WATER-QUALITY DATA FOR ARVADA RESERVOIR, DENVER METROPOLITAN AREA, COLORADO

By Linda J. Britton and Neville G. Gaggiani

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CONVERSION FACTORS

International System of Units (SI) in this report may be converted to inch-pound units by using the following conversion factors:

Multiply SI units	*By*	*To obtain inch-pound units*
centimeter (cm)	0.3437	inch
meter (m)	3.281	foot
micrometer (μm)	0.00003937	inch

Multiply inch-pound	*By*	*To obtain SI units*
cubic foot per second (ft^3/s)	0.02832	cubic meter per second
mile (mi)	1.609	kilometer
acre-foot (acre-ft)	0.001233	cubic hectometer

Degree Celsius (°C) may be converted to degree Fahrenheit (°F) by using the following equation:

$$°F = 9/5\ °C+32$$

The following terms and abbreviations also are used in this report:

microsiemens per centimeter at 25 degrees Celsius (μS/cm)
milligram per liter (mg/L)
milligram per kilogram (mg/kg)
microgram per gram (μg/g)
microgram per liter (μg/L)
gram per kilogram (g/kg)
picocurie per liter (pCi/L)
cells per milliliter (cells/mL)
organisms per cubic meter (organisms/m^3)

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ABSTRACT

Physical, chemical, and biological water-quality data were collected and compiled for five sites in Arvada Reservoir, one site in Ralston Creek, and two sites in Croke Canal, in the Denver metropolitan area, Colorado. The purpose of the data collection was to determine the water quality of Arvada Reservoir, evaluate the effect of source waters on the reservoir, and determine the trophic state of the reservoir. Data collected include reservoir profile measurements with depth and inflow measurements of water temperature, specific conductance, dissolved oxygen, and pH. Secchi-disk depth measurements also are reported. In addition, water samples were analyzed periodically for concentrations of major-chemical constituents, nutrients, trace elements, and selected radiochemicals; for densities and relative abundance of phytoplankton and zooplankton; and for concentrations of chlorophyll a. Results of algal-growth-potential determinations are included.

This report describes sampling-site locations and methods of data collection and analyses and presents qualitative and quantitative results of water-quality data collected during the study. Sampling began during June 1983 and continued through September 1985.

INTRODUCTION

During 1982, Blunn Reservoir, now called Arvada Reservoir, was built in the northwestern part of the Denver metropolitan area, Colo., (fig. 1), and filling began during 1983 and continued during 1984. Water stored in the reservoir is used as an additional source of drinking water for the City of Arvada during the peak demand period, May through September. Because it is near a densely populated urban environment, the reservoir could become a potential water-quality issue.

During the spring of 1983, a study of Arvada Reservoir was begun by the U.S. Geological Survey in cooperation with the City of Arvada. Because the study began when the reservoir was being filled, an opportunity existed to monitor the water quality prior to the reservoir's use as a drinking-water supply. In addition, background data on ambient water quality of inflows was needed to assess potential effects on future water stored in the reservoir.

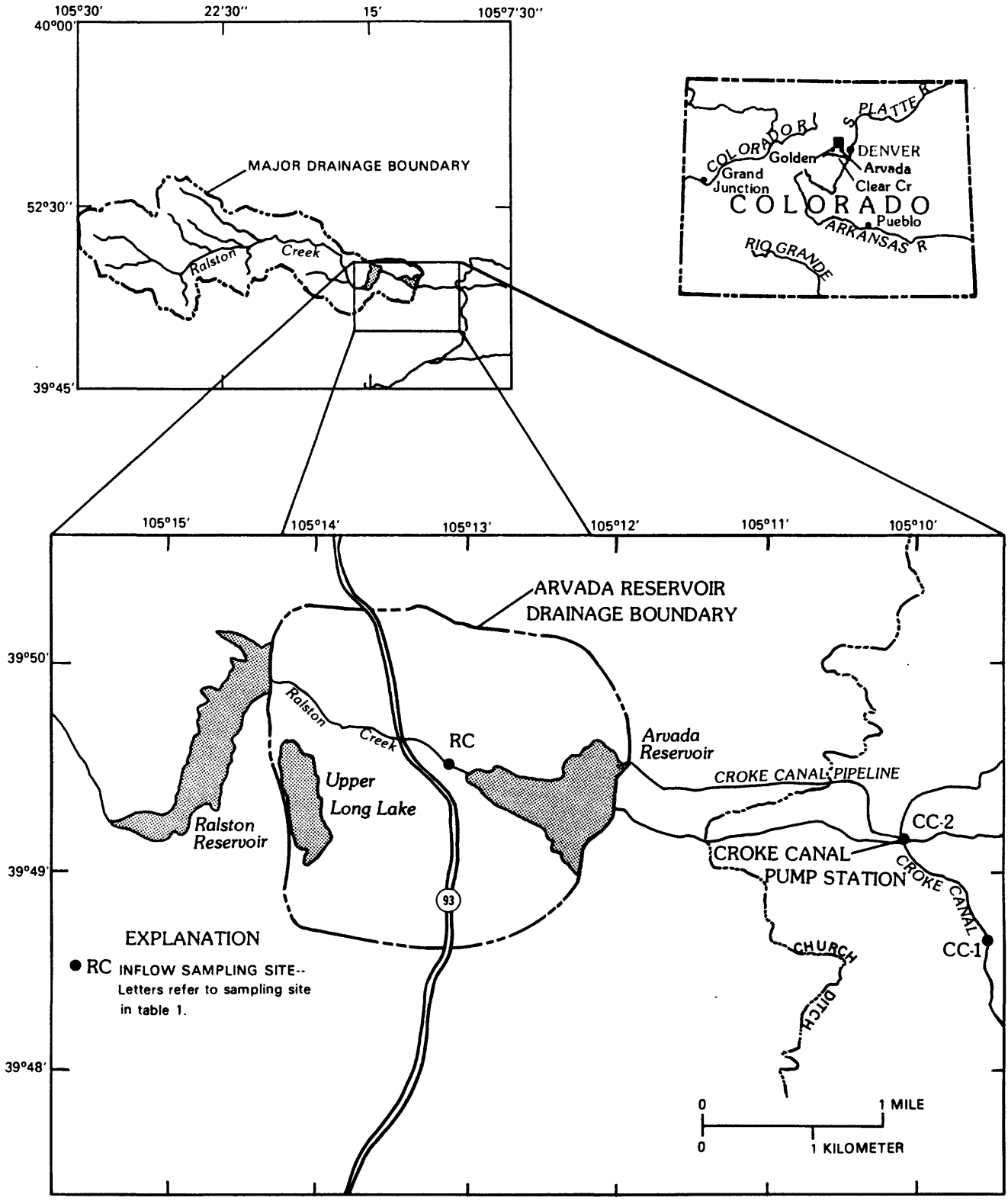

Figure 1.--Major drainage basin, Arvada Reservoir drainage basin, and inflow sampling sites.

The study of Arvada Reservoir was designed to fulfill the following objectives:

1. Assess the physical, chemical, and biological quality of Arvada Reservoir;
2. Estimate the quantity of algal growth that the reservoir may support, as well as the substances that may limit or stimulate growth;
3. Evaluate the effect of various source waters on the reservoir and estimate possible water-quality changes after addition of Croke Canal water to the reservoir;
4. Estimate the trophic state of the reservoir; and
5. Identify future data-collection efforts necessary to monitor possible degradation of the reservoir.

PURPOSE AND SCOPE

This report describes sampling-site locations and methods of data collection and analyses and presents qualitative and quantitative results of physical, chemical, and biological water-quality data collected from Arvada Reservoir and its inflows, Ralston Creek and Croke Canal. Included are reservoir profile measurements with depth and inflow measurements of water temperature, specific conductance, dissolved oxygen, and pH. Secchi-disk depth measurements also are reported. In addition, water samples were analyzed periodically for concentrations of major-chemical constituents, nutrients, trace elements, and selected radiochemicals; for densities and relative abundance of phytoplankton and zooplankton; and for concentrations of chlorophyll a. Results of algal-growth-potential determinations are included. The data are presented for five sites in Arvada Reservoir, one site in Ralston Creek, and two sites in Croke Canal, for the study period June 1983 through September 1985. An interpretive report that addresses objectives 1 through 5 in the "Introduction" section presently (1986) is being prepared.

ACKNOWLEDGMENTS

The authors extend their appreciation to Scott Daniels and Leonard Rossi of the City of Arvada for their assistance in collecting the samples. In addition, the City of Arvada provided sampling equipment during the last year of the study, which is gratefully acknowledged.

DESCRIPTION OF STUDY AREA AND OPERATION OF RESERVOIR

Arvada Reservoir is about 25 mi northwest of the City of Denver near the foothills of the Front Range. The reservoir is an impoundment on Ralston Creek, about 2 mi downstream from Ralston Reservoir (fig. 1). Impoundment of water began during May 1982 with water released from Ralston Reservoir. Water was released from Arvada Reservoir through the distribution system to the City of Arvada during June 1985.

The two primary sources of water for Arvada Reservoir are Ralston Creek and Clear Creek. In addition, water enters Arvada Reservoir from Upper Long Lake through a pipeline to Ralston Creek downstream from Ralston Reservoir. Occasionally water can and has entered Arvada Reservoir from Gross Reservoir (upstream from Ralston Reservoir), which receives water from the Moffatt Tunnel (a transmountain diversion). This water can either: (1) Pass from Gross Reservoir to Ralston Reservoir and flow downstream to Arvada Reservoir, or (2) enter a diversion canal and bypass Ralston Reservoir to the Ralston Reservoir spillway and flow downstream to Arvada Reservoir. Clear Creek water enters the reservoir from a pump station located downstream from the reservoir at the confluence of Ralston Creek and Croke Canal. Clear Creek water can be diverted through Church Ditch, Farmers Highline Canal, and Croke Canal to the pump station site. The Croke Canal diversion on Clear Creek is downstream from a domestic treatment plant outfall serving the City of Golden and the Adolph Coors Brewery[1] (directly east of Golden). The timing, source, and volume of flow into the reservoir are subject to normal precipitation and runoff patterns, allocation of water rights, and, ultimately, management decisions by the City of Arvada and the Denver Water Board.

Release of water from Arvada Reservoir to consumers in the City of Arvada began on June 5, 1985. The Croke Canal pump station also began operation during June 1985, and water began entering the reservoir through the pipeline on June 20, 1985. The pump station operated until July 22, 1985. Between June 20 and June 30, 1985, about 189 acre-ft of Croke Canal water entered the reservoir, and between July 1 and July 22, 1985, about 502 acre-ft of water entered the reservoir.

SAMPLING-SITE LOCATIONS

After an initial reconnaissance of Arvada Reservoir was made on June 17, 1983, three locations in the reservoir were selected as sampling sites (Sites A, B, C, fig. 2). These sites were selected based on depth characteristics to ensure that deep-, medium-, and shallow-depth sites were included. The proximity of the sites to the major inflow from Ralston Creek (fig. 2) and the future inflow from the Croke Canal pipeline (fig. 2) also was a factor. Because buoys were not established in the reservoir during 1983, sampling was not always at exactly the same location. Hence, depths of sampling vary within a site during the 1983 sampling period.

Prior to the 1984 sampling period, permanent buoys were established at the sampling sites in the reservoir. After March 1984, Site B was discontinued and Site D (fig. 2) was established (table 1). Data were collected at Sites A, C, and D during most of the 1984 sampling period. During 1985, Sites C and D were discontinued, and Site E (fig. 2) was established. Data were collected at Sites A and E during the 1985 sampling period.

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[1]The use of industry or firm names in this report is for location purposes only, and does not impute responsibility for any present or potential effects on the natural resources.

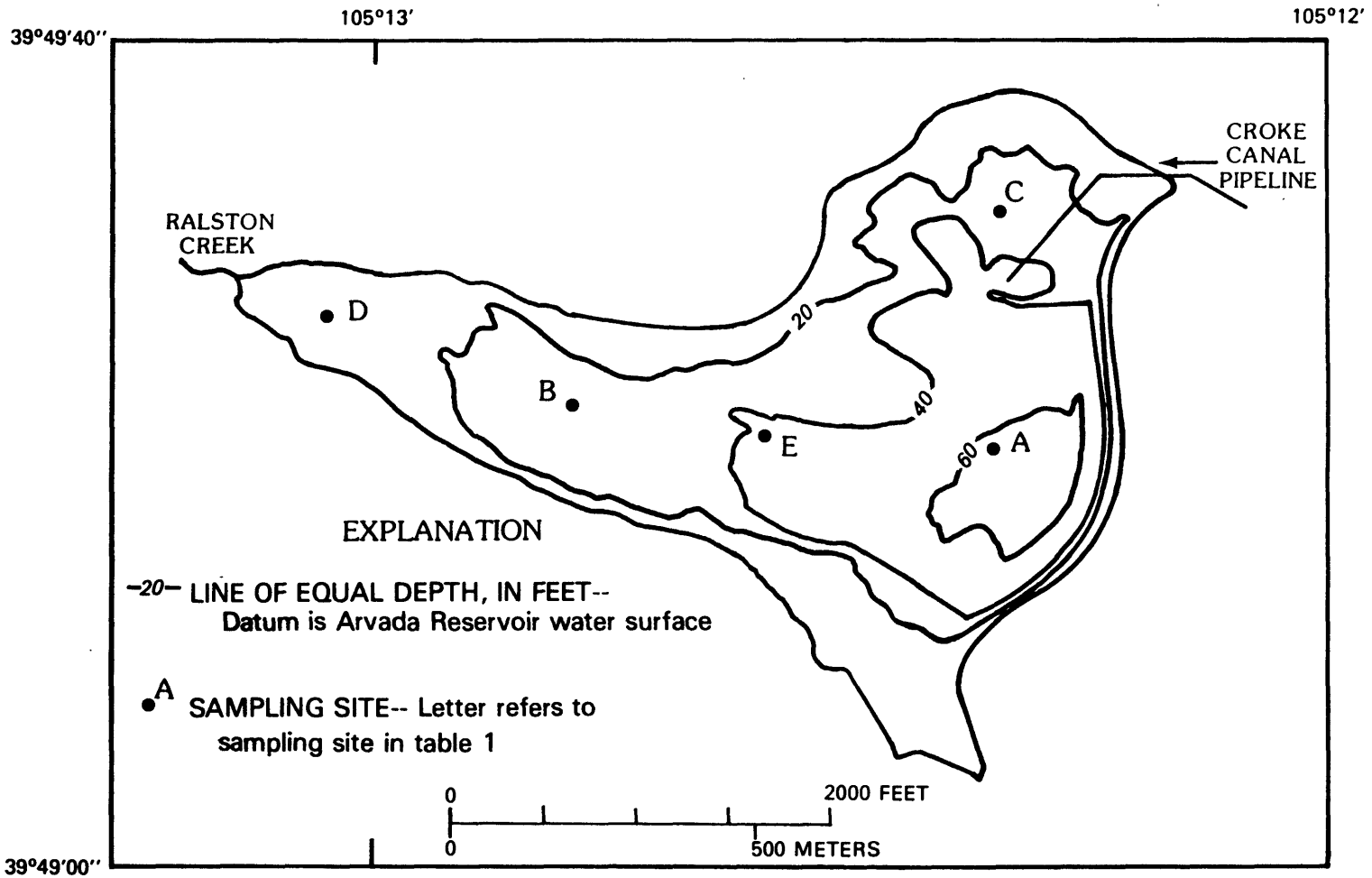

Figure 2.--Reservoir sampling sites.

Table 1.--*Sampling sites*

Sampling site name and number (see figs. 1 and 2)	Location		Identification number	Period of data collection
	Latitude	Longitude		
Arvada Reservoir				
A	39°49'19"	105°12'21"	394919105122100	06-17-83 - 09-25-85
B	39°49'23"	105°12'46"	394923105124600	06-17-83 - 03-21-84
C	39°49'31"	105°12'20"	394931105122000	06-17-83 - 09-26-84
D	39°49'25"	105°13'01"	394925105130100	03-01-84 - 09-26-84
E	39°49'21"	105°12'30"	394921105123000	04-10-85 - 09-25-85
Inflows				
Ralston Creek (RC)	39°49'34"	105°13'17"	394934105131700	06-17-83 - 09-25-85
Croke Canal (CC-1)	39°48'46"	105°09'57"	394846105095700	07-05-83 - 07-27-83
Croke Canal (CC-2)	39°49'14"	105°10'23"	394846105095700	09-13-83 - 07-17-85

During 1983, in addition to the data-collection sites in the reservoir, a sampling site (RC, fig. 1) was located in Ralston Creek, the major inflow to the reservoir, and a sampling site (CC-1, fig. 1) was located in Croke Canal, which began contributing water through a pipeline to the reservoir during 1985. During the later part of the 1983 sampling period, Site CC-1 in Croke Canal was moved to its permanent diversion site (CC-2, fig. 1). The sampling site name and number, location, identification number [for access to the U.S. Geological Survey National Water Data Storage and Retrieval System (WATSTORE)], and period of data collection for each sampling site are listed in table 1.

METHODS OF DATA COLLECTION AND ANALYSES

In-situ measurements of water temperature, specific conductance, dissolved oxygen, and pH were recorded at every 0.5 to 1 m of depth in the reservoir using a multiparameter unit. These in-situ measurements also were made in Ralston Creek and Croke Canal near the centroid of flow. Light transparency in the reservoir was measured using a Secchi disk, a black-and-white, flat, circular disk about 20 cm in diameter. The measurement consisted of recording the depth at which the disk disappeared from view in a shaded area of water surface (Welch, 1948, p. 159).

Water samples for determination of concentrations of major-chemical constituents, trace elements, and selected radiochemicals were collected from or near the surface (0.5-m depth) of the reservoir and periodically from near the bottom of the deepest site, during periods of thermal stratification. Water samples for determination of concentrations of nutrients were collected at 1-m depth intervals throughout the euphotic zone and composited, or samples were collected from or near the surface (0.5-m depth) of the reservoir. The samples were collected using a standard Van Dorn-type polyethylene water-sampling bottle and using the procedures described by Fishman and Friedman (1985). Water samples for chemical analyses were collected near the centroid of flow in Ralston Creek and Croke Canal. Bed-material samples for chemical analyses were collected from the reservoir using a weighted Ekman grab and using the procedures described by Guy and Norman (1970).

During 1983, 1984, and April 1985, water samples for phytoplankton, chlorophyll a, and algal-growth-potential analyses were collected and composited using the standard water-sampling bottle at 0.5 to 1-m depth intervals throughout the euphotic zone. The euphotic zone is defined as twice the measured Secchi-disk depth. At Site A, during the remainder of 1985, water samples for phytoplankton and chlorophyll a analyses were collected from or near: (1) The surface (0.5-m depth), (2) middle depth of the euphotic zone (equal to the Secchi-disk depth), (3) bottom depth of the euphotic zone (twice the Secchi-disk depth), and (4) 1-m depth intervals throughout the euphotic zone and composited. Each of these four samples was analyzed separately. At Site E, during 1985, water samples for chlorophyll a analyses were collected at 1-m depth intervals throughout the euphotic zone and composited. Water samples for chlorophyll a and algal-growth-potential analyses were collected near the centroid of flow in Ralston Creek and Croke Canal.

Water samples for zooplankton analyses were collected using a standard plankton net (80-μm mesh) that was: (1) Vertically towed from the bottom of the euphotic zone to the surface, and referenced as photic tows (1983, March 1984, and April 1985 samples), or (2) vertically towed from the bottom of the reservoir to the surface, and referenced as total-depth tows (June 1984 through September 1984 samples). On most dates, replicate samples were collected and analyzed separately. After April 1985, two samples for zooplankton analyses were collected from photic tows and two samples were collected from total-depth tows. Each replicate sample was analyzed separately. Zooplankton densities are reported as number of organisms per cubic meter using the following formula:

$$V = \pi r^2 d,$$

where V = volume, in cubic meters;
r = radius of the mouth of the net, in centimeters; and
d = tow length through the water column, in meters.

Zooplankton densities were based on the assumption that the filtration efficiency of the net was 100 percent. The data need to be interpreted as relative density values rather than true density values, because the net's true efficiency probably was less than 100 percent (Rawson, 1956). In addition, the total-depth-tow values are questionable because, compared to the photic-tow values collected on the same dates, the total-depth-tow values are always

less than the photic-tow values. The net possibly was towed to the surface too quickly, causing backflushing and decreased densities of zooplankton.

Ceratium hirundinella was collected in several of the zooplankton samples. This organism has been classified by different taxonomists as a protozoan (zooplankton) and as a dinoflagellate (phytoplankton). For this study, the organism is classified and tabulated as part of the phytoplankton community. The number of *Ceratium hirundinella* collected in only the photic tows were averaged. These numbers were converted to cells per milliliter and have been included in the phytoplankton tables and entered as a part of each sample collected in the euphotic zone.

The chemical samples were analyzed at the U.S. Geological Survey laboratory in Arvada, Colo., using the procedures described by Guy (1969) and Fishman and Friedman (1985). The biological samples were analyzed at a private laboratory in Littleton, Colo., using the procedures described by Greeson and others (1977). Specifically, the chlorophyll a analyses were made using acetone extraction and the chromatography and spectroscopy method, with a correction for pheophytin. The algal-growth-potential determinations were done using *Selenastrum capricornutum* as the test organism following the procedures described by the U.S. Environmental Protection Agency (1971). Finally, diversity-index values were calculated for the phytoplankton samples collected in the reservoir. The diversity index, as proposed by Shannon and Weaver (1949), was used and reported in the phytoplankton tables, and the diversity per individual (H') is:

$$-\sum_{i=1}^{s} (n_i/N) \log 2\ n_i/N,$$

where s = total number of taxa;
n_i = number of individuals of each single taxa in the sample; and
N = total number of individuals of all taxa in the sample.

RESULTS

The results of the data-collection program, shown by site, are in figures 3 through 7 and tables 2 through 28 in the "Water-Quality Data" section. Profile measurements with depth of water temperature, specific conductance, dissolved oxygen, and pH for each site in the reservoir are shown in figures 3 through 7. Where measured, the Secchi-disk depths are shown in the graphs. On some sampling dates, a property was not measured because of equipment failure.

The results of inflow measurements and analyses of chemical and biological constituents are shown in tables 2 through 28. The tables presenting results of phytoplankton analyses show taxa, densities, and diversity indices, and, in some instances, chlorophyll a analyses. For several dates, chlorophyll a analyses are reported separately at some sites. The tables presenting results of algal-growth potential include maximum specific growth rates and volumes and dry weights of maximum standing crop for controls and nutrient spikes. The tables presenting results of zooplankton analyses include taxa and densities.

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SITE A

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Profile Measurements

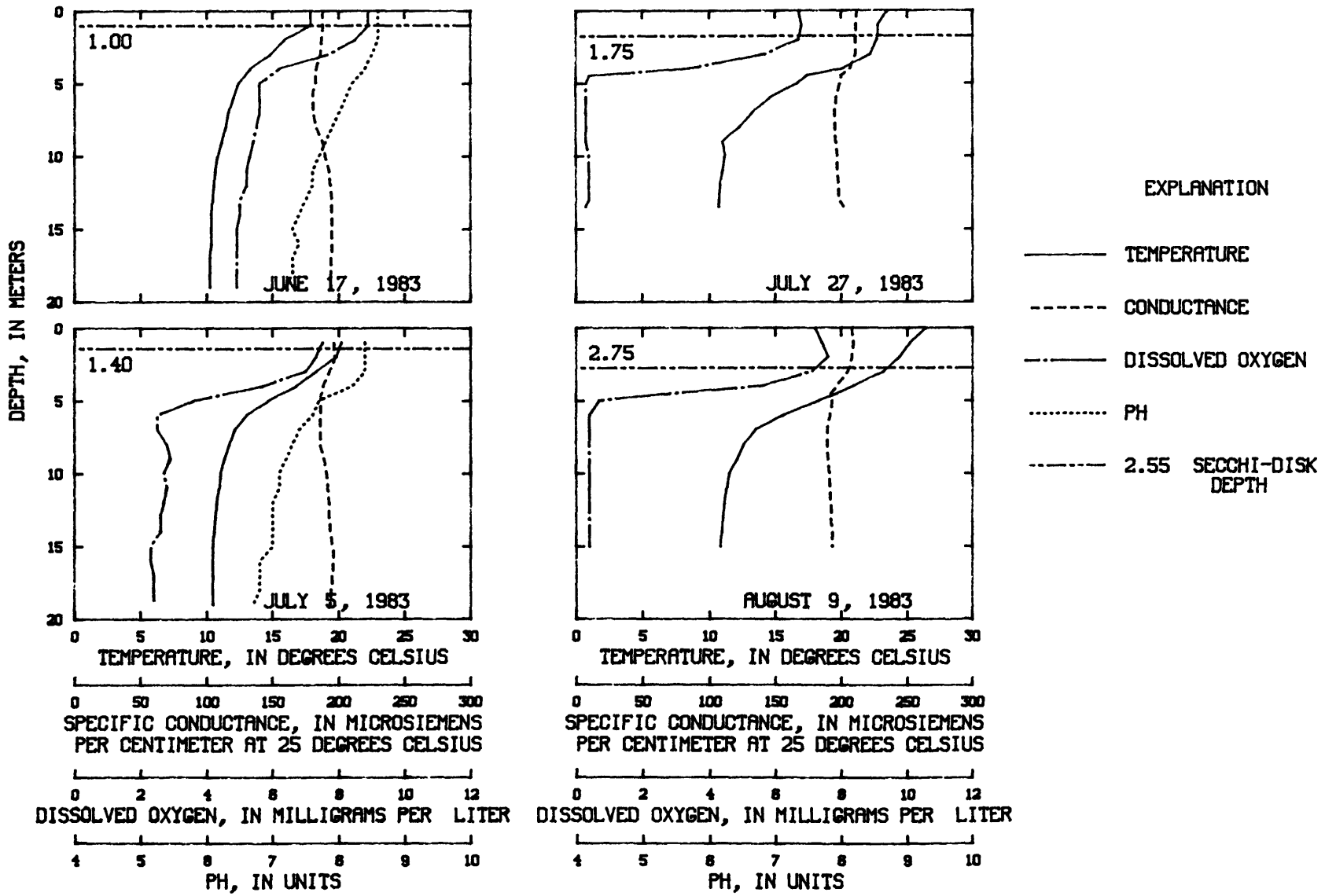

Figure 3.--Profile measurements for Site A, 1983-85.

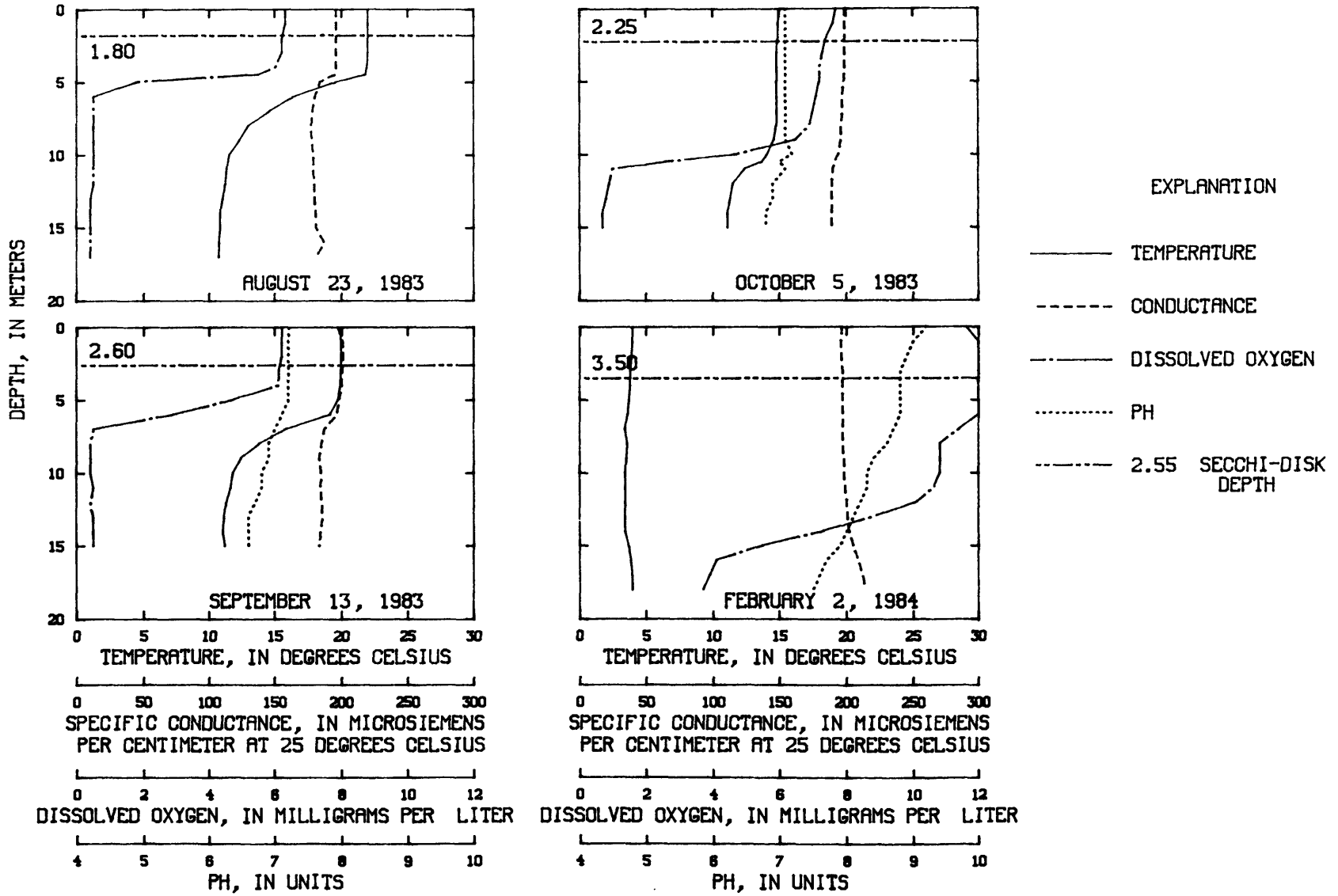

Figure 3.--Profile measurements for Site A, 1983-85--Continued.

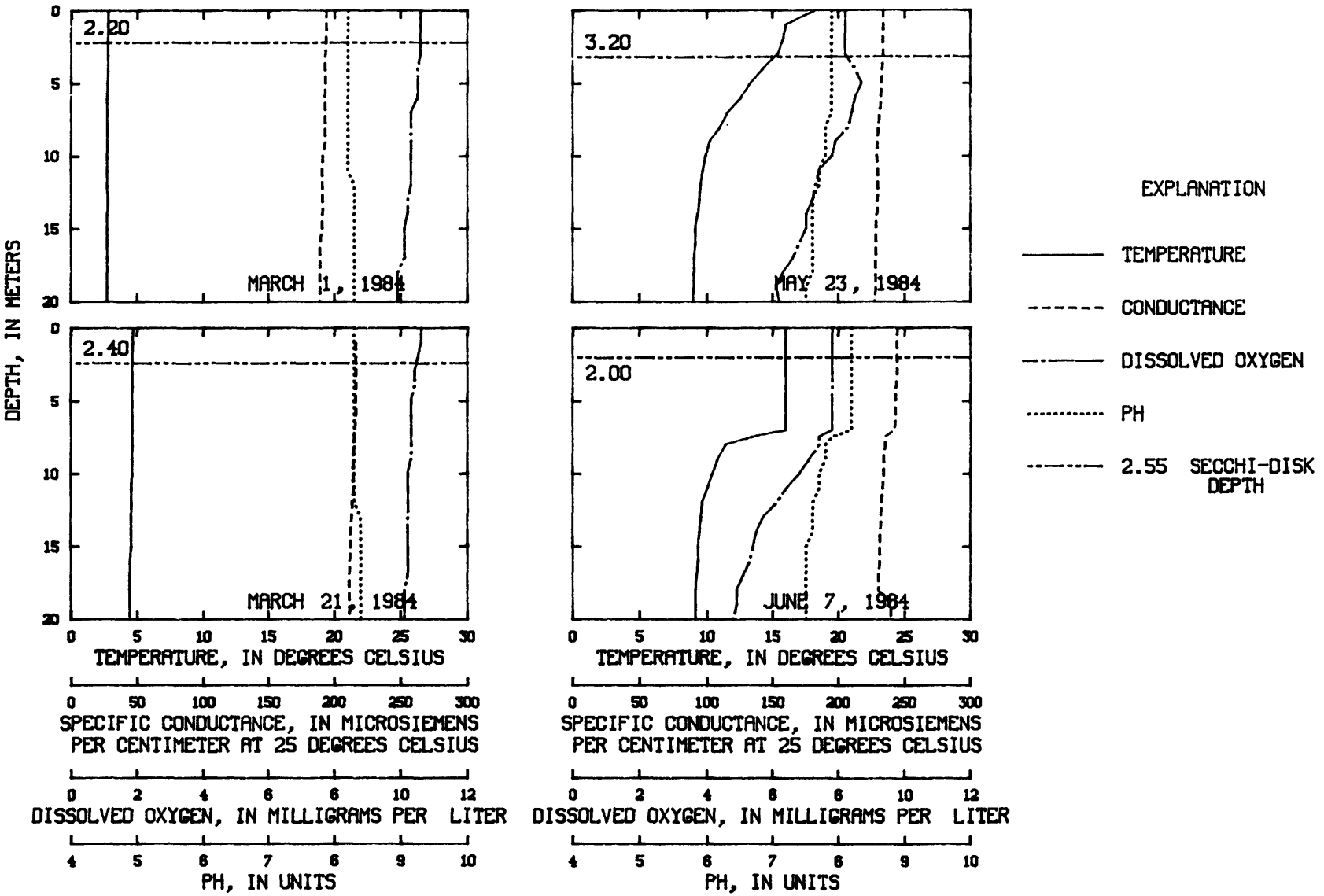

Figure 3.--Profile measurements for Site A, 1983-85--Continued.

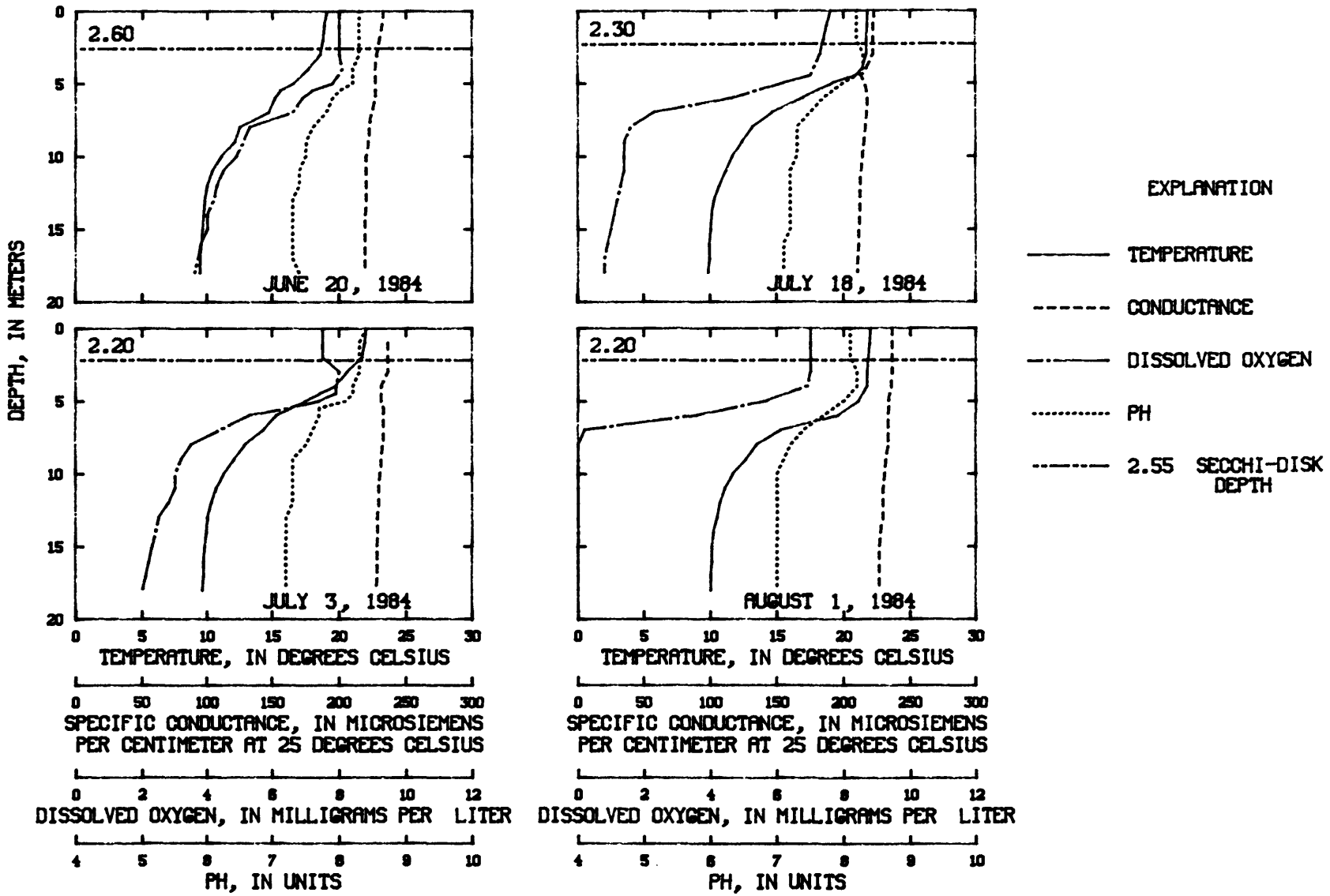

Figure 3.--Profile measurements for Site A, 1983-85--Continued.

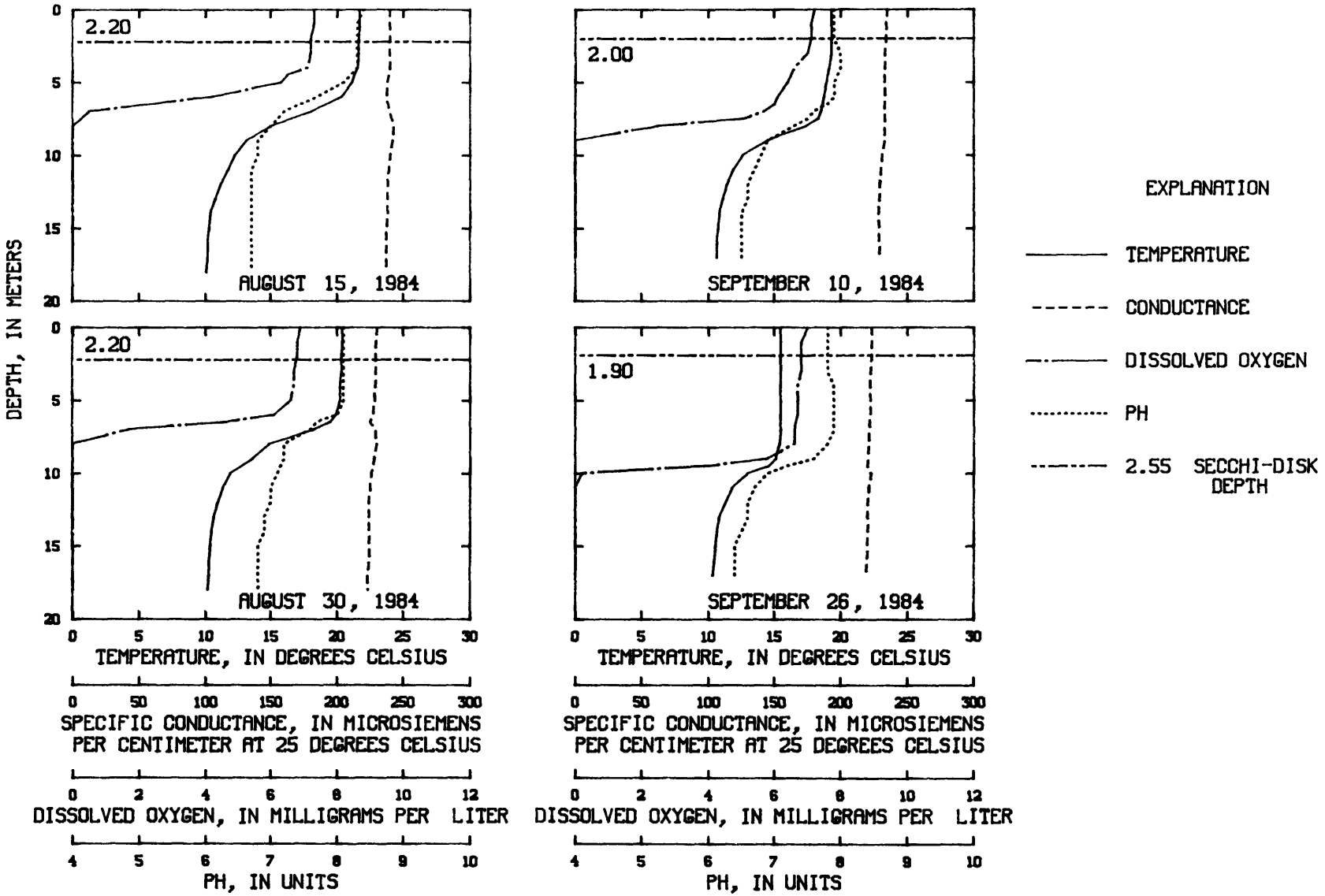

Figure 3.--Profile measurements for Site A, 1983-85--Continued.

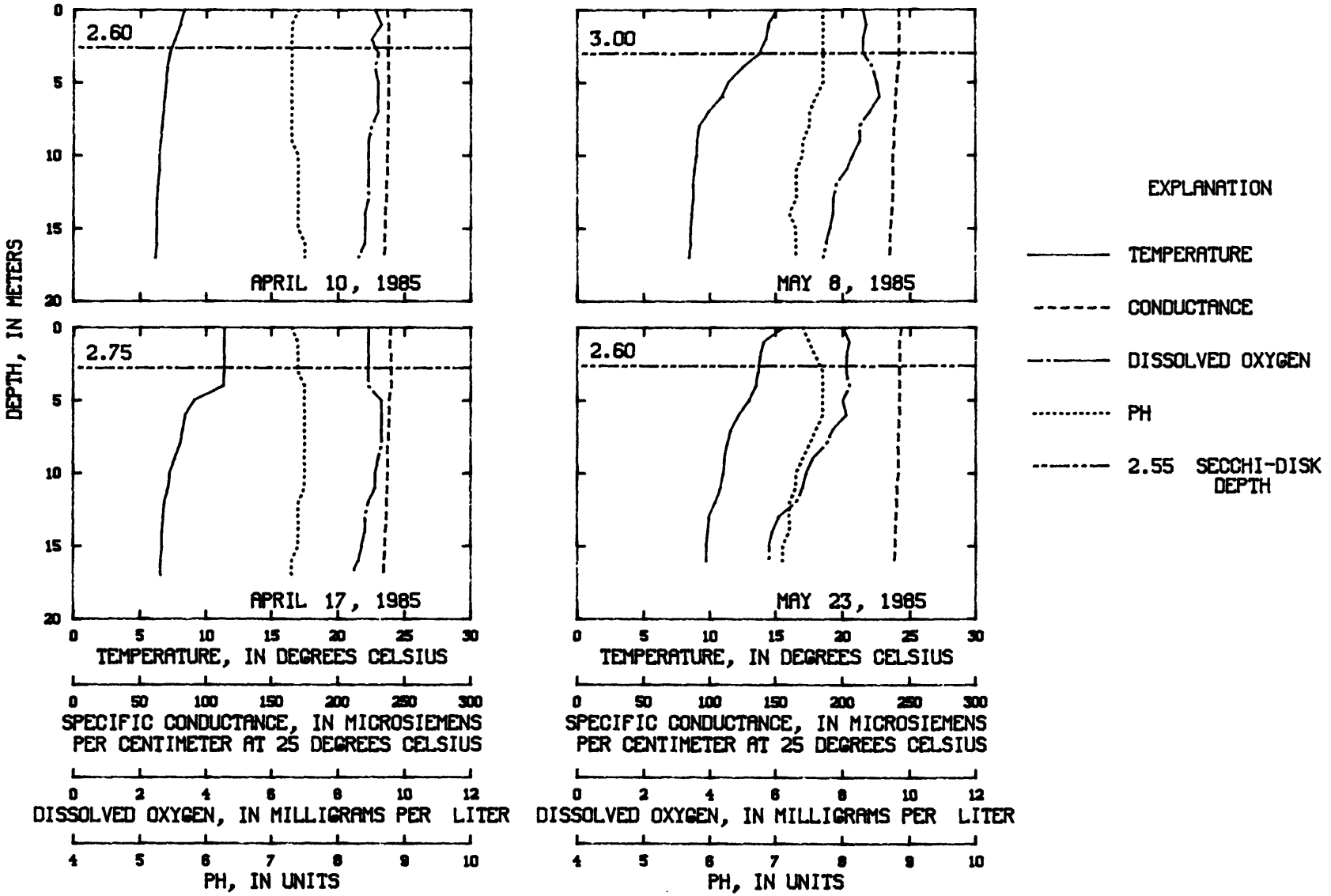

Figure 3.--Profile measurements for Site A, 1983-85--Continued.

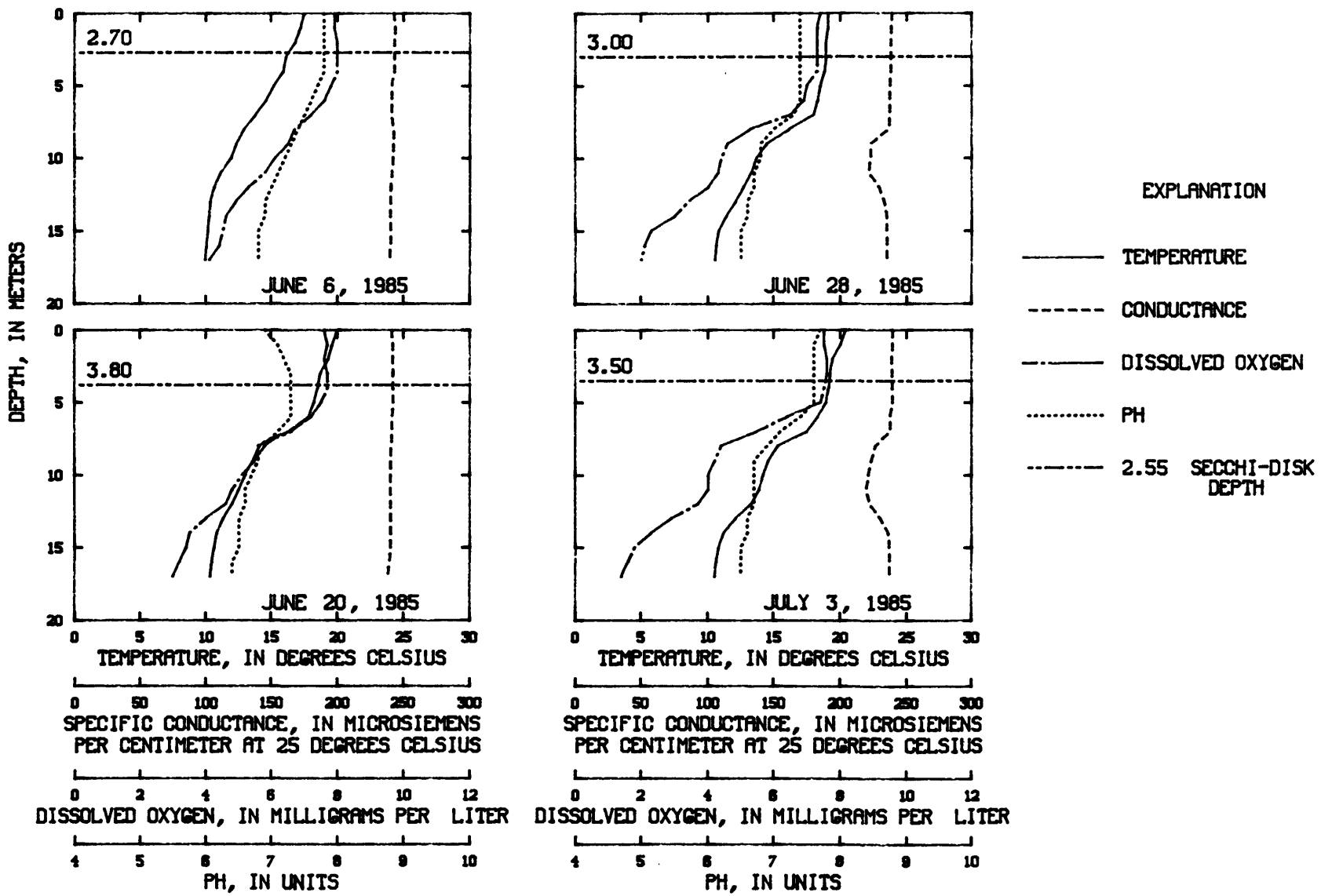

Figure 3.--Profile measurements for Site A, 1983-85--Continued.

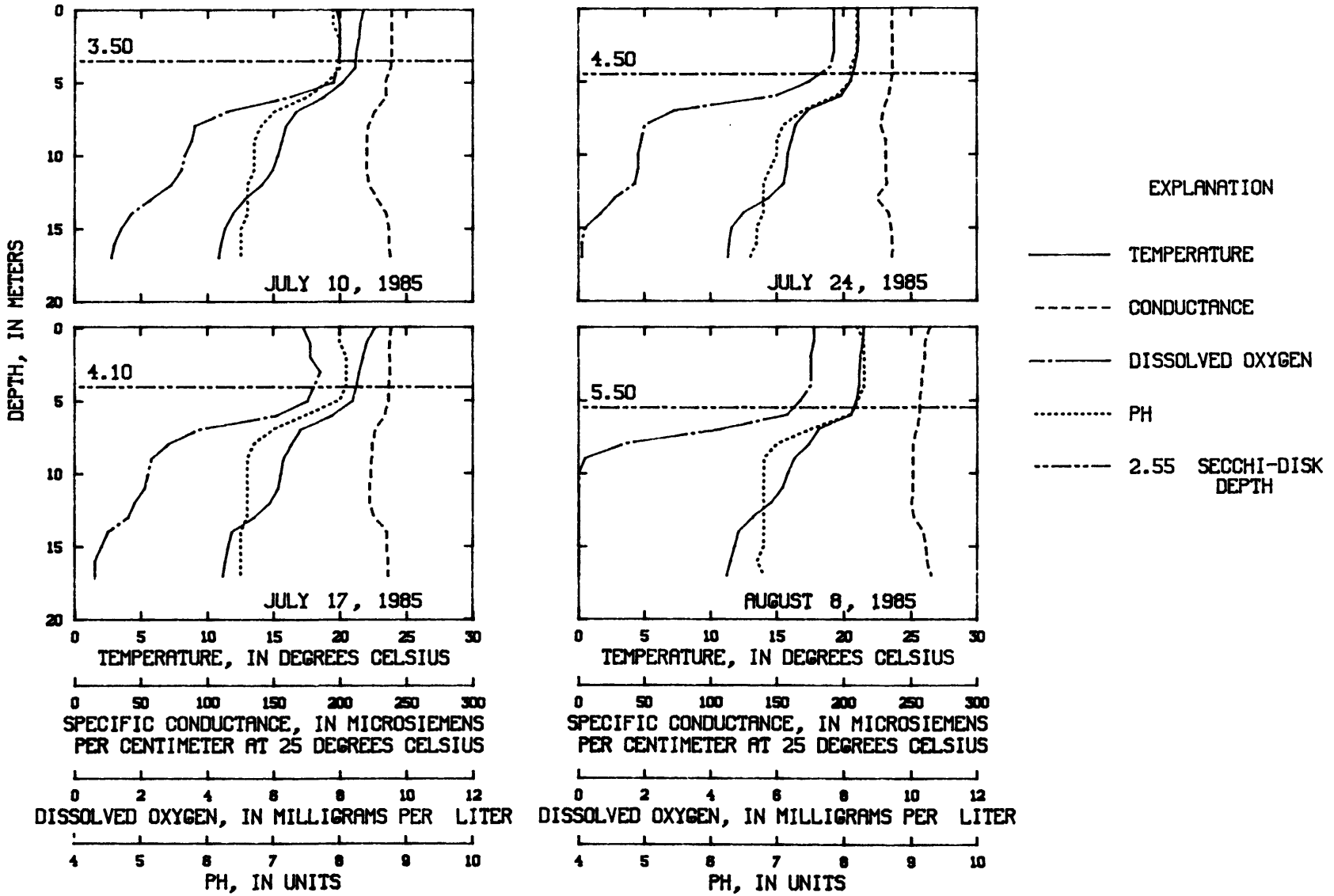

Figure 3.--Profile measurements for Site A, 1983-85--Continued.

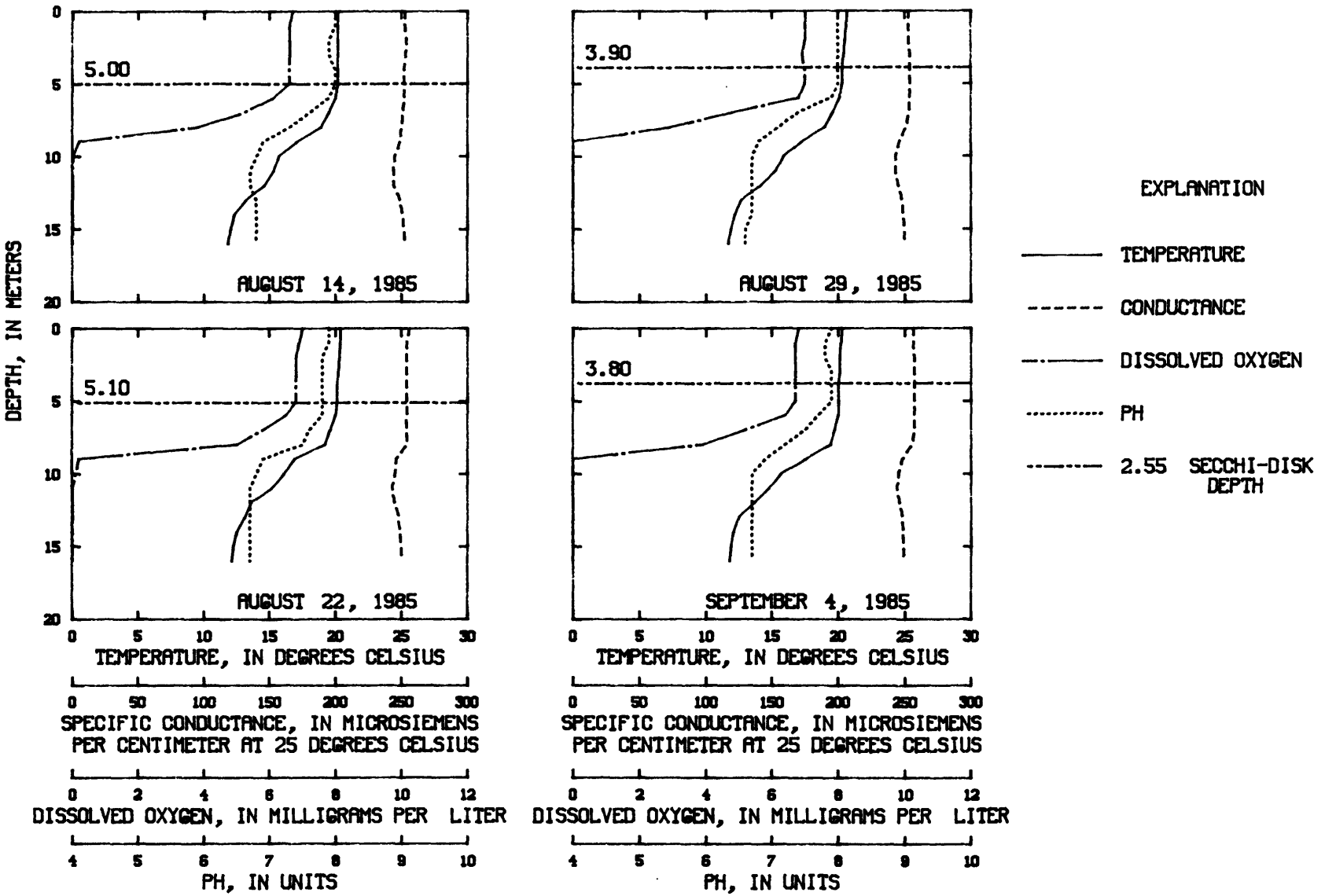

Figure 3.--Profile measurements for Site A, 1983-85--Continued.

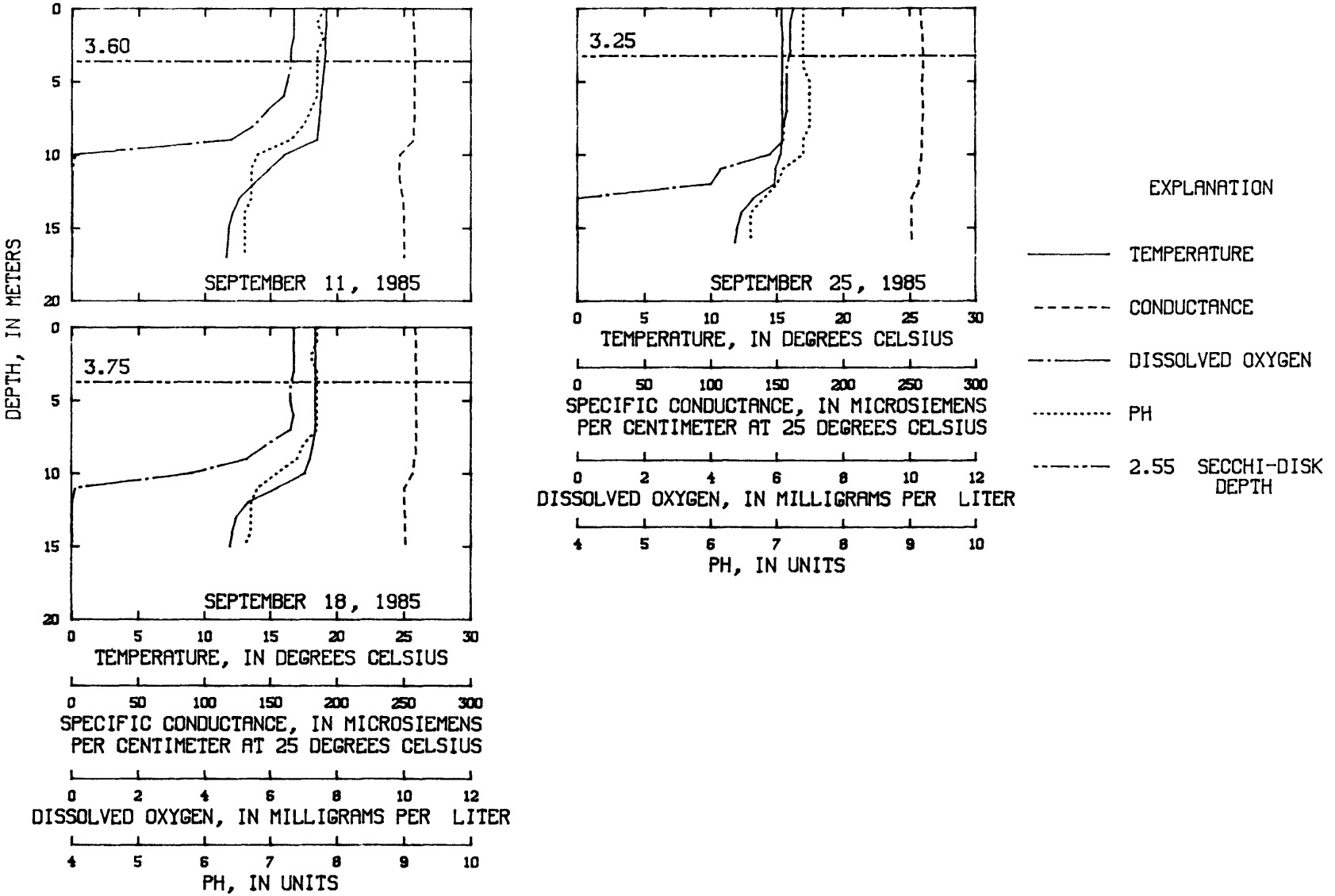

Figure 3.--Profile measurements for Site A, 1983-85--Continued.

Chemical-Quality Data

Table 2.--*Chemical-quality data for Site A, 1983-85*

[M, meters; LAB, laboratory; °C, degrees Celsius; MG/L, milligrams per liter; DIS, dissolved; ORG, organic; SUSP, suspended; TOT, total; BOT MAT, bottom material; MG/KG, milligrams per kilogram; µG/L, micrograms per liter; RECOV, recoverable; FM, from; µG/G, micrograms per gram; G/KG, grams per kilogram; INORG, inorganic; PCI/L, picocuries per liter; --, no data collected]

DATE	TIME	SAMPLING DEPTH (M)	pH, LAB (STANDARD UNITS)	SOLIDS, RESIDUE AT 105 °C, TOTAL (MG/L)	SOLIDS, RESIDUE AT 105 °C, SUSPENDED (MG/L)	SOLIDS, RESIDUE AT 180 °C, DISSOLVED (MG/L)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L)	CALCIUM, DISSOLVED (MG/L AS CA)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	MAGNESIUM, DISSOLVED (MG/L AS MG)	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SiO_2)
JUN 1983													
17...	1100	1.0	8.7	--	--	116	--	--	--	--	--	--	--
AUG													
09...	0850	[1]5.5	8.2	--	--	144	--	22	4.6	0.3	5.5	1.8	7.8
09...	0930	12.0	7.2	--	--	128	--	20	4.0	0.3	5.1	1.5	8.5
OCT													
05...	1015	[1]4.5	7.8	--	--	127	--	--	--	--	--	--	--
FEB 1984													
02...	0900	[1]7.0	8.0	--	--	125	--	22	4.3	0.3	5.5	1.7	6.1
MAR													
21...	1000	[1]5.0	8.1	--	--	134	--	--	--	--	--	--	--
MAY													
23...	1140	[1]6.4	8.3	--	--	135	--	--	--	--	--	--	--
JUN													
07...	0905	[1]4.0	8.3	--	--	139	--	--	--	--	--	--	--
20...	0930	[1]5.2	8.5	--	--	166	--	--	--	--	--	--	--
JUL													
03...	0930	[1]4.4	--	--	--	--	--	--	--	--	--	--	--
18...	1000	[1]4.6	--	--	--	--	--	--	--	--	--	--	--
AUG													
01...	0930	[1]4.4	8.6	--	--	145	--	26	5.4	0.4	6.1	2.0	4.3
01...	1000	15.0	7.7	--	--	146	--	26	4.6	0.3	6.0	1.8	5.6
15...	0930	[1]4.4	--	--	--	--	--	--	--	--	--	--	--
30...	0945	[1]4.4	--	--	--	--	--	--	--	--	--	--	--
30...	0955	9.0	--	--	--	--	--	--	--	--	--	--	--
30...	1005	15.0	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	0950	[1]4.0	--	--	--	--	--	--	--	--	--	--	--
10...	0955	8.0	--	--	--	--	--	--	--	--	--	--	--
10...	1000	15.0	--	--	--	--	--	--	--	--	--	--	--
26...	1015	[1]3.8	8.3	--	--	147	--	25	5.2	0.2	5.9	1.7	4.1
26...	1020	10.0	--	--	--	--	--	--	--	--	--	--	--
26...	1025	15.0	--	--	--	--	--	--	--	--	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	SODIUM, DISSOLVED (MG/L AS NA)	SULFATE, DISSOLVED (MG/L AS SO_4)	NITROGEN, NITRATE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, TOTAL (MG/L AS N)	NITROGEN, NO_2+NO_3, DISSOLVED (MG/L AS N)	NITROGEN, NO_2+NO_3, TOTAL (MG/L AS N)	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, DIS (MG/L AS N)	NITROGEN, NH_4 + ORG, SUSP, TOTAL (MG/L AS N)
JUN 1983												
17...	1.0	--	--	--	<0.02	<0.02	<0.10	<0.10	0.09	0.23	0.4	0.4
AUG												
09...	[1]5.5	--	34	--	<0.001	0.004	0.142	0.01	0.102	0.022	0.8	0.0
09...	12.0	13	31	--	--	--	--	--	--	--	--	--
OCT												
05...	[1]4.5	--	--	--	<0.001	<0.001	0.011	0.011	0.04	0.062	0.8	0.2
FEB 1984												
02...	[1]7.0	13	31	--	0.002	<0.001	<0.01	<0.01	0.045	0.036	<0.2	--
MAR												
21...	[1]5.0	--	--	0.026	0.007	0.008	0.033	0.036	0.042	0.045	0.3	0.1
MAY												
23...	[1]6.4	--	--	--	<0.001	--	<0.01	<0.01	0.021	--	--	--
JUN												
07...	[1]4.0	--	--	--	<0.001	--	<0.01	0.157	0.053	--	--	--
20...	[1]5.2	--	--	--	<0.001	--	0.028	0.032	0.087	--	--	--
JUL												
03...	[1]4.4	--	--	0.025	0.003	--	0.028	0.029	0.069	--	--	--
18...	[1]4.6	--	--	--	0.004	--	<0.01	<0.01	0.038	--	--	--
AUG												
01...	[1]4.0	16	34	--	<0.001	0.001	<0.01	<0.01	0.034	0.031	0.5	--
01...	15.0	15	29	--	--	--	--	--	--	--	--	--
15...	[1]4.4	--	--	--	<0.002	--	<0.01	<0.01	0.017	--	--	--
30...	[1]4.4	--	--	--	0.007	--	<0.01	<0.01	0.008	--	--	--
30...	9.0	--	--	--	--	--	--	--	--	--	--	--
30...	15.0	--	--	--	--	--	--	--	--	--	--	--
SEP												
10...	[1]4.0	--	--	--	0.003	--	<0.01	<0.01	0.013	--	--	--
10...	8.0	--	--	--	--	--	--	--	--	--	--	--
10...	15.0	--	--	--	--	--	--	--	--	--	--	--
26...	[1]3.8	14	35	--	0.002	0.004	<0.01	0.01	0.008	0.02	0.3	--
26...	10.0	--	--	--	--	--	--	--	--	--	--	--
26...	15.0	--	--	--	--	--	--	--	--	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	NITROGEN, AMMONIA + ORGANIC, TOTAL (MG/L AS N)	NITROGEN, NO_2+NO_3, TOT IN BOT MAT (MG/KG AS N)[2]	NITROGEN, NH_4 + ORG, TOT IN BOT MAT (MG/KG AS N)[2]	NITROGEN, TOT IN BOTTOM MATERIAL (MG/KG AS N)[2]	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	PHOSPHORUS, TOTAL IN BOT MAT (MG/KG AS P)[2]	ARSENIC, DISSOLVED (µG/L AS AS)	ARSENIC, SUSPENDED, TOTAL (µG/L AS AS)	ARSENIC, TOTAL (µG/L AS AS)
JUN 1983													
17...	1.0	0.8	--	--	--	0.01	0.02	<0.01	0.02	--	--	--	--
AUG													
09...	[1]5.5	0.8	--	--	--	<0.005	<0.005	0.011	0.013	--	1	0	1
09...	12.0	--	--	--	--	--	--	--	--	--	1	0	1
OCT													
05...	[1]4.5	1.0	--	--	--	<0.005	0.009	<0.002	<0.002	--	--	--	--
FEB 1984													
02...	[1]7.0	0.2	--	--	--	<0.005	<0.005	0.004	0.003	--	1	0	1
MAR													
21...	[1]5.0	0.4	5.0	1,800	1,800	<0.005	0.01	0.003	<0.001	--	--	--	--
MAY													
23...	[1]6.4	0.4	--	--	--	--	0.014	--	--	--	--	--	--
JUN													
07...	[1]4.0	0.6	--	--	--	--	0.007	--	--	--	--	--	--
20...	[1]5.2	1.0	--	--	--	--	0.011	--	--	--	--	--	--
JUL													
03...	[1]4.4	0.8	--	--	--	--	0.009	--	--	--	--	--	--
18...	[1]4.6	0.5	--	--	--	--	0.01	--	--	--	--	--	--
AUG													
01...	[1]4.4	--	--	--	--	<0.005	<0.005	<0.002	0.007	--	<1	--	1
01...	15.0	--	--	--	--	--	--	--	--	--	<1	--	1
15...	[1]4.4	0.5	--	--	--	--	0.007	--	--	--	--	--	--
30...	[1]4.4	--	--	--	--	--	--	0.014	--	--	--	--	--
30...	9.0	--	--	--	--	--	0.006	--	--	--	--	--	--
30...	15.0	--	--	--	--	--	0.014	--	--	--	--	--	--
SEP													
10...	[1]4.0	--	--	--	--	--	--	0.004	--	--	--	--	--
10...	8.0	--	--	--	--	--	0.008	--	--	--	--	--	--
10...	15.0	--	--	--	--	--	0.01	--	--	--	--	--	--
26...	[1]3.8	0.3	<10	1,900	--	<0.005	0.006	<0.002	<0.002	990	<1	--	<1
26...	10.0	--	--	--	--	--	0.006	--	--	--	--	--	--
26...	15.0	--	--	--	--	--	0.015	--	--	--	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	BORON, DISSOLVED (µG/L AS B)	BORON, TOTAL RECOVERABLE (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	CADMIUM, TOTAL RECOVERABLE (µG/L AS CD)	CHROMIUM, DISSOLVED (µG/L AS CR)	CHROMIUM, TOTAL RECOVERABLE (µG/L AS CR)	COPPER, DISSOLVED (µG/L AS CU)	COPPER, TOTAL RECOVERABLE (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	IRON, SUSPENDED, RECOVERABLE (µG/L AS FE)	IRON, TOTAL RECOVERABLE (µG/L AS FE)	IRON, RECOV FM BOTTOM MATERIAL (µG/G AS FE)[2]
JUN 1983													
17...	1.0	--	--	--	--	--	--	--	--	40	290	330	--
AUG													
09...	[1]5.5	20	40	--	<1	<10	<1	<10	<10	18	40	60	--
09...	12.0	20	30	<1	<1	<10	<1	<10	10	130	10	140	--
OCT													
05...	[1]4.5	--	--	--	--	--	--	--	--	50	150	200	--
FEB 1984													
02...	[1]7.0	20	50	<1	<1	<10	<1	<10	<10	26	0	20	--
MAR													
21...	[1]5.0	<10	--	--	--	--	--	--	--	30	90	120	6,100
MAY													
23...	[1]6.4	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
07...	[1]4.0	--	--	--	--	--	--	--	--	<10	--	150	--
20...	[1]5.2	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	[1]4.4	--	--	--	--	--	--	--	--	--	--	--	--
18...	[1]4.6	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
01...	[1]4.4	30	50	<1	<1	<10	5	<10	<10	15	--	60	--
01...	15.0	20	30	<1	<1	<10	1	<10	<10	49	--	220	--
15...	[1]4.4	--	--	--	--	--	--	--	--	--	--	--	--
30...	[1]4.4	--	--	--	--	--	--	--	--	--	--	--	--
30...	9.0	--	--	--	--	--	--	--	--	--	--	--	--
30...	15.0	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	[1]4.0	--	--	--	--	--	--	--	--	--	--	--	--
10...	8.0	--	--	--	--	--	--	--	--	--	--	--	--
10...	15.0	--	--	--	--	--	--	--	--	--	--	--	--
26...	[1]3.8	20	90	<1	<1	<10	<1	<10	<10	16	--	190	9,800
26...	10.0	--	--	--	--	--	--	--	--	--	--	--	--
26...	15.0	--	--	--	--	--	--	--	--	--	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	LEAD, DISSOLVED (µG/L AS PB)	LEAD, TOTAL RECOVERABLE (µG/L AS PB)	MANGANESE, DISSOLVED (µG/L AS MN)	MANGANESE, SUSPENDED, RECOV (µG/L AS MN)	MANGANESE, TOTAL RECOVERABLE (µG/L AS MN)	MANGANESE, RECOV FM BOTTOM MATERIAL (µG/G)[2]	MERCURY, DISSOLVED (µG/L AS HG)	MERCURY, TOTAL RECOVERABLE (µG/L AS HG)	NICKEL, TOTAL RECOVERABLE (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	SELENIUM, SUSPENDED, TOTAL (µG/L AS SE)	SELENIUM, TOTAL (µG/L AS SE)
JUN 1983													
17...	1.0	--	--	<10	--	10	--	--	--	--	--	--	--
AUG													
09...	[1]5.5	<1	<1	4	20	20	--	<0.1	<0.1	--	1	0	1
09...	12.0	<1	2	130	10	140	--	<0.1	0.1	--	<1	--	1
OCT													
05...	[1]4.5	--	--	10	40	50	--	--	--	--	--	--	--
FEB 1984													
02...	[1]7.0	<1	<1	<1	--	20	--	<0.1	<0.1	--	<1	--	<1
MAR													
21...	[1]5.0	--	--	<10	--	30	200	--	--	--	--	--	--
MAY													
23...	[1]6.4	--	--	--	--	--	--	--	--	--	--	--	--
JUN													
07...	[1]4.0	--	--	<10	--	30	--	--	--	--	--	--	--
20...	[1]5.2	--	--	--	--	--	--	--	--	--	--	--	--
JUL													
03...	[1]4.4	--	--	--	--	--	--	--	--	--	--	--	--
18...	[1]4.6	--	--	--	--	--	--	--	--	--	--	--	--
AUG													
01...	[1]4.4	<1	3	2	--	<10	--	<0.1	0.1	--	<1	--	<1
01...	15.0	<1	<1	360	--	340	--	<0.1	<0.1	--	<1	--	<1
15...	[1]4.4	--	--	--	--	--	--	--	--	--	--	--	--
30...	[1]4.4	--	--	--	--	--	--	--	--	--	--	--	--
30...	9.0	--	--	--	--	--	--	--	--	--	--	--	--
30...	15.0	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	[1]4.0	--	--	--	--	--	--	--	--	--	--	--	--
10...	8.0	--	--	--	--	--	--	--	--	--	--	--	--
10...	15.0	--	--	--	--	--	--	--	--	--	--	--	--
26...	[1]3.8	2	<1	8	--	50	180	<0.1	<0.1	--	<1	--	<1
26...	10.0	--	--	--	--	--	--	--	--	--	--	--	--
26...	15.0	--	--	--	--	--	--	--	--	--	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	URANIUM, NATURAL, TOTAL (µG/L AS U)	ZINC, DISSOLVED (µG/L AS ZN)	ZINC, SUSPENDED, RECOVERABLE (µG/L AS ZN)	ZINC, TOTAL RECOVERABLE (µG/L AS ZN)	CARBON, ORGANIC, TOTAL (MG/L AS C)	CARBON, INORGANIC, TOT IN BOT MAT (G/KG AS C)[2]	CARBON, ORGANIC, TOT IN BOTTOM MAT (G/KG AS C)[2]	CARBON, INORG + ORGANIC, TOT IN BOT MAT (G/KG AS C)[2]	GROSS BETA, SUSP, TOTAL (PCI/L AS CS-137)	GROSS BETA, SUSP, TOTAL (PCI/L AS SR/YT-90)	COD, TOTAL IN BOTTOM MATERIAL (MG/KG)[2]	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)
JUN 1983													
17...	1.0	--	--	--	--	6.5	--	--	--	--	--	--	--
AUG													
09...	[1]5.5	8.3	--	0	20	15	--	--	--	1.6	1.6	--	--
09...	12.0	7.8	24	0	20	--	--	--	--	2.3	2.4	--	--
OCT													
05...	[1]4.5	--	--	--	--	14	--	--	--	--	--	--	--
FEB 1984													
02...	[1]7.0	--	<3	--	10	5.3	--	--	--	--	--	--	--
MAR													
21...	[1]5.0	--	--	--	--	5.1	0.1	18	18	--	--	40,000	--
MAY													
23...	[1]6.4	--	--	--	--	4.7	--	--	--	--	--	--	--
JUN													
07...	[1]4.0	--	--	--	--	5.5	--	--	--	--	--	--	--
20...	[1]5.2	--	--	--	--	4.8	--	--	--	--	--	--	--
JUL													
03...	[1]4.4	--	--	--	--	6.2	--	--	--	--	--	--	--
18...	[1]4.6	--	--	--	--	--	--	--	--	--	--	--	25
AUG													
01...	[1]4.4	11	7	--	<10	4.6	--	--	--	--	--	--	--
01...	15.0	9.1	13	--	<10	--	--	--	--	--	--	--	--
15...	[1]4.4	--	--	--	--	5.4	--	--	--	--	--	--	--
30...	[1]4.4	--	--	--	--	6.0	--	--	--	--	--	--	--
30...	9.0	--	--	--	--	--	--	--	--	--	--	--	--
30...	15.0	--	--	--	--	--	--	--	--	--	--	--	--
SEP													
10...	[1]4.0	--	--	--	--	1.9	--	--	--	--	--	--	--
10...	8.0	--	--	--	--	--	--	--	--	--	--	--	--
10...	15.0	--	--	--	--	--	--	--	--	--	--	--	--
26...	[1]3.8	7.4	8	--	10	<0.1	1.1	9.9	11	--	--	--	--
26...	10.0	--	--	--	--	--	--	--	--	--	--	--	--
26...	15.0	--	--	--	--	--	--	--	--	--	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	TIME	SAMPLING DEPTH (M)	pH, LAB (STANDARD UNITS)	SOLIDS, RESIDUE AT 105 °C, TOTAL (MG/L)	SOLIDS, RESIDUE AT 105 °C, SUSPENDED (MG/L)	SOLIDS, RESIDUE AT 180 °C, DISSOLVED (MG/L)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L)	CALCIUM, DISSOLVED (MG/L AS CA)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	MAGNESIUM, DISSOLVED (MG/L AS MG)	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SiO_2)
JAN 1985													
04...	1100	1.0	--	--	--	--	--	--	--	--	--	--	--
17...	1500	1.0	--	--	4	--	--	--	--	--	--	--	--
FEB													
14...	1145	1.0	--	--	7	--	--	--	--	--	--	--	--
28...	1430	1.0	--	--	--	--	--	--	--	--	--	--	--
MAR													
15...	1445	1.0	--	--	1	--	--	--	--	--	--	--	--
27...	1000	1.0	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	1115	1.0	--	154	--	--	52	--	--	--	--	--	--
10...	1030	1.0	--	--	--	--	--	--	--	--	--	--	--
17...	1000	1.0	--	--	--	--	--	--	--	--	--	--	--
24...	1100	1.0	--	--	--	--	--	--	--	--	--	--	--
MAY													
08...	1030	1.0	--	149	--	--	36	--	--	--	--	--	--
08...	1045	15.0	--	--	--	--	--	--	--	--	--	--	--
15...	1100	1.0	--	--	--	--	--	--	--	--	--	--	--
23...	1145	1.0	--	--	--	--	--	--	--	--	--	--	--
29...	1045	1.0	--	148	--	--	38	--	--	--	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	SODIUM, DISSOLVED (MG/L AS NA)	SULFATE, DISSOLVED (MG/L AS SO_4)	NITROGEN, NITRATE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, TOTAL (MG/L AS N)	NITROGEN, NO_2+NO_3, DISSOLVED (MG/L AS N)	NITROGEN, NO_2+NO_3, TOTAL (MG/L AS N)	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, DIS (MG/L AS N)	NITROGEN, NH_4 + ORG, SUSP, TOTAL (MG/L AS N)
JAN 1985												
04...	1.0	--	--	--	--	--	--	--	--	--	--	--
17...	1.0	--	--	--	--	--	--	<0.10	--	--	--	--
FEB												
14...	1.0	--	--	--	--	--	--	<0.10	--	--	--	--
28...	1.0	--	--	--	--	--	--	--	--	--	--	--
MAR												
15...	1.0	--	--	--	--	--	--	<0.10	--	--	--	--
27...	1.0	--	--	--	--	--	--	--	--	--	--	--
APR												
03...	1.0	--	--	--	--	--	--	<0.01	--	--	--	--
10...	1.0	--	--	--	--	--	--	--	--	--	--	--
17...	1.0	--	--	--	--	--	--	<0.01	--	--	--	--
24...	1.0	--	--	--	--	--	--	--	--	--	--	--
MAY												
08...	1.0	--	--	--	--	--	--	<0.01	--	--	--	--
08...	15.0	--	--	--	--	--	--	<0.01	--	--	--	--
15...	1.0	--	--	--	--	--	--	<0.01	--	--	--	--
23...	1.0	--	--	--	--	--	--	--	--	--	--	--
29...	1.0	--	--	--	--	--	--	<0.01	--	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	NITROGEN, AMMONIA + ORGANIC, TOTAL (MG/L AS N)	NITROGEN, NO_2+NO_3, TOT IN BOT MAT (MG/KG AS N)[2]	NITROGEN, NH_4 + ORG, TOT IN BOT MAT (MG/KG AS N)[2]	NITROGEN, TOT IN BOTTOM MATERIAL (MG/KG AS N)[2]	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	PHOSPHORUS, TOTAL IN BOT MAT (MG/KG AS P)[2]	ARSENIC, DISSOLVED (µG/L AS AS)	ARSENIC, SUSPENDED, TOTAL (µG/L AS AS)	ARSENIC, TOTAL (µG/L AS AS)
JAN 1985													
04...	1.0	--	--	--	--	--	0.008	--	--	--	--	--	--
17...	1.0	0.3	--	--	--	--	0.006	--	--	--	--	--	<1
FEB													
14...	1.0	0.7	--	--	--	--	0.008	--	--	--	--	--	<1
28...	1.0	--	--	--	--	--	0.009	--	--	--	--	--	--
MAR													
15...	1.0	0.3	--	--	--	--	0.005	--	--	--	--	--	<1
27...	1.0	--	--	--	--	--	0.009	--	--	--	--	--	--
APR													
03...	1.0	0.5	--	--	--	--	0.009	--	--	--	--	--	<1
10...	1.0	--	--	--	--	--	0.003	--	--	--	--	--	--
17...	1.0	0.3	--	--	--	--	0.011	--	--	--	--	--	--
24...	1.0	--	--	--	--	--	0.011	--	--	--	--	--	--
MAY													
08...	1.0	0.3	--	--	--	--	0.003	--	--	--	--	--	<1
08...	15.0	0.3	--	--	--	--	0.011	--	--	--	--	--	<1
15...	1.0	0.5	--	--	--	--	0.004	--	--	--	--	--	--
23...	1.0	--	--	--	--	--	0.008	--	--	--	--	--	--
29...	1.0	0.5	--	--	--	--	0.005	--	--	--	--	--	<1

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	BORON, DISSOLVED (µG/L AS B)	BORON, TOTAL RECOVERABLE (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	CADMIUM, TOTAL RECOVERABLE (µG/L AS CD)	CHROMIUM, DISSOLVED (µG/L AS CR)	CHROMIUM, TOTAL RECOVERABLE (µG/L AS CR)	COPPER, DISSOLVED (µG/L AS CU)	COPPER, TOTAL RECOVERABLE (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	IRON, SUSPENDED, RECOVERABLE (µG/L AS FE)	IRON, TOTAL RECOVERABLE (µG/L AS FE)	IRON, RECOV FM BOTTOM MATERIAL (µG/G AS FE)[2]
JAN 1985													
04...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
17...	1.0	--	--	--	1	--	1	--	--	--	--	60	--
FEB													
14...	1.0	--	--	--	<1	--	<1	--	--	--	--	50	--
28...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
15...	1.0	--	--	--	<1	--	2	--	--	--	--	60	--
27...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	1.0	--	--	--	<1	--	3	--	--	--	--	90	--
10...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
17...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
24...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
08...	1.0	--	--	--	1	--	2	--	--	--	--	80	--
08...	15.0	--	--	--	1	--	1	--	--	--	--	60	--
15...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
23...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
29...	1.0	--	--	--	<1	--	3	--	--	--	--	90	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	LEAD, DISSOLVED (µG/L AS PB)	LEAD, TOTAL RECOVERABLE (µG/L AS PB)	MANGANESE, DISSOLVED (µG/L AS MN)	MANGANESE, SUSPENDED, RECOV (µG/L AS MN)	MANGANESE, TOTAL RECOVERABLE (µG/L AS MN)	MANGANESE, RECOV FM BOTTOM MATERIAL (µG/G)[2]	MERCURY, DISSOLVED (µG/L AS HG)	MERCURY, TOTAL RECOVERABLE (µG/L AS HG)	NICKEL, TOTAL RECOVERABLE (µG/L AS NI)	SELENIUM, DISSOLVED (µG/L AS SE)	SELENIUM, SUSPENDED, TOTAL (µG/L AS SE)	SELENIUM, TOTAL (µG/L AS SE)
JAN 1985													
04...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
17...	1.0	--	<1	--	--	20	--	--	<0.1	18	--	--	--
FEB													
14...	1.0	--	5	--	--	<10	--	--	<0.1	7	--	--	--
28...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
15...	1.0	--	<1	--	--	10	--	--	0.1	7	--	--	--
27...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	1.0	--	<1	--	--	10	--	--	0.3	9	--	--	--
10...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
17...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
24...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
08...	1.0	--	3	--	--	50	--	--	<0.1	8	--	--	--
08...	15.0	--	1	--	--	70	--	--	<0.1	8	--	--	--
15...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
23...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
29...	1.0	--	<5	--	--	100	--	--	<0.1	1	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	URANIUM, NATURAL, TOTAL (µG/L AS U)	ZINC, DISSOLVED (µG/L AS ZN)	ZINC, SUSPENDED, RECOVERABLE (µG/L AS ZN)	ZINC, TOTAL RECOVERABLE (µG/L AS ZN)	CARBON, ORGANIC, TOTAL (MG/L AS C)	CARBON, INORGANIC, TOT IN BOT MAT (G/KG AS C)[2]	CARBON, ORGANIC, TOT IN BOTTOM MAT (G/KG AS C)[2]	CARBON, INORG + ORGANIC, TOT IN BOT MAT (G/KG AS C)[2]	GROSS BETA, SUSP, TOTAL (PCI/L AS CS-137)	GROSS BETA, SUSP, TOTAL (PCI/L AS SR/YT-90)	COD, TOTAL IN BOTTOM MATERIAL (MG/KG)[2]	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)
JAN 1985													
04...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
17...	1.0	--	--	--	<10	--	--	--	--	--	--	--	--
FEB													
14...	1.0	--	--	--	20	--	--	--	--	--	--	--	--
28...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
MAR													
15...	1.0	--	--	--	<10	--	--	--	--	--	--	--	--
27...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
APR													
03...	1.0	9.5	--	--	<10	4.6	--	--	--	--	--	--	--
10...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
17...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
24...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
MAY													
08...	1.0	--	--	--	20	3.1	--	--	--	--	--	--	--
08...	15.0	--	--	--	20	--	--	--	--	--	--	--	--
15...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
23...	1.0	--	--	--	--	--	--	--	--	--	--	--	--
29...	1.0	9.6	--	--	<10	4.9	--	--	--	--	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	TIME	SAMPLING DEPTH (M)	SOLIDS, RESIDUE AT 105 °C, TOTAL (MG/L)	SOLIDS, VOLATILE ON IGNITION, TOTAL (MG/L)	NITROGEN, NO_2+NO_3, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	ARSENIC, TOTAL (µG/L AS AS)	BARIUM, TOTAL RECOVERABLE (µG/L AS BA)	CADMIUM, TOTAL RECOVERABLE (µG/L AS CD)	CHROMIUM, TOTAL RECOVERABLE (µG/L AS CR)
JUN 1985											
06...	1000	1.0	--	--	--	--	0.01	--	--	--	--
12...	1100	1.0	--	--	<0.01	0.6	0.007	--	--	--	--
20...	1130	1.0	--	--	--	--	0.007	--	--	--	--
28...	1030	1.0	160	51	0.018	0.2	0.008	<1	--	<1	7
28...	1100	14.0	--	--	0.026	0.3	0.011	<1	--	<1	4
JUL											
03...	1145	1.0	--	--	--	--	0.007	--	--	--	--
10...	1030	1.0	--	--	<0.01	0.5	0.009	--	--	--	--
17...	1100	1.0	--	--	--	--	0.004	--	--	--	--
24...	1030	1.0	168	45	<0.01	0.2	0.009	1	--	1	1
24...	1100	13.0	--	--	0.019	<0.2	0.009	<1	--	2	<1
31...	1300	1.0	--	--	--	--	0.006	--	--	--	--
AUG											
08...	1115	1.0	--	--	<0.01	0.4	0.004	--	--	--	--
14...	1115	1.0	--	--	--	--	0.008	--	--	--	--
22...	1030	1.0	156	60	<0.01	0.4	0.007	1	200	<1	8
22...	1045	12.5	--	--	<0.01	0.5	0.011	1	200	2	8
29...	1245	1.0	--	--	--	--	0.004	--	--	--	--
SEP											
04...	1030	1.0	--	--	<0.01	0.3	0.005	--	--	--	--
11...	1115	1.0	--	--	--	--	0.021	--	--	--	--
18...	1030	1.0	--	--	<0.01	0.4	0.012	1	--	1	<1
18...	1045	13.0	--	--	<0.01	0.6	0.024	1	--	--	4
25...	1030	1.0	--	--	--	--	0.006	--	--	--	--

Table 2.--*Chemical-quality data for Site A, 1983-85*--Continued

DATE	SAMPLING DEPTH (M)	COPPER, TOTAL RECOVERABLE (µG/L AS CU)	IRON, TOTAL RECOVERABLE (µG/L AS FE)	LEAD, TOTAL RECOVERABLE (µG/L AS PB)	MANGANESE, TOTAL RECOVERABLE (µG/L AS MN)	MERCURY, TOTAL RECOVERABLE (µG/L AS HG)	NICKEL, TOTAL RECOVERABLE (µG/L AS NI)	SELENIUM, TOTAL (µG/L AS SE)	SILVER, TOTAL RECOVERABLE (µG/L AS AG)	URANIUM, NATURAL, TOTAL (µG/L AS U)	ZINC, TOTAL RECOVERABLE (µG/L AS ZN)	CARBON, ORGANIC, TOTAL (MG/L AS C)
JUN 1985												
06...	1.0	--	--	--	--	--	--	--	--	--	--	--
12...	1.0	--	--	--	--	--	--	--	--	--	--	--
20...	1.0	--	--	--	--	--	--	--	--	--	--	--
28...	1.0	--	80	2	10	<0.1	10	--	--	10	20	5.3
28...	14.0	--	120	1	200	<0.1	14	--	--	--	40	5.6
JUL												
03...	1.0	--	--	--	--	--	--	--	--	--	--	--
10...	1.0	--	--	--	--	--	--	--	--	--	--	--
17...	1.0	--	--	--	--	--	--	--	--	--	--	--
24...	1.0	--	110	1	40	7.5	4	--	--	89	110	4.7
24...	13.0	--	140	1	140	<0.1	4	--	--	--	30	3.7
31...	1.0	--	--	--	--	--	--	--	--	--	--	--
AUG												
08...	1.0	--	--	--	--	--	--	--	--	--	--	--
14...	1.0	--	--	--	--	--	--	--	--	--	--	--
22...	1.0	1	40	<1	20	<0.1	7	<1	<1	770	90	4.3
22...	12.5	1	170	<1	460	0.2	4	<1	<1	--	20	4.0
29...	1.0	--	--	--	--	--	--	--	--	--	--	--
SEP												
04...	1.0	--	--	--	--	--	--	--	--	--	--	--
11...	1.0	--	--	--	--	--	--	--	--	--	--	--
18...	1.0	--	<10	2	20	<0.1	4	--	--	--	70	4.0
18...	13.0	--	390	1	740	<0.1	<1	--	--	--	40	4.3
25...	1.0	--	--	--	--	--	--	--	--	--	--	--

[1]Depth-integrated samples were collected throughout the euphotic zone for nutrient analyses. All other samples for chemical analyses were collected at the 1-meter depth.

[2]Samples collected from the bottom and not the designated sampling depth given for collection of other constituents.

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Biological Data

Phytoplankton and Chlorophyll a

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*

[Densities, in cells per milliliter, and chlorophyll a, in micrograms per liter (µg/L), are rounded to two significant figures (Greeson and others, 1977); --, organism not found]

PHYLUM CLASS Order *Genus species*	Sampling dates							
	6-17-83	8-9-83	9-13-83	10-5-83	2-2-84	3-21-84	6-7-84	7-3-84
CHLOROPHYTA								
CHLOROPHYCEAE (Green algae)								
Ankistrodesmus braunii	--	--	--	--	--	--	--	--
Ankistrodesmus falcatus	--	--	--	--	--	--	--	--
Ankistrodesmus falcatus var. *acicularis*	--	--	120	--	--	230	--	--
Ankistrodesmus falcatus var. *mirabilis*	100	350	--	--	--	--	--	--
Chlamydomonas sp. 1	--	--	15	--	--	--	2,900	1,200
Chlamydomonas sp. 2	--	--	--	--	--	--	--	--
Chlorella ellipsodea	--	--	--	--	--	--	--	--
Coccomonas sp.	--	--	--	--	--	--	--	--
Cosmarium sp.	--	--	15	--	--	--	66	130
Dictyosphaerium pulchellum	1,000	--	--	--	--	--	--	--
Elakotothrix viridis	--	--	--	--	--	--	--	--
Kirchneriella contorta	--	--	--	--	--	--	--	--
Nephrocytium sp.	--	--	--	--	--	--	--	--
Oocystis lacustris	--	--	--	--	--	--	--	--
Oocystis sp.	--	--	--	--	--	--	66	--
Pediastrum tetras	--	--	--	--	--	--	--	--
Pediastrum tetras var. *tetraodon*	--	--	--	--	--	--	--	--
Pteromonas limneticus	--	--	--	--	--	--	--	--
Scenedesmus abundans	--	--	--	--	--	--	--	--
Scenedesmus armatus	--	--	--	--	--	--	--	--
Scenedesmus quadricauda	--	--	--	--	--	--	--	--
Scenedesmus sp.	--	--	--	--	--	--	--	130

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates							
	6-17-83	8-9-83	9-13-83	10-5-83	2-2-84	3-21-84	6-7-84	7-3-84
CHLOROPHYTA--Continued								
CHLOROPHYCEAE (Green algae)--Continued								
Schroederia setigera	--	--	--	--	--	--	--	--
Selenastrum minutum	--	--	--	--	--	--	--	--
Sphaerocystis schroeteri	--	--	1,200	--	--	--	--	--
Tetraedron minimum	--	--	30	--	--	--	66	130
Tetraedron trigonum var. *setigerum*	--	--	--	--	--	--	--	--
Tetraedron sp.	--	--	15	--	--	--	--	--
Resting spores	--	--	--	--	--	--	--	--
CHRYSOPHYTA								
BACILLARIOPHYCEAE (Diatoms)								
Centrales								
Cyclotella bodanica	--	--	--	--	--	50	--	33
Cyclotella kutzingiana	400	260	330	1,800	60	280	130	1,500
Cyclotella meneghiniana	--	--	--	380	--	30	--	--
Cyclotella pseudostelligera	25	--	--	--	--	--	--	--
Cyclotella stelligera	--	--	14	--	--	--	--	--
Melosira granulata	200	--	--	--	--	--	--	--
Melosira granulata var. *angustissima*	--	--	--	--	--	--	--	--
Melosira italica	--	22	280	630	19	140	--	--
Melosira sp.	--	--	14	--	--	--	--	--
Rhizosolenia eriensis	75	2,700	10	110	39	50	530	1,900
Rhizosolenia longiseta	--	--	--	--	--	150	--	--

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates							
	6-17-83	8-9-83	9-13-83	10-5-83	2-2-84	3-21-84	6-7-84	7-3-84
CHRYSOPHYTA--Continued								
BACILLARIOPHYCEAE (Diatoms)--Continued								
Pennales								
Achnanthes affinis	--	--	--	--	--	80	--	--
Achnanthes linearis	--	--	--	--	--	--	--	--
Achnanthes minutissima	--	--	--	22	--	--	12	20
Achnanthes sp.	--	--	--	--	--	--	--	20
Amphipleura pelucida	--	--	--	--	--	--	3	--
Amphora veneta	--	--	--	--	--	--	--	--
Anomoeoneis vitrea	--	--	28	--	--	--	--	--
Asterionella formosa	4,000	--	--	3	1,000	1,700	28	89
Cymbella angustata	--	--	--	--	--	--	--	--
Cymbella minuta	--	--	--	2	--	--	--	10
Cymbella minuta var. *latens*	--	--	--	--	--	--	3	--
Cymbella prostrata	--	--	--	--	--	--	--	20
Denticula sp.	--	--	--	--	--	--	--	--
Diatoma tenue var. *elongatum*	1,600	230	69	--	700	2,200	60	10
Eunotia hexaglyphis	--	--	--	--	--	--	--	33
Fragilaria capucina	220	12	--	9	--	--	--	--
Fragilaria crotonensis	1,600	29	--	40	120	50	69	120
Fragilaria crotonensis var. *oregona*	--	--	--	--	--	--	6	--
Fragilaria vaucheriae	240	--	--	--	--	--	--	--
Gomphonema angustatum	--	--	14	--	--	--	--	10
Gyrosigma sp.	--	2	--	--	--	--	--	--
Navicula arvensis	--	--	41	2	--	--	--	--
Navicula cryptocephala	--	--	--	3	--	--	--	--
Navicula cryptocephala var. *veneta*	--	--	--	2	40	--	--	10
Navicula halophila	31	--	--	--	--	--	--	--

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates							
	6-17-83	8-9-83	9-13-83	10-5-83	2-2-84	3-21-84	6-7-84	7-3-84
CHRYSOPHYTA--Continued								
BACILLARIOPHYCEAE (Diatoms)--Continued								
Pennales--Continued								
Navicula heufleri var. *leptocephala*	--	--	--	--	--	--	--	10
Navicula lanceolata	--	--	--	--	--	30	--	--
Navicula minuscula	--	--	330	--	--	--	3	--
Navicula notha	--	--	--	--	--	30	--	20
Navicula pupula	--	--	--	--	--	--	--	--
Navicula pupula var. *capitata*	--	--	--	2	--	--	--	--
Navicula radiosa	--	--	--	--	--	--	--	10
Navicula rhyncocephala	--	--	--	2	--	--	--	--
Navicula tripunctata	--	--	--	2	--	--	--	--
Navicula viridula	--	--	--	2	--	--	--	--
Nedium iridis	--	--	--	--	--	--	3	--
Nitzschia acicularis	92	29	14	--	--	30	--	89
Nitzschia amphibia	--	7	55	--	--	--	23	--
Nitzschia dissipata	--	--	--	--	--	--	--	10
Nitzschia filiformis	--	--	--	--	--	--	6	--
Nitzschia fonticola	--	--	14	--	--	--	6	--
Nitzschia frustulum	--	--	--	--	--	--	6	--
Nitzschia intermedia	--	--	28	--	--	--	--	20
Nitzschia latens	--	--	--	2	--	--	--	--
Nitzschia linearis	--	2	14	--	--	--	6	33
Nitzschia microcephala	--	--	--	--	--	--	3	--
Nitzschia palea	--	15	--	5	20	--	--	37
Nitzschia paleacea	61	--	--	--	--	--	23	78
Nitzschia romana	--	--	--	--	--	--	--	--
Nitzschia thermalis	--	--	14	--	--	--	--	--
Nitzschia vermicularis	--	--	--	--	--	--	6	--

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates							
	6-17-83	8-9-83	9-13-83	10-5-83	2-2-84	3-21-84	6-7-84	7-3-84
CHRYSOPHYTA--Continued								
BACILLARIOPHYCEAE (Diatoms)--Continued								
Pennales--Continued								
Nitzschia sp.	--	--	--	2	--	--	3	--
Rhopalodia gibba	--	--	14	6	--	--	6	--
Rhopalodia musculus	--	--	--	2	--	--	--	--
Synedra acus	--	--	14	8	--	--	--	--
Synedra delicatissima	--	--	--	--	--	--	6	--
Synedra fasciculata	--	--	--	--	--	--	--	--
Synedra minuscula	--	--	--	--	--	--	3	--
Synedra nana	--	--	--	--	--	--	--	--
Synedra radians	2,900	17	96	--	--	100	40	820
Synedra rumpens var. *familiaris*	--	--	--	--	--	--	--	--
Synedra ulna var. *longissima*	--	--	--	--	180	300	--	98
CHRYSOPHYCEAE (Golden-brown algae)								
Dinobryon divergens	--	490	390	--	--	--	260	--
Mallomonas sp.	--	--	15	--	--	--	66	99
Uroglenopsis americana	4,000	--	--	--	--	--	--	--
CRYPTOPHYTA								
CRYPTOPHYCEAE (Cryptomonads)								
Chilomonas sp.	--	--	--	--	--	--	--	33
Chroomonas breviciliata	--	--	--	--	--	30	--	--
Chroomonas sp.	--	--	--	--	--	--	590	260
Cryptomonas erosa	--	--	--	--	--	--	--	--
Cryptomonas marsonii	--	--	--	--	--	--	--	--
Cryptomonas sp.	--	--	--	--	--	30	330	300

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates							
	6-17-83	8-9-83	9-13-83	10-5-83	2-2-84	3-21-84	6-7-84	7-3-84
CYANOPHYTA								
MYXOPHYCEAE (Blue-green algae)								
Anabaena sp.	--	250	--	--	--	--	--	--
Aphanizomenon flos-aquae	400	--	--	--	--	--	--	--
Aphanocapsa delicatissima	--	--	--	--	--	--	--	--
Aphanocapsa elachista	--	--	--	--	--	--	--	--
Aphanocapsa sp.	--	--	--	--	--	400	--	--
Aphanotheca sp.	--	560	--	--	--	--	--	--
Aphanothece sp.	--	--	--	--	--	--	--	--
Chroococcus dispersus	--	--	--	--	--	--	--	--
Chroococcus limneticus	--	--	--	--	--	--	--	--
Chroococcus pallidus	--	--	--	--	--	--	--	--
Chroococcus sp.	--	--	--	--	--	200	--	760
Gloeothece linearis	--	--	--	--	--	--	--	--
Microcystis firma	--	--	--	--	--	--	--	--
Microcystis sp.	--	--	--	--	--	--	--	--
Oscillatoria limnetica	--	--	--	--	--	--	--	--
Oscillatoria subtilissima	--	--	--	--	--	--	--	--
Synechococcus aeruginosa	--	--	--	--	--	--	--	--
Synechococcus sp.	--	--	--	--	--	--	--	--
Synechocystis sp.	--	--	--	--	--	--	--	--
EUGLENOPHYTA (Euglenoids)								
Euglena sp.	--	--	--	--	--	--	66	--
Phacus sp.	--	--	--	--	--	30	--	--
Trachelomonas hispida	--	--	--	--	--	--	--	--
Trachelomonas volvocina	100	--	--	--	--	--	--	--

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates							
	6-17-83	8-9-83	9-13-83	10-5-83	2-2-84	3-21-84	6-7-84	7-3-84
PYRROPHYTA								
DINOPHYCEAE (Dinoflagellates)								
Ceratium hirundinella[1]	--	3	19	19	--	--	--	--
Peridinium aciculiferum	--	--	--	--	--	--	--	--
Peridinium sp.	--	--	--	--	50	--	--	--
Dinoflagellate	--	--	--	--	--	--	--	--
Total	17,000	5,000	3,200	3,100	2,200	6,100	5,400	8,000
Number of taxa	18	17	28	23	10	21	33	33
Diversity index	3.01	2.29	3.21	1.81	2.15	2.92	2.59	3.45
Chlorophyll a (µg/L)	8.9	3.6	1.8	4.5	1.7	2.2	3.5	1.2

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	7-18-84	8-1-84	8-15-84	8-30-84	9-10-84	9-26-84	4-3-85
CHLOROPHYTA							
CHLOROPHYCEAE (Green algae)							
Ankistrodesmus braunii	--	440	--	--	--	--	--
Ankistrodesmus falcatus	250	--	--	57	280	--	800
Ankistrodesmus falcatus var. *acicularis*	--	--	--	--	--	57	--
Ankistrodesmus falcatus var. *mirabilis*	31	63	--	--	--	--	--
Chlamydomonas sp. 1	160	440	250	400	--	57	--
Chlamydomonas sp. 2	--	63	--	--	--	340	--
Chlorella ellipsodea	--	3,400	12,000	2,600	--	--	--
Coccomonas sp.	--	--	63	--	--	--	--
Cosmarium sp.	31	--	--	--	--	--	--
Dictyosphaerium pulchellum	--	--	--	--	--	--	--
Elakotothrix viridis	--	--	120	--	230	--	--
Kirchneriella contorta	--	--	--	57	--	--	--
Nephrocytium sp.	31	--	--	--	--	--	--
Oocystis lacustris	63	--	--	--	--	--	--
Oocystis sp.	--	--	--	--	--	--	28
Pediastrum tetras	--	--	500	--	--	--	--
Pediastrum tetras var. *tetraodon*	--	--	--	--	--	230	--
Pteromonas limneticus	--	--	--	510	850	1,900	--
Scenedesmus abundans	280	--	--	230	--	460	--
Scenedesmus armatus	--	120	--	--	--	110	--
Scenedesmus quadricauda	--	--	63	110	230	--	57
Scenedesmus sp.	--	120	120	340	110	--	57

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	7-18-84	8-1-84	8-15-84	8-30-84	9-10-84	9-26-84	4-3-85
CHLOROPHYTA--Continued							
CHLOROPHYCEAE (Green algae)--Continued							
Schroederia setigera	--	63	63	--	--	--	--
Selenastrum minutum	--	440	--	280	340	230	28
Sphaerocystis schroeteri	--	--	--	--	--	--	--
Tetraedron minimum	94	310	190	230	110	110	--
Tetraedron trigonum var. *setigerum*	--	--	63	--	--	--	--
Tetraedron sp.	--	--	--	--	--	--	--
Resting spores	31	--	--	--	--	--	--
CHRYSOPHYTA							
BACILLARIOPHYCEAE (Diatoms)							
Centrales							
Cyclotella bodanica	--	120	120	57	--	--	--
Cyclotella kutzingiana	750	810	880	510	1,100	850	310
Cyclotella meneghiniana	--	--	--	--	--	--	--
Cyclotella pseudostelligera	--	--	--	--	--	--	--
Cyclotella stelligera	--	--	--	--	--	--	--
Melosira granulata	--	--	--	--	--	--	--
Melosira granulata var. *angustissima*	10	--	--	--	28	--	--
Melosira italica	120	--	--	850	--	570	--
Melosira sp.	--	--	--	--	--	--	--
Rhizosolenia eriensis	310	250	63	850	570	850	8,100
Rhizosolenia longiseta	--	--	--	--	--	--	--

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	7-18-84	8-1-84	8-15-84	8-30-84	9-10-84	9-26-84	4-3-85
CHRYSOPHYTA--Continued							
BACILLARIOPHYCEAE (Diatoms)--Continued							
Pennales							
Achnanthes affinis	--	--	63	55	38	57	--
Achnanthes linearis	--	--	--	--	19	--	--
Achnanthes minutissima	--	--	--	36	38	--	--
Achnanthes sp.	--	--	--	--	--	--	--
Amphipleura pelucida	--	--	--	--	--	--	--
Amphora veneta	--	--	--	36	--	--	--
Anomoeoneis vitrea	--	--	--	18	38	--	--
Asterionella formosa	120	--	--	620	--	740	85
Cymbella angustata	--	--	--	55	--	13	--
Cymbella minuta	--	--	--	18	--	--	--
Cymbella minuta var. *latens*	--	--	--	--	--	--	--
Cymbella prostrata	--	--	--	--	--	--	--
Denticula sp.	--	--	--	--	38	54	--
Diatoma tenue var. *elongatum*	--	--	--	18	--	54	400
Eunotia hexaglyphis	--	--	--	--	--	--	--
Fragilaria capucina	--	--	--	--	--	--	--
Fragilaria crotonensis	--	--	--	680	--	--	--
Fragilaria crotonensis var. *oregona*	--	--	--	--	--	--	--
Fragilaria vaucheriae	--	--	--	--	--	--	--
Gomphonema angustatum	--	--	--	--	--	--	--
Gyrosigma sp.	--	--	--	--	--	--	--
Navicula arvensis	--	--	--	--	--	13	--
Navicula cryptocephala	--	--	--	--	--	13	--
Navicula cryptocephala var. *veneta*	--	32	32	18	--	--	--
Navicula halophila	--	16	--	--	--	--	--

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	7-18-84	8-1-84	8-15-84	8-30-84	9-10-84	9-26-84	4-3-85
CHRYSOPHYTA--Continued							
BACILLARIOPHYCEAE (Diatoms)--Continued							
Pennales--Continued							
Navicula heufleri							
var. *leptocephala*	--	--	--	--	--	--	--
Navicula lanceolata	--	--	--	--	--	--	--
Navicula minuscula	--	--	--	--	--	--	--
Navicula notha	--	63	--	--	--	--	--
Navicula pupula	--	32	--	91	--	--	--
Navicula pupula var. *capitata*	--	--	--	--	--	--	--
Navicula radiosa	--	--	--	--	19	13	--
Navicula rhyncocephala	--	--	--	--	--	--	--
Navicula tripunctata	--	--	--	--	--	--	--
Navicula viridula	--	--	--	--	--	--	--
Nedium iridis	--	--	--	--	--	--	--
Nitzschia acicularis	--	--	--	--	38	40	--
Nitzschia amphibia	--	--	32	--	--	--	--
Nitzschia dissipata	--	--	--	--	--	--	--
Nitzschia filiformis	--	--	--	--	--	--	--
Nitzschia fonticola	--	--	--	--	19	--	--
Nitzschia frustulum	--	--	--	36	--	--	--
Nitzschia intermedia	--	--	--	--	--	--	--
Nitzschia latens	--	--	--	--	--	--	--
Nitzschia linearis	--	--	--	--	--	--	--
Nitzschia microcephala	--	--	--	--	--	26	--
Nitzschia palea	--	--	32	91	76	--	--
Nitzschia paleacea	--	--	--	--	--	--	--
Nitzschia romana	--	--	--	18	--	--	--
Nitzschia thermalis	--	--	--	18	--	--	--
Nitzschia vermicularis	--	--	--	--	--	--	--

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	7-18-84	8-1-84	8-15-84	8-30-84	9-10-84	9-26-84	4-3-85
CHRYSOPHYTA--Continued							
BACILLARIOPHYCEAE (Diatoms)--Continued							
Pennales--Continued							
Nitzschia sp.	--	--	--	--	--	--	--
Rhopalodia gibba	--	--	--	--	--	--	--
Rhopalodia musculus	--	--	--	--	--	--	--
Synedra acus	--	--	--	--	--	--	77
Synedra delicatissima	--	--	--	--	--	--	--
Synedra fasciculata	--	--	620	--	--	--	--
Synedra minuscula	--	--	--	--	--	--	--
Synedra nana	--	--	--	--	280	730	--
Synedra radians	94	190	310	460	--	--	460
Synedra rumpens var. *familiaris*	--	--	--	400	110	460	--
Synedra ulna var. *longissima*	31	620	16	--	--	--	--
CHRYSOPHYCEAE (Golden-brown algae)							
Dinobryon divergens	--	--	32	57	570	--	--
Mallomonas sp.	980	620	380	570	--	--	57
Uroglenopsis americana	--	--	--	--	--	--	--
CRYPTOPHYTA							
CRYPTOPHYCEAE (Cryptomonads)							
Chilomonas sp.	--	--	--	57	--	--	--
Chroomonas breviciliata	--	--	--	--	--	--	--
Chroomonas sp.	440	190	120	57	--	57	--
Cryptomonas erosa	--	120	190	--	--	--	--
Cryptomonas marsonii	--	63	--	--	--	110	--
Cryptomonas sp.	63	63	--	--	--	--	--

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	7-18-84	8-1-84	8-15-84	8-30-84	9-10-84	9-26-84	4-3-85
CYANOPHYTA							
MYXOPHYCEAE (Blue-green algae)							
Anabaena sp.	--	--	--	--	--	--	--
Aphanizomenon flos-aquae	--	--	--	--	--	--	--
Aphanocapsa delicatissima	--	--	63	2,100	110	--	450
Aphanocapsa elachista	63	--	--	--	--	--	--
Aphanocapsa sp.	--	--	--	--	--	--	--
Aphanotheca sp.	--	--	--	--	--	--	--
Aphanothece sp.	--	--	2,000	--	1,100	--	--
Chroococcus dispersus	--	--	--	400	1,500	2,400	--
Chroococcus limneticus	--	--	--	2,400	280	1,400	--
Chroococcus pallidus	--	--	--	280	--	--	--
Chroococcus sp.	--	--	250	--	--	--	--
Gloeothece linearis	--	--	--	57	--	--	--
Microcystis firma	--	9,500	190	--	--	--	--
Microcystis sp.	4,800	--	--	--	--	--	--
Oscillatoria limnetica	--	--	--	--	--	--	450
Oscillatoria subtilissima	--	32	--	--	--	--	--
Synechococcus aeruginosa	--	--	--	57	--	110	--
Synechococcus sp.	--	750	--	--	--	--	--
Synechocystis sp.	--	--	190	--	--	--	--
EUGLENOPHYTA (Euglenoids)							
Euglena sp.	--	63	63	--	57	--	--
Phacus sp.	--	--	--	--	--	--	--
Trachelomonas hispida	--	63	32	--	--	--	--
Trachelomonas volvocina	--	63	32	57	--	110	--

Table 3.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	7-18-84	8-1-84	8-15-84	8-30-84	9-10-84	9-26-84	4-3-85
PYRROPHYTA							
DINOPHYCEAE (Dinoflagellates)							
Peridinium aciculiferum	94	--	--	--	--	--	--
Peridinium sp.	--	63	--	--	--	--	--
Dinoflagellate	--	--	63	--	--	--	--
Total	8,800	19,000	19,000	16,000	8,200	12,000	11,000
Number of taxa	22	31	33	42	27	30	14
Diversity index	2.61	2.83	2.43	4.18	3.80	3.80	1.74
Chlorophyll a (µg/L)	2.7	13.9	6.2	9.2	--	5.5	--

[1]Collected in zooplankton sample. See "Methods of Data Collection and Analyses" section for additional information.

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*

[Densities, in cells per milliliter, are rounded to two significant figures (Greeson and others, 1977); --, organism not found]

PHYLUM CLASS Order *Genus species*	Sampling date 4-17-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Ankistrodesmus falcatus	2,400	1,200	1,600	1,800
Closterium sp.	--	28	--	--
Gonium sp.	110	--	--	--
Nephrocytium sp.	--	28	--	--
Oocystis sp.	--	--	--	230
Scenedesmus dimorphus	--	230	110	--
Scenedesmus quadricauda	--	57	110	280
Scenedesmus serratus	85	170	110	170
Scenedesmus sp.	--	--	--	--
Selenastrum minutum	85	--	--	--
Tetraedron minimum	28	--	28	28
Resting spores	--	--	310	--
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella bodanica	--	--	28	--
Cyclotella kutzingiana	850	620	450	1,800
Rhizosolenia eriensis	24,000	20,000	15,000	14,000
Pennales				
Amphipleura pelucida	--	--	14	--
Asterionella formosa	280	370	--	340
Cymbella angustata	28	--	--	--
Diatoma tenue var. *elongatum*	1,600	170	170	1,300
Fragilaria vaucheriae	28	--	--	28
Navicula minuscula	28	--	--	--
Nitzschia acicularis	28	28	57	28
Nitzschia palea	--	--	--	28
Nitzschia paleacea	28	--	--	--
Synedra acus	--	--	--	80
Synedra minuscula	28	120	--	--
Synedra radians	1,400	1,200	470	880
Synedra rumpens	85	--	35	80
Synedra rumpens var. *familiaris*	57	--	120	240

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 4-17-85			
	Surface	Middle	Bottom	Composite
CHRYSOPHYTA--Continued				
CHRYSOPHYCEAE (Golden-brown algae)				
Dinobryon divergens	1,600	1,300	1,400	1,400
Mallomonas sp.	--	--	28	28
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Aphanocapsa delicatissima	--	--	1,000	--
Oscillatoria limnetica	--	--	740	170
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Peridinium inconspicua	--	--	--	57
Total	33,000	26,000	22,000	23,000
Number of taxa	19	14	19	20
Diversity index	1.59	1.37	1.89	2.22

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 5-15-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Ankistrodesmus falcatus var. *acicularis*	340	570	--	--
Ankistrodesmus falcatus var. *mirabilis*	28	28	430	230
Chlorococcum sp.	110	140	110	57
Closterium sp.	28	--	--	--
Cosmarium sp.	85	57	28	110
Gloeocystis sp.	110	110	--	--
Gonium sociale	--	--	110	--
Oocystis sp.	110	--	--	--
Scenedesmus armatus	--	--	--	110
Scenedesmus quadricauda	--	57	--	57
Scenedesmus serratus	--	--	57	--
Scenedesmus sp.	57	110	--	--
Tetraedron minimum	--	57	--	--
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella kutzingiana	500	670	450	630
Cyclotella meneghiniana	90	12	--	--
Cyclotella stelligera	8	--	--	--
Melosira italica	--	--	280	--
Rhizosolenia eriensis	2,400	1,600	820	940
Pennales				
Diatoma tenue var. *elongatum*	85	57	85	650
Nitzschia acicularis	57	190	28	57
Nitzschia ignorata	--	--	28	--
Nitzschia linearis	28	--	28	28
Nitzschia palea	28	--	--	--
Nitzschia romana	57	--	--	--
Nitzschia sp.	85	85	--	--
Synedra acus	57	28	--	--
Synedra radians	400	910	850	800
Synedra rumpens	--	--	28	200
Synedra rumpens var. *familiaris*	57	--	--	--

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 5-15-85			
	Surface	Middle	Bottom	Composite
CHRYSOPHYTA--Continued				
CHRYSOPHYCEAE (Golden-brown algae)				
Chrysochromulina parva	--	28	--	--
Chrysococcus radians	800	880	230	460
Dinobryon divergens	--	140	--	28
Mallomonas sp.1	230	580	340	200
Mallomonas sp.2	28	--	--	--
Small chrysophyte flagellate	--	--	57	--
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Chroomonas sp.	--	--	28	--
Cryptomonas erosa	28	--	--	--
Cryptomonas marsonii	28	57	85	28
Cryptomonas rostratiformis	--	--	57	--
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Aphanocapsa delicatissima	280	--	--	--
Dactylococcopsis fascicularis	--	28	--	28
Oscillatoria limnetica	--	570	--	--
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Peridinium inconspicua	28	57	--	--
Total	6,100	7,000	4,100	4,600
Number of taxa	28	24	20	17
Diversity index	3.34	3.56	3.47	3.31

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 5-29-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Ankistrodesmus falcatus var. *acicularis*	110	110	340	510
Chlorococcum sp.	170	170	310	260
Cosmarium sp.	--	85	85	230
Dictyosphaerium pulchellum	--	--	57	--
Gloeocystis sp.	--	57	230	--
Gonium sociale	110	--	--	170
Pediastrum tetras	--	--	--	110
Scenedesmus dimorphus	--	110	--	--
Scenedesmus serratus	--	--	--	110
Scenedesmus sp.	--	--	57	57
Selenastrum minutum	260	200	280	400
Tetraedron minimum	85	28	85	140
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella kutzingiana	400	130	850	1,200
Cyclotella meneghiniana	28	--	--	--
Cyclotella stelligera	7	14	--	--
Melosira italica	--	--	--	110
Rhizosolenia eriensis	1,600	430	850	1,200
Pennales				
Asterionella formosa	85	28	--	--
Diatoma tenue var. *elongatum*	--	280	280	85
Navicula capitata	28	--	--	--
Nitzschia acicularis	--	--	28	28
Nitzschia intermedia	--	28	--	--
Nitzschia palea	57	28	28	57
Synedra radians	1,500	2,500	2,100	2,200
Synedra rumpens	28	--	85	57
Synedra rumpens var. *familiaris*	28	--	--	--
Synedra ulna	--	--	--	28

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 5-29-85			
	Surface	Middle	Bottom	Composite
CHRYSOPHYTA--Continued				
CHRYSOPHYCEAE (Golden-brown algae)				
Chrysochromulina parva	170	--	--	--
Chrysococcus radians	280	370	420	710
Dinobryon divergens	--	--	28	85
Mallomonas sp. 1	--	--	28	85
Mallomonas sp. 2	--	--	--	140
Small chrysophyte flagellate	--	110	200	480
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Chroomonas sp.	--	85	--	--
Cryptomonas erosa	57	85	--	85
Cryptomonas marsonii	--	28	110	140
Cryptomonas ovata	--	--	--	28
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Aphanocapsa delicatissima	740	230	--	1,800
Dactylococcopsis fascicularis	--	--	--	57
Oscillatoria limnetica	450	--	680	340
EUGLENOPHYTA (Euglenoids)				
Euglena sp.	28	--	--	--
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Peridinium inconspicua	28	--	--	--
Total	6,200	5,100	7,100	11,000
Number of taxa	22	21	21	29
Diversity index	3.28	2.94	3.45	3.81

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 6-12-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Ankistrodesmus falcatus var. *acicularis*	--	--	140	57
Chlorococcum sp.	240	460	110	620
Cosmarium sp.	--	57	85	28
Elakatothrix gelatinosa?	--	57	--	57
Gonium sociale	--	--	110	--
Oocystis parva	--	--	--	28
Pediastrum tetras	--	--	110	--
Scenedesmus serratus	85	--	--	110
Scenedesmus sp.	85	--	57	57
Selenastrum minutum	14	140	85	200
Tetraedron minimum	160	140	85	170
Treubraia crassispina?	14	--	--	--
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella kutzingiana	200	430	200	600
Cyclotella stelligera	--	--	--	14
Melosira italica	210	110	--	110
Rhizosolenia eriensis	43	--	85	57
Pennales				
Diatoma tenue var. *elongatum*	--	--	--	85
Nitzschia intermedia	--	--	57	--
Nitzschia palea	--	--	57	--
Nitzschia romana	--	--	28	--
Surirella ovalis	--	--	14	--
Synedra acus	57	57	28	110
Synedra radians	--	140	340	200
Synedra rumpens	--	--	85	57
CHRYSOPHYCEAE (Golden-brown algae)				
Chrysococcus radians	14	57	170	57
Dinobryon divergens	14	--	--	--
Mallomonas sp.	28	28	57	140
Small chrysophyte flagellate	99	1,200	400	800

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 6-12-85			
	Surface	Middle	Bottom	Composite
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Chroomonas sp.	--	110	110	57
Cryptomonas erosa	110	540	230	230
Cryptomonas ovata	--	28	--	28
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Aphanocapsa delicatissima	280	--	170	110
Chroococcus limneticus?	--	28	--	28
Dactylococcopsis fascicularis	--	28	--	--
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Peridinium aciculiferum	28	--	--	--
Peridinium inconspicua	14	--	--	--
Total	1,700	3,600	2,800	4,000
Number of taxa	18	17	23	25
Diversity index	3.59	3.13	4.16	3.84

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 6-28-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Chlorococcum sp. 1	140	260	310	--
Chlorococcum sp. 2	140	--	--	280
Mesotaenium sp.	--	--	28	--
Oocystis lacustris	28	--	--	--
Oocystis sp.	28	--	--	57
Scenedesmus quadricauda	--	--	570	110
Scenedesmus serratus	170	230	260	570
Scenedesmus sp.	--	57	110	--
Selenastrum minutum	57	57	28	28
Tetraedron minimum	260	260	110	260
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella kutzingiana	110	260	170	400
Rhizosolenia eriensis	28	--	--	--
Pennales				
Nitzschia romana	--	--	28	--
Synedra rumpens var. *familiaris*	--	--	28	--
CHRYSOPHYCEAE (Golden-brown algae)				
Chromulina sp.	28	85	--	85
Chrysochromulina parva	200	230	--	260
Kephyrion sp.	28	--	--	--
Mallomonas sp.	28	28	28	28
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Chroomonas sp.	--	--	85	--
Cryptomonas erosa	57	1,700	850	570
Cryptomonas marsonii	28	57	--	57
Cryptomonas ovata	--	--	--	85
Cryptomonas sp.	57	--	--	28

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 6-28-85			
	Surface	Middle	Bottom	Composite
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Chroococcus limneticus	--	--	28	57
Lyngbya nana	--	--	--	340
Synechococcus elongatus	--	85	--	--
EUGLENOPHYTA (Euglenoids)				
Trachelomonas planktonica	--	--	28	--
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Ceratium hirundinella[1]	21	21	21	21
Peridinium inconspicua	57	--	--	--
Peridinium sp.	57	--	28	--
Total	1,500	3,300	2,700	3,200
Number of taxa	19	13	17	17
Diversity index	3.79	2.56	3.06	3.46

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 7-10-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Chlorella ellipsoidea	--	--	85	--
Chlorococcum sp.	140	28	85	--
Gloecystis sp.	--	57	--	--
Mesotaenium sp.	--	--	--	28
Scenedesmus abundans	--	--	400	--
Scenedesmus quadricauda	110	110	--	280
Scenedesmus serratus	940	970	1,200	--
Scenedesmus sp.	--	--	57	1,100
Schroederia setigera	--	--	--	28
Selenastrum minutum	--	28	--	85
Sphaerocystis schroeteri	--	340	450	--
Tetraedron minimum	57	140	--	110
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella bodanica	--	57	--	--
Cyclotella kutzingiana	230	170	85	140
Cyclotella ocellata	--	--	28	--
Rhizosolenia eriensis	--	--	57	57
Pennales				
Asterionella formosa	--	--	230	--
Caloneis ventricosa	--	--	7	--
Fragilaria crotonensis	--	--	--	28
Nitzschia acicularis	--	--	28	28
Synedra radians	--	28	--	--
CHRYSOPHYCEAE (Golden-brown algae)				
Chromulina sp.	280	170	230	280
Chrysochromulina parva	5,100	200	--	710
Kephyrion sp.	340	--	--	--
Mallomonas globosa	28	28	--	--
Mallomonas sp.	28	230	57	230
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Chilomonas sp. 1	--	--	--	57
Chilomonas sp. 2	--	--	--	28
Cryptomonas erosa	140	4,100	1,700	2,000
Cryptomonas marsonii	--	110	110	--
Cryptomonas sp.	85	--	--	140

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 7-10-85			
	Surface	Middle	Bottom	Composite
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Aphanocapsa delicatissima	--	--	570	--
Aphanothece sp.	--	--	57	--
Chroococcus dispersus	--	--	340	--
Chroococcus limneticus	570	--	--	57
Dactylococcopsis fasciculatus	28	--	--	--
Lyngbya nana	--	--	--	400
EUGLENOPHYTA (Euglenoids)				
Trachelomonas sp.	--	--	--	28
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Ceratium hirundinella[1]	51	51	51	51
Peridinium inconspicua	--	85	--	28
Peridinium sp.	--	28	--	--
Total	8,100	6,900	5,800	5,900
Number of taxa	15	19	20	22
Diversity index	2.09	2.34	3.25	3.17

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 7-24-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Chlamydomonas sp.	71	85	--	--
Chlorococcum sp.	28	14	--	14
Cosmarium sp.	--	--	14	--
Gloecystis sp.	--	14	--	--
Golenkinia radiata	--	--	--	14
Mesotaenium sp.	--	14	--	--
Oocystis sp.	--	43	--	--
Scenedesmus quadricauda	--	28	--	--
Scenedesmus serratus	800	1,300	210	270
Tetraedron minimum	200	99	28	43
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella kutzingiana	14	85	--	43
Melosira italica	57	180	--	--
Rhizosolenia eriensis	--	14	--	14
Pennales				
Fragilaria pinnata	--	--	--	85
Navicula heufleri	--	--	--	14
Nitzschia acicularis	--	--	--	14
Nitzschia palea	--	--	14	--
Synedra radians	--	14	--	--
Synedra rumpens var. *familiaris*	--	--	--	28
CHRYSOPHYCEAE (Golden-brown algae)				
Chrysochromulina parva	430	--	--	43
Dinobryon divergens	--	110	--	71
Mallomonas sp.	280	300	230	180
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Chroomonas sp.	85	910	200	230
Cryptomonas erosa	140	200	360	310
Cryptomonas marsonii	130	14	85	180
Nephroselmis olivacea	43	--	--	14

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 7-24-85			
	Surface	Middle	Bottom	Composite
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Aphanocapsa delicatissima------	--	--	--	2,300
Oscillatoria sp.----------	--	110	--	--
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Ceratium hirundinella[1]---------	480	480	480	480
Gymnodinium sp.----------	14	--	--	--
Peridinium inconspicuum--------	--	28	--	14
Peridinium sp.----------	28	57	71	85
Total----------	2,800	4,100	1,700	4,400
Number of taxa----------	15	21	10	21
Diversity index----------	3.10	3.12	2.74	2.68

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 8-8-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Carteria sp.	28	--	--	--
Chlamydomonas sp.	14	57	--	43
Chlorococcum sp.	43	43	43	43
Closterium sp.	--	14	--	--
Elakotothrix viridis	28	--	--	--
Golenkinia radiata	340	200	--	85
Mesotaenium sp.	71	--	--	--
Scenedesmus armatus	--	57	--	--
Scenedesmus serratus	1,300	980	170	1,100
Selenastrum minutum	--	14	--	--
Tetraedron minimum	43	--	--	110
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella kutzingiana	14	14	--	28
Melosira italica	--	--	200	--
Rhizosolenia eriensis	71	14	57	28
Pennales				
Asterionella formosa	--	--	140	140
Nitzschia palea	14	--	--	--
Nitzschia paleacea	--	--	14	--
Synedra rumpens	--	--	28	--
CHRYSOPHYCEAE (Golden-brown algae)				
Chrysochroimulina parva	57	--	--	14
Dinobryon divergens	520	330	28	360
Mallomonas sp.	71	--	--	28
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Chroomonas sp.	85	270	99	130
Cryptomonas erosa	71	85	130	260
Cryptomonas marsonii	28	14	28	14
Cryptomonas ovata	14	--	--	--
Cryptomonas reflexa	--	14	--	--
Cyathomonas truncata	--	14	--	--

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 8-8-85			
	Surface	Middle	Bottom	Composite
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Aphanocapsa delicatissima------	800	1,000	85	2,200
Aphanotheca sp.----------	1,100	71	--	--
Chroococcus dispersus----------	14	28	85	--
Oscillatoria sp.----------	--	--	110	--
Synechococcus elongatus--------	--	--	--	14
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Ceratium hirundinella[1]---------	1,100	1,100	1,100	1,100
Peridinium aciculiferum--------	14	--	--	28
Peridinium inconspicuum--------	--	--	--	14
Peridinium sp.----------	14	--	--	28
Total----------	5,900	4,300	2,300	5,800
Number of taxa----------	24	19	15	20
Diversity index----------	3.15	2.89	2.83	2.72

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 8-22-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Ankistrodesmus braunii	--	--	--	28
Ankistrodesmus falcatus var. *acicularis*	14	--	--	--
Carteria sp.	14	--	--	--
Chlamydomonas spp.	14	--	28	28
Chlorococcum sp.	57	140	110	28
Dictyosphaerium sp.	--	400	--	--
Elakotothrix viridis	--	--	--	28
Golenkinia radiata	14	--	--	--
Mesotaenium sp.	--	1,500	1,300	1,200
Oocystis sp.	43	--	--	28
Scenedesmus serratus	1,200	280	170	110
Schroederia setigera	28	170	28	57
Tetraedron minimum	--	28	--	--
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella kutzingiana	14	57	--	28
Melosira italica	--	110	--	280
Rhizosolenia eriensis	--	57	110	28
Pennales				
Anomoeoneis vitrea	14	--	--	--
Navicula pygmaea	--	28	--	--
Nitzschia acicularis	14	--	--	--
Nitzschia sinuata var. *tabellaria*	--	--	--	28
Synedra radians	--	--	28	28
Synedra rumpens var. *familiaris*	14	--	--	--
CHRYSOPHYCEAE (Golden-brown algae)				
Chrysochroimulina parva	--	--	57	57
Dinobryon divergens	14	--	--	--
Hyalobryon sp.	--	--	57	--
Kephyrion sp.	14	28	--	28
Mallomonas akrokomas var. *parvula*	--	--	85	57
Mallomonas ovum	71	85	--	57
Salpingoeca sp.	--	--	28	--

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 8-22-85			
	Surface	Middle	Bottom	Composite
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Chroomonas sp.	110	230	85	200
Cryptomonas erosa	43	170	450	230
Cryptomonas marsonii	14	--	110	--
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Aphanocapsa delicatissima	1,500	740	1,300	--
Aphanotheca sp.	57	2,100	--	--
Chroococcus dispersus	--	110	28	--
Synechococcus elongatus	57	--	340	85
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Ceratium hirundinella[1]	2,900	2,900	2,900	2,900
Peridinium aciculiferum	--	--	--	28
Total	6,200	9,100	7,200	5,500
Number of taxa	22	18	18	22
Diversity index	2.18	2.91	2.70	2.45

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 9-4-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Carteria sp.	--	14	--	--
Chlamydomonas spp.	--	--	--	57
Chlorococcum sp.	14	14	14	14
Gloeocystis sp.	--	--	14	--
Mesotaenium sp.	57	130	110	85
Oocystis sp.	--	14	--	57
Pediastrum tetras	--	--	--	57
Scenedesmus armatus	--	--	57	--
Scenedesmus bijuga	--	--	14	--
Scenedesmus quadricauda	--	28	--	--
Scenedesmus serratus	28	--	14	57
Schroederia setigera	--	--	28	--
Selenastrum minutum	--	14	14	--
Tetraedron minimum	--	14	--	14
Tetraedron sp.	--	--	14	--
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella kutzingiana	71	57	43	130
Cyclotella meneghiniana	--	--	14	--
Melosira italica	--	--	230	280
Rhizosolenia eriensis	14	14	--	28
Pennales				
Amphipleura pellucida	--	--	14	--
Navicula capitata	--	--	--	14
Navicula pygmaea	--	14	--	--
Navicula secreta var. *apiculata*	--	--	14	--
Synedra radians	140	14	--	14
Synedra rumpens var. *familiaris*	--	--	14	14
CHRYSOPHYCEAE (Golden-brown algae)				
Chrysochromulina parva	160	71	--	140
Kephyrion sp.	--	28	--	--
Mallomonas akrokomas var. *parvula*	14	14	160	28

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 9-4-85			
	Surface	Middle	Bottom	Composite
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Chroomonas sp.	28	640	71	300
Cryptomonas erosa	28	190	110	110
Cryptomonas marsonii	14	28	14	14
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Aphanocapsa delicatissima	330	--	--	770
Aphanotheca sp.	3,100	8,600	1,300	1,600
Microcystis sp.	--	980	--	--
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Ceratium hirundinella[1]	3,600	3,600	3,600	3,600
Total	7,600	14,000	5,900	7,400
Number of taxa	14	20	21	21
Diversity index	1.73	1.76	1.91	2.45

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 9-18-85			
	Surface	Middle	Bottom	Composite
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Chlamydomonas sp.	--	--	--	85
Chlorococcum sp. 1	170	--	--	110
Chlorococcum sp. 2	57	140	57	110
Golenkinia radiata	--	--	--	28
Mesotaenium sp.	110	110	57	57
Oocystis sp.	28	--	--	57
Scenedesmus armatus	28	--	57	--
Scenedesmus serratus	--	28	--	57
Selenastrum minutum	--	28	--	28
Tetraedron sp.	--	--	--	28
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella kutzingiana	1,800	1,300	820	3,200
Melosira italica	--	--	--	110
Rhizosolenia eriensis	260	--	28	57
Pennales				
Achnanthes minutissima	--	--	--	28
Nitzschia microcephala	28	--	--	--
Synedra radians	--	28	--	85
Synedra rumpens var. *familiaris*	--	--	--	28
CHRYSOPHYCEAE (Golden-brown algae)				
Chrysochromulina parva	400	--	--	280
Kephyrion sp.	--	--	57	57
Mallomonas sp.	28	--	57	--
Chrysophyte flagellate	--	140	57	57
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Chroomonas sp.	280	310	170	310
Cryptomonas erosa	28	28	--	28
Cryptomonas marsonii	--	28	--	57

Table 4.--*Taxa, densities, and diversity indices for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 9-18-85			
	Surface	Middle	Bottom	Composite
CYANOPHYTA				
MYXOPHYCEAE (Blue-green algae)				
Aphanothece sp.	5,500	3,500	230	6,400
Microcystis sp.	740	--	--	--
Oscillatoria sp.	280	--	--	--
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Ceratium hirundinella[1]	990	990	990	990
Total	11,000	6,600	2,600	12,000
Number of taxa	16	12	11	23
Diversity index	2.40	2.06	2.42	2.20

[1]Collected in zooplankton sample. See "Methods of Data Collection and Analyses" section for additional information.

Table 5.--*Chlorophyll a concentrations for phytoplankton samples collected in the euphotic zone at Site A, 1985*

[Values from May 15, 23, and 29, 1985, were determined using methanol extraction]

Sampling dates	Type of sample	Chlorophyll a (micrograms per liter)
04-17-85	Surface	16.8
	Middle	14.0
	Bottom	10.5
	Composite	9.8
05-15-85	Surface	5.3
	Middle	10.7
	Bottom	6.7
	Composite	5.0
05-23-85	Composite	6.5
05-29-85	Surface	11.2
	Middle	7.7
	Bottom	8.2
	Composite	20.4
06-12-85	Surface	2.0
	Middle	2.2
	Bottom	2.1
	Composite	2.6
06-20-85	Composite	13.5
06-28-85	Surface	11.0
	Middle	10.0
	Bottom	12.9
	Composite	8.5
07-03-85	Composite	19.2
07-10-85	Surface	10.0
	Middle	14.2
	Bottom	9.5
	Composite	12.6
07-17-85	Composite	2.5
07-24-85	Surface	2.8
	Middle	3.2
	Bottom	1.2
	Composite	2.0

Table 5.--*Chlorophyll a concentrations for phytoplankton samples collected in the euphotic zone at Site A, 1985*--Continued

Sampling dates	Type of sample	Chlorophyll a (micrograms per liter)
07-31-85	Composite	2.3
08-08-85	Surface	3.5
	Middle	2.5
	Bottom	1.9
	Composite	2.7
08-14-85	Composite	3.5
08-22-85	Surface	3.7
	Middle	6.7
	Bottom	6.5
	Composite	1.9
08-29-85	Composite	1.9
09-04-85	Surface	1.9
	Middle	5.5
	Bottom	6.7
	Composite	3.1
09-11-85	Composite	2.9
09-18-85	Surface	3.5
	Middle	2.8
	Bottom	1.1
	Composite	4.3
09-25-85	Composite	2.8

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Algal-Growth Potential

Table 6.--*Algal-growth-potential analyses for Site A, 1983-84*

[mg/L, milligrams per liter; P, phosphorus; N, nitrogen; cells/mL, cells per milliliter; --, no data]

Sampling dates	Control	Nutrient spikes			
		(+0.005 mg/LP +0.075 mg/LN)	(+0.05 mg/LP)	(+1.0 mg/LN)	(+0.05 mg/LP +1.0 mg/LN)
Maximum specific growth rate (day^{-1})					
06-17-83	1.34	1.10	--	--	--
08-09-83	0.82	1.00	--	--	--
09-13-83	0.92	0.41	0.82	0.62	0.75
10-05-83	1.54	1.63	1.85	2.19	1.76
02-02-84	1.10	0.92	1.37	0.78	0.84
03-21-84	0.81	1.05	0.46	1.20	1.39
06-07-84	1.24	1.70	0.88	1.26	1.27
08-03-84	0.67	1.14	0.92	0.67	1.11
09-26-84	1.21	1.03	0.74	1.19	0.70
Maximum standing crop (cells/mL)$\times 10^5$					
06-17-83	0.91	1.60	--	--	--
08-09-83	0.83	4.42	--	--	--
09-13-83	1.46	3.29	4.97	0.77	3.62
10-05-83	0.25	0.81	1.47	0.53	6.04
02-02-84	0.20	2.58	0.13	0.11	5.44
03-21-84	0.35	7.07	0.15	0.25	8.66
06-07-84	0.19	3.08	3.53	3.84	5.22
08-03-84	2.19	21.93	4.66	3.82	7.26
09-26-84	0.26	1.73	0.29	0.29	3.07
Maximum standing crop [dry weight--(mg/L)$\times 10^3$]					
06-17-83	2.41	4.25	--	--	--
08-09-83	2.19	11.71	--	--	--
09-13-83	3.87	8.72	13.17	2.03	9.60
10-05-83	0.67	2.15	3.88	1.40	16.01
02-02-84	0.52	6.83	0.34	0.29	14.41
03-21-84	0.92	18.73	0.41	0.65	22.96
06-07-84	0.51	8.16	9.35	10.19	13.82
08-03-84	5.80	58.11	12.34	10.12	19.24
09-26-84	0.69	4.58	0.76	0.77	8.14

Zooplankton

Table 7.--*Taxa and densities for zooplankton samples collected from photic or total-depth tows at Site A, 1983-85*

[Densities, in organisms per cubic meter, are rounded to two significant figures (Greeson and others, 1977); (1), first sample; (2), replicate sample; --, organism not found]

PHYLUM CLASS Order *Genus species*	Sampling dates							
	8-9-83	9-13-83	10-5-83		2-2-84		3-21-84	
	Photic tow	Photic tow	Photic tow		Photic tow		Photic tow	
			(1)	(2)	(1)	(2)	(1)	(2)
ARTHROPODA								
CRUSTACEA								
Cladocera								
Bosmina longirostris	750	94,000	49,000	50,000	340	--	--	1,600
Daphnia rosea	380	--	--	--	520	170	170	340
Copepoda								
Cyclops bicuspidatus thomasi	5,800	3,100	6,900	6,900	4,000	2,400	6,200	9,500
Diaptomus ashlandi	180	--	--	--	--	--	--	--
nauplii	4,100	4,400	16,000	14,000	8,400	4,300	2,900	4,800
PROTOZOA								
Difflugia sp.	1,900	--	--	--	--	170	--	--
ROTATORIA								
Ascomorpha sp.	--	--	12,000	16,000	--	--	--	--
Asplanchna sp.	560	10,000	2,800	3,400	1,900	1,700	520	860
Brachionus sp.	--	--	--	--	--	--	170	690
Filinia longiseta	--	--	--	--	--	--	--	--
Kellicottia longispina	380	--	--	--	--	--	--	--
Keratella cochlearis	1,300	1,900	690	--	130,000	79,000	4,100	9,000
Keratella quadrata	560	--	690	--	--	--	--	--
Monostyla sp.	--	2,500	--	--	--	--	--	--

Table 7.--*Taxa and densities for zooplankton samples collected from photic or total-depth tows at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates							
	8-9-83	9-13-83	10-5-83		2-2-84		3-21-84	
	Photic tow	Photic tow	Photic tow		Photic tow		Photic tow	
			(1)	(2)	(1)	(2)	(1)	(2)
ROTATORIA--Continued								
Notholca sp.	--	--	--	--	--	--	520	860
Philodina sp.	--	--	690	1,400	--	--	--	170
Polyarthra sp.	180	56,000	49,000	33,000	11,000	7,800	3,300	10,000
Testudinella sp.	--	--	--	--	--	--	--	170
Trichocera sp.	1,100	--	--	--	--	--	--	--
Total	17,000	170,000	140,000	120,000	160,000	96,000	18,000	38,000
Number of taxa	11	6	8	6	6	6	7	10

Table 7.--*Taxa and densities for zooplankton samples collected from photic or total-depth tows at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates							
	6-7-84		8-1-84		9-26-84		4-3-85	
	Total-depth tow		Total-depth tow		Total-depth tow		Photic tow	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
ARTHROPODA								
CRUSTACEA								
Cladocera								
Bosmina longirostris	11,000	12,000	860	860	4,100	1,100	--	260
Daphnia rosea	13,000	16,000	3,900	1,700	580	290	--	--
Copepoda								
Cyclops bicuspidatus thomasi	11,000	18,000	34,000	27,000	9,100	2,500	1,800	1,800
Diaptomus ashlandi	--	--	1,700	2,200	780	970	--	--
nauplii	56,000	59,000	16,000	19,000	4,700	1,700	3,600	6,800
PROTOZOA								
Difflugia sp.	--	--	--	--	1,400	1,500	--	--
ROTATORIA								
Asplanchna sp.	7,300	5,700	--	860	2,500	1,900	6,800	12,000
Brachionus sp.	--	--	--	--	190	97	--	--
Filinia longiseta	1,300	3,600	--	--	390	97	520	520
Kellicottia longispina	--	--	1,300	2,200	580	480	--	1,000
Keratella cochlearis	4,700	1,000	860	1,700	--	190	--	--
Keratella quadrata	860	2,100	--	--	--	--	--	--
Notholca sp.	860	--	--	--	--	--	--	--
Philodina sp.	--	--	--	--	--	--	--	--
Polyarthra sp.	8,200	9,800	14,000	20,000	1,900	1,500	2,900	2,300
Testudinella sp.	--	--	--	--	--	--	--	--

Table 7.--*Taxa and densities for zooplankton samples collected from photic or total-depth tows at Site A, 1983-85*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates							
	6-7-84		8-1-84		9-26-84		4-3-85	
	Total-depth tow		Total-depth tow		Total-depth tow		Photic tow	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Total----------	110,000	130,000	73,000	76,000	26,000	12,000	16,000	25,000
Number of taxa----------	9	8	7	8	10	11	4	6

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*

[Densities, in organisms per cubic meter, are rounded to two significant figures (Greeson and others, 1977); (1), first sample; (2), replicate sample; --, organism not found]

PHYLUM CLASS Order *Genus species*	Sampling date 4-17-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Bosmina longirostris	--	--	74	--
Daphnia rosea	190	--	--	--
Daphnia sp. (immature)	--	--	74	130
Copepoda				
Cyclops bicuspidatus thomasi	5,700	2,300	1,200	1,600
nauplii	1,500	1,000	1,300	1,700
ROTATORIA				
Asplanchna sp.	7,100	3,400	2,700	2,300
Brachionus sp.	--	190	--	--
Filinia longiseta	2,100	1,500	1,300	1,600
Kellicottia longispina	--	--	--	--
Keratella cochlearis	1,000	1,000	440	720
Polyarthra sp.	1,000	380	740	390
Total	19,000	10,000	7,800	8,500
Number of taxa	6	6	7	6

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 5-15-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Bosmina longirostris	210	630	60	60
Daphnia rosea	--	--	120	120
Copepoda				
Cyclops bicuspidatus thomasi	1,500	1,900	190	990
nauplii	12,000	8,200	3,400	4,000
ROTATORIA				
Asplanchna sp.	1,300	--	680	800
Filinia longiseta	840	210	250	1,500
Kellicottia longispina	1,700	210	430	310
Polyarthra sp.	420	630	310	310
Total	18,000	12,000	5,400	8,100
Number of taxa	6	5	7	7

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 5-29-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Bosmina longirostris	4,000	3,200	500	870
Daphnia catawba	--	--	--	60
Daphnia rosea	1,300	--	60	430
Copepoda				
Cyclops bicuspidatus thomasi	12,000	9,300	2,500	3,100
nauplii	14,000	17,000	4,600	7,100
ROTATORIA				
Asplanchna sp.	--	840	--	--
Brachionus sp.	--	210	60	--
Filinia longiseta	--	--	430	370
Keratella cochlearis	2,900	2,300	190	310
Monostyla sp.	--	--	--	60
Polyarthra sp.	1,100	1,300	190	120
Total	35,000	34,000	8,500	12,000
Number of taxa	5	6	7	8

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 6-12-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Bosmina longirostris	12,000	17,000	8,300	6,100
Daphnia catawba	--	160	--	--
Daphnia rosea	4,200	4,700	1,900	1,100
Copepoda				
Cyclops bicuspidatus thomasi	16,000	21,000	13,000	9,400
nauplii	11,000	18,000	12,000	7,700
ROTATORIA				
Asplanchna sp.	--	--	--	90
Filinia longiseta	--	--	90	90
Keratella cochlearis	320	320	280	--
Total	44,000	61,000	36,000	24,000
Number of taxa	4	5	5	5

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 6-28-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Bosmina longirostris	14,000	7,400	2,200	19,000
Daphnia rosea	11,000	13,000	8,100	6,300
Copepoda				
Cyclops bicuspidatus thomasi	35,000	29,000	16,000	13,000
nauplii	86,000	76,000	29,000	32,000
ROTATORIA				
Keratella cochlearis	530	1,600	200	--
Total	150,000	130,000	56,000	70,000
Number of taxa	4	4	4	3

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 7-10-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Bosmina longirostris	900	--	2,100	2,100
Daphnia rosea	16,000	11,000	7,500	5,600
Copepoda				
Cyclops bicuspidatus thomasi	73,000	51,000	26,000	30,000
nauplii	11,000	9,900	6,300	10,000
Total	100,000	72,000	42,000	48,000
Number of taxa	3	2	3	3

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 7-24-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Bosmina longirostris	--	--	400	--
Daphnia rosea	8,800	28,000	5,000	11,000
Copepoda				
Cyclops bicuspidatus thomasi	27,000	45,000	16,000	23,000
nauplii	9,100	4,600	5,000	5,000
Total	45,000	78,000	26,000	39,000
Number of taxa	2	2	3	2

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 8-8-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Daphnia rosea	18,000	7,200	9,600	8,600
Leptodora kindtii	--	--	--	200
Copepoda				
Cyclops bicuspidatus thomasi	18,000	17,000	11,000	7,800
nauplii	95,000	86,000	56,000	44,000
ROTATORIA				
Asplanchna sp.	300	--	--	--
Filinia longiseta	600	--	200	400
Keratella cochlearis	--	300	400	--
Platyias quadricornis	--	300	--	--
Polyarthra sp.	44,000	38,000	46,000	29,000
Total	180,000	150,000	120,000	90,000
Number of taxa	5	5	5	5

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 8-22-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Bosmina longirostris	--	390	--	--
Daphnia rosea	22,000	16,000	7,300	11,000
Leptodora kindtii	--	390	--	--
Sida crystallina	2,000	16,000	590	590
Copepoda				
Cyclops bicuspidatus thomasi	24,000	24,000	14,000	11,000
Diaptomus ashlandi	--	--	200	200
nauplii	25,000	33,000	14,000	12,000
ROTATORIA				
Brachionus sp.	390	--	--	--
Keratella cochlearis	--	--	390	--
Polyarthra sp.	7,900	7,900	3,900	5,500
Total	81,000	98,000	40,000	40,000
Number of taxa	5	6	6	5

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 9-4-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Daphnia rosea	4,700	1,600	2,600	1,200
Sida crystallina	--	--	390	590
Copepoda				
Cyclops bicuspidatus thomasi	17,000	10,000	10,000	13,000
Diaptomus ashlandi	11,000	6,700	2,400	2,000
nauplii	28,000	26,000	19,000	21,000
ROTATORIA				
Keratella cochlearis	390	1,200	--	--
Polyarthra sp.	2,000	6,700	--	1,800
Total	63,000	52,000	34,000	40,000
Number of taxa	5	5	4	5

Table 8.--*Taxa and densities for zooplankton samples collected from photic and total-depth tows at Site A, 1985*--Continued

PHYLUM CLASS Order *Genus species*	Sampling date 9-18-85			
	Photic tow		Total-depth tow	
	(1)	(2)	(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Daphnia rosea	1,300	1,700	1,300	420
Sida crystallina	840	2,100	--	840
Copepoda				
Cyclops bicuspidatus thomasi	15,000	14,000	12,000	17,000
Diaptomus ashlandi	8,400	17,000	6,300	2,700
nauplii	12,000	15,000	8,400	7,600
ROTATORIA				
Filinia longiseta	--	--	--	210
Keratella cochlearis	2,100	2,900	1,300	420
Polyarthra sp.	15,000	16,000	2,300	1,300
Total	55,000	69,000	32,000	30,000
Number of taxa	6	6	5	7

SITE B

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Profile Measurements

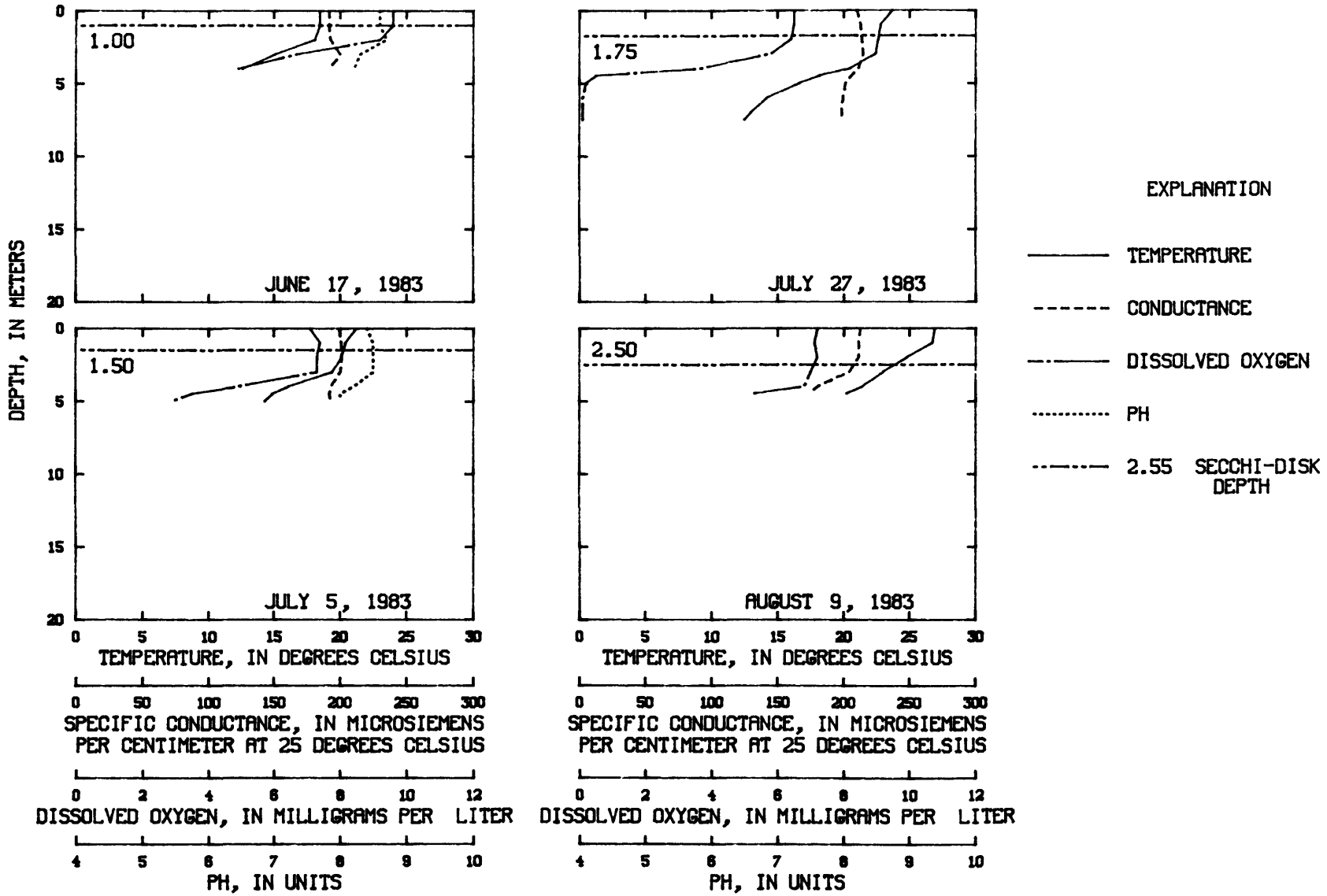

Figure 4.--Profile measurements for Site B, 1983.

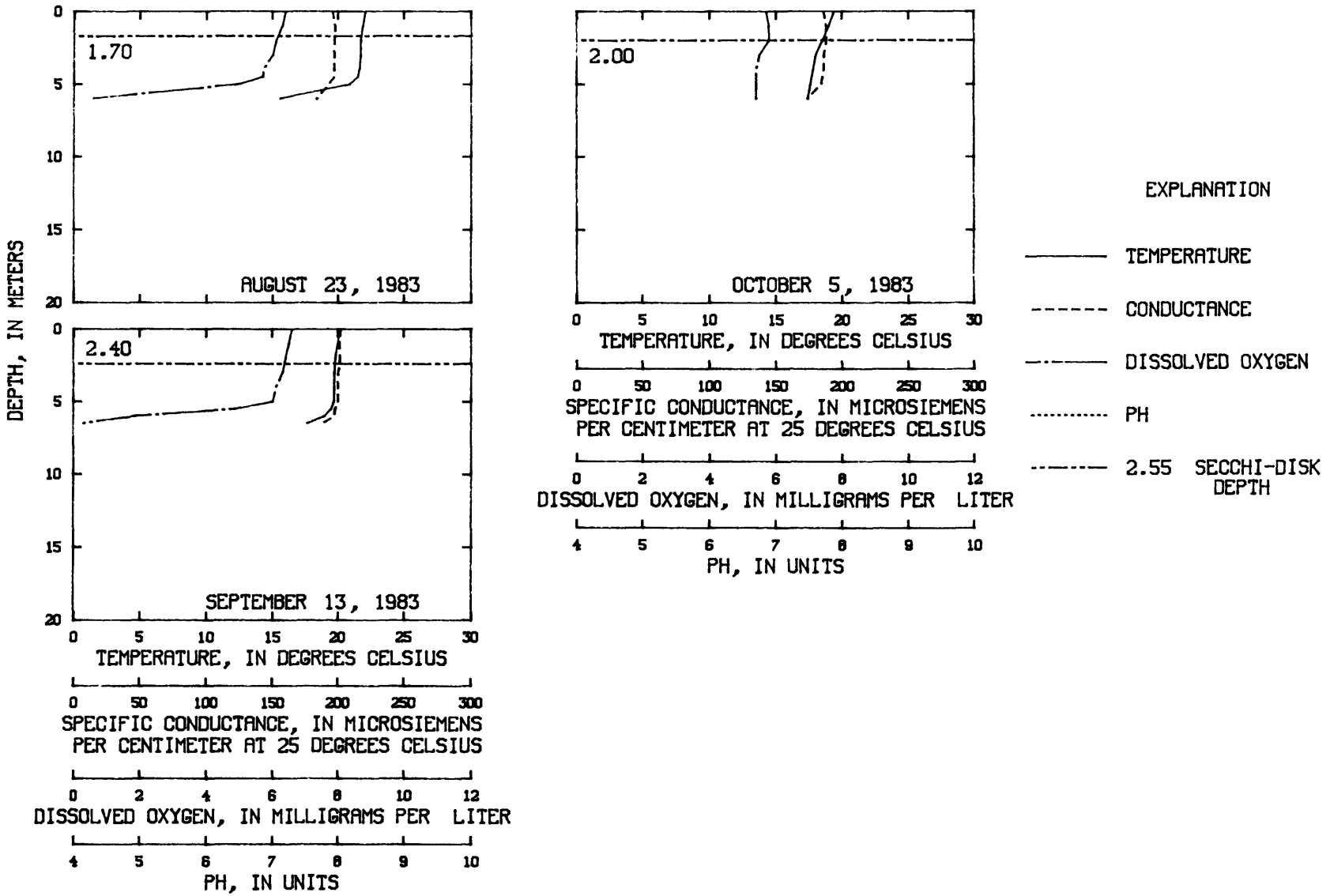

Figure 4.--Profile measurements for Site B, 1983--Continued.

Chemical-Quality Data

Table 9.--*Chemical-quality data for Site B, 1983*

[M, meters; LAB, laboratory; °C, degrees Celsius; MG/L, milligrams per liter; DIS, dissolved; ORG, organic; SUSP, suspended; µG/L, micrograms per liter; RECOV, recoverable; PCI/L, picocuries per liter; --, no data collected]

DATE	TIME	SAMPLING DEPTH (M)	pH, LAB (STANDARD UNITS)	SOLIDS, RESIDUE AT 180 °C, DISSOLVED (MG/L)	CALCIUM, DISSOLVED (MG/L AS CA)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	MAGNESIUM, DISSOLVED (MG/L AS MG)	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SiO_2)	SODIUM, DISSOLVED (MG/L AS NA)
JUN 1983											
17...	1400	1.0	8.7	118	--	--	--	--	--	--	--
AUG											
09...	1640	[1]4.0	8.5	142	22	4.5	0.3	5.5	1.8	7.9	13
OCT											
05...	1200	[1]4.0	7.9	128	--	--	--	--	--	--	--

DATE	SAMPLING DEPTH (M)	SULFATE, DISSOLVED (MG/L AS SO_4)	NITROGEN, NITRITE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, TOTAL (MG/L AS N)	NITROGEN, NO_2+NO_3, DISSOLVED (MG/L AS N)	NITROGEN, NO_2+NO_3, TOTAL (MG/L AS N)	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, DIS (MG/L AS N)	NITROGEN, NH_4 + ORG, SUSP, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)
JUN 1983												
17...	1.0	--	0.02	<0.02	<0.10	<0.10	0.06	0.26	0.5	0.1	0.6	0.02
AUG												
09...	[1]4.0	34	<0.001	0.002	<0.01	<0.01	0.074	0.096	0.6	0.0	0.6	<0.005
OCT												
05...	[1]4.0	--	<0.001	<0.001	<0.01	<0.01	0.097	0.069	0.9	0.2	1.1	<0.005

Table 9.--*Chemical-quality data for Site B, 1983*--Continued

DATE	SAMPLING DEPTH (M)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	ARSENIC, DISSOLVED (µG/L AS AS)	ARSENIC, TOTAL (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	BORON, TOTAL RECOVERABLE (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	CADMIUM, TOTAL RECOVERABLE (µG/L AS CD)	CHROMIUM, DISSOLVED (µG/L AS CR)	CHROMIUM, TOTAL RECOVERABLE (µG/L AS CR)
JUN 1983												
17...	1.0	0.03	0.01	0.02	--	--	--	--	--	--	--	--
AUG												
09...	[1]4.0	<0.005	0.002	0.007	1	<1	20	50	<1	<1	<10	<1
OCT												
05...	[1]4.0	0.013	<0.002	<0.002	--	--	--	--	--	--	--	--

DATE	SAMPLING DEPTH (M)	COPPER, DISSOLVED (µG/L AS CU)	COPPER, TOTAL RECOVERABLE (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	IRON, SUSPENDED, RECOVERABLE (µG/L AS FE)	IRON, TOTAL RECOVERABLE (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)	LEAD, TOTAL RECOVERABLE (µG/L AS PB)	MANGANESE, DISSOLVED (µG/L AS MN)	MANGANESE, SUSPENDED, RECOV (µG/L AS MN)	MANGANESE, TOTAL RECOVERABLE (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)
JUN 1983												
17...	1.0	--	--	80	120	200	--	--	<10	--	10	--
AUG												
09...	[1]4.0	<10	<10	44	30	70	<1	<1	1	20	20	<0.1
OCT												
05...	[1]4.0	--	--	40	120	160	--	--	10	30	40	--

Table 9.--*Chemical-quality data for Site B, 1983*--Continued

DATE	SAMPLING DEPTH (M)	MERCURY, TOTAL RECOVERABLE (µG/L AS HG)	SELENIUM, DISSOLVED (µG/L AS SE)	SELENIUM, SUSPENDED, TOTAL (µG/L AS SE)	SELENIUM, TOTAL (µG/L AS SE)	URANIUM, NATURAL, TOTAL (µG/L AS U)	ZINC, DISSOLVED (µG/L AS ZN)	ZINC, TOTAL RECOVERABLE (µG/L AS ZN)	CARBON, ORGANIC, TOTAL (MG/L AS C)	GROSS BETA, SUSP, TOTAL (PCI/L AS CS-137)	GROSS BETA, SUSP, TOTAL (PCI/L AS SR/YT-90)
JUN 1983											
17...	1.0	--	--	--	--	--	--	--	6.8	--	--
AUG											
09...	[1]4.0	0.2	1	0	1	7.5	<3	10	6.7	0.9	0.9
OCT											
05...	[1]4.0	--	--	--	--	--	--	--	5.0	--	--

[1]Depth-integrated samples were collected throughout the euphotic zone for nutrient analyses. All other samples for chemical analyses were collected at the 1-meter depth.

Biological Data

Phytoplankton and Chlorophyll a

Table 10.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site B, 1983-84*

[Densities, in cells per milliliter, and chlorophyll a, in micrograms per liter (µg/L), are rounded to two significant figures (Greeson and others, 1977); --, organism not found]

PHYLUM CLASS Order *Genus species*	Sampling dates				
	6-17-83	8-9-83	9-13-83	10-5-83	3-21-84
CHLOROPHYTA					
CHLOROPHYCEAE (Green algae)					
Ankistrodesmus falcatus var. *acicularis*	--	--	--	--	180
Ankistrodesmus falcatus var. *mirabilis*	--	140	--	--	--
Chlamydomonas sp.	80	--	--	--	--
Cosmarium sp.	--	69	--	--	--
Dictyosphaerium pulchellum	840	--	--	--	--
Golenkinia radiata	--	--	15	--	--
Nephrocytium limneticum	--	--	--	110	--
Oocystis sp.	--	--	150	--	--
Tetraedron minimum	--	--	45	--	--
CHRYSOPHYTA					
BACILLARIOPHYCEAE (Diatoms)					
Centrales					
Cyclotella kutzingiana	140	380	130	1,800	100
Cyclotella meneghiniana	11	--	18	--	--
Cyclotella pseudostelligera	21	--	--	--	--
Cyclotella stelligera	37	--	--	--	--
Melosira granulata	63	--	--	--	--
Melosira granulata var. *angustissima*	52	--	--	--	--
Melosira italica	--	110	180	1,000	--
Rhizosolenia eriensis	21	1,900	30	340	30
Stephanodiscus sp.	--	--	--	--	50
Pennales					
Achnanthes affinis	--	85	9	--	--
Achnanthes linearis	--	--	27	--	--
Achnanthes microcephala	--	--	9	--	--
Achnanthes minutissima	--	--	27	24	--
Anomoeoneis sp.	--	--	10	--	--
Asterionella formosa	2,200	--	--	7	1,000
Cymbella minuta	--	27	9	--	--
Cymbella minuta var. *latens*	--	--	18	--	--
Cymbella pediculus	--	--	--	2	--

Table 10.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site B, 1983-84*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates				
	6-17-83	8-9-83	9-13-83	10-5-83	3-21-84
CHRYSOPHYTA--Continued					
BACILLARIOPHYCEAE (Diatoms)--Continued					
Pennales--Continued					
Diatoma tenue var. *elongatum*	510	280	73	--	2,100
Diploneis sp.	--	--	9	--	--
Fragilaria capucina	110	27	9	--	--
Fragilaria construens var. *venter*	--	--	9	--	--
Fragilaria crotonensis	1,200	220	9	20	--
Fragilaria vaucheriae	95	--	9	--	30
Gomphonema angustatum	--	--	18	--	--
Hantzschia amphioxys	--	--	18	2	--
Navicula auriculata	--	--	9	--	--
Navicula heufleri	--	--	9	--	--
Navicula minuscula	--	--	91	--	--
Navicula mutica	--	--	9	--	--
Navicula notha	--	27	9	11	50
Navicula pellicosa	--	--	18	--	--
Navicula secreta var. *apiculata*	--	--	27	--	--
Navicula viridula var. *aveame*	--	--	27	--	--
Navicula sp.	--	27	--	--	--
Nitzschia acicularis	--	--	9	11	--
Nitzschia dissipata	--	--	9	--	--
Nitzschia fonticola	--	--	9	--	--
Nitzschia frustulum	19	--	--	--	--
Nitzschia ignorata	--	--	--	--	30
Nitzschia intermedia	--	27	18	--	--
Nitzschia latens	--	--	18	4	--
Nitzschia microcephala	--	--	9	--	--
Nitzschia palea	19	54	9	11	30
Nitzschia paleacea	95	--	--	--	--
Nitzschia sigma	--	--	--	7	--
Nitzschia thermalis	--	--	9	--	--
Nitzschia sp.	19	--	--	2	--
Surirella linearis	--	--	9	--	--
Synedra acus	210	--	27	9	--
Synedra fasciculata	19	--	--	--	--
Synedra minuscula	57	--	--	--	--

Table 10.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site B, 1983-84*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates				
	6-17-83	8-9-83	9-13-83	10-5-83	3-21-84
CHRYSOPHYTA--Continued					
BACILLARIOPHYCEAE (Diatoms)--Continued					
Pennales--Continued					
Synedra radians	2,100	--	35	--	--
Synedra ulna var. *longissima*	--	--	--	--	180
CHRYSOPHYCEAE (Golden-brown algae)					
Dinobryon divergens	100	1,400	150	110	30
Uroglenopsis americana	5,400	--	--	--	--
CRYPTOPHYTA					
CRYPTOPHYCEAE (Cryptomonads)					
Cryptomonas sp.	--	--	--	450	--
CYANOPHYTA					
MYXOPHYCEAE (Blue-green algae)					
Aphanotheca sp.	--	690	--	--	--
Dactylococcopsis sp.	--	69	--	--	--
EUGLENOPHYTA (Euglenoids)					
Euglena sp.	--	--	15	--	--
Trachelomonas volvocina	--	--	15	--	--
PYRROPHYTA					
DINOPHYCEAE (Dinoflagellates)					
Ceratium hirundinella[1]	--	3	16	11	--
Peridinium sp.	--	--	--	--	30
Total	13,000	5,500	1,400	3,900	3,800
Number of taxa	24	18	45	19	13
Diversity index	2.75	2.83	4.65	2.23	2.02
Chlorophyll a (µg/L)	16.8	6.3	2.6	4.5	1.6

[1]Collected in zooplankton sample. See "Methods of Data Collection and Analyses" section for additional information.

Algal-Growth Potential

Table 11.--*Algal-growth-potential analyses for Site B, 1983*

[mg/L, milligrams per liter; P, phosphorus; N, nitrogen; cells/mL, cells per milliliter; --, no data]

Sampling dates	Control	Nutrient spikes			
		(+0.005 mg/LP +0.075 mg/LN)	(+0.05 mg/LP)	(+1.0 mg/LN)	(+0.05 mg/LP +1.0 mg/LN)
Maximum specific growth rate (day^{-1})					
08-09-83	1.21	0.96	--	--	--
09-13-83	1.02	1.05	0.90	0.66	0.84
10-05-83	1.56	2.23	1.92	1.57	2.35
Maximum standing crop (cells/mL)$\times 10^5$					
08-09-83	1.18	4.03	--	--	--
09-13-83	4.52	3.76	4.10	1.65	4.22
10-05-83	0.39	1.34	2.89	0.36	5.53
Maximum standing crop [dry weight--(mg/L)$\times 10^3$]					
08-09-83	3.13	10.68	--	--	--
09-13-83	11.97	9.97	10.86	4.38	11.18
10-05-83	1.04	3.67	7.66	0.94	14.66

Zooplankton

Table 12.--*Taxa and densities for zooplankton samples collected from photic tows at Site B, 1983*

[Densities, in organisms per cubic meter, are rounded to two significant figures (Greeson and others, 1977); (1), first sample; (2), replicate sample; --, organism not found]

PHYLUM CLASS Order *Genus species*	Sampling dates			
	8-9-83	9-13-83	10-5-83	
			(1)	(2)
ARTHROPODA				
CRUSTACEA				
Cladocera				
Bosmina longirostris	1,300	170,000	91,000	93,000
Daphnia rosea	--	--	--	--
Copepoda				
Cyclops bicuspidatus thomasi	7,100	3,900	7,800	3,900
Diaptomus ashlandi	250	--	--	--
nauplii	2,400	2,400	11,000	16,000
PROTOZOA				
Difflugia sp.	3,700	--	--	--
ROTATORIA				
Ascomorpha sp.	--	--	38,000	46,000
Asplanchna sp.	530	23,000	7,800	9,400
Brachionus sp.	--	--	--	--
Kellicottia longispina	780	--	--	--
Keratella cochlearis	8,600	2,400	--	--
Monostyla sp.	--	13,000	--	--
Notholca sp.	--	--	--	--
Philodina sp.	--	--	3,900	3,100
Polyarthra sp.	1,300	65,000	29,000	44,000
Testudinella sp.	--	--	--	--
Trichocera sp.	1,600	--	--	--
Total	28,000	280,000	190,000	220,000
Number of taxa	9	6	6	6

SITE C

page 121 follows

Profile Measurements

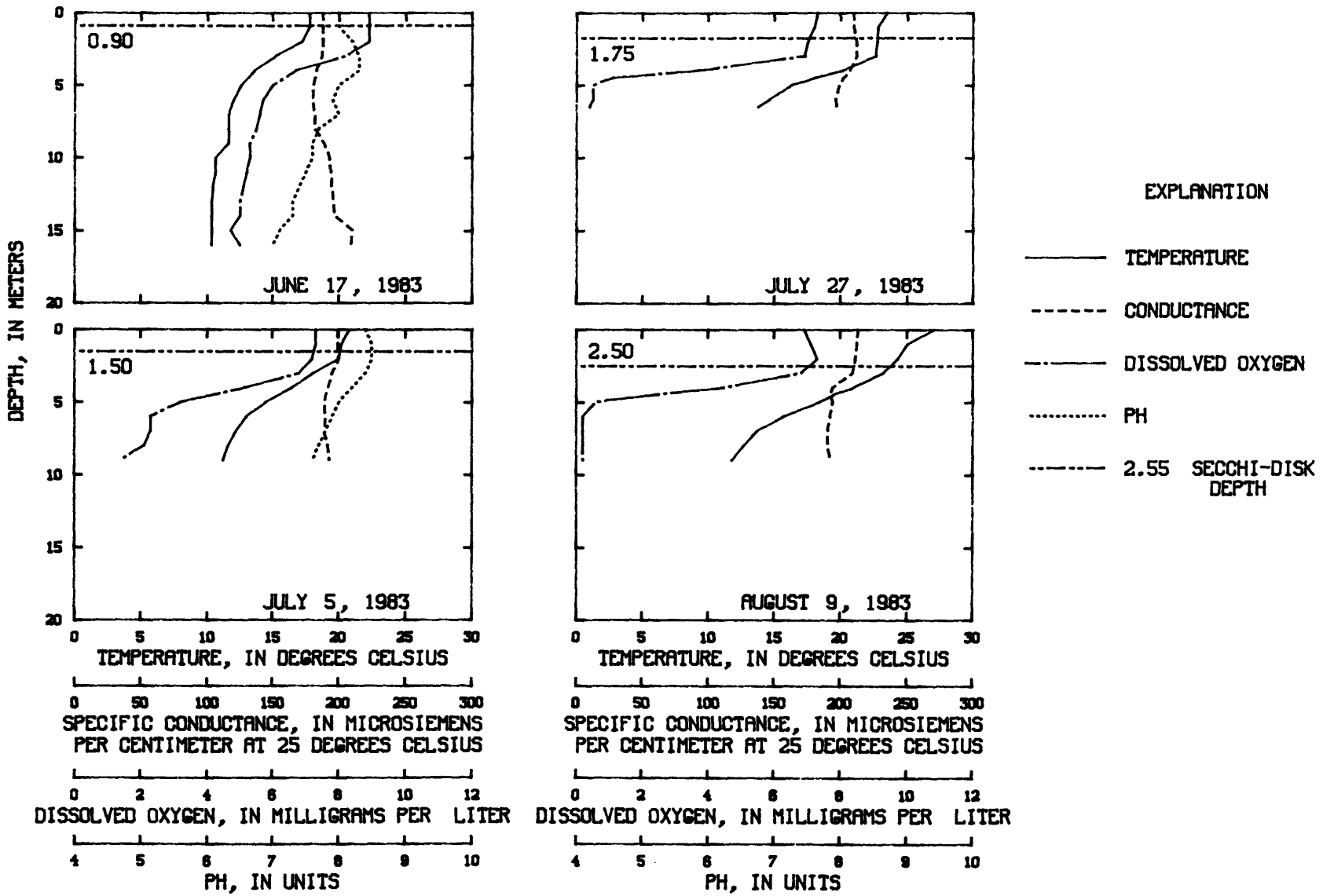

Figure 5.--Profile measurements for Site C, 1983-84.

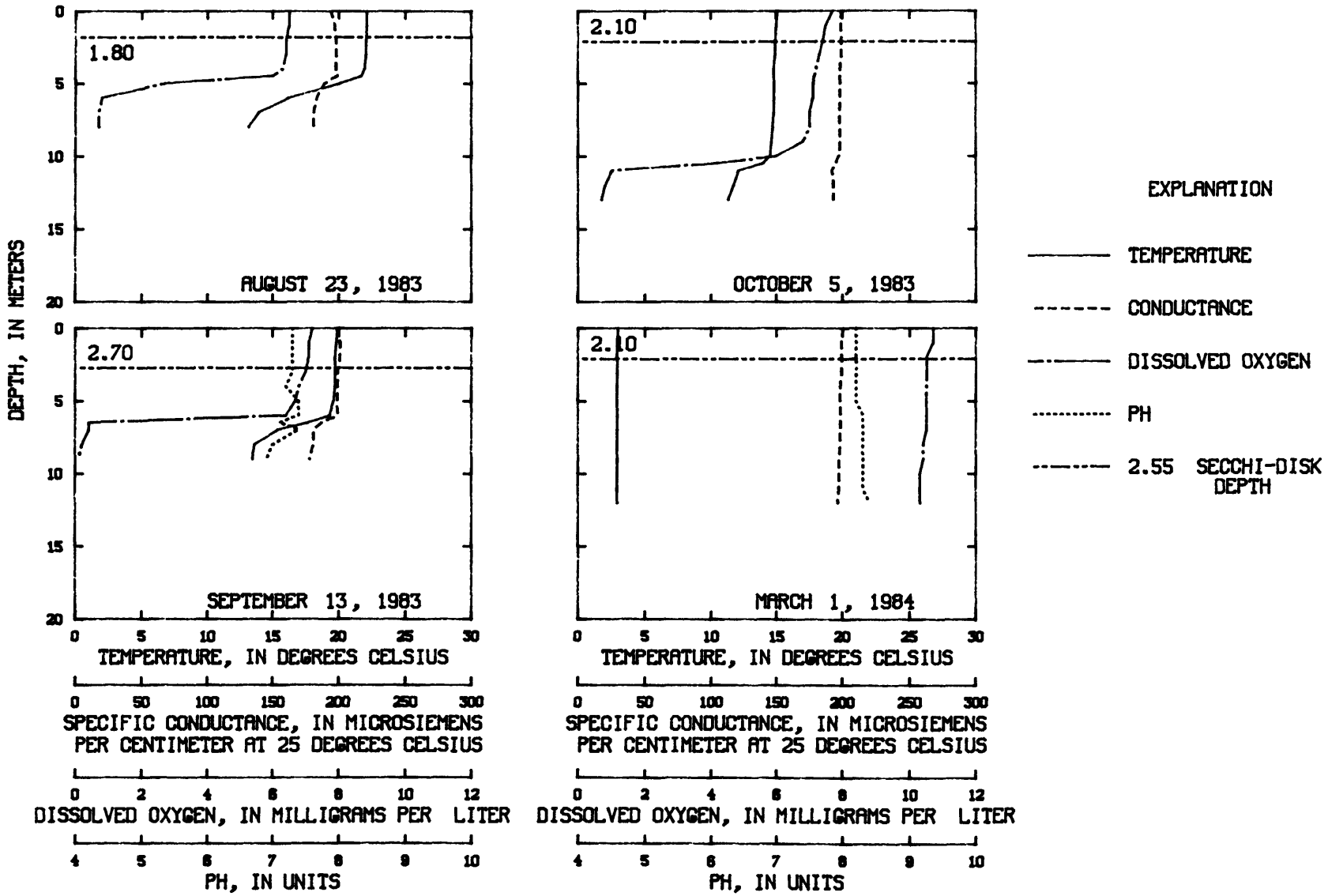

Figure 5.--Profile measurements for Site C, 1983-84--Continued.

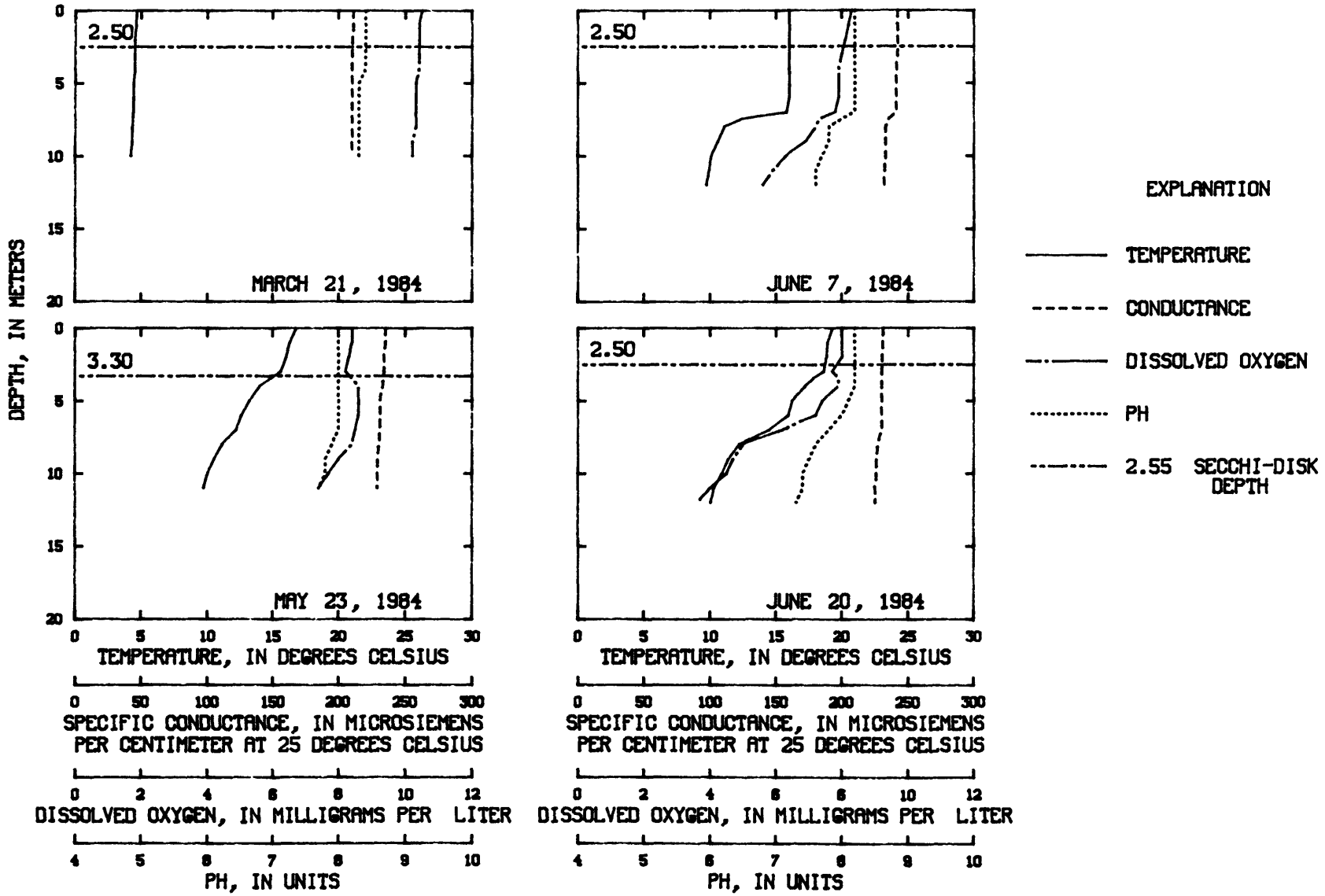

Figure 5.--Profile measurements for Site C, 1983-84--Continued.

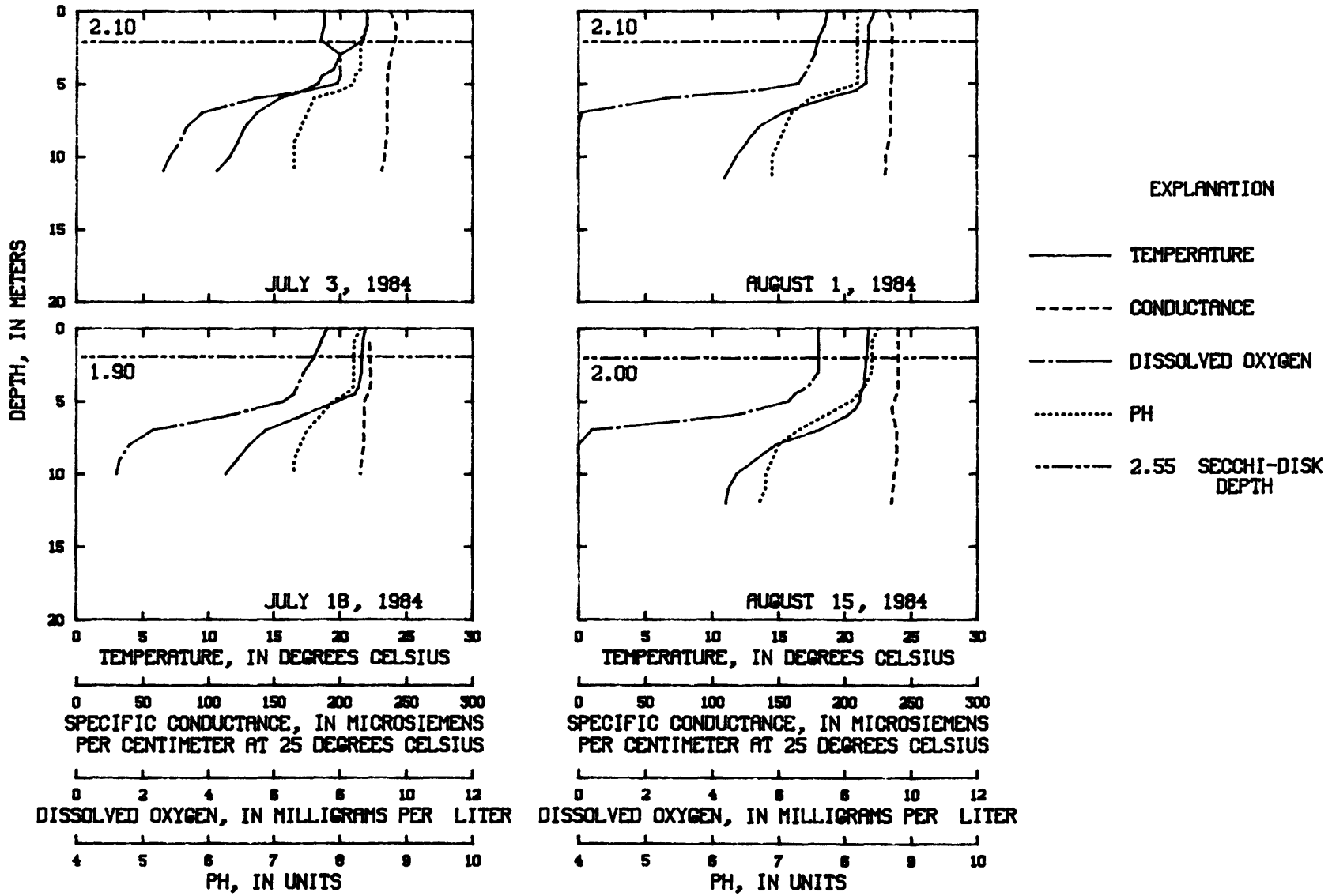

Figure 5.--Profile measurements for Site C, 1983-84--Continued.

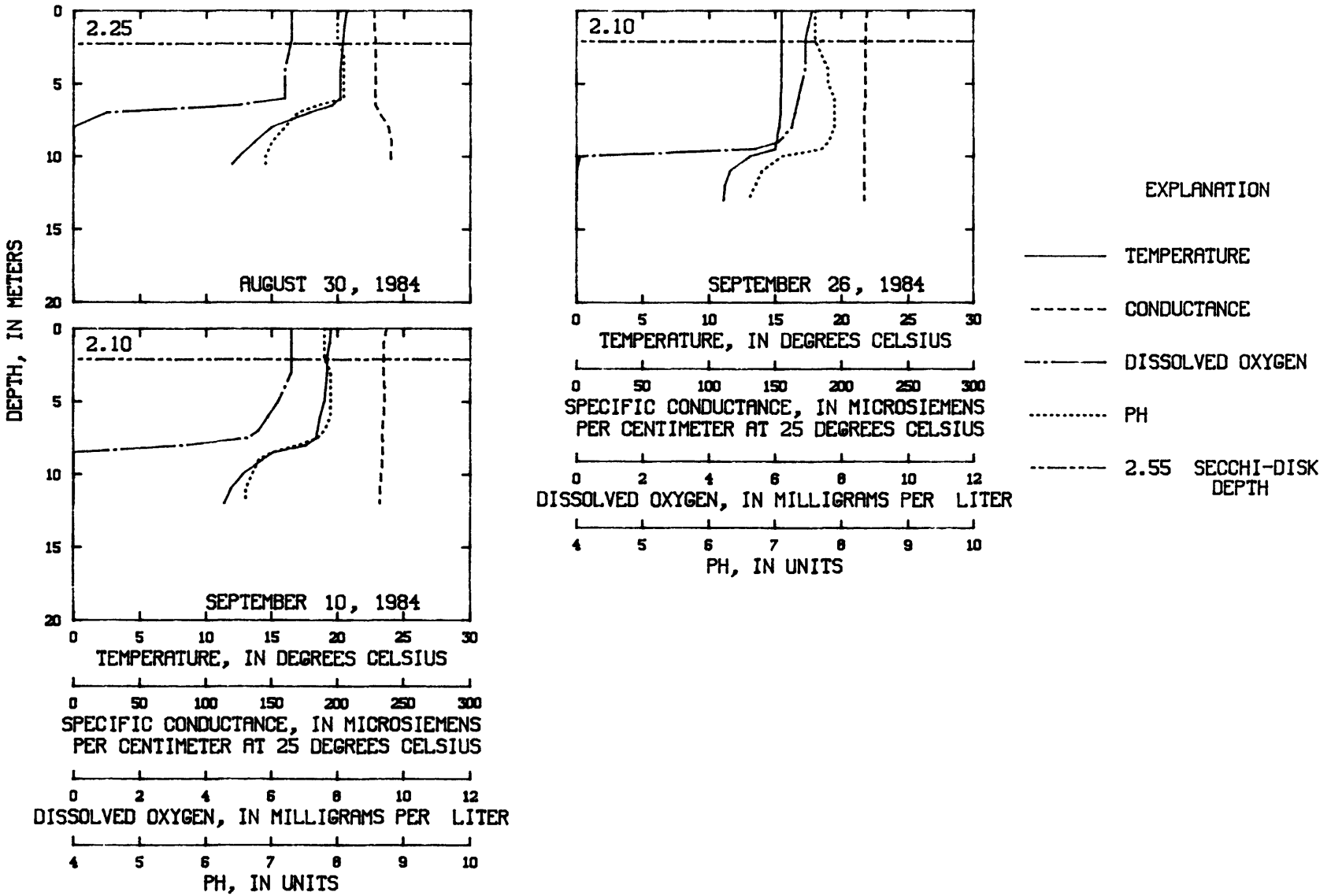

Figure 5.--Profile measurements for Site C, 1983-84--Continued.

Chemical-Quality Data

Table 13.--*Chemical-quality data for Site C, 1983-84*

[M, meters; LAB, laboratory; °C, degrees Celsius; MG/L, milligrams per liter; DIS, dissolved; ORG, organic; SUSP, suspended; µG/L, micrograms per liter; RECOV, recoverable; PCI/L, picocuries per liter; --, no data collected]

DATE	TIME	SAMPLING DEPTH (M)	pH, LAB (STANDARD UNITS)	SOLIDS, RESIDUE AT 180 °C, DISSOLVED (MG/L)	CALCIUM, DISSOLVED (MG/L AS CA)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	MAGNESIUM, DISSOLVED (MG/L AS MG)	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SiO_2)	SODIUM, DISSOLVED (MG/L AS NA)	SULFATE, DISSOLVED (MG/L AS SO_4)
AUG 1983												
09...	1425	[1]5.0	8.5	147	21	4.6	0.3	5.3	1.7	7.8	13	35
09...	1500	7.0	7.2	131	20	4.0	0.3	4.9	1.6	8.9	12	30
OCT												
05...	1110	[1]4.2	7.8	129	--	--	--	--	--	--	--	--
MAR 1984												
21...	1100	1.0	8.1	132	--	--	--	--	--	--	--	--

DATE	SAMPLING DEPTH (M)	NITROGEN, NITRATE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, TOTAL (MG/L AS N)	NITROGEN, NO_2+NO_3, DISSOLVED (MG/L AS N)	NITROGEN, NO_2+NO_3, TOTAL (MG/L AS N)	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, DIS (MG/L AS N)	NITROGEN, NH_4 + ORG, SUSP, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)
AUG 1983												
09...	[1]5.0	--	0.001	0.002	<0.01	<0.01	0.082	0.054	0.6	0.0	0.6	<0.005
09...	7.0	--	--	--	--	--	--	--	--	--	--	--
OCT												
05...	[1]4.2	--	<0.001	<0.001	<0.01	<0.01	0.075	0.064	0.8	0.3	1.1	<0.005
MAR 1984												
21...	1.0	0.022	0.007	0.008	0.029	0.03	0.06	0.035	0.3	0.2	0.5	<0.005

Table 13.--*Chemical-quality data for Site C, 1983-84*--Continued

DATE	SAMPLING DEPTH (M)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	ARSENIC, DISSOLVED (µG/L AS AS)	ARSENIC, SUSPENDED, TOTAL (µG/L AS AS)	ARSENIC, TOTAL (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	BORON, TOTAL RECOVERABLE (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	CADMIUM, TOTAL RECOVERABLE (µG/L AS CD)	CHROMIUM, DISSOLVED (µG/L AS CR)	CHROMIUM, TOTAL RECOVERABLE (µG/L AS CR)
AUG 1983													
09...	[1]5.0	<0.005	<0.002	0.006	1	0	1	20	40	<1	<1	<10	<1
09...	7.0	--	--	--	<1	--	<1	20	40	<1	<1	<10	<1
OCT													
05...	[1]4.2	0.009	<0.002	<0.002	--	--	--	--	--	--	--	--	--
MAR 1984													
21...	1.0	0.005	0.002	<0.001	--	--	--	--	--	--	--	--	--

DATE	SAMPLING DEPTH (M)	COPPER, DISSOLVED (µG/L AS CU)	COPPER, TOTAL RECOVERABLE (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	IRON, SUSPENDED, RECOVERABLE (µG/L AS FE)	IRON, TOTAL RECOVERABLE (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)	LEAD, TOTAL RECOVERABLE (µG/L AS PB)	MANGANESE, DISSOLVED (µG/L AS MN)	MANGANESE, SUSPENDED, RECOV (µG/L AS MN)	MANGANESE, TOTAL RECOVERABLE (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)
AUG 1983												
09...	[1]5.0	<10	10	38	160	200	<1	1	6	10	20	<0.1
09...	7.0	<10	<10	100	150	250	<1	1	62	0	60	<0.1
OCT												
05...	[1]4.2	--	--	50	130	180	--	--	<10	--	40	--
MAR 1984												
21...	1.0	--	--	30	60	90	--	--	<10	--	20	--

Table 13.--*Chemical-quality data for Site C, 1983-84*--Continued

DATE	SAMPLING DEPTH (M)	MERCURY, TOTAL RECOVERABLE (µG/L AS HG)	SELENIUM, DISSOLVED (µG/L AS SE)	SELENIUM, SUSPENDED, TOTAL (µG/L AS SE)	SELENIUM, TOTAL (µG/L AS SE)	URANIUM, NATURAL, TOTAL (µG/L AS U)	ZINC, DISSOLVED (µG/L AS ZN)	ZINC, SUSPENDED, RECOVERABLE (µG/L AS ZN)	ZINC, TOTAL RECOVERABLE (µG/L AS ZN)	CARBON, ORGANIC, TOTAL (MG/L AS C)	GROSS BETA, SUSP, TOTAL (PCI/L AS CS-137)	GROSS BETA, SUSP, TOTAL (PCI/L AS SR/YT-90)
AUG 1983												
09...	[1]5.0	0.4	1	0	1	7.5	12	100	110	7.5	1.2	1.2
09...	7.0	<0.1	1	--	<1	6.6	21	9	30	--	2.0	2.0
OCT												
05...	[1]4.2	--	--	--	--	--	--	--	--	5.0	--	--
MAR 1984												
21...	1.0	--	--	--	--	--	--	--	--	4.5	--	--

[1]Depth-integrated samples were collected throughout the euphotic zone for nutrient analyses. All other samples for chemical analyses were collected at the 1-meter depth.

Biological Data

Phytoplankton and Chlorophyll a

Table 14.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site C, 1983-84*

[Densities, in cells per milliliter, and chlorophyll a, in micrograms per liter (µg/L), are rounded to two significant figures (Greeson and others, 1977); --, organism not found]

PHYLUM CLASS Order *Genus species*	Sampling dates			
	8-9-83	9-13-83	10-5-83	3-21-84
CHLOROPHYTA				
CHLOROPHYCEAE (Green algae)				
Ankistrodesmus falcatus var. *acicularis*	--	60	--	100
Ankistrodesmus falcatus var. *mirabilis*	--	30	--	--
Oocystis sp.	--	140	--	--
Tetraedron minimum	--	150	--	--
CHRYSOPHYTA				
BACILLARIOPHYCEAE (Diatoms)				
Centrales				
Cyclotella kutzingiana	770	170	1,500	480
Cyclotella meneghiniana	--	12	--	--
Melosira granulata	--	12	--	--
Melosira italica	--	79	580	430
Melosira sp.	130	12	--	--
Rhizosolenia eriensis	1,700	30	340	80
Pennales				
Achnanthes affinis	--	--	--	30
Achnanthes microcephala	--	32	--	--
Achnanthes minutissima	--	--	1	--
Asterionella formosa	--	11	12	2,800
Cymbella minuta	--	11	1	30
Cymbella minuta var. *latens*	--	--	1	--
Cymbella minuta var. *silesica*	--	--	1	--
Diatoma anceps	--	--	2	--
Diatoma tenue var. *elongatum*	690	11	--	2,500
Epithemia sorex	--	11	--	--
Fragilaria capucina	56	--	3	--
Fragilaria crotonensis	85	43	17	30
Mastogloia sp.	28	--	--	--
Navicula arvensis	--	11	--	--
Navicula cryptocephala	--	--	1	--

Table 14.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site C, 1983-84*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates			
	8-9-83	9-13-83	10-5-83	3-21-84
CHRYSOPHYTA--Continued				
BACILLARIOPHYCEAE (Diatoms)--Continued				
Pennales--Continued				
Navicula elginensis	--	--	1	--
Navicula minuscula	--	280	--	--
Navicula notha	--	--	--	30
Navicula pellicosa	--	160	--	--
Navicula pupula var. *capitata*	--	11	--	--
Navicula pupula var. *pupula*	--	--	1	--
Navicula rhyncocephala	--	11	--	--
Navicula viridula	--	11	--	--
Nitzschia acicularis	70	22	2	--
Nitzschia amphibia	28	--	--	--
Nitzschia fonticola	--	--	4	--
Nitzschia latens	--	--	4	--
Nitzschia linearis	14	22	2	--
Nitzschia palea	28	22	--	--
Nitzschia paleacea	--	22	--	--
Nitzschia sp.	--	--	1	30
Rhopalodia gibba	--	43	1	--
Surirella linearis	--	11	--	--
Synedra acus	--	11	3	--
Synedra radians	42	32	--	--
Synedra ulna	--	11	--	--
Synedra ulna var. *longissima*	--	--	--	80
CHRYSOPHYCEAE (Golden-brown algae)				
Dinobryon divergens	830	690	--	--
XANTHOPHYCEAE (Yellow-green algae)				
Pseudotetraedon neglectum	69	--	--	--
CRYPTOPHYTA				
CRYPTOPHYCEAE (Cryptomonads)				
Cryptomonas sp.	--	--	220	--

Table 14.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site C, 1983-84*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates			
	8-9-83	9-13-83	10-5-83	3-21-84
PYRROPHYTA				
DINOPHYCEAE (Dinoflagellates)				
Ceratium hirundinella[1]------	3	9	14	--
Peridinium sp.----------	--	--	--	80
Total----------	4,500	2,200	2,700	6,700
Number of taxa----------	15	33	23	13
Diversity index----------	2.57	3.71	1.85	2.08
Chlorophyll a (µg/L)-----	3.3	2.5	5.5	2.5

[1]Collected in zooplankton sample. See "Methods of Data Collection and Analyses" section for additional information.

Algal-Growth Potential

Table 15.--*Algal-growth-potential analyses for Site C, 1983-84*

[mg/L, milligrams per liter; P, phosphorus; N, nitrogen; cells/mL, cells per milliliter; --, no data]

Sampling dates	Control	Nutrient spikes			
		(+0.005 mg/LP +0.075 mg/LN)	(+0.05 mg/LP)	(+1.0 mg/LN)	(+0.05 mg/LP +1.0 mg/LN)
Maximum specific growth rate (day^{-1})					
08-09-83	0.99	1.12	--	--	--
09-13-83	1.26	1.04	0.74	0.40	0.87
10-05-83	1.75	1.89	1.67	1.83	1.53
03-21-84	1.60	1.47	1.10	0.91	1.28
Maximum standing crop (cells/mL)$\times 10^5$					
08-09-83	0.78	2.66	--	--	--
09-13-83	1.13	4.18	5.79	1.05	3.82
10-05-83	0.49	1.70	1.60	0.21	3.19
03-21-84	0.20	6.42	1.00	0.54	8.32
Maximum standing crop [dry weight--(mg/L)$\times 10^3$]					
08-09-83	2.05	7.05	--	--	--
09-13-83	2.99	11.09	15.34	2.79	10.11
10-05-83	1.29	4.50	4.23	0.55	8.46
03-21-84	0.54	17.02	2.64	1.44	22.06

Zooplankton

Table 16.--*Taxa and densities for zooplankton samples collected from photic tows at Site C, 1983-84*

[Densities, in organisms per cubic meter, are rounded to two significant figures (Greeson and others, 1977); (1), first sample; (2), replicate sample; --, organism not found]

PHYLUM CLASS Order *Genus species*	Sampling dates					
	8-9-83	9-13-83	10-5-83		3-21-84	
			(1)	(2)	(1)	(2)
ARTHROPODA						
CRUSTACEA						
Cladocera						
Bosmina longirostris-------	620	150,000	110,000	110,000	1,200	160
Daphnia rosea--------------	420	--	780	780	620	160
Copepoda						
Cyclops bicuspidatus thomasi------------------	12,000	5,000	16,000	11,000	5,900	2,500
Diaptomus ashlandi--------	1,000	--	--	--	--	--
nauplii-------------------	3,300	3,800	10,000	11,000	11,000	6,700
PROTOZOA						
Difflugia sp.-------------	3,500	--	--	--	--	--
ROTATORIA						
Ascomorpha sp.------------	--	--	47,000	48,000	--	--
Asplanchna sp.------------	830	14,000	8,600	9,800	1,200	780
Brachionus sp.------------	--	--	--	--	930	1,400
Kellicottia longispina----	1,000	--	--	--	--	160
Keratella cochlearis------	6,700	1,900	780	780	9,000	3,200
Keratella quadrata--------	620	620	--	--	--	--
Monostyla sp.-------------	--	12,000	--	--	310	--
Notholca sp.--------------	--	--	--	--	310	310

Table 16.--*Taxa and densities for zooplankton samples collected from photic tows at Site C, 1983-84*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates					
	8-9-83	9-13-83	10-5-83		3-21-84	
			(1)	(2)	(1)	(2)
ROTATORIA--Continued						
Philodina sp.	--	--	1,600	1,600	--	160
Polyarthra sp.	2,500	33,000	52,000	57,000	31,000	14,000
Testudinella sp.	--	--	--	--	310	160
Trichocera sp.	1,000	--	--	--	--	--
Total	33,000	220,000	250,000	250,000	62,000	30,000
Number of taxa	11	7	8	8	10	11

SITE D

page 143 follows

Profile Measurements

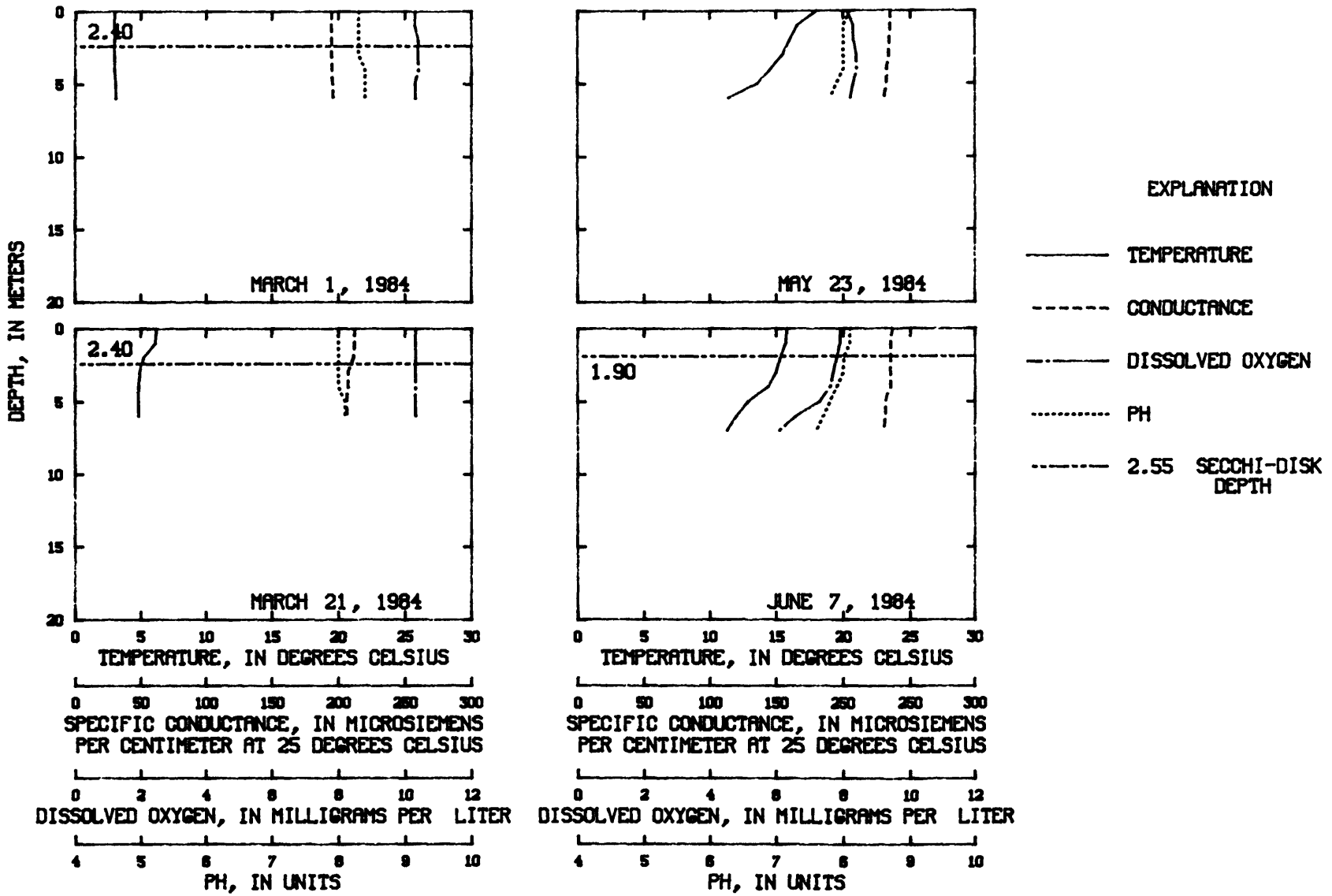

Figure 6.--Profile measurements for Site D, 1984.

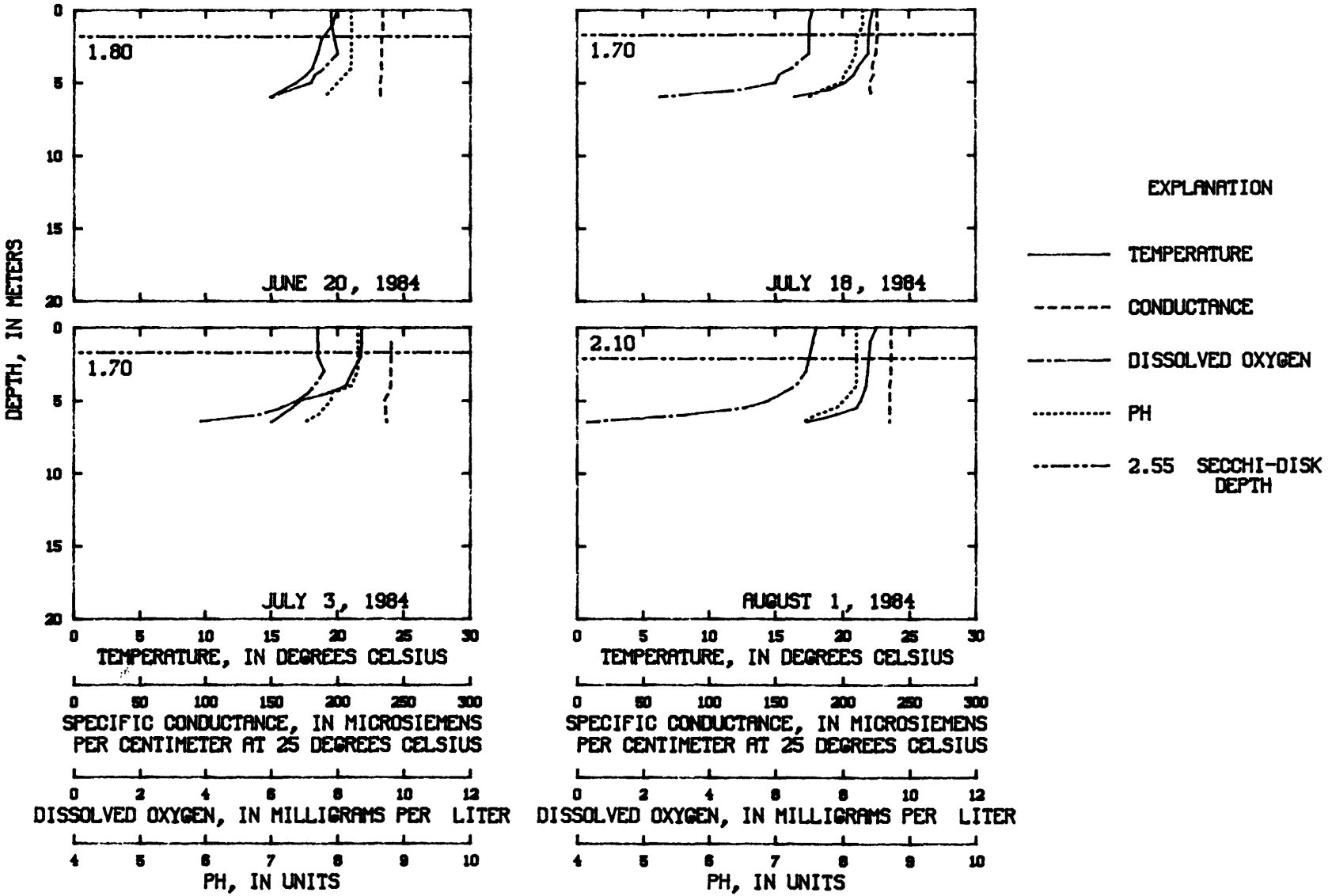

Figure 6.--Profile measurements for Site D, 1984--Continued.

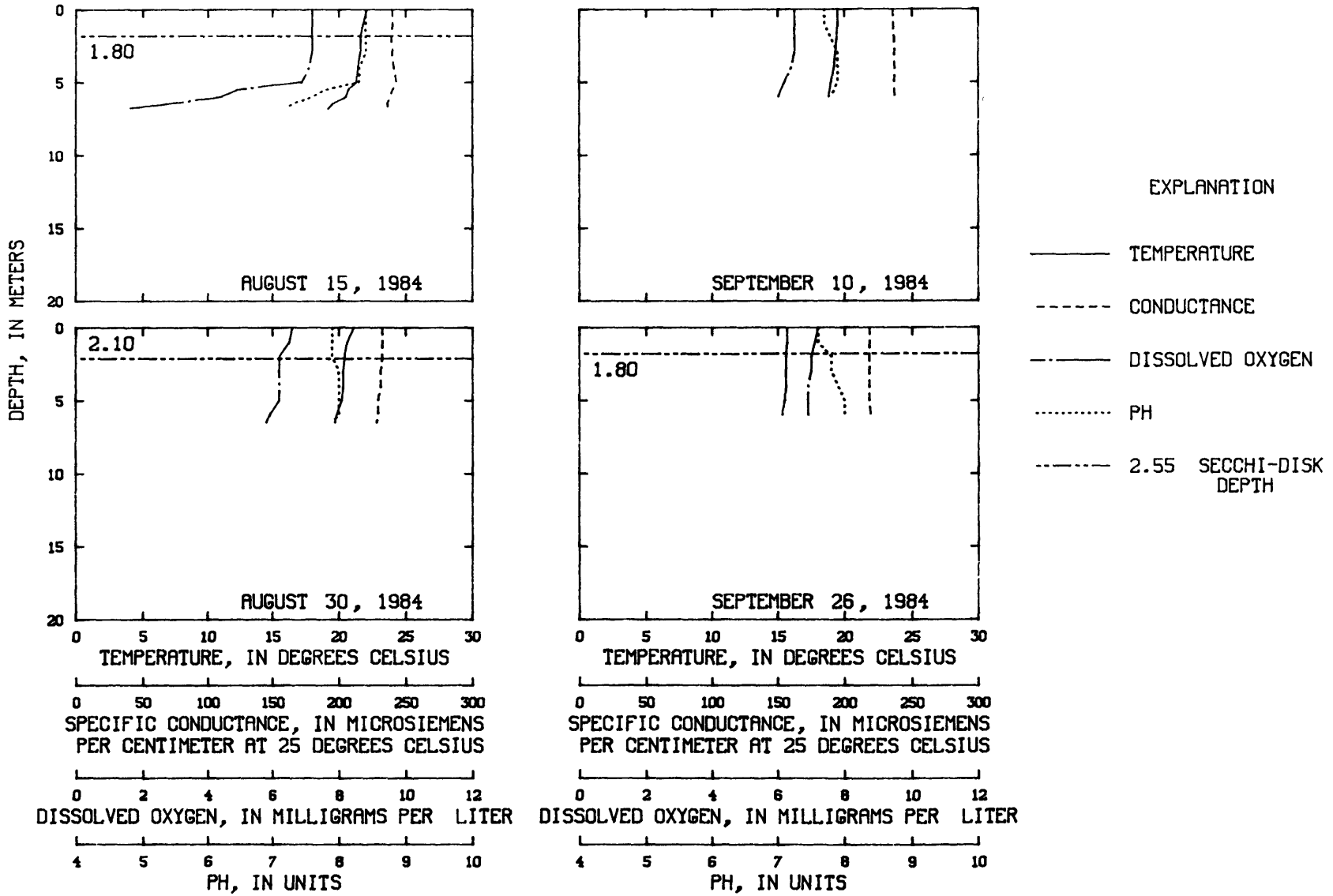

Figure 6.--Profile measurements for Site D, 1984--Continued.

Chemical-Quality Data

Table 17.--*Chemical-quality data for Site D, 1984*

[M, meters; LAB, laboratory; °C, degrees Celsius; MG/L, milligrams per liter; DIS, dissolved; ORG, organic; SUSP, suspended; µG/L, micrograms per liter; --, no data collected]

DATE	TIME	SAMPLING DEPTH (M)	pH, LAB (STANDARD UNITS)	SOLIDS, RESIDUE AT 180 °C, DISSOLVED (MG/L)	CALCIUM, DISSOLVED (MG/L AS CA)	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	MAGNESIUM, DISSOLVED (MG/L AS MG)	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SiO_2)	SODIUM, DISSOLVED (MG/L AS NA)
MAR 1984											
21...	1315	[1]4.8	8.1	132	--	--	--	--	--	--	--
MAY											
23...	1245	1.0	8.4	142	--	--	--	--	--	--	--
JUN											
07...	1045	[1]3.8	8.1	130	--	--	--	--	--	--	--
20...	1040	[1]3.6	8.5	153	--	--	--	--	--	--	--
JUL											
03...	1030	[1]3.4	--	--	--	--	--	--	--	--	--
18...	1100	[1]3.4	--	--	--	--	--	--	--	--	--
AUG											
01...	1230	[1]4.2	8.6	147	26	5.0	0.4	6.1	2.1	4.2	15
15...	1100	[1]3.6	--	--	--	--	--	--	--	--	--
30...	1115	[1]4.2	--	--	--	--	--	--	--	--	--
SEP											
10...	1100	[1]4.0	--	--	--	--	--	--	--	--	--
26...	1300	[1]3.6	8.3	147	26	3.9	0.4	6.0	1.9	4.1	15

Table 17.--*Chemical-quality data for Site D, 1984*--Continued

DATE	SAMPLING DEPTH (M)	SULFATE, DISSOLVED (MG/L AS SO_4)	NITROGEN, NITRATE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, TOTAL (MG/L AS N)	NITROGEN, NO_2+NO_3, DISSOLVED (MG/L AS N)	NITROGEN, NO_2+NO_3, TOTAL (MG/L AS N)	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, DIS (MG/L AS N)	NITROGEN, NH_4 + ORG, SUSP, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, TOTAL (MG/L AS N)
MAR 1984												
21...	[1]4.8	--	0.021	0.007	0.008	0.028	0.029	0.033	0.045	0.2	0.3	0.5
MAY												
23...	1.0	--	--	<0.001	--	0.017	0.013	0.033	--	--	--	0.4
JUN												
07...	[1]3.8	--	--	<0.001	--	<0.01	<0.01	0.053	--	--	--	0.6
20...	[1]3.6	--	0.026	0.001	--	0.027	0.03	0.044	--	--	--	0.5
JUL												
03...	[1]3.4	--	0.044	0.005	--	0.049	0.028	0.084	--	--	--	0.7
18...	[1]3.4	--	--	0.003	--	<0.01	<0.01	0.044	--	--	--	0.4
AUG												
01...	[1]4.2	33	--	0.001	0.002	<0.01	<0.01	0.038	0.016	0.4	--	--
15...	[1]3.6	--	--	<0.002	--	<0.01	<0.01	0.01	--	--	--	0.6
30...	[1]4.2	--	--	0.007	--	<0.01	<0.01	<0.003	--	--	--	--
SEP												
10...	[1]4.0	--	0.005	0.005	--	0.01	<0.01	0.014	--	--	--	--
26...	[1]3.6	35	--	<0.002	0.004	<0.01	<0.01	<0.005	0.012	0.4	--	0.5

Table 17.--*Chemical-quality data for Site D, 1984*--Continued

DATE	SAMPLING DEPTH (M)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	ARSENIC, DISSOLVED (µG/L AS AS)	ARSENIC, TOTAL (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	BORON, TOTAL RECOVERABLE (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)	CADMIUM, TOTAL RECOVERABLE (µG/L AS CD)
MAR 1984											
21...	[1]4.8	<0.005	<0.005	0.002	<0.001	--	--	--	--	--	--
MAY											
23...	1.0	--	0.005	--	--	--	--	--	--	--	--
JUN											
07...	[1]3.8	--	0.008	--	--	--	--	--	--	--	--
20...	[1]3.6	--	0.009	--	--	--	--	--	--	--	--
JUL											
03...	[1]3.4	--	0.008	--	--	--	--	--	--	--	--
18...	[1]3.4	--	0.011	--	--	--	--	--	--	--	--
AUG											
01...	[1]4.2	<0.005	<0.005	<0.002	0.007	<1	2	20	30	<1	<1
15...	[1]3.6	--	<0.005	--	--	--	--	--	--	--	--
30...	[1]4.2	--	--	0.014	--	--	--	--	--	--	--
SEP											
10...	[1]4.0	--	--	0.005	--	--	--	--	--	--	--
26...	[1]3.6	<0.005	0.006	<0.002	0.002	<1	<1	20	100	<1	<1

Table 17.--*Chemical-quality data for Site D, 1984*--Continued

DATE	SAMPLING DEPTH (M)	CHROMIUM, DISSOLVED (µG/L AS CR)	CHROMIUM, TOTAL RECOVERABLE (µG/L AS CR)	COPPER, DISSOLVED (µG/L AS CU)	COPPER, TOTAL RECOVERABLE (µG/L AS CU)	IRON, DISSOLVED (µG/L AS FE)	IRON, SUSPENDED, RECOVERABLE (µG/L AS FE)	IRON, TOTAL RECOVERABLE (µG/L AS FE)	LEAD, DISSOLVED (µG/L AS PB)	LEAD, TOTAL RECOVERABLE (µG/L AS PB)	MANGANESE, DISSOLVED (µG/L AS MN)
MAR 1984											
21...	[1]4.8	--	--	--	--	40	50	90	--	--	<10
MAY											
23...	1.0	--	--	--	--	--	--	--	--	--	--
JUN											
07...	[1]3.8	--	--	--	--	30	--	250	--	--	<10
20...	[1]3.6	--	--	--	--	--	--	--	--	--	--
JUL											
03...	[1]3.4	--	--	--	--	--	--	--	--	--	--
18...	[1]3.4	--	--	--	--	--	--	--	--	--	--
AUG											
01...	[1]4.2	<10	8	<10	<10	8	--	80	<1	3	2
15...	[1]3.6	--	--	--	--	--	--	--	--	--	--
30...	[1]4.2	--	--	--	--	--	--	--	--	--	--
SEP											
10...	[1]4.0	--	--	--	--	--	--	--	--	--	--
26...	[1]3.6	<10	<1	<10	<10	17	--	250	1	<1	6

Table 17.--*Chemical-quality data for Site D, 1984*--Continued

DATE	SAMPLING DEPTH (M)	MANGANESE, TOTAL RECOVERABLE (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MERCURY, TOTAL RECOVERABLE (µG/L AS HG)	SELENIUM, DISSOLVED (µG/L AS SE)	SELENIUM, TOTAL (µG/L AS SE)	URANIUM, NATURAL, TOTAL (µG/L AS U)	ZINC, DISSOLVED (µG/L AS ZN)	ZINC, TOTAL RECOVERABLE (µG/L AS ZN)	CARBON, ORGANIC, TOTAL (MG/L AS C)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)
MAR 1984											
21...	[1]4.8	20	--	--	--	--	--	--	--	4.5	--
MAY											
23...	1.0	--	--	--	--	--	--	--	--	5.2	--
JUN											
07...	[1]3.8	30	--	--	--	--	--	--	--	5.2	--
20...	[1]3.6	--	--	--	--	--	--	--	--	4.0	--
JUL											
03...	[1]3.4	--	--	--	--	--	--	--	--	6.1	--
18...	[1]3.4	--	--	--	--	--	--	--	--	--	28
AUG											
01...	[1]4.2	<10	<0.1	0.1	<1	<1	10	13	<10	5.0	--
15...	[1]3.6	--	--	--	--	--	--	--	--	5.6	--
30...	[1]4.2	--	--	--	--	--	--	--	--	5.7	--
SEP											
10...	[1]4.0	--	--	--	--	--	--	--	--	5.3	--
26...	[1]3.6	40	<0.1	<0.1	<1	<1	8.4	<3	50	5.0	--

[1]Depth-integrated samples were collected throughout the euphotic zone for nutrient analyses. All other samples for chemical analyses were collected at the 1-meter depth.

Biological Data

Phytoplankton and Chlorophyll a

Table 18.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site D, 1984*

[Densities, in cells per milliliter, and chlorophyll a, in micrograms per liter (µg/L), are rounded to two significant figures (Greeson and others, 1977); --, organism not found]

PHYLUM CLASS Order *Genus species*	Sampling dates						
	6-7-84	7-3-84	7-18-84	8-15-84	8-30-84	9-10-84	9-26-84
CHLOROPHYTA							
CHLOROPHYCEAE (Green algae)							
Ankistrodesmus braunii	--	--	--	310	--	--	--
Ankistrodesmus falcatus	--	--	31	--	--	280	110
Ankistrodesmus falcatus var. *acicularis*	66	--	--	620	--	--	--
Ankistrodesmus falcatus var. *mirabilis*	--	33	--	63	--	--	--
Ankistrodesmus nannoselene	--	--	--	32	--	--	110
Chlamydomonas dinobryon	--	--	31	--	--	--	--
Chlamydomonas sp. 1	1,800	760	410	250	280	230	230
Chlamydomonas sp. 2	--	--	63	--	28	--	57
Chlorella ellipsoidea	--	--	--	15,000	3,400	--	--
Chlorella sp.	--	--	--	--	190	--	170
Cosmarium sp.	--	33	--	--	--	--	--
Dictyosphaerium pulchellum	--	--	--	--	--	--	340
Elakotothrix viridis	--	--	--	--	--	110	--
Golenkinia radiata	--	--	31	--	--	--	--
Golenkinia sp.	--	99	--	--	--	--	--
Pediastrum tetras	--	130	--	250	--	--	--
Pediastrum tetras var. *tetraedon*	--	--	--	--	--	110	--
Pteromonas limneticus	--	--	--	--	600	910	1,600
Scenedesmus abundans	--	130	63	--	--	--	--
Scenedesmus armatus	--	--	--	--	230	--	--
Scenedesmus quadricauda	--	--	--	--	57	340	--
Scenedesmus serratus	--	--	--	--	--	--	230

Table 18.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site D, 1984*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	6-7-84	7-3-84	7-18-84	8-15-84	8-30-84	9-10-84	9-26-84
CHLOROPHYTA--Continued							
CHLOROPHYCEAE (Green algae)--Continued							
Scenedesmus sp.	--	130	--	--	--	110	--
Selenastrum minutum	--	--	--	--	310	510	--
Tetraedron minimum	--	360	63	120	110	--	110
Resting spores	--	--	31	--	--	--	--
CHRYSOPHYTA							
BACILLARIOPHYCEAE (Diatoms)							
Centrales							
Cyclotella bodanica	--	--	31	--	--	--	--
Cyclotella kutzingiana	260	1,000	620	880	850	1,200	910
Cyclotella ocellata	7	--	--	--	--	--	--
Melosira granulata	--	--	7	--	--	--	--
Melosira granulata var. *angustissima*	--	--	--	--	--	76	--
Melosira italica	110	--	31	--	--	--	110
Rhizosolenia eriensis	200	1,700	--	120	400	680	510
Pennales							
Achnanthes affinis	20	--	--	--	--	19	--
Achnanthes linearis	7	--	--	--	--	--	--
Achnanthes minutissima	130	99	--	--	--	--	--
Amphipleura pelucida	3	--	--	--	--	--	--
Anomoeoneis vitrea	10	--	--	--	--	19	--
Asterionella formosa	110	160	63	250	--	--	1,100
Caloneis ventricosa	--	--	--	--	57	19	--
Cymbella affinis	3	--	--	--	--	--	--
Cymbella angustata	30	--	--	--	--	--	11
Cymbella minuta	10	--	--	--	--	--	--

Table 18.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site D, 1984*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	6-7-84	7-3-84	7-18-84	8-15-84	8-30-84	9-10-84	9-26-84
CHRYSOPHYTA--Continued							
BACILLARIOPHYCEAE (Diatoms)--Continued							
Pennales--Continued							
Cymbella minuta var. *latens*----	3	--	--	--	--	--	--
Cymbella minuta var. *silesica*----------	3	--	--	--	--	--	--
Cymbella sinuata----------	--	33	--	--	--	--	--
Denticula sp.----------	--	--	--	--	28	--	170
Diatoma tenue var. *elongatum*----------	270	99	--	32	--	--	45
Epithemia sorex----------	20	--	--	--	--	--	--
Eunotia hexaglyphis----------	--	33	--	--	--	--	--
Fragilaria capucina----------	20	--	--	--	--	--	--
Fragilaria crotonensis---------	130	130	--	--	--	57	--
Fragilaria crotonensis var. *oregona*----------	63	--	--	--	--	--	--
Fragilaria vaucheriae var. *capitellata*----------	47	--	--	--	--	--	45
Fragilaria vaucheriae var. *vaucheria*----------	--	--	31	--	--	--	--
Navicula arvensis----------	39	--	--	--	--	19	11
Navicula capitata----------	--	--	--	--	--	--	57
Navicula cryptocephala var. *veneta*----------	3	--	--	63	--	--	--
Navicula halophila----------	3	--	--	32	--	--	--
Navicula heufleri----------	17	--	--	--	--	--	--
Navicula minuscula----------	27	--	--	--	--	--	--
Navicula mutica var. *cohnii*----	--	--	--	--	170	--	--
Navicula notha----------	--	--	--	93	--	19	--
Navicula pupula----------	--	--	31	--	--	19	--

Table 18.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site D, 1984*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	6-7-84	7-3-84	7-18-84	8-15-84	8-30-84	9-10-84	9-26-84
CHRYSOPHYTA--Continued							
BACILLARIOPHYCEAE (Diatoms)--Continued							
Pennales--Continued							
Navicula pupula							
var. *capitata*	3	--	--	--	--	--	--
Navicula pygmaea	17	--	--	--	--	--	--
Navicula radiosa	13	10	--	--	--	--	--
Navicula secreta							
var. *apiculata*	3	--	--	--	--	--	--
Nedium iridis	7	--	--	--	--	--	--
Nitzschia acicularis	30	--	--	--	--	19	--
Nitzschia amphibia	20	--	--	--	--	--	--
Nitzschia communis	3	--	--	--	--	--	--
Nitzschia dissipata	20	33	--	--	--	--	--
Nitzschia filiformis	13	--	--	--	--	--	--
Nitzschia fonticola	13	33	--	--	--	--	--
Nitzschia frustulum	17	--	--	--	--	--	--
Nitzschia hungarica	7	--	--	--	--	--	--
Nitzschia ignorata	3	--	--	--	--	--	--
Nitzschia intermedia	3	--	--	--	--	--	--
Nitzschia latens	23	33	--	--	--	--	--
Nitzschia linearis	13	33	--	--	--	--	--
Nitzschia microcephala	--	--	--	--	--	--	45
Nitzschia palea	37	66	--	--	--	76	11
Nitzschia paleacea	60	33	--	--	--	--	--
Nitzschia romana	--	--	--	--	--	19	--
Nitzschia sp. 1	7	--	--	--	--	--	--
Nitzschia sp. 2	3	--	--	--	--	--	--
Surirella ovata	10	--	--	--	--	--	--
Synedra delicatissima	23	--	--	--	--	--	--

Table 18.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site D, 1984*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	6-7-84	7-3-84	7-18-84	8-15-84	8-30-84	9-10-84	9-26-84
CHRYSOPHYTA--Continued							
BACILLARIOPHYCEAE (Diatoms)--Continued							
Pennales--Continued							
Synedra fasciculata	--	--	--	1,000	--	--	--
Synedra nana	--	--	--	--	170	57	170
Synedra parasitica	3	--	--	--	--	--	--
Synedra radians	13	1,700	500	250	57	--	54
Synedra rumpens var. *familiaris*	--	--	--	--	--	57	170
Synedra ulna var. *longissima*	--	99	94	32	--	--	--
CHRYSOPHYCEAE (Golden-brown algae)							
Dinobryon divergens	460	1,200	--	--	170	57	--
Mallomonas sp.	66	230	310	560	85	--	--
CRYPTOPHYTA							
CRYPTOPHYCEAE (Cryptomonads)							
Chilomonas sp.	--	66	--	--	28	--	--
Chroomonas sp.	330	160	280	190	85	57	280
Cryptomonas erosa	--	--	--	63	--	--	--
Cryptomonas marsonii	130	--	--	--	110	--	57
Cryptomonas sp.	--	590	31	--	28	--	57
CYANOPHYTA							
MYXOPHYCEAE (Blue-green algae)							
Aphanocapsa delicatissima	--	--	--	2,000	--	--	--
Chroococcus dispersus	--	--	--	--	1,200	4,000	3,800
Chroococcus limneticus	--	--	--	--	4,100	1,300	1,800
Chroococcus pallidus	--	--	--	--	120	--	--

Table 18.--*Taxa, densities, diversity indices, and chlorophyll a analyses for phytoplankton samples composited throughout the euphotic zone at Site D, 1984*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates						
	6-7-84	7-3-84	7-18-84	8-15-84	8-30-84	9-10-84	9-26-84
CYANOPHYTA--Continued							
MYXOPHYCEAE (Blue-green algae)--Continued							
Chroococcus sp.	--	460	--	--	--	--	--
Microcystis firma	--	--	--	6,400	12,000	--	--
Microcystis sp.	--	--	1,100	--	--	--	--
Synechococcus aeruginosa	--	--	--	--	--	--	170
EUGLENOPHYTA (Euglenoids)							
Trachelomonas hispida	--	--	--	190	--	--	--
Trachelomonas volvocina	--	33	--	32	--	--	57
PYRROPHYTA							
DINOPHYCEAE (Dinoflagellates)							
Ceratium hirundinella[1]	9	--	--	--	--	--	1
Peridinium aciculiferum	--	--	31	--	--	--	--
Peridinium inconspicua	--	--	--	--	--	110	--
Total	4,800	9,700	3,900	29,000	25,000	10,000	13,000
Number of taxa	58	32	22	25	26	28	32
Diversity index	3.75	3.82	3.31	2.40	2.61	3.17	3.52
Chlorophyll a (µg/L)	3.5	1.4	0.8	2.8	3.7	6.5	4.1

[1]Collected in zooplankton sample. See "Methods of Data Collection and Analyses" section for additional information.

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Algal-Growth Potential

Table 19.--*Algal-growth-potential analyses for Site D, 1984*

[mg/L, milligrams per liter; P, phosphorus; N, nitrogen; cells/mL, cells per milliliter; --, no data]

Sampling dates	Control	Nutrient spikes			
		(+0.005 mg/LP +0.075 mg/LN)	(+0.05 mg/LP)	(+1.0 mg/LN)	(+0.05 mg/LP +1.0 mg/LN)
Maximum specific growth rate (day^{-1})					
03-21-84	1.22	1.55	1.21	1.22	1.21
Maximum standing crop (cells/mL)$\times 10^5$					
03-21-84	0.66	8.29	0.59	0.37	8.13
Maximum standing crop [dry weight--(mg/L)$\times 10^3$]					
03-21-84	1.75	21.96	1.56	0.97	21.56

Zooplankton

Table 20.--*Taxa and densities for zooplankton samples collected from photic or total-depth tows at Site D, 1984*

[Densities, in organisms per cubic meter, are rounded to two significant figures (Greeson and others, 1977); (1), first sample; (2), replicate sample; --, organism not found]

PHYLUM CLASS Order *Genus species*	Sampling dates							
	3-21-84		6-7-84		8-1-84		9-26-84	
	Photic tow		Total-depth tow		Total-depth tow		Total-depth tow	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
ARTHROPODA								
CRUSTACEA								
Cladocera								
Bosmina longirostris	1,000	520	5,200	1,000	3,200	9,700	4,700	4,600
Daphnia rosea	--	--	10,000	21,000	1,900	5,200	--	--
Copepoda								
Cyclops bicuspidatus thomasi	4,700	6,800	20,000	3,100	40,000	77,000	19,000	18,000
Diaptomus ashlandi	--	--	--	--	1,900	3,200	780	1,900
nauplii	18,000	17,000	83,000	170,000	21,000	35,000	16,000	16,000
PROTOZOA								
Difflugia sp.	--	--	--	--	--	1,300	4,700	6,500
ROTATORIA								
Asplanchna sp.	2,100	4,200	6,200	14,000	650	1,300	18,000	18,000
Brachionus sp.	2,100	1,000	--	--	--	--	--	3,200
Kellicottia longispina	--	--	--	--	3,200	5,200	1,600	650
Keratella cochlearis	10,000	11,000	1,000	--	3,900	1,300	--	--
Monommata sp.	--	--	--	--	--	--	--	--
Notholca sp.	--	520	--	--	--	--	780	--
Polyarthra sp.	51,000	60,000	33,000	43,000	26,000	32,000	19,000	25,000

Table 20.--*Taxa and densities for zooplankton samples collected from photic or total-depth tows at Site D, 1984*--Continued

PHYLUM CLASS Order *Genus species*	Sampling dates							
	3-21-84		6-7-84		8-1-84		9-26-84	
	Photic tow		Total-depth tow		Total-depth tow		Total-depth tow	
	(1)	(2)	(1)	(2)	(1)	(2)	(1)	(2)
Total----------	89,000	100,000	160,000	250,000	100,000	170,000	85,000	94,000
Number of taxa----------	6	7	6	5	8	9	8	8

SITE E

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Profile Measurements

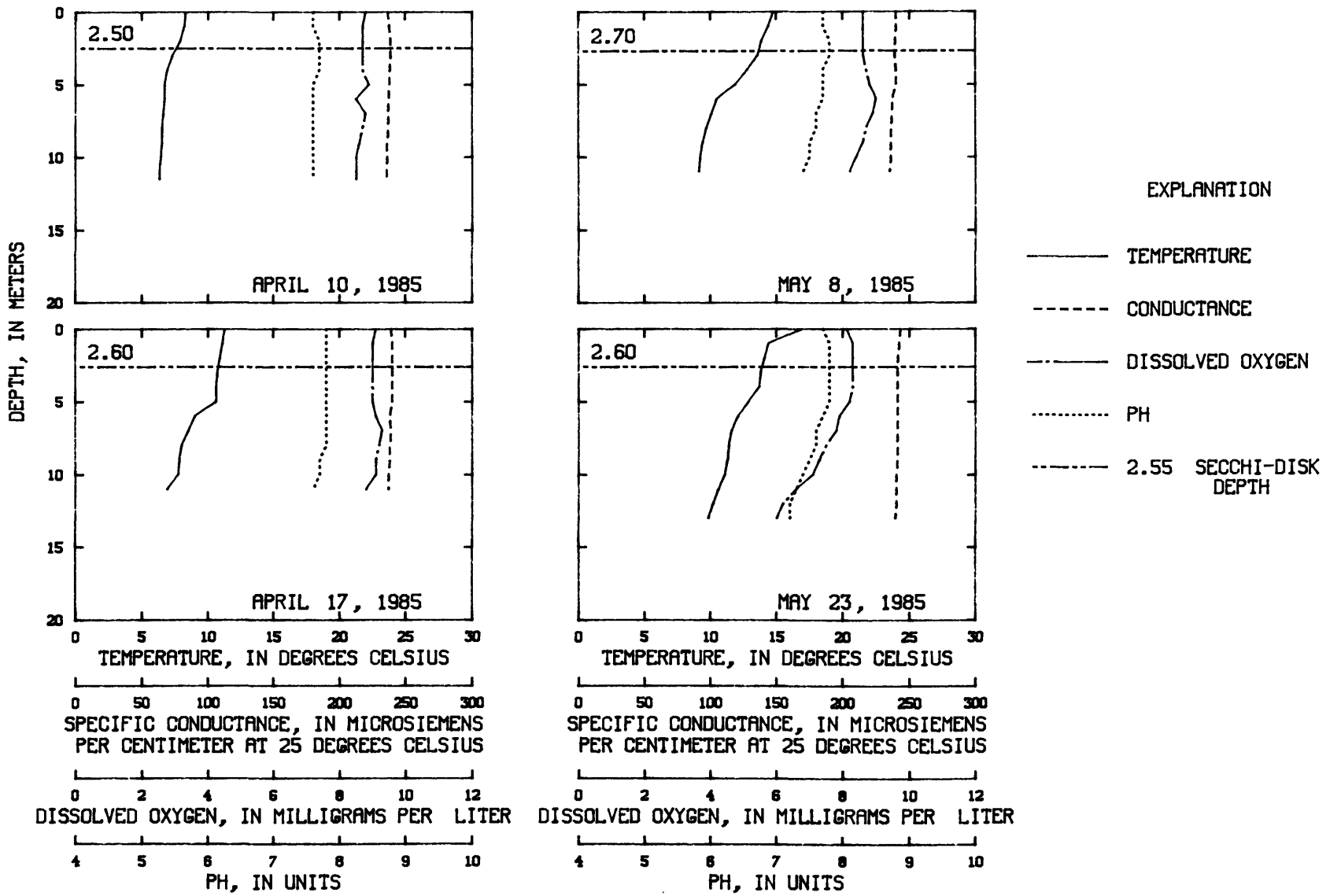

Figure 7.--Profile measurements for Site E, 1985.

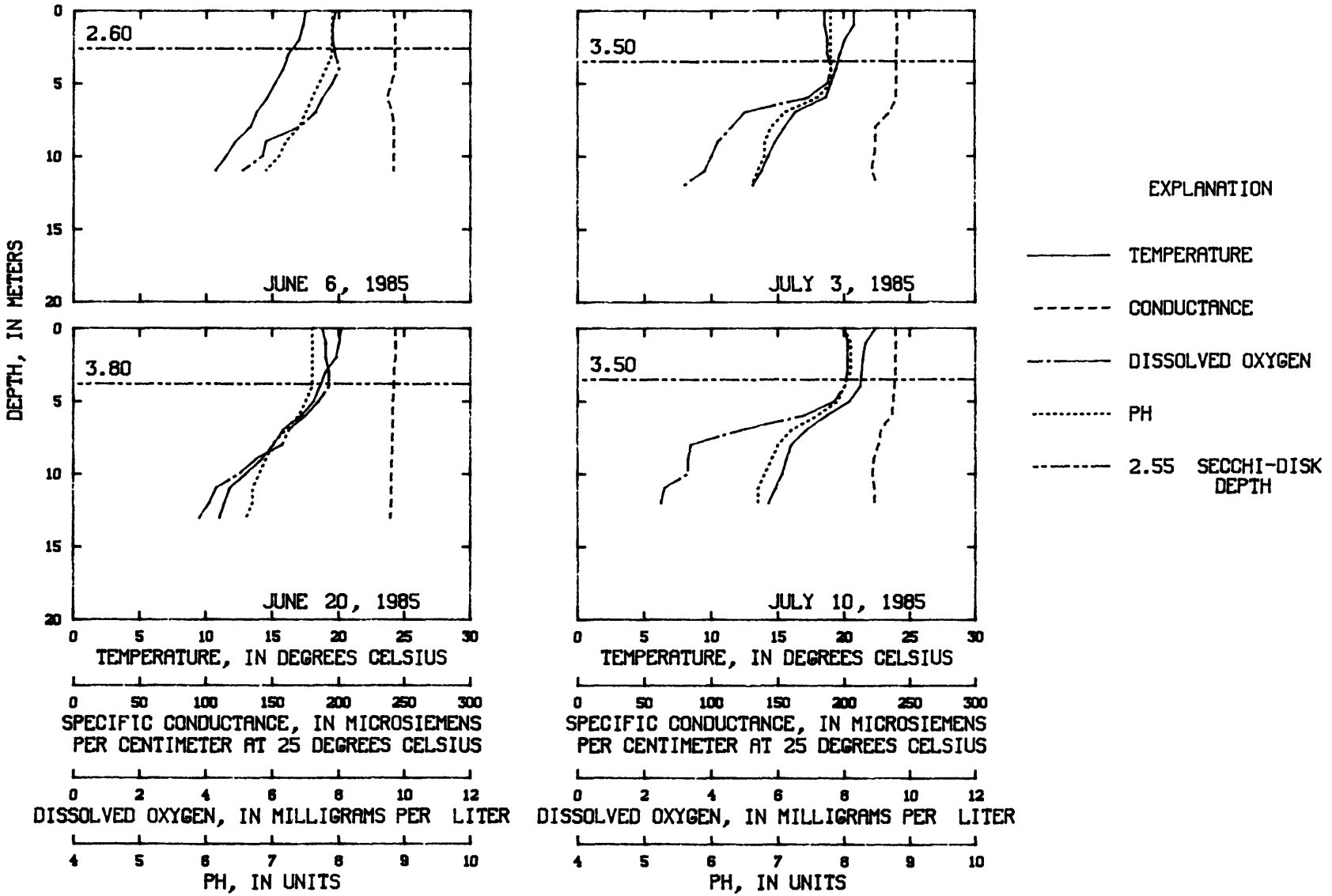

Figure 7.--Profile measurements for Site E, 1985--Continued.

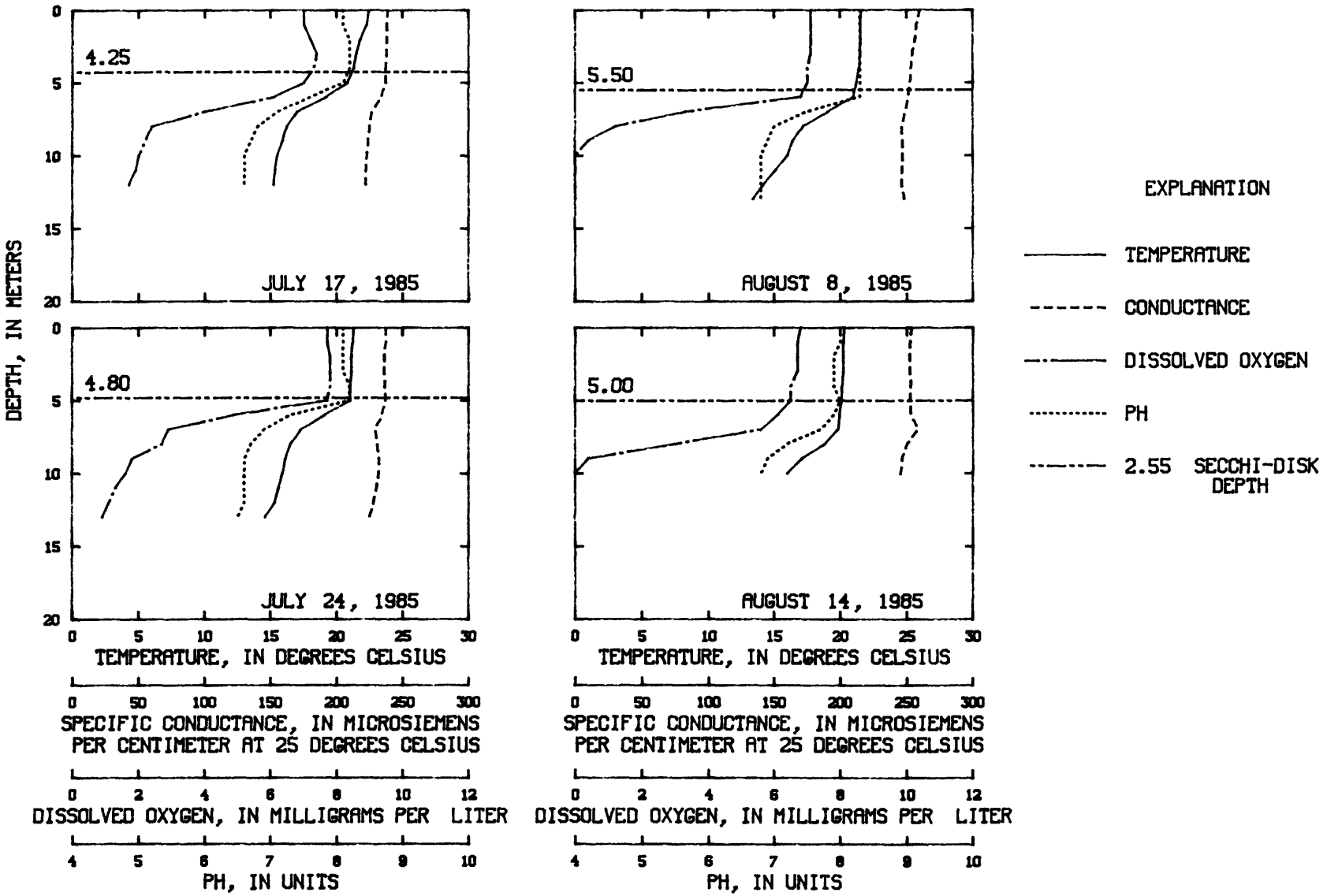

Figure 7.--Profile measurements for Site E, 1985--Continued.

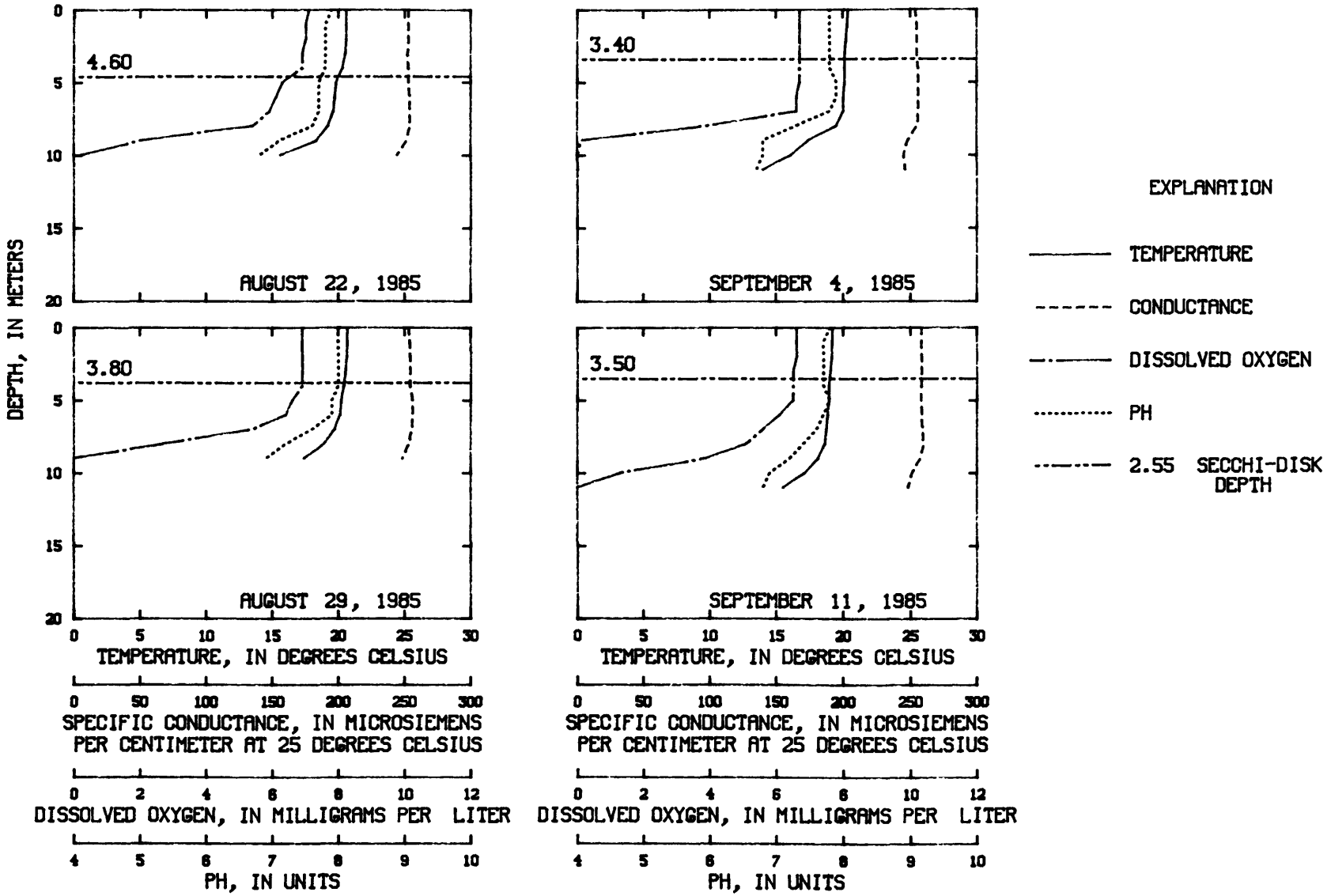

Figure 7.--Profile measurements for Site E, 1985--Continued.

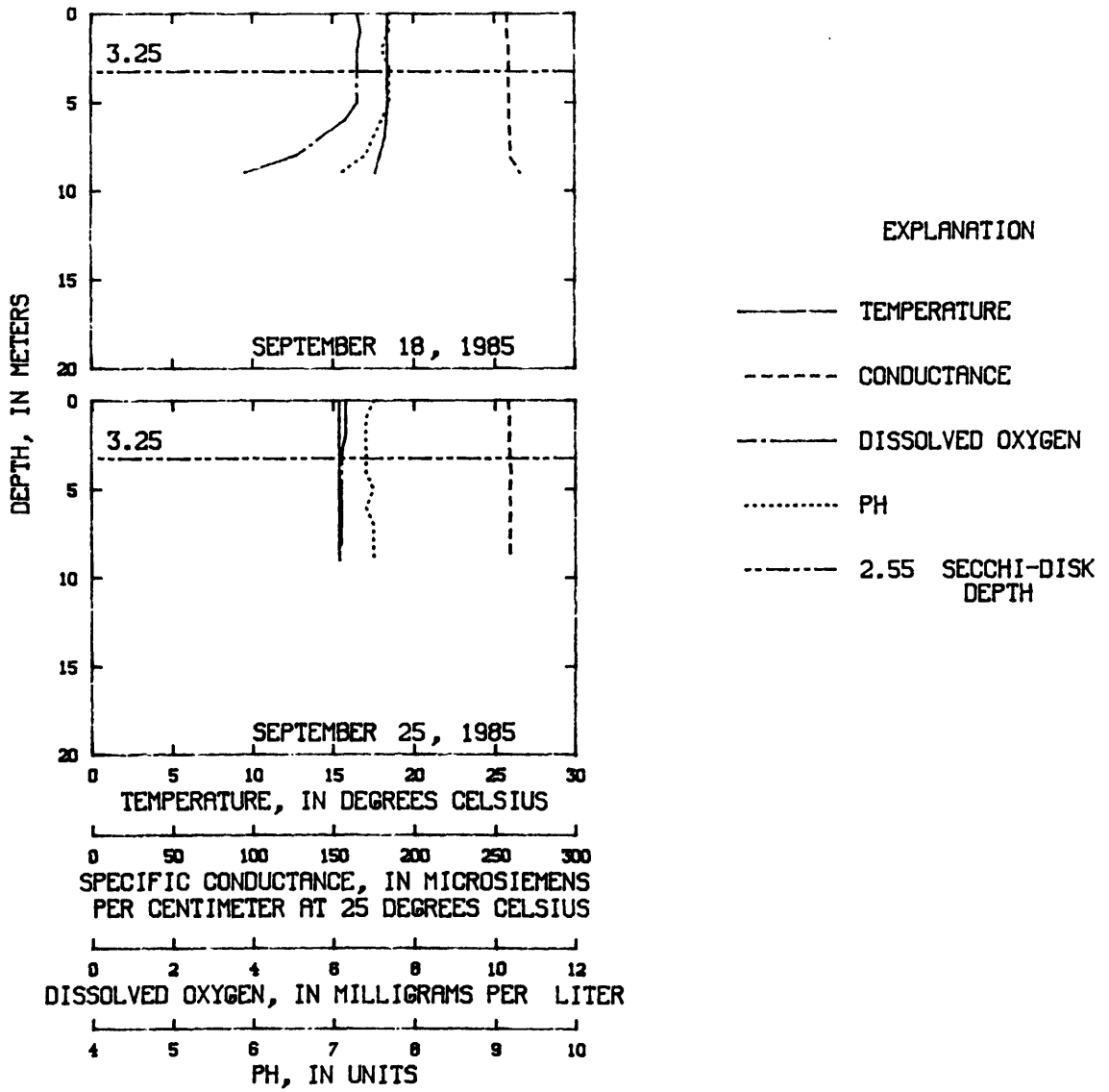

Figure 7.--Profile measurements for Site E, 1985--Continued.

Chemical-Quality Data

Table 21.--*Chemical-quality data for Site E, 1985*

[M, meters; MG/L, milligrams per liter; --, no data collected]

DATE	TIME	SAMPLING DEPTH (M)	NITROGEN, NO_2+NO_3, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)
APR 1985					
10...	1200	1.0	--	--	0.003
17...	1300	1.0	<0.01	0.6	0.012
24...	1215	1.0	--	--	0.030
MAY					
08...	1115	1.0	<0.01	0.3	0.005
23...	1230	1.0	--	--	0.002
29...	1145	1.0	0.013	0.4	0.005
JUN					
06...	1010	1.0	--	--	0.012
12...	1230	1.0	<0.01	0.5	0.008
20...	1200	1.0	--	--	0.007
28...	1300	1.0	0.012	0.4	0.009
JUL					
03...	1245	1.0	--	--	0.008
10...	1130	1.0	<0.01	0.5	0.007
17...	1145	1.0	--	--	<0.001
24...	1145	1.0	<0.01	<0.2	0.025
31...	1315	1.0	--	--	0.005
AUG					
08...	1230	1.0	<0.01	0.4	0.004
14...	1200	1.0	--	--	0.014
22...	1130	1.0	<0.01	0.4	0.005
29...	1300	1.0	--	--	0.005
SEP					
04...	1130	1.0	<0.01	0.4	0.004
11...	1130	1.0	--	--	0.008
18...	1100	1.0	<0.01	0.3	0.008
25...	1100	1.0	--	--	0.008

Biological Data

Chlorophyll a

Table 22.--*Chlorophyll a concentrations for phytoplankton samples composited throughout the euphotic zone at Site E, 1985*

[Values from May 15, 23, and 29 were determined using methanol extraction]

Sampling dates	Chlorophyll *a* (micrograms per liter)
04-03-85	4.1
05-15-85	5.3
05-23-85	20.0
05-29-85	16.0
06-12-85	1.3
06-20-85	13.8
06-28-85	9.6
07-03-85	12.8
07-10-85	9.6
07-17-85	7.5
07-24-85	2.5
07-31-85	1.8
08-08-85	0.0
08-14-85	1.8
08-22-85	5.4
08-29-85	1.5
09-04-85	5.8
09-11-85	3.5
09-18-85	1.7
09-25-85	3.5

RALSTON CREEK

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Chemical-Quality Data

Table 23.--*Chemical-quality data for Ralston Creek, 1983-85*

[FT^3/S, cubic feet per second; °C, degrees Celsius; µS/CM, microsiemens per centimeter at 25 degrees Celsius; MG/L, milligrams per liter; DIS, dissolved; ORG, organic; SUSP, suspended; µG/L, micrograms per liter; RECOV, recoverable; --, no data collected; E, estimated]

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (FT^3/S)	TEMPER-ATURE (°C)	SPE-CIFIC CON-DUCT-ANCE, FIELD (µS/CM)	OXYGEN, DIS-SOLVED (MG/L)	pH, FIELD (STAN-DARD UNITS)	SOLIDS, RESIDUE AT 105 °C, TOTAL (MG/L)	SOLIDS, RESIDUE AT 180 °C, DIS-SOLVED (MG/L)	NITRO-GEN, NITRATE, DIS-SOLVED (MG/L AS N)	NITRO-GEN, NITRITE, DIS-SOLVED (MG/L AS N)
JUN 1983										
17...	1300	<1.0	17.5	531	7.6	7.8	--	--	--	<0.02
JUL										
05...	1230	E4.1	19.5	134	7.0	7.8	--	--	--	--
27...	1230	E2.0	20.0	179	7.5	--	--	--	--	--
AUG										
09...	1200	E7.7	16.5	--	--	7.5	--	--	0.191	0.002
23...	1030	E2.5	14.0	123	8.7	--	--	--	--	--
SEP										
13...	1215	E1.5	16.5	130	7.5	7.0	--	--	--	--
OCT										
05...	1242	E9.1	21.5	155	6.9	--	--	104	0.029	0.003
MAR 1984										
21...	1300	E0.19	10.5	508	9.6	8.0	--	--	--	--
MAY										
23...	1315	E4.7	17.5	272	7.8	7.8	--	162	--	<0.001
JUN										
07...	1030	E10.0	12.5	236	9.1	8.1	--	137	--	<0.001
20...	1100	E1.1	17.5	254	8.2	8.1	--	152	0.088	0.008
JUL										
18...	1120	E4.4	20.0	118	7.1	7.7	--	--	--	--
JUN 1985										
04...	0950	E9.0	9.5	78	9.2	6.7	61	--	--	--
JUL										
10...	1215	E2.8	18.5	64	7.6	7.6	60	--	--	--
17...	1215	E3.8	18.0	276	7.0	7.6	192	--	--	--
AUG										
08...	1300	E3.0	--	--	--	--	384	--	--	--
14...	1215	E12.0	--	--	--	--	199	--	--	--
22...	1245	E3.8	20.5	305	7.0	7.9	199	--	--	--
29...	1315	E3.0	22.0	305	7.0	8.1	219	--	--	--
SEP										
04...	1145	E3.0	20.5	307	7.2	8.0	203	--	--	--
11...	1145	E3.0	18.0	310	7.3	7.6	193	--	--	--
18...	1115	E2.0	17.5	310	7.7	7.8	201	--	--	--
25...	1105	E2.0	13.0	314	8.3	7.5	204	--	--	--

Table 23.--*Chemical-quality data for Ralston Creek, 1983-85*--Continued

DATE	NITROGEN, NITRITE, TOTAL (MG/L AS N)	NITROGEN, NO_2+NO_3, DISSOLVED (MG/L AS N)	NITROGEN, NO_2+NO_3, TOTAL (MG/L AS N)	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, DIS (MG/L AS N)	NITROGEN, NH_4 + ORG, SUSP, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, TOTAL (MG/L AS N)	NITROGEN, DISSOLVED (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)
JUN 1983										
17...	0.02	1.10	1.20	0.10	0.15	0.5	0.3	0.8	1.6	0.02
JUL										
05...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	0.005	0.193	0.076	0.088	0.086	0.6	0.1	0.7	--	<0.005
23...	--	--	--	--	--	--	--	--	--	--
SEP										
13...	--	--	--	--	--	--	--	--	--	--
OCT										
05...	0.004	0.032	0.031	0.03	0.045	0.5	0.1	0.6	--	<0.005
MAR 1984										
21...	--	--	--	--	--	--	--	--	--	--
MAY										
23...	--	0.241	0.241	0.043	--	--	--	0.5	--	--
JUN										
07...	--	0.157	0.124	0.055	--	--	--	0.8	--	--
20...	--	0.096	0.102	0.056	--	--	--	0.6	--	--
JUL										
18...	--	--	--	--	--	--	--	--	--	--
JUN 1985										
04...	--	--	0.063	--	--	--	--	0.3	--	--
JUL										
10...	--	--	0.038	--	--	--	--	<0.2	--	--
17...	--	--	--	--	--	--	--	--	--	--
AUG										
08...	--	--	0.041	--	--	--	--	1.0	--	--
14...	--	--	--	--	--	--	--	--	--	--
22...	--	--	0.036	--	--	--	--	0.4	--	--
29...	--	--	--	--	--	--	--	--	--	--
SEP										
04...	--	--	0.025	--	--	--	--	0.6	--	--
11...	--	--	--	--	--	--	--	--	--	--
18...	--	--	0.049	--	--	--	--	0.4	--	--
25...	--	--	--	--	--	--	--	--	--	--

Table 23.--*Chemical-quality data for Ralston Creek, 1983-85*--Continued

DATE	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	IRON, DISSOLVED (µG/L AS FE)	IRON, SUSPENDED, RECOVERABLE (µG/L AS FE)	IRON, TOTAL RECOVERABLE (µG/L AS FE)	MANGANESE, DISSOLVED (µG/L AS MN)	MANGANESE, SUSPENDED, RECOV (µG/L AS MN)	MANGANESE, TOTAL RECOVERABLE (µG/L AS MN)	CARBON, ORGANIC TOTAL (MG/L AS C)
JUN 1983										
17...	0.10	<0.01	0.02	20	190	210	10	--	<10	5.4
JUL										
05...	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--
AUG										
09...	<0.005	0.002	0.008	110	320	430	10	20	30	4.6
23...	--	--	--	--	--	--	--	--	--	--
SEP										
13...	--	--	--	--	--	--	--	--	--	--
OCT										
05...	0.007	<0.002	<0.002	90	250	340	10	10	20	1.8
MAR 1984										
21...	--	--	--	--	--	--	--	--	--	--
MAY										
23...	0.014	--	--	--	--	--	--	--	--	6.5
JUN										
07...	0.017	--	--	50	--	740	10	--	50	5.0
20...	0.014	--	--	--	--	--	--	--	--	3.5
JUL										
18...	--	--	--	--	--	--	--	--	--	--
JUN 1985										
04...	0.03	--	--	--	--	--	--	--	--	--
JUL										
10...	0.005	--	--	--	--	--	--	--	--	--
17...	0.012	--	--	--	--	--	--	--	--	--
AUG										
08...	0.02	--	--	--	--	--	--	--	--	--
14...	0.016	--	--	--	--	--	--	--	--	--
22...	0.015	--	--	--	--	--	--	--	--	--
29...	0.013	--	--	--	--	--	--	--	--	--
SEP										
04...	0.013	--	--	--	--	--	--	--	--	--
11...	0.015	--	--	--	--	--	--	--	--	--
18...	0.02	--	--	--	--	--	--	--	--	--
25...	0.021	--	--	--	--	--	--	--	--	--

Biological Data

Chlorophyll a

Table 24.--*Chlorophyll a concentrations for Ralston Creek, 1983*

Sampling dates	Chlorophyll a (micrograms per liter)
06-17-83	1.1
08-09-83	2.3
09-13-83	0.8
10-05-83	0.7

Algal-Growth Potential

Table 25.--*Algal-growth-potential analyses for Ralston Creek, 1983*

[mg/L, milligrams per liter; P, phosphorus; N, nitrogen; cells/mL, cells per milliliter; --, no data]

Sampling dates	Control	Nutrient spikes			
		(+0.005 mg/LP +0.075 mg/LN)	(+0.05 mg/LP)	(+1.0 mg/LN)	(+0.05 mg/LP +1.0 mg/LN)
Maximum specific growth rate (day^{-1})					
06-17-83	0.92	1.75	--	--	--
08-09-83	1.10	0.60	--	--	--
09-13-83	1.06	0.61	0.86	1.00	1.08
10-05-83	3.11	2.37	2.49	1.62	1.06
Maximum standing crop (cells/mL)$\times 10^5$					
06-17-83	4.16	62.00	--	--	--
08-09-83	0.73	4.26	--	--	--
09-13-83	1.94	4.15	2.40	0.80	4.07
10-05-83	1.81	4.70	2.08	0.50	6.00
Maximum standing crop [dry weight--(mg/L)$\times 10^3$]					
06-17-83	11.02	164.33	--	--	--
08-09-83	1.93	11.29	--	--	--
09-13-83	5.13	11.00	6.37	2.12	10.78
10-05-83	4.79	12.45	5.52	1.33	15.90

CROKE CANAL

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Chemical-Quality Data

Table 26.--*Chemical-quality data for Croke Canal, 1983-85*

[FT^3/S, cubic feet per second; °C, degrees Celsius; µS/CM, microsiemens per centimeter at 25 degrees Celsius; MG/L, milligrams per liter; DIS, dissolved; ORG, organic; SUSP, suspended; µG/L, micrograms per liter; RECOV, recoverable; --, no data collected]

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (FT^3/S)	TEMPER-ATURE (°C)	SPE-CIFIC CON-DUCT-ANCE, FIELD (µS/CM)	OXYGEN, DIS-SOLVED (MG/L)	pH, FIELD (STAND-ARD UNITS)	SOLIDS, RESIDUE AT 105 °C, TOTAL (MG/L)	SOLIDS, RESIDUE AT 180 °C, DIS-SOLVED (MG/L)	CALCIUM, DIS-SOLVED (MG/L AS CA)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)
JUL 1983												
05...	1245	369	11.0	89	8.9	7.9	--	--	--	--	--	--
27...	1300	24	25.5	313	6.4	--	--	--	--	--	--	--
JUL 1984												
18...	1215	84	16.0	94	8.3	7.4	--	--	--	--	--	--
AUG												
03...	1100	12	18.5	135	8.0	7.6	--	87	14	3.2	0.5	3.7
15...	1200	130	19.5	137	7.7	7.4	--	--	--	--	--	--
30...	1310	8.0	22.0	172	8.6	7.8	--	--	--	--	--	--
MAY 1985												
08...	1315	206	12.5	166	8.8	6.8	104	--	--	--	--	--
15...	1430	93	15.5	205	8.1	6.8	123	--	--	--	--	--
JUN												
04...	1030	42	12.0	137	8.5	6.8	81	--	--	--	--	--
20...	1330	107	--	--	--	--	85	--	--	--	--	--
28...	1430	15	20.0	162	9.2	6.5	123	--	--	--	--	--
JUL												
03...	1415	15	19.5	166	7.9	6.9	116	--	--	--	--	--
10...	1430	10	25.5	192	9.9	8.0	122	--	--	--	--	--
17...	1345	18	22.0	240	7.0	7.5	167	--	--	--	--	--

Table 26.--*Chemical-quality data for Croke Canal, 1983-85*--Continued

DATE	POTASSIUM, DISSOLVED (MG/L AS K)	SILICA, DISSOLVED (MG/L AS SiO_2)	SODIUM, DISSOLVED (MG/L AS NA)	SULFATE, DISSOLVED (MG/L AS SO_4)	NITROGEN, NITRATE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, DISSOLVED (MG/L AS N)	NITROGEN, NITRITE, TOTAL (MG/L AS N)	NITROGEN, NO_2+NO_3, DISSOLVED (MG/L AS N)	NITROGEN, NO_2+NO_3, TOTAL (MG/L AS N)	NITROGEN, AMMONIA, DISSOLVED (MG/L AS N)	NITROGEN, AMMONIA, TOTAL (MG/L AS N)
JUL 1983											
05...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL 1984											
18...	--	--	--	--	0.102	0.005	--	0.107	0.105	0.03	--
AUG											
03...	1.3	7.4	6.6	23	0.165	0.006	<0.002	0.171	0.159	0.028	0.048
15...	--	--	--	--	0.143	0.004	--	0.147	0.139	0.033	--
30...	--	--	--	--	0.081	0.011	--	0.092	0.084	<0.003	--
MAY 1985											
08...	--	--	--	--	--	--	--	--	0.165	--	--
15...	--	--	--	--	--	--	--	--	0.158	--	--
JUN											
04...	--	--	--	--	--	--	--	--	0.206	--	--
20...	--	--	--	--	--	--	--	--	0.141	--	--
28...	--	--	--	--	--	--	--	--	0.092	--	--
JUL											
03...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	0.046	--	--
17...	--	--	--	--	--	--	--	--	--	--	--

Table 26.--*Chemical-quality data for Croke Canal, 1983-85*--Continued

DATE	NITROGEN, AMMONIA + ORGANIC, DIS (MG/L AS N)	NITROGEN, NH_4 + ORG, SUSP, TOTAL (MG/L AS N)	NITROGEN, AMMONIA + ORGANIC, TOTAL (MG/L AS N)	PHOSPHORUS, DISSOLVED (MG/L AS P)	PHOSPHORUS, TOTAL (MG/L AS P)	PHOSPHORUS, ORTHO, DISSOLVED (MG/L AS P)	PHOSPHORUS, ORTHO, TOTAL (MG/L AS P)	ARSENIC, DISSOLVED (µG/L AS AS)	ARSENIC, TOTAL (µG/L AS AS)	BORON, DISSOLVED (µG/L AS B)	BORON, TOTAL RECOVERABLE (µG/L AS B)	CADMIUM, DISSOLVED (µG/L AS CD)
JUL 1983												
05...	--	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--	--
JUL 1984												
18...	--	--	<0.2	--	<0.005	--	--	--	--	--	--	--
AUG												
03...	0.2	--	0.2	0.007	0.073	0.005	0.026	<1	1	10	10	1
15...	--	--	0.5	--	0.048	--	--	--	--	--	--	--
30...	--	--	--	--	--	0.024	--	--	--	--	--	--
MAY 1985												
08...	--	--	0.5	--	0.123	--	--	--	--	--	--	--
15...	--	--	0.3	--	0.052	--	--	--	--	--	--	--
JUN												
04...	--	--	0.4	--	0.066	--	--	--	--	--	--	--
20...	--	--	0.3	--	0.027	--	--	--	--	--	--	--
28...	--	--	0.4	--	0.026	--	--	--	--	--	--	--
JUL												
03...	--	--	--	--	0.98	--	--	--	--	--	--	--
10...	--	--	0.6	--	0.049	--	--	--	--	--	--	--
17...	--	--	--	--	0.036	--	--	--	--	--	--	--

Table 26.--*Chemical-quality data for Croke Canal, 1983-85*--Continued

DATE	CADMIUM, TOTAL RECOV-ERABLE (µG/L AS CD)	CHRO-MIUM, DIS-SOLVED (µG/L AS CR)	CHRO-MIUM, TOTAL RECOV-ERABLE (µG/L AS CR)	COPPER, DIS-SOLVED (µG/L AS CU)	COPPER, TOTAL RECOV-ERABLE (µG/L AS CU)	IRON, DIS-SOLVED (µG/L AS FE)	IRON, SUS-PENDED, RECOV-ERABLE (µG/L AS FE)	IRON, TOTAL RECOV-ERABLE (µG/L AS FE)	LEAD, DIS-SOLVED (µG/L AS PB)	LEAD, TOTAL RECOV-ERABLE (µG/L AS PB)	MANGA-NESE, DIS-SOLVED (µG/L AS MN)
JUL 1983											
05...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL 1984											
18...	--	--	--	--	--	--	--	--	--	--	--
AUG											
03...	<1	<10	<1	20	60	80	--	2,200	14	31	190
15...	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--
MAY 1985											
08...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
03...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--

Table 26.--*Chemical-quality data for Croke Canal, 1983-85*--Continued

DATE	MANGANESE, SUSPENDED, RECOV (µG/L AS MN)	MANGANESE, TOTAL RECOVERABLE (µG/L AS MN)	MERCURY, DISSOLVED (µG/L AS HG)	MERCURY, TOTAL RECOVERABLE (µG/L AS HG)	SELENIUM, DISSOLVED (µG/L AS SE)	SELENIUM, TOTAL (µG/L AS SE)	URANIUM, NATURAL, TOTAL (µG/L AS U)	ZINC, DISSOLVED (µG/L AS ZN)	ZINC, TOTAL RECOVERABLE (µG/L AS ZN)	CARBON, ORGANIC, TOTAL (MG/L AS C)	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)
JUL 1983											
05...	--	--	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--	--	--
JUL 1984											
18...	--	--	--	--	--	--	--	--	--	--	14
AUG											
03...	--	280	<0.1	0.2	<1	<1	1.7	77	210	2.8	--
15...	--	--	--	--	--	--	--	--	--	2.5	--
30...	--	--	--	--	--	--	--	--	--	2.8	--
MAY 1985											
08...	--	--	--	--	--	--	--	--	--	--	--
15...	--	--	--	--	--	--	--	--	--	--	--
JUN											
04...	--	--	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--	--	--
28...	--	--	--	--	--	--	--	--	--	--	--
JUL											
03...	--	--	--	--	--	--	--	--	--	--	--
10...	--	--	--	--	--	--	--	--	--	--	--
17...	--	--	--	--	--	--	--	--	--	--	--

Biological Data

Chlorophyll a

Table 27.--*Chlorophyll a concentrations for Croke Canal, 1983-84*

Sampling dates	Chlorophyll a (micrograms per liter)
09-13-83	1.8
10-05-83	10.0
07-18-84	1.9
08-15-84	1.5
08-30-84	4.8
09-10-84	18.5

Algal-Growth Potential

Table 28.--*Algal-growth-potential analyses for Croke Canal, 1983-84*

[mg/L, milligrams per liter; P, phosphorus; N, nitrogen; cells/mL, cells per milliliter; --, no data]

Sampling dates	Control	Nutrient spikes			
		(+0.005 mg/LP +0.075 mg/LN)	(+0.05 mg/LP)	(+1.0 mg/LN)	(+0.05 mg/LP +1.0 mg/LN)
Maximum specific growth rate (day^{-1})					
09-13-83	0.69	1.01	0.98	0.63	1.57
10-05-83	1.96	1.49	2.20	2.05	1.00
08-03-84	1.61	1.14	0.92	0.67	1.11
Maximum standing crop (cells/mL)$\times 10^5$					
09-13-83	2.18	3.88	8.89	4.18	18.03
10-05-83	4.94	11.10	10.60	7.94	14.00
08-03-84	1.87	21.96	4.66	3.82	7.26
Maximum standing crop [dry weight--(mg/L)$\times 10^3$]					
09-13-83	5.79	10.28	23.55	11.08	48.50
10-05-83	13.10	29.38	27.96	21.04	36.99
08-03-84	4.96	58.19	12.34	10.12	19.24