.01	6.19	6.07	6.28	6.69	6.57	6.49	6.27	6.15	6.41
13	5.98	5.90	6.03	6.19	6.07	6.36	6.68	6.59	6.48	6.26	6.14	6.38
14	5.91	5.89	6.03	6.19	6.07	6.44	6.68	6.59	6.48	6.23	6.14	6.33
15	5.89	5.89	6.02	6.21	6.07	6.49	6.67	e6.59	6.47	6.22	6.14	6.32
16	5.88	5.89	6.02	6.21	6.06	6.52	6.66	e6.58	6.46	6.22	6.13	6.30
17	5.92	5.89	6.02	6.21	6.06	6.55	6.66	e6.58	6.46	6.21	6.10	6.29
18	5.94	5.89	6.03	6.20	6.05	6.56	6.65	6.58	6.47	6.21	6.09	6.28
19	5.95	5.89	6.02	6.20	6.05	6.58	6.65	6.57	6.48	6.19	6.21	6.27
20	5.94	5.88	6.02	6.17	6.05	6.59	6.64	6.55	6.47	6.17	6.29	6.27
21	5.94	5.88	6.03	6.18	6.05	6.60	6.64	6.55	6.46	6.15	e6.32	6.26
22	5.99	5.88	6.09	6.19	6.05	6.62	6.63	6.55	6.43	6.14	e6.36	6.28
23	5.99	5.87	6.16	6.19	6.04	6.62	6.63	e6.55	6.41	6.13	e6.40	6.28
24	5.97	5.87	6.15	6.18	6.09	6.63	6.63	e6.55	6.40	6.12	e6.40	6.27
25	5.97	5.87	6.15	6.17	6.14	6.65	6.63	e6.55	6.40	6.11	e6.42	6.30
26	5.96	5.88	6.16	6.17	6.16	6.66	6.63	e6.55	6.40	6.11	e6.41	6.31
27	5.96	5.92	6.16	6.17	6.17	6.65	6.63	e6.55	6.39	6.18	e6.40	6.29
28	5.97	6.03	6.16	6.17	6.16	6.68	6.63	e6.55	6.34	6.16	6.44	6.29
29	5.95	6.07	6.16	6.16	---	6.68	6.62	e6.54	6.33	6.16	6.46	6.27
30	5.94	6.08	6.17	6.16	---	6.68	6.61	e6.54	6.31	6.15	6.45	6.25
31	5.97	---	6.19	6.15	---	6.68	---	6.53	---	6.15	6.44	---
Mean	5.95	5.91	6.07	6.20	6.09	6.46	6.67	6.58	6.47	6.23	6.24	6.34
Max	5.99	6.08	6.19	6.24	6.17	6.68	6.77	6.64	6.58	6.36	6.46	6.45
Min	5.88	5.87	6.01	6.15	6.04	6.18	6.61	6.53	6.31	6.11	6.09	6.25

434756089020500 GREEN LAKE AT DEEP HOLE NEAR GREEN LAKE, WI

LOCATION.--Lat 43°47'56", long 89°02'05", in NW ¼ SE ¼ sec.2, T.15 N., R.12 E., Green Lake County, Hydrologic Unit 04030201, about 5 miles southwest of the City of Green Lake.

SURFACE AREA.--11.48 mi^2.

PERIOD OF RECORD.--May 2004 to current year. Lake sampled by Wisconsin Department of Natural Resources prior to 2004.

REMARKS.--Water-quality analyses done by Wisconsin State Laboratory of Hygiene. A "*" indicates data that were collected by Mary Jane Bumby, Self-Help Volunteer.

WATER-QUALITY DATA, OCTOBER 1, 2006 TO JUNE 10, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Oct 1*	Apr 24		May 10*	May 21	May 30	Jun 10*
00065	Lake stage (ft)	5.93	6.63		6.59	6.55	6.54	6.53
32210	Chlorophyll a, phytoplankton (µg/L)	--	7.83		--	--	--	--
00078	Secchi-depth (m)	5.8	3.5		2.3	1.8	1.7	2.9
00098	Sampling depth (m)	0.1	0.5	66.0	--	0.1	0.1	--
00010	Water temperature (ºC)	15.6	4.4	3.9	--	12.2	16.7	--
00020	Air temperature (ºC)	15.6	--	--	--	18.9	25.6	--
00400	pH (standard units)	--	8.5	8.3	--	--	--	--
00095	Specific conductance (µS/cm)	--	506	510	--	--	--	--
00300	Dissolved oxygen	--	14.2	14.2	--	--	--	--
00665	Phosphorus, total (as P)	--	0.115	0.047	--	--	--	--
00671	Orthophosphate, dissolved (as P)	--	1.16	--	--	--	--	--
00631	Nitrite + nitrate, dissolved (as N)	--	0.196	--	--	--	--	--
00608	Ammonia, dissolved (as N)	--	<0.015	--	--	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	--	0.37	--	--	--	--	--
00600	Total nitrogen	--	0.57	--	--	--	--	--
00076	Turbidity (NTU)	--	<1.0	--	--	--	--	--
00081	Apparent color (PTU)	--	5	--	--	--	--	--
00900	Hardness (as CaCO3)	--	230	--	--	--	--	--
00915	Calcium, dissolved (Ca)	--	34.2	--	--	--	--	--
00925	Magnesium, dissolved (Mg)	--	36	--	--	--	--	--
00930	Sodium, dissolved (Na)	--	20.1	--	--	--	--	--
00935	Potassium, dissolved (K)	--	3.3	--	--	--	--	--
00417	ANC (as CaCO3)	--	181	--	--	--	--	--
00940	Chloride, dissolved (Cl)	--	37.3	--	--	--	--	--
00955	Silica, dissolved (SiO2)	--	0.363	--	--	--	--	--
01046	Iron (µg/L)	--	<100	--	--	--	--	--
01049	Lead, dissolved (µg/L)	--	<1	--	--	--	--	--
01056	Manganese (µg/L)	--	<0.5	--	--	--	--	--
70300	Solids, dissolved (at 180 ºC)	--	280	--	--	--	--	--

434756089020500 GREEN LAKE AT DEEP HOLE NEAR GREEN LAKE, WI

WATER-QUALITY DATA, JUNE 11 TO AUGUST 30, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Jun 11		Jun 28*	Jul 5*	Jul 11		Jul 13*	Jul 28*
00065	Lake stage (ft)	6.51		6.34	6.36	6.31		6.31	6.16
32210	Chlorophyll a, phytoplankton (µg/L)	1.55		--	--	3.04		--	--
00078	Secchi-depth (m)	--		2.6	3.7	3.4		4.1	2.6
00098	Sampling depth (m)	0.5	67.0	--	0.1	0.5	67.0	--	--
00010	Water temperature (ºC)	18.7	4.4	--	23.3	24.0	4.6	--	--
00020	Air temperature (ºC)	--	--	--	29.4	--	--	--	--
00400	pH (standard units)	8.7	7.9	--	--	8.8	7.6	--	--
00095	Specific conductance (µS/cm)	497	501	--	--	498	531	--	--
00300	Dissolved oxygen	10.5	8.3	--	--	10.4	6.5	--	--
00665	Phosphorus, total (as P)	0.021	0.087	--	--	0.016	0.153	--	--

Parameter Code	Parameter Name	Aug 3*	Aug 6*	Aug 10*	Aug 16*	Aug 21			Aug 30*
00065	Lake stage (ft)	6.11	6.14	6.13	6.13	6.32			6.45
32210	Chlorophyll a, phytoplankton (µg/L)	--	--	--	--	12.8			--
00078	Secchi-depth (m)	2.0	2.9	4.3	4.3	--			4.9
00098	Sampling depth (m)	--	--	--	--	0.5	15.0	67.0	--
00010	Water temperature (ºC)	--	--	--	--	22.0	11.5	4.6	--
00400	pH (standard units)	--	--	--	--	8.8	7.8	7.3	--
00095	Specific conductance (µS/cm)	--	--	--	--	471	509	537	--
00300	Dissolved oxygen	--	--	--	--	8.6	3.4	0.1	--
00665	Phosphorus, total (as P)	--	--	--	--	0.018	0.011	0.235	--
00671	Orthophosphate, dissolved (as P)	--	--	--	--	<0.002	--	--	--
00631	Nitrite + nitrate, dissolved (as N)	--	--	--	--	<0.019	--	--	--
00608	Ammonia, dissolved (as N)	--	--	--	--	<0.015	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	--	--	--	--	0.53	--	--	--

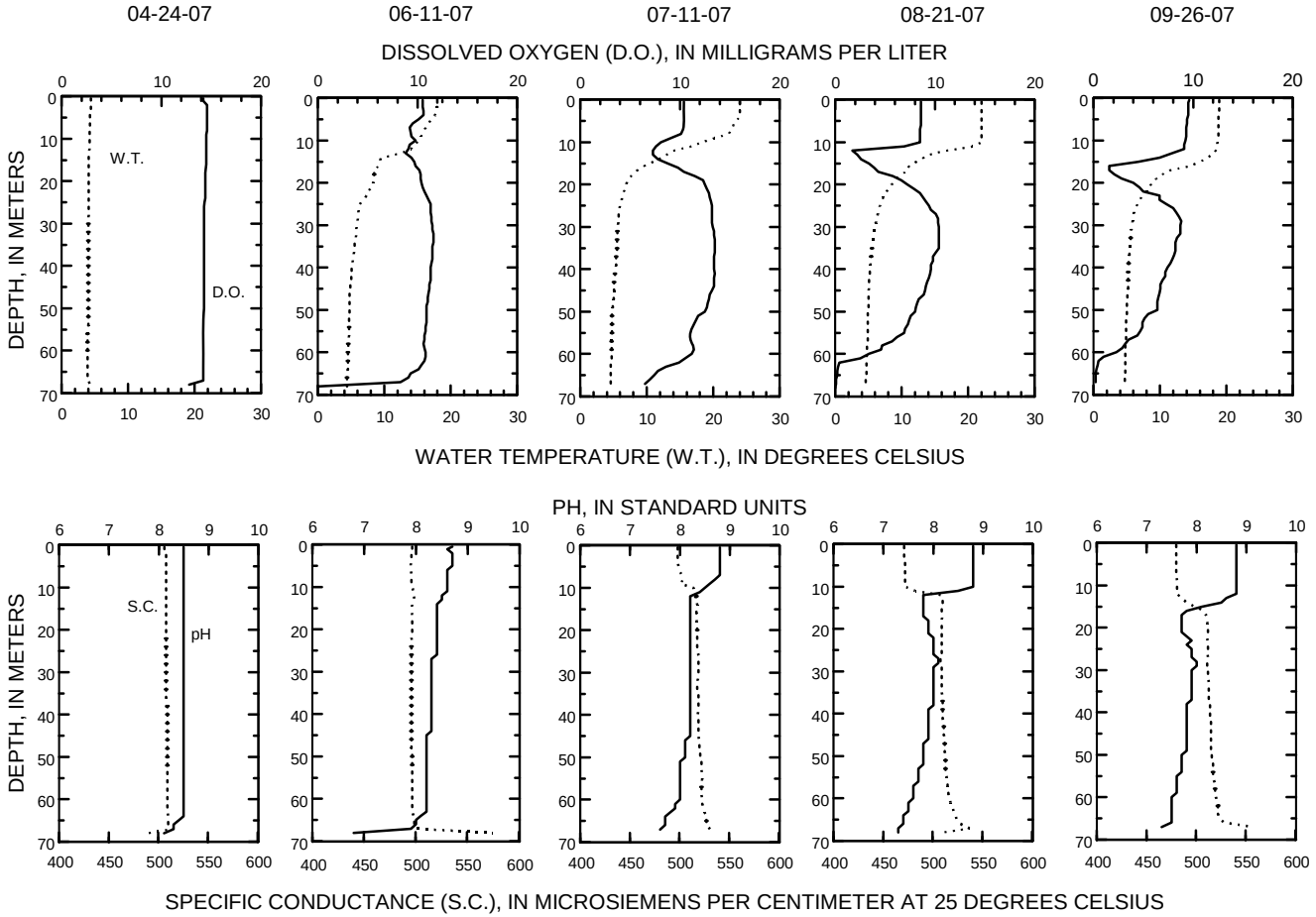
434756089020500 GREEN LAKE AT DEEP HOLE NEAR GREEN LAKE, WI

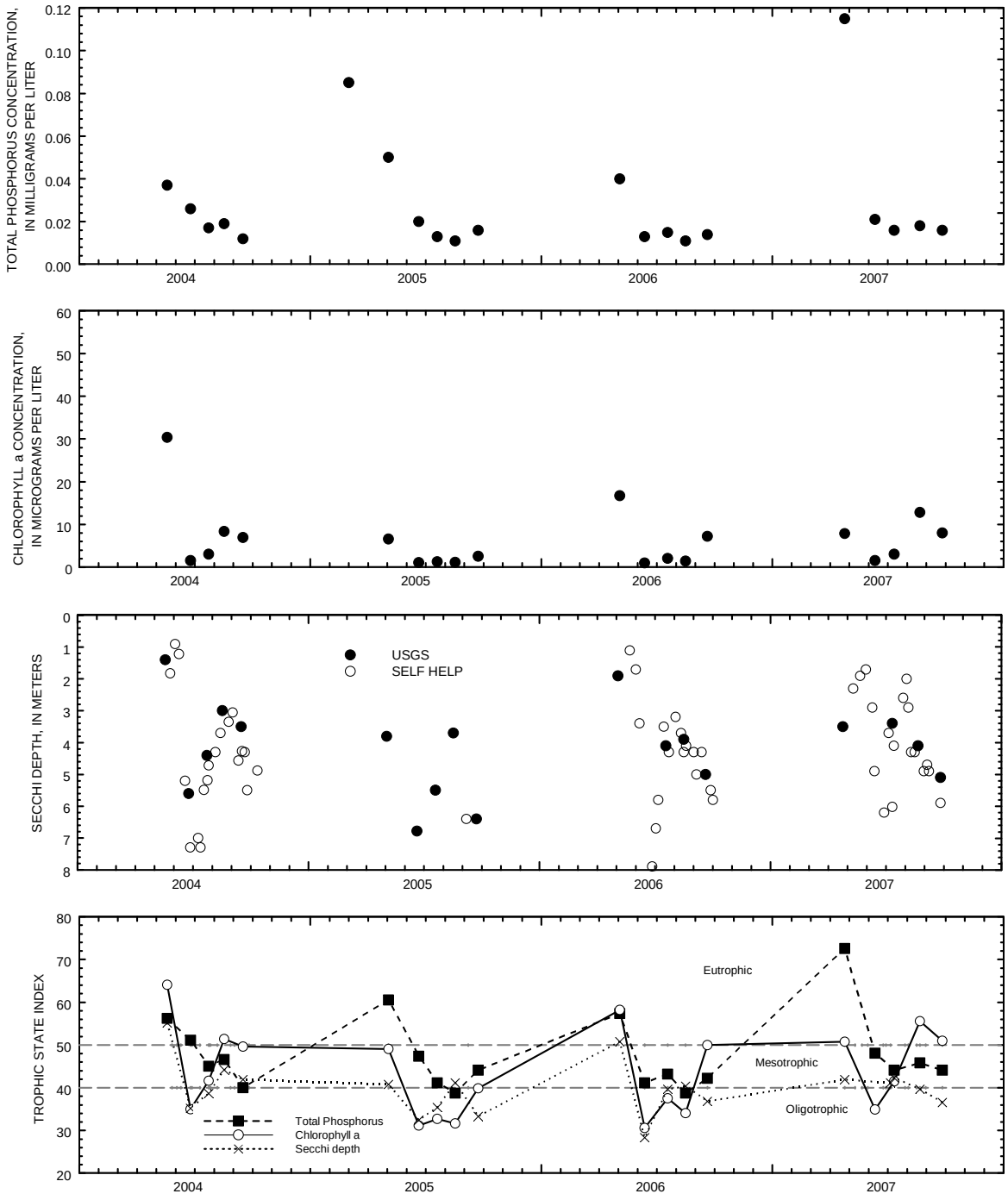
WATER-QUALITY DATA, SEPTEMBER 5 to 26, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Sept 5*	Sept 8*		Sept. 26	
00065	Lake stage (ft)	6.39	6.45		6.31	
32210	Chlorophyll a, phytoplankton (µg/L)	--	--		8.01	
00078	Secchi-depth (m)	4.7	4.9		5.1	
00098	Sampling depth (m)	--	--	0.5	20.0	67.0
00010	Water temperature (ºC)	--	--	18.9	8.8	4.7
00400	pH (standard units)	--	--	8.8	7.7	7.3
00095	Specific conductance (µS/cm)	--	--	480	512	558
00300	Dissolved oxygen	--	--	9.6	4.0	0.2
00665	Phosphorus, total (as P)	--	--	0.016	0.011	0.239

434756089020500 GREEN LAKE AT DEEP HOLE NEAR GREEN LAKE, WI

LAKE-DEPTH PROFILES, APRIL 24 TO SEPTEMBER 26, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Green Lake, Deep Hole, near Green Lake, Wisconsin.

434928088570000 GREEN LAKE AT EAST END NEAR GREEN LAKE, WI

LOCATION.--Lat 43°49'28", long 88°57'00", in SE ¼ SE ¼ sec.28, T.16 N., R.13 E., Green Lake County, Hydrologic Unit 04030201, about one mile southeast of the City of Green Lake.

SURFACE AREA.--11.48 mi^2.

PERIOD OF RECORD.--May 2004 current year. Lake sampled by Wisconsin Department of Natural Resources prior to 2004.

REMARKS.--Water-quality analyses done by Wisconsin State Laboratory of Hygiene. A "*" indicates data that were collected by Mary Jane Bumby, Self-Help Volunteer.

WATER-QUALITY DATA, OCTOBER 1, 2006 TO JULY 28, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Oct 1*	Apr 24		May 10*	May 21*	May 30*	Jun 10*
00065	Lake stage (ft)	5.93	6.63		6.59	6.55	6.54	6.53
32210	Chlorophyll a, phytoplankton (µg/L)	--	10.3		--	--	--	--
00078	Secchi-depth (m)	5.3	2.7		2.0	2.1	1.8	3.0
00098	Sampling depth (m)	0.1	0.5	33	--	0.1	0.1	--
00010	Water temperature (ºC)	15.6	6.3	4.6	--	11.7	17.8	--
00020	Air temperature (ºC)	15.6	--	--	--	18.9	25.6	--
00400	pH (standard units)	--	--	--	--	--	--	--
00095	Specific conductance (µS/cm)	--	505	509	--	--	--	--
00300	Dissolved oxygen	--	15.7	15	--	--	--	--
00665	Phosphorus, total (as P)	--	0.041	0.046	--	--	--	--

Parameter Code	Parameter Name	Jun 11		Jun 13*	Jun 24*	Jun 28*	Jul 5	Jul 13*	Jul 28*
00065	Lake stage (ft)	6.51		6.48	6.40	6.34	6.35	6.31	6.16
32210	Chlorophyll a, phytoplankton (µg/L)	1.74		--	--	--	--	--	--
00078	Secchi-depth (m)	--		5.3	7.9	6.1	3.5	3.8	3.7
00098	Sampling depth (m)	0.5	32	--	--	--	0.1	--	--
00010	Water temperature (ºC)	19.4	5.4	--	--	--	23.9	--	--
00020	Air temperature (ºC)	--	--	--	--	--	29.4	--	--
00400	pH (standard units)	8.6	8.2	--	--	--	--	--	--
00095	Specific conductance (µS/cm)	495	497	--	--	--	--	--	--
00300	Dissolved oxygen	10.4	10.8	--	--	--	--	--	--
00665	Phosphorus, total (as P)	0.024	0.05	--	--	--	--	--	--

434928088570000 GREEN LAKE AT EAST END NEAR GREEN LAKE, WI

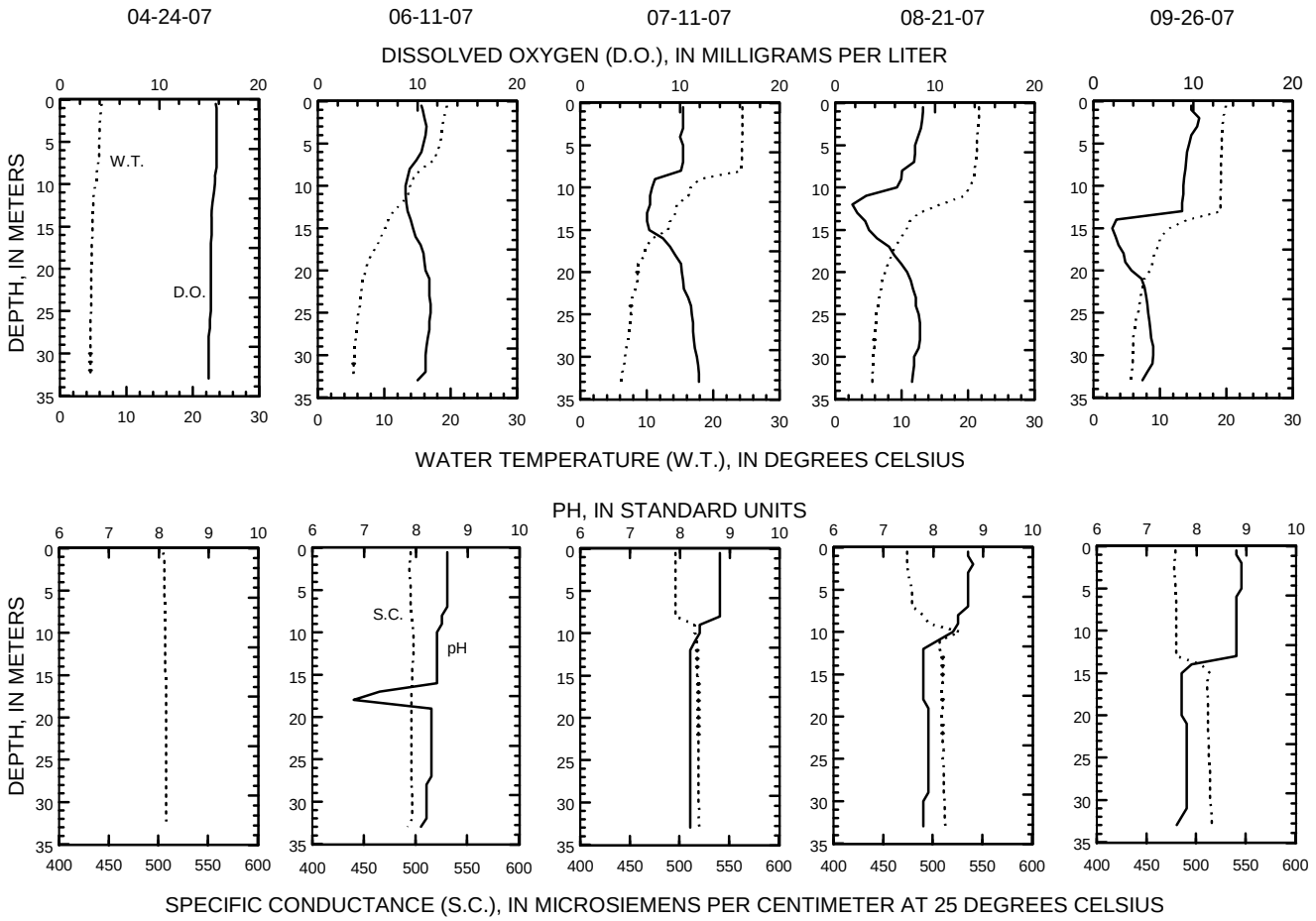
WATER-QUALITY DATA, AUGUST 3 TO SEPTEMBER 26, 2007
(Milligrams per liter unless otherwise indicated)

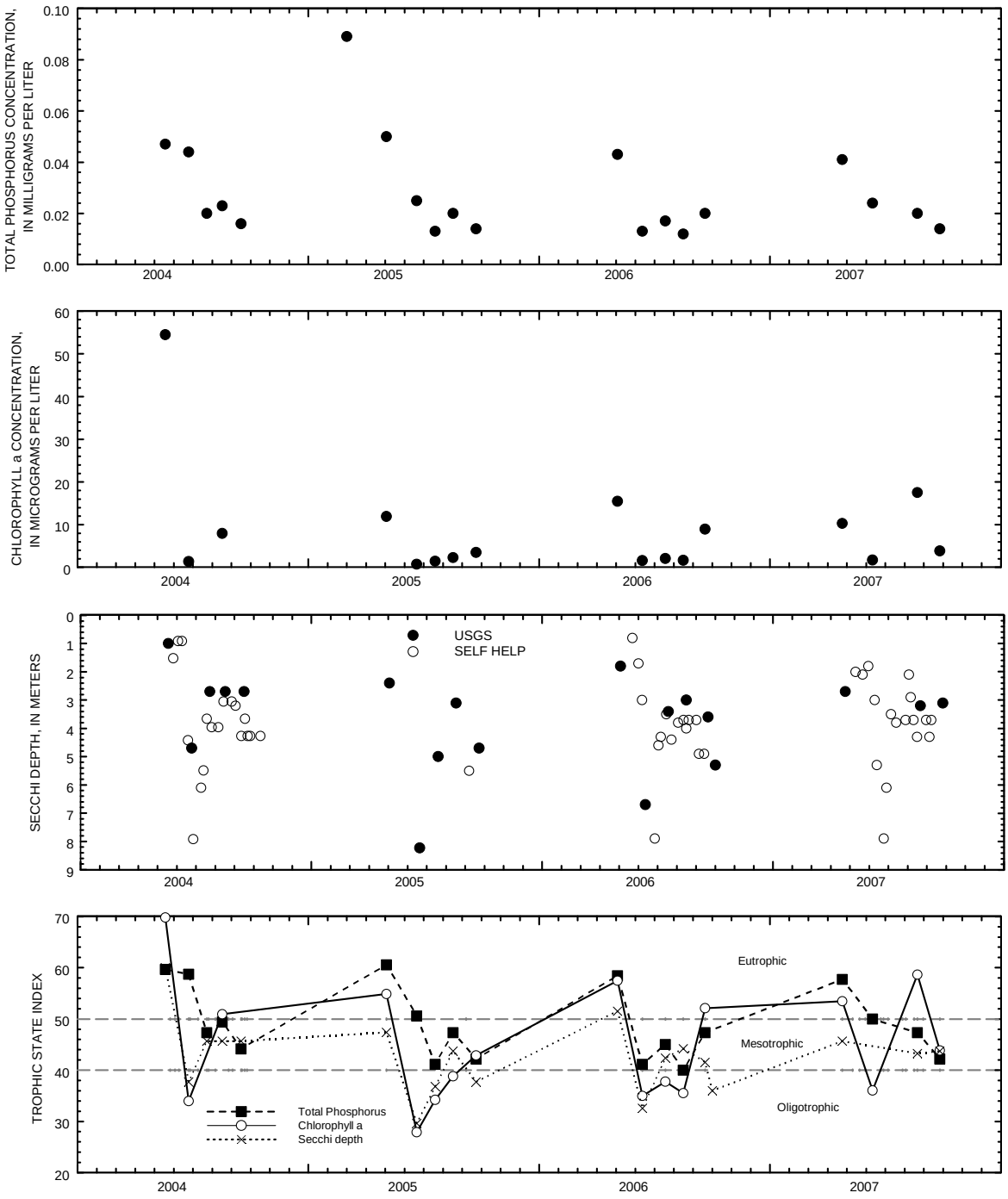
Parameter Code	Parameter Name	Aug 3*	Aug 6*	Aug 10*	Aug 16*		Aug. 21		Aug 30*
00065	Lake stage (ft)	6.11	6.14	6.13	6.13		6.32		6.45
32210	Chlorophyll a, phytoplankton (µg/L)	--	--	--	--		17.5		--
00078	Secchi-depth (m)	2.1	2.9	3.7	4.3		3.7		4.3
00098	Sampling depth (m)	--	--	--	--	0.5	15	33	--
00010	Water temperature (ºC)	--	--	--	--	21.6	10.6	5.6	--
00020	Air temperature (ºC)	--	--	--	--	--	--	--	--
00400	pH (standard units)	--	--	--	--	8.7	7.8	7.8	--
00095	Specific conductance (µS/cm)	--	--	--	--	474	510	513	--
00300	Dissolved oxygen	--	--	--	--	8.8	3.4	7.7	--
00665	Phosphorus, total (as P)	--	--	--	--	0.02	0.013	0.081	--

Parameter Code	Parameter Name	Sept 5*	Sept 8*		Sept. 26	
00065	Lake stage (ft)	6.39	6.45		6.31	
32210	Chlorophyll a, phytoplankton (µg/L)	--	--		3.86	
00078	Secchi-depth (m)	3.7	3.7		3.1	
00098	Sampling depth (m)	--	--	0.5	16	33
00010	Water temperature (ºC)	--	--	19.9	10.1	5.7
00020	Air temperature (ºC)	--	--	--	--	--
00400	pH (standard units)	--	--	8.8	7.7	7.6
00095	Specific conductance (µS/cm)	--	--	479	511	516
00300	Dissolved oxygen	--	--	9.8	2.2	4.9
00665	Phosphorus, total (as P)	--	--	0.014	0.012	0.084

434928088570000 GREEN LAKE AT EAST END NEAR GREEN LAKE, WI

LAKE-DEPTH PROFILES, APRIL 24 TO SEPTEMBER 26, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Green Lake, East End, near Green Lake, Wisconsin.

455208089435800 KAWAGUESAGA LAKE, DEEP HOLE, NEAR MINOCQUA, WI

LOCATION.--Lat 45°52'08", long 89°43'58", in NE ¼ NW ¼ SW ¼ sec.15, T.39 N., R.6 E., Oneida County, Hydrologic Unit 07070001, at Minocqua.

SURFACE AREA.--1.05 mi^2.

PERIOD OF RECORD.--May to September 2003, April 2006 to September 2007 (discontinued).

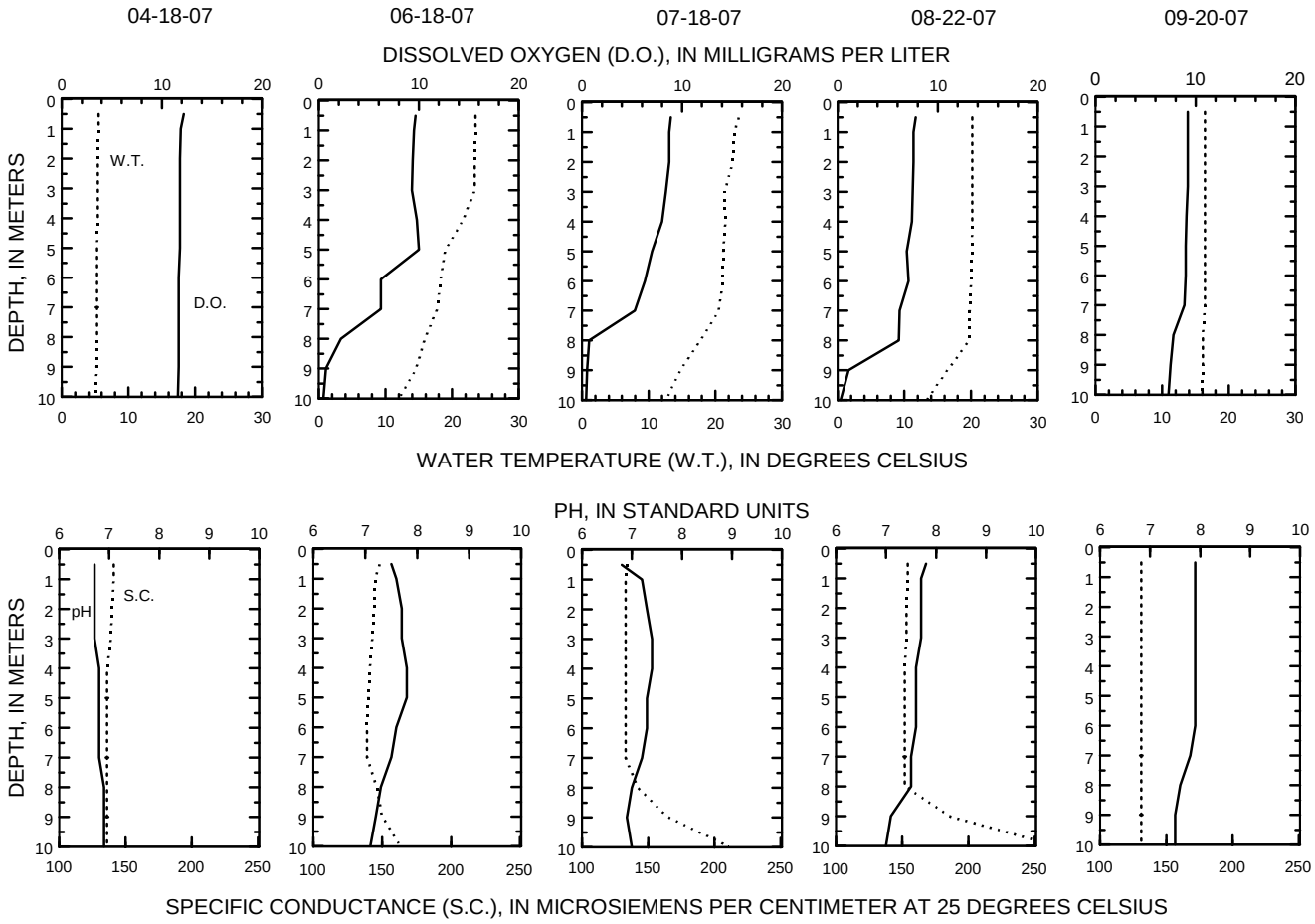
REMARKS.--Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

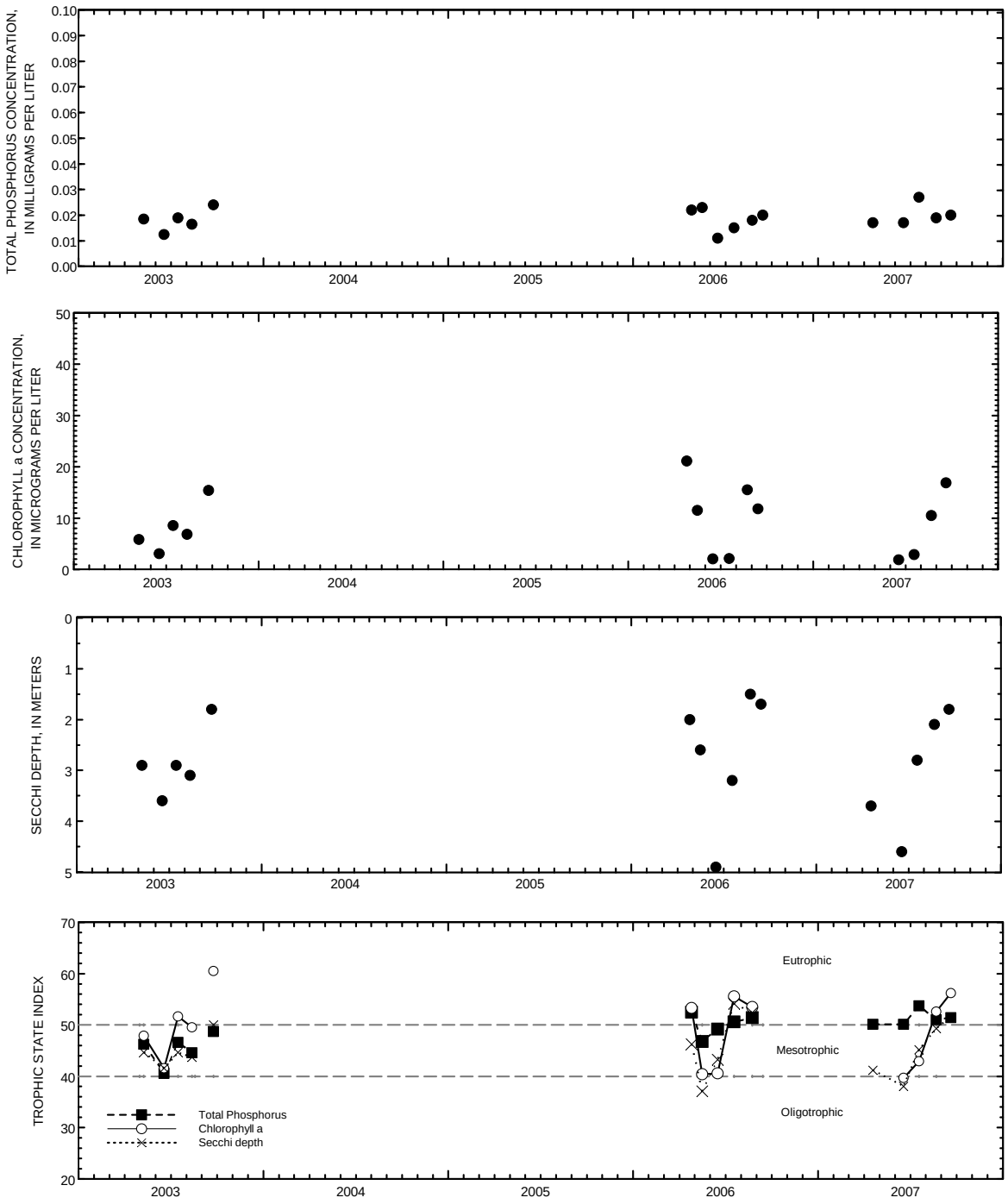
WATER-QUALITY DATA, APRIL 18 TO SEPTEMBER 20, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Apr. 18		Jun. 18		Jul. 18		Aug. 22		Sept. 20	
32210	Chlorophyll a, phytoplankton (µg/L)	--		1.91		2.91		10.5		16.9	
00078	Secchi-depth (m)	3.7		4.6		2.8		2.1		1.8	
00098	Sampling depth (m)	0.5	10.0	0.5	10.0	0.5	10.0	0.5	10.0	0.5	10.0
00010	Water temperature (ºC)	5.5	5.1	23.5	12.0	23.5	12.6	20.2	13.3	16.4	16.0
00400	pH (standard units)	6.7	6.9	7.5	7.1	6.8	7.0	7.8	7.0	7.9	7.5
00095	Specific conductance (µS/cm)	141	136	148	163	134	211	154	267	131	131
00300	Dissolved oxygen	12.2	11.6	9.7	0.5	8.9	0.4	7.8	0.3	9.2	7.3
00665	Phosphorus, total (as P)	0.017	0.017	0.017	<0.005	0.027	0.100	0.019	0.075	0.020	0.027

455208089435800 KAWAGUESAGA LAKE, DEEP HOLE, NEAR MINOCQUA, WI

LAKE-DEPTH PROFILES, APRIL 18 TO SEPTEMBER 20, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Kawaguesaga Lake, Deep Hole, Near Minocqua, Wisconsin.

425715089164700 LAKE KEGONSA AT BARBER DRIVE NEAR STOUGHTON, WI

LOCATION.--Lat 42°57′15″, long 89°16′47″ referenced to North American Datum of 1927, in SW ¼ NE ¼ NE ¼ sec.26, T.6 N., R.10 E., Dane County, WI, Hydrologic Unit 07090001, on downstream side of bridge on Barber Drive, 3.5 mi northwest of Stoughton.

SURFACE AREA.--1.05 mi^2.

DRAINAGE AREA.--386 mi^2.

PERIOD OF RECORD.--October 2003 to current year.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above sea level (levels from Wisconsin Department of Transportation benchmark).

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 4.71 ft, May 23, 2004; minimum observed, 2.07 ft, Jan.27, 2006.

EXTREMES FOR CURRENT YEAR.--Maximum gage height observed, 4.14 ft, Aug. 27; minimum observed, 2.14 ft, Feb. 20.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	3.23	2.99	3.28	2.64	2.30	2.48	3.43	3.49	3.50	3.29	3.02	4.01
2	3.21	2.96	3.28	2.63	2.29	2.53	3.47	3.46	3.51	3.25	3.01	3.97
3	3.22	2.95	3.28	2.60	2.28	2.55	3.66	3.41	3.49	3.24	3.00	3.94
4	3.25	2.93	3.33	2.58	2.27	2.56	3.69	3.35	3.53	3.35	2.99	3.90
5	3.22	2.92	3.34	2.58	2.27	2.58	3.70	3.30	3.52	3.34	3.14	3.86
6	3.21	2.92	3.34	2.55	2.26	2.59	3.69	3.23	3.49	3.33	3.17	3.82
7	3.19	2.92	3.26	2.53	2.26	2.59	3.64	3.16	3.47	3.31	3.22	3.79
8	3.17	2.92	3.18	2.50	2.25	2.60	3.58	3.12	3.46	3.29	3.23	3.77
9	3.18	2.92	3.12	2.46	2.23	2.61	3.53	3.09	3.45	3.29	3.25	3.74
10	3.17	2.99	3.06	2.44	2.22	2.63	3.49	3.08	3.43	3.27	3.27	3.74
11	3.18	3.07	3.02	2.42	2.20	2.65	3.52	3.08	3.41	3.24	3.26	3.75
12	3.16	3.10	3.00	2.42	2.20	2.69	3.48	3.05	3.41	3.20	3.30	3.73
13	3.13	3.13	2.99	2.42	2.20	2.82	3.46	3.04	3.39	3.19	3.29	3.72
14	3.13	3.15	2.97	2.41	2.20	2.99	3.46	3.03	3.38	3.15	3.33	3.70
15	3.13	3.16	2.93	2.42	2.20	3.13	3.45	3.09	3.38	3.14	3.30	3.67
16	3.14	3.16	2.90	2.40	2.20	3.21	3.43	3.17	3.36	3.13	3.25	3.65
17	3.22	3.15	2.86	2.37	2.20	3.25	3.41	3.24	3.36	3.12	3.19	3.63
18	3.27	3.15	2.82	2.34	2.19	3.26	3.40	3.27	3.34	3.12	3.17	3.61
19	3.29	3.13	2.78	2.33	2.17	3.25	3.38	3.31	3.35	3.12	3.45	3.60
20	3.30	3.12	2.73	2.31	2.16	3.23	3.37	3.36	3.33	3.09	3.55	3.60
21	3.33	3.10	2.74	2.32	2.17	3.24	3.37	3.38	3.34	3.07	3.50	3.58
22	3.39	3.08	2.75	2.32	2.18	3.35	3.35	3.40	3.38	3.04	3.52	3.59
23	3.40	3.07	2.77	2.32	2.21	3.42	3.41	3.41	3.36	3.02	3.63	3.58
24	3.40	3.05	2.76	2.32	2.28	3.47	3.44	3.41	3.36	3.01	3.83	3.57
25	3.39	3.04	2.75	2.32	2.35	3.49	3.51	3.44	3.35	3.00	3.94	3.56
26	3.32	3.03	2.73	2.32	2.38	3.51	3.55	3.46	3.35	2.99	4.00	3.56
27	3.25	3.08	2.71	2.32	2.40	3.49	3.56	3.46	3.35	3.05	4.04	3.54
28	3.17	3.14	2.69	2.31	2.43	3.47	3.57	3.46	3.34	3.06	4.07	3.52
29	3.12	3.21	2.66	2.31	---	3.43	3.55	3.47	3.32	3.04	4.08	3.50
30	3.07	3.26	2.64	2.31	---	3.39	3.54	3.48	3.30	3.04	4.07	3.47
31	3.02	---	2.65	2.31	---	3.38	---	3.48	---	3.03	4.04	---
Mean	3.22	3.06	2.95	2.41	2.25	3.03	3.50	3.30	3.40	3.16	3.46	3.69
Max	3.40	3.26	3.34	2.64	2.43	3.51	3.70	3.49	3.53	3.35	4.08	4.01
Min	3.02	2.92	2.64	2.31	2.16	2.48	3.35	3.03	3.30	2.99	2.99	3.47

05427235 LAKE KOSHKONONG NEAR NEWVILLE, WI

LOCATION.--Lat 42°51′27″, long 88°56′27″ referenced to North American Datum of 1927, in NW ¼ NE ¼ sec.34, T.5 N., R.13 E., Jefferson County, WI, Hydrologic Unit 07090001, 80 ft east of Pottawatomi Trail Bridge at Bingham Point Estates, and 4.5 mi northeast of Newville.

SURFACE AREA.—16.34 $mi^{2.}$

DRAINAGE AREA.--2,560 mi^2.

PERIOD OF RECORD.--July 1987 to current year.

GAGE.--Water-stage recorder. Datum of gage is 770.00 ft above NGVD of 1929 (Wisconsin Department of Transportation bench mark).

REMARKS.--Lake level regulated by dam at Indianford. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum recorded gage height, 12.23 ft, Apr. 25, 1993; minimum recorded, 5.06 ft, Feb. 22, 2007.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 10.58 ft, Apr. 7; minimum recorded gage height, 5.06 ft, Feb. 22.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	6.18	7.43	7.09	7.52	5.69	5.37	9.59	8.72	6.31	6.14	6.12	10.42
2	6.18	7.38	7.18	7.47	5.67	5.52	9.63	8.66	6.34	6.11	6.15	10.35
3	6.34	7.29	7.25	7.43	5.65	5.71	9.85	8.58	6.35	6.14	6.17	10.26
4	6.58	7.22	7.27	7.42	5.63	5.89	10.14	8.50	6.44	6.36	6.17	10.15
5	6.73	7.13	7.26	7.41	5.61	6.04	10.32	8.42	6.42	6.37	6.34	10.02
6	6.86	7.05	7.24	7.38	5.58	6.06	10.47	8.31	6.38	6.32	6.35	9.87
7	6.96	6.95	7.21	7.33	5.54	6.00	10.54	8.24	6.42	6.26	6.38	9.72
8	7.04	6.85	7.15	7.30	5.51	5.94	10.56	8.18	6.50	6.25	6.33	9.56
9	7.10	6.79	7.11	7.27	5.47	5.90	10.55	8.10	6.48	6.27	6.29	9.38
10	7.08	6.78	7.06	7.14	5.43	5.89	10.51	8.00	6.47	6.25	6.29	9.23
11	7.13	6.80	7.00	7.04	5.39	5.91	10.49	7.90	6.45	6.23	6.26	9.10
12	7.11	6.78	6.96	6.99	5.37	6.00	10.46	7.76	6.41	6.19	6.30	8.89
13	7.08	6.84	6.96	6.94	5.33	6.29	10.38	7.63	6.34	6.14	6.26	8.68
14	7.06	6.90	6.99	6.88	5.30	6.80	10.31	7.52	6.33	6.18	6.26	8.52
15	7.01	6.94	7.02	6.86	5.27	7.36	10.22	7.45	6.33	6.20	6.25	8.31
16	6.97	6.99	7.03	6.83	5.24	7.84	10.11	7.38	6.31	6.21	6.24	8.13
17	7.05	6.99	7.03	6.80	5.20	8.21	10.01	7.29	6.28	6.19	6.21	7.95
18	7.10	7.02	7.00	6.73	5.18	8.47	9.89	7.18	6.26	6.17	6.20	7.76
19	7.19	7.03	6.95	6.66	5.15	8.66	9.76	7.09	6.34	6.17	6.77	7.60
20	7.24	7.01	6.89	6.59	5.12	8.81	9.63	6.98	6.27	6.12	7.21	7.43
21	7.29	6.96	6.86	6.52	5.08	8.94	9.48	6.86	6.26	6.12	7.50	7.27
22	7.40	6.93	6.86	6.43	5.08	9.16	9.32	6.70	6.27	6.12	7.86	7.15
23	7.43	6.90	6.96	6.33	5.15	9.31	9.22	6.56	6.25	6.13	8.36	7.01
24	7.49	6.86	7.06	6.22	5.27	9.43	9.10	6.45	6.25	6.13	8.84	6.88
25	7.54	6.79	7.19	6.11	5.41	9.52	9.00	6.38	6.24	6.13	9.32	6.82
26	7.56	6.73	7.30	6.01	5.40	9.61	8.92	6.37	6.24	6.16	9.72	6.78
27	7.59	6.72	7.38	5.91	5.37	9.65	8.87	6.39	6.29	6.25	10.00	6.70
28	7.62	6.71	7.44	5.83	5.35	9.64	8.84	6.34	6.26	6.21	10.23	6.63
29	7.58	6.80	7.48	5.76	---	9.61	8.81	6.33	6.22	6.18	10.38	6.56
30	7.52	6.94	7.49	5.73	---	9.58	8.77	6.33	6.18	6.15	10.45	6.50
31	7.49	---	7.49	5.71	---	9.55	---	6.31	---	6.13	10.45	---
Mean	7.11	6.95	7.13	6.73	5.37	7.63	9.79	7.38	6.33	6.19	7.41	8.32
Max	7.62	7.43	7.49	7.52	5.69	9.65	10.56	8.72	6.50	6.37	10.45	10.42
Min	6.18	6.71	6.86	5.71	5.08	5.37	8.77	6.31	6.18	6.11	6.12	6.50

432255088134700 LITTLE CEDAR LAKE, NORTH SITE, NEAR WEST BEND, WI

LOCATION.--Lat 43°22'55", long 88°13'47", in NW ¼ NE ¼ sec.33, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, 2.6 mi southwest of West Bend.

SURFACE AREA.--0.38 mi^2.

PERIOD OF RECORD.--February 1997 to August 1999, February 2003 to current year.

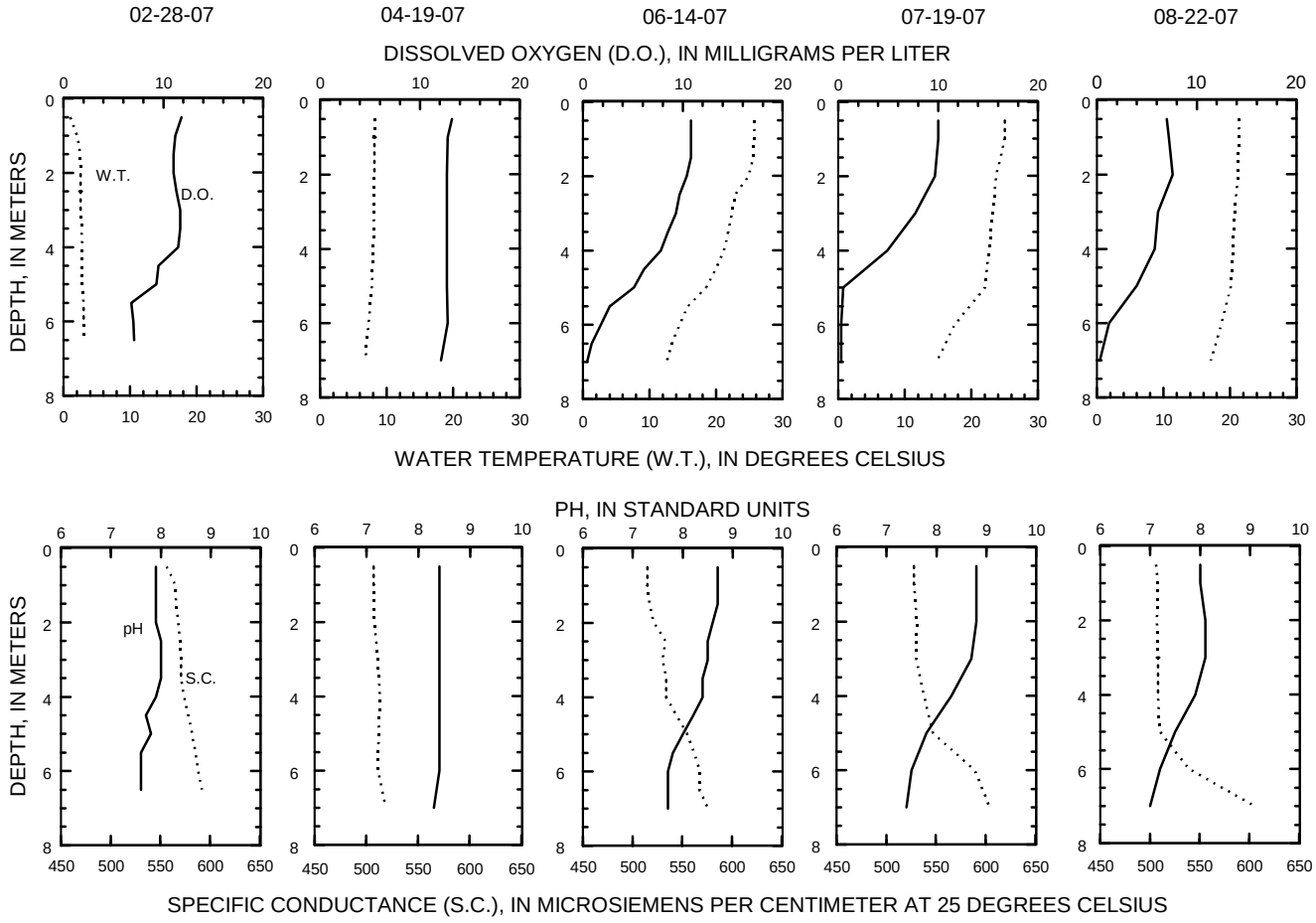
REMARKS.--Lake sampled at center of northern basin at deep hole. Lake ice-covered during February sampling. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

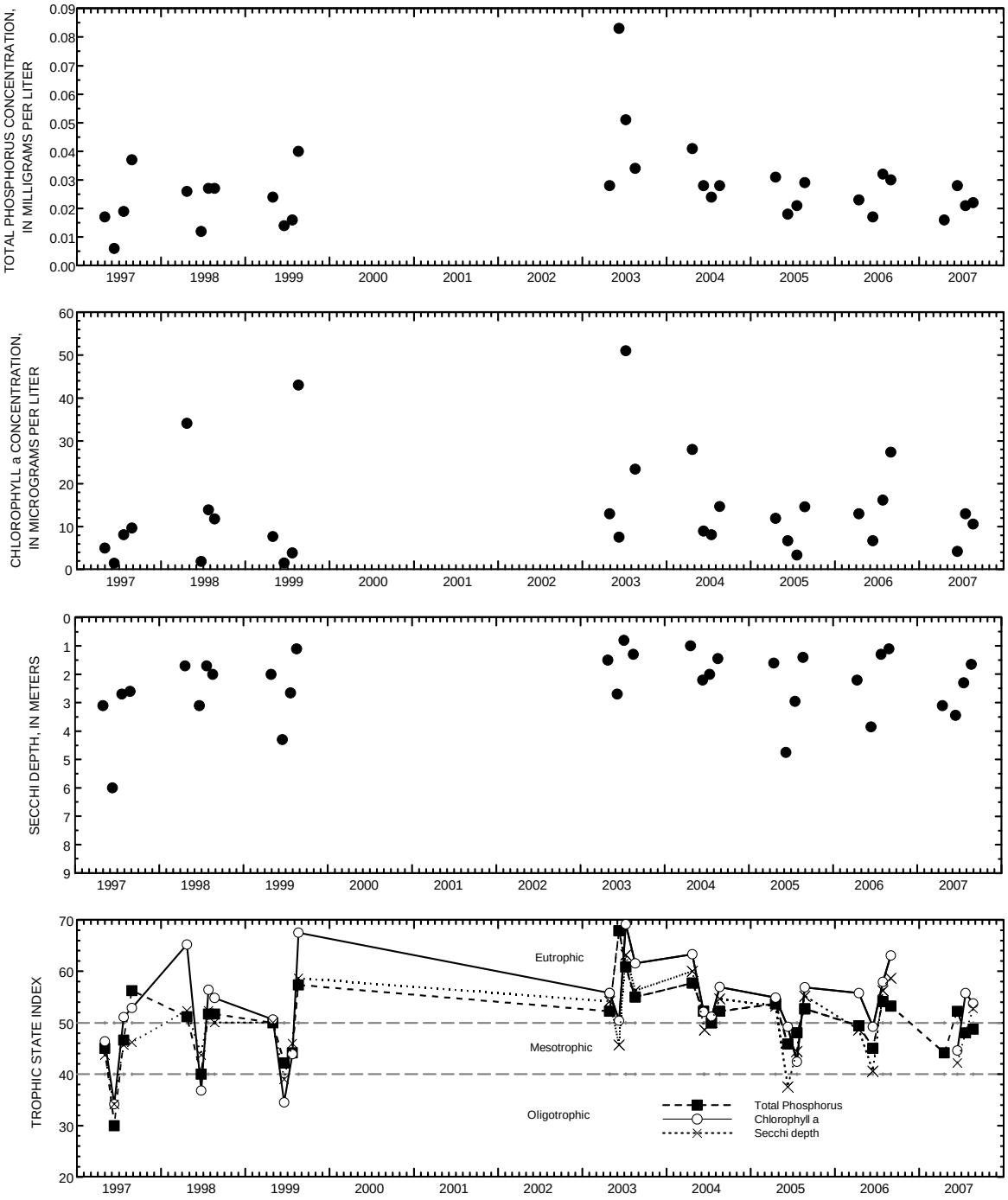
WATER-QUALITY DATA, FEBRUARY 28 TO AUGUST 22, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Feb. 28		April 19		June 14		July 19		August 22	
32210	Chlorophyll a, phytoplankton (µg/L)	--		--		4.18		13		10.6	
00078	Secchi-depth (m)	--		3.1		3.4		2.3		1.6	
00098	Sampling depth (m)	0.5	6.5	0.5	7.0	0.5	7.0	0.5	7.0	0.5	7.0
00010	Water temperature (ºC)	1.0	3.1	8.3	6.8	25.8	12.6	25.0	14.8	21.4	17.1
00400	pH (standard units)	7.9	7.6	8.4	8.3	8.7	7.7	8.8	7.4	8.0	7.0
00095	Specific conductance (µS/cm)	556	592	507	519	515	576	528	604	506	605
00300	Dissolved oxygen	11.8	7.1	13.2	12.1	10.8	0.4	10.0	0.3	7.0	0.3
00665	Phosphorus, total (as P)	0.013	0.015	0.016	0.017	0.028	0.046	0.021	0.045	0.022	0.059

432255088134700 LITTLE CEDAR LAKE, NORTH SITE, NEAR WEST BEND, WI

LAKE-DEPTH PROFILES, FEBRUARY 28 TO AUGUST 22, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Little Cedar Lake, North Site, near West Bend, Wisconsin.

432249088134500 LITTLE CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

LOCATION.--Lat 43°22'49", long 88°13'45", in NW ¼ SE ¼ sec.33, T.11 N., R.19 E., Washington County, Hydrologic Unit 04040003, 2.8 mi southwest of West Bend.

SURFACE AREA.--0.38 mi^2.

PERIOD OF RECORD.--February 1997 to August 1999, February 2003 to current year.

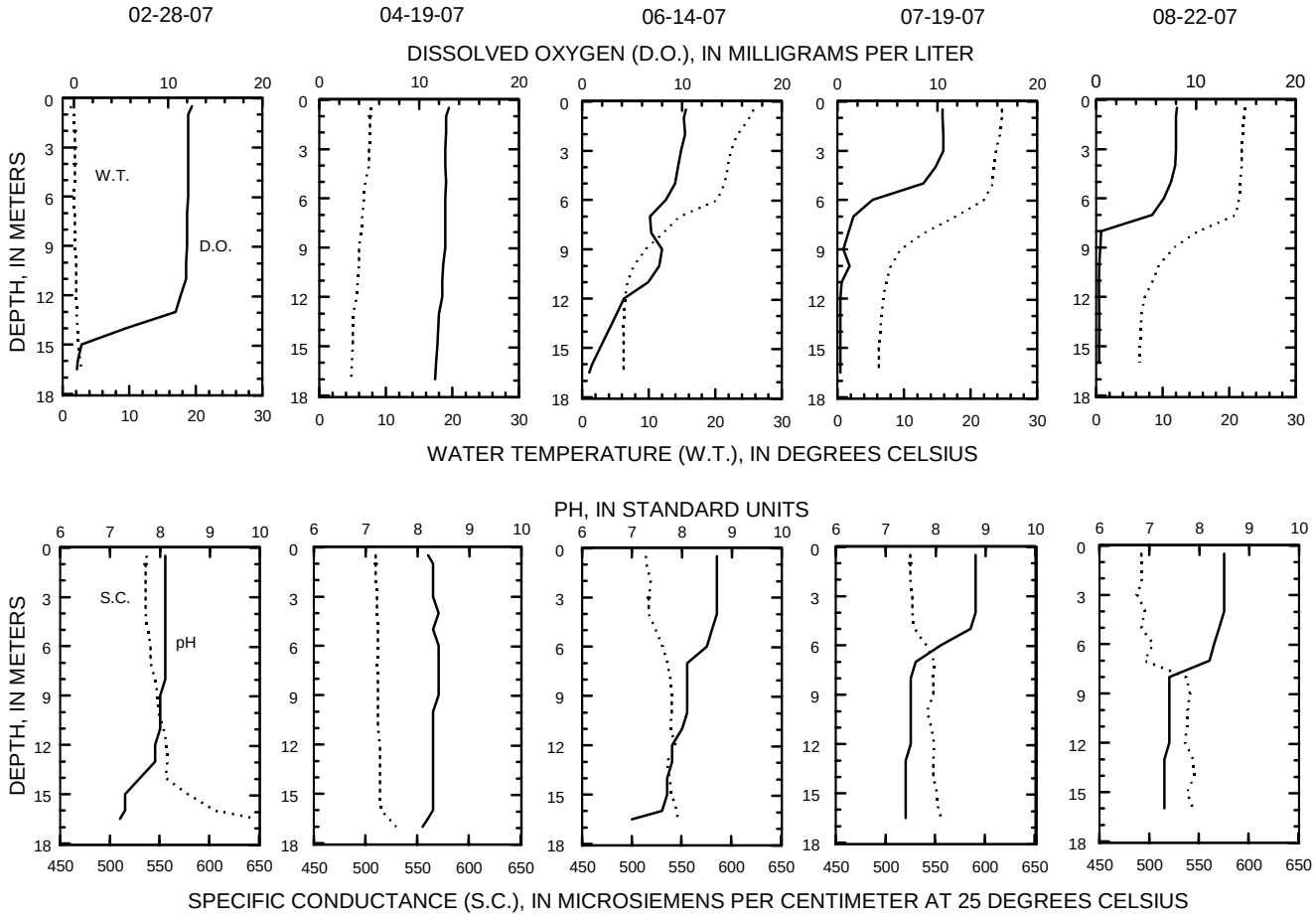
REMARKS.--Lake sampled in southern basin at deep hole. Lake ice-covered during February sampling. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

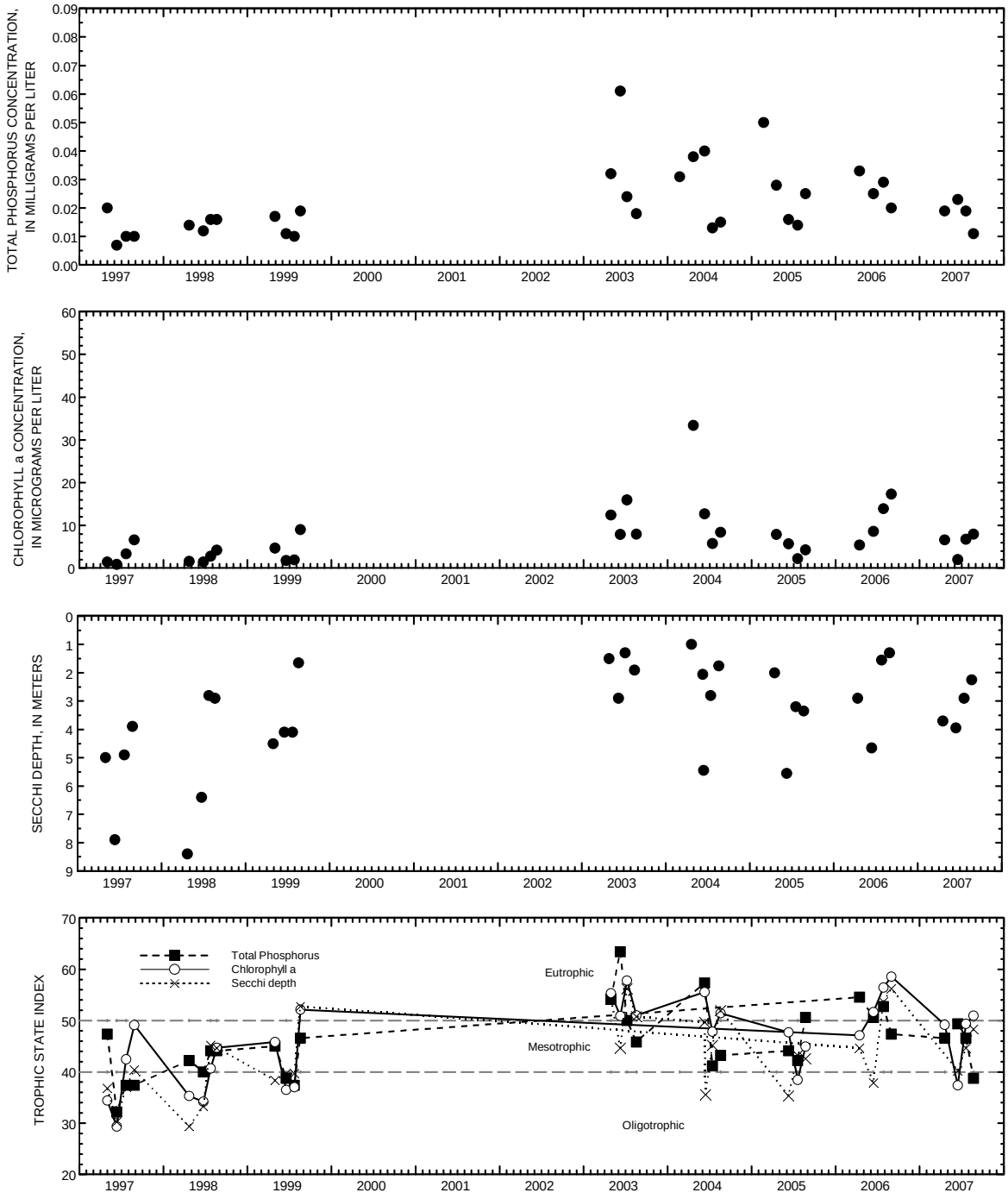
WATER-QUALITY DATA, FEBRUARY 23 TO AUGUST 30, 2006
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Feb. 28		April 19		June 14		July 19		August 22	
32210	Chlorophyll a, phytoplankton (µg/L)	--		6.65		2.00		6.76		7.96	
00078	Secchi-depth (m)	--		3.7		4.0		2.9		2.2	
00098	Sampling depth (m)	0.5	16.5	0.5	17.0	0.5	16.5	0.5	16.5	0.5	16.0
00010	Water temperature (ºC)	1.1	2.8	7.7	4.8	25.7	6.2	24.7	6.2	22.3	6.5
00400	pH (standard units)	8.1	7.2	8.2	8.1	8.7	7.0	8.8	7.4	8.5	7.3
00095	Specific conductance (µS/cm)	537	647	510	530	514	546	525	556	492	544
00300	Dissolved oxygen	12.5	0.3	13.0	11.6	10.4	0.7	10.5	0.3	8.1	0.3
00665	Phosphorus, total (as P)	0.019	0.015	0.019	0.018	0.023	0.051	0.019	0.122	0.011	0.093
00671	Orthophosphate, dissolved (as P)	--	--	0.004	--	--	--	0.002	--	--	--
00631	Nitrite + nitrate, dissolved (as N)	--	--	0.154	--	--	--	<0.019	--	--	--
00608	Ammonia, dissolved (as N)	--	--	0.09	--	--	--	<0.015	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	--	--	0.6	--	--	--	--	--	--	--
00600	Total nitrogen	--	--	0.75	--	--	--	--	--	--	--
00076	Turbidity (NTU)	--	--	1.1	--	--	--	--	--	--	--
00081	Apparent color (PTU)	--	--	10	--	--	--	--	--	--	--
00900	Hardness (as CaCO3)	--	--	220	--	--	--	--	--	--	--
00915	Calcium, dissolved (Ca)	--	--	35.7	--	--	--	--	--	--	--
00925	Magnesium, dissolved (Mg)	--	--	32.6	--	--	--	--	--	--	--
00930	Sodium, dissolved (Na)	--	--	22	--	--	--	--	--	--	--
00935	Potassium, dissolved (K)	--	--	1.7	--	--	--	--	--	--	--
00417	ANC (as CaCO3)	--	--	179	--	--	--	--	--	--	--
00940	Chloride, dissolved (Cl)	--	--	48.5	--	--	--	--	--	--	--
00945	Sulfate, dissolved (SO4)	--	--	18.3	--	--	--	--	--	--	--
00955	Silica, dissolved (SiO2)	--	--	0.554	--	--	--	--	--	--	--
01046	Iron (µg/L)	--	--	<100	--	--	--	--	--	--	--
01056	Manganese (µg/L)	--	--	<0.5	--	--	--	--	--	--	--
70300	Solids, dissolved (at 180 ºC)	--	--	286	--	--	--	--	--	--	--

432249088134500 LITTLE CEDAR LAKE, SOUTH SITE, NEAR WEST BEND, WI

LAKE-DEPTH PROFILES, FEBRUARY 28 TO AUGUST 22, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Little Cedar Lake, South Site, near West Bend, Wisconsin.

05428000 LAKE MENDOTA AT MADISON, WI

LOCATION.--Lat 43°05′42″, long 89°22′12″ referenced to North American Datum of 1927, in NW ¼ SE ¼ sec.12, T.7 N., R.9 E., Dane County, WI, Hydrologic Unit 07090001, in county boat house at dam at outlet, in Madison.

SURFACE AREA.—15.2 mi^2.

DRAINAGE AREA.--233 mi^2 of which 36.6 mi^2 probably is noncontributing.

PERIOD OF RECORD.--January 1916 to January 1985 (incomplete), February 1985 to current year.

REVISED RECORDS.--WDR WI-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above NGVD of 1929, or 5.60 ft below City of Madison datum. Prior to Oct. 1, 1979, at datum 7.82 ft higher; prior to Nov. 15, 1971, nonrecording gage at same site at the higher datum.

REMARKS.--Lake level regulated by concrete dam with two 12-foot gates and 20-foot lock at outlet. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 12.75 ft, June 5, 2000; minimum observed, 8.02 ft, Feb. 24 to Mar. 10, 1920, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 11.89 ft, Aug. 27; minimum recorded, 8.30 ft, Dec. 5.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	10.33	9.89	9.05	9.08	9.04	9.06	10.08	10.08	9.57	9.74	9.60	11.64
2	10.32	9.84	9.00	9.05	9.03	9.07	10.10	10.06	9.61	9.72	9.59	11.59
3	10.33	9.77	8.95	9.04	9.03	9.09	10.29	10.03	9.67	9.72	9.57	11.55
4	10.37	9.72	8.82	9.04	9.03	9.10	10.41	10.00	9.91	9.79	9.55	11.50
5	10.37	9.68	8.68	9.06	e9.02	9.10	10.38	9.99	9.95	9.82	9.69	11.45
6	10.36	9.65	8.82	9.06	e9.02	9.10	10.36	9.95	9.93	9.82	9.74	11.41
7	10.34	9.62	8.82	9.06	e9.01	9.10	10.33	9.93	9.93	9.81	9.81	11.41
8	10.33	9.59	8.80	9.06	e9.01	9.10	10.28	9.92	9.95	9.80	9.82	11.36
9	10.33	9.55	8.80	9.08	e9.01	9.11	10.25	9.90	9.92	9.80	9.88	11.31
10	10.31	9.54	8.80	9.03	e8.99	9.11	10.22	9.89	9.91	9.81	9.90	11.28
11	10.35	9.54	8.81	9.03	e8.99	9.11	10.24	9.87	9.90	9.78	9.89	11.29
12	10.30	9.49	8.83	9.04	e8.99	9.12	10.25	9.83	9.90	9.75	9.94	11.21
13	10.26	9.46	8.85	9.03	e8.99	9.16	10.21	9.81	9.89	9.71	9.93	11.14
14	10.23	9.42	8.86	9.03	e8.99	9.30	10.19	9.81	9.88	9.70	10.0	11.10
15	10.19	9.39	8.86	9.05	e8.98	9.51	10.16	9.83	9.87	9.68	10.05	11.01
16	10.17	9.36	8.86	9.04	e8.98	9.61	10.13	9.84	9.87	9.67	10.08	10.95
17	10.24	9.31	8.86	9.04	e8.97	9.66	10.09	9.81	9.85	9.67	10.06	10.89
18	10.26	9.27	8.86	9.04	e8.96	9.70	10.06	9.79	9.85	9.67	10.05	10.85
19	10.26	9.23	8.85	9.03	e8.96	9.74	10.02	9.75	9.88	9.67	10.45	10.82
20	10.23	9.18	8.85	9.02	e8.95	9.77	9.98	9.72	9.84	9.64	10.84	10.77
21	10.24	9.13	8.90	9.03	e8.95	9.79	9.95	9.69	9.83	9.62	11.07	10.74
22	10.30	9.09	8.98	9.04	e8.96	9.91	9.92	9.67	9.84	9.60	11.20	10.74
23	10.28	9.06	9.02	9.04	e8.96	9.98	9.97	9.64	9.83	9.58	11.43	10.70
24	10.26	9.02	9.01	9.04	e9.00	10.0	9.98	9.64	9.83	9.57	11.70	10.66
25	10.21	8.99	9.03	9.04	9.03	10.01	10.03	9.65	9.83	9.56	11.80	10.64
26	10.17	8.95	9.02	9.04	9.03	10.02	10.07	9.63	9.82	9.56	11.79	10.60
27	10.14	8.95	9.01	9.03	9.04	10.01	10.11	9.63	9.83	9.63	11.78	10.56
28	10.11	9.01	9.01	9.03	9.04	9.99	10.11	9.60	9.80	9.62	11.78	10.51
29	10.04	9.06	9.01	9.03	---	9.98	10.09	9.60	9.78	9.61	11.78	10.47
30	9.99	9.07	9.01	9.03	---	9.96	10.07	9.59	9.77	9.61	11.73	10.44
31	9.96	---	9.03	9.03	---	9.97	---	9.58	---	9.61	11.69	---
Mean	10.24	9.36	8.91	9.04	9.00	9.52	10.14	9.80	9.84	9.69	10.52	11.02
Max	10.37	9.89	9.05	9.08	9.04	10.02	10.41	10.08	9.95	9.82	11.80	11.64
Min	9.96	8.95	8.68	9.02	8.95	9.06	9.92	9.58	9.57	9.56	9.55	10.44

430251088284700 MIDDLE GENESEE LAKE, AT GENESEE LAKE ROAD, NEAR OCONOMOWOC, WI

LOCATION.--Lat 43°02'51", long 88°28'47", in SW ¼ SW ¼ SW ¼ sec.22, T. 7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at the southwest side of the lake about 2 miles south of Oconomowoc.

SURFACE AREA.--0.17 mi^2.

DRAINAGE AREA.--Unknown.

PERIOD OF RECORD.--April 1996 to current year.

GAGE.--Staff gage. Local observer, Tom Schubring provided most readings of gage. Datum of gage is about 0.0 ft above NGVD of 1929.

EXTREMES FOR THE PERIOD OF RECORD.--Maximum observed gage height, 867.21 ft, Apr. 16, 2007; minimum observed, 863.88 ft, Oct. 31, 2005.

EXTREMES FOR CURRENT YEAR.--Maximum observed gage height, 867.21 ft, Apr. 16; minimum observed, 865.93 ft, Oct. 17.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007

Date	Gage Height, ft	Date	Gage Height, ft
October 3	865.95	July 8	866.48
8	865.95	11	866.40
17	865.93	15	866.34
23	866.01	21	866.20
29	865.99	25	866.10
April 16	867.21	27	866.20
20	867.20	August 5	866.14
May 6	867.20	11	866.24
18	867.14	19	866.40
23	867.04	21	866.50
25	867.00	25	866.94
June 5	867.00	September 4	866.92
7	866.96	11	866.94
13	866.84	16	866.82
27	866.66	26	866.82
July 2	866.54		

455214089412800 MINOCQUA LAKE, DEEP HOLE, AT MINOCQUA, WI

LOCATION.--Lat 45°52'14", long 89°41'28", in SE ¼ SW ¼ NW ¼ sec.13, T.39 N., R.6 E., Oneida County, Hydrologic Unit 07070001, at Minocqua.

SURFACE AREA.--2.12 mi^2.

PERIOD OF RECORD.--May to September 2003, April 2006 to September 2007 (discontinued).

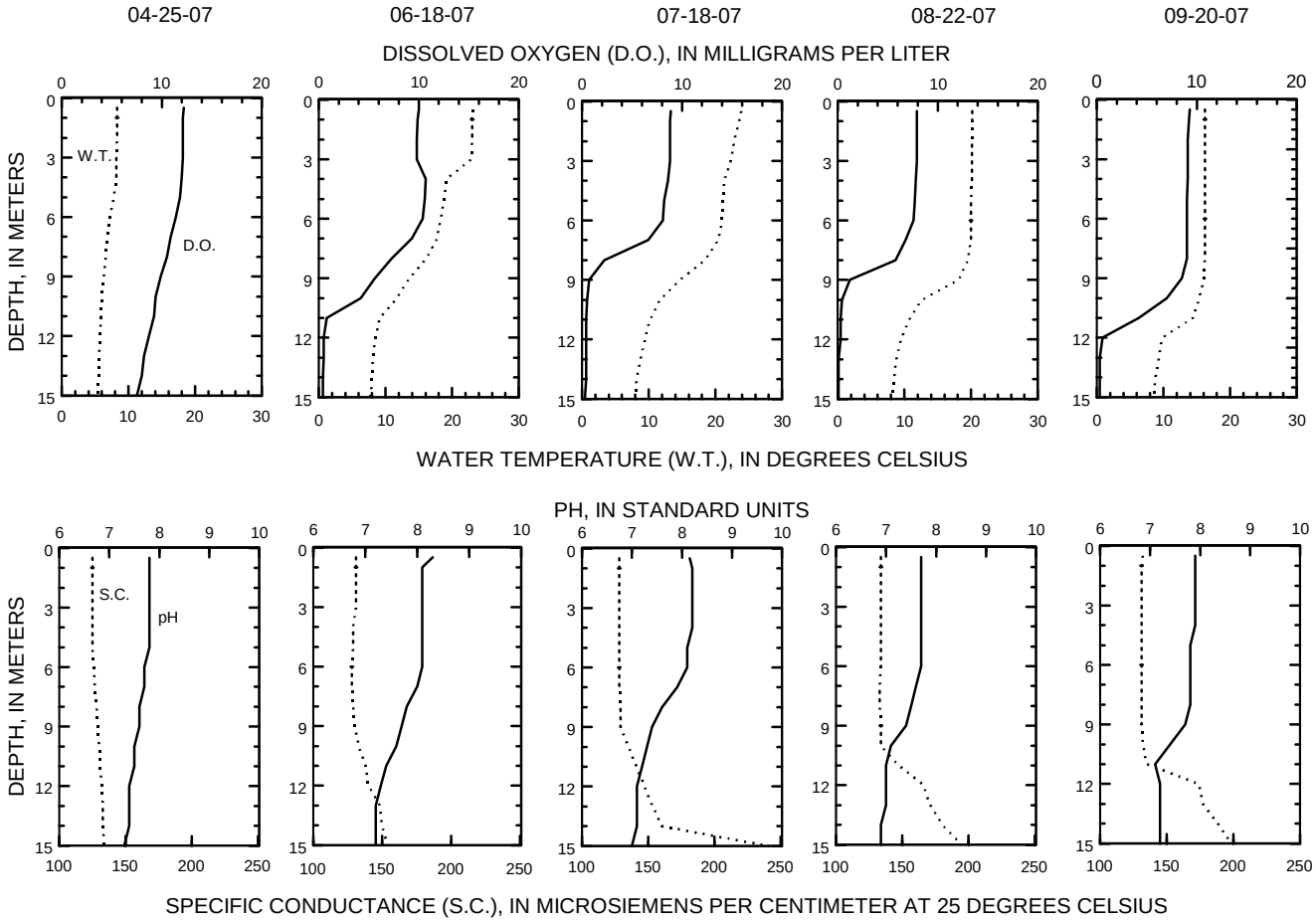
REMARKS.--Lake sampled near center at the deep hole. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

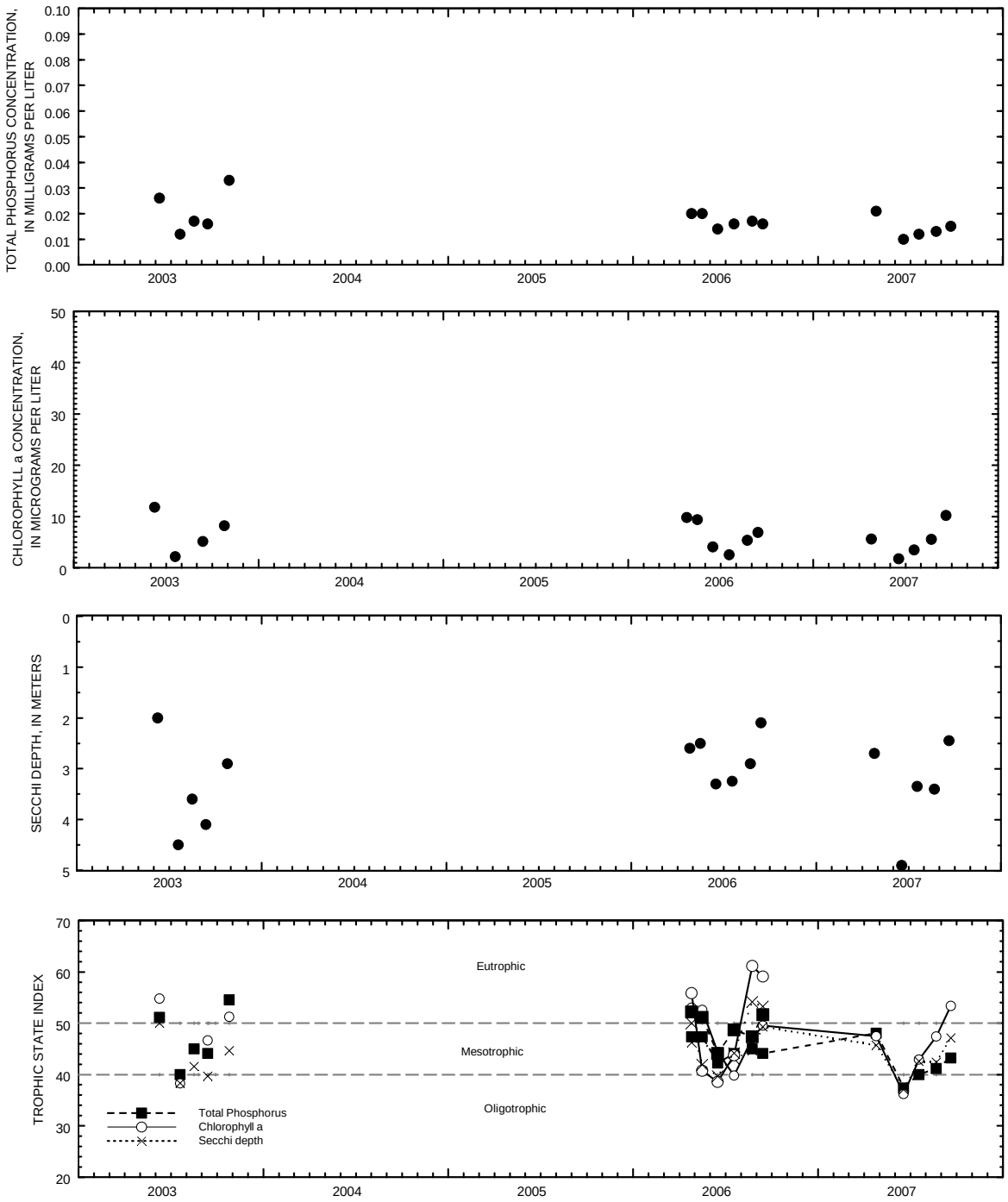
WATER-QUALITY DATA, APRIL 25 TO SEPTEMBER 14, 2006
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Apr. 25		Jun. 18		Jul. 18		Aug. 22			Sept. 20		
00065	Lake stage (ft)	1584.67		1584.61		1584.59		1584.23			1584.05		
32210	Chlorophyll a, phytoplankton (µg/L)	5.60		1.77		3.51		5.55			10.2		
00078	Secchi-depth (m)	2.7		4.9		3.4		--			--		
00098	Sampling depth (m)	0.5	15.0	0.5	15.0	0.5	14.0	0.5	10.0	15.0	0.5	12.0	15.0
00010	Water temperature (ºC)	8.3	5.4	23.1	7.8	23.9	8.2	20.2	12.6	8.1	16.2	9.8	8.5
00400	pH (standard units)	7.8	7.3	8.3	7.2	8.2	7.1	7.7	7.1	6.9	7.9	7.2	7.2
00095	Specific conductance (µS/cm)	125	134	131	154	128	160	134	134	195	132	174	198
00300	Dissolved oxygen	12.2	7.5	10.0	0.4	8.9	0.4	7.9	0.4	0.1	9.3	0.6	0.3
00665	Phosphorus, total (as P)	0.021	0.024	0.010	0.178	0.012	0.200	0.013	0.023	0.417	0.015	0.133	0.465

455214089412800 MINOCQUA LAKE, DEEP HOLE, AT MINOCQUA, WI

LAKE-DEPTH PROFILES, APRIL 25 TO SEPTEMBER 20, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Minocqua Lake, Deep Hole, at Minocqua, Wisconsin.

455232089424100 MINOCQUA LAKE, NORTH BAY, AT MINOCQUA, WI

LOCATION.--Lat 45°52'32", long 89°42'41", in NE ¼ NW ¼ NW ¼ sec.14, T.39 N., R.6 E., Oneida County, Hydrologic Unit 07070001, at Minocqua.

SURFACE AREA.--2.12 mi^2.

PERIOD OF RECORD.—May to September 2003, April 2006 to September 2007 (discontinued).

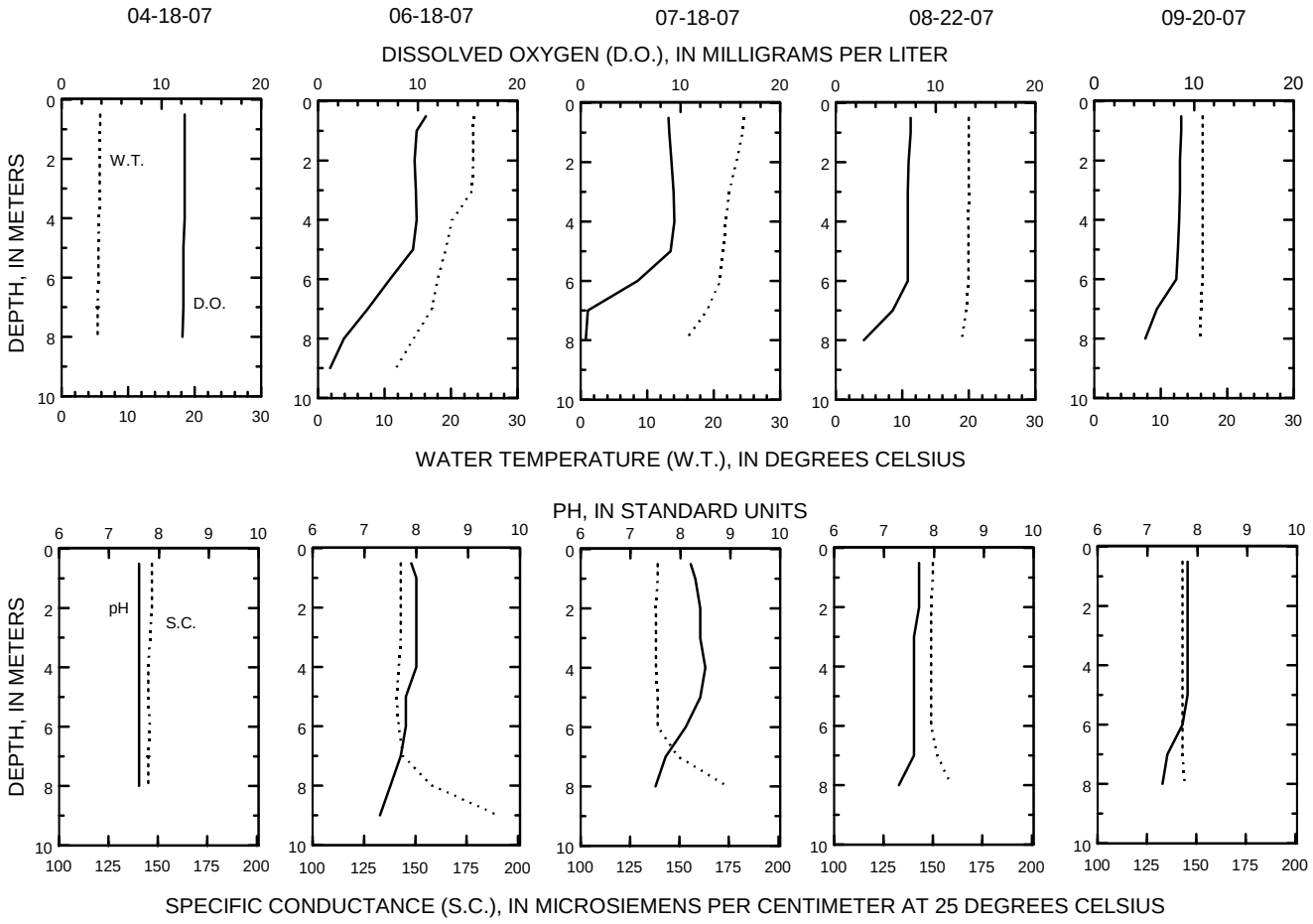
REMARKS.--Lake sampled in the north bay. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

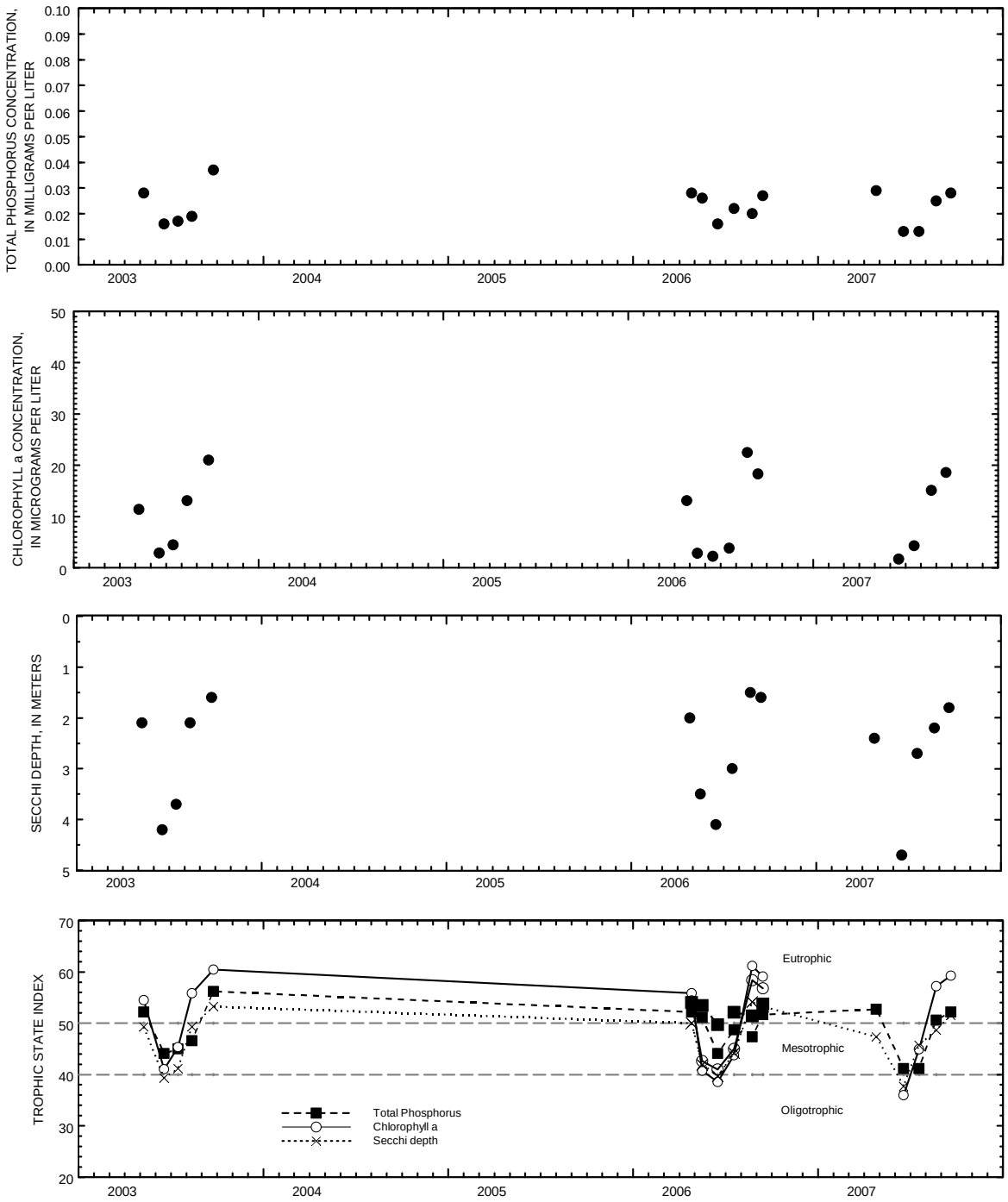
WATER-QUALITY DATA, APRIL 18 TO SEPTEMBER 20, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Apr. 18		Jun. 18		Jul. 18		Aug. 22		Sept. 20	
00065	Lake stage (ft)	1584.67		1584.61		1584.59		1584.23		1584.05	
32210	Chlorophyll a, phytoplankton (µg/L)	--		1.73		4.31		15.1		18.6	
00078	Secchi-depth (m)	2.4		4.7		2.7		2.2		1.8	
00098	Sampling depth (m)	0.5	8.0	0.5	9.0	0.5	8.0	0.5	8.0	0.5	8.0
00010	Water temperature (ºC)	5.8	5.4	23.4	11.7	24.5	15.7	20.0	18.9	16.3	15.9
00400	pH (standard units)	7.6	7.6	7.9	7.3	8.2	7.5	7.7	7.3	7.8	7.3
00095	Specific conductance (µS/cm)	147	145	143	190	139	174	150	159	143	144
00300	Dissolved oxygen	12.3	12.1	10.8	1.2	8.8	0.5	7.5	2.8	8.7	5.1
00665	Phosphorus, total (as P)	0.029	0.026	0.013	0.076	0.013	0.098	0.025	0.216	0.028	0.058

455232089424100 MINOCQUA LAKE, NORTH BAY, AT MINOCQUA, WI

LAKE-DEPTH PROFILES, APRIL 18 TO SEPTEMBER 20, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Minocqua Lake, North Bay, at Minocqua, Wisconsin.

05429000 LAKE MONONA AT MADISON, WI

LOCATION.--Lat 43°03′48″, long 89°23′49″ referenced to North American Datum of 1927, in SE ¼ SW ¼ sec.23, T.7 N., R.9 E., Dane County, WI, Hydrologic Unit 07090001, in Brittingham Park, in Madison.

SURFACE AREA.--5.3 mi^2.

DRAINAGE AREA.--279 mi^2 of which 36.6 mi^2 probably is noncontributing.

PERIOD OF RECORD.--September 1915 to current year (fragmentary) in reports of the Geological Survey. For 1856 to March 1917 in reports of Wisconsin Railroad Commission, volume 19.

REVISED RECORDS.--WSP 1338: Lake area. WDR WI-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above NGVD of 1929, or 5.60 ft below City of Madison datum. Prior to Oct. 1, 1979, datum 3.61 ft higher; prior to Nov. 15, 1971, nonrecording gage at same site at the higher datum.

REMARKS.--Lake level regulated by concrete dam with four 12-foot stop-log sections and 12-foot lock at outlet of Lake Waubesa. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 7.48 ft, June 14, 15, 2000; minimum observed, 3.22 ft, Jan. 20, 1965, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 7.43 ft, Aug. 27; minimum recorded, 4.04 ft, Feb. 22 and 23.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

[e, estimated]

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5.33	5.16	5.31	4.34	e4.07	4.21	5.05	5.29	4.90	4.88	4.90	7.26
2	5.31	5.14	5.29	4.32	e4.07	4.24	5.07	5.25	4.93	4.86	4.89	7.23
3	5.29	5.14	5.26	4.30	e4.06	4.22	5.33	5.21	4.97	4.85	4.88	7.20
4	5.29	5.15	5.23	4.29	e4.07	4.20	5.37	5.16	5.19	4.97	4.89	7.16
5	5.26	5.16	5.20	4.28	e4.07	4.19	5.34	5.13	5.25	4.97	5.09	7.13
6	5.22	5.16	5.16	4.25	e4.08	4.17	5.30	5.09	5.22	4.95	5.12	7.09
7	5.18	5.16	5.04	4.23	e4.07	4.16	5.27	5.04	5.20	4.96	5.21	7.06
8	5.14	5.17	4.99	4.21	e4.08	4.15	5.26	5.01	5.16	4.96	5.23	7.03
9	5.11	5.17	4.93	4.17	e4.09	4.15	5.25	4.99	5.12	4.97	5.30	6.99
10	5.06	5.21	4.86	4.16	e4.07	4.18	5.24	4.96	5.09	4.94	5.30	6.99
11	5.07	5.27	4.80	4.16	e4.07	4.19	5.29	4.96	5.06	4.89	5.28	6.98
12	5.02	5.27	4.74	4.15	e4.06	4.21	5.26	4.94	5.04	4.86	5.31	6.93
13	4.97	5.28	4.67	4.13	e4.06	4.26	5.26	4.96	5.02	4.85	5.30	6.89
14	4.95	5.28	4.62	4.12	e4.06	4.36	5.28	4.95	5.01	4.82	5.36	6.82
15	4.93	5.27	4.57	4.13	e4.06	4.45	5.28	4.99	5.00	4.82	5.40	6.77
16	4.93	5.24	4.54	4.13	e4.06	4.47	5.27	5.03	4.98	4.82	5.41	6.74
17	5.01	5.22	4.50	4.13	e4.05	4.47	5.27	5.03	4.97	4.82	5.40	6.71
18	5.02	5.21	4.46	4.14	e4.05	4.46	5.25	5.03	4.97	4.82	5.45	6.67
19	5.01	5.19	4.43	4.14	e4.05	4.45	5.25	5.02	4.96	4.82	5.92	6.63
20	5.00	5.18	4.40	4.14	e4.05	4.43	5.24	5.04	4.94	4.81	6.23	6.60
21	5.00	5.17	4.45	4.14	e4.05	4.44	5.22	5.03	4.94	4.82	6.38	6.56
22	5.02	5.16	4.49	4.14	4.04	4.59	5.21	5.02	4.99	4.82	6.55	6.57
23	5.00	5.15	4.49	4.14	4.04	4.67	5.25	5.01	4.98	4.82	6.84	6.54
24	4.99	5.14	4.49	4.13	4.10	4.72	5.26	5.00	4.97	4.82	7.12	6.50
25	5.04	5.13	4.47	4.12	4.18	4.75	5.33	5.00	4.96	4.82	7.30	6.48
26	5.10	5.12	4.44	4.12	4.19	4.79	5.37	4.99	4.96	4.83	7.33	6.46
27	5.13	5.16	4.42	4.11	4.19	4.84	5.39	4.95	4.95	4.92	7.38	6.42
28	5.13	5.28	4.40	4.10	4.19	4.87	5.37	4.95	4.93	4.93	7.40	6.38
29	5.15	5.33	4.37	4.10	---	4.88	5.33	4.93	4.90	4.92	7.37	6.32
30	5.17	5.33	4.35	4.09	---	4.89	5.33	4.92	4.89	4.92	7.34	6.23
31	5.16	---	4.36	e4.07	---	4.93	---	4.90	---	4.91	7.30	---
Mean	5.10	5.20	4.70	4.17	4.08	4.45	5.27	5.03	5.01	4.88	5.94	6.78
Max	5.33	5.33	5.31	4.34	4.19	4.93	5.39	5.29	5.25	4.97	7.40	7.26
Min	4.93	5.12	4.35	4.07	4.04	4.15	5.05	4.90	4.89	4.81	4.88	6.23

430551088273500 OCONOMOWOC LAKE NO. 1 (CENTER) AT OCONOMOWOC, WI

LOCATION.--Lat 43°05'51", long 88°27'35", in NW ¼ SE ¼ sec.2, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Oconomowoc.

SURFACE AREA.--1.20 mi^2.

PERIOD OF RECORD.--March 1986 to current year.

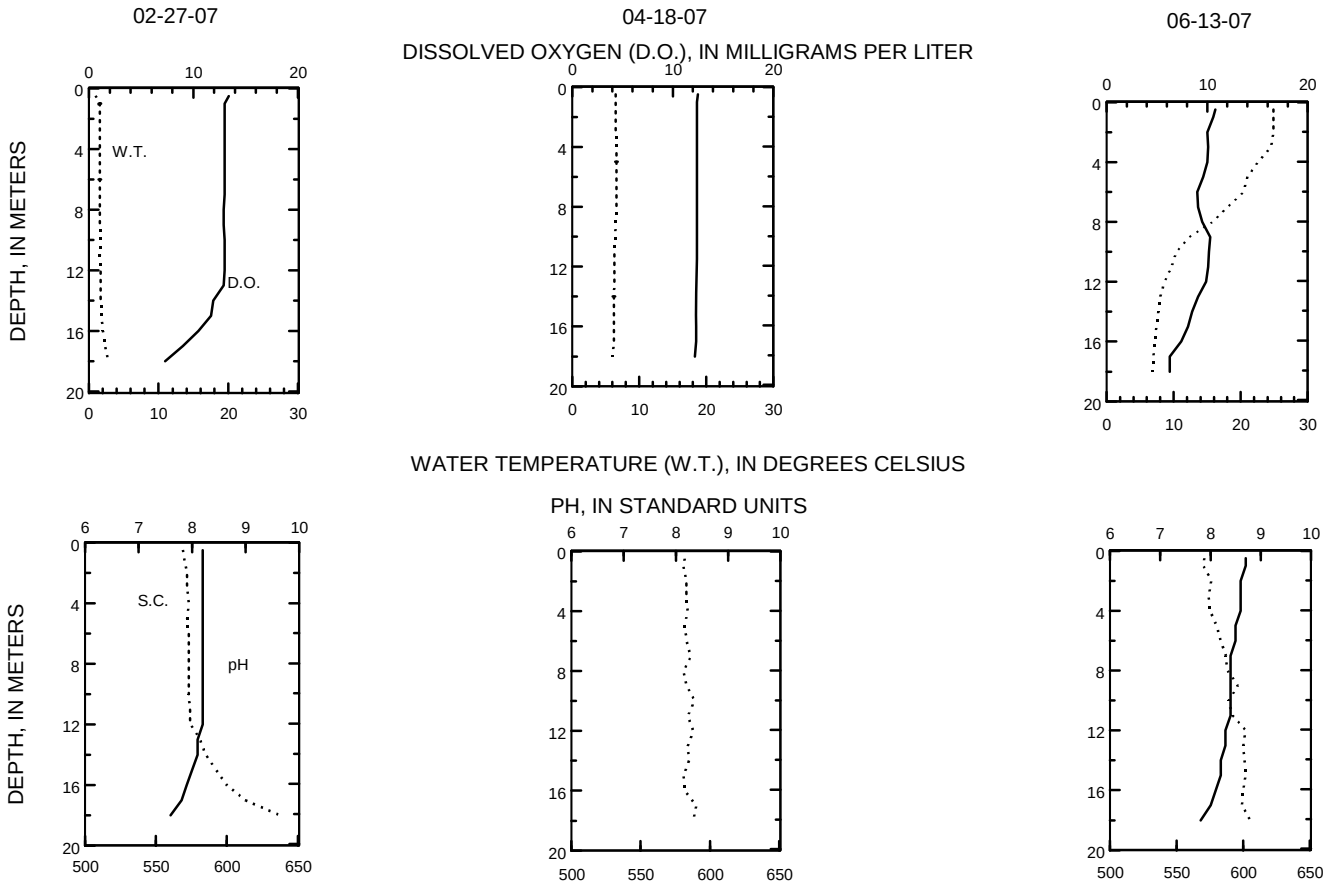
REMARKS.--Lake sampled near center at the deep hole. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 27 TO SEPTEMBER 5, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	February 27		April 18		June 13		July 3	July 18		August 23		Sept. 5
00065	Lake stage (ft)	--		--		8.21		--	--		--		--
32210	Chlorophyll a, phytoplankton (µg/L)	--		1.13		2.03		3.36	3.39		2.83		2.79
00078	Secchi-depth (m)	--		7.0		5.8		2.0	1.6		4.8		3.8
00098	Sampling depth (m)	0.5	18.0	0.5	18.0	0.5	18.0	0.5	0.5	18.0	0.5	18.0	0.5
00010	Water temperature (ºC)	0.9	2.8	6.5	6.0	24.9	6.9	23.8	24.8	6.8	22.6	7.0	25.2
00400	pH (standard units)	8.2	7.6	--	--	8.7	7.8	8.6	8.6	7.5	8.2	7.3	8.4
00095	Specific conductance (µS/cm)	569	638	582	588	571	605	578	561	598	533	585	533
00300	Dissolved oxygen	13.4	7.3	12.5	12.2	10.8	6.3	9.3	9.9	0.4	8.5	0.4	8.4
00665	Phosphorus, total (as P)	0.010	0.007	0.014	0.014	0.026	0.019	0.012	0.016	0.020	<0 .005	0.023	0.014
00671	Orthophosphate, dissolved (as P)	--	--	0.005	--	--	--	--	--	--	--	--	--
00631	Nitrite + nitrate, dissolved (as N)	--	--	0.274	--	--	--	--	--	--	--	--	--
00608	Ammonia, dissolved (as N)	--	--	0.019	--	--	--	--	--	--	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	--	--	0.45	--	--	--	--	--	--	--	--	--
00600	Total nitrogen	--	--	0.72	--	--	--	--	--	--	--	--	--
00076	Turbidity (NTU)	--	--	0.9	--	--	--	--	--	--	--	--	--
00080	Color, filtered (PTU)	--	--	--	--	--	--	8	--	--	--	--	5
00081	Apparent color (PTU)	--	--	10	--	--	--	--	--	--	--	--	--
00900	Hardness (as CaCO3)	--	--	250	--	--	--	--	--	--	--	--	--
00915	Calcium, dissolved (Ca)	--	--	45.2	--	--	--	--	--	--	--	--	--
00925	Magnesium, dissolved (Mg)	--	--	33.5	--	--	--	--	--	--	--	--	--
00930	Sodium, dissolved (Na)	--	--	19.4	--	--	--	--	--	--	--	--	--
00935	Potassium, dissolved (K)	--	--	2.1	--	--	--	--	--	--	--	--	--
00417	ANC (as CaCO3)	--	--	204	--	--	--	189	--	--	--	--	173
00940	Chloride, dissolved (Cl)	--	--	47.1	--	--	--	--	--	--	--	--	--
00945	Sulfate, dissolved (SO4)	--	--	30	--	--	--	--	--	--	--	--	--
00955	Silica, dissolved (SiO2)	--	--	5.18	--	--	--	4.2	--	--	--	--	8.04
01046	Iron (µg/L)	--	--	<100	--	--	--	--	--	--	--	--	--
01056	Manganese (µg/L)	--	--	<0 .5	--	--	--	--	--	--	--	--	--
70300	Solids, dissolved (at 180 ºC)	--	--	318	--	--	--	--	--	--	--	--	--

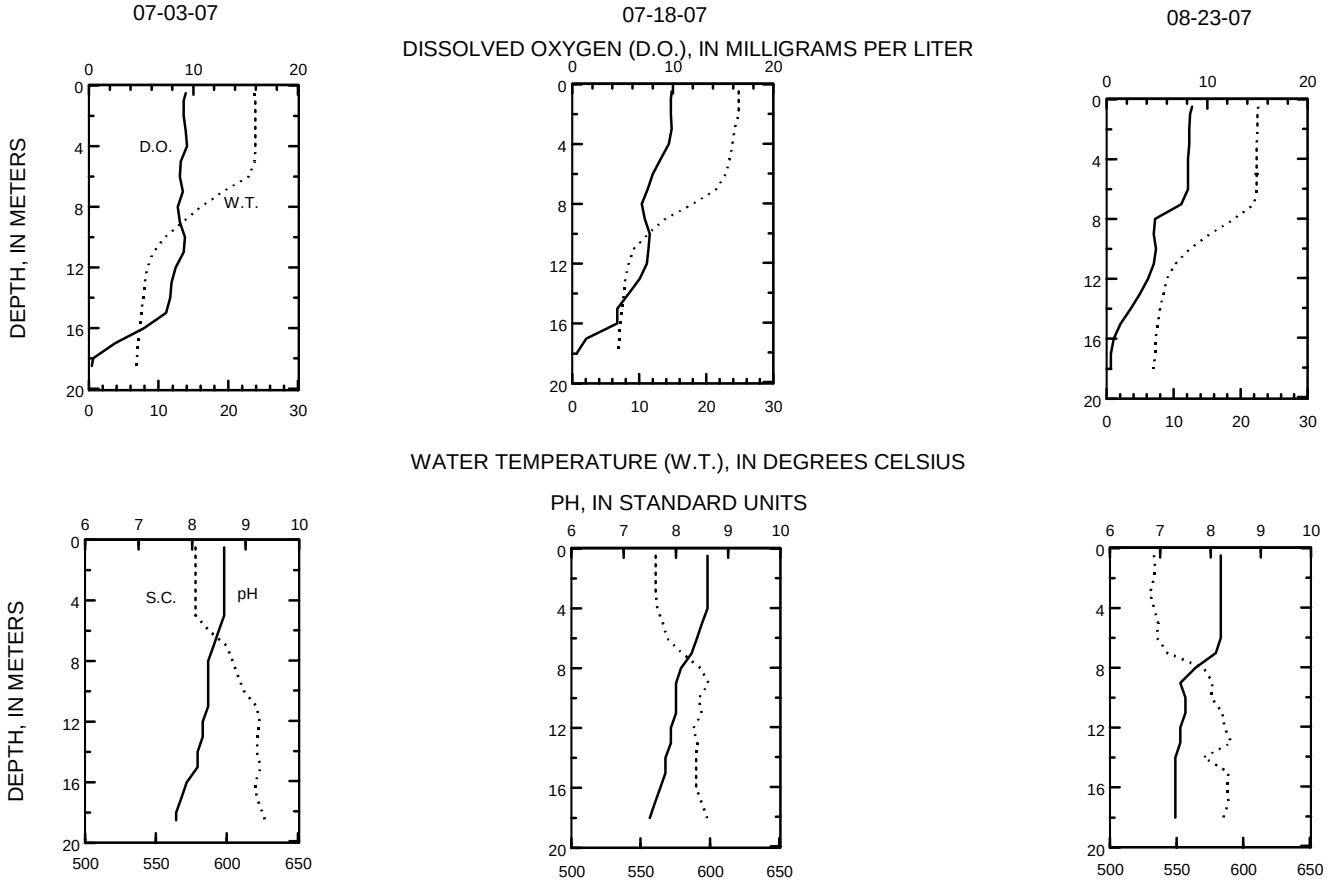
430551088273500 OCONOMOWOC LAKE NO. 1 (CENTER) AT OCONOMOWOC, WI

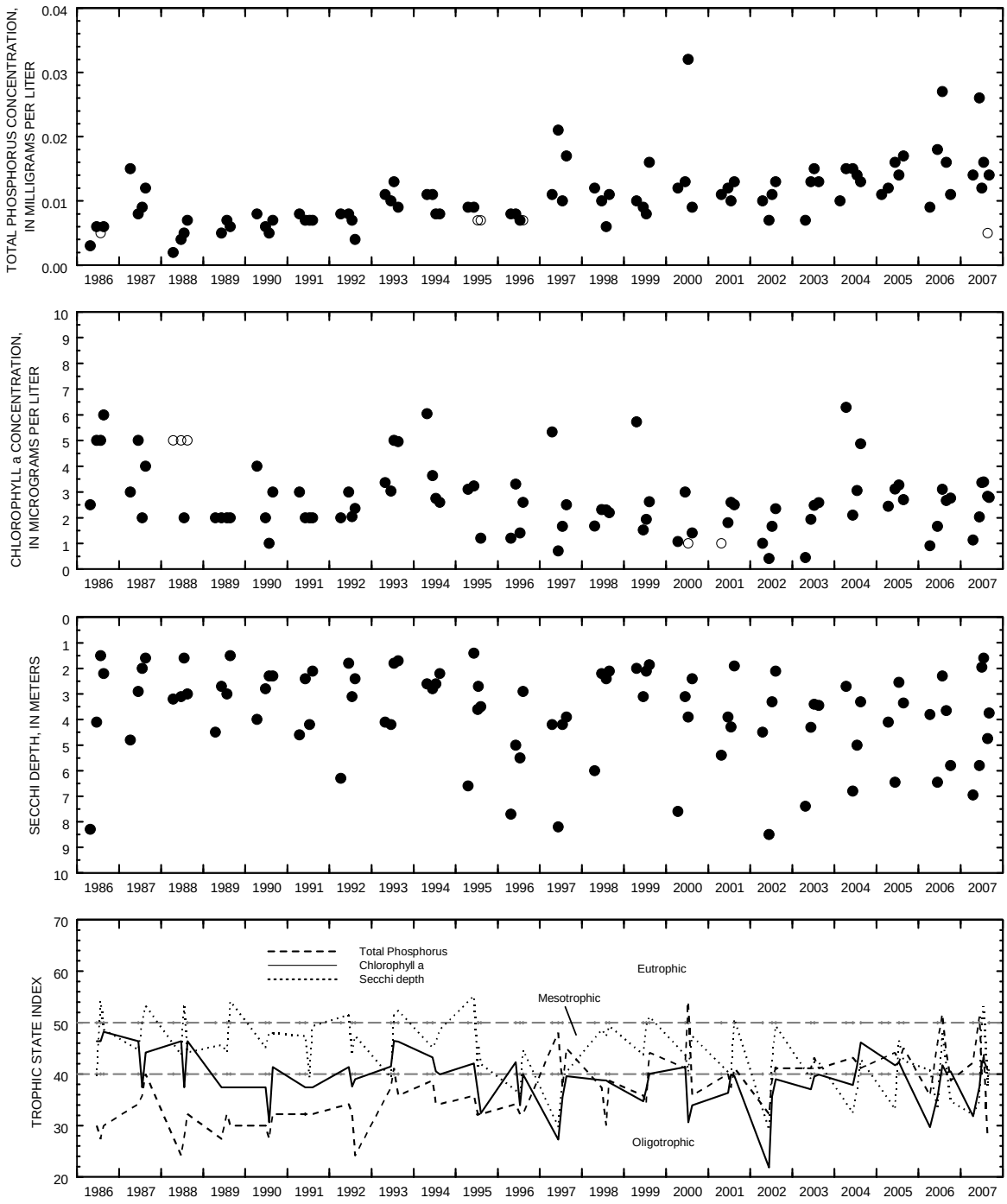
LAKE-DEPTH PROFILES, FEBRUARY 27 TO JUNE 13, 2007



430551088273500 OCONOMOWOC LAKE NO. 1 (CENTER) AT OCONOMOWOC, WI

LAKE-DEPTH PROFILES, JULY 3 TO AUGUST 23, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Oconomowoc Lake, Center Site, at Oconomowoc, Wisconsin.

(Open circles on the first two plots indicate laboratory detection limit for selected analyses.
Actual concentrations for these particular analyses are less than the plotted circles.)

430609088262200 OCONOMOWOC LAKE NO. 2 (OFF HEWITT POINT) AT OCONOMOWOC, WI

LOCATION.--Lat 43°06'09", long 88°26'22", in NW ¼ NW ¼ sec.1, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Oconomowoc.

SURFACE AREA.—1.20 mi^2.

PERIOD OF RECORD.--March 1986 to current year.

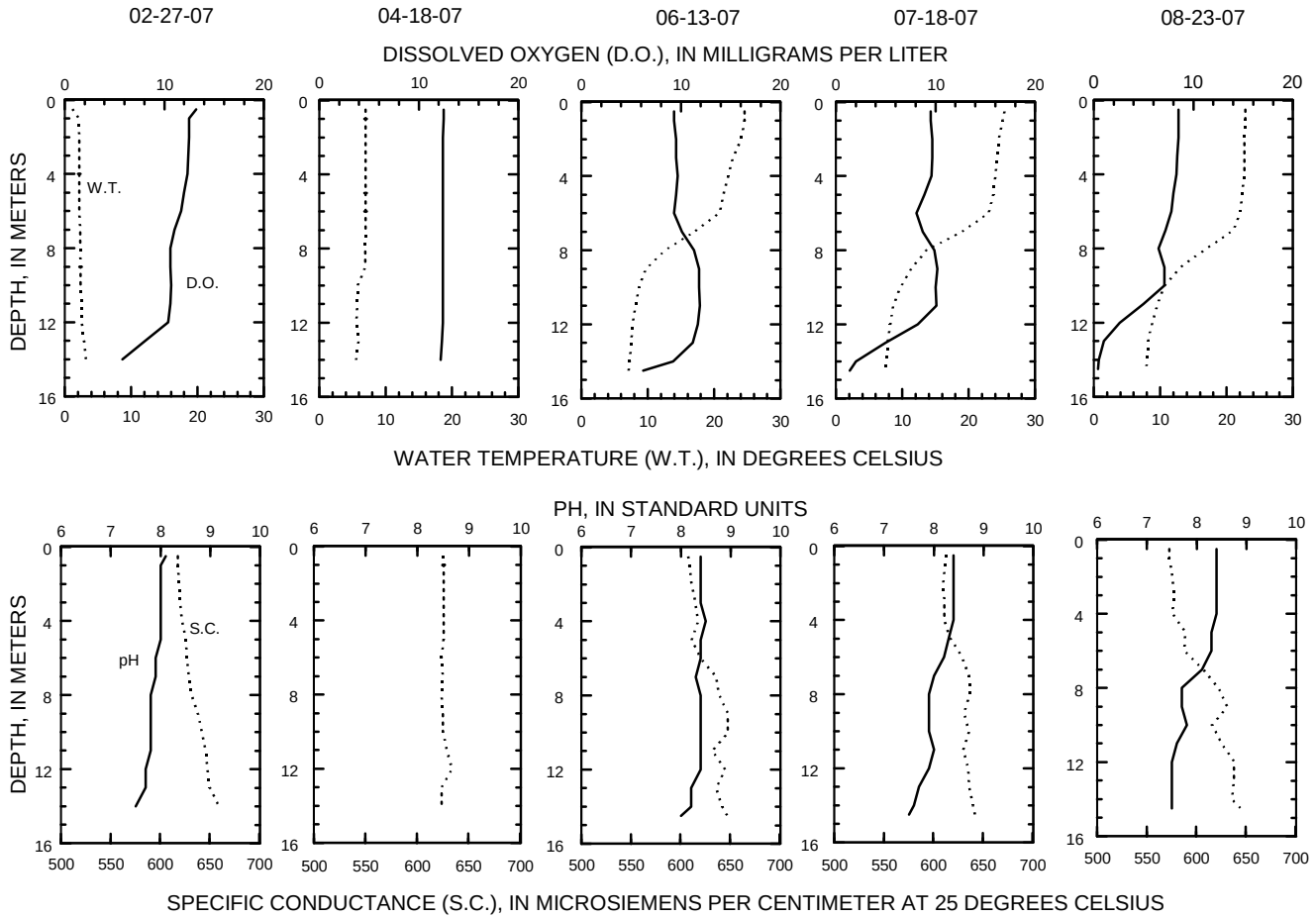
REMARKS.--Lake sampled at the deepest point in northeast bay near Hewitt Point. Lake ice-covered during February sampling. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

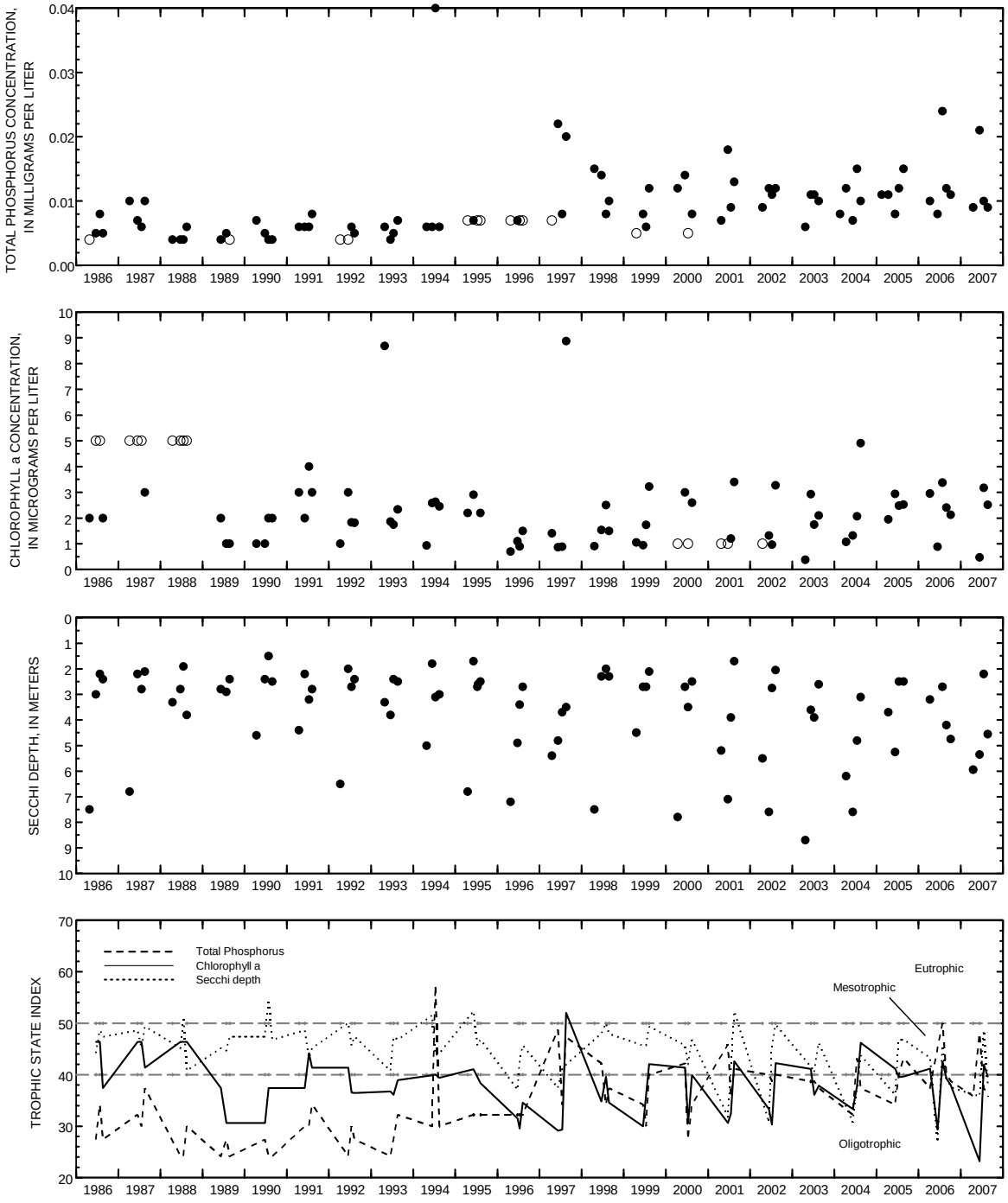
WATER-QUALITY DATA, FEBRUARY 27 TO AUGUST 23, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	February 27		April 18		June 13		July 18		August 23	
00065	Lake stage (ft)	--		--		8.21		--		--	
32210	Chlorophyll a, phytoplankton (µg/L)	--		--		0.47		3.18		2.51	
00078	Secchi-depth (m)	--		6.0		5.4		2.2		4.6	
00098	Sampling depth (m)	0.5	14.0	0.5	14.0	0.5	14.5	0.5	14.5	0.5	14.5
00010	Water temperature (ºC)	1.1	3.2	7.0	5.5	24.6	7.1	25.4	7.5	22.8	7.8
00400	pH (standard units)	8.1	7.5	--	--	8.4	8.0	8.4	7.5	8.4	7.5
00095	Specific conductance (µS/cm)	618	659	625	624	608	647	613	642	573	645
00300	Dissolved oxygen	13.2	5.8	12.5	12.2	9.3	6.2	9.5	1.4	8.5	0.4
00665	Phosphorus, total (as P)	0.009	0.009	0.009	0.009	0.021	0.020	0.010	0.014	0.009	0.013

430609088262200 OCONOMOWOC LAKE NO. 2 (OFF HEWITT POINT) AT OCONOMOWOC, WI

LAKE-DEPTH PROFILES, FEBRUARY 27 TO AUGUST 23, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths,
and TSI data for Oconomowoc Lake, Hewitt Point, at Oconomowoc, Wisconsin.

(Open circles on the first two plots indicate laboratory detection limit for selected analyses.
Actual concentrations for these particular analyses are less than the plotted circles.)

424905088204000 POTTER LAKE NEAR MUKWONAGO, WI

LOCATION.--Lat 42°49'05", long 88°20'40", in NW ¼ SW ¼ sec.11, T.4 N., R.18 E., Walworth County, Hydrologic Unit 07120006, 3.3 mi south of Mukwonago.

SURFACE AREA.--0.25 mi^2.

PERIOD OF RECORD.--February 1993 to current year.

REMARKS.--Lake sampled at the deep hole. Lake ice-covered during February sampling. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, FEBRUARY 27 TO AUGUST 13, 2007

(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	February 27		April 16		June 13		July 18		July 30		August 13	
00065	Lake stage (ft)	--		--		8.34		--		--		--	
32210	Chlorophyll a, phytoplankton (µg/L)	--		13.7		3.17		10.8		8.63		9.22	
00078	Secchi-depth (m)	--		1.4		1.8		0.8		0.9		0.9	
00098	Sampling depth (m)	0.5	7.0	0.5	7.0	0.5	7.0	0.5	7.0	0.5	6.5	0.5	6.5
00010	Water temperature (ºC)	1.8	4.0	7.2	6.4	25.9	19.8	25.5	19.2	26.6	21.1	27.2	21.4
00400	pH (standard units)	7.7	7.2	8.2	8.0	8.8	7.4	8.6	6.7	8.7	6.9	8.6	6.9
00095	Specific conductance (µS/cm)	489	608	458	470	456	516	475	612	447	559	445	573
00300	Dissolved oxygen	12.0	4.7	13.4	12.2	11.1	0.2	9.1	0.1	9.2	0.2	8.9	0.2
00665	Phosphorus, total (as P)	0.038	0.025	0.024	0.032	0.039	0.089	0.036	0.086	0.029	0.086	0.028	0.081
00671	Orthophosphate, dissolved (as P)	--	--	0.012	--	--	--	0.009	--	--	--	--	--
00631	Nitrite + nitrate, dissolved (as N)	--	--	0.137	--	--	--	<0.019	--	--	--	--	--
00608	Ammonia, dissolved (as N)	--	--	<0.015	--	--	--	<0.015	--	--	--	--	--
00623	Ammonia + org-N, dissolved (as N)	--	--	0.70	--	--	--	--	--	--	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	--	--	0.72	--	--	--	--	--	--	--	--	--
00600	Total nitrogen	--	--	0.86	--	--	--	--	--	--	--	--	--
00076	Turbidity (NTU)	--	--	5.5	--	--	--	--	--	--	--	--	--
00081	Apparent color (PTU)	--	--	10	--	--	--	--	--	--	--	--	--
00900	Hardness (as CaCO3)	--	--	180	--	--	--	--	--	--	--	--	--
00915	Calcium, dissolved (Ca)	--	--	39	--	--	--	--	--	--	--	--	--
00925	Magnesium, dissolved (Mg)	--	--	20.1	--	--	--	--	--	--	--	--	--
00930	Sodium, dissolved (Na)	--	--	21.6	--	--	--	--	--	--	--	--	--
00935	Potassium, dissolved (K)	--	--	2.2	--	--	--	--	--	--	--	--	--
00417	ANC (as CaCO3)	--	--	156	--	--	--	--	--	--	--	--	--
00940	Chloride, dissolved (Cl)	--	--	49.3	--	--	--	--	--	--	--	--	--
00945	Sulfate, dissolved (SO4)	--	--	6.8	--	--	--	--	--	--	--	--	--
00955	Silica, dissolved (SiO2)	--	--	3.8	--	--	--	--	--	--	--	--	--
01046	Iron (µg/L)	--	--	<100	--	--	--	--	--	--	--	--	--
01056	Manganese (µg/L)	--	--	M	--	--	--	--	--	--	--	--	--
70300	Solids, dissolved (at 180 ºC)	--	--	262	--	--	--	--	--	--	--	--	--

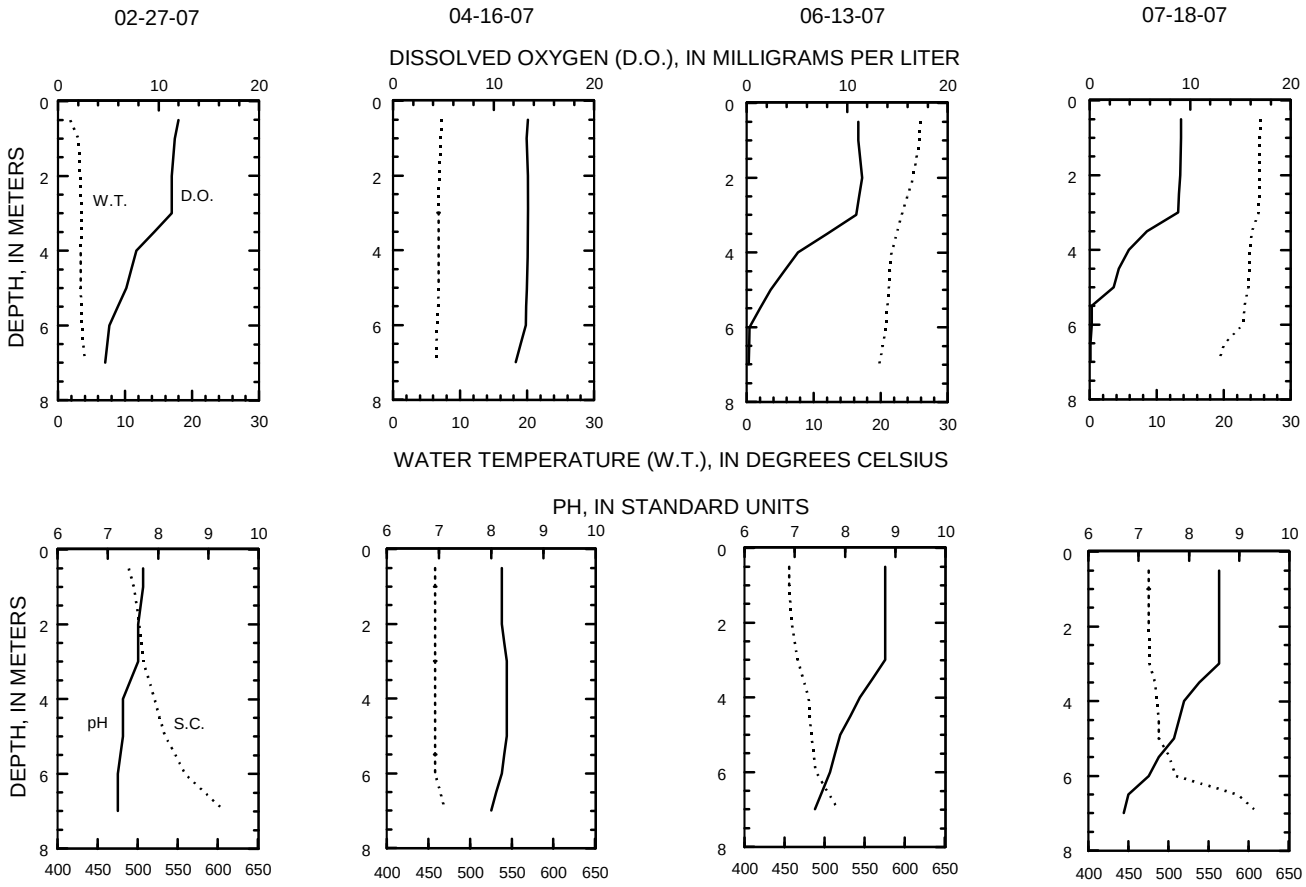
424905088204000 POTTER LAKE NEAR MUKWONAGO, WI

WATER-QUALITY DATA, AUGUST 27 TO SEPTEMBER 14, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	August 27		September 14	
32210	Chlorophyll a, phytoplankton (µg/L)	9.94		6.67	
00078	Secchi-depth (m)	1.2		1.2	
00098	Sampling depth (m)	0.5	7.0	0.5	6.5
00010	Water temperature (ºC)	23.7	20.9	19.9	19.5
00400	pH (standard units)	8.7	7.0	8.6	8.5
00095	Specific conductance (µS/cm)	434	518	461	461
00300	Dissolved oxygen	9.8	0.3	9.2	9.0
00665	Phosphorus, total (as P)	--	0.084	0.029	0.027

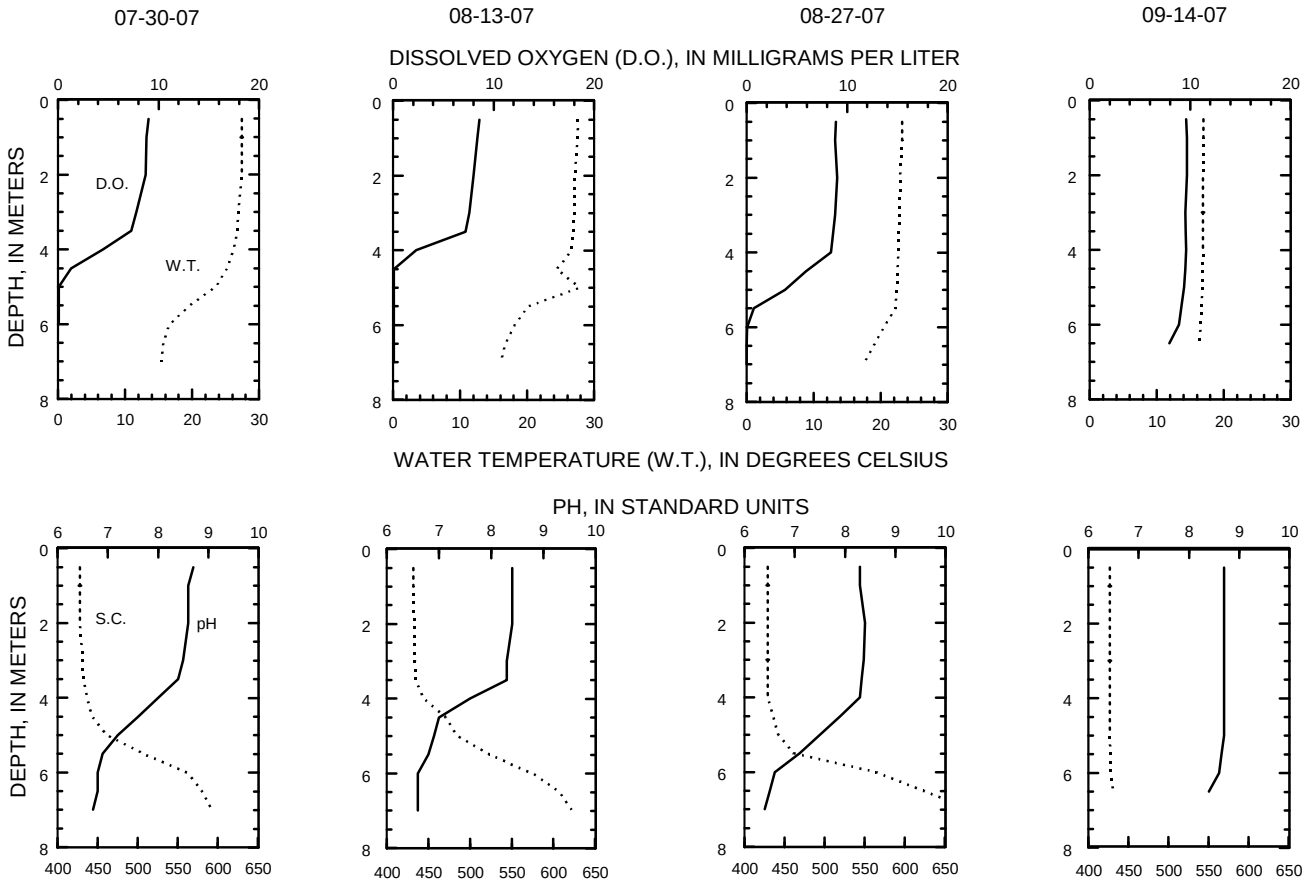
424905088204000 POTTER LAKE NEAR MUKWONAGO, WI

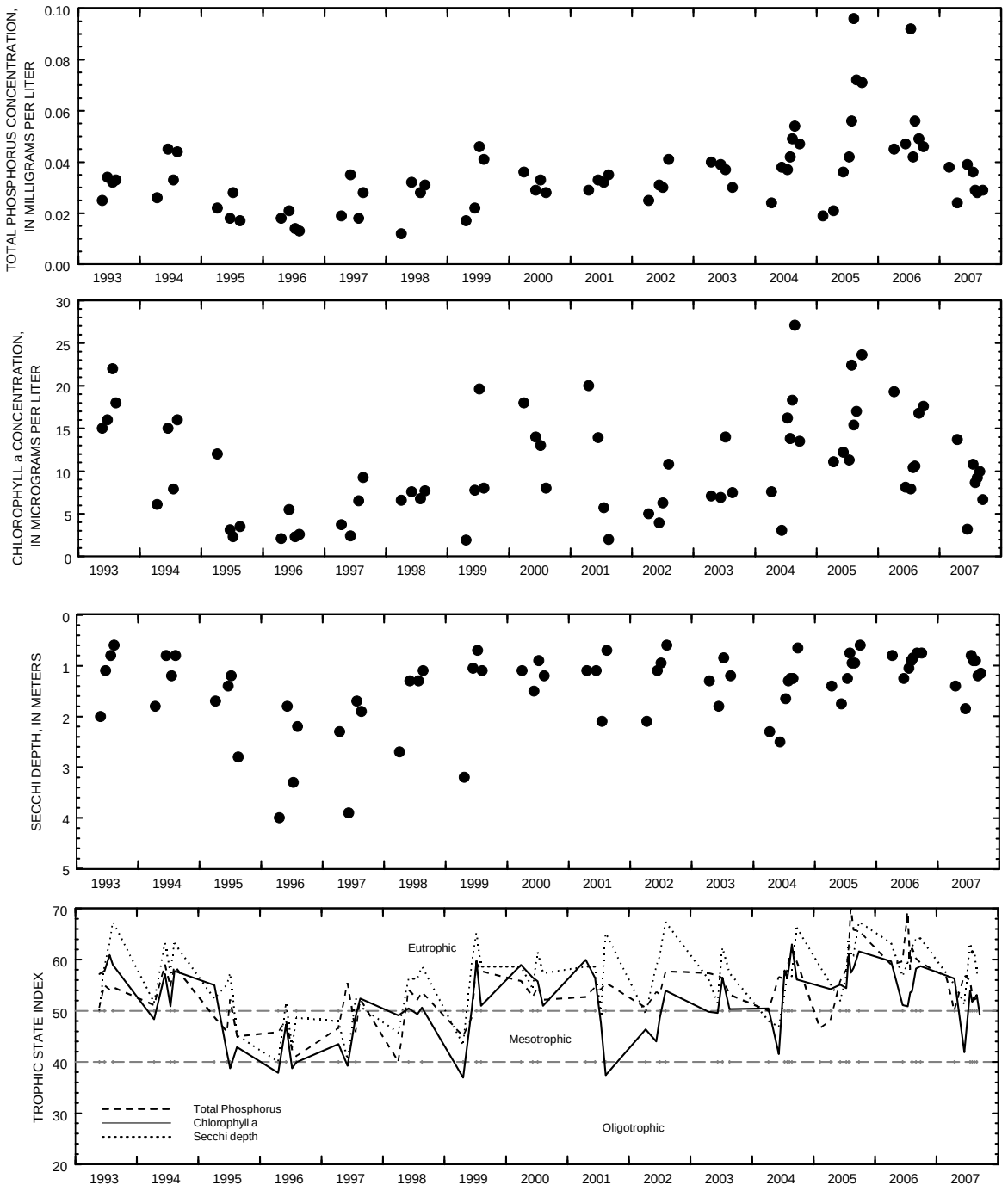
LAKE-DEPTH PROFILES, FEBRUARY 27 TO JULY 18, 2007



424905088204000 POTTER LAKE NEAR MUKWONAGO, WI

LAKE-DEPTH PROFILES, JULY 30 TO SEPTEMBER 14, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Potter Lake, near Mukwonago, Wisconsin.

423246088175800 POWERS LAKE AT POWERS LAKE, WI

LOCATION.--Lat 42°32'46", long 88°17'58", in NW ¼ SE ¼ sec.13, T.1 N., R.18 E., Walworth County, Hydrologic Unit 07120006, at Powers Lake.

SURFACE AREA.—0.72 mi^2.

DRAINAGE AREA.--3.42 mi^2.

PERIOD OF RECORD.--March 1986 to August 1996, and April 1998 to current year.

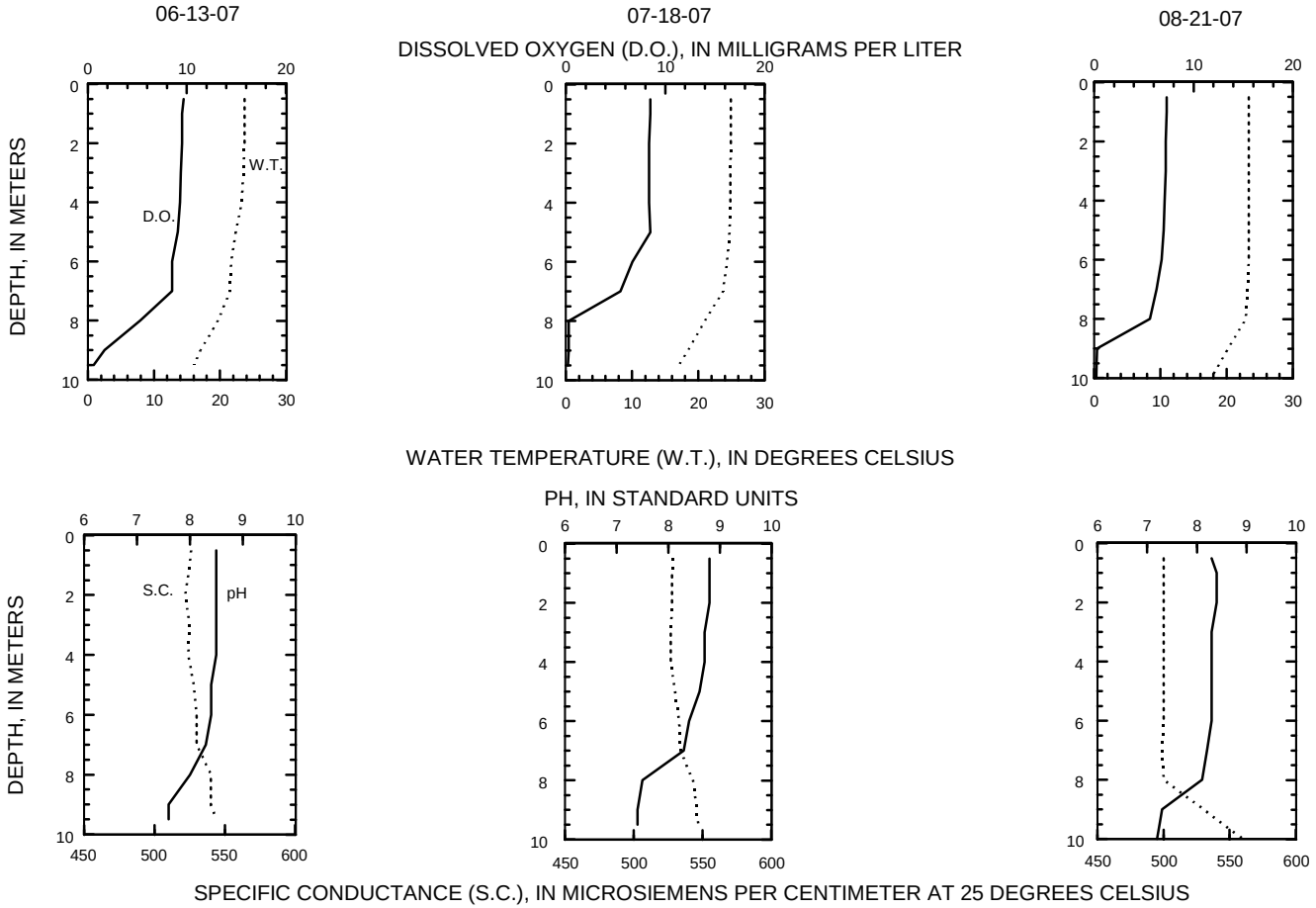
REMARKS.--Lake sampled near center at the deep hole. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

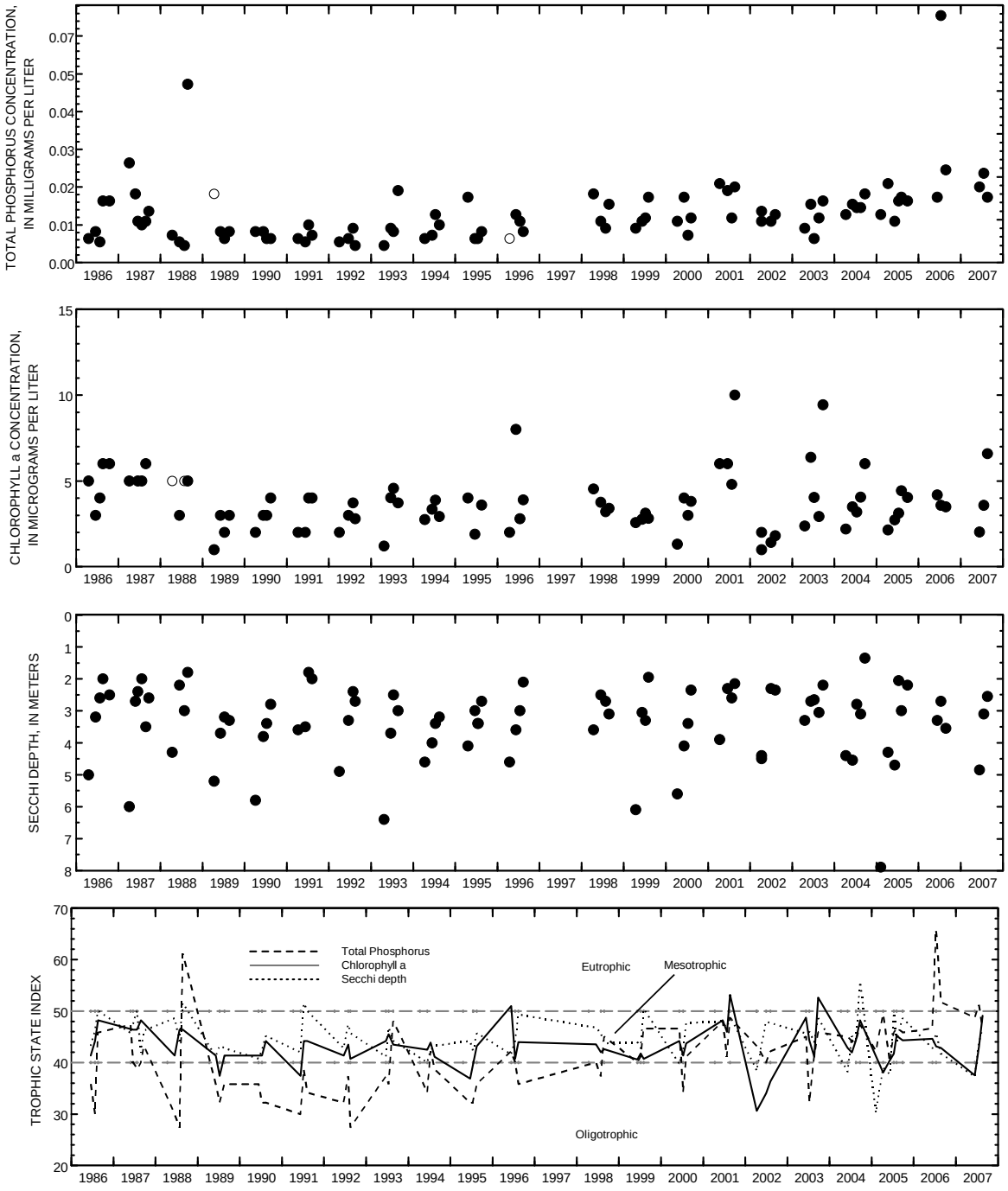
WATER-QUALITY DATA, JUNE 13 TO AUGUST 21, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	June 13		July 18		August 21	
00065	Lake stage (ft)	10.46		--		--	
32210	Chlorophyll a, phytoplankton (µg/L)	2.02		3.58		6.59	
00078	Secchi-depth (m)	4.8		3.1		2.6	
00098	Sampling depth (m)	0.5	9.5	0.5	9.5	0.5	10.0
00010	Water temperature (ºC)	23.7	16.1	24.9	24.7	23.3	17.6
00400	pH (standard units)	8.5	7.6	8.8	8.6	8.3	7.2
00095	Specific conductance (µS/cm)	526	544	529	530	500	560
00300	Dissolved oxygen	9.7	0.6	8.5	8.5	7.3	0.2
00665	Phosphorus, total (as P)	0.022	0.022	0.026	0.028	0.019	0.038
00671	Orthophosphate, dissolved (as P)	--	--	<0.002	--	--	--
00631	Nitrite + nitrate, dissolved (as N)	--	--	<0.019	--	--	--
00608	Ammonia, dissolved (as N)	--	--	<0.015	--	--	--
00623	Ammonia + org-N, total, diss. (as N)			0.65			

423246088175800 POWERS LAKE AT POWERS LAKE, WI

LAKE-DEPTH PROFILES, JUNE 13 TO AUGUST 21, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Powers Lake, at Powers Lake, Wisconsin.

(Open circles on the first two plots indicate laboratory detection limit for selected analyses. Actual concentrations for these particular analyses are less than the plotted circles.)

434515089124000 PUCKAWAY LAKE, WEST BASIN, NEAR MARQUETTE, WI

LOCATION.--Lat 43°45'15", long 89°12'40", in SE ¼ SW ¼ NE ¼ sec.31, T.15 N., R.11 E., Green Lake County, Hydrologic Unit 04030201, near Marquette.

SURFACE AREA.--7.87 mi^2.

DRAINAGE AREA.--748 mi^2.

PERIOD OF RECORD.--April 2005 to current year.

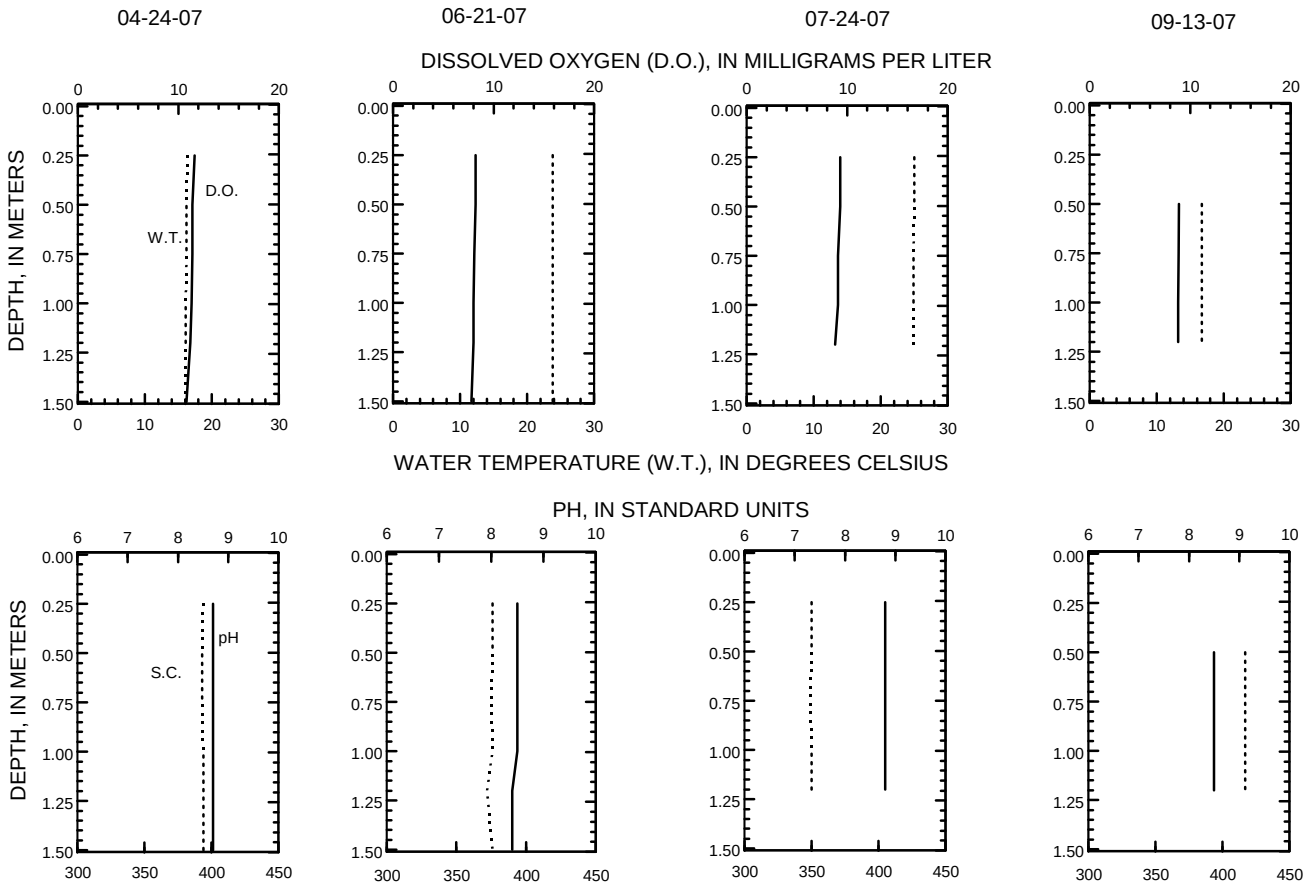
REMARKS.--Lake sampled in West Basin. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

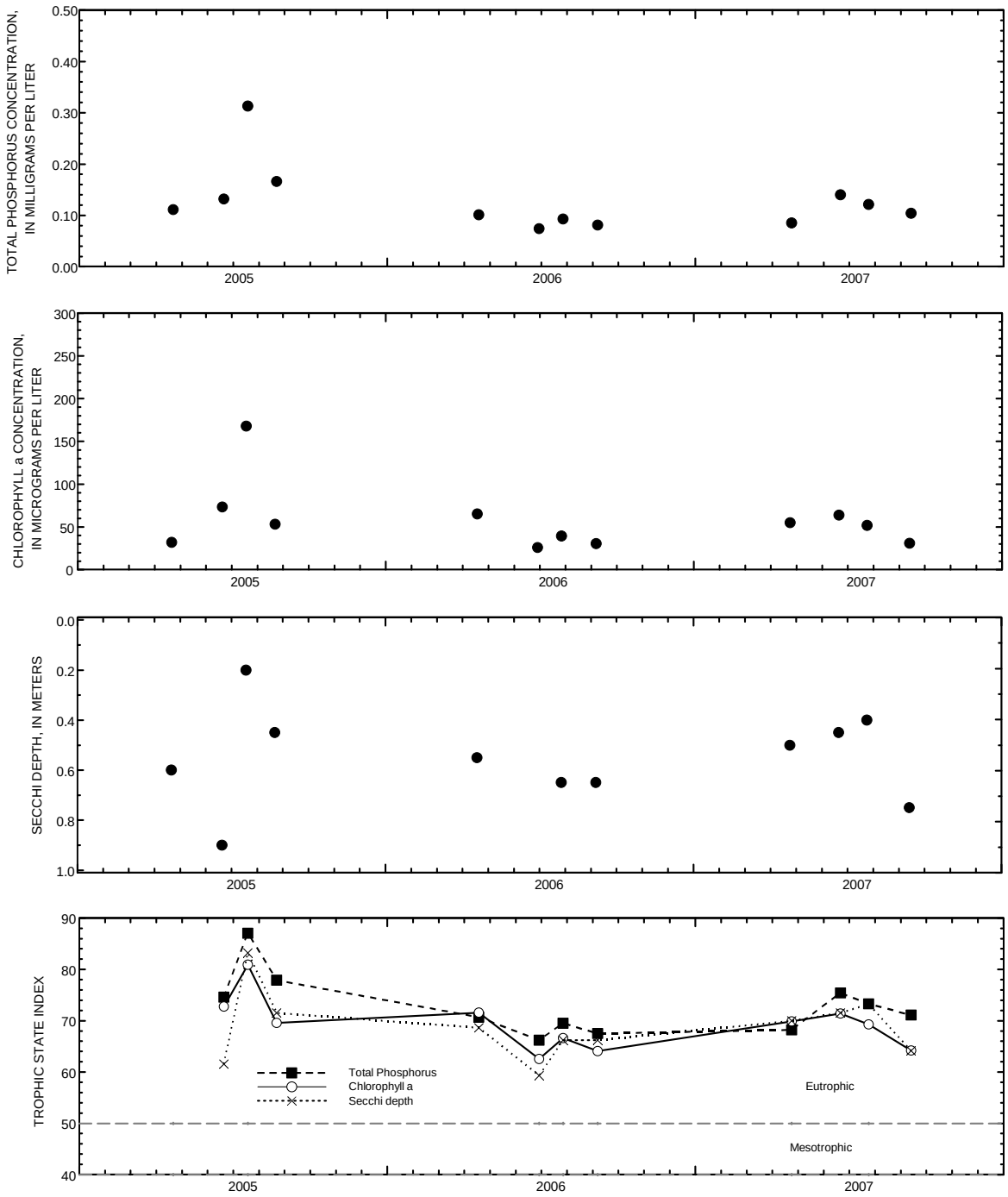
WATER-QUALITY DATA, APRIL 24 TO SEPTEMBER 13, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	April 24	June 13		July 24	September 13
00065	Lake stage (ft)	--	4.01		--	--
32210	Chlorophyll a, phytoplankton (µg/L)	54.9	63.8		51.6	30.8
00078	Secchi-depth (m)	0.5	0.4		0.4	0.8
00098	Sampling depth (m)	0.5	0.5	1.2	0.5	0.5
00010	Water temperature (ºC)	16.2	23.8	23.8	25.0	16.7
00400	pH (standard units)	8.7	8.5	8.4	8.8	8.5
00095	Specific conductance (µS/cm)	393	376	372	350	417
00300	Dissolved oxygen	11.4	8.2	8.0	9.3	8.9
00665	Phosphorus, total (as P)	0.085	0.140	0.155	0.121	0.104

434515089124000 PUCKAWAY LAKE, WEST BASIN, NEAR MARQUETTE, WI

LAKE-DEPTH PROFILES, APRIL 24 TO SEPTEMBER 13, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Puckaway Lake, West Basin, Near Marquette, Wisconsin.

43454208907300 PUCKAWAY LAKE, EAST BASIN, NEAR MARQUETTE, WI

LOCATION.--Lat 43°45'42", long 89°07'30", in NW ¼ NW ¼ NW ¼ sec.19, T.15 N., R.12 E., Green Lake County, Hydrologic Unit 04030201, near Marquette.

SURFACE AREA.--7.87 mi^2.

DRAINAGE AREA.--748 mi^2.

PERIOD OF RECORD.--April 2005 to current year.

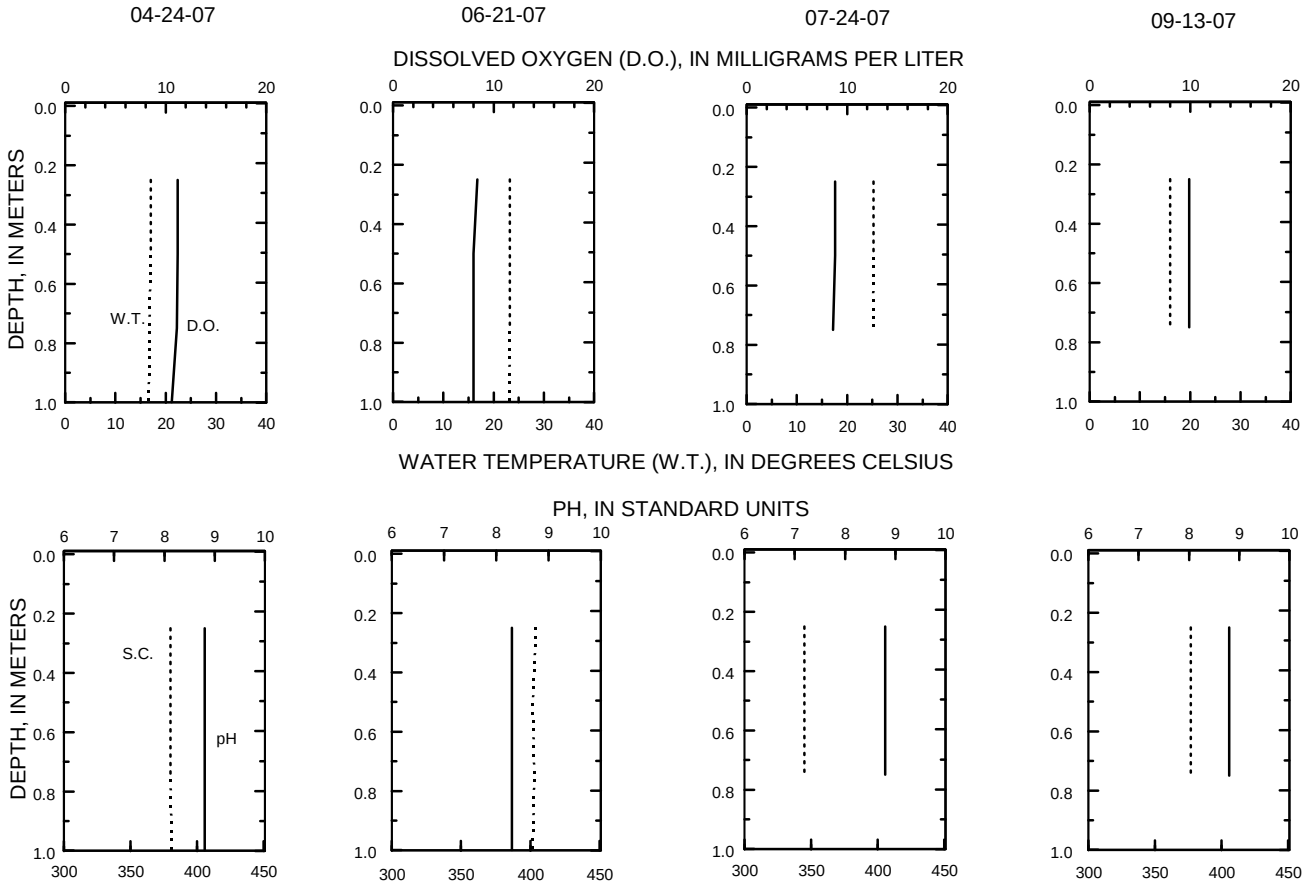
REMARKS.--Lake sampled in the east basin. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

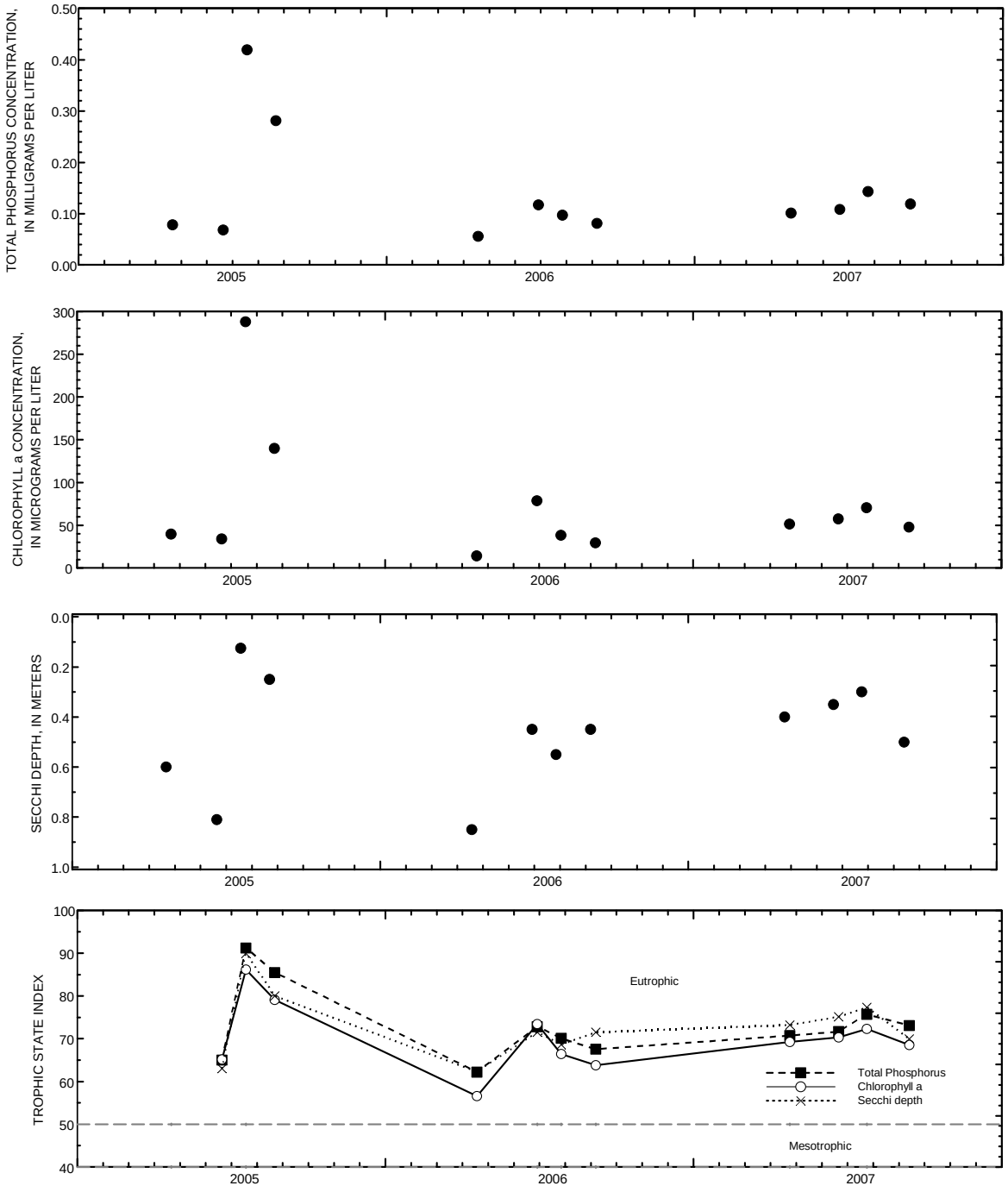
WATER-QUALITY DATA, APRIL 18 TO SEPTEMBER 7, 2006
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	April 24	June 21		July 24	September 13
32210	Chlorophyll a, phytoplankton (µg/L)	51.3	57.2		70.3	47.9
00078	Secchi-depth (m)	0.4	0.4		0.3	0.5
00098	Sampling depth (m)	0.5	0.5	0.75	0.5	0.5
00010	Water temperature (ºC)	17.0	23.2	23.2	25.2	16.0
00400	pH (standard units)	8.8	8.3	8.3	8.8	8.8
00095	Specific conductance (µS/cm)	380	402	403	345	377
00300	Dissolved oxygen	11.2	8.0	8.0	8.8	9.9
00665	Phosphorus, total (as P)	0.101	0.108	0.115	0.143	0.119

43454208907300 PUCKAWAY LAKE, EAST BASIN, NEAR MARQUETTE, WI

LAKE-DEPTH PROFILES, APRIL 24 TO SEPTEMBER 13, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Puckaway Lake, East Basin, Near Marquette, Wisconsin.

434824089083200 PUCKAWAY LAKE, RIVER SITE, NEAR MARQUETTE, WI

LOCATION.--Lat 43°48'24", long 89°08'32", in NW ¼ SE ¼ SW ¼ sec.1, T.15 N., R.11 E., Green Lake County, Hydrologic Unit 04030201, near Marquette.

SURFACE AREA.--7.87 mi^2.

DRAINAGE AREA.--748 mi^2.

PERIOD OF RECORD.--April 2005 to current year.

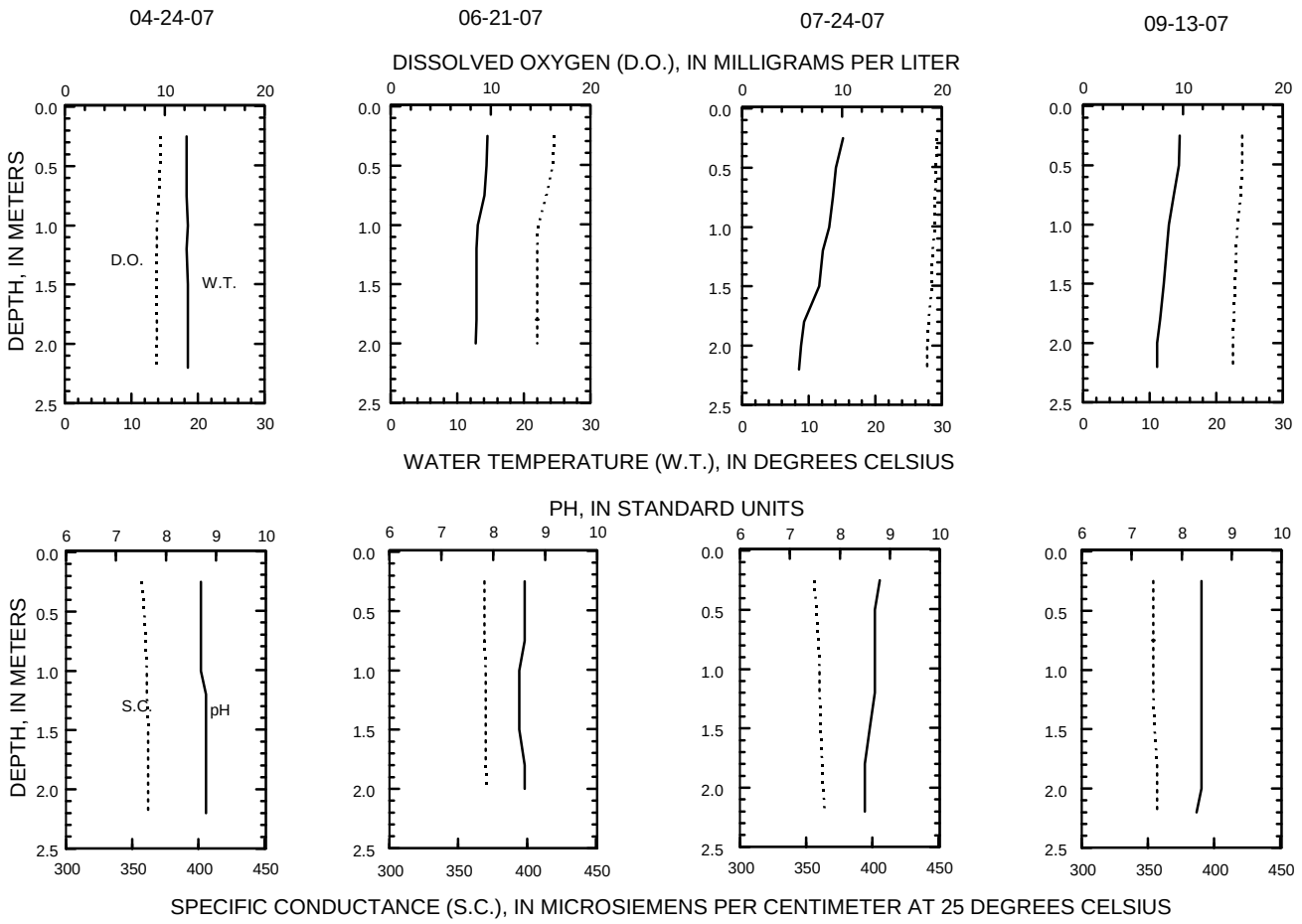
REMARKS.-- Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

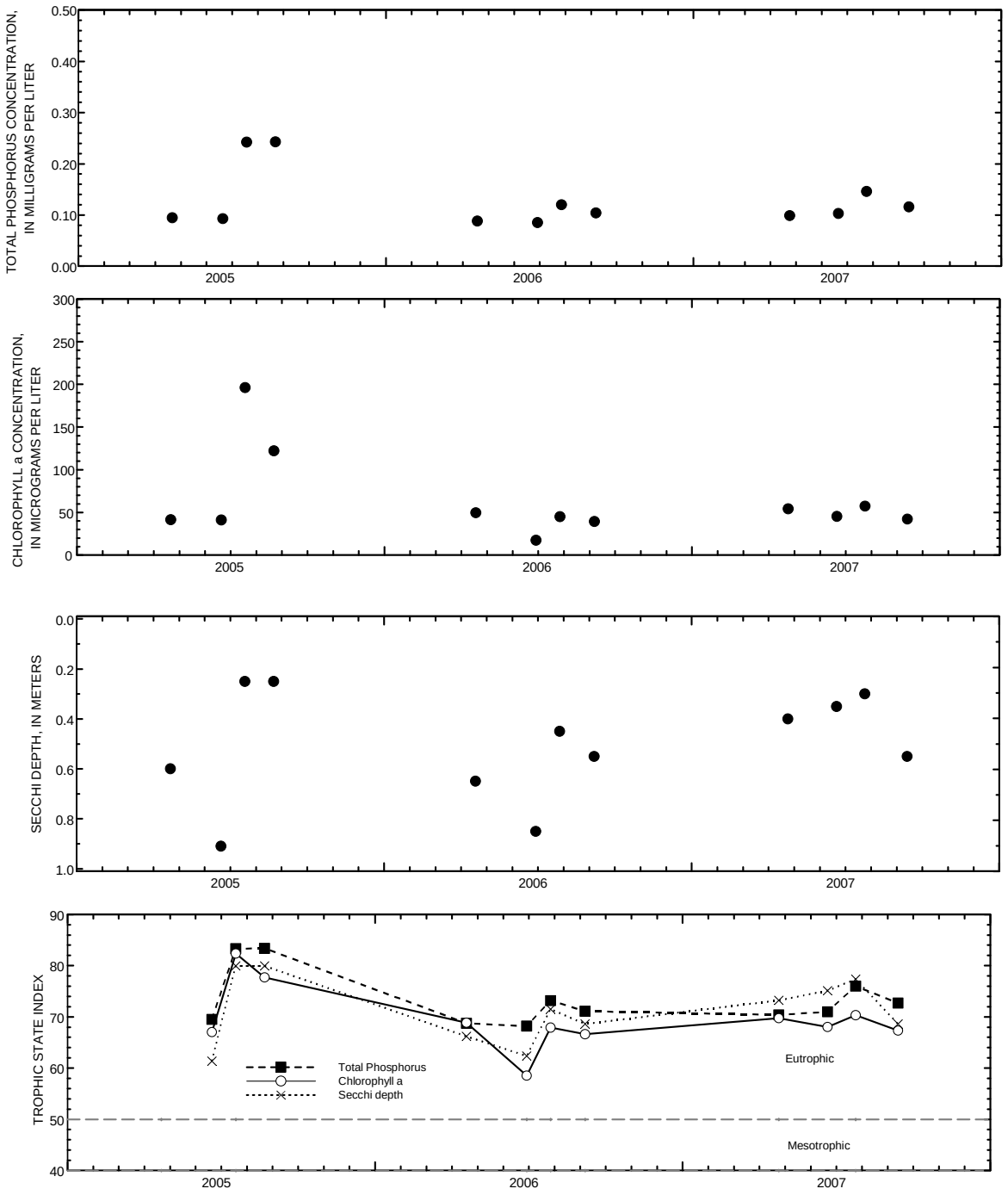
WATER-QUALITY DATA, APRIL 18 TO SEPTEMBER 7, 2006
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	February 24		June 21		July 24		September 13
32210	Chlorophyll a, phytoplankton (µg/L)	54.0		45.3		57.3		42.3
00078	Secchi-depth (m)	0.4		0.35		0.3		0.55
00098	Sampling depth (m)	0.5	2.0	0.5	1.5	0.5	1.5	0.5
00010	Water temperature (ºC)	16.0	16.0	24.0	24.0	26.9	25.0	16.0
00400	pH (standard units)	8.8	8.8	8.2	8.2	8.6	8.1	8.8
00095	Specific conductance (µS/cm)	372	372	405	405	347	358	380
00300	Dissolved oxygen	10.0	9.8	7.7	7.4	8.6	3.1	9.9
00665	Phosphorus, total (as P)	0.099	0.106	0.103	0.123	0.146	0.164	0.116

434824089083200 PUCKAWAY LAKE, RIVER SITE, NEAR MARQUETTE, WI

LAKE-DEPTH PROFILES, APRIL 24 TO SEPTEMBER 13, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Puckaway Lake, River Site, Near Marquette, Wisconsin.

05429485 LAKE WAUBESA AT MCFARLAND, WI

LOCATION.--Lat 43°00′32″, long 89°18′19″ referenced to North American Datum of 1927, in SW ¼ SW ¼ sec.3, T.6 N., R.10 E., Dane County, WI, Hydrologic Unit 07090001, on left bank just upstream from bridge on U.S. Highway 51, downstream of dam at outlet of Lake Waubesa and 1.0 mi southwest of McFarland.

SURFACE AREA.--3.25 mi^2.

DRAINAGE AREA.--327 mi^2 of which 36.6 mi^2 probably is noncontributing.

PERIOD OF RECORD.--October 2003 to current year.

REVISED RECORDS.--WSP 805, WDR WI-73-1: Drainage area.

GAGE.--Water-stage recorder. Datum of gage is 840.00 ft above NGVD of 1929 (levels by Wisconsin Department of Natural Resources).

REMARKS.--Lake level regulated by dams at outlets of Lake Mendota and Lake Waubesa. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 6.30 ft, June 12, 2004; minimum observed, 3.50 ft, Feb.14, 2006, current datum.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 6.95 ft, Aug. 28-29; minimum recorded, 3.80 ft, Feb.22 and 23.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	5.10	4.72	4.97	4.14	3.84	3.99	4.73	4.96	4.71	4.83	4.88	6.83
2	5.06	4.72	4.94	4.12	3.83	4.01	4.79	4.92	4.78	4.82	4.88	6.78
3	5.04	4.71	4.91	4.09	3.84	4.01	4.97	4.87	4.83	4.82	4.87	6.74
4	5.04	4.71	4.87	4.06	3.85	4.00	5.08	4.83	4.97	4.91	4.86	6.70
5	5.01	4.70	4.82	4.06	3.85	3.98	5.06	4.79	5.00	4.94	5.03	6.65
6	4.97	4.70	4.79	4.06	3.84	3.97	5.01	4.73	4.96	4.93	5.06	6.60
7	4.91	4.71	4.80	4.03	3.84	3.95	4.96	4.70	4.91	4.92	5.15	6.57
8	4.87	4.71	4.71	4.03	3.84	3.94	4.91	4.69	4.92	4.91	5.12	6.53
9	4.83	4.72	4.65	4.02	3.84	3.94	4.89	4.68	4.90	4.90	5.15	6.48
10	4.79	4.76	4.60	3.99	3.84	3.96	4.84	4.68	4.88	4.90	5.18	6.46
11	4.80	4.86	4.55	3.95	3.83	3.97	4.86	4.70	4.86	4.90	5.15	6.47
12	4.77	4.86	4.51	3.95	3.83	4.04	4.90	4.71	4.86	4.87	5.17	6.40
13	4.72	4.85	4.46	3.94	3.83	4.18	4.90	4.71	4.85	4.83	5.16	6.34
14	4.67	4.85	4.41	3.93	3.84	4.28	4.92	4.72	4.85	4.82	5.25	6.29
15	4.63	4.85	4.37	3.89	3.84	4.32	4.91	4.76	4.85	4.80	5.28	6.23
16	4.59	4.85	4.32	3.97	3.84	4.31	4.91	4.82	4.86	4.78	5.29	6.17
17	4.67	4.84	4.28	3.96	3.83	4.29	4.93	4.84	4.87	4.78	5.27	6.13
18	4.70	4.82	4.25	3.94	3.83	4.27	4.93	4.82	4.86	4.79	5.27	6.09
19	4.70	4.81	4.21	3.94	3.83	4.25	4.93	4.81	4.88	4.80	5.63	6.06
20	4.67	4.79	4.18	3.93	3.83	4.24	4.92	4.81	4.86	4.79	5.89	6.03
21	4.65	4.77	4.19	3.93	3.83	4.24	4.92	4.80	4.85	4.78	6.00	5.99
22	4.71	4.75	4.24	3.93	3.81	4.43	4.89	4.78	4.87	4.78	6.16	5.98
23	4.69	4.75	4.29	3.93	3.80	4.49	4.95	4.76	4.86	4.78	6.41	5.95
24	4.66	4.74	4.27	3.89	3.87	4.50	4.97	4.75	4.86	4.79	6.70	5.92
25	4.65	4.73	4.25	3.86	3.95	4.51	5.02	4.79	4.85	4.79	6.85	5.90
26	4.65	4.73	4.23	3.86	3.98	4.53	5.06	4.78	4.85	4.79	6.89	5.89
27	4.68	4.77	4.20	3.85	3.98	4.55	5.09	4.79	4.85	4.88	6.92	5.85
28	4.70	4.89	4.17	3.86	3.99	4.57	5.07	4.76	4.84	4.90	6.94	5.82
29	4.70	4.94	4.15	3.85	---	4.59	5.03	4.74	4.85	4.89	6.94	5.77
30	4.70	4.97	4.13	3.85	---	4.60	4.99	4.72	4.85	4.89	6.92	5.72
31	4.72	---	4.12	3.85	---	4.62	---	4.70	---	4.89	6.87	---
Mean	4.78	4.79	4.45	3.96	3.86	4.24	4.94	4.77	4.87	4.85	5.71	6.24
Max	5.10	4.97	4.97	4.14	3.99	4.62	5.09	4.96	5.00	4.94	6.94	6.83
Min	4.59	4.70	4.12	3.85	3.80	3.94	4.73	4.68	4.71	4.78	4.86	5.72

424848088083100 WIND LAKE AT OUTLET AT WIND LAKE, WI

LOCATION.--Lat 42°48′48″, long 88°08′31″ referenced to North American Datum of 1927, in NE ¼ NW ¼ sec.16, T.4 N., R.20 E., Racine County, WI, Hydrologic Unit 07120006, at Wind Lake.

SURFACE AREA.--1.46 mi^2.

DRAINAGE AREA.--39.6 mi^2.

PERIOD OF RECORD.--March 1985 to current year. Prior to October 2000, published as "Wind Lake Outlet".

REVISED RECORDS.--WDR WI-91-1: 1988(m).

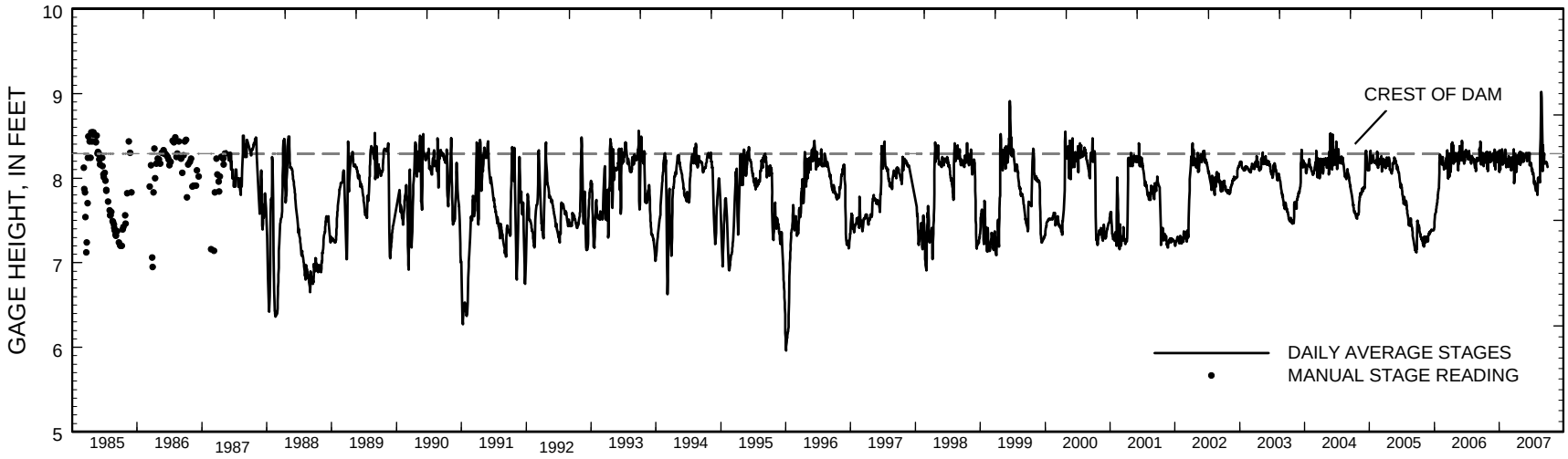
REMARKS.--Lake level regulated by dam with two 10-foot gates at outlet. Lake ice-covered Dec. 3 to Mar. 14. Prior to October 1987, published as Wind Lake at Wind Lake, Wis. Gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height, 9.04 ft, Aug. 25, 2007; minimum recorded, 5.95 ft, Jan. 2, 1996.

EXTREMES FOR CURRENT YEAR.--Maximum recorded gage height, 9.04 ft, Aug. 25; minimum recorded, 7.79 ft, Aug. 4.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	8.30	8.27	8.30	8.08	8.26	8.16	8.07	8.31	8.27	8.12	7.86	8.20
2	8.29	8.24	8.25	8.07	8.29	8.16	8.11	8.18	8.30	8.10	7.84	8.08
3	8.27	8.22	8.18	8.22	8.31	8.16	8.23	8.25	8.26	8.08	7.82	8.15
4	8.14	8.26	8.14	8.33	8.32	8.14	8.19	8.28	8.29	8.11	7.80	8.33
5	8.14	8.28	8.22	8.28	8.33	8.12	8.09	8.28	8.25	8.10	7.95	8.39
6	8.19	8.24	8.34	8.15	8.34	8.10	8.07	8.24	8.20	8.08	7.96	8.26
7	8.22	8.22	8.33	8.10	8.32	8.09	8.11	8.24	8.20	8.06	8.00	8.18
8	8.24	8.23	8.22	8.14	8.21	8.11	8.17	8.27	8.27	8.04	8.01	8.21
9	8.27	8.27	8.10	8.25	8.14	8.16	8.23	8.30	8.27	8.05	8.00	8.24
10	8.25	8.31	8.10	8.29	8.13	8.20	8.25	8.27	8.30	8.06	7.99	8.28
11	8.24	8.29	8.18	8.31	8.14	8.21	8.25	8.22	8.30	8.05	7.97	8.29
12	8.19	8.19	8.26	8.24	8.16	8.23	8.27	8.20	8.28	8.01	7.98	8.21
13	8.18	8.22	8.26	8.18	8.17	8.25	8.22	8.20	8.24	7.98	7.97	8.17
14	8.20	8.26	8.22	8.19	8.18	8.19	8.22	8.19	8.25	7.96	7.97	8.19
15	8.21	8.27	8.22	8.27	8.19	8.14	8.23	8.22	8.24	7.94	7.97	8.18
16	8.23	8.27	8.22	8.31	8.20	8.10	8.22	8.29	8.24	7.93	7.97	8.18
17	8.30	8.20	8.29	8.34	8.21	8.11	8.19	8.24	8.24	7.97	7.95	8.18
18	8.29	8.24	8.28	8.33	8.22	8.16	8.17	8.20	8.23	7.97	7.95	8.18
19	8.26	8.28	8.19	8.22	8.23	8.21	8.24	8.21	8.30	7.96	8.30	8.19
20	8.22	8.28	8.19	8.16	8.23	8.21	8.29	8.23	8.19	7.94	8.40	8.19
21	8.25	8.22	8.28	8.16	8.20	8.25	8.29	8.24	8.15	7.91	8.43	8.18
22	8.31	8.21	8.31	8.20	8.16	8.34	8.24	8.25	8.16	7.89	8.51	8.19
23	8.18	8.23	8.31	8.24	8.13	8.20	8.19	8.25	8.16	7.88	8.76	8.18
24	8.11	8.25	8.21	8.27	8.16	8.06	8.22	8.24	8.16	7.86	8.92	8.17
25	8.15	8.28	8.19	8.26	8.26	7.94	8.31	8.25	8.16	7.85	9.01	8.17
26	8.29	8.28	8.21	8.21	8.25	7.98	8.29	8.26	8.15	7.85	9.02	8.18
27	8.31	8.27	8.25	8.18	8.20	8.17	8.23	8.27	8.16	7.93	8.95	8.17
28	8.18	8.26	8.26	8.18	8.16	8.29	8.17	8.26	8.18	7.92	8.85	8.15
29	8.08	8.23	8.20	8.18	---	8.24	8.16	8.25	8.16	7.90	8.73	8.14
30	8.10	8.28	8.14	8.21	---	8.16	8.25	8.25	8.14	7.89	8.56	8.13
31	8.23	---	8.10	8.23	---	8.08	---	8.25	---	7.87	8.37	---
Mean	8.22	8.25	8.22	8.22	8.22	8.16	8.21	8.24	8.22	7.98	8.25	8.20
Max	8.31	8.31	8.34	8.34	8.34	8.34	8.31	8.31	8.30	8.12	9.02	8.39
Min	8.08	8.19	8.10	8.07	8.13	7.94	8.07	8.18	8.14	7.85	7.80	8.08



Stage hydrograph for Wind Lake, 1985-2007.

424915088083900 WIND LAKE AT WIND LAKE, WI

LOCATION.--Lat 42°49'15", long 88°08'39", in NW ¼ SW ¼ sec.9, T.4 N., R.20 E., Racine County, Hydrologic Unit 07120006, at Wind Lake.

SURFACE AREA.--1.46 mi^2.

PERIOD OF RECORD.--February 1985 to current year.

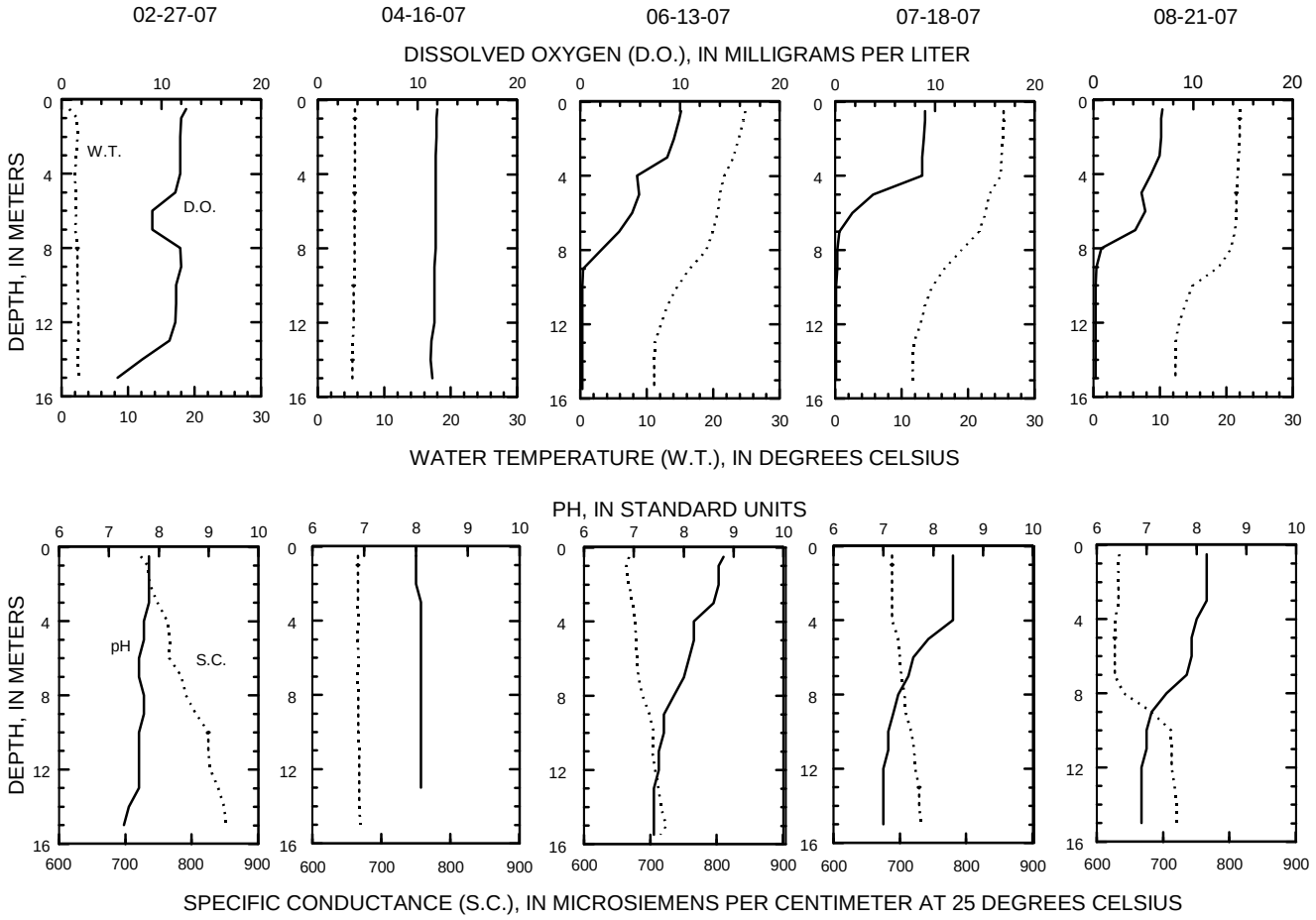
REMARKS.--Lake sampled near center at the deep hole. Water-quality analyses done by Wisconsin State Laboratory of Hygiene.

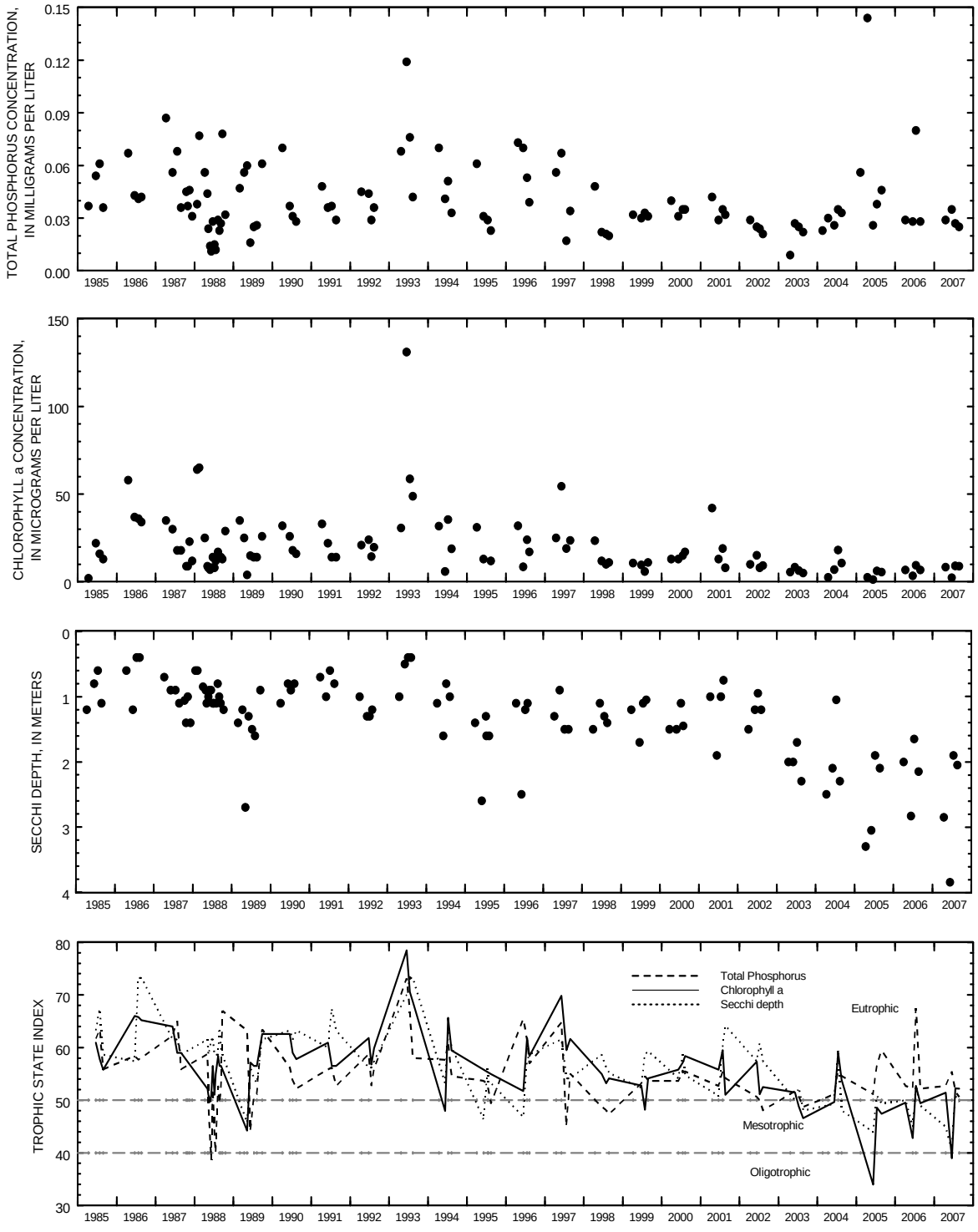
WATER-QUALITY DATA, APRIL 5 TO OCTOBER 5, 2006
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	February 27		April 16		June 13		July 18		August 21	
32210	Chlorophyll a, phytoplankton (µg/L)	--		8.35		2.35		9.1		9.02	
00078	Secchi-depth (m)	--		2.8		3.8		1.9		2.0	
00098	Sampling depth (m)	0.5	15.0	0.5	15.0	0.5	15.5	0.5	15.0	0.5	15.0
00010	Water temperature (ºC)	1.1	2.5	5.6	5.2	24.8	11.1	2.3	11.6	22.1	12.3
00400	pH (standard units)	7.8	7.3	8.0	7.9	8.8	7.4	8.4	7.0	8.2	6.9
00095	Specific conductance (µS/cm)	723	852	666	670	668	715	688	732	634	721
00300	Dissolved oxygen	12.5	5.6	12.0	11.5	10.1	0.2	9.0	0.1	6.9	0.2
00665	Phosphorus, total (as P)	0.043	0.046	0.029	0.029	0.035	0.409	0.027	0.455	0.025	0.532
00671	Orthophosphate, dissolved (as P)	--	--	0.006	--	--	--	0.002	--	--	--
00631	Nitrite + nitrate, dissolved (as N)	--	--	0.333	--	--	--	<0.019	--	--	--
00608	Ammonia, dissolved (as N)	--	--	0.026	--	--	--	< 0.015	--	--	--
00625	Ammonia + org-N, total, diss. (as N)	--	--	0.87	--	--	--	--	--	--	--
00600	Total nitrogen	--	--	1.2	--	--	--	--	--	--	--
00076	Turbidity (NTU)	--	--	2.7	--	--	--	--	--	--	--
00081	Apparent color (PTU)	--	--	40	--	--	--	--	--	--	--
00900	Hardness (as CaCO3)	--	--	230	--	--	--	--	--	--	--
00915	Calcium, dissolved (Ca)	--	--	49.1	--	--	--	--	--	--	--
00925	Magnesium, dissolved (Mg)	--	--	25.9	--	--	--	--	--	--	--
00930	Sodium, dissolved (Na)	--	--	46.3	--	--	--	--	--	--	--
00935	Potassium, dissolved (K)	--	--	2.9	--	--	--	--	--	--	--
00417	ANC (as CaCO3)	--	--	162	--	--	--	--	--	--	--
00940	Chloride, dissolved (Cl)	--	--	92.8	--	--	--	--	--	--	--
00945	Sulfate, dissolved (SO4)	--	--	41.7	--	--	--	--	--	--	--
00955	Silica, dissolved (SiO2)	--	--	0.3	--	--	--	--	--	--	--
01046	Iron (µg/L)	--	--	<100	--	--	--	--	--	--	--
01056	Manganese (µg/L)	--	--	M	--	--	--	--	--	--	--
70300	Solids, dissolved (at 180 ºC)	--	--	382	--	--	--	--	--	--	--

424915088083900 WIND LAKE AT WIND LAKE, WI

LAKE-DEPTH PROFILES, FEBRUARY 27 TO AUGUST 21, 2007





Surface total phosphorus, chlorophyll a concentrations, Secchi depths, and TSI data for Wind Lake, Deep Hole, at Wind Lake, Wisconsin.

04082500 LAKE WINNEBAGO AT OSHKOSH, WI

LOCATION.--Lat 44°00′35″, long 88°31′38″ referenced to North American Datum of 1927, in NE ¼ NE ¼ sec.25, T.18 N., R.16 E., Winnebago County, WI, Hydrologic Unit 04030203, 800 ft east of mouth of the upper Fox River.

SURFACE AREA.--215 mi^2.

DRAINAGE AREA.--5,880 mi^2.

PERIOD OF RECORD.--October 1938 to current year in reports of Geological Survey. Records from July 1882 to September 1938 in files of Geological Survey and U.S. Army Corps of Engineers. A report on Fox River by U.S. Army Corps of Engineers, published as House Document No. 146, 67th Congress, 2nd session, contains semi-monthly records of inflow of Lake Winnebago for the period 1896-1917.

REVISED RECORDS.--WDR WI-83-1: Drainage area.

GAGE.--Water-stage recorder. Nonrecording gage read once daily October 1938 to October 1978. Datum of gage is 745.05 ft above mean tide at New York City (levels by U.S. Army Corps of Engineers). Datum of Deuchman gage is 745.00 ft above mean tide at New York City.

REMARKS.--Lake elevations controlled by dams at Menasha and Neenah, which are operated in the interest of navigation. Crests of both dams are at elevation 746.73 ft. Present limits of regulation are from 21 ¼ in. above the crest of Menasha to crest during navigation season, plus additional 18 in. below crest during winter. Oshkosh staff gage gives true level of lake, while Deuchman gage readings are affected by loss of head in the channel between lake and dam. Data-collection platform and gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum gage height observed, 5.33 ft (Deuchman gage) Nov. 8, 1881; Minimum observed, -2.00 ft (Deuchman gage) Nov. 28, 1891.

EXTREMES FOR CURRENT YEAR.--Maximum daily mean gage height, 2.98 ft, June 5, 14; Minimum recorded, 1.63 ft, Feb. 23, 24.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.62	2.49	2.63	2.44	1.82	1.71	2.01	2.77	2.78	2.81	2.58	2.88
2	2.65	2.50	2.57	2.45	1.82	1.75	2.04	2.82	2.81	2.78	2.56	2.86
3	2.70	2.49	2.49	2.43	1.81	1.78	2.15	2.82	2.89	2.73	2.56	2.88
4	2.75	2.48	2.49	2.42	1.80	1.78	2.00	2.78	2.95	2.79	2.54	2.87
5	2.68	2.48	2.49	2.41	1.80	1.78	2.19	2.78	2.98	2.80	2.53	2.88
6	2.63	2.49	2.45	2.38	1.79	1.76	2.21	2.76	2.94	2.80	2.52	2.87
7	2.58	2.50	2.43	2.35	1.78	1.76	2.20	2.68	2.91	2.78	2.53	2.88
8	2.57	2.49	2.42	2.30	1.77	1.75	2.23	2.72	2.92	2.75	2.55	2.95
9	2.59	2.50	2.39	2.23	1.76	1.74	2.23	2.74	2.97	2.79	2.52	2.94
10	2.57	2.55	2.37	2.29	1.75	1.73	2.24	2.75	2.96	2.74	2.52	2.94
11	2.50	2.54	2.35	2.23	1.73	1.72	2.35	2.79	2.97	2.74	2.50	2.88
12	2.48	2.52	2.35	2.21	1.72	1.72	2.22	2.74	2.97	2.72	2.54	2.93
13	2.43	2.49	2.35	2.19	1.71	1.75	2.25	2.70	2.97	2.71	2.53	2.85
14	2.49	2.53	2.35	2.16	1.70	1.77	2.32	2.64	2.98	2.66	2.48	2.83
15	2.45	2.54	2.34	2.15	1.70	1.78	2.36	2.69	2.97	2.67	2.50	2.87
16	2.44	2.55	2.36	2.12	1.69	1.77	2.38	2.73	2.96	2.67	2.48	2.83
17	2.47	2.54	2.35	2.08	1.68	1.75	2.42	2.70	2.97	2.66	2.48	2.83
18	2.48	2.54	2.35	2.05	1.67	1.74	2.45	2.66	2.93	2.65	2.49	2.83
19	2.49	2.53	2.36	2.01	1.66	1.75	2.45	2.66	2.92	2.68	2.53	2.83
20	2.49	2.53	2.36	1.98	1.66	1.79	2.48	2.68	2.95	2.66	2.65	2.86
21	2.50	2.50	2.37	1.95	1.65	1.78	2.50	2.64	2.97	2.62	2.69	2.83
22	2.51	2.51	2.43	1.93	1.65	1.83	2.51	2.62	2.94	2.59	2.71	2.87
23	2.52	2.52	2.52	1.90	1.64	1.84	2.54	2.64	2.91	2.58	2.75	2.88
24	2.52	2.52	2.54	1.88	1.66	1.84	2.59	2.62	2.88	2.57	2.80	2.86
25	2.52	2.53	2.52	1.86	1.68	1.89	2.62	2.68	2.88	2.58	2.82	2.88
26	2.52	2.53	2.51	1.84	1.71	1.90	2.64	2.70	2.88	2.58	2.82	2.92
27	2.52	2.55	2.51	1.84	1.72	1.93	2.61	2.67	2.88	2.61	2.83	2.88
28	2.47	2.63	2.51	1.84	1.72	1.99	2.64	2.72	2.89	2.61	2.83	2.90
29	2.53	2.63	2.48	1.84	---	1.97	2.65	2.71	2.85	2.60	2.88	2.88
30	2.52	2.66	2.47	1.83	---	1.98	2.68	2.73	2.83	2.58	2.90	2.85
31	2.45	---	2.46	1.83	---	2.01	---	2.75	---	2.59	2.88	---
Mean	2.54	2.53	2.44	2.11	1.72	1.81	2.37	2.71	2.92	2.68	2.63	2.87
Max	2.75	2.66	2.63	2.45	1.82	2.01	2.68	2.82	2.98	2.81	2.90	2.95
Min	2.43	2.48	2.34	1.83	1.64	1.71	2.00	2.62	2.78	2.57	2.48	2.83

04084255 LAKE WINNEBAGO NEAR STOCKBRIDGE, WI

LOCATION.--Lat 44°04′14″, long 88°19′44″ referenced to North American Datum of 1983, Calumet County, WI, Hydrologic Unit 04030203, Stockbridge Indian Reservation, on east shore of Lake Winnebago, 300 ft south of County Highway E and 1.6 mi west of Stockbridge.

SURFACE AREA.--215 mi^2.

DRAINAGE AREA.--5,880 mi^2.

PERIOD OF RECORD.--November 1982 to current year.

GAGE.--Water-stage recorder. Datum of gage is 745.05 ft above mean tide of New York City (levels by U. S. Army Corps of Engineers).

REMARKS.--Lake elevations controlled by dams at Menasha and Neenah, which are operated in the interest of navigation. Crests of both dams are at elevation 746.73 ft. Present limits of regulation are from 21 ¼ in. above the crest of Menasha dam to crest during navigation season, plus additional 18 in. below crest during winter. Data-collection platform and gage-height telemeter at station.

EXTREMES FOR PERIOD OF RECORD.--Maximum daily mean gage height, 3.85 ft, July 9, 11, 1993; minimum observed, 0.30 ft, Mar. 1, 1986.

EXTREMES FOR CURRENT YEAR.--Maximum daily mean gage height, 2.98 ft, June 19; minimum recorded, 1.56 ft, Feb. 23.

GAGE HEIGHT, FEET
WATER YEAR OCTOBER 2006 TO SEPTEMBER 2007
DAILY MEAN VALUES

Day	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep
1	2.56	2.58	2.58	2.45	1.78	1.68	1.98	2.64	2.67	2.64	2.51	2.80
2	2.63	2.57	2.65	2.45	1.79	1.72	2.06	2.66	2.71	2.64	2.52	2.81
3	2.63	2.50	2.62	2.44	1.78	1.76	2.06	2.62	2.78	2.68	2.48	2.79
4	2.56	2.44	2.54	2.41	1.78	1.75	2.22	2.59	2.82	2.70	2.44	2.79
5	2.59	2.44	2.45	2.37	1.76	1.75	2.21	2.58	2.84	2.71	2.42	2.80
6	2.58	2.45	2.42	2.38	1.75	1.73	2.16	2.55	2.89	2.69	2.44	2.81
7	2.57	2.45	2.41	2.34	1.74	1.73	2.20	2.58	2.88	2.70	2.46	2.88
8	2.56	2.46	2.36	2.35	1.73	1.71	2.15	2.61	2.92	2.72	2.43	2.85
9	2.49	2.46	2.33	2.33	1.72	1.70	2.12	2.63	2.89	2.68	2.42	2.81
10	2.50	2.39	2.31	2.26	1.71	1.69	2.09	2.64	2.87	2.73	2.44	2.80
11	2.60	2.46	2.30	2.21	1.69	1.67	1.95	2.56	2.86	2.74	2.45	2.92
12	2.75	2.46	2.30	2.13	1.68	1.67	2.09	2.57	2.86	2.70	2.45	2.83
13	2.76	2.48	2.30	2.12	1.67	1.71	2.21	2.57	2.86	2.62	2.40	2.81
14	2.58	2.48	2.29	2.11	1.67	1.74	2.23	2.63	2.87	2.65	2.46	2.85
15	2.44	2.46	2.32	2.11	1.66	1.75	2.25	2.60	2.86	2.58	2.42	2.79
16	2.38	2.45	2.30	2.08	1.64	1.74	2.28	2.61	2.88	2.55	2.41	2.76
17	2.42	2.50	2.31	2.03	1.64	1.72	2.27	2.59	2.86	2.54	2.39	2.73
18	2.49	2.48	2.31	2.00	1.64	1.70	2.29	2.61	2.91	2.55	2.32	2.75
19	2.49	2.49	2.31	1.97	1.63	1.69	2.34	2.57	2.98	2.52	2.34	2.78
20	2.45	2.50	2.30	1.93	1.62	1.68	2.36	2.48	2.91	2.52	2.45	2.74
21	2.43	2.49	2.31	1.90	1.62	1.68	2.39	2.50	2.85	2.50	2.56	2.79
22	2.50	2.47	2.42	1.88	1.62	1.74	2.41	2.51	2.79	2.49	2.62	2.82
23	2.55	2.47	2.54	1.85	1.61	1.75	2.46	2.54	2.79	2.49	2.66	2.78
24	2.50	2.47	2.50	1.83	1.62	1.76	2.46	2.59	2.79	2.49	2.69	2.77
25	2.47	2.48	2.47	1.81	1.66	1.79	2.41	2.60	2.80	2.49	2.73	2.83
26	2.43	2.48	2.49	1.79	1.68	1.81	2.41	2.57	2.81	2.50	2.73	2.83
27	2.46	2.47	2.46	1.80	1.68	1.80	2.51	2.68	2.81	2.50	2.73	2.83
28	2.56	2.58	2.44	1.80	1.68	1.80	2.55	2.61	2.74	2.48	2.76	2.81
29	2.55	2.62	2.43	1.79	---	1.83	2.56	2.60	2.73	2.49	2.78	2.77
30	2.47	2.63	2.41	1.80	---	1.84	2.54	2.62	2.70	2.50	2.79	2.77
31	2.61	---	2.40	1.78	---	1.86	---	2.65	---	2.50	2.79	---
Mean	2.53	2.49	2.41	2.08	1.69	1.74	2.27	2.59	2.83	2.59	2.53	2.80
Max	2.76	2.63	2.65	2.45	1.79	1.86	2.56	2.68	2.98	2.74	2.79	2.92
Min	2.38	2.39	2.29	1.78	1.61	1.67	1.95	2.48	2.67	2.48	2.32	2.73

USGS participation in the National Lake Survey for Wisconsin

The Survey of the Nation's Lakes is a statistical survey of the condition of the Nation's lakes, ponds, and reservoirs undertaken by the U.S. Environmental Protection Agency (USEPA), states, tribes, and other partners. The purpose of the survey is to generate a statistically-valid report by USEPA on the condition of the Nation's lakes, to be completed in 2009.

A total of 909 lakes were included in the National Lakes Survey across the lower 48 states. The sample set is comprised of natural and man-made freshwater lakes, ponds, and reservoirs greater than 10 acres and greater than one meter in depth located in the conterminous United States. The characteristics measured in the Lakes Survey will be used to evaluate the ecological condition, trophic state, and recreational potential of lakes. Consistent sampling procedures were used to ensure that the results can be compared across the country. All sampling was completed during the summer of 2007. For more information see: *www.epa.gov/owow/lakes/lakessurvey/*

Key indicators measured included:

Water Quality Indicators

• *In situ* temperature and dissolved oxygen profiles
• Water chemical quality and nutrient concentrations
• Chlorophyll *a*, Secchi disk depth, turbidity, and color

Ecological Indicators

• Sediment diatoms
• Phytoplankton
• Zooplankton
• Shoreline physical habitat conditions
• Macroinvertebrates

Recreational Indicators

• Enterococci bacteria
• Algal toxin (microcystins)
• Sediment mercury

EPA Region 5 also developed a webpage on National Lake Survey activities, including information on Region activities as well as links to state pages at:
http://www.epa.gov/region5/water/wqb/wqb_r5surveys.htm

Within Wisconsin the USEPA randomly selected 29 lakes for sampling, including 2 that were located on Tribal lands (sampled by the respective Tribes). The Wisconsin Department of Natural Resources (WDNR) selected an additional 30 lakes to add to the data set to help characterize lakes within the state. The USGS Wisconsin Water Science Center conducted the in-lake water and sediment sampling for 56 lakes (listed in table 3; and locations shown in fig.2), while the WDNR collected the habitat and bacteria data. In-lake water data collected by USGS from these lakes are presented in this section.

Table 3. 2007 EPA National Lake Survey and WDNR-selected lake station ID's and counties

EPA SiteID	Name	Station ID	County
NLA06608-3470	Aldridge Lake	455158089180300	Vilas
NLA06608-0547	Arrowhead Lake (Manchester)*	441242089511200	Adams
NLA06608-0926	Atkins Lake*	461642091021800	Bayfield
NLA06608-1619	Bashaw Lake	454616092082100	Burnett
NLA06608-0627	Berry Lake*	445325088282900	Oconto
NLA06608-4927	Big Crooked Lake	460222089504600	Vilas
NLA06608-3411	Briggs Lake	460012092153700	Burnett
NLA06608-0542	Buckskin Lake*	454709088215800	Florence
NLA06608-0435	Chequamegon Flowage*	451224090415300	Taylor
NLA06608-2654	Chippewa Lake	461157090591100	Bayfield
NLA06608-1395	Christie Lake	445326088213000	Oconto
NLA06608-1422	Crooked Lake	454439089052000	Oneida
NLA06608-1166	Crystal Lake*	460007089364100	Vilas
NLA06608-1075	Echo Lake*	452109089282000	Lincoln
NLA06608-1566	Elwood Lake	455134088083400	Florence
NLA06608-0862	Fox Lake*	460823090123600	Iron
WI-4	Glen Lake	452947088050600	Marinette
NLA06608-0291	Green Lake*	434911088583000	Green Lake
NLA06608-1822	Half Moon Lake	463336091234600	Bayfield
NLA06608-0823	Half Moon Lake*	452919092244400	Polk
NLA06608-1950	Lake Helane	460714091141400	Sawyer
NLA06608-0611	Lake Kegonsa*	425750089143800	Dane
NLA06608-4728	Lake Poygan	440906088480000	Winnebago
NLA06608-1059	Lake Winnebago*	435934088274300	Winnebago
NLA06608-1242	Little Elkhart Lake*	434829087582700	Sheboygan
NLA06608-2510	Little Star Lake	460300089290000	Vilas
NLA06608-0115	Marl Lake*	441925089112800	Waupaca
NLA06608-0654	McLeod Lake*	455913089210100	Vilas
WI-1	Mud Lake	433926088132500	Fond du Lac
WI-2	Mud Lake	454755089391200	Oneida
WI-3	Mud Lake	455948091145500	Sawyer
NLA06608-1847	Murdock Lake	453341092255700	Polk
NLA06608-0099	Oconomowoc Lake*	430551088273500	Waukesha
NLA06608-1443	Peshtigo Lake	453500088540000	Forest
NLA06608-1399	Pleasant Lake	451730092371300	Polk
NLA06608-0142	Plum Lake*	455958089314200	Vilas
NLA06608-0350	Price Lake*	454547090393300	Price
NLA06608-2035	Pulaski Lake	452005091171000	Rusk

Table 3. 2007 EPA National Lake Survey and WDNR-selected lake station ID's and counties--continued

EPA SiteID	Name	Station ID	County
NLA06608-4120	Rainbow Lake (chain)	442024089090200	Waupaca
NLA06608-2398	Riley Lake	455125090095400	Price
WI-5	Rolling Stone Lake	452617088565800	Langlade
NLA06608-1207	Round Lake*	451853092334600	Polk
NLA06608-3230	Sand Lake	462242091342400	Douglas
NLA06608-0606	Schnur Lake*	455828090302800	Price
NLA06608-3043	Soo Lake	453918089322600	Oneida
NLA06608-0007	Spring Lake*	453452092022600	Barron
WI-6	Swamsauger Lake	454710089573000	Oneida
NLA06608-0467	Swan Lake*	433239089223500	Columbia
NLA06608-0859	Tichigan Lake*	424854088123300	Racine
NLA06608-0414	Unnamed Lake*	460759091364200	Washburn
NLA06608-1143	Unnamed Lake*	454322092100500	Burnett
NLA06608-1627	Voltz Lake	423029088050000	Kenosha
NLA06608-0183	Wapogasset Lake*	451909092253300	Polk
NLA06608-1363	Webb Lake	460222092083100	Burnett
NLA06608-3811	West Mitchell Lake	453902089423200	Oneida
NLA06608-0846	Willow Reservoir*	454300089515900	Oneida

* EPA National Lake Survey sites

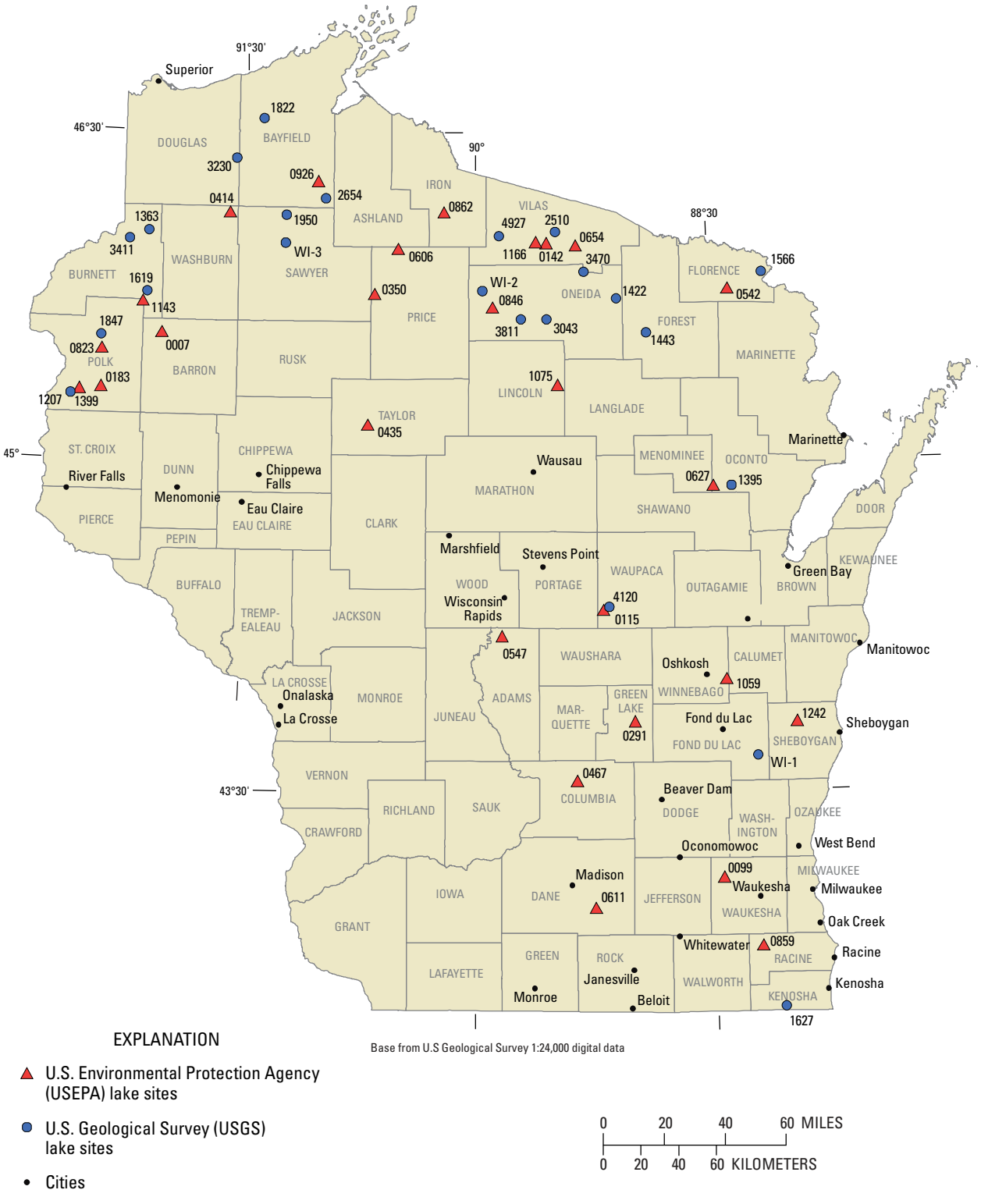


Figure 2. Map showing location of 2007 EPA National Lake Survey and WDNR-selected lakes

455158089180300 ALDRIDGE LAKE, DEEP HOLE, NEAR EAGLE RIVER, WI

LOCATION.--Lat 45°52'05", long 89°18'14", in NE ¼ SE ¼ sec.13, T.39 N., R.9 E., Vilas County, Hydrologic Unit 07070001, near Eagle River.

SURFACE AREA.--0.22 mi^2.

PERIOD OF RECORD.--August 14, 2007.

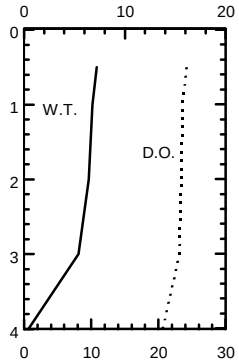
REMARKS.--Lake sampled at deep hole at a depth of 4.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 14, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.6
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.2
00400	pH (standard units)	6.1
00095	Specific conductance (µS/cm)	90
00300	Dissolved oxygen	7.2
00665	Phosphorus, total (as P)	0.029
32210	Chlorophyll a, phytoplankton (µg/L)	3.54
00080	Color (platinum cobalt units)	55
00417	ANC (as CaCO3)	11
00955	Dissolved silica	7.95

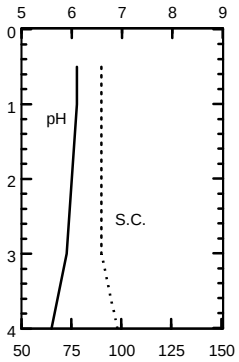
08-14-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

441242089511200 ARROWHEAD LAKE, ABOVE DAM, NEAR NEKOOSA, WI

LOCATION.--Lat 44°12'42", long 89°51'12", in NW ¼ NW ¼ sec.13, T.20 N., R.5 E., Adams County, Hydrologic Unit 07070003, near Nekoosa.

SURFACE AREA.--0.48 mi^2.

PERIOD OF RECORD.--July 31, 2007.

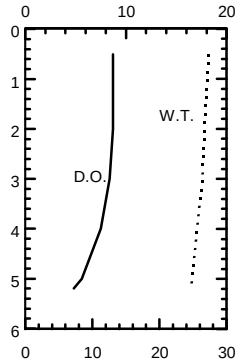
REMARKS.--Lake sampled at west end at a depth of 5.7 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 31, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	3.6
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	27.3
00400	pH (standard units)	8.6
00095	Specific conductance (µS/cm)	316
00300	Dissolved oxygen	8.7
00665	Phosphorus, total (as P)	0.014
32210	Chlorophyll a, phytoplankton (µg/L)	2.74
00080	Color (platinum cobalt units)	5.0
00417	ANC (as CaCO3)	103
00955	Dissolved silica	3.87

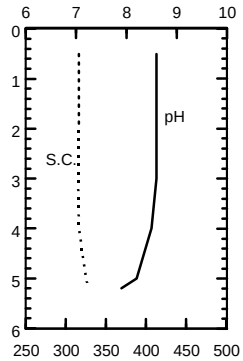
07-31-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

461642091021800 ATKINS LAKE, DEEP HOLE, NEAR GRAND VIEW, WI

LOCATION.--Lat 46°16'42", long 91°02'18", in NE ¼ SE ¼ sec.19, T.44 N., R.5 W., Bayfield County, Hydrologic Unit 07030002, near Grand View.

SURFACE AREA.--0.27 mi^2.

PERIOD OF RECORD.--August 6, 2007.

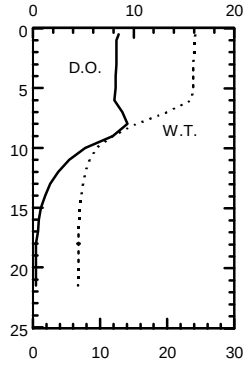
REMARKS.--Lake sampled at the deep hole at a depth of 22 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 6, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	6.7
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.2
00400	pH (standard units)	7.2
00095	Specific conductance (µS/cm)	30
00300	Dissolved oxygen	8.5
00665	Phosphorus, total (as P)	<0.005
32210	Chlorophyll a, phytoplankton (µg/L)	0.88
00080	Color (platinum cobalt units)	5.0
00417	ANC (as CaCO3)	12
00955	Dissolved silica	0.185

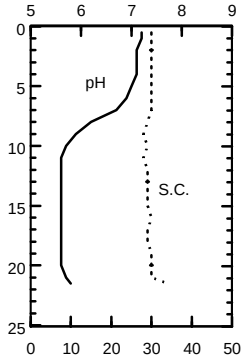
08-06-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

454616092082100 BASHAW LAKE, DEEP SPOT, NEAR HERTEL, WI

LOCATION.--Lat 45°46'16", long 92°08'21", in SE ¼ SE ¼ sec.18, T.38 N., R.14 W., Burnett County, Hydrologic Unit 07030001, near Hertel.

SURFACE AREA.--0.30 mi^2.

PERIOD OF RECORD.--July 27, 2007.

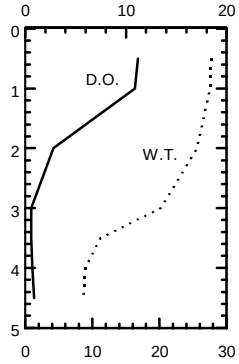
REMARKS.--Lake sampled at the deep hole at a depth of 5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 27, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	0.5
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	1.0
00010	Water temperature, ºC	27.7
00400	pH (standard units)	9.4
00095	Specific conductance (µS/cm)	187
00300	Dissolved oxygen	11.2
00665	Phosphorus, total (as P)	0.121
32210	Chlorophyll a, phytoplankton (µg/L)	116
00080	Color (platinum cobalt units)	15
00417	ANC (as CaCO3)	89
00955	Dissolved silica	17.2

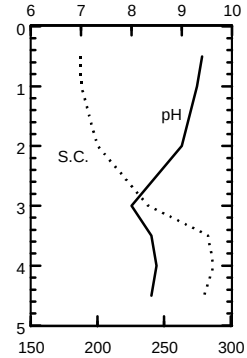
07-27-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

445325088282900 BERRY LAKE, DEEP HOLE, NEAR GILLETT, WI

LOCATION.--Lat 44°53'25", long 88°28'29", in NE ¼ SE ¼ sec.19, T.28 N., R.17 E., Oconto County, Hydrologic Unit 04030104, near Gillett.

SURFACE AREA.--0.32 mi^2.

PERIOD OF RECORD.--July 19, 2007.

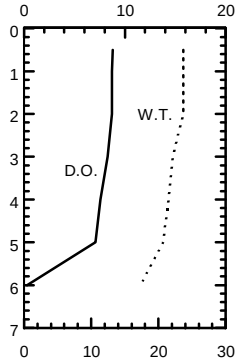
REMARKS.--Lake sampled at the deep hole at a depth of 6.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 19, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	3.3
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	23.7
00400	pH (standard units)	8.5
00095	Specific conductance (µS/cm)	166
00300	Dissolved oxygen	8.8
00665	Phosphorus, total (as P)	0.015
32210	Chlorophyll a, phytoplankton (µg/L)	2.88
00080	Color (platinum cobalt units)	5.0
00417	ANC (as CaCO3)	64
00955	Dissolved silica	0.328

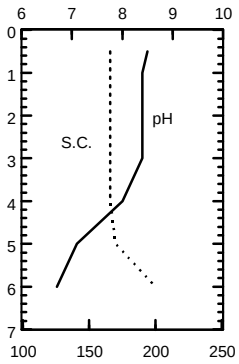
07-19-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

460222089504600 BIG CROOKED LAKE, DEEP SPOT, NEAR LAC DU FLAMBEAU, WI

LOCATION.--Lat 46°02'22", long 89°50'46", in NE ¼ NE ¼ sec.15, T.41 N., R.5 E., Vilas County, Hydrologic Unit 07050002, near Lac du Flambeau.

SURFACE AREA.--0.61 mi^2.

PERIOD OF RECORD.--August 15, 2007.

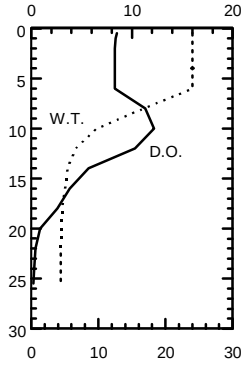
REMARKS.--Lake sampled at the deep hole at a depth of 26 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 15, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	5.0
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.0
00400	pH (standard units)	7.3
00095	Specific conductance (µS/cm)	24
00300	Dissolved oxygen	8.5
00665	Phosphorus, total (as P)	<0.005
32210	Chlorophyll a, phytoplankton (µg/L)	2.00
00080	Color (platinum cobalt units)	2.5
00417	ANC (as CaCO3)	10
00955	Dissolved silica	0.115

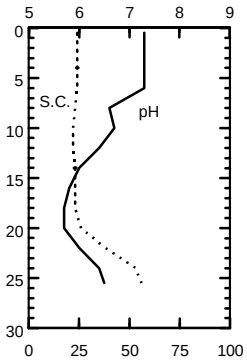
08-15-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

460012092153700 BRIGGS LAKE, DEEP SPOT, NEAR DANBURY, WI

LOCATION.--Lat 46°00'12", long 92°15'37", in NE ¼ SE ¼ sec.29, T.41 N., R.15 W., Burnett County, Hydrologic Unit 07030001, near Danbury.

SURFACE AREA.—0.08 mi^2.

PERIOD OF RECORD.--July 28, 2007.

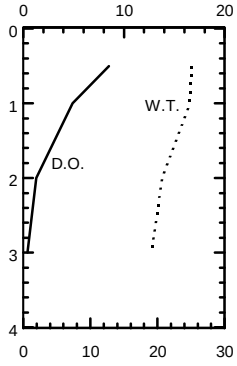
REMARKS.--Lake sampled at the deep hole at a depth of 3.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 28, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.9
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	25.1
00400	pH (standard units)	8.4
00095	Specific conductance (µS/cm)	136
00300	Dissolved oxygen	8.5
00665	Phosphorus, total (as P)	0.052
32210	Chlorophyll a, phytoplankton (µg/L)	22.7
00080	Color (platinum cobalt units)	17.5
00417	ANC (as CaCO3)	63
00955	Dissolved silica	14.2

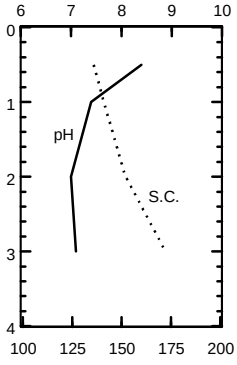
07-28-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

454709088215800 BUCKSKIN LAKE, CENTER, NEAR FENCE, WI

LOCATION.--Lat 45°47'09", long 88°21'58", in NE ¼ SE ¼ sec.9, T.38 N., R.17 E., Florence County, Hydrologic Unit 04030108, near Fence.

SURFACE AREA.--0.02 mi^2.

PERIOD OF RECORD.--August 30, 2007.

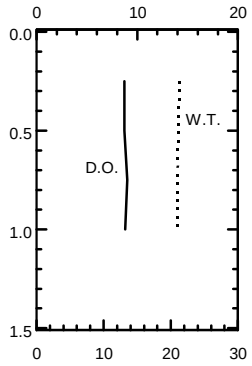
REMARKS.--Lake sampled at the deep hole at a depth of 1.3 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 30, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	>1.3
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	1.0
00010	Water temperature, ºC	21.3
00400	pH (standard units)	8.7
00095	Specific conductance (µS/cm)	127
00300	Dissolved oxygen	8.7
00665	Phosphorus, total (as P)	0.015
32210	Chlorophyll a, phytoplankton (µg/L)	1.80
00080	Color (platinum cobalt units)	5.0
00417	ANC (as CaCO3)	57.8
00955	Dissolved silica	0.778

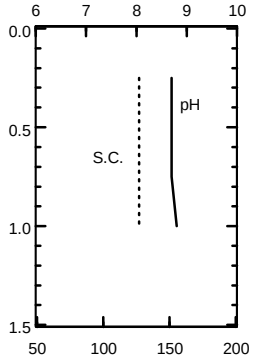
08-30-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

451224090415300 CHEQUAMEGON FLOWAGE, DEEP HOLE, NEAR GILMAN, WI

LOCATION.--Lat 45°12'24", long 90°41'53", in SW ¼ SW ¼ sec.36, T.32 N., R.3 W., Taylor County, Hydrologic Unit 07050005, near Gilman.

SURFACE AREA.--1.42 mi^2.

PERIOD OF RECORD.--July 23, 2007.

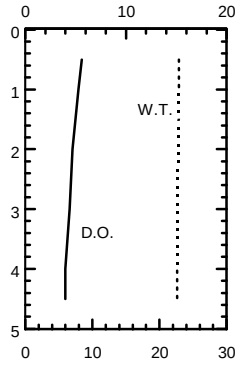
REMARKS.--Lake sampled at the deep hole at a depth of 5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 23, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	0.8
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	1.6
00010	Water temperature, ºC	22.9
00400	pH (standard units)	6.8
00095	Specific conductance (µS/cm)	216
00300	Dissolved oxygen	5.6
00665	Phosphorus, total (as P)	0.096
32210	Chlorophyll a, phytoplankton (µg/L)	28.9
00080	Color (platinum cobalt units)	75
00417	ANC (as CaCO3)	29
00955	Dissolved silica	6.02

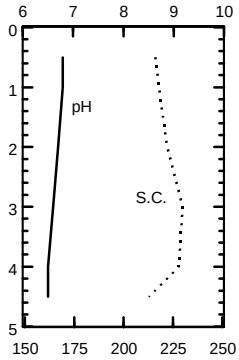
07-23-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

461157090591100 CHIPPEWA LAKE, DEEP SPOT, NEAR NAMEKAGON, WI

LOCATION.--Lat 46°11'57", long 90°59'11", in SW ¼ SW ¼ sec.15, T.43 N., R.5 W., Bayfield County, Hydrologic Unit 07050001, near Namekagon.

SURFACE AREA.--0.44 mi^2.

PERIOD OF RECORD.--August 6, 2007.

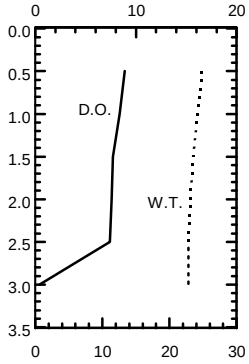
REMARKS.--Lake sampled at the deep hole at a depth of 3.25 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 6, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.8
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.8
00400	pH (standard units)	8.7
00095	Specific conductance (µS/cm)	93
00300	Dissolved oxygen	8.9
00665	Phosphorus, total (as P)	0.019
32210	Chlorophyll a, phytoplankton (µg/L)	4.31
00080	Color (platinum cobalt units)	15
00417	ANC (as CaCO3)	44
00955	Dissolved silica	9.3

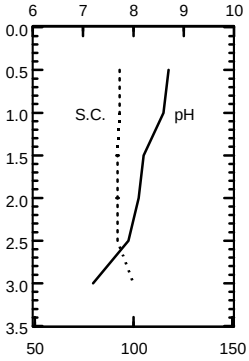
08-06-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

455326088213000 CHRISTIE LAKE, DEEP HOLE, NEAR GILLETT, WI

LOCATION.--Lat 44°53'26", long 88°21'30", in SW ¼ NE ¼ sec.19, T.28 N., R.18 E., Oconto County, Hydrologic Unit 04030104, near Gillett.

SURFACE AREA.--0.65 mi^2.

PERIOD OF RECORD.--July 19, 2007.

REMARKS.--Lake sampled on the west side near the boat landing at a depth of about 0.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 19, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	>0.5
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	0.3
00010	Water temperature, ºC	24.5
00400	pH (standard units)	8.1
00095	Specific conductance (µS/cm)	308
00300	Dissolved oxygen	9.0
00665	Phosphorus, total (as P)	0.022
32210	Chlorophyll a, phytoplankton (µg/L)	3.34
00080	Color (platinum cobalt units)	10
00417	ANC (as CaCO3)	116
00955	Dissolved silica	10.7

No profile plots because just one reading was taken.

454439089052000 CROOKED LAKE, DEEP HOLE, NEAR THREE LAKES, WI

LOCATION.--Lat 45°54'39", long 89°05'20", in NW ¼ SW ¼ sec.26, T.38 N., R.11 E., Oneida County, Hydrologic Unit 07070001, near Three Lakes.

SURFACE AREA.--0.27 mi^2.

PERIOD OF RECORD.--August 16, 2007.

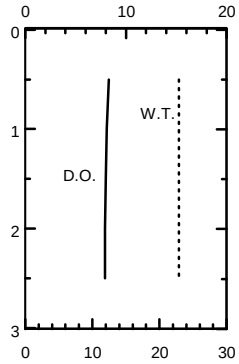
REMARKS.--Lake sampled at the deep hole at a depth of about 3.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 16, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	2.0
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	22.9
00400	pH (standard units)	8.2
00095	Specific conductance (µS/cm)	119
00300	Dissolved oxygen	8.3
00665	Phosphorus, total (as P)	0.019
32210	Chlorophyll a, phytoplankton (µg/L)	11.6
00080	Color (platinum cobalt units)	10
00417	ANC (as CaCO3)	47
00955	Dissolved silica	11.9

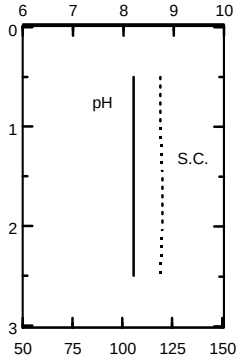
08-16-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

460007089364100 CRYSTAL LAKE, DEEP HOLE, NEAR SAYNER, WI

LOCATION.--Lat 46°00'07", long 89°36'41", in NW ¼ SW ¼ sec.27, T.41 N., R.7 E., Vilas County, Hydrologic Unit 07050002, near Sayner.

SURFACE AREA.--0.12 mi^2.

PERIOD OF RECORD.--August 14, 2007.

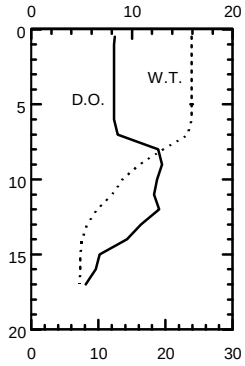
REMARKS.--Lake sampled at the deep hole at a depth of about 17.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 14, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	7.2
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	23.9
00400	pH (standard units)	6.2
00095	Specific conductance (µS/cm)	10
00300	Dissolved oxygen	8.3
00665	Phosphorus, total (as P)	<0.005
32210	Chlorophyll a, phytoplankton (µg/L)	0.92
00080	Color (platinum cobalt units)	0.0
00417	ANC (as CaCO3)	4
00955	Dissolved silica	<0.022

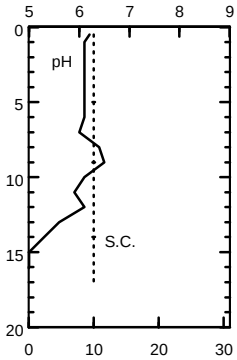
08-14-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

452109089282000 ECHO LAKE, DEEP HOLE, NEAR GLEASON, WI

LOCATION.--Lat 45°21'09", long 89°28'20", in SW ¼ SE ¼ sec.10, T.33 N., R.8 E., Lincoln County, Hydrologic Unit 07070002, near Gleason.

SURFACE AREA.--0.09 mi^2.

PERIOD OF RECORD.--August 27, 2007.

REMARKS.--Lake sampled at the deep hole at a depth of about 2.6 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

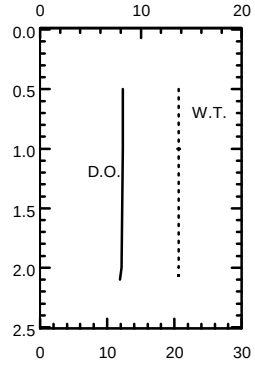
WATER-QUALITY DATA, AUGUST 27, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	>2.6
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	20.6
00400	pH (standard units)	5.4
00095	Specific conductance (µS/cm)	19.3
00300	Dissolved oxygen	8.2
00665	Phosphorus, total (as P)	0.010
32210	Chlorophyll a, phytoplankton (µg/L)	2.72
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	2.9
00955	Dissolved silica	ND

ND = Not detected

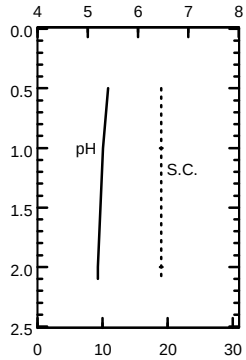
08-27-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

455134088083400 ELLWOOD LAKE, DEEP HOLE, NEAR SPREAD EAGLE, WI

LOCATION.--Lat 45°51'34", long 88°08'34", in NE ¼ NE ¼ sec.17, T.39 N., R.19 E., Florence County, Hydrologic Unit 04030108, near Spread Eagle.

SURFACE AREA.--0.20 mi^2.

PERIOD OF RECORD.--August 29, 2007.

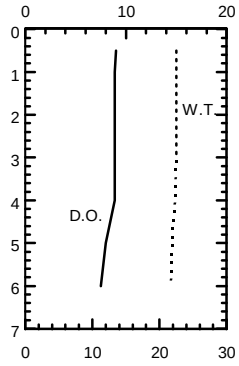
REMARKS.--Lake sampled at the deep hole at a depth of about 7.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 29, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	3.0
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	22.5
00400	pH (standard units)	8.6
00095	Specific conductance (µS/cm)	221
00300	Dissolved oxygen	9.0
00665	Phosphorus, total (as P)	0.012
32210	Chlorophyll a, phytoplankton (µg/L)	2.48
00080	Color (platinum cobalt units)	2.5
00417	ANC (as CaCO3)	101
00955	Dissolved silica	2.71

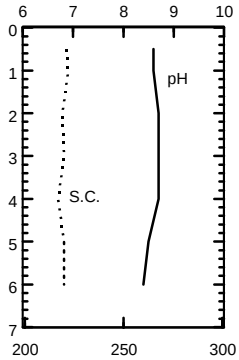
08-29-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

460823090123600 FOX LAKE, DEEP SPOT, NEAR MERCER, WI

LOCATION.--Lat 46°08'23", long 90°12'36", in NE ¼ NW ¼ sec.11, T.42 N., R.2 E., Iron County, Hydrologic Unit 07050002, near Mercer.

SURFACE AREA.--0.06 mi^2.

PERIOD OF RECORD.--August 8, 2007.

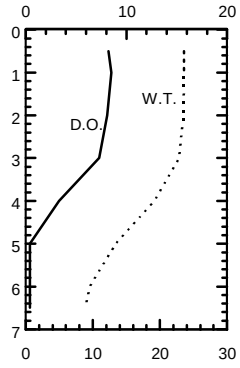
REMARKS.--Lake sampled at the deep hole at a depth of about 7.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 8, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	2.8
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	23.6
00400	pH (standard units)	7.7
00095	Specific conductance (µS/cm)	54
00300	Dissolved oxygen	8.2
00665	Phosphorus, total (as P)	0.012
32210	Chlorophyll a, phytoplankton (µg/L)	3.23
00080	Color (platinum cobalt units)	20
00417	ANC (as CaCO3)	20
00955	Dissolved silica	0.602

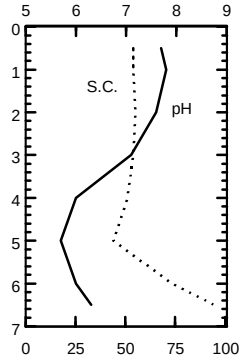
08-08-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

452947088050600 GLEN LAKE, DEEP HOLE, NEAR ATHELSTANE, WI

LOCATION.--Lat 45°29'51", long 88°04'48", in NE ¼ NE ¼ sec.23, T.35 N., R.19 E., Marinette County, Hydrologic Unit 04030108, near Athelstane.

SURFACE AREA.--0.08 mi^2.

PERIOD OF RECORD.—August 29, 2007.

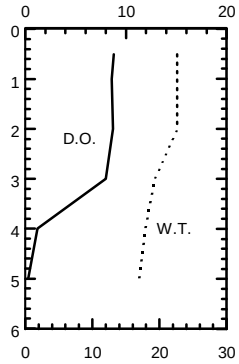
REMARKS.--Lake sampled at the deep hole at a depth of about 5.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 29, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	2.6
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	22.6
00400	pH (standard units)	8.4
00095	Specific conductance (µS/cm)	207
00300	Dissolved oxygen	8.8
00665	Phosphorus, total (as P)	0.013
32210	Chlorophyll a, phytoplankton (µg/L)	2.28
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	98
00955	Dissolved silica	10.9

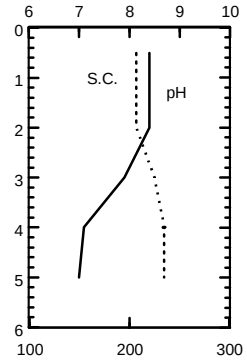
08-29-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

434911088583000 GREEN LAKE, EAST #2, NEAR GREEN LAKE, WI

LOCATION.--Lat 43°49'11", long 88°58'30", in NW ¼ NE ¼ sec.32, T.16 N., R.13 E., Green Lake County, Hydrologic Unit 04030201, near Green Lake.

SURFACE AREA.--11.48 mi^2.

PERIOD OF RECORD.--July 11, 2007.

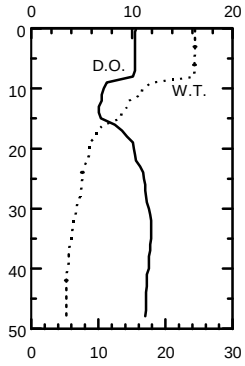
REMARKS.--Lake sampled at a depth of about 49.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 11, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	3.6
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.4
00400	pH (standard units)	8.8
00095	Specific conductance (µS/cm)	496
00300	Dissolved oxygen	10.3
00665	Phosphorus, total (as P)	0.016
32210	Chlorophyll a, phytoplankton (µg/L)	5.53
00080	Color (platinum cobalt units)	2.5
00417	ANC (as CaCO3)	169
00955	Dissolved silica	0.457

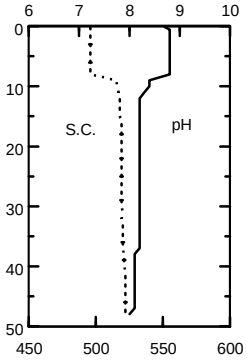
07-11-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

463336091234600 HALF MOON LAKE, DEEP HOLE, AT IRON RIVER, WI

LOCATION.--Lat 46°33'36", long 91°23'46", in NW ¼ NE ¼ sec.17, T.47 N., R.08 W., Bayfield County, Hydrologic Unit 04010301, at Iron River.

SURFACE AREA.--0.17 mi^2.

PERIOD OF RECORD.--July 30, 2007.

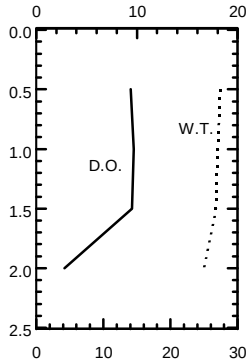
REMARKS.--Lake sampled at the deep hole at a depth of about 2.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 30, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	>2.5
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	27.4
00400	pH (standard units)	9.4
00095	Specific conductance (µS/cm)	102
00300	Dissolved oxygen	9.4
00665	Phosphorus, total (as P)	0.024
32210	Chlorophyll a, phytoplankton (µg/L)	2.36
00080	Color (platinum cobalt units)	12.5
00417	ANC (as CaCO3)	46
00955	Dissolved silica	0.322

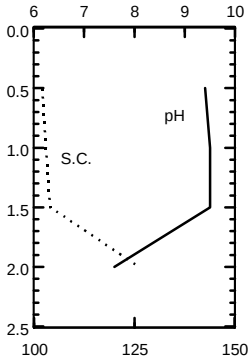
07-30-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

452919092244400 HALF MOON LAKE, DEEP HOLE, NEAR MILLTOWN, WI

LOCATION.--Lat 45°29'19", long 92°24'44", in NW ¼ SE ¼ sec.25, T.35 N., R.17 W., Polk County, Hydrologic Unit 07030005, near Milltown.

SURFACE AREA.--0.19 mi^2.

PERIOD OF RECORD.--July 26, 2007.

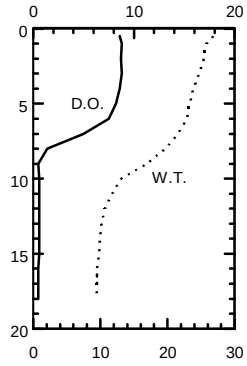
REMARKS.--Lake sampled at the deep hole at a depth of about 18.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 26, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	4.0
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	26.8
00400	pH (standard units)	9.0
00095	Specific conductance (µS/cm)	194
00300	Dissolved oxygen	8.6
00665	Phosphorus, total (as P)	0.01
32210	Chlorophyll a, phytoplankton (µg/L)	2.19
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	65
00955	Dissolved silica	4.44

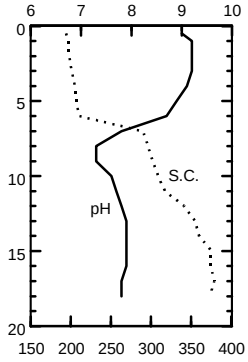
07-26-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

460714091141400 LAKE HELANE, DEEP HOLE, NEAR SEELEY, WI

LOCATION.--Lat 46°07'14", long 91°14'14", in NW ¼ SW ¼ sec.15, T.42 N., R.7 W., Sawyer County, Hydrologic Unit 07050001, near Seeley.

SURFACE AREA.--0.08 mi^2.

PERIOD OF RECORD.--August 7, 2007.

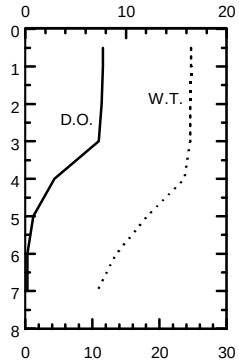
REMARKS.--Lake sampled at the deep hole at a depth of about 7.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 7, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	3.2
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.7
00400	pH (standard units)	5.9
00095	Specific conductance (µS/cm)	7
00300	Dissolved oxygen	7.7
00665	Phosphorus, total (as P)	0.016
32210	Chlorophyll a, phytoplankton (µg/L)	5.49
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	4
00955	Dissolved silica	<0.022

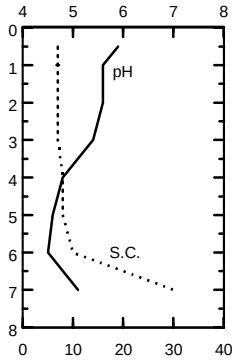
08-07-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

425750089143800 LAKE KEGONSA, DEEP HOLE, NEAR STOUGHTON, WI

LOCATION.--Lat 42°57'50", long 89°14'38", in SE ¼ SW ¼ sec.19, T.6 N., R.11 E., Dane County, Hydrologic Unit 07090001, near Stoughton.

SURFACE AREA.--4.99 mi^2.

PERIOD OF RECORD.--July 2, 2007.

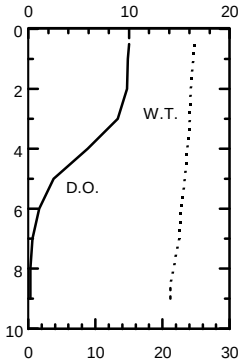
REMARKS.--Lake sampled at the deep hole at a depth of about 9.1 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 2, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.4
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.7
00400	pH (standard units)	8.7
00095	Specific conductance (µS/cm)	552
00300	Dissolved oxygen	10.0
00665	Phosphorus, total (as P)	0.056
32210	Chlorophyll a, phytoplankton (µg/L)	23.6
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	181
00955	Dissolved silica	8.65

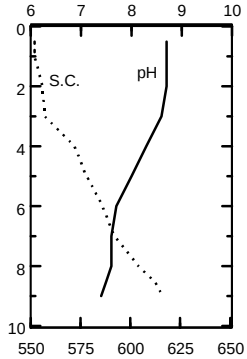
07-02-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

440906088480000 LAKE POYGAN, DEEP SPOT, NEAR WINNECONNE, WI

LOCATION.--Lat 44°09'06", long 88°48'00", in SE ¼ NW ¼ sec.2, T.19 N., R.14 E., Winnebago County, Hydrologic Unit 04030202, near Winneconne.

SURFACE AREA.--22.03 mi^2.

PERIOD OF RECORD.--September 6, 2007.

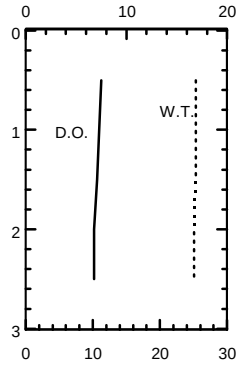
REMARKS.--Lake sampled at the deep hole at a depth of about 3.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, SEPTEMBER 6, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	0.7
82047	Depth to top of sampling interval (m)	0.5
82048	Depth to bottom of sampling interval (m)	1.4
00010	Water temperature, ºC	25.3
00400	pH (standard units)	8.6
00095	Specific conductance (µS/cm)	354
00300	Dissolved oxygen	7.5
00665	Phosphorus, total (as P)	0.074
32210	Chlorophyll a, phytoplankton (µg/L)	27.6
00080	Color (platinum cobalt units)	15
00417	ANC (as CaCO3)	155
00955	Dissolved silica	10.1

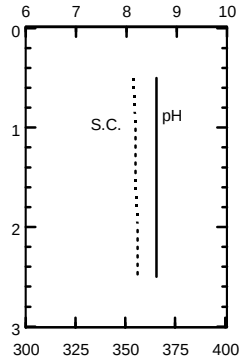
09-06-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

435934088274300 LAKE WINNEBAGO NEAR OSHKOSH, WI

LOCATION.--Lat 45°59'34", long 88°27'43", in NW ¼ NW ¼ sec.34, T.18 N., R.17 E., Winnebago County, Hydrologic Unit 04030203, near Oshkosh.

SURFACE AREA.--215 mi^2.

PERIOD OF RECORD.--July 12 and 30, 2007.

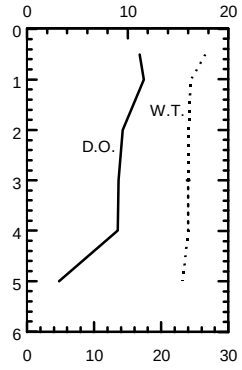
REMARKS.--Lake sampled at a depth of about 5.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 30, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.0
82047	Depth to top of sampling interval (m)	0.5
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	26.5
00400	pH (standard units)	8.8
00095	Specific conductance (µS/cm)	382
00300	Dissolved oxygen	11.2
00665	Phosphorus, total (as P)	0.175
32210	Chlorophyll a, phytoplankton (µg/L)	50.4
00080	Color (platinum cobalt units)	10
00417	ANC (as CaCO3)	157
00955	Dissolved silica	18

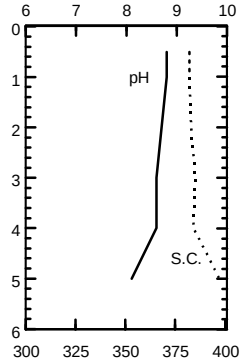
07-30-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

434829087582700 LITTLE ELKHART LAKE, DEEP HOLE, NEAR PLYMOUTH, WI

LOCATION.--Lat 43°48'29", long 87°58'27", in NW ¼ SW ¼ sec.34, T.16 N., R.21 E., Sheboygan County, Hydrologic Unit 04030101, near Plymouth.

SURFACE AREA.--0.08 mi^2.

PERIOD OF RECORD.--July 10, 2007.

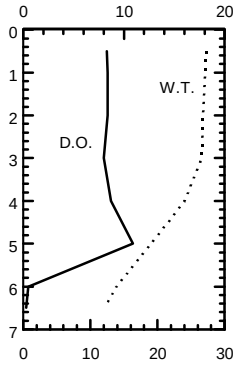
REMARKS.--Lake sampled at the deep hole at a depth of about 7.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 10, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	4.4
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	27.2
00400	pH (standard units)	8.6
00095	Specific conductance (µS/cm)	365
00300	Dissolved oxygen	8.3
00665	Phosphorus, total (as P)	0.018
32210	Chlorophyll a, phytoplankton (µg/L)	2.71
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	123
00955	Dissolved silica	1.22

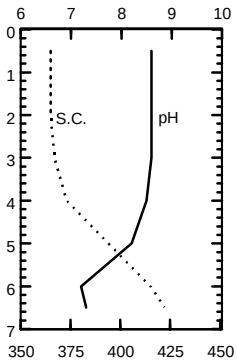
07-10-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

460300089290000 LITTLE STAR LAKE, DEEP SPOT, NEAR SAYNER, WI

LOCATION.--Lat 46°03'00", long 89°29'00", in SE ¼ NW ¼ sec.10, T.41 N., R.8 E., Vilas County, Hydrologic Unit 07070001, near Sayner.

SURFACE AREA.--0.14 mi^2.

PERIOD OF RECORD.--August 15, 2007.

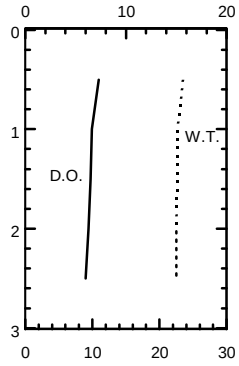
REMARKS.--Lake sampled at the deep hole at a depth of about 2.75 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 15, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	0.4
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	0.8
00010	Water temperature, ºC	23.5
00400	pH (standard units)	7.7
00095	Specific conductance (µS/cm)	101
00300	Dissolved oxygen	7.3
00665	Phosphorus, total (as P)	0.084
32210	Chlorophyll a, phytoplankton (µg/L)	27.8
00080	Color (platinum cobalt units)	50
00417	ANC (as CaCO3)	45
00955	Dissolved silica	19.1

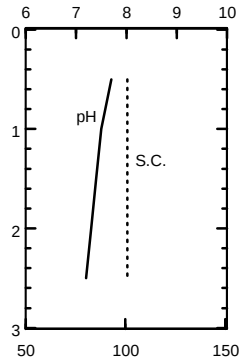
08-15-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

441925089112800 MARL LAKE, DEEP HOLE, NEAR WAUPACA, WI

LOCATION.--Lat 44°19'25", long 89°11'28", in SW ¼ NE ¼ sec.5, T.21 N., R.11 E., Waupaca County, Hydrologic Unit 04030202, near Waupaca.

SURFACE AREA.--0.03 mi^2.

PERIOD OF RECORD.--July 18, 2007.

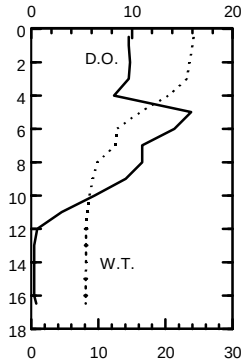
REMARKS.--Lake sampled at the deep hole at a depth of about 17.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 18, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	2.6
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.2
00400	pH (standard units)	8.5
00095	Specific conductance (µS/cm)	313
00300	Dissolved oxygen	9.7
00665	Phosphorus, total (as P)	0.009
32210	Chlorophyll a, phytoplankton (µg/L)	--
00080	Color (platinum cobalt units)	2.5
00417	ANC (as CaCO3)	153
00955	Dissolved silica	12.1

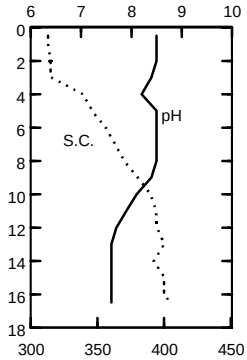
07-18-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

455913089210100 MCLEOD LAKE, DEEP HOLE, NEAR CONOVER, WI

LOCATION.--Lat 45°59'13", long 89°21'01", in NE ¼ SE ¼ sec.34, T.41 N., R.9 E., Vilas County, Hydrologic Unit 07070001, near Conover.

SURFACE AREA.--0.08 mi^2.

PERIOD OF RECORD.--August 14, 2007.

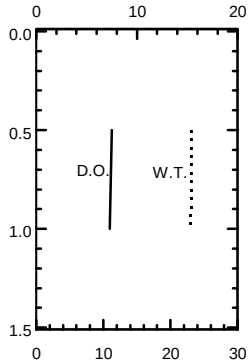
REMARKS.--Lake sampled at the deep hole at a depth of about 1.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 14, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.2
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	23.2
00400	pH (standard units)	5.9
00095	Specific conductance (µS/cm)	19
00300	Dissolved oxygen	7.5
00665	Phosphorus, total (as P)	0.019
32210	Chlorophyll a, phytoplankton (µg/L)	7.91
00080	Color (platinum cobalt units)	90
00417	ANC (as CaCO3)	9
00955	Dissolved silica	3.08

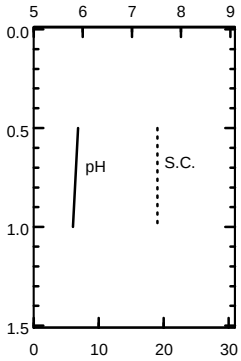
08-14-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

433926088132500 MUD LAKE, CENTER, NEAR CAMPBELLSPORT, WI

LOCATION.--Lat 43°39'26", long 88°13'25", in NE ¼ NE ¼ sec.28, T.14 N., R.19 E., Fond du Lac County, Hydrologic Unit 04040003, near Campbellsport.

SURFACE AREA.--0.07 mi^2.

PERIOD OF RECORD.--July 17, 2007.

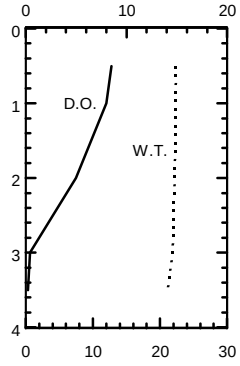
REMARKS.--Lake sampled at the deep hole at a depth of about 4.2 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 17, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	0.4
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	0.8
00010	Water temperature, ºC	22.4
00400	pH (standard units)	8.6
00095	Specific conductance (µS/cm)	443
00300	Dissolved oxygen	8.5
00665	Phosphorus, total (as P)	0.164
32210	Chlorophyll a, phytoplankton (µg/L)	85.7
00080	Color (platinum cobalt units)	55
00417	ANC (as CaCO3)	209
00955	Dissolved silica	18.6

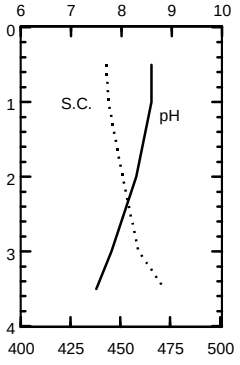
07-17-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

454755089391200 MUD LAKE, DEEP HOLE, NEAR HAZELHURST, WI

LOCATION.--Lat 45°47'55", long 89°39'12", in SE ¼ NE ¼ sec.7, T.38 N., R.7 E., Oneida County, Hydrologic Unit 07070001, near Hazelhurst.

SURFACE AREA.--0.06 mi^2.

PERIOD OF RECORD.—September 5, 2007.

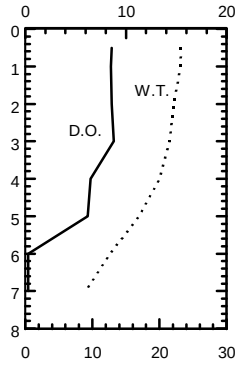
REMARKS.--Lake sampled at the deep hole at a depth of about 7.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, SEPTEMBER 5, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	3.4
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	23.2
00400	pH (standard units)	7.5
00095	Specific conductance (µS/cm)	88
00300	Dissolved oxygen	8.6
00665	Phosphorus, total (as P)	0.012
32210	Chlorophyll a, phytoplankton (µg/L)	1.26
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	41
00955	Dissolved silica	10.8

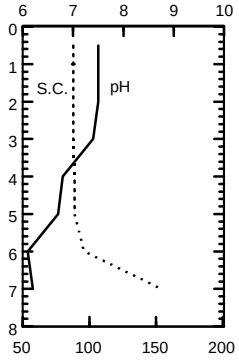
09-05-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

455948091145500 MUD LAKE, DEEP SPOT, NEAR HAYWARD, WI

LOCATION.--Lat 45°59'48", long 91°14'55", in NW ¼ NE ¼ sec.33, T.41 N., R.7 W., Sawyer County, Hydrologic Unit 07050001, near Hayward.

SURFACE AREA.--0.75 mi^2.

PERIOD OF RECORD.--August 7, 2007.

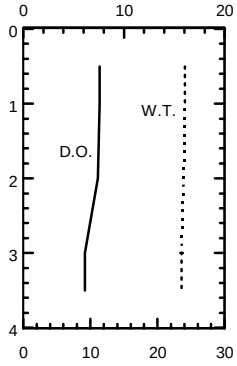
REMARKS.--Lake sampled at the deep hole at a depth of about 4.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 7, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	2.0
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.1
00400	pH (standard units)	8.2
00095	Specific conductance (µS/cm)	95
00300	Dissolved oxygen	7.6
00665	Phosphorus, total (as P)	0.015
32210	Chlorophyll a, phytoplankton (µg/L)	2.6
00080	Color (platinum cobalt units)	12.5
00417	ANC (as CaCO3)	43
00955	Dissolved silica	3.01

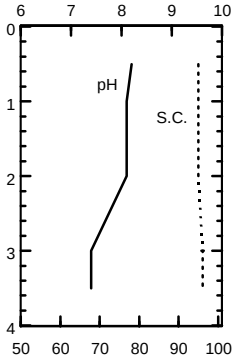
08-07-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

453341092255700 MURDOCK LAKE, DEEP SPOT, NEAR LUCK, WI

LOCATION.--Lat 45°33'41", long 92°25'57", in NW ¼ SE ¼ sec.35, T.36 N., R.17 W., Polk County, Hydrologic Unit 07030005, near Luck.

SURFACE AREA.--0.03 mi^2.

PERIOD OF RECORD.--July 29, 2007.

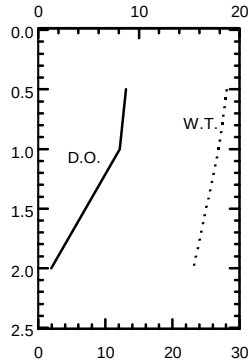
REMARKS.--Lake sampled at the deep hole at a depth of about 2.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 29, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.0
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	28.1
00400	pH (standard units)	7.6
00095	Specific conductance (µS/cm)	45
00300	Dissolved oxygen	8.7
00665	Phosphorus, total (as P)	0.047
32210	Chlorophyll a, phytoplankton (µg/L)	25.7
00080	Color (platinum cobalt units)	22
00417	ANC (as CaCO3)	7
00955	Dissolved silica	0.613

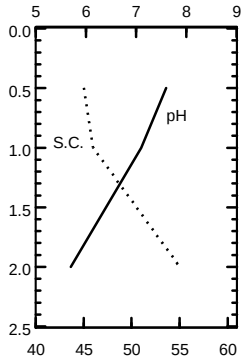
07-29-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

430551088273500 OCONOMOWOC LAKE, CENTER, AT OCONOMOWOC, WI

LOCATION.--Lat 43°05'51", long 88°27'35", in NW ¼ SE ¼ sec.2, T.7 N., R.17 E., Waukesha County, Hydrologic Unit 07090001, at Oconomowoc.

SURFACE AREA.--1.20 mi^2.

PERIOD OF RECORD.--July 3 and September 5, 2007.

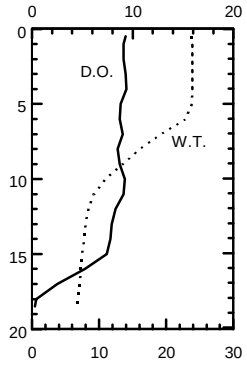
REMARKS.--Lake sampled at the deep hole at a depth of about 18.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene. The multi-parameter meter malfunctioned on Sept. 5, so no profile data is available for that day.

WATER-QUALITY DATA, JULY 3 and SEPTEMBER 5, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	July 3, 2007	September 5, 2007
00078	Secchi-depth (m)	2.0	3.8
82047	Depth to top of sampling interval (m)	0.0	0.0
82048	Depth to bottom of sampling interval (m)	2.0	2.0
00010	Water temperature, ºC	23.8	25.2
00400	pH (standard units)	8.6	8.4
00095	Specific conductance (µS/cm)	578	533
00300	Dissolved oxygen	9.3	8.4
00665	Phosphorus, total (as P)	0.012	0.014
32210	Chlorophyll a, phytoplankton (µg/L)	3.36	2.79
00080	Color (platinum cobalt units)	7.5	5.0
00417	ANC (as CaCO3)	189	173
00955	Dissolved silica	4.20	8.04

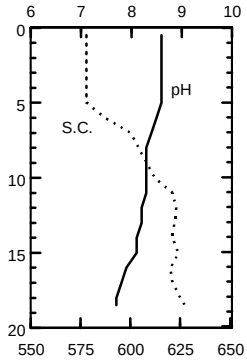
07-03-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

453500088540000 PESHTIGO LAKE, DEEP SPOT, AT CRANDON, WI

LOCATION.--Lat 45°35'00", long 88°54'00", in NW ¼ SW ¼ sec.20, T.36 N., R.13 E., Forest County, Hydrologic Unit 04030105, at Crandon.

SURFACE AREA.--0.22 mi^2.

PERIOD OF RECORD.--August 30, 2007.

REMARKS.--Lake sampled at the deep hole at a depth of about 0.75 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 30, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	>0.8
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	0.6
00010	Water temperature, ºC	23.1
00400	pH (standard units)	8.3
00095	Specific conductance (µS/cm)	405
00300	Dissolved oxygen	11.1
00665	Phosphorus, total (as P)	0.026
32210	Chlorophyll a, phytoplankton (µg/L)	11.6
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	135
00955	Dissolved silica	3.54

No profile plots because just one reading was taken.

451730092371300 PLEASANT LAKE, DEEP SPOT, NEAR OSCEOLA, WI

LOCATION.--Lat 45°17'30", long 92°37'13", in SW ¼ NE ¼ sec.5, T.32 N., R.18 W., Polk County, Hydrologic Unit 07030005, near Osceola.

SURFACE AREA.--0.06 mi^2.

PERIOD OF RECORD.--July 25, 2007.

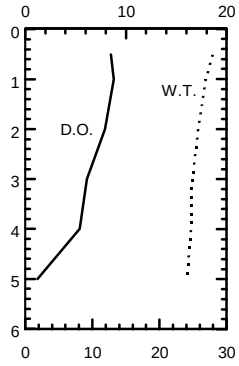
REMARKS.--Lake sampled at the deep hole at a depth of about 5.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 25, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	2.5
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	27.9
00400	pH (standard units)	9.3
00095	Specific conductance (µS/cm)	250
00300	Dissolved oxygen	8.5
00665	Phosphorus, total (as P)	0.013
32210	Chlorophyll a, phytoplankton (µg/L)	2.27
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	66
00955	Dissolved silica	8

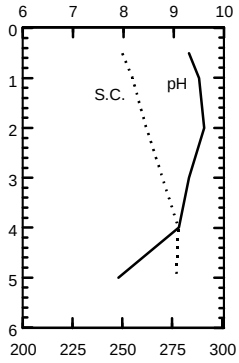
07-25-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

455958089314200 PLUM LAKE, DEEP HOLE, AT SAYNER, WI

LOCATION.--Lat 45°59'58", long 89°31'42", in SW ¼ SW ¼ sec.29, T.41 N., R.8 E., Vilas County, Hydrologic Unit 07070001, at Sayner.

SURFACE AREA.--0.51 mi^2.

PERIOD OF RECORD.--August 13, 2007.

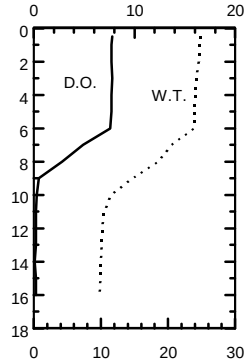
REMARKS.--Lake sampled at the deep hole at a depth of about 16.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 25, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	4.7
82047	Depth to top of sampling interval (m)	0.0
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00400	pH (standard units)	7.7
00095	Specific conductance (µS/cm)	100
00300	Dissolved oxygen	7.8
00665	Phosphorus, total (as P)	0.008
32210	Chlorophyll a, phytoplankton (µg/L)	1.67
00080	Color (platinum cobalt units)	2.5
00417	ANC (as CaCO3)	44
00955	Dissolved silica	13.5

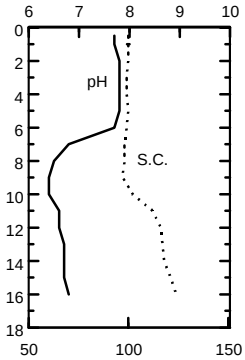
08-13-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

454547090393300 PRICE LAKE, DEEP SPOT, NEAR LUGERVILLE, WI

LOCATION.--Lat 45°45'47", long 90°39'33", in SE ¼ NE ¼ sec.19, T.38 N., R.2 W., Price County, Hydrologic Unit 07050003, near Lugerville.

SURFACE AREA.--0.14 mi^2.

PERIOD OF RECORD.--August 9, 2007.

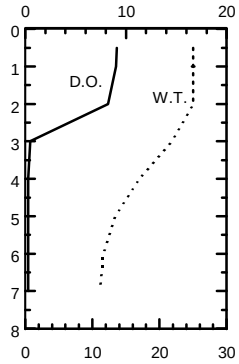
REMARKS.--Lake sampled at the deep hole at a depth of about 7.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 9, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.2
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	25.0
00400	pH (standard units)	8.3
00095	Specific conductance (µS/cm)	83
00300	Dissolved oxygen	9.1
00665	Phosphorus, total (as P)	0.024
32210	Chlorophyll a, phytoplankton (µg/L)	20
00080	Color (platinum cobalt units)	55
00417	ANC (as CaCO3)	38
00955	Dissolved silica	2.91

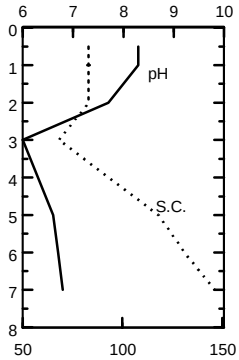
08-09-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

452005091171000 PULASKI LAKE, DEEP HOLE, NEAR BRUCE, WI

LOCATION.--Lat 45°20'05", long 91°17'10", in NW ¼ NE ¼ sec.19, T.33 N., R.7 W., Rusk County, Hydrologic Unit 07050001, near Bruce.

SURFACE AREA.--0.20 mi^2.

PERIOD OF RECORD.--July 24, 2007.

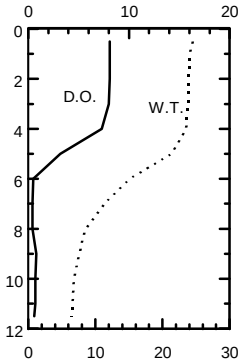
REMARKS.--Lake sampled at the deep hole at a depth of about 12 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 24, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	3.4
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.5
00400	pH (standard units)	7.5
00095	Specific conductance (µS/cm)	48
00300	Dissolved oxygen	8.1
00665	Phosphorus, total (as P)	0.012
32210	Chlorophyll a, phytoplankton (µg/L)	2.42
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	14
00955	Dissolved silica	0.206

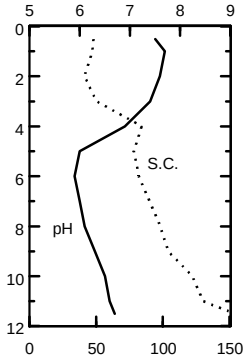
07-24-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

442024089090200 RAINBOW (CHAIN) LAKE, DEEP HOLE, NEAR WAUPACA, WI

LOCATION.--Lat 44°20'44", long 89°09'02", in SW ¼ NE ¼ sec.34, T.22 N., R.11 E., Waupaca County, Hydrologic Unit 04030202, near Bruce.

SURFACE AREA.--0.18 mi^2.

PERIOD OF RECORD.--July 18, 2007.

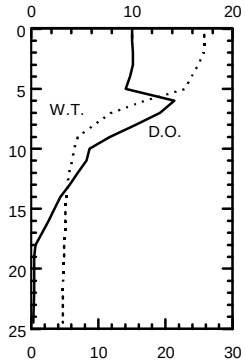
REMARKS.--Lake sampled at the deep hole at a depth of about 25 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 18, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.7
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	25.8
00400	pH (standard units)	8.4
00095	Specific conductance (µS/cm)	353
00300	Dissolved oxygen	10
00665	Phosphorus, total (as P)	0.013
32210	Chlorophyll a, phytoplankton (µg/L)	7.94
00080	Color (platinum cobalt units)	2.5
00417	ANC (as CaCO3)	140
00955	Dissolved silica	3.47

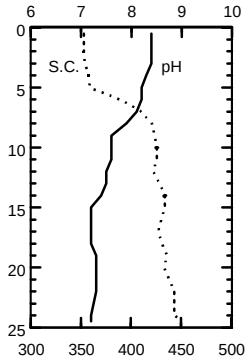
07-18-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

455125090095400 RILEY LAKE, DEEP SPOT, NEAR FIFIELD, WI

LOCATION.--Lat 45°51'25", long 90°09'54", in NW ¼ NW ¼ sec.19, T.39 N., R.2 E., Price County, Hydrologic Unit 07050003, near Fifield.

SURFACE AREA.--0.30 mi^2.

PERIOD OF RECORD.--August 9, 2007.

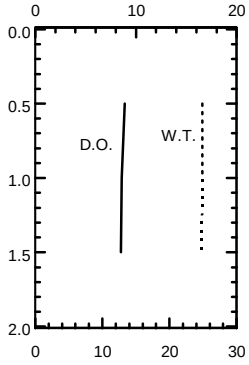
REMARKS.--Lake sampled at the deep hole at a depth of about 2.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 9, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	0.6
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	1.2
00010	Water temperature, ºC	24.9
00400	pH (standard units)	7.8
00095	Specific conductance (µS/cm)	41
00300	Dissolved oxygen	8.9
00665	Phosphorus, total (as P)	0.026
32210	Chlorophyll a, phytoplankton (µg/L)	16.4
00080	Color (platinum cobalt units)	35
00417	ANC (as CaCO3)	17
00955	Dissolved silica	5.25

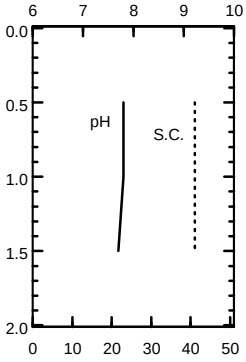
08-09-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

452617088565800 ROLLING STONE LAKE, DEEP HOLE, NEAR PICKEREL, WI

LOCATION.--Lat 45°26'17", long 88°56'58", in SE ¼ SE ¼ sec.11, T.34 N., R.12 E., Langlade County, Hydrologic Unit 04030202, near Pickerel.

SURFACE AREA.--1.05 mi^2.

PERIOD OF RECORD.--August 29, 2007.

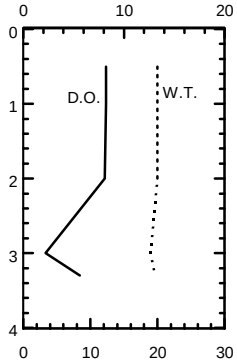
REMARKS.--Lake sampled at the deep hole at a depth of about 3.8 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 29, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	0.6
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	20.0
00400	pH (standard units)	9.4
00095	Specific conductance (µS/cm)	160
00300	Dissolved oxygen	8.2
00665	Phosphorus, total (as P)	0.039
32210	Chlorophyll a, phytoplankton (µg/L)	27.7
00080	Color (platinum cobalt units)	12.5
00417	ANC (as CaCO3)	79
00955	Dissolved silica	6.48

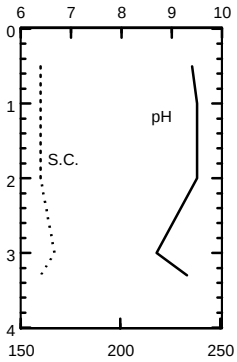
08-29-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

451853092334600 ROUND LAKE, DEEP HOLE, NEAR OSCEOLA, WI

LOCATION.--Lat 45°18'53", long 92°33'46", in NE ¼ SW ¼ sec.26, T.33 N., R.18, Polk County, Hydrologic Unit 07030005, near Osceola.

SURFACE AREA.--0.10 mi^2.

PERIOD OF RECORD.--July 26, 2007.

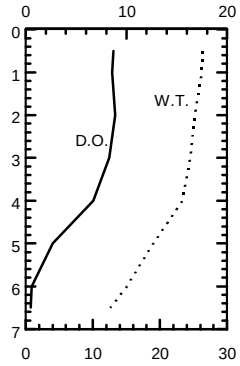
REMARKS.--Lake sampled at the deep hole at a depth of about 7 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 26, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	4.0
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	26.3
00400	pH (standard units)	8.7
00095	Specific conductance (µS/cm)	230
00300	Dissolved oxygen	8.7
00665	Phosphorus, total (as P)	0.013
32210	Chlorophyll a, phytoplankton (µg/L)	3.06
00080	Color (platinum cobalt units)	2.5
00417	ANC (as CaCO3)	97
00955	Dissolved silica	5.5

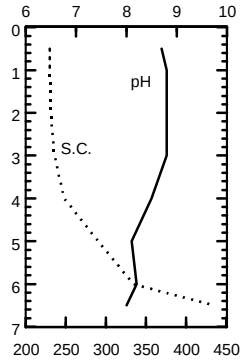
07-26-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

462242091342400 SAND LAKE, DEEP SPOT, NEAR SOLON SPRINGS, WI

LOCATION.--Lat 46°22'42", long 91°34'24", in NE ¼ SE ¼ sec.14, T.45 N., R.10 W., Douglas County, Hydrologic Unit 07030001, near Solon Springs.

SURFACE AREA.--0.15 mi^2.

PERIOD OF RECORD.--July 30, 2007.

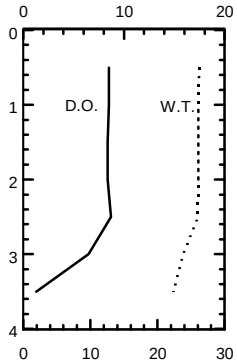
REMARKS.--Lake sampled at the deep hole at a depth of about 4 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 30, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	2.8
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	26.2
00400	pH (standard units)	9.0
00095	Specific conductance (µS/cm)	79
00300	Dissolved oxygen	8.5
00665	Phosphorus, total (as P)	0.012
32210	Chlorophyll a, phytoplankton (µg/L)	2.54
00080	Color (platinum cobalt units)	5.0
00417	ANC (as CaCO3)	33
00955	Dissolved silica	8.52

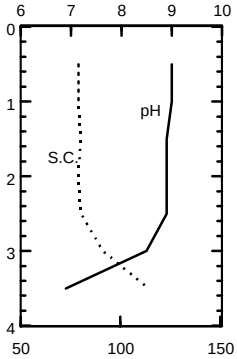
07-30-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

455828090302800 SCHNUR LAKE, DEEP HOLE, NEAR PARK FALLS, WI

LOCATION.--Lat 45°58'28", long 90°30'28", in SW ¼ NW ¼ sec.4, T.40 N., R.1 W., Price County, Hydrologic Unit 07050002, near Park Falls.

SURFACE AREA.--0.24 mi^2.

PERIOD OF RECORD.--August 8, 2007.

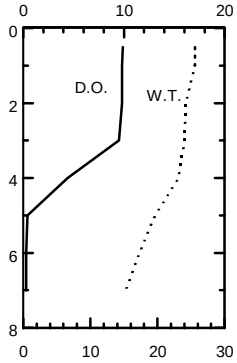
REMARKS.--Lake sampled at the deep hole at a depth of about 7.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 8, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.6
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	25.6
00400	pH (standard units)	9.2
00095	Specific conductance (µS/cm)	146
00300	Dissolved oxygen	9.9
00665	Phosphorus, total (as P)	0.015
32210	Chlorophyll a, phytoplankton (µg/L)	13.1
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	52
00955	Dissolved silica	1.31

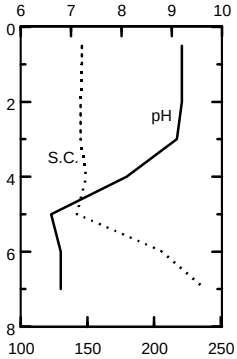
08-08-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

453918089322600 SOO LAKE, DEEP HOLE, NEAR RHINELANDER, WI

LOCATION.--Lat 45°39'18", long 89°32'26", in SW ¼ NE ¼ sec.31, T.37 N., R.8 E., Oneida County, Hydrologic Unit 07070001, near Rhinelander.

SURFACE AREA.--0.20 mi^2.

PERIOD OF RECORD.--August 31, 2007.

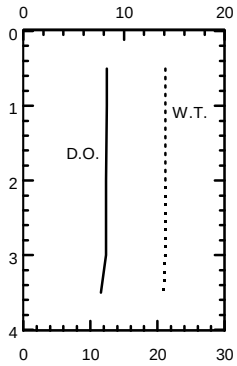
REMARKS.--Lake sampled at the deep hole at a depth of about 4 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 31, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	2.3
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	21.2
00400	pH (standard units)	6.9
00095	Specific conductance (µS/cm)	13.5
00300	Dissolved oxygen	8.3
00665	Phosphorus, total (as P)	0.016
32210	Chlorophyll a, phytoplankton (µg/L)	4.07
00080	Color (platinum cobalt units)	5.0
00417	ANC (as CaCO3)	5.2
00955	Dissolved silica	0.272

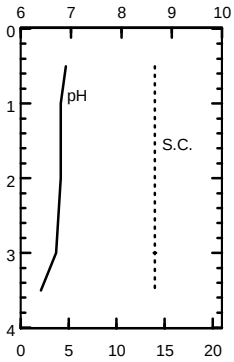
08-31-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

453452092022600 SPRING LAKE, DEEP HOLE, NEAR CUMBERLAND, WI

LOCATION.--Lat 45°34'52", long 92°02'26", in NW ¼ NE ¼ sec.25, T.36 N., R.14 W., Barron County, Hydrologic Unit 07050007, near Cumberland.

SURFACE AREA.--0.10 mi^2.

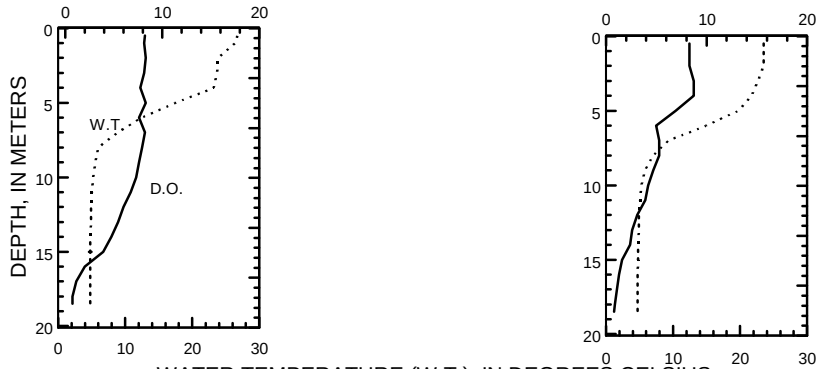
PERIOD OF RECORD.--July 24 and September 6, 2007.

REMARKS.--Lake sampled at the deep hole at a depth of about 19 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 24 AND SEPTEMBER 6, 2007
(Milligrams per liter unless otherwise indicated)

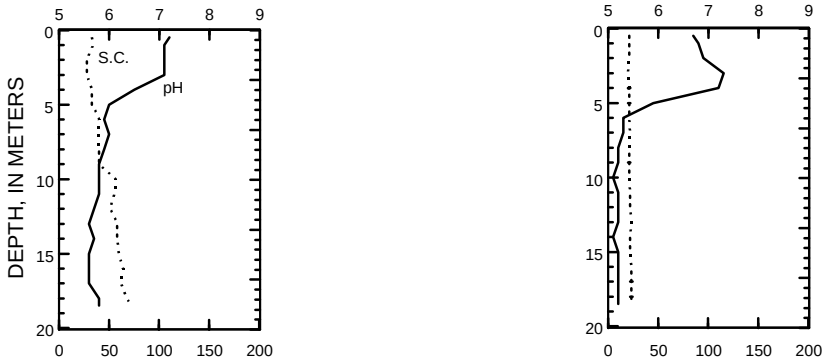
Parameter Code	Parameter Name	July 24	September 6	
00078	Secchi-depth (m)	3.2	3.4	
82047	Depth to top of sampling interval (m)	0.0	0.0	0.0
82048	Depth to bottom of sampling interval (m)	2.0	2.0	2.0
00010	Water temperature, ºC	26.7	23.5	23.5
00400	pH (standard units)	7.2	6.7	6.7
00095	Specific conductance (µS/cm)	33	21	21
00300	Dissolved oxygen	8.2	8.3	8.3
00665	Phosphorus, total (as P)	0.008	0.008	0.007
32210	Chlorophyll a, phytoplankton (µg/L)	4.23	2.47	2.79
00080	Color (platinum cobalt units)	12.5	7.5	7.5
00417	ANC (as CaCO3)	6	7	6
00955	Dissolved silica	0.072	0.105	0.111
		07-24-07	09-06-07	

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELSIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELSIUS

454710089573000 SWAMSAUGER LAKE, DEEP SPOT, NEAR HAZELHURST, WI

LOCATION.--Lat 45°47'10", long 89°57'30", in NW ¼ NW ¼ sec.14, T.38 N., R.4 E., Oneida County, Hydrologic Unit 07070001, near Hazelhurst.

SURFACE AREA.--0.21 mi^2.

PERIOD OF RECORD.--August 13, 2007.

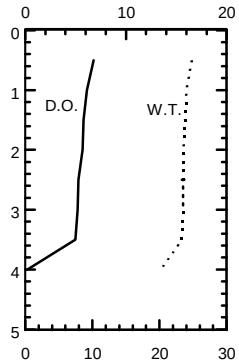
REMARKS.--Lake sampled at the deep hole at a depth of about 4.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 13, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.0
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	24.8
00400	pH (standard units)	7.0
00095	Specific conductance (µS/cm)	83
00300	Dissolved oxygen	6.8
00665	Phosphorus, total (as P)	0.034
32210	Chlorophyll a, phytoplankton (µg/L)	12.0
00080	Color (platinum cobalt units)	110
00417	ANC (as CaCO3)	37
00955	Dissolved silica	13.1

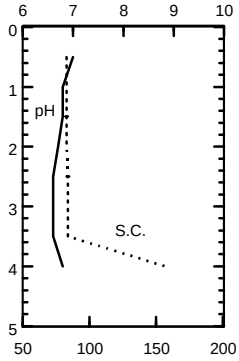
08-13-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

433239089223500 SWAN LAKE, DEEP HOLE, NEAR PORTAGE, WI

LOCATION.--Lat 43°32'39", long 89°22'35", in SE ¼ SW ¼ sec.1, T.12 N., R.9 E., Columbia County, Hydrologic Unit 04030201, near Portage.

SURFACE AREA.--0.71 mi^2.

PERIOD OF RECORD.--July 9, 2007.

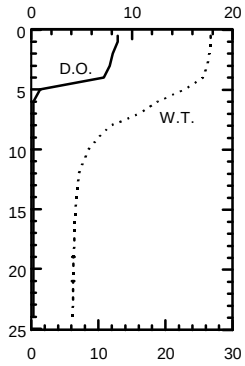
REMARKS.--Lake sampled at the deep hole at a depth of about 24.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 9, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.1
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	26.7
00400	pH (standard units)	8.6
00095	Specific conductance (µS/cm)	400
00300	Dissolved oxygen	8.6
00665	Phosphorus, total (as P)	0.024
32210	Chlorophyll a, phytoplankton (µg/L)	10.9
00080	Color (platinum cobalt units)	15
00417	ANC (as CaCO3)	167
00955	Dissolved silica	2.24

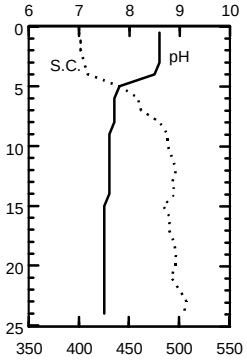
07-09-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

424854088123300 TICHIGAN LAKE NEAR WATERFORD, WI

LOCATION.--Lat 42°48'54", long 88°12'33", in SE ¼ SE ¼ sec.11, T.4 N., R.19 E., Racine County, Hydrologic Unit 07120006, near Waterford.

SURFACE AREA.--1.89 mi^2.

PERIOD OF RECORD.--July 5, 2007.

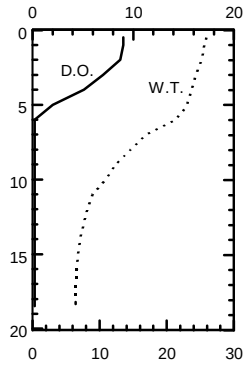
REMARKS.--Lake sampled at the deep hole at a depth of about 19 m. Water-quality analyses by Wisconsin State Laboratory
of Hygiene.

WATER-QUALITY DATA, JULY 5, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.2
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	25.9
00400	pH (standard units)	8.2
00095	Specific conductance (µS/cm)	875
00300	Dissolved oxygen	9.0
00665	Phosphorus, total (as P)	0.036
32210	Chlorophyll a, phytoplankton (µg/L)	17.3
00080	Color (platinum cobalt units)	15
00417	ANC (as CaCO3)	188
00955	Dissolved silica	3.73

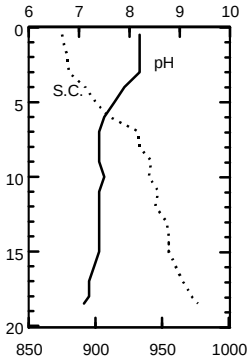
07-05-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

454322092100500 UNNAMED LAKE, CENTER, NEAR CLAM FALLS, WI

LOCATION.--Lat 45°43'22", long 92°10'05", in NE ¼ NW ¼ sec.1, T.37 N., R.15 W., Burnett County, Hydrologic Unit 07030001, near Clam Falls.

SURFACE AREA.--0.02 mi^2.

PERIOD OF RECORD.--July 31, 2007.

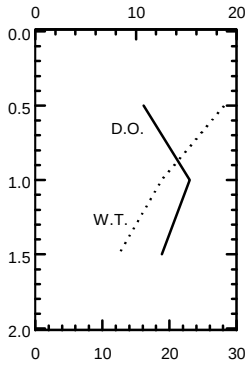
REMARKS.--Lake sampled at the deep hole at a depth of about 1.8 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 31, 2007
(Milligrams per liter unless otherwise indicated)

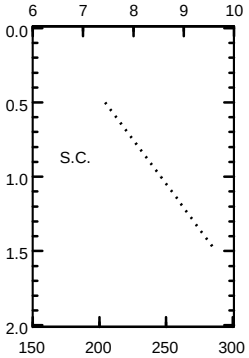
Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.8
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	28.1
00400	pH (standard units)	--
00095	Specific conductance (µS/cm)	204
00300	Dissolved oxygen	10.8
00665	Phosphorus, total (as P)	0.08
32210	Chlorophyll a, phytoplankton (µg/L)	9.91
00080	Color (platinum cobalt units)	7.5
00417	ANC (as CaCO3)	115
00955	Dissolved silica	28.9

07-31-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

460759091364200 UNNAMED LAKE, DEEP SPOT, NEAR MINONG, WI

LOCATION.--Lat 46°07'59", long 91°36'42", in NW ¼ SW ¼ sec.10, T.42 N., R.10 W., Washburn County, Hydrologic Unit 07030002, near Minong.

SURFACE AREA.--0.08 mi^2.

PERIOD OF RECORD.--July 31, 2007.

REMARKS.--Lake sampled at the deep hole at a depth of about 1.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 31, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	0.9
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	1.8
00010	Water temperature, ºC	26.4
00400	pH (standard units)	6.4
00095	Specific conductance (µS/cm)	70
00300	Dissolved oxygen	4.1
00665	Phosphorus, total (as P)	0.049
32210	Chlorophyll a, phytoplankton (µg/L)	6.64
00080	Color (platinum cobalt units)	180
00417	ANC (as CaCO3)	23
00955	Dissolved silica	3.41

No profile data due to just one line of data.

423029088050000 VOLTZ LAKE, DEEP HOLE, NEAR WILMOT, WI

LOCATION.--Lat 42°30'29", long 88°05'00", in NE ¼ NW ¼ sec.36, T.1 N., R.20 E., Kenosha County, Hydrologic Unit 07120006, near Wilmot.

SURFACE AREA.--0.10 mi^2.

PERIOD OF RECORD.--July 5, 2007.

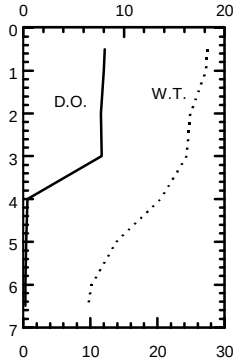
REMARKS.--Lake sampled at the deep hole at a depth of about 6.7 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 5, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	2.1
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	27.4
00400	pH (standard units)	8.2
00095	Specific conductance (µS/cm)	520
00300	Dissolved oxygen	8.1
00665	Phosphorus, total (as P)	0.038
32210	Chlorophyll a, phytoplankton (µg/L)	5.93
00080	Color (platinum cobalt units)	15
00417	ANC (as CaCO3)	154
00955	Dissolved silica	2.44

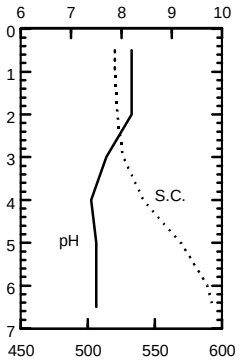
07-05-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

451909092253300 WAPOGASSET LAKE, SOUTH END DEEP HOLE, NEAR AMERY, WI

LOCATION.--Lat 45°19'09", long 92°25'33", in SW ¼ NW ¼ sec.25, T.33 N., R.17 W., Polk County, Hydrologic Unit 07030005, near Amery.

SURFACE AREA.--2.23 mi^2.

PERIOD OF RECORD.--July 25, 2007.

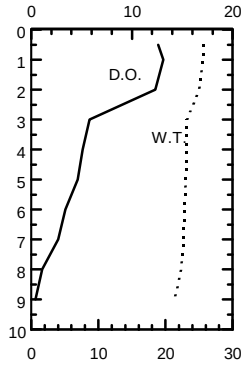
REMARKS.--Lake sampled at the deep hole at a depth of about 9.5 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 25, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	1.1
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	25.7
00400	pH (standard units)	9.2
00095	Specific conductance (µS/cm)	232
00300	Dissolved oxygen	12.6
00665	Phosphorus, total (as P)	0.064
32210	Chlorophyll a, phytoplankton (µg/L)	37.4
00080	Color (platinum cobalt units)	10
00417	ANC (as CaCO3)	98
00955	Dissolved silica	17.6

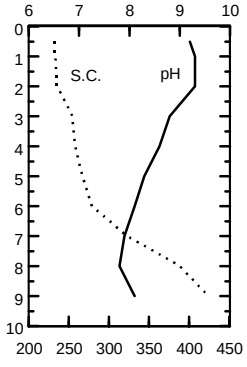
07-25-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

460222092083100 WEBB LAKE, NORTH BASIN DEEP HOLE, NEAR WEBB LAKE, WI

LOCATION.--Lat 46°02'22", long 92°08'31", in NW ¼ NE ¼ sec.17, T.41 N., R.14 W., Burnett County, Hydrologic Unit 07030002, near Webb Lake.

SURFACE AREA.--0.68 mi^2.

PERIOD OF RECORD.--July 28, 2007.

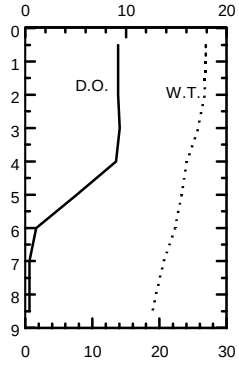
REMARKS.--Lake sampled at the deep hole at a depth of about 9.0 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, JULY 28, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	2.6
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	26.9
00400	pH (standard units)	8.8
00095	Specific conductance (µS/cm)	143
00300	Dissolved oxygen	9.2
00665	Phosphorus, total (as P)	0.021
32210	Chlorophyll a, phytoplankton (µg/L)	6.69
00080	Color (platinum cobalt units)	5.0
00417	ANC (as CaCO3)	62
00955	Dissolved silica	15.1

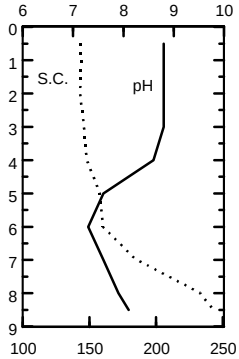
07-28-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

453902089423200 WEST MITCHELL LAKE, DEEP SPOT, NEAR HARSHAW, WI

LOCATION.--Lat 45°39'02", long 89°42'32", in NW ¼ SW ¼ sec.35, T.37 N., R.6 E., Oneida County, Hydrologic Unit 07070001, near Harshaw.

SURFACE AREA.--0.09 mi^2.

PERIOD OF RECORD.--September 5, 2007.

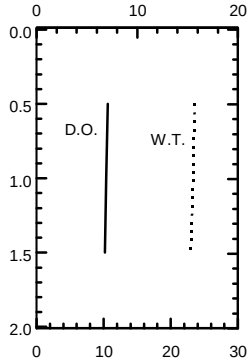
REMARKS.--Lake sampled at the deep hole at a depth of about 2.2 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, SEPTEMBER 5, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	--
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	2.0
00010	Water temperature, ºC	23.6
00400	pH (standard units)	4.9
00095	Specific conductance (µS/cm)	144
00300	Dissolved oxygen	7.1
00665	Phosphorus, total (as P)	0.013
32210	Chlorophyll a, phytoplankton (µg/L)	0.95
00080	Color (platinum cobalt units)	25
00417	ANC (as CaCO3)	3.7
00955	Dissolved silica	0.553

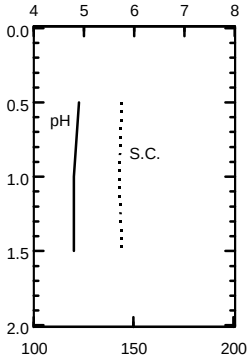
09-05-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

454300089515900 WILLOW RESERVOIR, DEEP SPOT, NEAR HAZELHURST, WI

LOCATION.--Lat 45°43'00", long 89°51'59", in NW ¼ NE ¼ sec.9, T.37 N., R.5 E., Oneida County, Hydrologic Unit 07070001, near Hazelhurst.

SURFACE AREA.--6.87 mi^2.

PERIOD OF RECORD.--August 28, 2007.

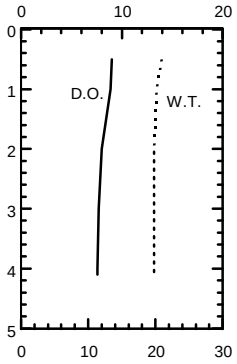
REMARKS.--Lake sampled at the deep hole at a depth of about 4.6 m. Water-quality analyses by Wisconsin State Laboratory of Hygiene.

WATER-QUALITY DATA, AUGUST 28, 2007
(Milligrams per liter unless otherwise indicated)

Parameter Code	Parameter Name	Value
00078	Secchi-depth (m)	0.8
82047	Depth to top of sampling interval (m)	0.0
82048	Depth to bottom of sampling interval (m)	1.6
00010	Water temperature, ºC	20.9
00400	pH (standard units)	8.4
00095	Specific conductance (µS/cm)	96
00300	Dissolved oxygen	9.0
00665	Phosphorus, total (as P)	0.048
32210	Chlorophyll a, phytoplankton (µg/L)	26.2
00080	Color (platinum cobalt units)	22.5
00417	ANC (as CaCO3)	39.2
00955	Dissolved silica	6.44

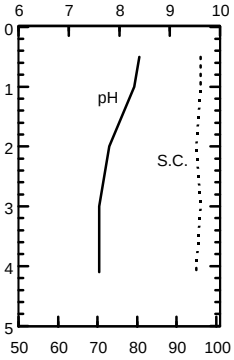
08-28-07

DISSOLVED OXYGEN (D.O.), IN MILLIGRAMS PER LITER



WATER TEMPERATURE (W.T.), IN DEGREES CELCIUS

PH, IN STANDARD UNITS



SPECIFIC CONDUCTANCE (S.C.), IN MICROSIEMENS PER CENTIMETER AT 25 DEGREES CELCIUS

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APPENDIX

Wisconsin Lakes Team

Quality-Assurance Plan

Most lake studies and monitoring programs that are conducted by the USGS Wisconsin Water Science Center entail water sampling and analysis to determine water quality and biological productivity. Because all sampling and analysis is subject to error and random variablility, a certain proportion of the sampling effort should include quality-assurance samples. These samples are collected and/or prepared solely for the purpose of assessing the magnitude of error and random variability so that the accuracy and precision of all data can be evaluated. The plan for this quality-assurance sampling is described below.

Three types of QA/QC samples are collected:

blanks
Provide information about accuracy and errors due to treatment or reagents
replicates
provide information about precision (variability)
standard additions (spikes)
provide information about accuracy and matrix interferences

Blank Sampling

B1. A **preservation blank** is prepared for each month of lake sampling. This consists of deionized water or inorganic blank water, to which is added any reagents or preservatives that are normally added to natural water samples. The blank is not taken to the field, but is shipped to the laboratory for analysis along with the natural water samples.

This blank sample is analyzed for the Nutrient Group[1] and chlorophyll-a.

B2. At one randomly-chosen lake each month, a **field blank** is prepared. This consists of deionized water or inorganic blank water treated exactly the same as regular samples. During winter, the field blank is analyzed for total phosphorus (TP) only; during summer, it is analyzed for TP and chlorophyll-a, and in the spring it is analyzed for the Nutrient Group and chlorophyll-a.

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[1]Nutrient Group = all phosphorus and nitrogen species that are commonly determined in lakes (total phosphorus, nitrate + nitrite, ammonia, total Kjeldahl nitrogen, total nitrogen)

Replicate Sampling

R1. At all lakes in the program, **triplicate samples** are taken near water surface in summer for analysis of total phosphorus and chlorophyll-a. At two of these lakes, a set of triplicate samples is also taken from near-bottom water, for analysis of total phosphorus.

R2. At three selected lakes in the spring (different lakes each year), **triplicate samples** are taken near water surface for analysis of Nutrient Group.

R3. At one lake each year, **5 replicate samples** are taken near water surface for analysis of total phosphorus and chlorophyll-a.

Standard Addition Testing

S1. At Delavan Lake and one other lake (to be determined each year), **5 replicate samples** are taken in August for **a standard addition (spike) test.** The spike consists of addition of a prepared phosphorus solution (standard) of known volume and concentration, such that the expected result of analysis is the natural water TP concentration plus the known addition. One sample from each set will receive no spike (the mean of these gives the natural water TP concentration).

Data and results of replicate sampling and field blank testing in water year 2007 are shown in Table A1.

Table A1. Analyses of replicate samples from Wisconsin lakes in water years 2001-2006. See text for procedures used. Phosphorus data in milligrams per liter; chlorophyll data in micrograms per liter. Symbol "<" indicates less than given detection limit (DL); mean and stabdard deviation not calculated for datasets containing values less than DL.

Parameter	Lake	Date	Replicate Data					Mean	Standard Deviation	Percent Standard Deviation
Total Phosphorus	Buffalo	7/23/01	0.276	0.275	0.277			**0.276**	**0.001**	**0.4**
	Delavan	7/15/01	0.027	0.027	0.031			**0.028**	**0.002**	**8.2**
	Delavan	8/19/01	0.031	0.027	0.035			**0.031**	**0.004**	**12.9**
	Geneva	7/15/01	0.005	<0.005	<0.005					
	Little Green	7/23/01	0.069	0.074	0.072			**0.072**	**0.003**	**3.5**
	Middle	6/17/01	0.012	0.012	0.017	0.016		**0.014**	**0.003**	**18.5**
	Muskego	4/18/01	0.039	0.044	0.047			**0.043**	**0.004**	**9.3**
	Muskego	7/25/01	0.030	0.031	0.031			**0.031**	**0.001**	**1.9**
	Oconomowoc	7/17/01	0.010	0.011	0.010			**0.010**	**0.001**	**5.6**
	Oconomowoc	8/23/01	0.011	0.010	0.009			**0.010**	**0.001**	**10.0**
	Okauchee	8/20/01	0.013	0.015	0.015			**0.014**	**0.001**	**8.1**
	Red Cedar	7/9/01	0.021	0.022				**0.022**	**0.001**	**3.3**
	Delavan	7/15/02	0.026	0.026	0.027	0.031		**0.028**	**0.002**	**8.7**
	Geneva	7/16/02	0.008	0.008	0.008			**0.008**	**0.000**	**0.0**
	Little Muskego	7/1/02	0.016	0.016	0.017			**0.016**	**0.001**	**3.5**
	Potter	8/5/02	0.041	0.036	0.042	0.043	0.041	**0.041**	**0.003**	**6.7**
	Little St. Germain	7/22/02	0.061	0.060	0.059			**0.060**	**0.001**	**1.7**
	Delavan	4/14/03	0.057	0.057	0.057			**0.057**	**0.000**	**0.0**
	Delavan	8/12/03	0.044	0.043	0.041			**0.043**	**0.002**	**3.6**
	Lac La Belle	8/19/03	0.015	0.012	0.012			**0.013**	**0.002**	**13.3**
	Butternut	8/13/03	0.040	0.042				**0.041**	**0.001**	**3.4**
	Delavan	7/20/04	0.031	0.020	0.041			**0.031**	**0.011**	**34.3***
	Big Cedar	8/18/04	0.012	0.011	0.012			**0.012**	**0.001**	**4.9**
	Big Cedar, South	7/19/05	0.015	0.015	0.009			**0.013**	**0.003**	**26.6**
	Delavan	8/16/05	0.032	0.029	0.027			**0.029**	**0.003**	**8.6**
	Middle	8/25/05	0.014	0.012	0.013	0.017	0.013	**0.014**	**0.002**	**13.9**
	Puckaway, West	7/18/05	0.309	0.310	0.313			**0.311**	**0.002**	**0.7**
	Upper Nemahbin	8/24/05	0.015	0.017	0.018	0.039	0.023	**0.022**	**0.010**	**43.5**
	Big Cedar	8/30/06	0.035	0.034	0.032			**0.034**	**0.002**	**4.5**
	Delavan	6/13/06	0.062	0.045				**0.054**	**0.012**	**22.5**
	Delavan	8/15/06	0.030	0.028	0.029	0.026		**0.028**	**0.002**	**6.0**
	Beulah	8/30/07	0.017	0.015				**0.016**	**0.001**	**8.8**
	Delavan	4/16/07	0.040	0.038				**0.039**	**0.001**	**3.6**
	Spring	9/6/07	0.008	0.007				**0.008**	**0.001**	**9.4**
Total Phosphorus, near bottom	Geneva	7/15/01	0.017	0.020	0.021			**0.019**	**0.002**	**10.8**
	Red Cedar	7/9/01	0.187	0.228	0.262			**0.226**	**0.038**	**16.6**
	Wind	7/8/02	0.084	0.089	0.092			**0.088**	**0.004**	**4.6**
	Wind	8/19/03	0.194	0.192	0.165			**0.184**	**0.016**	**8.8**
	Wind	7/11/05	0.380	0.378	0.394			**0.384**	**0.009**	**2.3**
	Wind	7/10/06	0.380	0.378	0.394			**0.384**	**0.009**	**2.3**
Dissolved Phosphorus	Delavan	7/15/01	0.010	<0.002	<0.007					
	Geneva	4/17/01	<0.002	<0.002						
	Oconomowoc	8/23/01	0.002	<0.002	<0.002					
	Delavan	4/14/03	0.022	0.023	0.023			**0.023**	**0.001**	**2.5**
	Beulah	8/30/07	<0.002	<0.002						

Parameter	Lake	Date	Replicate Data					Mean	Standard Deviation	Percent Standard Deviation
Dissolved Ammonia	Delavan	7/15/01	0.026	0.013	0.021			**0.020**	**0.007**	**32.8**
	Geneva	4/17/01	0.014	0.022				**0.018**	**0.006**	**31.4**
	Muskego	4/18/01	0.086	0.083	0.084			**0.084**	**0.002**	**1.8**
	Oconomowoc	8/23/01	0.027	0.028	0.022			**0.026**	**0.003**	**12.5**
	Delavan	4/14/03	<0.015	<0.015	<0.015					
	Beulah	8/30/07	0.170	0.190				**0.180**	**0.014**	**7.9**
Total Kjeldahl Nitrogen	Delavan	7/15/01	0.560	0.580	0.560			**0.567**	**0.012**	**2.0**
	Geneva	4/17/01	0.390	0.390				**0.390**	**0.000**	**0.0**
	Muskego	4/18/01	1.200	1.100	1.200			**1.167**	**0.058**	**4.9**
	Oconomowoc	8/23/01	0.490	0.500	0.520			**0.503**	**0.015**	**3.0**
	Delavan	4/14/03	0.640	0.640	0.620			**0.633**	**0.012**	**1.8**
	Beulah	8/30/07	0.510	0.420				**0.465**	**0.064**	**13.7**
Dissolved Nitrate plus Nitrite	Delavan	7/15/01	0.014	0.008	0.007			**0.010**	**0.004**	**39.2**
	Geneva	4/17/01	0.113	0.115				**0.114**	**0.001**	**1.2**
	Muskego	4/18/01	0.102	0.103	0.104			**0.103**	**0.001**	**1.0**
	Oconomowoc	8/23/01	0.370	0.371	0.369			**0.370**	**0.001**	**0.3**
	Delavan	4/14/04	<0.022	<0.022	<0.022					
	Beulah	8/30/07	<0.019	<0.019						
Chlorophyll-a (micrograms per liter)	Buffalo	7/23/01	14.0	16.0	17.0			**15.7**	**1.5**	**9.8**
	Delavan	7/15/01	4.9	4.0	4.8			**4.6**	**0.5**	**10.8**
	Geneva	7/15/01	<1.0	<1.0	1.1					
	Little Green	7/23/01	23.0	24.0	24.0			**23.7**	**0.6**	**2.4**
	Middle	6/17/01	1.6	4.7				**3.2**	**2.2**	**69.6**
	Muskego	7/25/01	6.6	3.2	3.2			**4.3**	**2.0**	**45.3**
	Oconomowoc	7/17/01	2.6	2.8	2.3			**2.6**	**0.3**	**9.8**
	Okauchee	8/20/01	8.0	8.0	8.0			**8.0**	**0.0**	**0.0**
	Powers	7/25/01	4.8	5.0	5.5			**5.1**	**0.4**	**7.1**
	Red Cedar	7/9/01	5.2	3.7				**4.5**	**1.1**	**23.8**
	Delavan	7/15/02	9.7	6.9	8.0	8.1		**8.2**	**1.2**	**14.1**
	Geneva	7/16/02	0.74	1.00	0.96			**0.9**	**0.1**	**15.6**
	Little Muskego	7/1/02	1.74	1.50	1.34			**1.5**	**0.2**	**13.2**
	Potter	8/5/02	10.8	10.3	11.9	9.77	11.0	**10.8**	**0.8**	**7.4**
	Little St. Germain	7/22/02	63.8	62.2	69.7			**65.2**	**4.0**	**6.1**
	Lac La Belle	8/19/03	3.3	3.7	3.5			**3.5**	**0.2**	**5.3**
	Butternut	8/13/03	44.00	46.10	45.20			**45.1**	**1.1**	**2.3**
	Delavan	7/20/04	10.4	11.6	10.5			**10.8**	**0.7**	**6.1**
	Big Cedar	8/18/04	8.36	8.56	8.61			**8.51**	**0.13**	**1.6**
	Big Cedar, South	7/19/05	3.13	3.10	2.63			**2.95**	**0.28**	**9.49**
	Middle	8/25/05	4.45	4.48	4.82	4.70	4.40	**4.58**	**0.21**	**4.48**
	Puckaway, West	7/18/05	174.00	178.00	168.00			**173.33**	**5.03**	**2.90**
	Big Cedar, South	8/29/06	8.02	7.56	8.20			**7.93**	**0.33**	**4.16**
	Beulah	8/30/07	4.05	3.78				**3.92**	**0.19**	**4.88**
	Spring	9/6/07	2.47	2.79				**2.63**	**0.23**	**8.60**
Turbidity, NTU	Beulah	8/30/07	<1.0	<1.0						
Dissolved Calcium	Beulah	8/30/07	42.8	41				**41.9**	**1.273**	**3.0**
Diss. Magnesium	Beulah	8/30/07	32.7	31.2				**31.95**	**1.061**	**3.3**
Diss. Potassium	Beulah	8/30/07	1.5	1.4				**1.45**	**0.071**	**4.9**
Dissolved Sodium	Beulah	8/30/07	8.8	8.5				**8.65**	**0.212**	**2.5**
ANC as CaCO3	Beulah	8/30/07	192	193				**192.5**	**0.707**	**0.4**
	Spring	9/6/07	6.6	6.4				**6.5**	**0.141**	**2.2**
Diss. Chloride	Beulah	8/30/07	20.3	20.4				**20.35**	**0.071**	**0.3**
Dissolved Silica	Beulah	8/30/07	15.2	15.3				**15.25**	**0.071**	**0.5**
	Spring	9/6/07	0.105	0.111				**0.108**	**0.004**	**3.9**
Dissolved Sulfate	Beulah	8/30/07	26.1	26.2				**26.15**	**0.071**	**0.3**
Dissolved Iron	Beulah	8/30/07	<100	<100						
Diss. Manganese	Beulah	8/30/07	<0.5	<0.5						

*Algal bloom on lake.

Table A2. Data from tests of blanks, 2001-2007. All data in milligrams per liter, unless otherwise indicated.
< = less than given detection limit; E = estimated value.

Delavan Lake. Analyses at USGS National Water Quality Laboratory, Lakewood, CO.

Parameter	2/19/01	4/17/01	7/15/01	2/21/02	4/17/02	7/14/02		2/20/03	4/16/03	4/7/06	6/13/06	8/14/06	4/16/07
Total P	E 0.003	< 0.004	< 0.004	< 0.004	< 0.004	< 0.004	0.006	E 0.002	< 0.004	< 0.004	E 0.002	< 0.004	<0.004
Dissolved orthophosphate			< 0.007			< 0.007	< 0.007		< 0.007	<0.006	<0.006	E0.003	<0.004
Chlorophyll a	< 0.1	< 0.1		< 0.1		< 0.1	< 0.1		< 0.0260	< 0.0260		< 0.0260	<0.260
Chlorophyll b	< 0.1			< 0.1		< 0.1	< 0.1						
Total Kjeldahl Nitrogen (as N)			< 0.08		< 0.10	E 0.05	E 0.05		< 0.10				
Ammonia (as N)			< 0.02			0.037	0.034		< 0.015				
Nitrate + Nitrite (as N)			< 0.05			E 0.011	0.008		< 0.022				

Big Cedar Lake, south site, near West Bend, WI. Analyses at Wisconsin State Laboratory of Hygiene, Madison, WI

Parameter	4/22/02	8/8/02
Total P	< 0.005	< 0.005
Dissolved orthophosphate	< 0.002	
Chlorophyll a	< 1.00	< 0.26
Total Kjeldahl Nitrogen (as N)	< 0.14	
Ammonia (as N)	< 0.013	
Nitrate + Nitrite (as N)	< 0.010	
Calcium, dissolved	< 0.20	
Magnesium, dissolved	< 0.20	
Potassium, dissolved	< 1.0	
Sodium, dissolved	< 0.10	
Iron, dissolved (micrograms per liter)	< 100	
per liter)	< 1	

Lake Beulah at Deep Hole near East Troy, WI. Analysis at Wisconsin State Laboratory of Hygiene, Madison, WI

Parameter	4/16/07
Total P	<0.005
Dissolved orthophosphate	0.005
Total Kjeldahl	<0.14
Dissolved Ammonia	<0.15
Dissolved Nitrate plus Nitrite	<0.019
Chlorophyll a (ug/L)	<0.260
Dissolved Calcium	<0.10
Dissolved Magnesium	<0.10
Dissolved Potassium	<0.10
Dissolved Sodium	0.200
ANC as CaCO3	<2
Dissolved Chloride	<1.0
Dissolved Silica	<0.22
Dissolved Sulfate	<4.5
Dissolved Iron	<100
Dissolved Manganese	<0.5

Little Cedar Lake, south site, near West Bend, WI. Analyses at Wisconsin State Laboratory of Hygiene, Madison, WI

Parameter	4/29/03
Total P	< 0.005
Dissolved orthophosphate	< 0.002
Total Kjeldahl Nitrogen (as N)	< 0.14
Ammonia (as N)	< 0.013
Nitrate + Nitrite (as N)	0.016

Little Cedar Lake, North site, near West Bend, WI. Analyses at Wisconsin State Laboratory of Hygiene, Madison, WI

Parameter	2/21/03
Total P	< 0.005

Table A2. -- continued

Rolling Stone Lake near Pickerel, WI. Analysis at Wisconsin State Laboratory of Hygiene, Madison, WI

Parameter	8/29/07
Total P	<0.005
Chlorophyll a (ug/L)	<0.260
ANC as CaCO3	2
Dissolved Silica	<0.022

Wind Lake at Wind Lake, WI. Analyses at Wisconsin State Laboratory of Hygiene, Madison, WI

Parameter	6/13/06
Total P	< 0.005
Chlorophyll a (ug/L)	<0.260

Table A3. Data (for 2003-2007) from standard addition tests using stock solution containing 5.00 mg/L phosphorus. See text for detail of procedures. All concentration data in milligrams per liter.

Lake, Date	Original Sample Concentration	Stock Solution Volume Added (milliliters)	Final Expected Concentration	Actual Detected Concentration	Percent Recovery
Delavan, August 12, 2003	0.043	0.310	0.056	0.058	116%
	0.043	1.250	0.094	0.099	108%
Delavan, August 16, 2005	0.029	0.188	0.036	0.037	103%
	0.029	0.75	0.059	0.063	107%

No Spike data in 2006

No Spike data in 2007