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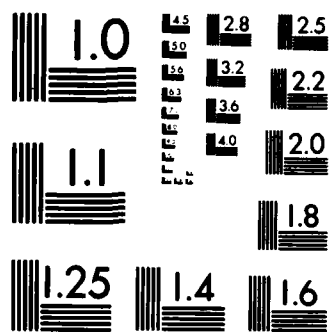
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Water Quality Management Studies

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WEST POINT LAKE
CHATTANOOCHEE RIVER
ALABAMA - GEORGIA

APRIL 1978 - DECEMBER 1979

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The upper lentic, or middle section of the reservoir, showed the greatest biological activity in terms of plankton standing stock, adenosine triphosphate, and chlorophyll production. During thermal stratification periods, phytoplankton and zooplankton standing crops in this section of the reservoir ranged from 39,310 to 666,280 cells per milliliter and 6,000 to 283,740 organisms per liter, respectively. The dominant plankton groups in numbers per unit volume were blue-green algae and rotifers. Algal growth potential assay data showed that the availability of nutrients decreased in response to increases in phytoplankton concentrations from the upper to lower reaches of the reservoir. A maximum algal growth potential value (U.S. Geological Survey method) of 48.0 milligrams per liter was obtained at the uppermost data-collection station at Franklin, Georgia, on July 13, 1978, whereas a minimum value of 0.4 milligrams per liter was recorded at the dam pool station in August 1978. "Algal Assay Procedure: Bottle Test" (U.S. Environmental Protection Agency method) identified nitrogen as the primary growth limiting nutrient in the lotic section and phosphorus as the primary growth limiting nutrient in the lentic section during stratified periods. Also, phosphorus addition in the presence of excess nitrogen appeared to support growth to its maximum.

The highest measured concentrations of total iron, total manganese, total phosphorus, total organic carbon, and volatile solids in sediments occurred in the lentic section of the reservoir and at the tributary stations, where silts and clays constitute most of the bottom sediments. PCB's (polychlorinated biphenyls) and chlordane concentrations in the bottom sediments were also relatively high in this section of the reservoir. At these locations, PCB's and chlordane were detected at concentrations up to 740 micrograms per kilogram and 210 micrograms per kilogram, respectively.

Young bullhead catfish and largemouth bass tissue samples analyzed for chlorinated hydrocarbons and heavy metals showed substantial amounts of chlordane and PCB's in both whole fish and fillet samples. Concentrations of PCB's and chlordane in fish tissue ranged from 19 to 3,800 micrograms per kilogram and 6.0 to 280 micrograms per kilogram, respectively.

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WATER QUALITY MANAGEMENT STUDIES

WEST POINT LAKE
CHATTAHOOCHEE RIVER
ALABAMA-GEORGIA
APRIL 1978-DECEMBER 1979

BY

Dean B. Radtke, Gary R. Buel and Howard A. Perlman
U. S. Geological Survey
Doraville, Georgia

FOR

U. S. Army Corps of Engineers
Environmental Quality Section
P. O. Box 2288
Mobile, Alabama 36628-0001

August 1984

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INTERNATIONAL SYSTEMS UNITS

The following factors may be used to convert International Systems of Units (SI) published herein to the inch-pound units.

<u>Divide SI unit</u>	<u>By</u>	<u>To obtain inch-pound unit</u>
Length		
micrometer (um)	25.4×10^3	inch
millimeter (mm)	25.4	inch
meter (m)	0.3048	foot
kilometer (km)	1.609	mile
Area		
square meter (m ²)	4.05×10^3	acre
hectare (ha)	0.4047	acre
square kilometer (km ²)	0.004047	acre
square kilometer (km ²)	2.590	square mile
Volume		
milliliter (mL)	3.78×10^3	gallon
liter (L)	3.785	gallon
cubic meter (m ³)	0.003785	gallon
cubic meter (m ³)	0.02832	cubic foot
cubic hectometer (hm ³)	0.001233	acre-foot
Flow		
cubic meter per second (m ³ /s)	0.02832	cubic foot per second
Mass		
microgram (ug)	28.3×10^6	ounce
milligram (mg)	28.3×10^3	ounce
gram (g)	28.35	ounce
gram (g)	453.59	pound
kilogram (kg)	907.2	ton (short, 2,000 pounds)

Temperature

$$\text{degrees Celsius (}^\circ\text{C)} = (\text{degrees Fahrenheit} - 32)/1.8$$

National Geodetic Vertical Datum of 1929 (NGVD of 1929): A geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada, formerly called mean sea level. NGVD of 1929 is referred to as sea level in this report.

ABSTRACT

West Point Reservoir is a multiple-purpose project on the Chattahoochee River about 95 kilometers downstream from Atlanta. Urbanization has placed large demands on the Chattahoochee River, and water quality below Atlanta was degraded, even before impoundment. Water-quality, bottom-sediment, and fish-tissue samples were collected from West Point Reservoir to determine whether water-quality problems have occurred subsequent to impoundment. Water-quality data were collected at 16 sampling stations within the reservoir and the river downstream of the dam on 17 data-collection trips between April 1978 and December 1979.

Water-quality data show that severe hypolimnetic oxygen deficiency occurred in the reservoir after thermal stratification developed in the spring of both 1978 and 1979. This environment favored the release of iron, manganese, phosphorus, and other constituents from the sediments. Concentrations of dissolved iron and manganese in the hypolimnion at the dam pool stations ranged from 20 to 7,700 and 30 to 3,000 micrograms per liter, respectively. During these periods of thermal stratification, dissolved-oxygen concentrations in the release water from West Point Reservoir consistently were below State of Georgia water-quality standards at the data-collection stations immediately below the reservoir. At these stations, dissolved-oxygen concentrations ranged from 2.0 to 6.3 milligrams per liter, having a mean of 3.8 milligrams per liter. The State of Georgia requires a minimum concentration of 4 milligrams per liter to meet water-quality standards. Hydrogen sulfide odor was also evident in the area immediately downstream from the dam during periods of thermal stratification.

The upper lentic, or middle section of the reservoir, showed the greatest biological activity in terms of plankton standing stock, adenosine triphosphate, and chlorophyll production. During thermal stratification periods, phytoplankton and zooplankton standing crops in this section of the reservoir ranged from 39,310 to 666,280 cells per milliliter and 6,000 to 283,740 organisms per liter, respectively. The dominant plankton groups in numbers per unit volume were blue-green algae and rotifers. Algal growth potential assay data showed that the availability of nutrients decreased in response to increases in phytoplankton concentrations from the upper to lower reaches of the reservoir. A maximum algal growth potential value (U.S. Geological Survey method) of 48.0 micrograms per liter was obtained at the uppermost data-collection station at Franklin, Georgia, on July 13, 1978, whereas a minimum value of 0.4 micrograms per liter was recorded at the dam pool station in August 1978. "Algal Assay Procedure: Bottle Test" (U.S. Environmental Protection Agency method) identified nitrogen as the primary growth limiting nutrient in the lotic section and phosphorus as the primary growth limiting nutrient in the lentic section during stratified periods. Also, phosphorus addition in the presence of excess nitrogen appeared to support growth to its maximum.

The highest measured concentrations of total iron, total manganese, total phosphorus, total organic carbon, and volatile solids in sediments occurred in the lentic section of the reservoir and at the tributary stations, where silts and clays constitute most of the bottom sediments. PCB's (polychlorinated biphenyls) and chlordane concentrations in the bottom sediments were also relatively high in this section of the reservoir. At these locations, PCB's and chlordane were detected at concentrations up to 740 micrograms per kilogram and 210 micrograms per kilogram, respectively.

Young bullhead catfish and largemouth bass tissue samples analyzed for chlorinated hydrocarbons and heavy metals showed substantial amounts of chlordane and PCB's in both whole fish and fillet samples. Concentrations of PCB's and chlordane in fish tissue ranged from 19 to 3,800 micrograms per kilogram and 6.0 to 280 micrograms per kilogram, respectively.

INTRODUCTION

West Point Reservoir is a multiple-purpose project designed to provide flood control, power, recreation, fish and wildlife enhancement, and stream-flow regulation for downstream navigation. Construction of the reservoir was authorized by the United States Flood Control Act of 1962. West Point Dam is on the Chattahoochee River, 5.1 km north of West Point, Ga., and 112 river km downstream from Atlanta. Impoundment began in October 1974 and the reservoir filled to normal pool elevation in June of 1975.

The problems associated with water quality in the study area, as pointed out by Cherry and others (1978), are for the most part related to urbanization in the Atlanta and LaGrange metropolitan areas. This urbanization has created large demands on the Chattahoochee River, not only as a major water supply, but as a transporter of municipal and industrial wastes. As a result, the water quality in the river below Atlanta was in a degraded condition, even before impoundment. Excessive organic, nutrient, and pathogenic organism loadings could cause accelerated eutrophication, and could spoil the recreational potential of the proposed reservoir. For this reason concern was expressed about the potential effects these metropolitan areas would have on the reservoir, even prior to the dam's closure.

Objectives

The objectives of this study were to: (1) document general post-impoundment water-quality conditions of the reservoir, (2) establish base-line conditions for future comparisons, (3) identify water-quality environmental problems, (4) collect data to develop guidance for reservoir control and discharge water-quality relations, (5) study special problems and collect data necessary to develop criteria for solutions of such problems, and (6) collect data that would provide an adequate data base and understanding of project conditions to facilitate coordination with State agencies in implementing watershed pollution control.

The purpose of this report is to present and interpret the limnological data collected from April 1978 through December 1979, and make recommendations accordingly.

Scope

West Point Reservoir, in west-central Georgia, is in an 8,944 km² drainage basin of the upper Chattahoochee River (fig. 1). The study area encompassed the Chattahoochee River from Franklin, Ga., to Langdale, Ala., (fig. 2) approximately 69 km in river length.

The approach used to meet the stated objectives was to collect and analyze data and prepare a report concerning water, sediments, and biological

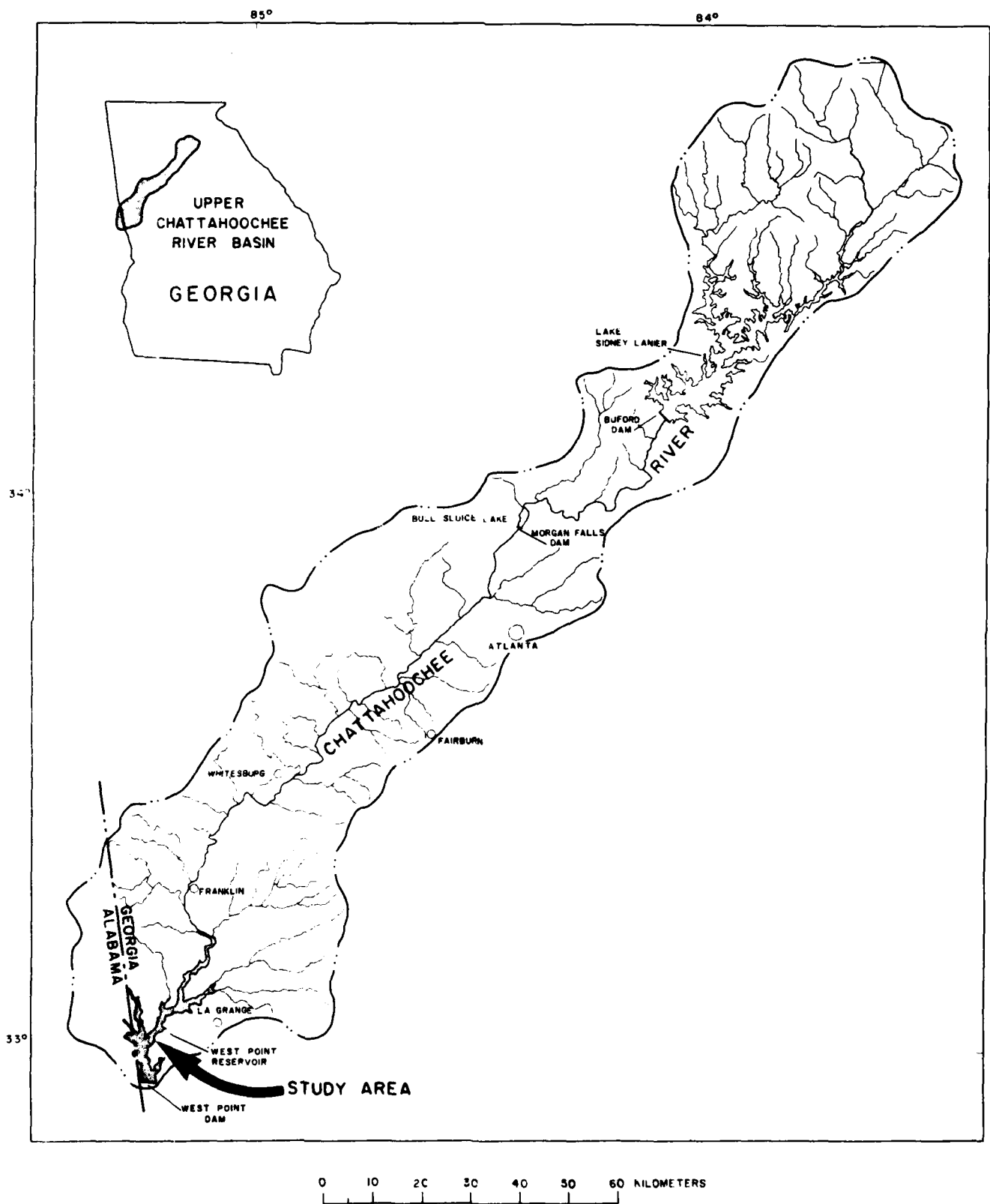


Figure 1.—Location of study area within the upper Chattahoochee River basin.

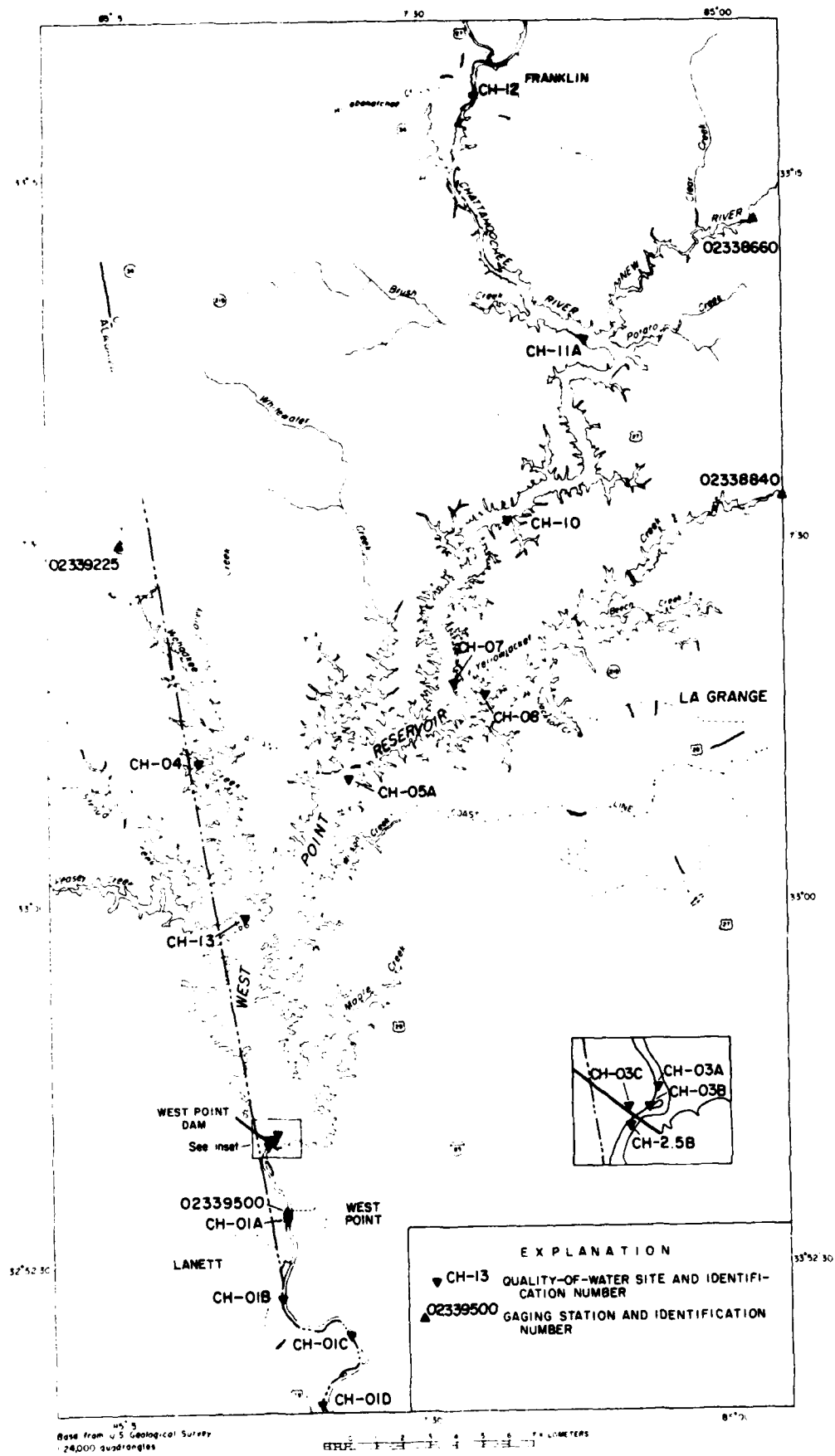


FIGURE 2—West Point Reservoir study area and location of the principal data-collection stations

quality of West Point Reservoir and its environs. The data analyzed included water (physical and chemical parameters), sediment (physical and chemical parameters), bacteriological parameters, biological (standing stock and biomass parameters), and fish tissue chemical parameters.

In order to determine river and reservoir water-quality conditions during thermally stratified and unstratified periods, water-quality sampling of the reservoir and the river downstream from the dam began in April 1978 and ended in December 1979.

Previous Studies

Schneider and others (1972) cited the potential for accelerated eutrophication and its associated nuisance problems in West Point Reservoir. This report also stated that problems associated with thermal stratification could occur and that potential problems of low dissolved-oxygen concentrations, hydrogen sulfide odors, and high levels of dissolved iron and dissolved manganese could interfere with water-supply users downstream from the dam. The authors recommended the use of preventive measures to preclude potential water-quality problems associated with these conditions.

As a result of these concerns, Vick and others (1976) conducted the first of many postimpoundment studies. This report noted the occurrence of acute dissolved iron and dissolved manganese problems during periods of thermal stratification. On the basis of AGP-EPA (algal growth potential, U.S. Environmental Protection Agency method) assays and phosphorus-based trophic state models, the authors predicted that the reservoir would become highly eutrophic.

In 1975, water-quality analyses were made by the Georgia Department of Natural Resources (1976) to provide information about possible water-quality criteria violations and nuisance conditions. Some of the conclusions of this study were as follows: (1) nuisance algal conditions were not observed; (2) low dissolved-oxygen concentrations and, at times, anaerobic conditions in the hypolimnion caused serious violations immediately below West Point Dam during the thermal stratification period; (3) the headwater area of the reservoir was of poor quality and was not acceptable for whole-body contact recreational activities; (4) water quality was better in the downstream part of the reservoir; and (5) overall, the lake was classified as highly eutrophic.

During the period of April 1975 to June 1978, the U.S. Geological Survey conducted a river-quality assessment of the upper Chattahoochee River basin in Georgia (Cherry and others, 1978). The study showed that urbanization and reservoir releases had substantial effects on the quality of water in the Chattahoochee River. Point and nonpoint sources from the metropolitan Atlanta area contributed most of the dissolved and suspended loads to the river and, subsequently, to West Point Reservoir. These constituent loads increased with urbanization within the basin. Urbanization, therefore, had created large demands on West Point Reservoir not only as the major sources of water for LaGrange, but also as a major transporter of wastes from Atlanta and LaGrange.

Stamer and others (1978) attempted to estimate the effects of these loads from point and nonpoint sources on the potential eutrophication of West Point Reservoir. Analysis of data collected from November 1975 to

to September 1976 showed that the availability of nutrients, as measured by AGP-USGS (algal growth potential, U.S. Geological Survey method) assays, decreased in response to increased phytoplankton concentrations from the upper to lower reaches of the reservoir. Dissolved orthophosphate was the nutrient limiting phytoplankton growth when temperatures were greater than 26°C. The authors predicted that in the year 2000, phytoplankton concentrations in the reservoir would probably not exceed 700,000 cells/mL during extended summer low-flow periods if point source concentrations of phosphorus are not greater than about 1 mg/L.

Several reports have been published in conjunction with the Auburn University Department of Fisheries and Allied Aquacultures on a series of fisheries and limnology studies of West Point Reservoir and its environs. Pre-impoundment fisheries information has been reported by Chookajorn (1973), Hiranvat (1973), Shelton and Davis (1977), Lawrence (1975), and Gilbert (1969). These studies revealed the presence of 53 species of fish representing 14 families. Three of these species were considered endemic to the Chattahoochee River basin, but not endangered or threatened within the basin. It was also found that preimpoundment fish standing stocks were typical when compared with other southeastern streams.

Water-quality and biological data gathered during two consecutive post-impoundment studies by Davies and others (1979; 1980) indicated that West Point Reservoir was mesoeutrophic, and maintained sufficient aquatic production to sustain and support a relatively high fish biomass (350 kg/ha). It was also noted that 16 of the original species of fish present during preimpoundment were not found during postimpoundment studies. It was speculated that eutrophic conditions were not reached due, in part, to insufficient carbon loading into the reservoir.

Acknowledgments

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DESCRIPTION OF THE STUDY AREA

West Point Reservoir is impounded by a U.S. Army Corps of Engineers gravity-type dam 2,211 m long and 29.6 m high. The reservoir has a surface area of 10,360 ha, a volume of 605 hm³, and a shoreline of 840 km at normal pool elevation of 194 m above sea level (U.S. Army Corps of Engineers, 1975).

The upper Chattahoochee River originates on the southern slopes of the Blue Ridge Mountains in northeast Georgia and flows generally southwestward through the Atlanta area to West Point Reservoir at the Georgia-Alabama State line. The drainage area of the Chattahoochee River upstream of West Point Dam is 8,944 km² and it lies entirely within the Piedmont physiographic province.

The Piedmont province, in the vicinity of the study area, is a nearly level plateau whose generally smooth surface lies 244 to 275 m above sea level. Southwestward it descends to 152 m at the margin of the Coastal Plain. Except in the Pine Mountain area, the plateau is almost unbroken by isolated ridges. It is not deeply dissected, except along the valley of the Chattahoochee River.

Metamorphic and igneous rocks underlie the study area and generally occupy broad belts. The comparatively uniform lithology is reflected in the uniform topography.

The climate of the study area is temperate but humid, with mean annual temperatures of 16° to 19°C and an average annual rainfall of 1,200 to 1,350 mm per year. As a result of this rainfall, mean annual runoff in the study area is high, ranging from 250 to 1,000 mm. Major flood-producing storms usually occur in winter or spring and the lowest streamflows generally occur in late autumn. The frequency, severity, and duration of both higher and lower flows have been affected for many years by flow regulation by hydroelectric facilities and more recently by Buford Dam, which regulates the runoff from the upper one-third of the Chattahoochee River basin.

Streamflow into the reservoir is, therefore, predominantly dependent upon rainfall and regulation by hydroelectric generating facilities. The Chattahoochee River, which is the principal tributary to West Point Reservoir, contributes approximately 96 percent of the mean annual water loading. Minor tributaries to West Point Reservoir include Yellowjacket, Wehadkee, Whitewater, Potato, and Maple Creeks and New River.

Land in the study area is about 79 percent forested, 17 percent rural, and 4 percent urban. Urban land includes residential, commercial, and industrial development. Rural land includes cropland, pastureland, and feedlot operations. Forested land includes deciduous and coniferous forests and wetlands.

The original vegetation of the study area consisted primarily of hardwood forests of the oak-hickory community. However, because of extensive intervention by man for urban and agricultural uses, it is difficult to find any established vegetation pattern today. Remnants of the original forest can be found in isolated areas too difficult to farm or develop, such as steep slopes and ravines.

DATA COLLECTION

Sixteen data-collection stations were established on the Chattahoochee River and its principal tributaries between Franklin, Ga., and Langdale, Ala. Eight water-quality data-collection stations were established in the main river channel; three stations were in the tributaries, and five stations were located downstream from West Point Dam. A map of the reservoir and the principal data-collection stations is presented in figure 2 and

descriptions of the principal station locations are provided in table 1. Throughout this report, U.S. Army Corps of Engineers station identification numbers are used for the sake of brevity.

In table 1, the reservoir stations were partitioned into lotic (flowing water, riverine) and lentic (still water, lacustrine). These terms describe the stations as they relate to ecologically important but different habitats. Later discussions will utilize these terms and describe their significance as they relate to West Point Reservoir. It is important to realize, however, that these descriptors are relative terms. The lotic and lentic environments within West Point Reservoir change both temporally and spatially with changes in the hydrologic conditions such as inflow-outflow discharge, and reservoir surface elevation. For example, if the reservoir surface elevation is low and a spate occurs, the entire reservoir would be described as being lotic in nature. Also, the demarcation between these two environments is not sharply defined. This transition zone (ecotone) can be variable and considerable in areal extent and commonly exhibits characteristics of the adjoining environments.

Three data-collection stations (CH-03A, CH-03B, and CH-03C) were situated near the dam in order to monitor the effects of an inundated coffer structure. (See inset, fig. 2.) During dam construction, the coffer structure was built to divert river water around the construction site. When dam construction was completed, the part of the coffer structure upstream from the powerhouse was not removed. This section of the coffer structure was left in place in the hope that the flow of poor quality hypolimnetic water through the penstocks would be impeded when the lake stratified. This structure, however, no longer exists (Harold Wallace, U.S. Army Corps of Engineers, oral commun., 1982).

Water-quality data were collected on 17 sampling trips between April 1978 and December 1979. Table 2 summarizes the parameters collected on each data-collection trip and table 3 summarizes parameters measured at each individual station. These tables are important, especially when referring to subsequent data tables and illustrations. For example, not all parameters were collected at all data-collection stations and not all stations listed were designated for sampling on each data-collection trip. The downstream river stations were visited twice each trip to make measurements and collect samples at minimum daily release and maximum daily release.

Pool elevations of West Point Reservoir, mean inflow-outflow discharges at time of collection, and the instantaneous discharges of the Chattahoochee River at West Point at the time of low-flow and high-flow sampling are presented in Appendix A-1. For Yellowjacket and Wehadkee Creeks and New River, inflow discharges are incomplete because gaging stations were not established until October 1978. Appendix A-2 figures illustrate the mean daily discharges at selected inflow-outflow sites for the duration of the study. Maximum, minimum, and mean temperatures at sampling times are presented in Appendix A-3, and the mean daily temperatures at inflow-outflow stations are illustrated in Appendix A-4 figures.

FIELD SAMPLING METHODOLOGY

Temperature, dissolved oxygen, pH, specific conductance, and oxidation-reduction potential were measured on site by using the Hydrolab

Table 1.--Principal data-collection stations in and downstream from West Point Reservoir

U.S. Geological Survey Identification No.	U.S. Corps of Engineers Identification No.	Environmental Protection Agency Identification No.	River kilometer	Station description
Main channel reservoir stations (lotic environment)				
02338500	CH-12	121992	378.94	Chattahoochee River at U.S. Highway 27, at Franklin, Ga.
02338570	CH-11A	—	367.09	Chattahoochee River above New River, near Corinth, Ga.
02338710	CH-10	121960	355.02	Chattahoochee River at State Highway 219, near LaGrange, Ga.
Main channel reservoir stations (lentic environment)				
02338720	CH-07	121939	346.70	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga.
02339190	CH-05A	121920	339.14	Chattahoochee River at State Highway 701, near Abbottsford, Ga.
02339382	CH-03A	—	324.45	Chattahoochee River above coffer structure, above West Point Dam
02339387	CH-03B	—	324.18	Chattahoochee River east of coffer structure, above West Point Dam
02339388	CH-03C	121913	324.08	Chattahoochee River below coffer structure, above West Point Dam
Tributary stations				
02339020	CH-08	121940	—	Yellowjacket Creek at Cameron Mill Road, near LaGrange, Ga.
02339350	CH-04	121918	—	Wahadkee Creek at State Highway 244, near Abbottsford, Ga.
02339362	CH-13	121915	—	Wahadkee Creek at State Highway 238, near Abbottsford, Ga.
Downstream river stations				
02339402	CH-2.5B	121912	323.96	Chattahoochee River below West Point Dam
02339500	CH-01A	121910-A	320.28	Chattahoochee River at West Point, Ga.
02339550	CH-01B	010020	317.59	Chattahoochee River (city of Lanett intake) at Lanett, Ala.
02339560	CH-01C	—	313.63	Chattahoochee River above junction of Long Cane Creek, near West Point, Ga.
02339780	CH-01D	—	310.25	Chattahoochee River at Langdale, Ala.

Table 2.--Parameters collected on each data-collection trip

Month and days	Apr.-	May-	June	July	Aug.	Aug.	Oct.	Nov.	Jan.	Mar.	Apr.-	June	July	Aug.	Sept.	Oct.	Loc.
	9-18	30-14	30-6	9-13	13-18	27-31	16-19	27-30	22-24	19-22	30-5	11-15	23-27	20-24	16-20	14-17	9
Year	1978								1979								
Trip number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
I. Water sampling																	
A. On-site physical and chemical																	
Conductivity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Dissolved oxygen	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Oxidation-reduction potential	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Percent light transmission	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
pH	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Secchi-disc visibility	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Temperature	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Turbidity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
B. Physical and chemical																	
Alkalinity	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Calcium, total	X	--	--	--	--	X	--	--	--	--	--	--	--	--	--	--	--
Carbon, organic, dissolved	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Carbon, organic, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Carbon dioxide (calculated)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Chloride	X	--	--	--	--	X	--	--	--	--	--	--	--	--	--	--	--
Color	X	X	X	X	X	X	--	--	X	--	X	X	X	X	X	X	X
Iron, dissolved	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Iron, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Magnesium, total	X	--	--	--	--	X	--	--	--	--	--	--	--	--	--	--	--
Manganese, dissolved	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Manganese, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nitrogen, ammonia, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nitrogen, Kjeldahl, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nitrogen, inorganic, total (calculated)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 2. Parameters collected on each data-collection trip--Continued

Month and days	Apr. 9-18	Apr.- May 30-14	May- June 30-6	July 9-13	Aug. 13-18	Aug. 27-31	Oct. 16-19	Nov. 27-30	Jan. 22-24	Mar. 19-22	Apr.- May 30-5	June 11-15	July 23-27	Aug. 29-24	Sept. 16-20	Oct. 14-17	Nov. 9-14
Year	1978								1979								
Trip number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
B. Physical and chemical--Continued																	
Nitrogen, nitrite plus nitrate, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nitrogen, organic, total (calculated)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Nitrogen, total (calculated)	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Phosphorus, ortho- phosphate, dissolved	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Phosphorus, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Potassium, total	X	--	--	--	--	X	--	--	--	--	--	--	--	--	--	--	--
Residue, filterable, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Residue, non- filterable, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sodium, total	X	--	--	--	--	X	--	--	--	--	--	--	--	--	--	--	--
Sulfate, dissolved	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Sulfur, sulfide, total	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
Zinc, total	X	X	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--
C. Biological																	
Adenosine triphosphate	X	X	X	X	X	X	X	--	--	--	X	X	X	X	X	X	X
Algal growth potential	X	X	X	X	X	X	X	--	--	--	--	--	--	--	--	--	--
Benthic algae	--	--	--	--	--	X	--	--	--	--	--	--	--	--	--	--	--
Benthic invertebrates	X	X	X	X	X	X	--	--	--	--	--	--	--	--	--	--	--
Chlorophyll <u>a</u> and <u>b</u>	X	X	X	X	X	X	X	--	--	--	X	X	X	X	X	X	X
Fecal coliform (F.C.)	X	X	X	X	X	X	--	--	--	--	X	X	X	X	X	X	X
Fecal strepto- cocci (F.S.)	X	X	X	X	X	X	--	--	--	--	X	X	X	X	X	X	X
F.C./F.S. ratio (calculated)	X	X	X	X	X	X	--	--	--	--	X	X	X	X	X	X	X
Phytoplankton (identification and enumeration)	X	X	X	X	X	X	--	--	--	--	X	X	X	X	X	X	X

Table 2.--Parameters collected on each data-collection trip--Continued

Month and days	Apr.- May		May- June		July	Aug.	Aug.	Oct.	Nov.	Jan.	Mar.	Apr.- May		June	July	Aug.	Sept.	Oct.	Dec.
	Apr.- 9-18	May 30-14	May- 30-6	June 9-13	July 13-18	Aug. 27-31	Oct. 16-19	Nov. 27-30	Jan. 22-24	Mar. 19-22	Apr.- 30-5	May 11-15	June 23-27	July 20-24	Aug. 16-20	Sept. 14-17	Oct. 9-12	Dec. 9-12	
Year	1978										1979								
Trip number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17		
C. Biological--Continued																			
Seeton (total suspended material)	X	X	X	X	X	X	--	--	--	--	X	X	X	X	X	X	X	X	
Zooplankton (identification and enumeration)	X	X	X	X	X	X	--	--	--	--	X	X	X	X	X	X	X	X	
II. Sediment samples																			
A. Particle size																			
B. Selected chemical																			
Carbon, organic, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Nitrogen, Kjeldahl, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Oil and grease	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Phosphorus, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Volatile solids	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
C. Metals																			
Arsenic, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Cadmium, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Chromium, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Copper, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Iron, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Lead, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Manganese, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Mercury, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Nickel, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Zinc, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
D. Chlorinated hydrocarbons																			
Aldrin	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
BHC, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	
Chlordane	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	--	

Table 2.--Parameters collected on each data-collection trip--Continued

Month and days	Apr.-		May-		July 9-13	Aug. 13-18	Aug. 27-31	Oct. 16-19	Nov. 27-30	Jan. 22-24	Mar. 19-22	Apr.-		July 23-27	Aug. 20-24	Sept. 16-20	Oct. 14-17	Dec. 9-13
	Apr. 9-18	May 30-14	June 30-6	May 30-5								June 11-15						
Year	1978								1979									
Trip number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
D. Chlorinated hydrocarbons--Continued																		
DDD	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
DDE	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
DDT	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Dieldrin	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Endo-sulfur sulphate	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Endrin	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Heptachlor	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Heptachlor epoxide	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Methoxychlor	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Mirex	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Perthane	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Polychlori- nated bi- phenyls (PCB)	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Polychlori- nated nap- thalenes (PCN)	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Toxaphene	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
III. Fish tissue analyses																		
A. Metals																		
Arsenic, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Cadmium, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Chromium, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Lead, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Mercury, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Selenium, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
Zinc, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
B. Chlorinated hydrocarbons																		
Aldrin	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
BHC, total	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
ChlorDane	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
DDD	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	
DDE	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--	

Table 2.--Parameters collected on each data-collection trip--Continued

Month and days	Apr.-		May-		July	Aug.	Oct.	Nov.	Jan.	Mar.	Apr.-		July	Aug.	Sept.	Oct.	Dec.
	Apr.	May	June	June							May	June					
Year	1978								1979								
Trip number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
B. Chlorinated hydrocarbons--Continued																	
DCT	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--
Dieldrin	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--
Endo-sulfur sulphate	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--
Endrin	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--
Heptachlor	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--
Heptachlor epoxide	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--
Perthane	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--
Polychlori- nated bi- phenyls (PCB)	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--
Polychlori- nated nap- thalenes (PCN)	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--
Toxaphene	--	--	--	--	--	X	--	--	--	--	--	--	--	X	--	--	--

Table 3.—Parameters and stations sampled during West Point Reservoir study

	Data-collection stations (CH-)															
	12	11A	10	07	08	05A	13	04	03A	03B	03C	2.5B	01A	01B	01C	01D
Physical-chemical	X	X ¹	X	X	X	X	X	X ²	X ³	X ³	X	X	X	X	X	X
Biological ⁴	X	X ¹	X	X	--	X	X	--	--	--	X	--	--	--	--	--
Algal growth potential ⁵	X	--	X	X	--	X	--	--	--	--	X	--	--	--	--	--
Bacteriological	X	--	--	X	--	--	--	--	--	--	X	X	--	X	X	X
Benthic algae ⁵	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Benthic invertebrates ⁵	X	--	X	X	--	--	--	--	--	--	X	--	--	X	X	--
Bottom sediments	X	--	X	X	X	X	X	--	--	--	X	--	--	X	X	--
Fish tissue	--	--	--	--	X ⁶	--	--	X ⁶	--	--	--	--	--	--	--	--

1 Determinations limited to 1979.

2 Determinations limited to on-site measurements; percent light transmission; turbidity; alkalinity; bicarbonate; carbon, organic, total and dissolved; iron, total and dissolved; nitrogen, ammonia, total; nitrite plus nitrate, total; phosphorus, orthophosphate, dissolved.

3 Determinations limited to specific conductance; dissolved oxygen; oxidation-reduction potential; pH; Secchi-disk visibility; temperature; iron, total and dissolved.

4 Phytoplankton, chlorophyll, zooplankton, seston, and ATP.

5 Determinations limited to 1978.

6 Approximate locations only.

multi-parameter water-quality instrument, Model 6D Surveyor or Model 8002¹. Before each data-collection trip and at the beginning of each sampling day, instrument calibration was checked against reproducible standards.

Stations within the reservoir were measured for on-site parameters at least every 2 m through the entire water column, and during periods of thermal and oxygen stratification, at every meter for the first 10 m. River stations below West Point Dam were measured at a depth of 0.7 m during minimum daily release and at 1 m during maximum daily release. Station CH-12 at the reservoir headwaters was treated as a river station and measured at a depth of 1 m. Cross-sectional variability was determined by measurement of on-site parameters at CH-12, CH-05A, CH-01A, and CH-01C. Measurements in the vertical profile were made at positions one-fifth, two-fifths, three-fifths, and four-fifths of the distance from the left bank.

Water samples for chemical determinations were collected in one of two ways. For trips 1 through 10, data-collection stations in the reservoir were point sampled by using a 3-L Van Dorn bottle. For the remaining trips, water was pumped directly from the required sampling depth to the container, or sealed filter chamber for filtered samples, by using a Master-flex single-channel peristaltic pump. Chemically inert silicone tubing was used for delivery of the sample to minimize contamination. The pumping method of sampling reservoir water replaced the point sampler method because the pumping method is faster, more convenient, and allows transfer of the sample directly to the container or filtering apparatus. Direct transfer of the sample also minimized oxidation of dissolved trace metals and sulfides collected from the anoxic hypolimnion. River stations below West Point Dam were point sampled with the 3-L Van Dorn bottle. A U.S. Geological Survey churn sample splitter was used to integrate the composited point samples. All samples were chilled and kept at approximately 4°C until time of analysis.

During periods of stratification, reservoir stations were sampled for chemical determinations as defined in table 2 at depths of 0.2, 2, 4, 8, and 16 m. Where the bottom depth was between either 13 and 16 m or 21 and 24 m, bottom samples were taken at 12 and 20 m, respectively. In rare instances where the bottom depth at coffer-structure stations (CH-03A, CH-03B, and CH-03C) was greater than 25 m, the last sample was taken at a depth of 24 m. However, no samples were taken closer than 1 m to the bottom. If the system was unstratified, only surface and near-bottom samples were taken. River sites below the dam were sampled at 0.7 m during minimum daily release and at 1.0 m during maximum daily release.

Water samples for all biological analyses except zooplankton were collected from the euphotic zone. Measurements to determine euphotic zone depth were made with a submarine photometer. After surface calibration, measurements of percent transmission were made at 1-m intervals until a value of 1 percent was obtained. Water was then collected from the euphotic zone at 1-m intervals (point sampled in 1978 or pumped in 1979) and composited in a 14-L sample splitter.

Aliquots for the analysis of phytoplankton, seston, AGP (algal growth potential), chlorophyll, and ATP (adenosine triphosphate) were drawn off the

¹ Any use of trade names is for descriptive purposes only and does not constitute endorsement by the U.S. Geological Survey.

splitter to insure a uniform composite. For phytoplankton analysis, a 1-L aliquot was drawn off into a plastic bottle and preserved with 4-percent formaldehyde solution and cupric sulfate. A 1-L seston sample was taken and preserved with mercuric chloride to stop all biological and microbiological activity. For AGP-USGS assays in 1978, a sample aliquot was filtered at a maximum vacuum of 250 mm of mercury through a 0.22-micrometer glass fiber filter immediately after collection to remove indigenous algae, bacteria, fungi, and other organisms which are capable of utilizing the available nutrients in the sample (Shoaf and Lium, 1979). The filtered sample was then immediately chilled to 4°C. A 1-L sample aliquot for AAP:BT-EPA (algal assay procedure: bottle test, U.S. Environmental Protection Agency method) was taken and chilled to 4°C and stored in the dark until the sample was autoclaved and filtered in the laboratory (U.S. Environmental Protection Agency, 1971). A 250-mL sample for chlorophyll analysis was vacuum filtered through a 0.45-micrometer glass fiber filter and stored in a glass vial. Chlorophyll samples were wrapped in aluminum foil to protect them from decomposition by exposure to light and were kept frozen until time of analysis.

Samples for ATP (U.S. Geological Survey method) analysis were prepared as described by Shoaf and Lium (1977) in the following manner: Ten milliliters of water were filtered through a 0.45-micrometer membrane filter and the filter was washed with 5 mL of distilled water. The filtrate was discarded. Any ATP present was then extracted with a buffered solution of DMSO (dimethyl sulfoxide), rinsed twice with more buffered DMSO solution, and quick-frozen in a dry ice-acetone bath. Samples were kept frozen on dry ice until time of analysis. Both chlorophyll and ATP samples were filtered at a pressure of no more than 250 mm of mercury to prevent cell lysis.

Zooplankton samples were collected by two methods. In 1978 zooplankton were obtained by a single vertical tow through the entire water column with a 0.5-m diameter, 80-micrometer mesh Wisconsin net. In 1979 zooplankton samples were obtained by pump compositing the entire water column, with the exception of the last meter above the bottom. A diaphragm pump rated at 31.2 L per minute connected to a 19-mm diameter rubber hose was used to pump water through a deck plankton collector with a net mesh size of 75 microns. The pump rating was used to calculate the rate at which the hose was raised through the water column so that a total volume of 200 L was filtered. Results from replicate analyses, taken in 1979 under experimentally designed and controlled conditions, indicated that the two methods compared favorably (Radtke, 1979). All samples were preserved in 4-percent formaldehyde solution. A few drops of glycerin were added to prevent embrittlement of the organisms.

Benthic macroinvertebrates were also collected by two methods. At selected mainstem reservoir and downstream river stations, benthic macroinvertebrates were collected with a jumbo multiple-substrate sampler as described in Hahn and others (1977). Each of two samplers was placed at a standard depth of 1 m below the water surface at sampling stations and left for about 6 weeks. Because reservoir elevations varied, substrate samplers were suspended from buoys. Benthic macroinvertebrates also were collected at selected downstream river stations with a ponar dredge and were immediately washed through a U.S. Standard No. 30 sieve. All samples were preserved in 70-percent ethyl alcohol.

Benthic algae were collected during three consecutive 2-week periods at station CH-01A with artificial substrate samplers made of thin polyethylene

lastic. Three substrate samplers were suspended 0.3-m below the water surface from a single buoy located in the center of the channel. These samplers were left for about 2 weeks. At the end of each 2-week interval, the three samplers were composited and preserved in 4-percent formaldehyde solution.

Samples for fecal coliform and fecal streptococci bacteriological analyses were collected at selected sites in West Point Reservoir and in the Chattahoochee River below West Point Dam. Samples were taken with sterile glass bottles at a depth of 0.3 m and analyzed within 6 hours. The membrane-filter method used for these analyses involved filtering suitable volumes of water through 0.45-micrometer membrane filters and incubating the filters on bacteria-specific agar for recommended time periods. Normally, volumes of 10, 30, and 100 mL were filtered, but where unusually high counts were expected 3, 10, and 30 mL were used. Filtration was done by following accepted sterile laboratory techniques. Filters to be examined for fecal coliform colonies were then placed onto m-FC agar and incubated for 22 \pm 2 hours at 44.5°C. For fecal streptococci analysis, filters were placed onto KF agar and incubated for 46 \pm 2 hours at 35°C.

Fish specimens for fish-tissue analysis were collected by Auburn University, Department of Fisheries and Cooperative Fishery Research Unit, from Yellowjacket and Wehadkee Creek embayments by using a rotenone treatment. In 1978 fish-tissue samples for whole-fish analysis were prepared from five young-of-the-year specimens of brown bullhead catfish (Ictalurus nebulosus) from each embayment. In 1979, eight of the smallest brown bullhead catfish and eight young-of-the-year largemouth bass (Micropterus salmoides) were collected for analysis. Upon collection, the fish specimens were immediately wrapped in aluminum foil and placed on dry ice for shipment to the laboratory. The fish were stored frozen until time of analysis. For each collection station in 1979 and each species of fish, five specimens were composited for whole-fish analysis and three specimens were composited for fillet-tissue analysis. The fillets were prepared by beheading, gutting, and skinning the specimens.

Bottom-sediment samples were collected with an epoxy-coated petter-ponar dredge and were composited with an epoxy-coated container and utensil. Epoxy-coated equipment was used to prevent contamination of the sample by extraneous metallic constituents from sampling devices. For the river stations, four samples were collected from equally spaced locations in the cross section, and were composited for analysis. At each lake station, four sediment samples were composited from points 6 m to the north, east, south, and west of the station.

ANALYTICAL METHODOLOGY

Analytical methods, detection limits, holding times, methods of treatment, and literature citations for method documentation are shown in table 4. Because many of the analytical methods listed in table 4 are established procedures and documented in the literature, the following discussion includes only those analytical methods which are not as well documented.

Taxonomic and numerical assessment of natural populations of zooplankton were determined to the nearest species where possible, by using the following method: Zooplankton samples were scanned first with a stereozoom microscope at 10-80 x magnification to compile a species list. The sample

Table 4.--Methods of collection and analysis of samples collected in and downstream from West Point Reservoir

[μ , less than]

	Collection method	Treatment	Maximum holding time	Detection limit:	Analytical method	Reference
I. Water sampling						
A. On-site physical-chemical						
Specific conductance.	On site	--	--	1 μ hos/cm at 25°C	Multiparameter instrument	--
Dissolved oxygen	do.	--	--	0.1 mg/L	do.	--
Oxidation-reduction potential.	do.	--	--	5 mv	do.	--
Percent light transmission.	do.	--	--	--	Submarine photometer	--
pH	do.	--	--	0.1 unit	Multiparameter instrument	--
Secchi-disc visibility.	do.	--	--	None	20-cm diameter black and white Secchi disc.	--
Turbidity	1978-Van Dorn (PVC) point sampler. 1979-Peristaltic pump with silicone tubing.	Chill to 4°C	7 days	1 unit	Nephelometric	Skougstad and others (1979, p. 549-550).
Water temperature	On site	--	--	0.1°C	Multiparameter instrument	--
B. Selected physical-chemical						
Alkalinity	1978-Van Dorn (PVC) point sampler. 1979-Peristaltic pump with silicone tubing.	Chill to 4°C	24 hours	--	Electrometric, titration	Skougstad and others (1979, p. 517-518).
Bicarbonate	Calculated					--
Calcium, total	1978-Van Dorn (PVC) point sampler. 1979-Peristaltic pump with silicone tubing.	Chill to 4°C Acidity with HNO_3 to pH <2.	3 months	0.1 mg/L	Atomic absorption spectrometric, direct.	Skougstad and others, (1979, p. 511-512).
Carbon dioxide	Calculated					--
Carbon, organic, dissolved.	1978-Van Dorn (PVC) point sampler. 1979-Peristaltic pump with silicone tubing.	Chill to 4°C Filter through 0.45- μ m silver filter. 1978-Acidity to pH <2 with H_2SO_4 .	24 hours	0.1 mg/L	Carbon conversion to CO_2 , infrared analyzer.	Goerlitz and Brown (1972, p. 4-6).
Carbon, organic, total.	do.	do.	do.	0.1 mg/L	do.	Goerlitz and Brown (1972, p. 4-6).
Chloride, dissolved.	do.	Chill to 4°C Filter through 0.45- μ m filter.	3 months	0.1 mg/L	Colorimetric, ferric thiocyanate, automated.	Skougstad and others (1979, p. 333-335).
Color	do.	Chill to 4°C	3 days	--	Electrometric, visual comparison	Skougstad and others (1979, p. 521-522).
Iron, dissolved.	do.	Filter through 0.45- μ m filter, acidity to pH <2 with HNO_3 .	3 months	10 μ g/L	Atomic absorption spectrometric, direct.	Skougstad and others (1979, p. 153-154).
Iron, total	do.	Acidity to pH <2 with HNO_3 .	1 month	10 μ g/L	do.	Skougstad and others (1979, p. 157-158).
Manganese, dissolved.	do.	Filter through 0.45- μ m filter, acidity to pH <2 with HNO_3 .	3 months	10 μ g/L	Atomic absorption spectrometric, chelation-extraction.	Skougstad and others (1979, p. 187-188).
Manganese, total.	do.	Acidity to pH <2 with HNO_3 .	do.	10 μ g/L	Atomic absorption spectrometric, direct.	Skougstad and others (1979, p. 191-192).

Table 4.--Methods of collection and analysis of samples in and downstream from West Point Reservoir--Continued

Collection method	Treatment	Maximum holding time	Detection limit	Analytical method	Reference	
B. Selected physical-chemical--Continued						
Magnesium, total.	1978-Van Dorn (PVC) point sampler. 1979-Peristaltic pump with silicone tubing.	Chill to 4°C Acidify with HNO ₃ to pH <2.	3 months	0.1 mg/L	Atomic absorption spectrometric, direct.	Skougstad and others (1979, p. 191-192).
Nitrogen, total	Calculated					--
Nitrogen, ammonia, total.	1978-Van Dorn (PVC) point sampler. 1979-Peristaltic pump with silicone tubing.	Chill to 4°C	24 hours	0.01 mg/L	Colorimetric, extraction-indophenol, automated.	Skougstad and others (1979, p. 425-427).
Nitrogen, inorganic, total.	Calculated					--
Nitrogen, Kjeldahl, total.	1978-Van Dorn (PVC) point sampler. 1979-Peristaltic pump with silicone tubing.	Chill to 4°C 1978-Acidify to pH <2 with HNO ₃ .	3 days	0.01 mg/L	Colorimetric, block digester-salicylate-hypochlorite, automated.	Skougstad and others (1979, p. 407).
Nitrogen, nitrite plus nitrate, total.	do.	Chill to 4°C Acidify to pH <2 with H ₂ SO ₄ .	24 hours	0.01 mg/L	Colorimetric, cadmium reduction-diazotization, automated.	Skougstad and others (1979, p. 445-447).
Nitrogen, organic, total.	Calculated					--
Phosphorus, orthophosphate, dissolved.	1978-Van Dorn (PVC) point sampler. 1979-Peristaltic pump with silicone tubing.	Chill to 4°C Filter through 0.45-um filter, acidify to pH <3 with HCl.	3 days	0.01 mg/L	Colorimetric, phosphomolybdate, automated.	Skougstad and others (1979, p. 479-481).
Phosphorus, total.	do.	Chill to 4°C Acidify to pH <2 with H ₂ SO ₄ .	do.	0.01 mg/L	do.	Skougstad and others (1979, p. 491-493).
Residue, filterable, total.	do.	Chill to 4°C	14 days	1 mg/L	Residue on evaporation at 180°C, dissolved, gravimetric.	Skougstad and others (1979, p. 575-576).
Residue, non-filterable, total.	do.	do.	do.	1 mg/L	Residue on evaporation at 105°C, total, gravimetric.	Skougstad and others (1979, p. 575-576).
Sodium, total	do.	Chill to 4°C Acidify with HNO ₃ to pH <2.	3 months	0.1 mg/L	Atomic absorption spectrometric, direct.	Skougstad and others (1979, p. 259-260).
Sulfur, sulfate, dissolved.	do.	Filter through 0.45-um filter.	7 days	0.1 mg/L	Colorimetric, complexometric methylthymol blue, automated.	Skougstad and others (1979, p. 501-504).
Sulfur, sulfide, total.	do.	Zinc acetate and sodium hydroxide.	24 hours	0.1 mg/L	Titrimetric, iodometric.	Skougstad and others (1979, p. 614-620).
Zinc, total dissolved.	do.	Chill to 4°C Acidify with HNO ₃ to pH <2.	3 months	10 ug/L	Atomic absorption spectrometric, direct.	Skougstad and others (1979, p. 277-278).
C. Biological						
Adenosine triphosphate.	1978-Van Dorn (PVC) point sampler composite. 1979-Plankton pump, from entire euphotic zone.	Field extraction, with DMSO. Freeze with dry ice. 0.45-um filter	30 days	0.01 mg/L	ATP photometer.	Shoaf and Liem (1977, p. 44-51).
Algal Assay Procedure: Bottle test.	1978-Van Dorn (PVC) point sampler composite.	Chill to 4°C Autoclaving followed by filtration through 0.45-um filter.	1 week	0.1 mg/L	Electronic particle counter Test organism - <u>Selenastrum capricornutum</u> .	U.S. Environmental Protection Agency, 1971.

Table 4.—Methods of collection and analysis of samples in and downstream from West Point Reservoir—Continued

	Collection method	Treatment	Maximum holding time	Detection limit	Analytical method	Reference
C. Biological—Continued						
Algal growth potential.	1978—Van Dorn (PVC) point sampler composite.	Chill to 4°C Field filter through 0.22- μ m filter.	1 week	0.1 mg/L	Electronic particle counter Test organism - <i>Selenastrum capricornutum</i> .	Shoaf and Liou (1979, p. 79-85).
Benthic algae	Artificial substrate	4 percent formaldehyde solution, detergent solution, cupric sulfate solution.	1 year	Species where possible.	Directing microscope	GZI and Associates (oral commun., 1979).
Benthic invertebrates.	Artificial substrate, and Ponar grab sampler.	70 percent ethyl alcohol.	do.	Genera where possible.	do.	Hahn and others (1977, p. 145-208).
Chlorophyll, a and b.	1978—Van Dorn (PVC) point sampler composite. 1979—Plankton pump, from entire euphotic zone.	Field filter through 0.45- μ m glass fiber filter, freeze with dry ice.	2 weeks	0.01 mg/L	High pressure liquid chromatography.	Shoaf and Liou (1979, p. 44-51).
F.C./F.S.	Calculated					--
Fecal coliform (F.C.).	Direct into sterile bottle.	Chill to 4°C	6 hours	--	Membrane filter technique using 0.45- μ m filter.	Ehke and others (1977, p. 53-57).
Fecal streptococci (F.S.).	do.	do.	do.	--	do.	Ehke and others (1977, p. 59-62).
Phytoplankton (identification and enumeration).	1978—Van Dorn (PVC) point sampler. 1979—Plankton pump, from entire euphotic zone.	Formaldehyde solution, detergent solution, cupric sulfate solution.	1 year	1978—Genera where possible. 1979—Species where possible.	Inverted microscope	Shoaf and Liou (1979, p. 20-25).
Seston	do.	HgCl ₂ solution, filtered in lab.	8 days	0.1 mg/L	Glass-fiber filter	Shoaf and Liou (1979, p. 26-31).
Zooplankton (identification and enumeration).	1978—Weighted 0.5 m diameter, 80- μ m Wisconsin net with flow meter. 1979—Deck collector with plankton pump, from entire water column.	2 percent formaldehyde solution, 0.5 ml of glycerin.	1 year	Species where possible.	Sedgwick-Rafter	GZI and Associates (oral commun., 1979).
II. Bottom sediments						
A. Particle size	Ponar grab (epoxy coated), 4 sample composite.	Not critical	--	--	Wet sieve (0.062-4.0 mm)	Joy (1969, p. 49-51).
B. Selected chemical						
Carbon, organic total.	do.	Chill to 4°C	14 days after processing.	100 mg/kg	Dilute HCl extraction, infrared analyzer.	Guerlitz and Brown (1972, p. 4-5).
Nitrogen, Kjeldahl, total.	do.	do.	do.	10 mg/kg	Colorimetric, block digest of sediment sample, salicylate-hypochlorite, automated.	Skougstad and others (1979, p. 403-405).
Oil and grease	do.	do.	do.	20 mg/kg	Freon extraction, gravimetry	American Public Health Association (1976, p. 513-515).
Phosphorus, total.	do.	do.	do.	1 mg/kg	Colorimetric, phosphomolybdate, automated.	Skougstad and others (1979, p. 487-489).
Volatile solids	do.	do.	do.	1 mg/kg	Gravimetric method, ignite to 550°C.	Skougstad and others (1979, p. 561).

Table 4.—Methods of collection and analysis of samples in and downstream from West Point Reservoir:—Continued

	Collection method	Treatment	Maximum holding time	Detection limit	Analytical method	Reference
C. Metals						
Arsenic	Ponar grab (epoxy coated), 4 sample composite.	Chill to 4°C	1 month after processing.	1.0 ug/g	2 mm sieve, atomic absorption spectrometric, hydride, automated.	Skougstad and others (1979, p. 71-76).
Cadmium, total	do.	do.	do.	10 ug/g	HCL extraction, atomic absorption spectrometric, direct.	Skougstad and others (1979, p. 101-102).
Chromium, total	do.	do.	do.	10 ug/g	HCL extraction, atomic absorption spectrometric, direct.	Skougstad and others (1979, p. 123-124).
Copper, total	do.	do.	do.	10 ug/g	do.	Skougstad and others (1979, p. 147-148).
Iron, total	do.	do.	do.	10 ug/g	do.	Skougstad and others (1979, p. 155-156).
Lead, total	do.	do.	do.	10 ug/g	do.	Skougstad and others (1979, p. 165-166).
Manganese, total.	do.	do.	do.	10 ug/g	do.	Skougstad and others (1979, p. 189-190).
Mercury, total	do.	do.	do.	0.1 ug/g	Atomic absorption spectrometric, flameless.	Skougstad and others (1979, p. 201-203).
Nickel, total	do.	do.	do.	10 ug/g	HCL extraction, atomic absorption spectrometric, direct.	Skougstad and others (1979, p. 221-222).
Zinc, total	do.	do.	do.	10 ug/g	do.	Skougstad and others (1979, p. 275-276).
D. Chlorinated hydrocarbons						
A.drin.	Ponar grab (epoxy coated), 4 sample composite.	Chill to 4°C	1 month after processing.	0.1 ug/kg	Acetone-hexane extraction, gas chromatography.	Goerlitz and Brown (1972, p. 33-35).
BHC, total	do.	do.	do.	0.1 ug/kg	do.	Do.
Chlordane	do.	do.	do.	0.1 ug/kg	do.	Do.
DDD	do.	do.	do.	0.1 ug/kg	do.	Do.
DDF	do.	do.	do.	0.1 ug/kg	do.	Do.
DDT	do.	do.	do.	0.1 ug/kg	do.	Do.
Dieldrin	do.	do.	do.	0.1 ug/kg	do.	Do.
Endo-sulfur sulfate.	do.	do.	do.	0.1 ug/kg	do.	Do.
Endrin	do.	do.	do.	0.1 ug/kg	do.	Do.
Heptachlor	do.	do.	do.	0.1 ug/kg	do.	Do.
Heptachlor epoxide.	do.	do.	do.	0.1 ug/kg	do.	Do.
Perthane	do.	do.	do.	0.1 ug/kg	do.	Do.
Polychlorinated biphenyls (PCB).	do.	do.	do.	0.1 ug/kg	do.	Do.
Polychlorinated naphthalenes (PCN).	do.	do.	do.	0.1 ug/kg	do.	Do.
Toxaphene	do.	do.	do.	0.1 ug/kg	do.	Do.

Table 4.—Methods of collection and analysis of samples in and downstream from West Point Reservoir—Continued

	Collection method	Treatment	Maximum holding time	Detection limit	Analytical method	Reference
III. Fish tissue analysis						
A. Metals						
Arsenic, total	Kotenone	Freeze with dry ice	3 months	0.1 ug/g	Methods for chemical analysis of water and wastes, with bovine liver as reference standard, EPA.	Skougstad and others (1979, p. 71-76).
Cadmium, total	do.	do.	do.	0.01 ug/g	do.	Skougstad and others (1979, p. 101-102).
Chromium, total	do.	do.	do.	0.1 ug/g	do.	Skougstad and others (1979, p. 123-124).
Lead, total	do.	do.	do.	0.01 ug/g	do.	Skougstad and others (1979, p. 165-166).
Mercury, total	do.	do.	do.	0.1 ug/g	do.	Skougstad and others (1979, p. 201-203).
Selenium, total	do.	do.	do.	1 ug/g	do.	Skougstad and others (1979, p. 245-247).
Zinc, total	do.	do.	do.	1 ug/g	do.	Skougstad and others (1979, p. 275-276).
B. Chlorinated hydrocarbons						
Aldrin	Kotenone	Freeze with dry ice	3 months	0.1 ug/kg	Pesticide Analytical Manual, Vol. I, "Methods which detect multiple residues," HEW and FDA, with bovine liver as reference standard.	Gaul and others (1972, sec. 211.1-211.17).
BHC, total	do.	do.	do.	0.1 ug/kg	do.	Do.
Chlordane	do.	do.	do.	0.1 ug/kg	do.	Do.
DDD	do.	do.	do.	0.1 ug/kg	do.	Do.
DDE	do.	do.	do.	0.1 ug/kg	do.	Do.
DDT	do.	do.	do.	0.1 ug/kg	do.	Do.
Dieldrin	do.	do.	do.	0.1 ug/kg	do.	Do.
Endo-sulfur sulphate	do.	do.	do.	0.1 ug/kg	do.	Do.
Endrin	do.	do.	do.	0.1 ug/kg	do.	Do.
Heptachlor	do.	do.	do.	0.1 ug/kg	do.	Do.
Heptachlor epoxide	do.	do.	do.	0.1 ug/kg	do.	Do.
Perthane	do.	do.	do.	0.1 ug/kg	do.	Do.
Polychlorinated biphenyls (PCB)	do.	do.	do.	0.1 ug/kg	do.	Do.
Polychlorinated naphthalenes (PCN)	do.	do.	do.	0.1 ug/kg	do.	Do.
Toxaphene	do.	do.	do.	0.1 ug/kg	do.	Do.

was then thoroughly mixed and a subsample was withdrawn with an automatic pipette. Organisms were identified in a Sedgwick-Rafter cell having a sample volume of 2.7 mL. The cell was divided into eight equidimensional strips. Counts were made until either 200 of the dominant taxon were counted or homogeneity among subsamples was established. Identification slides were made of the adult copepods and cladocerans and all slides were examined with a research microscope at 30-1,000 x magnification.

Taxonomic and numerical assessment of natural populations of benthic algae were determined by the following method: Aliquots from 50-mL subsamples of periphyton were quantitatively examined by using either Sedgwick-Rafter counting cells or circular plankton counting chambers 0.6 mm deep. Samples collected during September 1978 contained substantial amounts of sediment and other flocculent material. It was necessary to use a smaller counting chamber for these samples.

The counting procedure followed the recommendations of Woelkerling and others (1976). Counting was routinely performed at 200 x magnification or 400 x for closer examination of certain species, using a phase contrast microscope. Diatoms were identified at 1,000 x from permanent mounts prepared from a sample aliquot oxidized by potassium dichromate-hydrogen peroxide. A unit or clump count system was used in which unicellular and colonial organisms were tallied as single units with equal numerical weight. Filamentous algae were counted as one count per 50-um unit length. Diatoms were counted with one unit equal to one complete cell.

Those taxa observed only during the scanning process of phytoplankton, periphyton, and zooplankton analysis are reported as present in insufficient densities to establish an accurate count. The primary identification references for all taxonomic analyses are cited in the bibliography. Results are reported in units as noted in the Appendix biological tables.

The Shannon-Weaver Species Diversity Index, \bar{H} (Wilhm and Dorris, 1968) was calculated by using the following expression:

$$\bar{H} = \sum_{i=1}^t \frac{n_i}{N} \log_2 \frac{n_i}{N}$$

where n_i = total number of organisms present as taxon i ,

$N = \sum_{i=1}^t n_i$ = total number of organisms present in the sample,

and t = number of taxa present in the sample.

\bar{H} ranges from a minimum of 0.0, occurring when all organisms belong to the same taxon (no diversity), to a maximum of $\log_2 N$, occurring where each organism present belongs to a unique taxon (maximum diversity).

Fish samples were prepared for trace metals analyses in the following manner: A tissue grinder with nonmetallic blades was used to homogenize whole fish and fillet samples separately. For each metal determination, a 10-g sample of homogenate and an equal amount of granulated bovine liver standard were placed separately in a furnace and ashed for 3-1/2 hours at 100°C. The temperature was then raised 50°C every 1/2 hour until a temperature of 450°C was reached, and this temperature was maintained overnight. After the samples were removed from the furnace and cooled, 2 mL of concentrated HNO₃ were added and the ashing process was repeated. After ashing,

the samples were cooled and put into solution using 2 mL of concentrated HNO₃ and 25 mL of deionized water. This solution was heated to boiling for 15 minutes. Each solution was then filtered and diluted to 500 mL. The determinations were performed by using the chelation extraction for cadmium and lead and direct aspiration for chromium and zinc.

A separate weight of tissue was obtained for the analyses of mercury, selenium, and arsenic. These metals were determined by an atomic absorption spectrophotometer and prepared with the same methodology used for determining these elements in bottom materials. The organic portion of the compounds that contain these elements, if present, was decomposed by digestion methods described in the citation listed in table 4. Arsenic, mercury, and selenium ions so liberated, together with the inorganic ions originally present, were subsequently reduced and stripped from solution before being determined spectrometrically.

Pesticide analyses were performed according to extraction and cleanup procedures given in the citation listed in table 4. The samples were prepared for analysis by utilizing a separate weight of subsample from the original homogenate. The results of these analyses are reported in micrograms per kilogram.

QUALITY ASSURANCE

An integral part of any water-quality investigation is a quality assurance program geared to determine compliance with acceptable levels of reproducibility. The following section describes quality control measures used to assure the quality of data for the West Point Reservoir study.

An important step toward obtaining good data is the proper collection and handling of samples. The following procedures were employed in the field to minimize sampling error:

- (1) All sample containers were rinsed with sample water prior to filling to minimize the possibility of contamination;
- (2) The silicone tubing used with the peristaltic pump was adequately flushed between sampling depths to minimize cross-contamination between sample sets from different depths;
- (3) Before a sample was filtered, the filter assembly was rinsed with deionized water. A small amount of sample water was then passed through the filter to rinse the container; and
- (4) All sample containers were checked against laboratory inventory sheets to insure that the sample set was complete and properly identified.

Quality assurance practices of the U.S. Geological Survey's National Water Quality Laboratories for the analyses of water samples are described in Friedman and Erdmann (1981).

Special measures also were taken in the project office to assure the integrity of the analytical results. Where applicable, routine data evaluation procedures included:

- (1) Comparisons of total versus dissolved concentrations for each constituent sample pair, and laboratory reruns of both parameters if the dissolved value was greater than the total value;

- (2) Spatial comparisons between and within stations to determine if any given value looked suspicious, and reruns for appropriate samples; and
- (3) Deletion of questionable values from the data files if data were still unacceptable after rerun attempts.

Additional procedures were implemented throughout the study to assess the composite error resulting from sample collection and handling in the field and sample analyses in the laboratory. These additional procedures included:

- (1) U.S. Geological Survey personnel periodically being accompanied in the field by representatives of the U.S. Army Corps of Engineers from the Mobile District Office for an inspection of field operative procedures;
- (2) Collection of duplicate samples from randomly selected sites and analyses of these duplicates by the U.S. Army Corps of Engineers's South Atlantic Division Laboratory;
- (3) Collection for duplicate analyses of 10 percent of the water chemistry, chlorophyll, adenosine triphosphate, and bacteriological samples collected during this study, and determination of reproducibility in sample collection and analyses (table 5); and
- (4) Collection in duplicate of 50 percent of those samples collected for metals analyses and "spiking" of samples with predetermined amounts of these metals for determination of percent recovery (table 5). Samples collected for calculation of percent recovery analysis for iron, manganese, zinc, calcium, magnesium, potassium, and sodium analyses were prepared according to the following procedure: Samples "spiked" for total constituent analysis were prepared by first adding a small, known volume of a standard solution of metals to a 500-mL volumetric flask, acidifying with redistilled 16 N nitric acid to a pH less than 2, and then filling to volume with sample water. Samples "spiked" for dissolved-constituent analysis were similarly prepared, but with a 100-mL volumetric flask instead of a 500-mL flask. Dates of preparation of standards, analyses, and constituent concentrations are presented in table 6.

Due to inherent problems in analytical and field collection methods, no established methods exist for the quality control of planktonic and benthic flora and fauna. Therefore, quality-assurance procedures could not be provided for the biological samples.

QUALITY CONTROL DATA PRESENTATION AND DISCUSSION

Results of duplicate and field "spiked" sample analyses were used to evaluate the accuracy and precision of the water-quality data. These observed variations in the analytical results are a reflection of the composite of determinant and indeterminant error in sample collection, handling, and analysis.

The percent relative deviation of a sample pair was adopted as a measure of central tendency for all chemical, biological, and bacteriological replicates. This statistic was computed according to the equation:

$$\text{relative deviation, in percent} = \left[\frac{|x_1 - \bar{x}|}{\bar{x}} \right] [100] \quad (1)$$

where x_1 = constituent value of one member of a sample pair,
and \bar{x} = mean constituent value.

Table 5.--Quality-assurance data-collection stations in and downstream from West Point Reservoir

[D, duplicate sample; S, "spiked" sample]

Data-collection period	Data-collection station (CH-)															
	12	11A	10	07	08	05A	04	13	03A	03B	03C	2.5B	01A	01B	01C	01D
April 9-18, 1978	D	--	--	--	--	D,S	--	--	--	--	--	--	D,S	--	--	--
April 30-May 14	D,S	--	--	--	--	D,S	--	--	--	--	--	--	D,S	D,S	D,S	--
May 30-June 6	D,S	--	--	--	--	D,S	--	--	--	--	--	--	D,S	--	--	--
July 9-13	D,S	--	--	--	--	D,S	--	--	--	--	--	--	D,S	--	--	--
August 13-18	D,S	--	--	--	--	D,S	--	--	--	--	--	--	D,S	--	--	--
August 27-31	D,S	--	--	--	--	D,S	--	--	--	--	--	--	D,S	--	--	--
October 16-19	D	--	D	--	--	--	--	--	--	--	D,S	--	D,S	--	--	--
November 27-31	--	--	D	--	--	D,S	--	--	--	--	--	--	--	D,S	--	--
January 22-24, 1979	--	--	--	D	--	--	--	D,S	--	--	--	--	--	--	--	D,S
March 19-22	D	--	--	--	D,S	--	--	--	--	--	--	D,S	--	--	--	--
April 30-May 5	--	--	D,S	--	--	--	--	D,S	--	--	--	D	--	--	--	D,S
June 11-15	--	--	--	D,S	--	--	D	--	--	--	D,S	--	--	--	D,S	--
July 23-27	--	--	--	--	D,S	--	--	--	--	--	--	--	D,S	D,S	--	D
August 20-24	D,S	--	D	--	--	--	D	--	--	--	D,S	--	--	--	D,S	--
September 16-20	--	--	--	--	--	D,S	--	D	--	--	D	D,S	--	D,S	--	--
October 14-17	--	--	D,S	--	--	--	D	D,S	--	--	D	--	D	--	--	D,S
December 9-13	--	D	--	--	--	D,S	--	--	--	--	--	--	--	--	D,S	--

Table 6.—Analysis of standard solutions used to prepare "spiked" samples submitted to the Atlanta Central Water-Quality Laboratory, U.S. Geological Survey

[All concentrations in milligrams per liter. +, not required for this data-collection trip]

Date of analysis	Constituent concentration									Period of use
	Iron, total	Iron, dissolved	Manganese, total	Manganese, dissolved	Zinc, total	Calcium, total	Magnesium, total	Potassium, total	Sodium, total	
April 5, 1978	12.5	2.57	2.75	0.67	2.55	4.70	1.40	2.00	5.10	April 19-18, 1978
Do.	12.5	2.57	2.75	.67	2.55	+	+	+	+	April 30-May 14
May 23, 1978	11.6	2.80	3.10	.73	3.00	+	+	+	+	May 30-June 6
July 12, 1978	12.0	3.00	2.70	.60	3.30	+	+	+	+	July 9-13
August 11, 1978	13.8	3.50	2.70	.60	2.50	+	+	+	+	August 13-18
August 29, 1978	12.7	3.20	2.70	.60	3.30	4.70	1.40	2.00	5.00	August 27-31
October 16, 1978	14.0	3.50	2.70	.60	+	+	+	+	+	October 16-19
November 24, 1978	13.0	3.20	2.70	.60	+	+	+	+	+	November 27-31
January 24, 1979	13.0	3.20	2.80	.64	+	+	+	+	+	January 22-24, 1979
March 19, 1979	13.0	3.10	2.70	.61	+	+	+	+	+	March 19-22
May 2, 1979	12.5	3.17	2.68	.63	+	+	+	+	+	April 30-May 5
Do.	12.5	3.17	2.68	.63	+	+	+	+	+	June 11-15
Do.	12.5	3.17	2.68	.63	+	+	+	+	+	July 23-27
August 22, 1979	11.0	.34	3.30	.76	+	+	+	+	+	August 20-24
Do.	11.0	.34	3.30	.76	+	+	+	+	+	September 16-20
Do.	11.0	.34	3.30	.76	+	+	+	+	+	October 14-17
Do.	11.0	.34	3.30	.76	+	+	+	+	+	December 9-13

The percentage distribution of relative deviations from replicate analyses of water-quality samples are presented in table 7. The sampling frequency was the same for most constituents, however, the number of sample pairs is highly variable because not all data were used in the computations. Any data pair in which one member equals zero will, by definition, give a percent relative deviation of 100 regardless of the difference between the two values. Thus table 7 presents statistical information only for those sample pairs having two nonzero values. No data are presented for total sulfide because of the large number of zero values.

The majority of relative deviations for all constituents analyzed are less than 10 percent. For example, results of the dissolved manganese analysis on 65 sample pairs indicated that 85 percent of the sample pairs (55 pairs) were within the 0-5 percent relative deviation category. Total alkalinity, bicarbonate, dissolved and total organic carbon, and total zinc had a sizable percentage of relative deviations in the 11- to 20-percent category. This observation does not necessarily imply poor field and/or analytical technique. Total alkalinity and bicarbonate, for example, are unstable constituents and subject to more variability than other constituents. Generally, the duplicate analysis data indicate that the methodologies used produced reliable data.

The same measure of central tendency was used to evaluate the analyses of "spiked" samples. "Spiked" samples were always prepared from one of the replicate samples. Thus the two values used to compute the relative deviation represent a "predicted versus actual" comparison and the statistic is more properly referred to as a relative error. The predicted value in equation (1) becomes the "x" term and the actual (measured) value becomes the \bar{x} term.

The percentage distribution of relative errors for spiked metal samples is given in table 8. Most relative errors were within 6-10 percent category and for some constituents many relative errors were within 5 percent category, which indicates a high degree of accuracy for those determinations.

Analysis of duplicate biological samples indicated, for the most part, consistency in both field preparation and laboratory analysis. Data are presented in table 9 for chlorophyll a, adenosine triphosphate, and fecal coliform and fecal streptococci indicator bacteria. Though the percentage distributions of relative deviations for these parameters are shifted more toward higher percentage categories, the results are judged to be reasonable, considering the inherent variability of biological samples. Part of the variability in the ATP duplicates can probably be attributed to field problems associated with the extraction, preservation, and shipment of this highly unstable compound. Statistical data for duplicate chlorophyll b samples are not reported due to the large number of zero values.

DATA PRESENTATION

This section presents and summarizes the physical, chemical, and biological data collected in West Point Reservoir and the Chattahoochee River below West Point Dam for the study period. All of the data also are presented in tabular form in Appendix C-F. Summary (means and ranges) tables of all the data are presented in Appendix B.

Table 7.--Distribution of relative deviations for replicate analyses of selected water-quality samples collected in and downstream from West Point Reservoir, April 1978-December 1979

	Number of sample pairs	Percentage of sample pairs whose relative deviation falls within the indicated percentage category										
		0-5	6-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Nutrients												
Carbon, organic, dissolved	73	22	34	18	12	8	4	--	--	2	--	--
Carbon, organic, total	70	30	24	22	14	7	3	--	--	--	--	--
Nitrogen, ammonia, total	75	83	7	5	3	2	--	--	--	--	--	--
Nitrogen, Kjeldahl, total	71	39	41	13	4	3	--	--	--	--	--	--
Nitrogen, nitrite plus nitrate, total	49	82	10	2	--	--	2	--	--	--	4	--
Phosphorus, orthophosphate, dissolved	59	51	29	9	5	3	--	3	--	--	--	--
Phosphorus, total	71	61	20	15	--	3	--	1	--	--	--	--
Metals												
Calcium, total	8	88	12	--	--	--	--	--	--	--	--	--
Iron, dissolved	57	33	19	14	16	7	5	4	--	2	--	--
Iron, total	72	61	25	11	3	--	--	--	--	--	--	--
Magnesium, total	8	100	--	--	--	--	--	--	--	--	--	--
Manganese, dissolved	65	85	4	11	--	--	--	--	--	--	--	--
Manganese, total	72	86	10	4	--	--	--	--	--	--	--	--
Potassium, total	8	88	12	--	--	--	--	--	--	--	--	--
Sodium, total	8	100	--	--	--	--	--	--	--	--	--	--
Zinc, total	25	36	20	28	8	4	--	--	4	--	--	--
Other												
Alkalinity	74	39	28	23	6	3	--	--	--	--	1	--
Bicarbonate	35	31	31	29	9	--	--	--	--	--	--	--
Chloride, dissolved	8	75	13	12	--	--	--	--	--	--	--	--
Color	55	56	13	9	2	16	2	--	2	--	--	--
Residue, filterable, total	71	78	16	4	1	1	--	--	--	--	--	--
Residue, nonfilterable, total	61	30	28	15	13	3	8	--	2	--	1	--
Sulfur, sulfate, total	72	86	13	1	--	--	--	--	--	--	--	--
Turbidity	73	51	25	15	1	4	3	--	1	--	--	--

Table 8.—Distribution of the relative errors of "spiked" water-quality samples collected in and downstream from West Point Reservoir, April 1978-December 1979

	Number of sample pairs	Percentage of sample pairs whose relative errors fall within the indicated percentage category										
		0-5	6-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Iron, dissolved	48	48	40	2	6	2	--	--	--	--	2	--
Iron, total	51	57	33	6	4	--	--	--	--	--	--	--
Manganese, dissolved	50	66	24	6	4	--	--	--	--	--	--	--
Manganese, total	51	80	14	6	--	--	--	--	--	--	--	--
Zinc, total	18	33	50	6	6	--	--	--	--	--	5	--
Calcium, total	4	100	--	--	--	--	--	--	--	--	--	--
Magnesium, total	4	75	--	25	--	--	--	--	--	--	--	--
Potassium, total	4	100	--	--	--	--	--	--	--	--	--	--
Sodium, total	4	100	--	--	--	--	--	--	--	--	--	--

Table 9.--Distribution of relative deviations for replicate analyses of selected biological samples collected in and downstream from West Point Reservoir, April 1978-December 1979

	Number of sample pairs	Percentage of sample pairs whose relative deviation falls within the indicated percentage category										
		0-5	6-10	11-20	21-30	31-40	41-50	51-60	61-70	71-80	81-90	91-100
Chlorophyll a, from plankton samples	16	38	38	12	--	6	--	--	--	6	--	--
Adenosine triphosphate (ATP)	8	13	50	--	12	--	--	25	--	--	--	--
Fecal coliform (MF)	8	--	25	38	25	--	--	--	12	--	--	--
Fecal streptococci (MF)	11	37	18	18	--	18	9	--	--	--	--	--

In Appendix B, mean values have been calculated with respect to annual stratification-destratification cycles (stratified versus unstratified, above and below the thermocline); changing flow conditions in the Chattahoochee River below West Point Dam (maximum versus minimum daily release); and depth weighted. Mean values are given only to illustrate temporal and longitudinal trends. Obviously, seasonal perturbations and anomalies are masked by mean values.

For the purpose of the following discussion, West Point Reservoir is a monomictic system that undergoes an annual thermal stratification-destratification cycle in four distinct stages: (1) The onset of stratification (thermal density layering) in the spring, (2) a stratified period during the summer, (3) a fall mixing period or turnover, and (4) a winter unstratified period. The significance of the spatial and temporal effects of thermal stratification in West Point Reservoir and on the Chattahoochee River downstream from West Point Dam, however, will be covered in much greater detail in the discussion section which follows.

Physical and Chemical Parameters

Water-quality physical measurements and chemical-concentration data at stations in West Point Reservoir and the Chattahoochee River below West Point Dam for the study period are presented in Appendix C-1 and C-4. Means and ranges of physical and chemical parameters are presented in Appendix B-1, B-2, B-3, and B-4. Graphs showing variations in water-quality parameters with reservoir depth are presented in Appendix C-2 and C-5, and isopleths showing the longitudinal variations in physical and chemical parameters are presented in Appendix C-3 and C-6.

Water temperature -

For the study period, mean water temperatures within the reservoir ranged from 14.7°C (CH-03A) to 27.9°C (CH-04). Minimum water temperatures during the unstratified periods ranged from 6.0°C (CH-04) to 11.3°C (CH-11A). Above the thermocline, maximum water temperatures ranged from 26.8°C (CH-12) to 30.9°C (CH-04) during stratified periods, whereas, below the thermocline, maximum water temperatures during the same periods ranged from 24.9°C (CH-03C) to 27.5°C (CH-03A).

During unstratified periods, mean water temperatures of the Chattahoochee River downstream from West Point Dam ranged from 16.1° to 16.2°C during maximum daily release periods and 17.7° to 17.9°C during minimum daily release periods. Mean water temperatures during stratified periods were 1°-4°C cooler during maximum daily release periods than during minimum daily release periods. In 1978, for example, mean water temperatures ranged from 21.9° to 22.7°C during maximum daily release periods, 24.2° to 25.7°C during minimum daily release periods, and in 1979, 24.0° to 25.5°C versus 24.2° to 25.4°C.

Specific conductance -

Mean specific conductance during unstratified periods ranged from 44 umho/cm at station CH-04 to 69 umho/cm at station CH-07. The specific conductance values measured in the undeveloped upper Wehadkee Creek during the

study period ranged from 30 to 106 umho/cm; whereas, in urban watersheds tributary to West Point Reservoir, such as Yellowjacket Creek, the range was from 48 to 230 umho/cm. Specific conductance changed very little downstream in the reservoir during unstratified periods.

During the warmer months, mean specific conductances of 63 to 94 umho/cm above and below the thermocline were associated with the effects of thermal stratification. The highest values were recorded in anoxic hypolimnetic waters and ranged from 77 (CH-03C) to 230 (CH-08) umho/cm. During the 1978 stratified period, there was a sharp decrease in specific conductance above the thermocline from CH-10 to CH-03C. Below the thermocline, mean conductances were relatively constant downstream to CH-07, and then decreased slightly to CH-03C. In 1979, specific conductance above the thermocline was nearly constant, with the exception of an increase at CH-05A. Below the thermocline, mean specific conductances increased downstream to CH-03C.

Specific conductance varied little in vertical profile at the dam pool (CH-03C), which resulted in little variation of specific conductance in the Chattahoochee River downstream from West Point Dam. Neither varying flow conditions nor season seemed to have much influence on specific conductance values; means ranged from 60 to 73 umho/cm during the entire study period. Specific conductances of maximum daily release water remained relatively constant. Minimum daily release water, however, showed a downstream increase from station CH-01B to station CH-01D. The increase is probably due to inputs of treated wastes to the Chattahoochee River from LaGrange, Ga., and Lanett, Ala.

Oxidation-reduction potential -

Redox (oxidation-reduction) potential values ranged from a mean of 265 mV in Wehadkee Creek (CH-13) to a mean of 595 mV at CH-12 in the main-channel headwaters of the reservoir. Maximum redox potentials (645-690 mV) characteristic of highly oxygenated waters occurred during unstratified periods. Redox potentials remained relatively constant with depth during the unstratified periods. With the onset of thermal stratification, there was a gradual increase in redox potential from the water surface to the epilimnial-metalimnial boundary, and a drastic decrease in redox potential from the hypolimnial-metalimnial boundary to the reservoir bottom. Minimum redox potentials were, therefore, recorded in anoxic hypolimnetic waters during stratified periods and ranged from 50 mV at CH-08 to 415 mV at CH-10. Mean redox potentials below the thermocline during stratified periods in both 1978 and 1979 were lower in Yellowjacket and Wehadkee Creeks than in the main channel.

Redox potentials in the Chattahoochee River downstream from West Point Reservoir were generally lower during maximum daily release periods than during minimum daily release periods. The lowest values recorded during maximum daily release ranged from 190 to 245 mV and during minimum daily release from 235 to 390 mV. During unstratified periods, the difference in redox potentials between maximum and minimum daily release waters was slight compared to redox potentials of maximum and minimum daily release waters during stratified periods. Mean redox potentials in the Chattahoochee River downstream from West Point Reservoir were generally higher during unstratified periods (560 to 575 mV) than during stratified periods (375 to 535 mV), and generally increased with distance downstream from the dam.

Dissolved oxygen -

Mean DO (dissolved-oxygen) concentrations ranged from 6.7 mg/L at CH-08 to 8.5 mg/L at CH-12 during the unstratified periods and from <0.1 mg/L at several sampling sites, to 13.4 mg/L at CH-07 during the stratified periods. During stratification, the hypolimnetic waters became anoxic (DO <0.1 mg/L), or nearly so, from CH-10 downstream to the dam pool. On the other hand, the epilimnetic waters were often supersaturated as a result of autotrophic photosynthetic activity.

Mean DO concentrations in the Chattahoochee River downstream from West Point Dam were substantially lower during stratified periods (4.6 versus 7.7 mg/L) due to the release of anoxic hypolimnetic water and were noticeably lower during maximum daily release periods than during minimum daily release periods. For example, when the reservoir was unstratified, mean concentrations in the river below the dam ranged from 7.2 to 7.5 mg/L during maximum daily release periods and from 7.7 to 8.2 mg/L during minimum daily release periods. During stratified periods, mean concentrations ranged from 3.3 to 4.9 mg/L during maximum daily release and from 5.2 to 6.0 mg/L during minimum daily release. Higher DO concentrations during minimum release periods were a result of minimum daily release water having more surface area to water volume for reaeration and longer time of travel (more time for reaeration to occur) between measurement sites than maximum daily release water.

pH -

pH values ranged from 5.4 (dam pool) to 8.4 (CH-10) during unstratified periods. During stratified periods, pH values below the thermocline ranged from 5.2 (CH-08) to 7.4 (CH-03C), and above the thermocline ranged from 5.4 (CH-08) to 9.8 (CH-03C).

Stratification in the reservoir had a noticeable influence on the pH of the Chattahoochee River downstream from West Point Dam. Release of anoxic hypolimnetic waters during the stratified periods resulted in lower pH values during maximum daily release periods. In 1978, mean pH values ranged from 5.8 to 6.3 during maximum daily release periods and 6.0 to 6.8 during minimum daily release periods. In 1979, mean pH values ranged from 6.0 to 6.4 during maximum daily release as compared to 6.3 to 6.6 during minimum daily release periods. During unstratified periods within the reservoir, however, there was little difference in pH values between maximum and minimum daily release water. Mean pH values ranged from 6.4 to 6.5 during maximum daily release and 6.3 to 6.5 during minimum daily release.

Euphotic depth -

The upper layer of water in which light supports biological productivity is called the euphotic zone. The base of the euphotic zone is the depth at which the light intensity is 1 percent of that at the surface and approximates the depth at which the rate of photosynthesis and the rate of respiration are equal. The quantity of light and the depth to which light penetrates are therefore significant factors in determining the amount and form of biological productivity.

Euphotic depth values within the main channel of the reservoir ranged from 1 m (CH-11A) to 6 m (CH-03C). The longitudinal distribution of

euphotic depth and its relation to total seston for selected sampling trips is illustrated in figure 3. Total seston is defined as the weight of the total suspended matter in water and includes both living and nonliving material. In the lotic section of the reservoir, euphotic depth probably was a function of the loading of nonfilterable residue (suspended solids), whereas in the lentic section, it was mostly a function of biological activity.

The classical subjective Secchi disc visibility depth was also determined. Mean transparencies ranged from 0.49 m at CH-11A to 1.60 m at CH-03C. The lowest values recorded ranged from 0.15 to 0.55 m during periods of heavy rainfall and subsequent runoff and the highest values recorded during summer low-flow periods ranged from 0.65 to 2.20 m. The relation between Secchi disc visibility depth and euphotic depth (measured by a submarine photometer) is illustrated in figure 4. The values of the Secchi-disc visibility measurements were approximately 30 percent of those determined by the submarine photometer.

Residue, nonfilterable and filterable, total -

Mean nonfilterable-residue concentrations in the Chattahoochee River upstream from its confluence with Yellowjacket Creek were about twice those downstream from the confluence (32 to 40 mg/L versus 12 to 16 mg/L) during unstratified periods. Mean concentrations above the thermocline were extremely low at all stations in 1978 and 1979 (3.0 to 5.6 mg/L). Mean concentrations below the thermocline showed a same sharp drop between CH-07 and CH-05A as occurred during the unstratified period. In 1978 mean concentrations were 29 to 33 mg/L upstream from Yellowjacket Creek versus 5 to 17 mg/L downstream, and in 1979 mean concentrations were 20 to 25 mg/L upstream and 8 to 20 mg/L downstream.

Flow from the reservoir had little effect on the amount of nonfilterable residue downstream from West Point Dam during stratification periods. However, water releases during the unstratified periods did affect the concentrations. Means ranged from 12 to 22 mg/L during maximum daily release periods and from 6 to 9 mg/L during minimum daily release periods. Generally, mean concentrations did not show much variation from one station to another.

Filterable-residue concentrations were low and uniform with respect to depth and time at all stations in the reservoir. Thermal stratification did not have much effect upon filterable residue distributions, though in 1978 mean and maximum concentrations in Yellowjacket and Wehadkee Creeks were higher than those in other parts of the reservoir. Filterable residue concentrations in the Chattahoochee River downstream from West Point Dam were about the same as in the reservoir, and did not vary appreciably with flow conditions.

Turbidity -

Mean turbidities measured in West Point Reservoir during unstratified periods ranged from 13 NTU (nephelometric turbidity units) at CH-03C to 33 NTU at CH-07. A sharp decrease in mean turbidity occurred between CH-07 and CH-05A. During stratified periods, mean turbidities were generally much higher in the hypolimnion than in the epilimnion. Above the thermocline,

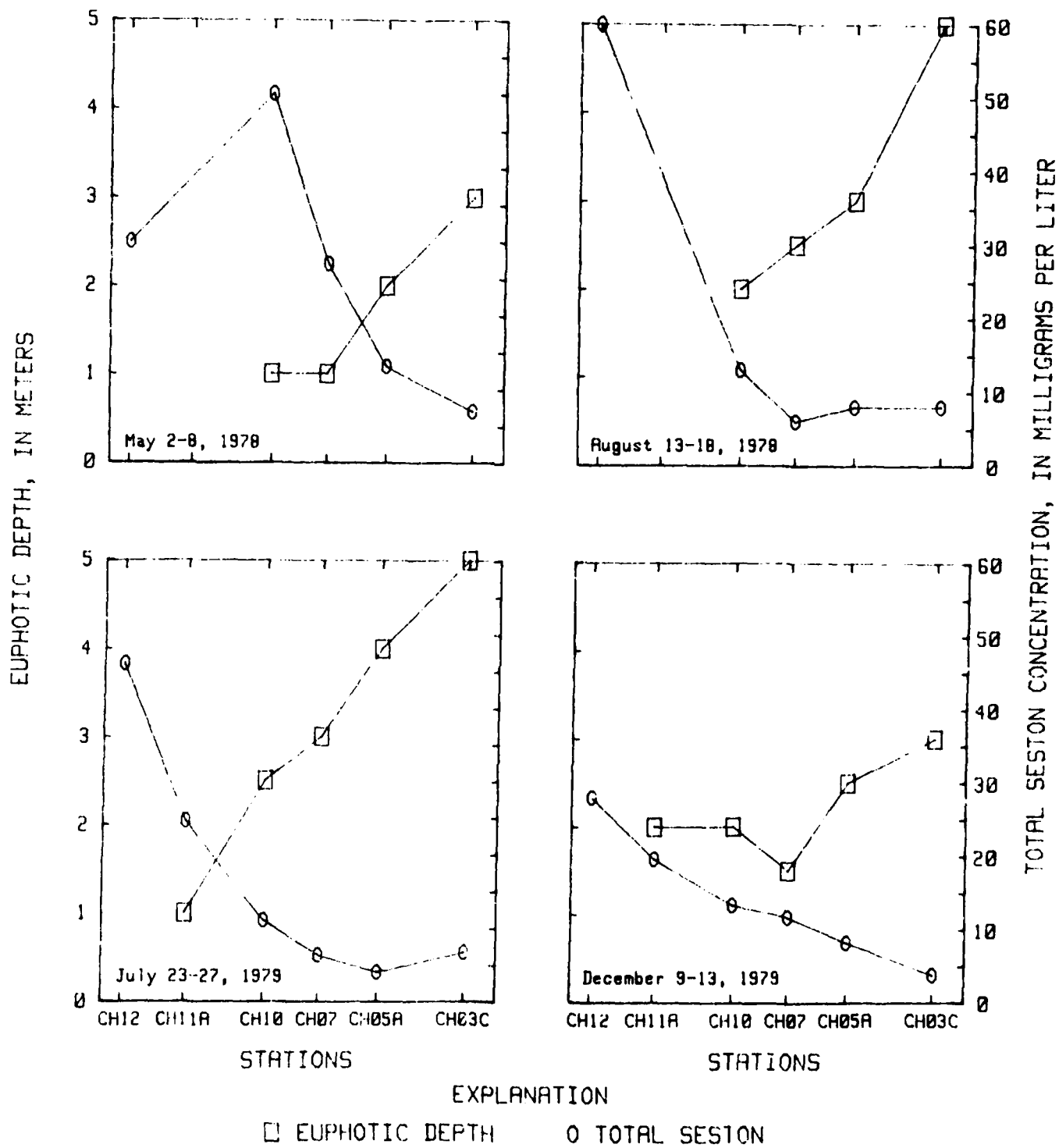
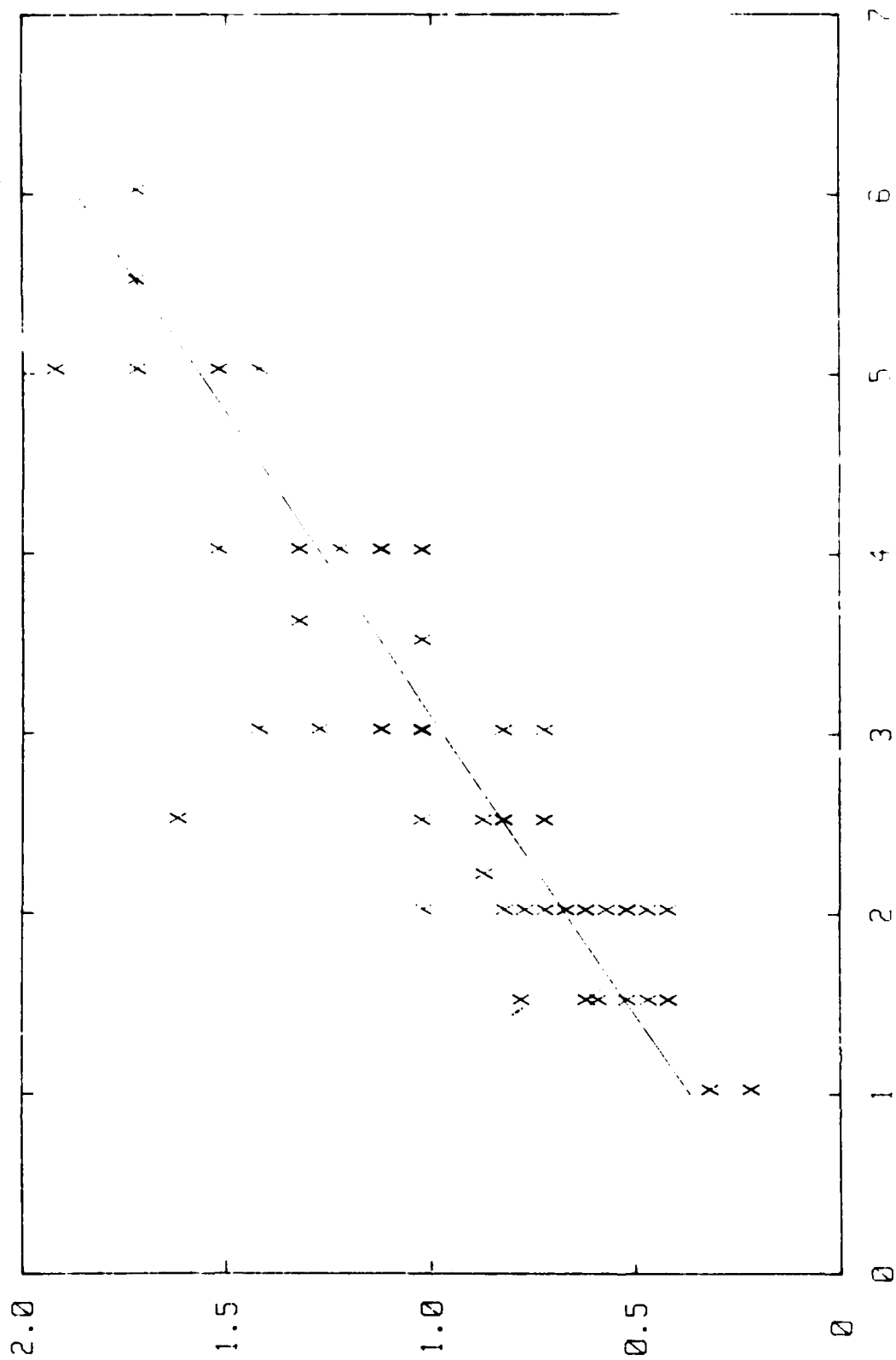


FIGURE 3.--Longitudinal distribution of euphotic depth and total seston concentrations in West Point Reservoir for selected collection trips.



EUPHOTIC DEPTH, IN METERS

Figure 4.--Relation of Secchi disc visibility to euphotic depth in west Point Reservoir, 1978 and 1979.

mean turbidities for the reach of the reservoir between CH-10 and CH-03C ranged from 1.7 to 5.9 NTU, whereas below the thermocline mean values ranged from 5.8 to 31 NTU.

Flow downstream from West Point Dam seemed to have little influence on turbidity in the Chattahoochee River. Values were generally less than 10 NTU, but maximum values between 30 and 35 NTU were recorded during some periods.

Color -

The color of water in lakes and reservoirs depends on the spectral quality of light that is transmitted through the surface. Generally, color is attributable to dissolved organic matter, such as humic acids, and these compounds typically absorb most strongly at shorter wavelengths (Wetzel, 1975).

"Apparent" water color (unfiltered sample), as distinguished from "true" water color, was determined in this study by visual comparison with the standard platinum-cobalt scale (Pt-Co units).

Color values in the reservoir were, for the most part, low and uniform during unstratified periods and had means which ranged from 11 Pt units at CH-07 to 26 Pt units at CH-13. Color values during both 1978 and 1979 were extremely low above the thermocline. Mean color values ranged from 15 to 20 Pt units during 1978 and from 4.2 to 12 Pt units in 1979. In contrast, mean color values were substantially higher below the thermocline at all stations and ranged from 30 to 70 Pt units in 1978 and from 30 to 39 Pt units in 1979. An extremely high color value of 400 Pt units was measured in the hypolimnion of Yellowjacket Creek (CH-08) during summer stratification in 1978. Relatively high color values below the thermocline occur because reduction reactions in anoxic bottom waters often cause the release of highly colored substances from sediment.

Alkalinity -

Mean alkalinities (mg/L as CaCO₃) in West Point Reservoir for the entire sampling periods ranged from 12 mg/L in the Chattahoochee River headwaters (CH-11A) to 15 mg/L in Yellowjacket and Wehadkee Creeks (CH-08, CH-13). Although total alkalinity did not vary appreciably with depth or season at most stations in the reservoir, substantially higher values were measured in the hypolimnion of Yellowjacket Creek (52 mg/L in 1978 and 46 mg/L in 1979). Total alkalinity downstream from West Point Dam apparently was not appreciably affected by stratification and seasonal water discharges. Means and ranges for downstream river stations were similar to those measured upstream from the dam.

Carbon dioxide -

Carbon dioxide concentrations were calculated from field measurements of pH and laboratory determinations of alkalinity. Means for the entire sampling period (reservoir only) ranged from 9.1 mg/L at CH-12 to 16 mg/L at CH-04. The greatest ranges in CO₂ concentrations were observed during periods of thermal stratification. Epilimnetic concentrations were usually less than 5.0 mg/L because of photosynthetic uptake of CO₂ by phytoplankton.

Associated pH values were often greater than 8.0 near the surface. High CO₂ concentrations were calculated for hypolimnetic waters having pH values less than 5.5. Maximum concentrations under these conditions ranged from 72 mg/L at CH-05A to 180 mg/L at CH-08.

In the Chattahoochee River downstream from the dam, mean concentrations of CO₂ during the winter were low and did not vary appreciably with changing flow conditions, but release of anoxic hypolimnetic water during stratified periods substantially increased the CO₂ levels during high flow (17 to 39 mg/L versus 5.5 to 31 mg/L in 1978 and 13 to 41 mg/L versus 8 to 16 mg/L in 1979).

Bicarbonate -

Results of bicarbonate analyses reflect the same information provided by alkalinity determinations and are related to calcium carbonate alkalinity through the equation: $[HCO_3^-] = 1.22 \times \text{alkalinity (as CaCO}_3\text{)}$.

Sulfur, sulfate, dissolved -

Mean concentrations of the sulfate ion measured in West Point Reservoir were low, with means for the entire sampling period ranging from 2.7 mg/L at CH-04 to 7.2 mg/L at CH-12. The greatest extremes were found at CH-08 (Yellowjacket Creek) and ranged from 2.0 to 11 mg/L. Varying flow conditions downstream from West Point Dam also showed no apparent influence on sulfate concentrations in the Chattahoochee River. Sulfate concentrations downstream from West Point Dam were less variable than those in the reservoir, with means ranging from 5.4 to 6.1 mg/L and extremes ranging from 3.2 to 8.9 mg/L.

Sulfur, sulfide, total -

Sulfide was found to be present only when the reservoir was stratified. In the reservoir, concentrations ranged from 0.10 mg/L at station CH-03C to 0.80 mg/L at stations CH-08 and CH-05A. During stratified periods, release waters downstream from West Point Dam contained appreciable amounts of sulfide ranging from 0.10 to 2.80 mg/L. The maximum value (2.80 mg/L) was measured at the Lanett, Ala., city water intake (CH-01B). Hydrogen sulfide odor was often prevalent downstream from the dam immediately after release.

Chloride, dissolved -

Mean chloride concentrations in West Point Reservoir were extremely low during the period of study, ranging from 3.5 to 4.4 mg/L. Extremes ranged from 2.0 to 5.0 mg/L. Mean concentrations downstream from West Point Dam ranged from 2.8 to 4.9 mg/L and extremes ranged from 2.8 to 6.0 mg/L.

Nutrient Parameters

Nutrient concentration data at stations in West Point Reservoir and the Chattahoochee River below West Point Dam for the study period are presented in Appendix C-7. Means and ranges of nutrient concentrations are presented in Appendix B-5. Graphs showing variations in nutrient concentration with

reservoir depth are presented in Appendix C-8, and isopleths showing the longitudinal variations in nutrient concentration are presented in Appendix C-9.

Phosphorus, total -

Mean total phosphorus concentrations during unstratified periods ranged from 0.04 mg/L at CH-03C to 0.27 mg/L at CH-12. Both total and suspended phosphorus decreased appreciably downstream from Franklin, Ga., (CH-12) to the dam pool (CH-03C). Generally, total phosphorus measured in release waters downstream from West Point Dam reflected concentrations at the dam pool during unstratified periods. Mean concentrations in the release waters ranged from 0.03 to 0.06 mg/L. Flow conditions had little effect on the total phosphorus measured at downstream stations.

Thermal stratification in the reservoir was found to be a factor affecting the vertical distribution of total phosphorus. Mean total phosphorus in the reservoir during the 1978 and 1979 stratification periods ranged from 0.02 to 0.07 mg/L above the thermocline and ranged from 0.05 to 0.15 mg/L below the thermocline. Total phosphorus concentrations in the water column decreased substantially downstream toward the dam pool (0.20 to 0.43 mg/L at CH-12 compared with 0.00 to 0.13 at CH-03C). Total phosphorus concentrations in the reach of the Chattahoochee River downstream from the reservoir ranged from 0.01 to 0.12 mg/L during both years. The concentrations during periods of maximum release were slightly lower from those during periods of minimum release.

Phosphorus, orthophosphate, dissolved -

Dissolved orthophosphate concentrations in the reservoir decreased in the downstream direction from CH-12 to CH-03C. Mean concentrations during unstratified periods ranged from 0.01 to 0.12 mg/L. During stratified periods of 1978-79, mean concentrations ranged from <0.01 to 0.03 mg/L above the thermocline and ranged from 0.01 to 0.08 mg/L below the thermocline. During stratified periods, epilimnetic concentrations of dissolved orthophosphate from CH-10 downstream to CH-03C were at times below detection limits (<0.01 mg/L), while hypolimnetic concentrations were measured as high as 0.20 mg/L (Yellowjacket Creek). Dissolved orthophosphate concentrations in the Chattahoochee River downstream from the reservoir ranged from <0.01 to 0.08 mg/L. Variations in flow from the reservoir had little effect on the dissolved orthophosphate concentrations measured at downstream stations.

Nitrogen, nitrite plus nitrate, total -

In general, nitrite plus nitrate concentrations in West Point Reservoir were lower during stratified than during unstratified periods. During stratified periods, above the thermocline, mean concentrations in the main channel ranged from 0.07 to 0.40 mg/L and below the thermocline, mean concentrations ranged from 0.14 to 0.72 mg/L. During the unstratified periods, mean nitrite plus nitrate concentrations ranged from 0.49 to 0.74 mg/L in the main channel and from 0.10 to 0.58 mg/L in Yellowjacket and Wehadkee Creeks. In the Chattahoochee River downstream from West Point Dam, mean concentrations of nitrite plus nitrate ranged from 0.39 to 0.52 mg/L during the unstratified periods, and from 0.08 to 0.17 mg/L during stratified periods.

Nitrogen, ammonia, total -

Mean ammonia concentrations during the unstratified periods ranged from 0.15 mg/L (CH-11A) to 0.29 mg/L (CH-10) in the main channel and from 0.11 mg/L (CH-04) to 0.29 mg/L (CH-02) in the tributaries. Stratification had a pronounced effect on the vertical distribution of ammonia in the reservoir. Mean concentrations during the stratified periods ranged from 0.02 to 0.08 mg/L above the thermocline. Below the thermocline, mean ammonia concentrations were relatively high and ranged from 0.30 to 0.65 mg/L in the main channel and from 0.28 to 0.84 mg/L in both major tributaries. The highest observed concentration was 2.90 mg/L in Yellowjacket Creek (CH-08). Mean ammonia concentrations in the Chattahoochee River downstream from the dam during the unstratified periods in the reservoir ranged from 0.12 to 0.16 mg/L during maximum daily release compared to 0.09 to 0.13 mg/L during minimum daily releases. Release of anoxic hypolimnetic waters during stratified periods resulted in even greater increases in ammonia concentrations. Mean concentrations in maximum daily release waters ranged from 0.16 to 0.29 mg/L and in minimum daily release waters mean concentrations of ammonia ranged from 0.08 to 0.23 mg/L.

Nitrogen, organic, total -

Mean concentrations ranged from 0.24 mg/L (CH-13) to 0.35 mg/L (CH-12) during unstratified periods. Mean organic nitrogen concentrations during stratified periods ranged from 0.33 to 0.57 mg/L above the thermocline and ranged from 0.13 to 0.35 mg/L below the thermocline. The highest observed concentrations of organic nitrogen (1.0 mg/L) occurred at CH-08 and CH-07.

Organic nitrogen concentrations in the Chattahoochee River downstream from West Point Dam were about the same as in the reservoir, and did not vary appreciably with season or with flow from the reservoir.

Carbon, organic, total, and organic, dissolved -

TOC (total organic carbon) and DOC (dissolved organic carbon) concentrations measured in West Point Reservoir during the study period were low and varied little, either spatially or temporally. Mean TOC concentrations during the unstratified periods ranged from 3.5 to 4.5 mg/L. Data collected during stratified periods indicated slightly more TOC present in the epilimnion than in the hypolimnion at most stations. Mean TOC concentrations in the Chattahoochee River downstream from the dam were slightly lower than those in the reservoir and showed no appreciable difference with flow from the reservoir.

With the exception of stations CH-12 and CH-11A, most of the organic carbon present was in the dissolved phase. Mean DOC concentrations during unstratified periods ranged from 2.5 mg/L at CH-11A to 3.5 mg/L at CH-08 in the reservoir and from 2.6 mg/L (CH-01A during minimum daily release) to 3.9 mg/L (CH-01D during minimum daily release) in the Chattahoochee River downstream from West Point Dam.

Metal Parameters

Metal concentration data from stations in West Point Reservoir and the Chattahoochee River below West Point Dam for the study period are presented in Appendix C-10. Means and ranges of metal concentration data are presented in Appendix B-6. Graphs showing variations in iron concentration with reservoir depth are presented in Appendix C-11, and isopleths showing the longitudinal variations in iron concentration are presented in Appendix C-12.

Sodium, calcium, potassium, and magnesium, totals -

The major alkali and alkaline earth metals measured in West Point Reservoir and the Chattahoochee River downstream from West Point Dam display the abundance ranking, Na>Ca>K>Mg. Mean sodium concentrations ranged from 4.4 to 5.1 mg/L in the reservoir and from 3.8 to 6.2 mg/L in the river. Extremes for all stations sampled ranged from 2.9 to 7.3 mg/L. Mean calcium concentrations ranged from 3.4 to 4.2 mg/L in the reservoir and from 3.3 to 4.3 mg/L in the river. Extremes ranged from 2.8 to 6.5 mg/L. Potassium ranged from 1.1 to 2.1 mg/L for all stations sampled. Magnesium, the least abundant of these constituents, showed the least amount of variation. Means ranged from 1.1 to 1.3 mg/L and extremes ranged from 0.9 to 2.0 mg/L.

Iron, total -

Mean total iron concentrations during unstratified periods ranged from 700 ug/L at CH-03C to 2,400 ug/L at CH-12. Stratification had a strong influence on the distribution of iron in the reservoir. Mean total iron concentrations above the thermocline, during thermal stratification ranged from 120 ug/L at CH-05A, CH-03C, and CH-13 to 250 ug/L at CH-10 in 1978 and from 120 ug/L at CH-03C to 660 ug/L at CH-08 in 1979. In sharp contrast, mean concentrations below the thermocline ranged from 880 ug/L (CH-03C) to 4,400 ug/L (CH-08) in 1978 and from 1,100 ug/L (CH-07) to 4,800 ug/L (CH-08) in 1979.

With few exceptions, mean total iron concentrations in the Chattahoochee River downstream from West Point Dam were higher during maximum daily release periods than during minimum daily release periods, and this pattern was consistent throughout the sampling period. Maximum daily release mean total iron concentrations ranged from 600 to 980 ug/L during unstratified periods and from 730 to 1,040 ug/L during stratified periods. Minimum daily release mean concentrations, on the other hand, ranged from 520 to 570 ug/L during unstratified periods and from 600 to 940 ug/L during stratified periods.

Iron, dissolved -

Spatial and temporal patterns in dissolved iron distributions were similar to those observed for total iron. Mean concentrations during the unstratified periods ranged from 40 ug/L at CH-03C to 700 ug/L at CH-08. Mean concentrations below the thermocline during thermal stratification ranged from 290 ug/L at CH-03C to 3,300 ug/L at CH-08 in 1978 and from 30 ug/L (CH-10) to 3,500 ug/L (CH-08) in 1979. Like total iron, mean dissolved

iron concentrations in the Chattahoochee River downstream from the dam were much higher during maximum daily releases than during minimum daily releases when the reservoir was stratified.

Manganese, total -

Mean total manganese concentrations during unstratified periods at main-channel sites ranged from 120 ug/L at CH-12 to 200 ug/L at CH-07 and from 330 to 470 ug/L in Yellowjacket and Wehadkee Creeks. The vertical distribution of total manganese during thermal stratification was similar to that observed for total iron. Above the thermocline, mean concentrations during stratified periods were lower than the whole-water column mean concentrations for unstratified periods and ranged from 10 to 70 ug/L. However, below the thermocline mean concentrations for both 1978 and 1979 were considerably higher than the unstratified values and ranged from 270 to 2,900 ug/L.

Mean total manganese concentrations in the Chattahoochee River downstream from West Point Dam during the unstratified periods were generally higher during maximum daily release periods than during minimum daily release periods, though not by an appreciable quantity. The difference between concentrations of total manganese at maximum and minimum daily release during the stratified periods were substantially increased by the release of anoxic hypolimnetic waters. In 1978, mean concentrations during maximum daily release ranged from 420 to 490 ug/L as compared with 140 to 230 ug/L during minimum daily release periods and in 1979, 410 to 510 ug/L at maximum daily release periods compared with 270 to 390 ug/L during minimum daily release periods.

Manganese, dissolved -

Mean dissolved manganese concentrations during unstratified periods ranged from 30 to 120 ug/L in the main channel and from 280 to 380 ug/L in Yellowjacket and Wehadkee Creek tributaries. Mean dissolved manganese concentrations above the thermocline during stratified periods of both 1978 and 1979 ranged from less than 10 to 40 ug/L. Mean concentrations below the thermocline ranged from 150 to 2,000 ug/L, which approached the total manganese concentrations.

Dissolved manganese downstream from West Point Dam varied appreciably with both flow and season. Mean maximum daily release concentrations during unstratified periods were only slightly higher than those for minimum daily release periods. However, during the stratified period, mean concentrations were nearly twice as great during maximum daily release periods as during minimum daily release periods.

Zinc, total -

Mean total zinc concentrations during unstratified periods ranged from 20 to 30 ug/L in the reservoir and from <10 to 20 ug/L in the Chattahoochee River downstream from the dam. Mean concentrations in the reservoir were

slightly higher during stratified periods (30 to 40 ug/L above the thermocline and from 40 to 50 ug/L below the thermocline) than during the unstratified periods. Mean concentrations downstream from the dam ranged from 30 to 80 ug/L and did not vary appreciably with flow.

Biological Parameters

Biological data collected at stations in West Point Reservoir and the Chattahoochee River below West Point Dam for the study period are presented in Appendix D-2 through D-6. A summary of biological analyses are presented in Appendix B-7 and D-1.

Phytoplankton -

The distribution of total phytoplankton standing stock values in relation to time of year and location within the reservoir is shown in figure 5. The lentic section of the reservoir (stations CH-10 to CH-03C) showed the greatest biological activity. During stratified periods, the highest concentrations of phytoplankton consistently occurred in the upper lentic, or middle, section of the reservoir (stations CH-10 to CH-05A); station CH-07 had the highest estimated concentration (666,280 cells per mL) in June 1978 (Appendix D-2). The estimates are only crude approximations of standing stock. They are good for determining which species are present in water, but tend to overemphasize large concentrations of small-cell organisms such as those in West Point Reservoir.

Temporal and longitudinal variation of the major groups of phytoplankton are illustrated in figure 6, and temporal and longitudinal distribution of selected common phytoplankton at selected stations in West Point Reservoir is represented in figure 7. Comparisons utilizing cell-count data should be made with caution, because comparing a cell of one species with a cell of another species of different size, volume, and metabolic production would be erroneous. Certain generalizations about the data, however, can be made as follows:

- (1) During stratified periods, the dominant group in terms of numbers per unit volume was the blue-green algae (Cyanophyta). Agmenellum quadruplicatum, Anacystis incerta, and Lyngbya contorta were the most prevalent.
- (2) The lotic section (vicinity of CH-12) was represented by forms characteristic of benthic riverine communities, for example, Gomphonema parvulum and Nitzschia palea.
- (3) The ecotone between lotic and lentic environments (vicinity of CH-11A) was characterized by high species richness as a result of having representative species from both environments.
- (4) There was an increase in true plankters comprising the communities, as the distance to the dam pool decreased.

Chlorophyll a -

All algae contain chlorophyll a. Chlorophyll a is the molecule that absorbs light energy from the sun and transforms it into chemical energy in the photosynthetic process. Measurement of this photosynthetic pigment can give insight into the quantity of algae present and, if measured over a time

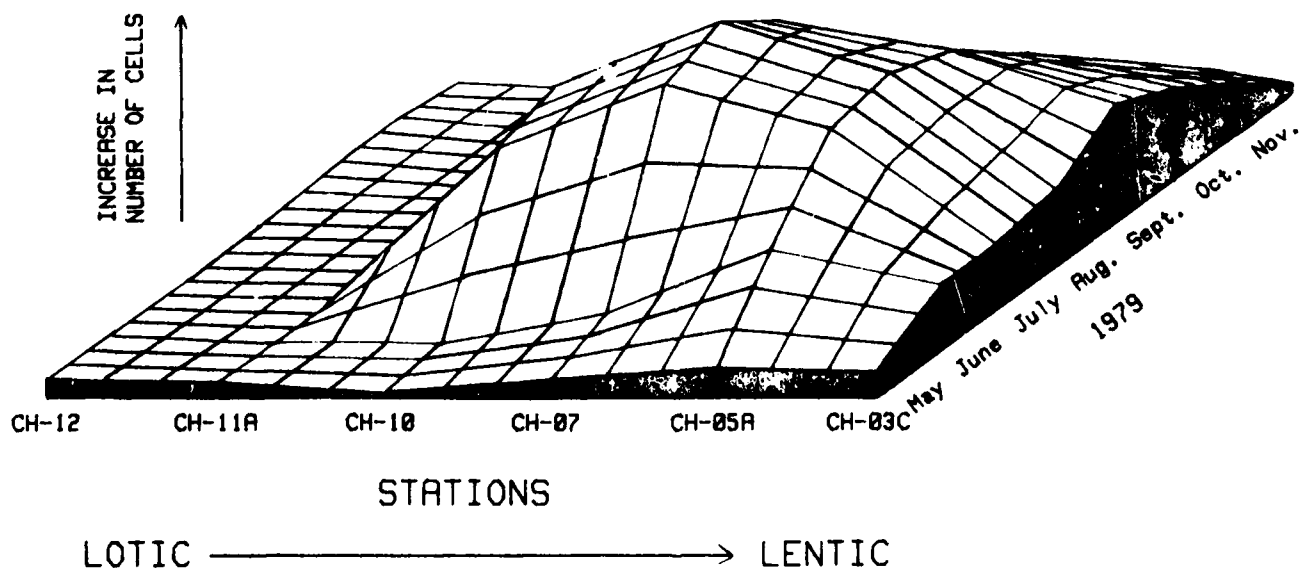
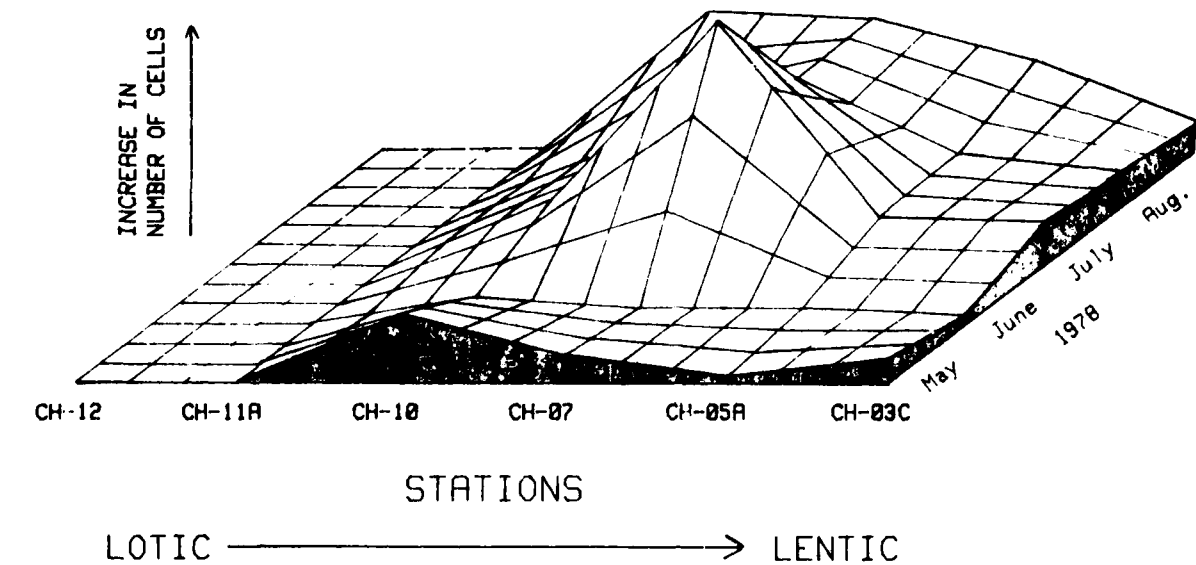


FIGURE 5.--Trends in temporal and longitudinal variations of total phytoplankton standing stock in West Point Reservoir, 1978 and 1979.

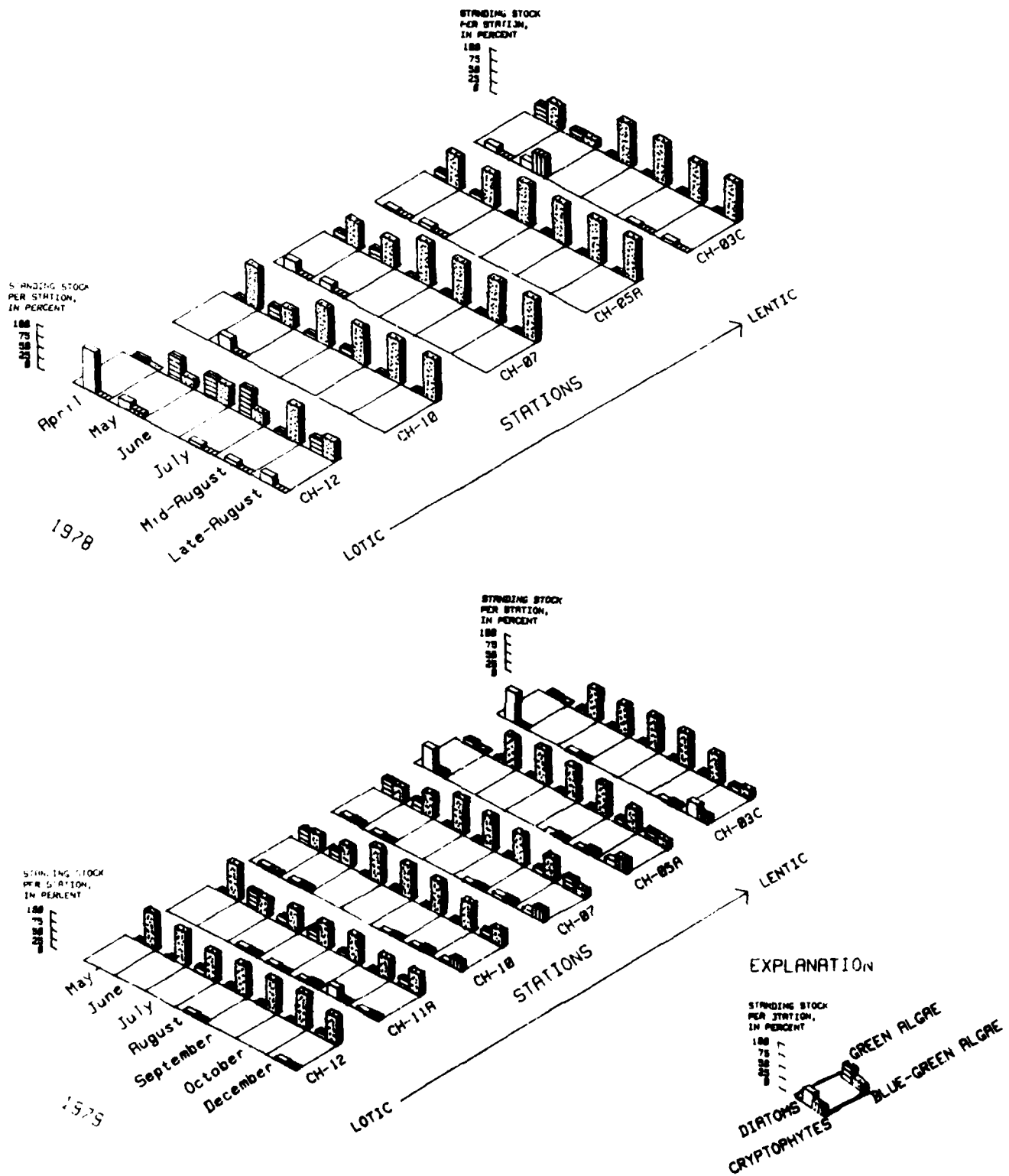


FIGURE 6.--Temporal and longitudinal variations of the major groups of phytoplankton in West Point Reservoir, 1978 and 1979.

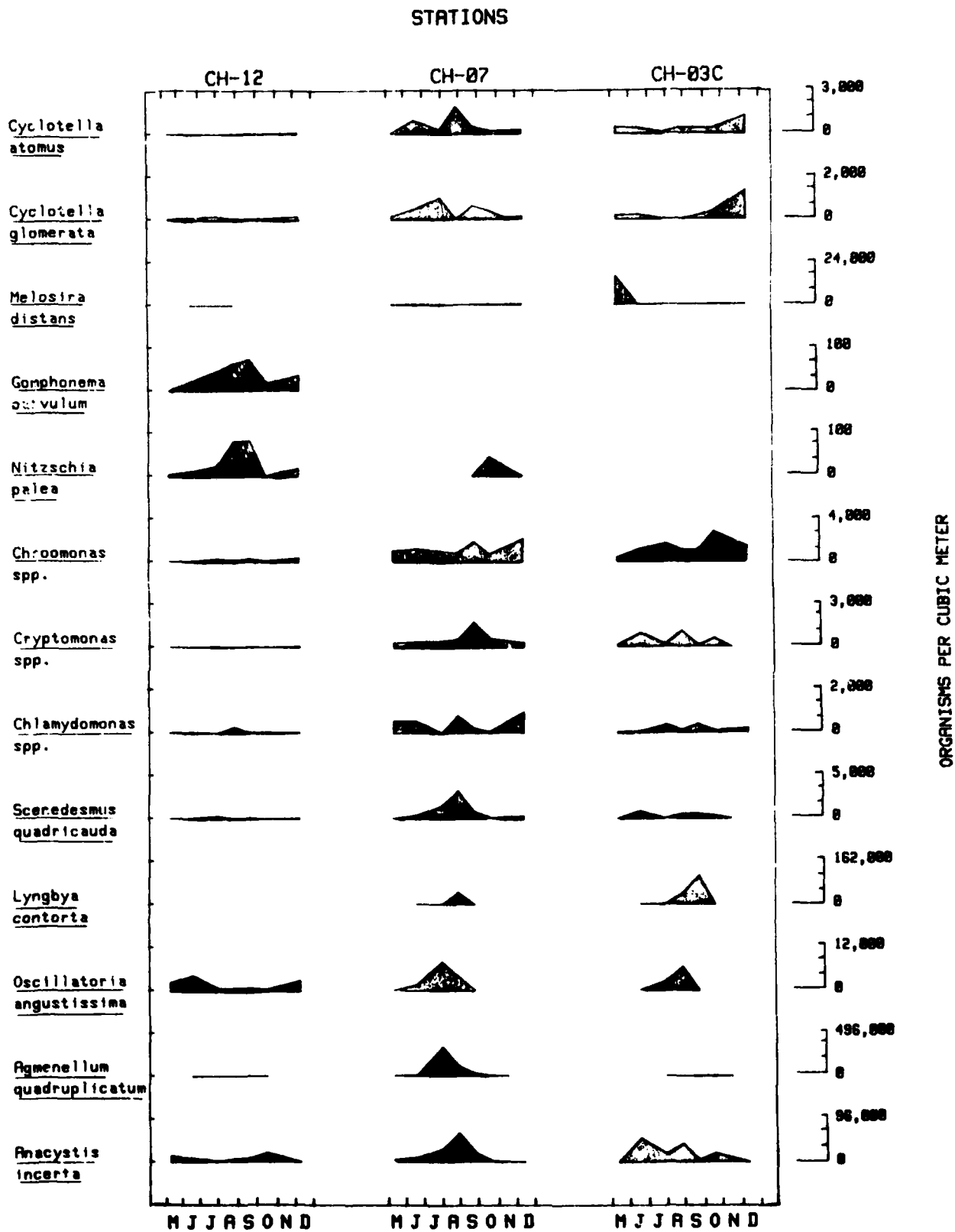


FIGURE 7.--Temporal and longitudinal distributions of selected phytoplankton species at selected stations in West Point Reservoir, 1979.

interval, can provide an estimate of primary production. Because chlorophyll a concentration varies with species and with environmental and nutritional factors which do not necessarily affect total algal biomass, estimates based on chlorophyll measurements are relatively imprecise, as indicated by the scatter in the relation presented in figure 8.

In the lotic section of the reservoir, the chlorophyll values ranged from 1.12 to 9.36 ug/L and in the lentic section, the values ranged from 2.99 to 35.0 ug/L. The high chlorophyll values (2.72-35.0 ug/L) in March 1979 (Appendix D-1) probably occurred at the same time as a spring diatom population maxima. This could not be substantiated because supportive cell-count data were not obtained.

Algal growth potential -

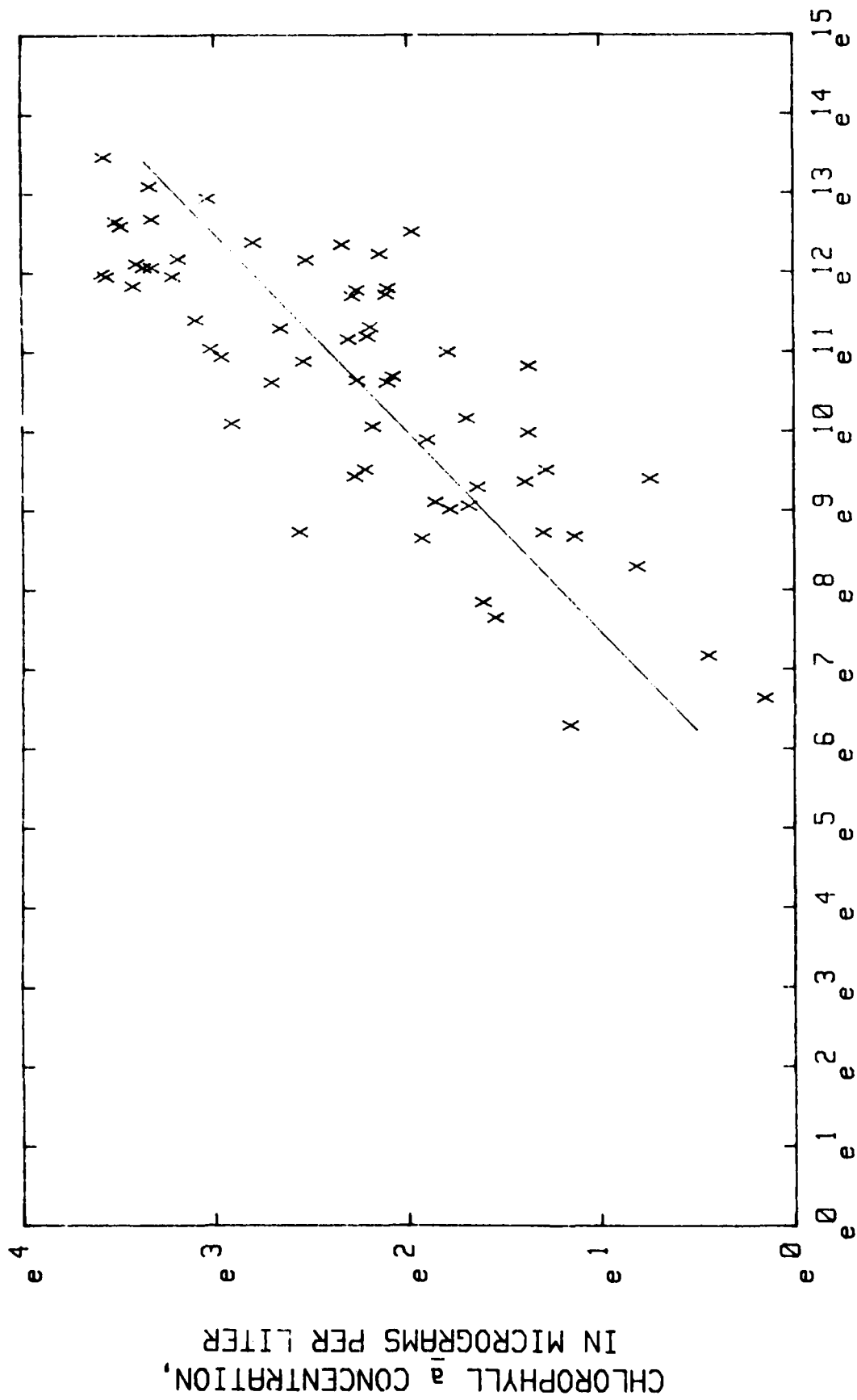
The longitudinal distribution of algal growth potential concentrations for selected data-collection trips is illustrated in figure 9. A maximum algal growth potential value of 48.0 ug/L was obtained at the uppermost data-collection station (CH-12) at Franklin, Ga., on July 13, 1978, whereas a minimum value of 0.4 ug/L was recorded at the dam pool station (CH-03C) in August 1978.

Zooplankton -

Distribution of total zooplankton standing stock values in relation to time of year and location within the reservoir is represented in figure 10. The lentic section of the reservoir (stations CH-10 to CH-03C) showed the greatest zooplankton activity, ranging from 1,000 to 284,160 organisms/m³ (Appendix D-3). The largest concentrations of zooplankton were reported during early summer and autumn. During stratified periods, the highest concentrations of zooplankton occurred in the midsection of the reservoir (stations CH-07 and CH-05A); station CH-05A had the highest reported concentrations (284,160 organisms/m³) in June 1979. Inferences should not be made based on differences between 1978 and 1979 zooplankton data because of a change in sampling methodology. The 1978 data probably are not indicative of the annual distribution of zooplankton standing stock due to poor sampling design.

The zooplankton communities in West Point Reservoir consisted primarily of rotifers, cladocerans, and copepods (fig. 11). Rotifers were the predominant animal plankters both spatially and temporally. Cladocerans and copepods comprised larger fractions of the communities at the dam pool (station CH-03C) compared to upstream stations and at all stations during spring and autumn.

The temporal and longitudinal distribution of selected representative zooplankton species are presented in figure 12. For the sampling period, Conochilus unicornis and Keratella crassa were the most abundant rotifers and Bosmina longirostris and Diaphanosoma brachyurum represented the most frequently observed cladocerans. Because of inadequacies in the taxonomy of larval stages, the majority of copepod specimens were not identified to the species level. The fauna of the lotic section were low in species richness and was represented by forms characteristic of benthic riverine communities,



PHYTOPLANKTON CONCENTRATION, IN CELLS PER MILLILITER

Figure 8.--Relation of chlorophyll a concentration to phytoplankton standing stock in West Point Reservoir, 1978 and 1979.

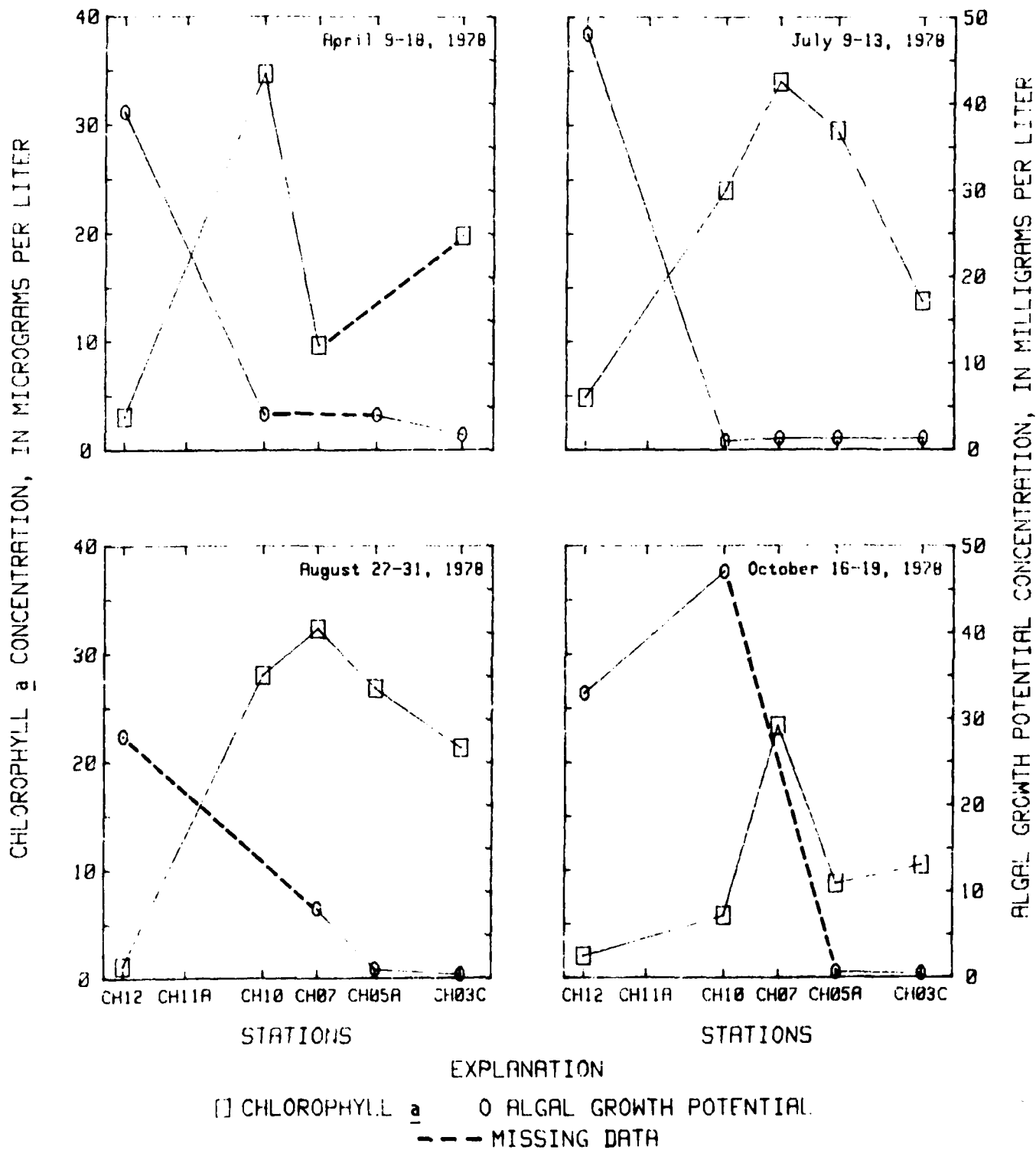


FIGURE 9.--Longitudinal distribution of chlorophyll a and algal growth potential concentrations in West Point Reservoir for selected data-collection trips.

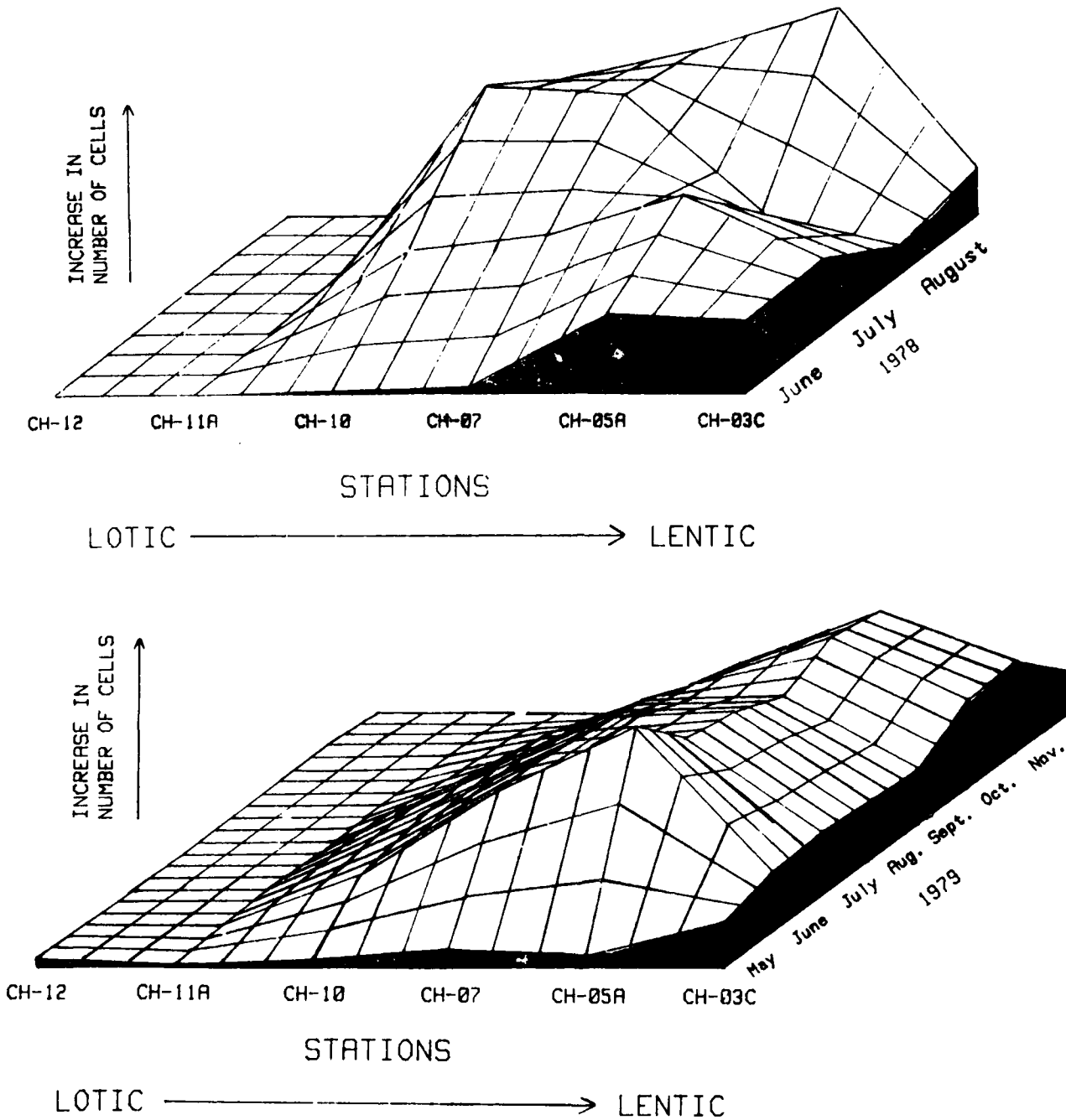


FIGURE 10.--Trends in temporal and longitudinal variations of total zooplankton standing stock in West Point Reservoir, 1978 and 1979.

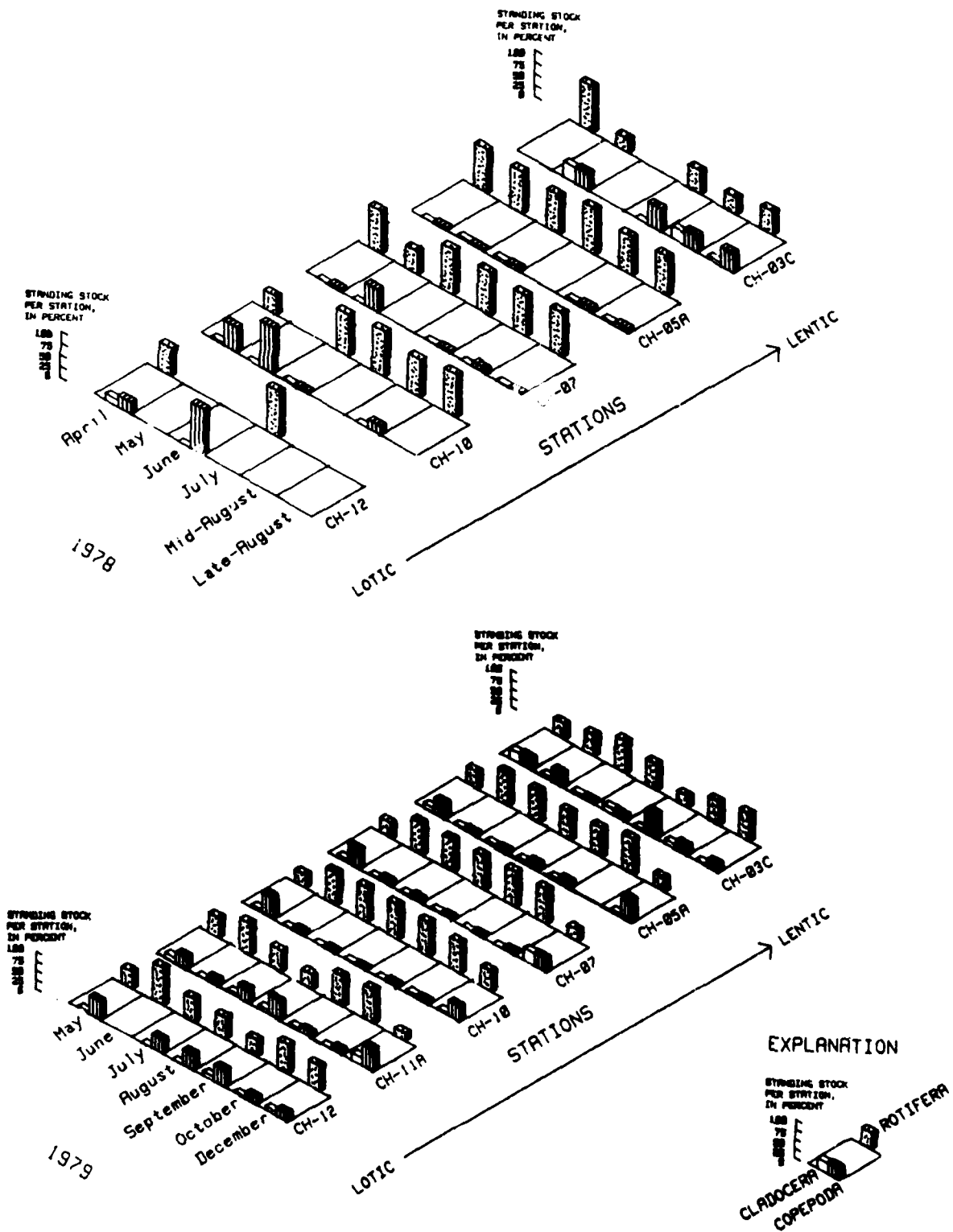


FIGURE 11.--Temporal and longitudinal variations of the major groups of zooplankton in West Point Reservoir, 1978 and 1979.

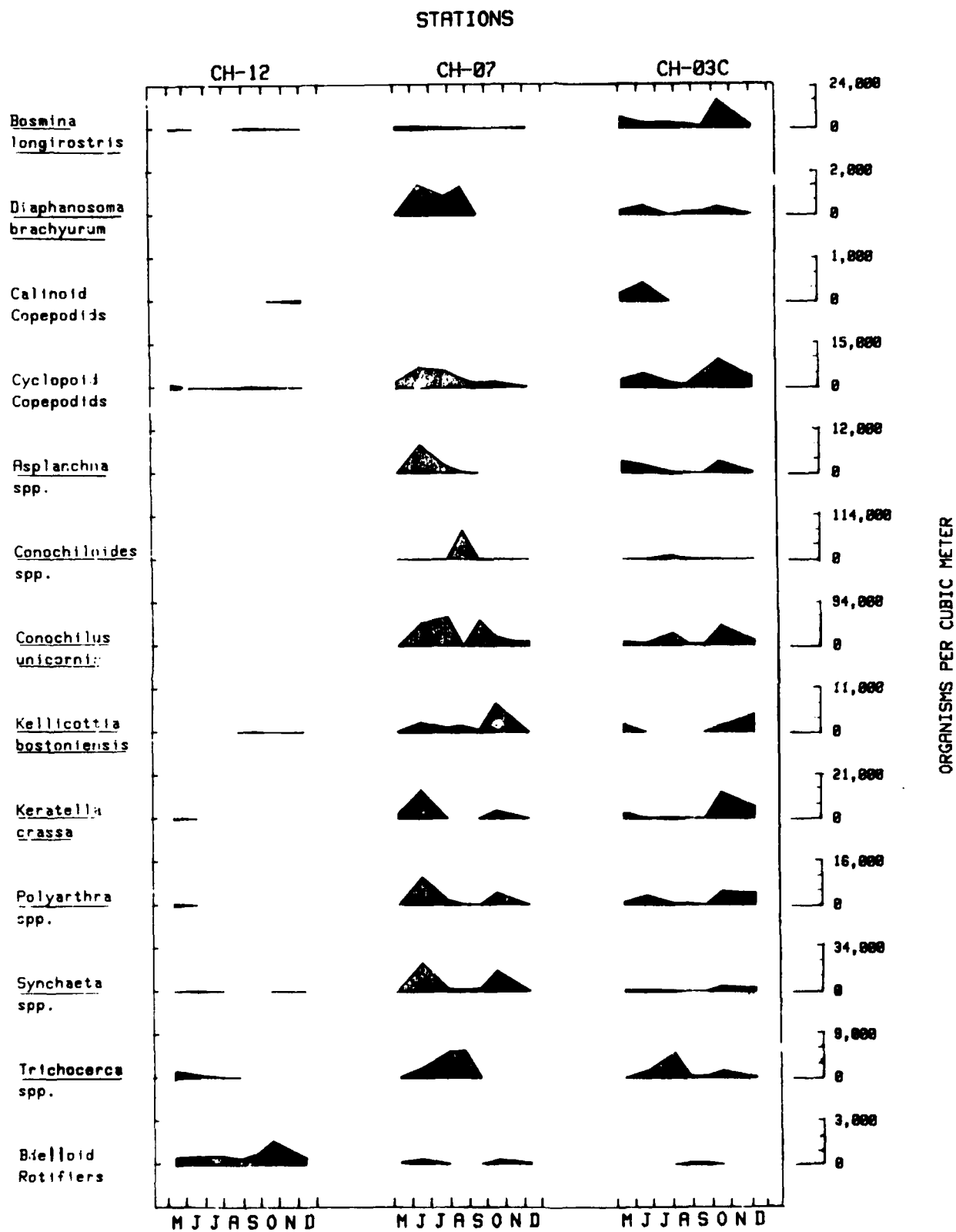


FIGURE 12.--Temporal and longitudinal distributions of selected zooplankton species at selected stations in West Point Reservoir, 1979.

for example, the Bdelloid rotifers (Hynes, 1970). Species richness and true plankters comprising the populations increased as the distance to the dam decreased (Appendix D-3).

The majority of species in figure 12 had population maxima in 1979 occurring in early summer and midautumn. At stations CH-05A and CH-03C in 1979, the highest species richness coincided with the early summer (June) and midautumn (October) population maxima (Appendix D-3). At CH-10 and CH-07, the highest species richness in 1979 coincided with summer (June, July, and August) population maxima. Population maxima of Trichocerca spp. and Conochiloides spp. appeared to coincide with the midsummer maxima of blue-green algae populations (figs. 7 and 12). Changes in the temporal and spatial distribution and composition of zooplankton populations are extremely complex; therefore, these generalizations should be interpreted with caution.

Fecal coliform -

The fecal coliform bacteria group (Escherichia coli and variants) is currently considered the most easily determined and reliable bacterial indicator of fecal contamination. Fecal coliform grow mainly in the intestines of warm-blooded animals, including man. fecal coliform density is, therefore, indicative of the relative magnitude of fecal wastes from warm-blooded animals. Though generally nonpathogenic, fecal coliform bacteria indicate the probable presence of pathogens. Most water-quality standards are based on fecal coliform densities.

Fecal coliform densities were determined at only one station (CH-12), at the headwaters of the reservoir. Estimated counts at this station ranged from 20 colonies/100 mL in December 1979 to 5,100 colonies/100 mL recorded in April 1978 (Appendix D-6). For the 1978 and 1979 data-collection periods, the geometric mean was 300 colonies/100 mL. In most samples, an unknown organism was found to completely obliterate and interfere with fecal coliform growth and development on the membrane filter. Most of the fecal coliform densities should be considered low estimates, because of the interference during analysis. A need exists to determine whether this unidentified organism is pathogenic.

Fecal streptococci -

Fecal streptococci is another group of organisms which can be used to indicate potential fecal contamination. Fecal streptococci tend to survive longer in the environment than do fecal coliform and some investigators consider it a better indicator of fecal contamination. Fecal streptococci occur in large numbers in the enteric discharges of warm-blooded animals. They do occur in small numbers in cold-blooded animals and are rarely found in soil. In contrast to the fecal coliform, fecal streptococci is a member of a large group of organisms which can cause disease in man.

Fecal streptococci densities at station CH-12 ranged from 7 to 3,000 colonies/100 mL. Fecal streptococci densities at other stations within the reservoir were not found in significant numbers. The estimated counts ranged from less than 1 to 180 colonies/100 mL, with a geometric mean of 7 colonies/100 mL for the combined stations.

FC/FS ratio -

Fecal coliform and fecal streptococci of themselves cannot indicate whether feces from which they came were of human or other warm-blooded animal origin. The ratio of fecal coliform to fecal streptococci (FC/FS) can be useful if it is important to differentiate between human and animal origins of enteric bacteria. This ratio, however, must be used with caution because the results are dependable only if the samples are collected where the time of travel downstream from the source of the bacteria is less than 24 hours (Millipore, 1973). However, this limitation has been overlooked in many investigations.

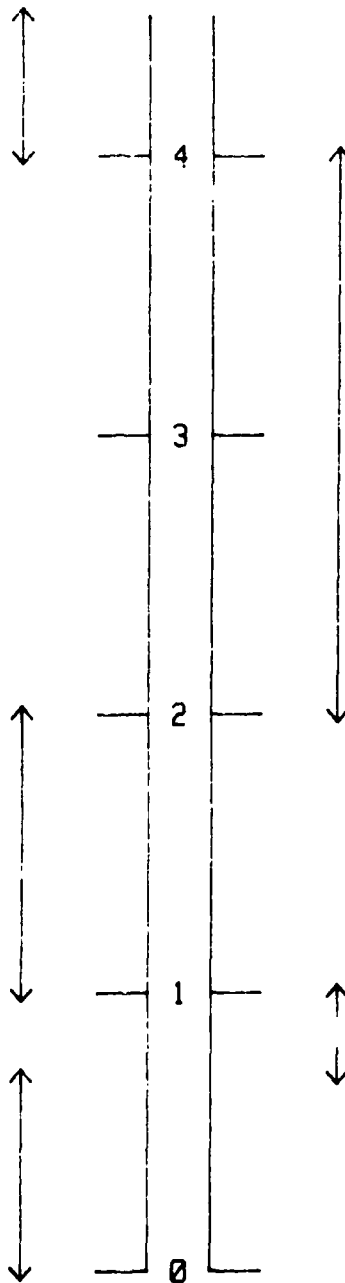
Figure 13 illustrates the range of values utilized in the interpretation of results listed in Appendix D-6. At station CH-12 the FC/FS ratio values ranged from 0.09 to 22.86. Most of the values, however, indicate that the fecal contamination was predominantly of human origin. These values, as all FC/FS ratio values calculated for the study, were not screened for compliance with time of travel restrictions. The results may be interpreted only as qualitative indicators of the source of the fecal material.

Figure 14 illustrates the longitudinal distribution of fecal coliform and fecal streptococci concentrations and FC/FS ratios in the Chattahoochee River below West Point Dam during maximum daily releases for selected periods. The highest concentrations of these organisms occurred during the late summer months (August 1978 and September 1979). Fecal coliform and fecal streptococci concentrations generally increased as the distance downstream from the dam increased. This was probably a result of municipal waste discharges from West Point and LaGrange, Ga., by way of Long Cane Creek and from Lanett, Ala. The high ratios (greater than or equal to two) during minimum daily release periods indicates a predominantly human source of the contamination. Fecal coliform concentrations tended to be lower during maximum daily release periods, probably as a result of dilution of municipal wastes by reservoir release water. Fecal streptococci, on the other hand, tended to be higher during maximum daily release periods. A great deal more data, however, would be required to substantiate these generalities.

Seston and ATP -

The concentrations of volatile seston and ATP (adenosine triphosphate) collected from West Point Reservoir during the 1978-1979 data-collection periods ranged from <0.1 to 23 mg/L and from 0.10 to 4.4 ug/L, respectively. The longitudinal distribution of volatile seston in relation to viable suspended organic matter as estimated by ATP is shown in figure 15. The relation between plankton biomass and volatile seston is not well defined because of the relatively large loads of allochthonous volatile seston from the Chattahoochee River. For example, the high concentration of volatile seston during the first week in May 1978 (fig. 15) can be attributed to a storm event which contributed large quantities of allochthonous seston to the reservoir. During stratified periods, volatile seston in the lentic section of the reservoir did, generally, coincide with plankton biomass. A cautious approach must be taken when interpreting and estimating plankton biomass from seston values because the seston usually includes varying amounts of non-living matter.

$FC/FS > 4$
STRONG EVIDENCE
OF HUMAN WASTES



$2 < FC/FS < 4$
PREDOMINANCE OF
HUMAN WASTES IN
MIXED POPULATION

$1 <= FC/FS <= 2$
UNCERTAIN
INTERPRETATION,
NEEDS RESAMPLING

$0.7 < FC/FS < 1$
LIVESTOCK OR
POULTRY WASTE IN
MIXED POPULATION

$FC/FS <= 0.7$
PREDOMINANCE OF
LIVESTOCK OR
POULTRY WASTES

Figure 13.--Range of values utilized in the interpretation of fecal coliform to fecal streptococci ratio data.

BACTERIA CONCENTRATION, IN ORGANISMS PER 100 MILLILITERS

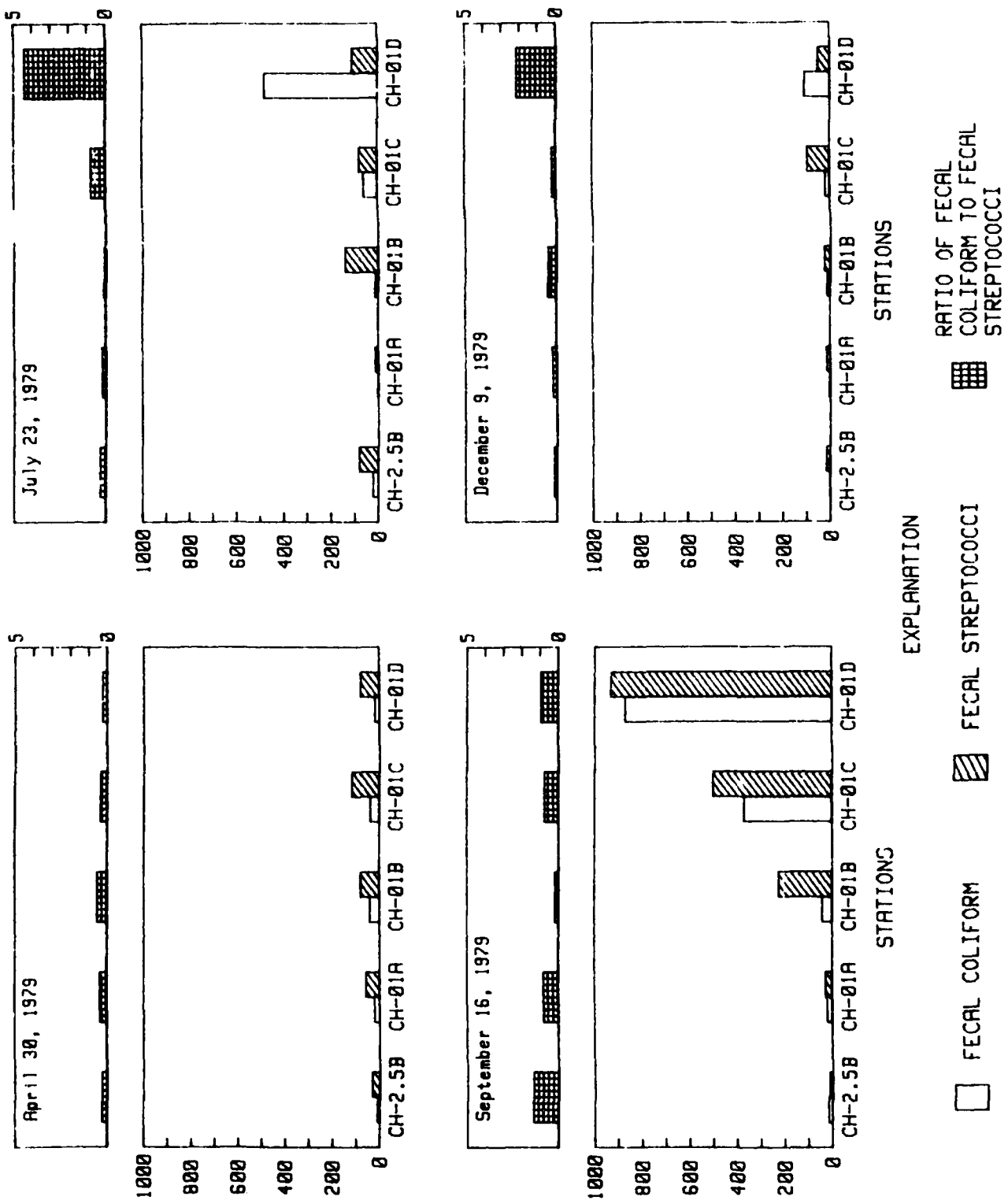
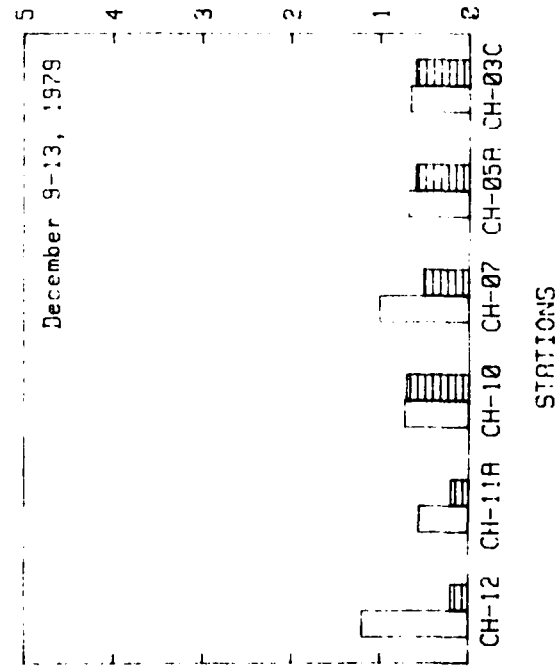
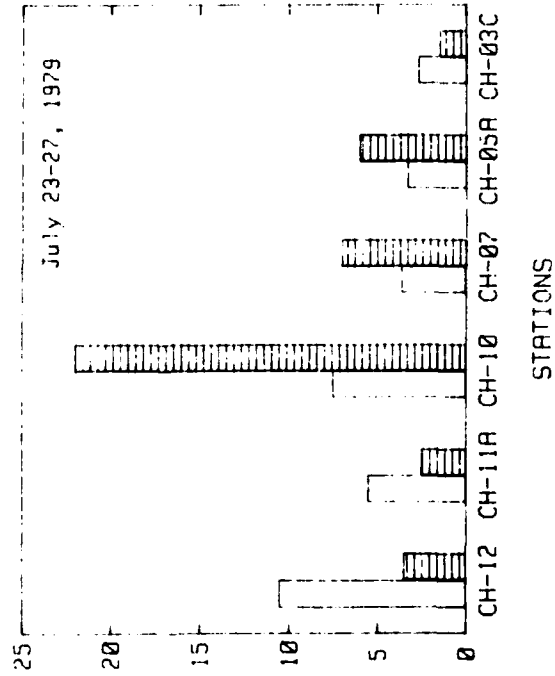
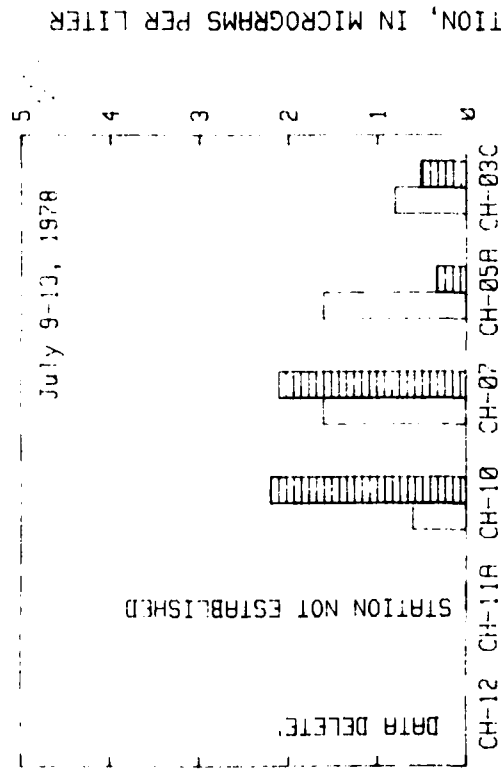
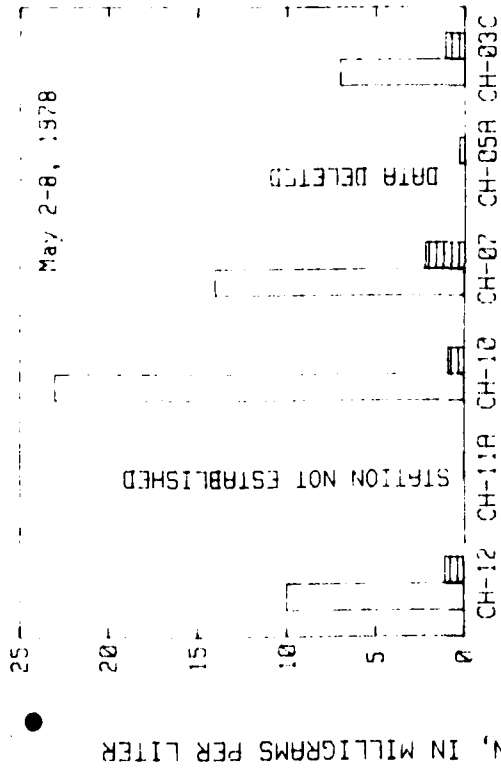


FIGURE 14.--Longitudinal distribution of fecal coliform and fecal streptococci concentrations and ratios of fecal coliform to fecal streptococci during maximum release periods in the Chattahoochee River below West Point Dam for selected data-collection trips.



EXPLANATION

□ VOLATILE SESTON
 ▨ ADENOSINE TRIPHOSPHATE

FIGURE 15.--Longitudinal distribution of volatile seston and adenosine triphosphate concentrations in the euphotic zone of West Point Reservoir for selected data-collection trips.

ATP represent only viable organic particulate material and is proportional to the total biomass. The universal occurrence and central role of ATP as the primary energy donor in living cells make it an excellent indicator of the presence of living material. ATP, generally, coincided with plankton biomass (fig. 15).

Benthic invertebrates -

Results of benthic invertebrate identification and enumeration are presented in Appendix D-4. The lotic section of the reservoir was characterized by higher generic richness and fauna indicative of a riverine environment. The dominant benthic invertebrates included Rheotanytarsus, Simulium, Tricorythodes, Hydropsyche, and Cricotopus. The lentic section had lower generic richness and benthic fauna indicative of limnetic environments. Cyrenellus, Limnochironomus, and Plumatella were the most abundant organisms.

Plumatella was the most conspicuous component of the benthic fauna in the lentic section. Plumatella is a representative of the phylum Bryozoa, class Ectoprocta. Another Ectoproctan genus, Pectinatella was also commonly found, developing on submerged objects in the shallow shore zone of West Point Reservoir. Both Plumatella and Pectinatella had population maxima occurring during the summer. Bryozoans are rarely animals of quantitative or economic importance in freshwater (Pennak, 1953). Sessile forms like Plumatella and Pectinatella, however, occasionally form massive colonies that can become conspicuous members of shallow reservoirs. Information on the ecology of species in these genera is scanty, therefore the significance concerning their presence is uncertain.

The phylum Arthropoda had the largest number of benthic invertebrate genera represented at the downstream river stations. The caddisfly Cheumatopsyche and the chironomid Polypedilum were the most abundant genera. The data available do not permit inferences on temporal and longitudinal variation in benthic community structure.

Benthic algae -

The Bacillariophyta (diatoms) dominated the phytobenthic community at station CH-01A (downstream from the reservoir), the only benthic algae sampling site. Achnanthes minutissimam, Gomphonema angustratum, Gomphonema gracile, Gomphonema parvulum, and Synedra rumpens were the most abundant species.

The Chattahoochee River below West Point Dam exhibits modifications of chemical and physical parameters that profoundly influence benthic communities. Possible controlling factors include temperature, flow, substrata, turbidity, and dissolved substances. However, the limited amount of data available do not permit inferences to be made as to the effects of reservoir releases and flow regulation on the benthic algae and benthic invertebrate communities of the Chattahoochee River below West Point Dam.

Bottom Material

Bottom material was analyzed for particle sizes that included clay, silt, sand, and very fine gravel-size classes. Particle-size distributions are given in Appendix E-1 and are graphically displayed in Appendix E-2. Sand-sized particles (73-97 percent of total) were predominant in bottom material of the lotic section stations, CH-12 and CH-10. In contrast, bottom material from the upper part of the lentic section, stations CH-7, CH-5, and CH-8, consisted primarily of silt- and clay-sized particles (59-95 percent of total). Bottom material from the lower part of the lentic section, stations CH-13 and CH-03C, varied in particle size from fine sand to silt plus clay. Bottom material collected at the river stations downstream of West Point Dam had a particle-size distribution of sand and small gravel. No fine material was detected in any river sample except for a 30-percent fraction at station CH-01A in 1979.

Results of bottom-material analyses for nutrients, trace metals, oil and grease, and volatile solids are presented in Appendix E-3. Most constituent concentrations were low. However, measurable concentrations of total iron (3,700 to 31,000 ug/g), total phosphorus (250 to 2,200 mg/kg), total organic carbon (10,000 to 49,000 mg/kg), and volatile solids (31,200 to 169,000 mg/kg) were found in bottom material from the lentic section of the reservoir. The highest concentrations of these constituents occurred where silt and clay particles constituted most of the bottom material.

Appendix E-4 contains the results of analyses for chlorinated hydrocarbons in the bottom material of West Point Reservoir. Most of the chlorinated hydrocarbons for which analyses were performed were not present in the bottom material sampled in 1978 and 1979. The constituents that were detected followed the same spatial distribution pattern as that of the chemical constituents. Measurable concentrations of PCB's (34 to 740 ug/kg) and chlordane (16 to 210 ug/kg) were found in the bottom material from the lentic section of the reservoir. The highest concentrations of these constituents occurred where silt and clay particles constituted most of the bottom material.

Fish Tissue Analyses

Results of the fish tissue analyses for selected substances that form persistent and toxic residues in the environment are presented in Appendix F. Most of the tissue samples contained measurable amounts of chlorinated hydrocarbons and trace metals.

PCB's (polychlorinated biphenyls), chlordane, and DDT and its degradation products are especially notable because of their potential concern to human health. PCB concentrations ranged from less than 0.1 to 3,800 ug/kg. Concentrations of DDT and its derivatives ranged from less than 0.1 to 49 ug/kg. Chlordane concentrations ranged from less than 0.1 to 280 ug/kg.

Zinc, having concentrations ranging from 2 to 180 ug/kg, was the most abundant selected trace metal in fish tissue. The concentrations of other selected trace metals were much less, ranging from less than 0.1 to 0.8 ug/kg.

DATA DISCUSSION

Reservoir Stratification and the Effects on Water Quality

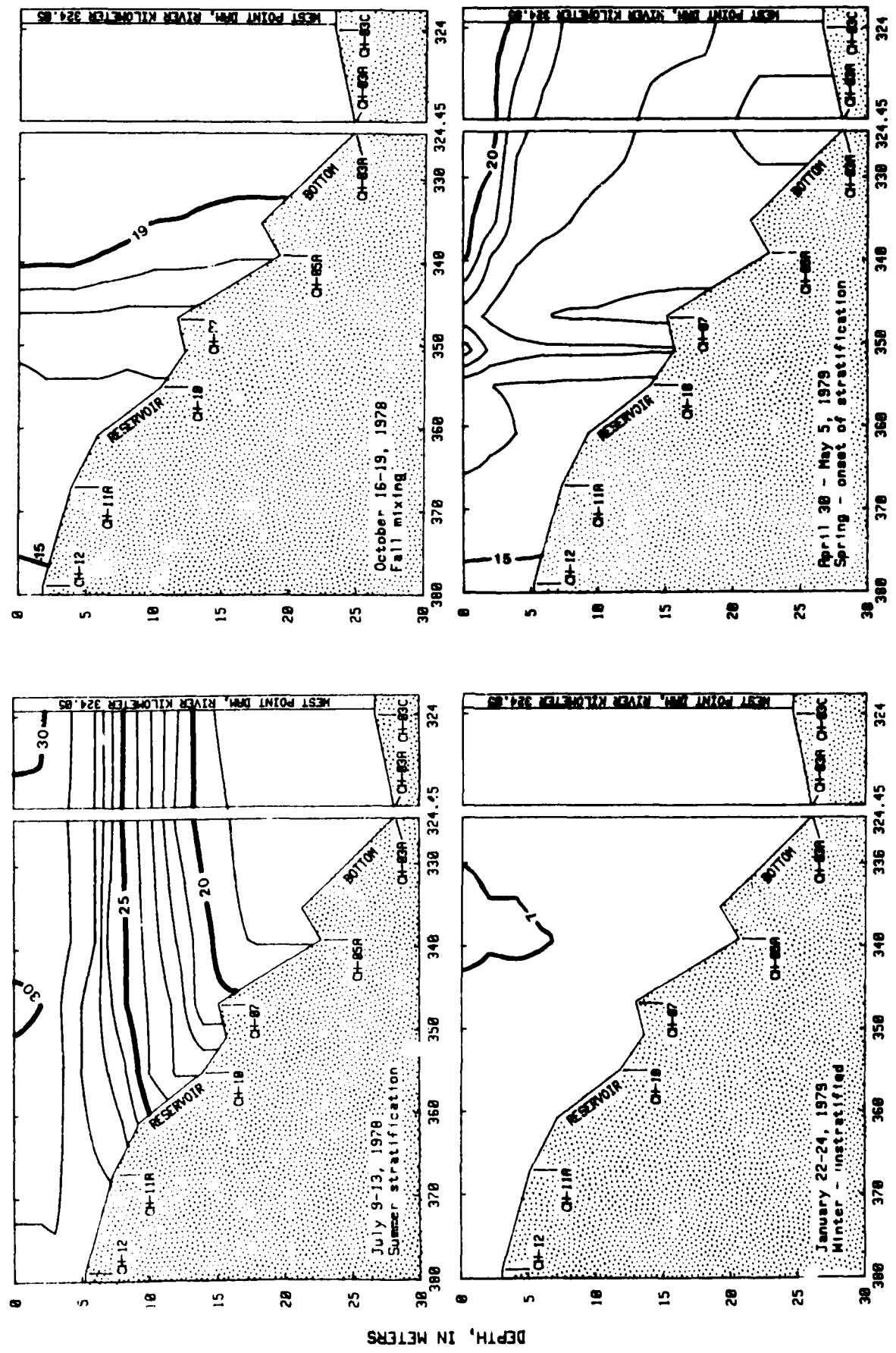
Thermal Stratification

West Point Reservoir is a monomictic system that undergoes an annual thermal stratification-destratification cycle in four distinct stages: (1) the onset of stratification (thermal density layering) in the spring, (2) a stratified period during the summer, (3) a fall mixing period or turnover, and (4) a winter unstratified period. The reservoir is weakly stratified during the summer. The stability and duration of summer stratification depend on inflow water discharge, inflow water temperature relative to reservoir water temperature, atmospheric temperature, wind velocity, cloud cover, reservoir morphometry, and residence time.

Field measurements of water temperature provide a qualitative picture of stratification and mixing patterns. The four stages of the stratification-destratification cycle in the main channel of West Point Reservoir are shown in figure 16. Figure 16 presents a series of plots of water temperatures in the main channel of West Point Reservoir as a function of depth and distance. Each line represents a constant water temperature with respect to depth and distance along the reservoir reach. Each individual graph represents the spatial (longitudinal) change in water temperature from Franklin, Ga. (station CH-12), to the dam pool area (station CH-03C). Stratification during the summer was typified by horizontal temperature isopleths (July 1978). Under these circumstances, inflow water from the Chattahoochee River seems to follow an intermediate horizontal flow plane of similar density. During the stratification period, the depth of this interflow probably fluctuates vertically with periodic changes in river temperature. Rapid fluctuations in river temperature at CH-12 are caused by the release of cool water from upstream reservoirs during the minimum to maximum daily release regulation cycle (Appendix A-4.1). The fall mixing period is illustrated by the nearly vertical temperature isopleths shown in the graph for October 1978. Mixing usually does not occur until the fall, when advective atmospheric cooling of the surface water and wind-generated thermal convection currents have lessened the temperature difference between the surface and bottom. After complete mixing, the entire reservoir was essentially the same temperature, as shown by the graph for January 1979. In the springtime, thermal stratification occurs, as illustrated by the graph for April-May 1979. The progressive warming of the water by atmospheric advection at the surface of the reservoir allowed the reestablishment of a vertical density gradient.

In summary, the temperature data indicate that the mixing of inflow water from the Chattahoochee River with reservoir water depended on the orientation and extent of thermal density gradients in the reservoir. During the wintertime, when the temperature isopleths were vertical (fig. 16), mixing of inflow water occurred rapidly throughout the whole water column. In the summer months, the more dense (cooler) water of the river was confined as an interflow to the part of the water column in the reservoir that had a similar density.

Yellowjacket and Wehadkee Creek tributaries had seasonal temperature patterns similar to those in the main channel. The seasonal temperature patterns of these two tributaries and a midreach main channel station (CH-05A) are shown in figure 17. In both 1978 and 1979 the water column temperatures at the three stations were similar. However, at stations CH-08 and CH-13, the water columns began to stratify earlier than at station CH-05A.

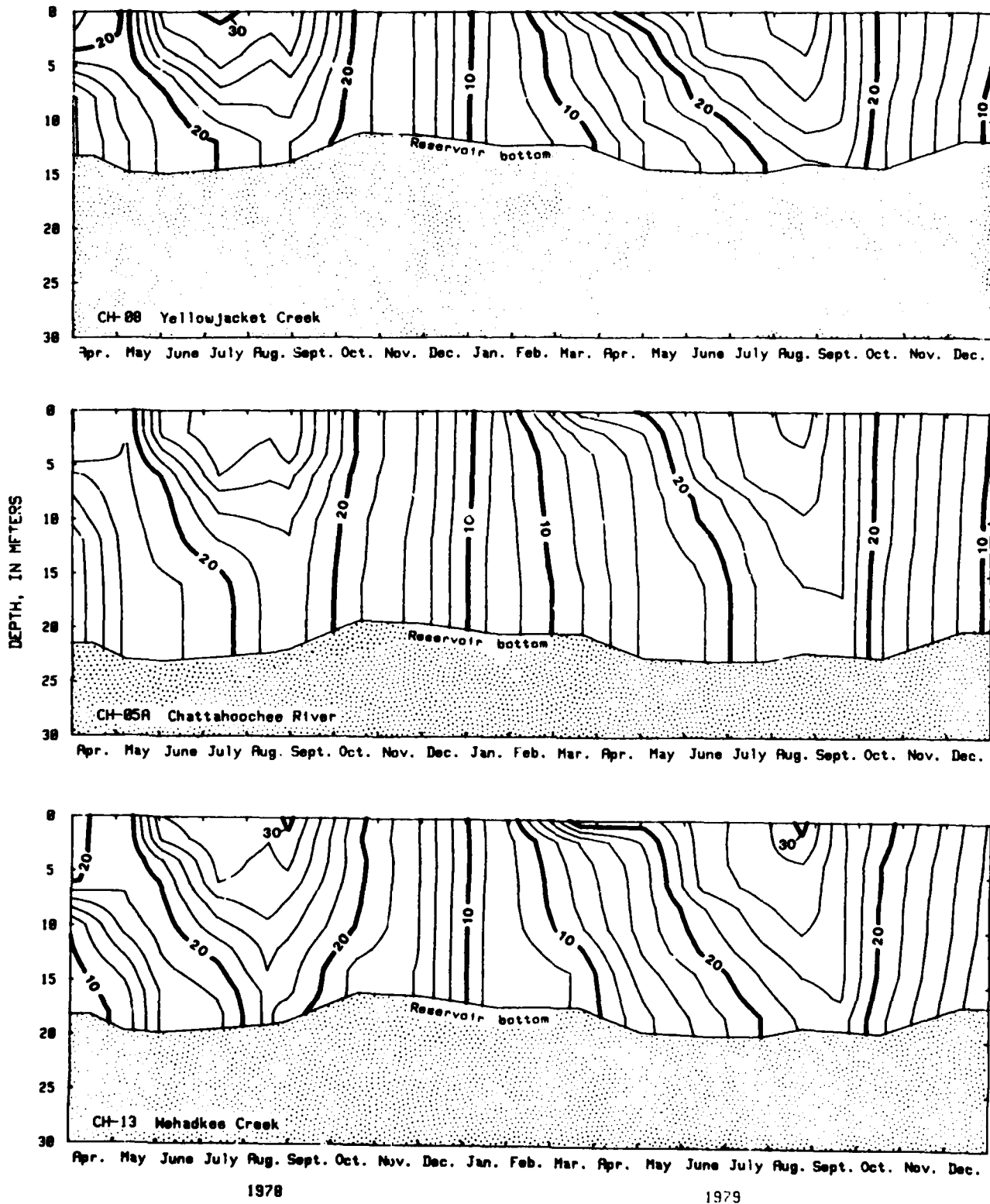


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

— 7 — LINE OF EQUAL WATER TEMPERATURE--Interval 1 degree Celsius

FIGURE 15.---Comparisons of distribution patterns of water temperature in West Point Reservoir for selected data-collection trips.



EXPLANATION

--10-- LINE OF EQUAL WATER TEMPERATURE--Interval 2 degrees Celsius

FIGURE 17.--Comparisons of water temperatures at selected main channel-tributary stations in West Point Reservoir, April 1978 - December 1979.

Numerous studies have shown that a reservoir can significantly affect the water quality downstream from the dam. The data indicate that West Point Reservoir affected downstream water quality primarily as a result of changes in the chemical nature of the water column at the dam pool, brought on by seasonal stratification and dissolved-oxygen depletion. Withdrawal depths at West Point Dam cannot be altered to control downstream water quality, because the intakes for both the main and the service penstocks are located in a fixed position near the reservoir bottom and differ by only 1.52 m in altitude. Thus, little difference occurs in the quality of the released water during periods of maximum and minimum flows through the penstocks.

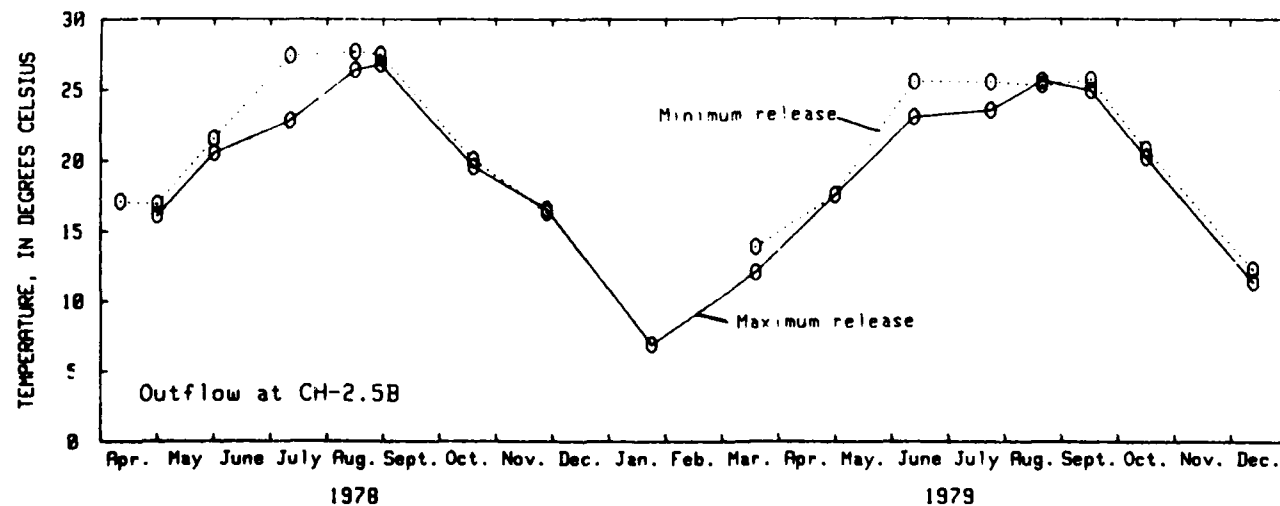
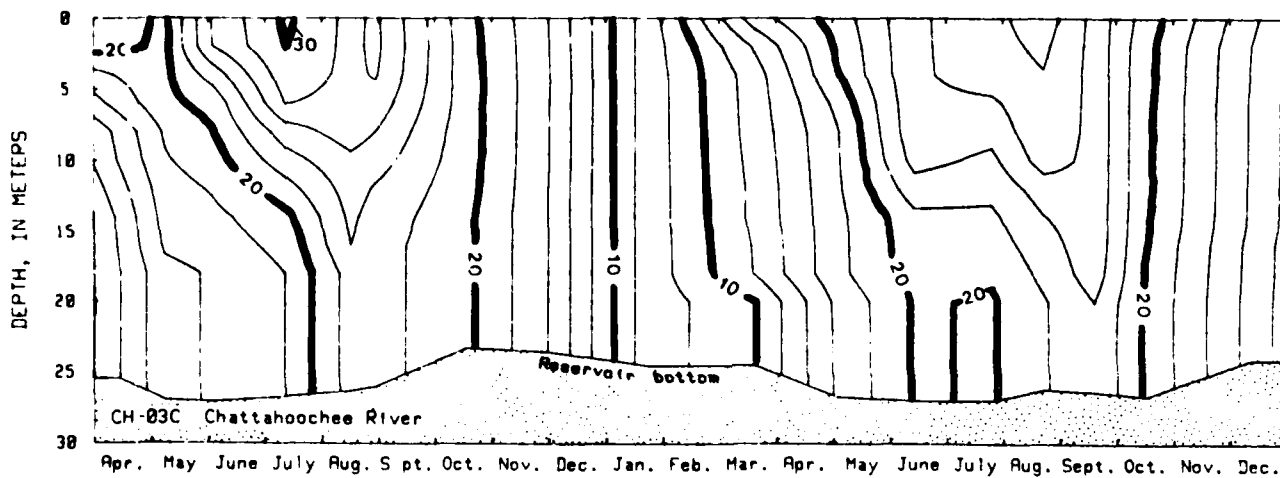
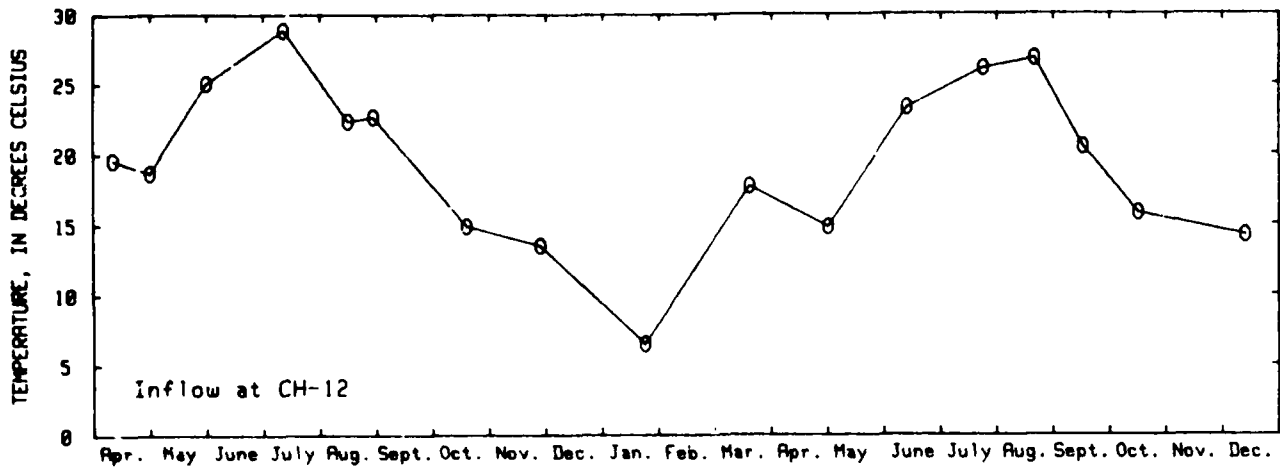
Observed water temperatures in the Chattahoochee River downstream from West Point Dam were dependent on the temperature of the bottom water at the dam pool and on the ambient air temperature. Inflow water temperatures at Franklin, Ga. (station CH-12), minimum and maximum daily release outflow water temperatures measured at station CH-1.5B, and the seasonal temperature distribution in the water column at dam pool station CH-03C are presented in figure 18. As expected, observed temperatures at station CH-2.5B were similar to those measured in the bottom water of the dam pool. Maximum daily release and minimum daily release temperatures at station CH-2.5B (outflow) are generally shifted to the right of the temperatures for station CH-12 (inflow). The temperature shift indicates the seasonal warming and cooling of outflow water lagged somewhat behind that of the inflow. Since water was always withdrawn from the same level, temperature differences between minimum and maximum daily release periods were generally small. However, these temperature differences were greater during periods when there was a substantial difference between the ambient air temperature and the water temperature of hypolimnion at the dam pool. River water was more rapidly warmed by the atmosphere during minimum daily release periods than during maximum daily release periods (fig. 18).

Dissolved-Oxygen Enrichment-Depletion Cycle

The distribution of DO (dissolved oxygen) in West Point Reservoir was strongly influenced by stratification and mixing. During the study period, severe hypolimnetic oxygen deficits occurred in the spring and summer months because stratification curtailed vertical mixing. The oxygen demand in the hypolimnion was high, due to decomposition of settled particulate organic matter and benthic biological and chemical oxygen demand.

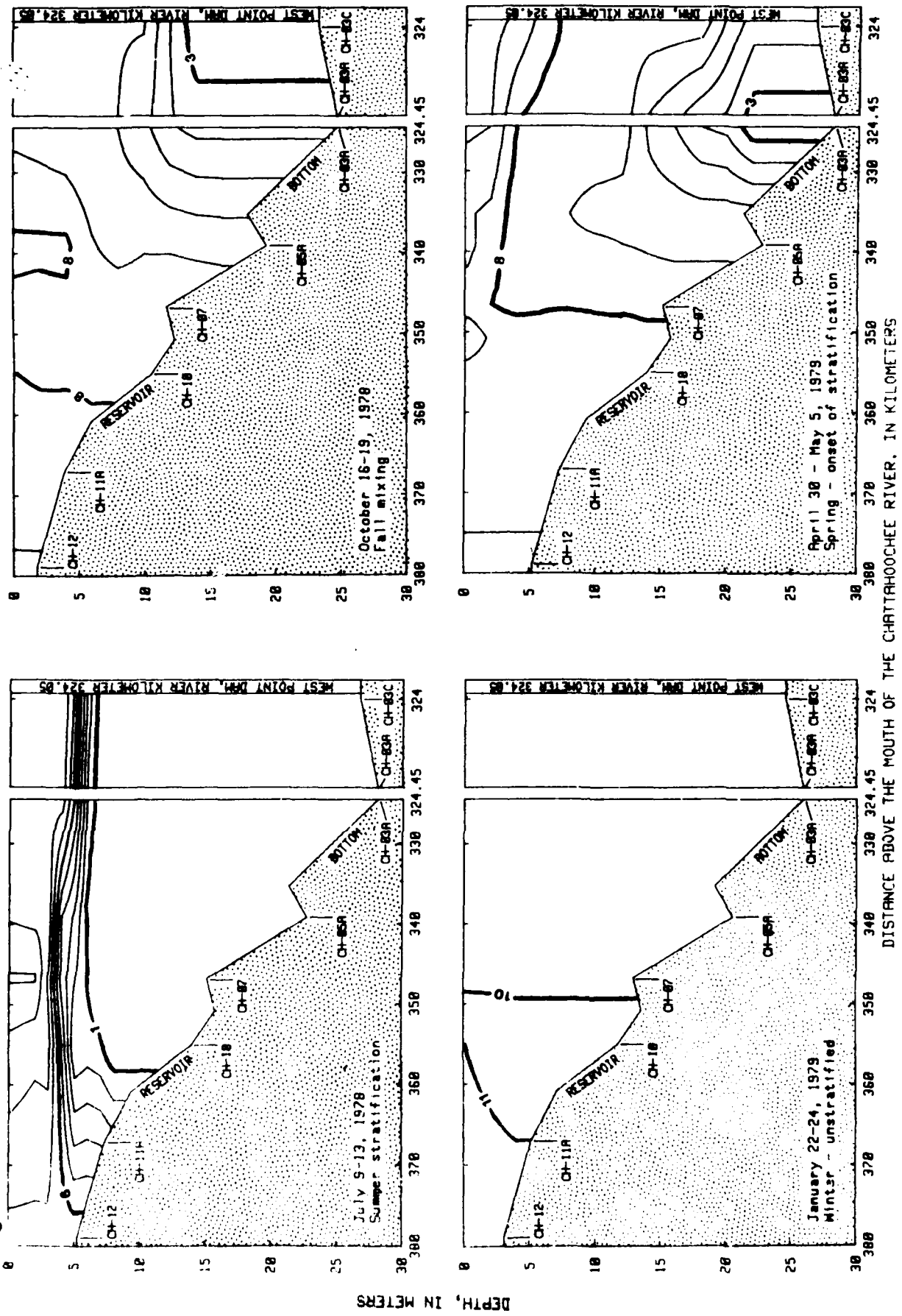
The seasonal aspects of the dissolved-oxygen cycle in the main channel of the reservoir are shown in figure 19. Marked metalimnial concentration gradients indicative of a highly stratified system are evidenced by the compressed horizontal dissolved-oxygen isopleths seen in the July graph.

For both 1978 and 1979 stratified periods, the highest DO concentration in the epilimnion occurred in the reach between stations CH-10 and CH-07. The supersaturated conditions were the result of phytoplankton production. The effects of high concentrations of phytoplankton, as measured by chlorophyll *a*, on the pH and DO concentrations at the surface of the lentic section of the reservoir are illustrated in figure 20. Because the photosynthetic process requires carbon dioxide, a decrease in carbon dioxide produces a decrease in the hydrogen ion concentration and an increase in pH. The subsequent release of dissolved oxygen in this process accounts for the high DO concentrations in the euphotic zone.



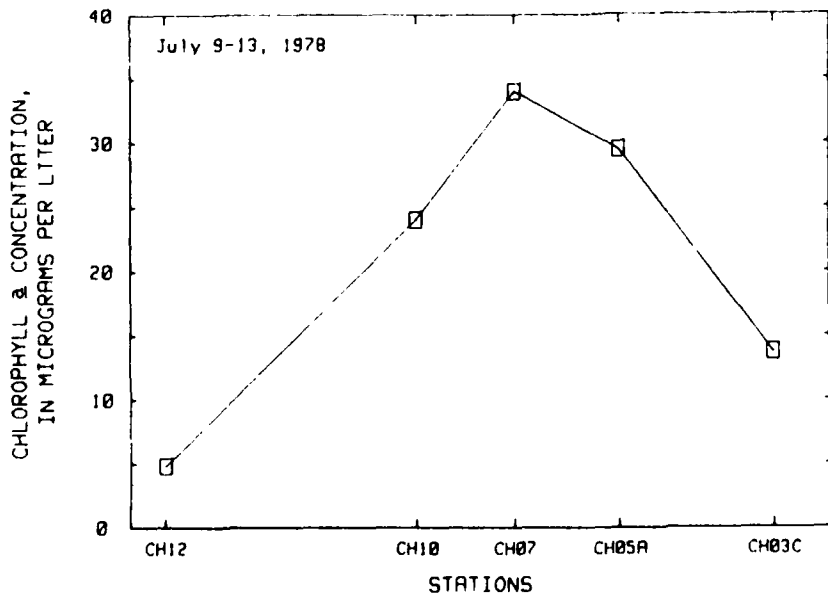
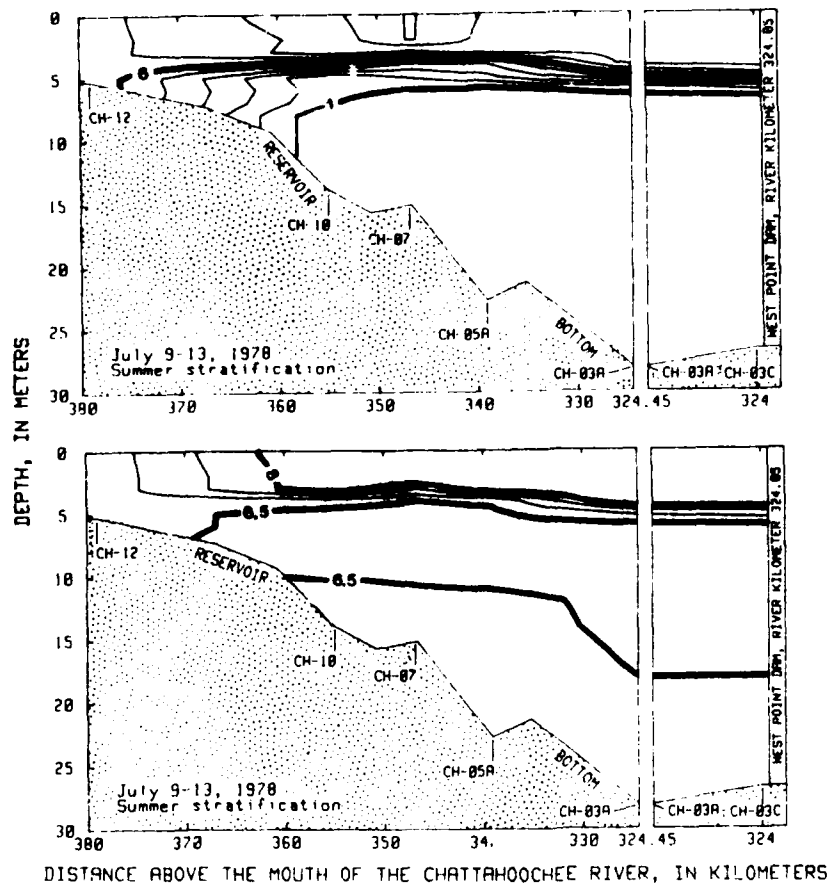
EXPLANATION
 —10— LINE OF EQUAL WATER TEMPERATURE--Interval 2 degrees Celsius

FIGURE 18.--Comparisons of water temperatures of inflow to West Point Reservoir with seasonal distribution patterns of water temperatures at the dam pool and with water temperatures in minimum and maximum release from the reservoir, April 1978 - December 1979.



EXPLANATION

—11— LINE OF EQUAL DISSOLVED-OXYGEN CONCENTRATION—Interval 1 milligram per liter
 FIGURE 19.—Comparisons of distribution patterns of dissolved-oxygen concentrations in West Point Reservoir for selected data-collection trips.



EXPLANATION

TOP GRAPH: —6.0— LINE OF EQUAL DISSOLVED-OXYGEN CONCENTRATION--
Interval 1 milligram per liter

MIDDLE GRAPH: —6.5— LINE OF EQUAL pH--Interval 0.5 unit

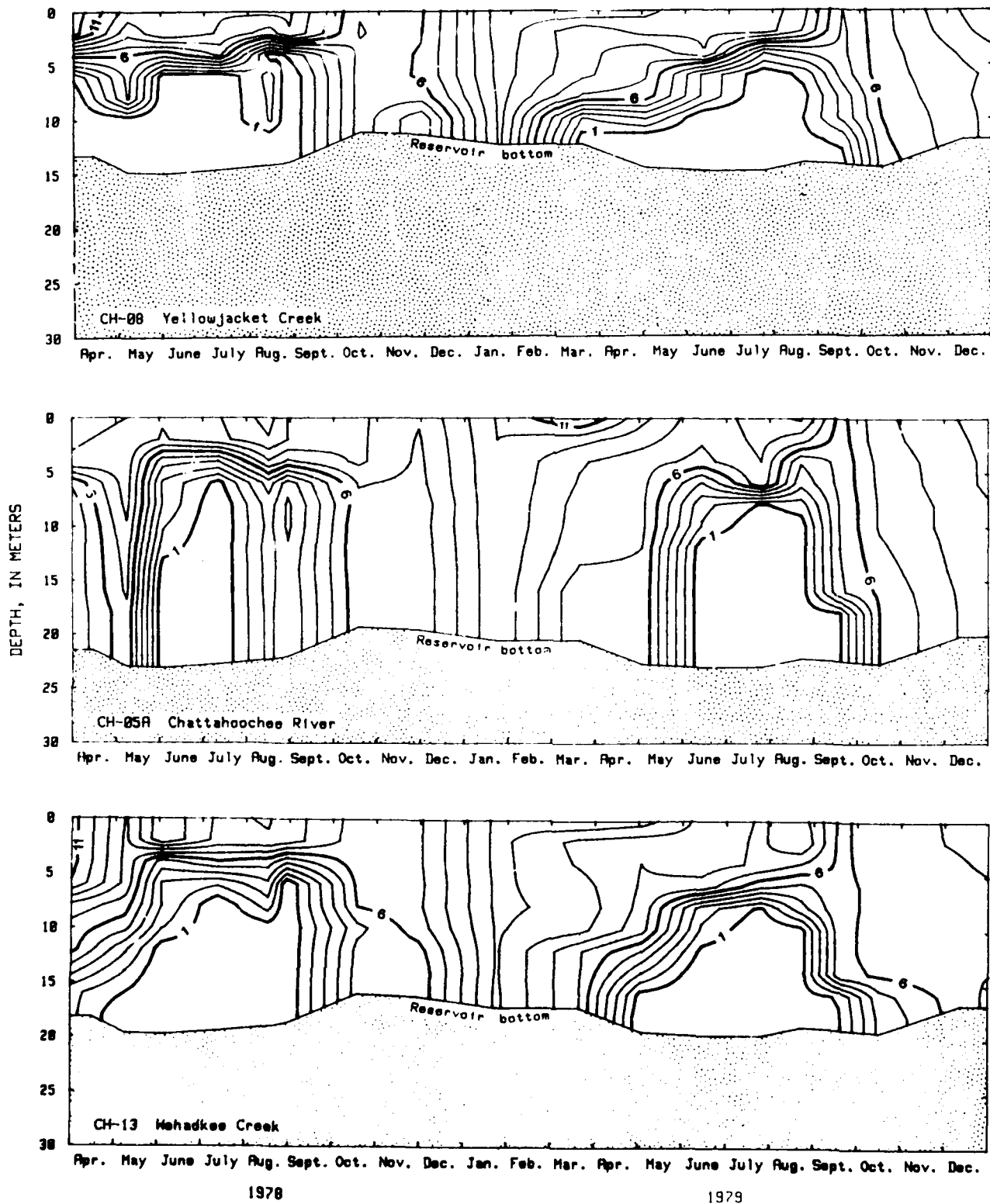
FIGURE 20.--Comparisons of distribution patterns of dissolved-oxygen concentrations and pH values with chlorophyll a concentrations in the euphotic zone of West Point Reservoir, July 9-13, 1978.

In contrast, hypolimnetic anoxia is partially a result of downward migration of autochthonous organic matter when plankton production is high. The oxidation and respiration process in the hypolimnion consumed the available oxygen and thus, without adequate mixing, created low DO concentrations (fig. 19). During July 1978, the main channel was anoxic below a depth of about 10 m from station CH-10 downstream to the dam pool (station CH-03C). It is likely that relatively large amounts of particulate cellular material settled to the hypolimnion in the reach between CH-10 and CH-05, and exerted a high oxygen demand. Conditions were not as severe during July 1979, when the anoxic part of the hypolimnion extended below a depth of about 10 m from about halfway between stations CH-07 and CH-05A to the dam pool (station CH-03C).

Hypolimnetic dissolved-oxygen deficits persisted until vertical mixing occurred in the fall. The October 1978 graph in figure 19 shows the dissolved-oxygen conditions in the main channel of West Point Reservoir during the mixing period. Sufficient epilimnial cooling just prior to October 1978 caused a disruption of the thermocline, which allowed vertical mixing to occur throughout most of the main channel reach. Only the bottom water near the dam pool (station CH-03C) remained near anoxia during October 16-19, 1978. In January 1979, the entire main channel was well mixed. The April-May 1979 graph shows the distribution of dissolved oxygen during the initial stages of the 1979 stratification period, which occurred in the springtime.

Hypolimnetic dissolved-oxygen depletion in Yellowjacket and Wehadkee Creek tributaries was more pronounced than in the main channel, partially because thermal stratification persisted longer in the two tributaries (fig. 21). These tributaries received small inflows and, therefore, were more lacustrine than the main channel because the metalimnion was not subjected to the destabilizing influence of higher velocity inflow and short-term temperature fluctuation caused by regulation of the Chattahoochee River. This observation suggests that water-quality problems associated with dissolved-oxygen depletion would have been more pronounced in the tributaries than in the main channel. The depth-time dissolved-oxygen isopleths of Yellowjacket Creek (station CH-08) show that anoxic conditions were present from April through August 1978 and from March through September 1979, or nearly 50 percent of the data-collection period. In Wehadkee Creek (station CH-13), the hypolimnion was anoxic from May through August 1978 and from May through September 1979, or about 40 percent of the time. By comparison, the bottom water at station CH-05A in the main channel was anoxic only during June and July 1978 and from June through September 1979, or about 20 percent of the time.

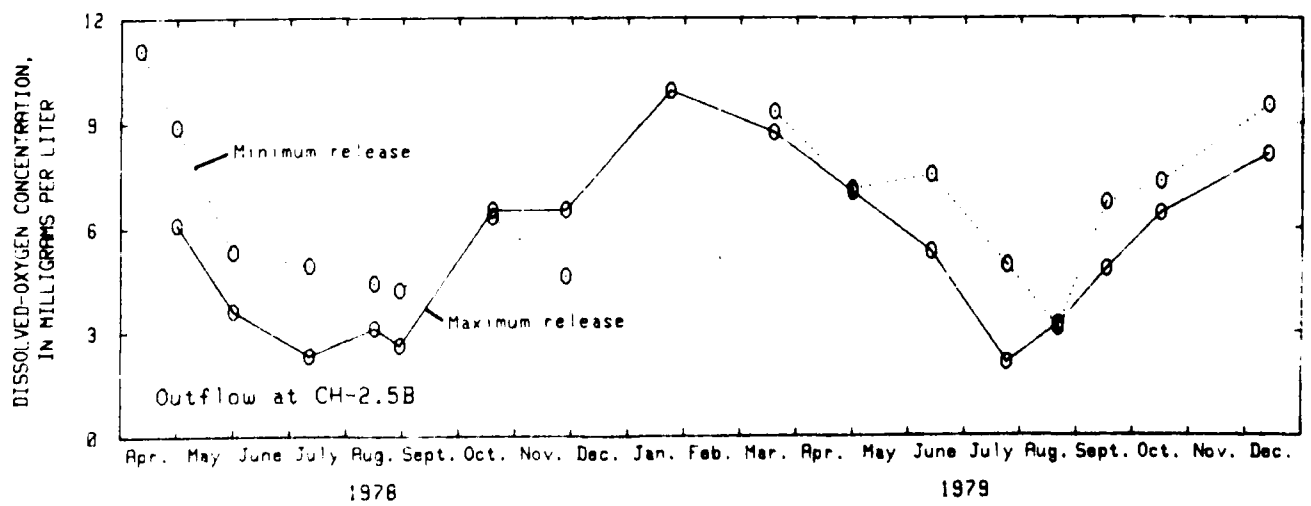
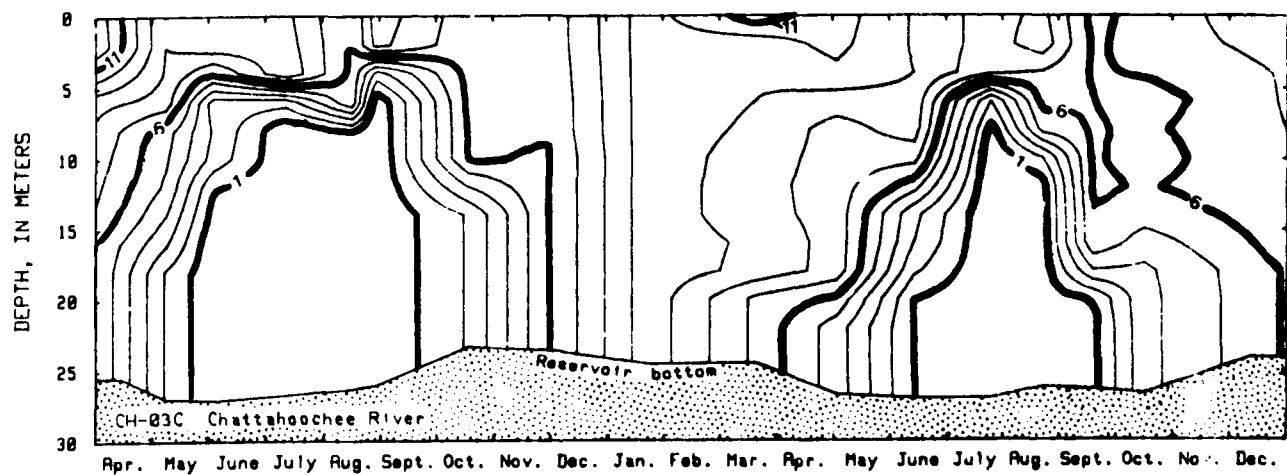
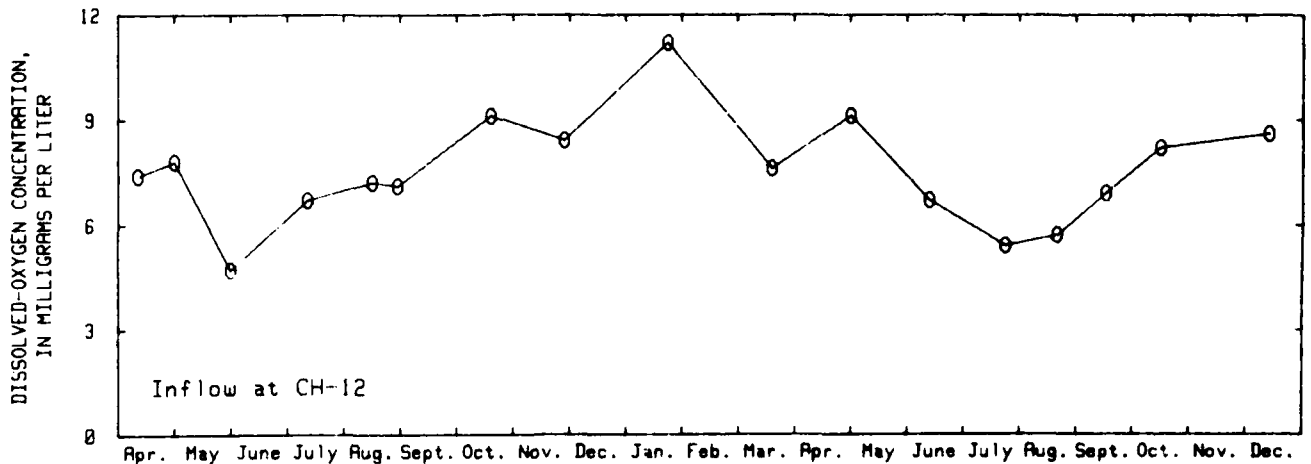
One of the more critical degradations in water quality that occurred downstream from West Point Dam was the lower DO concentration caused by discharge of anoxic water during periods of stratification. For a discussion of state standard violations, please refer to the Water-Quality Criteria section of this report. The bottom water at the dam pool (station CH-03C) was anoxic from the end of May through the middle of September 1978 and during June and July 1979. Discharge of this anoxic water resulted in dissolved-oxygen concentrations that reached a summertime minimum of 2.5 mg/L at station CH-02.08 (fig. 22). During summer the concentrations during maximum daily releases were lower than concentrations during minimum daily releases because regeneration of minimum daily release discharge occurred more rapidly than during maximum daily release discharge (fig. 23).



EXPLANATION

—1— LINE OF EQUAL DISSOLVED-OXYGEN CONCENTRATION—Interval 1 milligram per liter

FIGURE 21.--Comparisons of dissolved-oxygen concentrations at selected main channel-tributary stations in West Point Reservoir, April 1978 - December 1979.



EXPLANATION

—|— LINE OF EQUAL DISSOLVED-OXYGEN CONCENTRATION--Interval 1 milligram per liter

FIGURE 22.—Comparisons of dissolved-oxygen concentrations in inflow to West Point Reservoir with seasonal distribution patterns of dissolved-oxygen concentrations at the dam pool and with dissolved-oxygen concentrations in minimum and maximum release from the reservoir, April 1978 - December 1979.

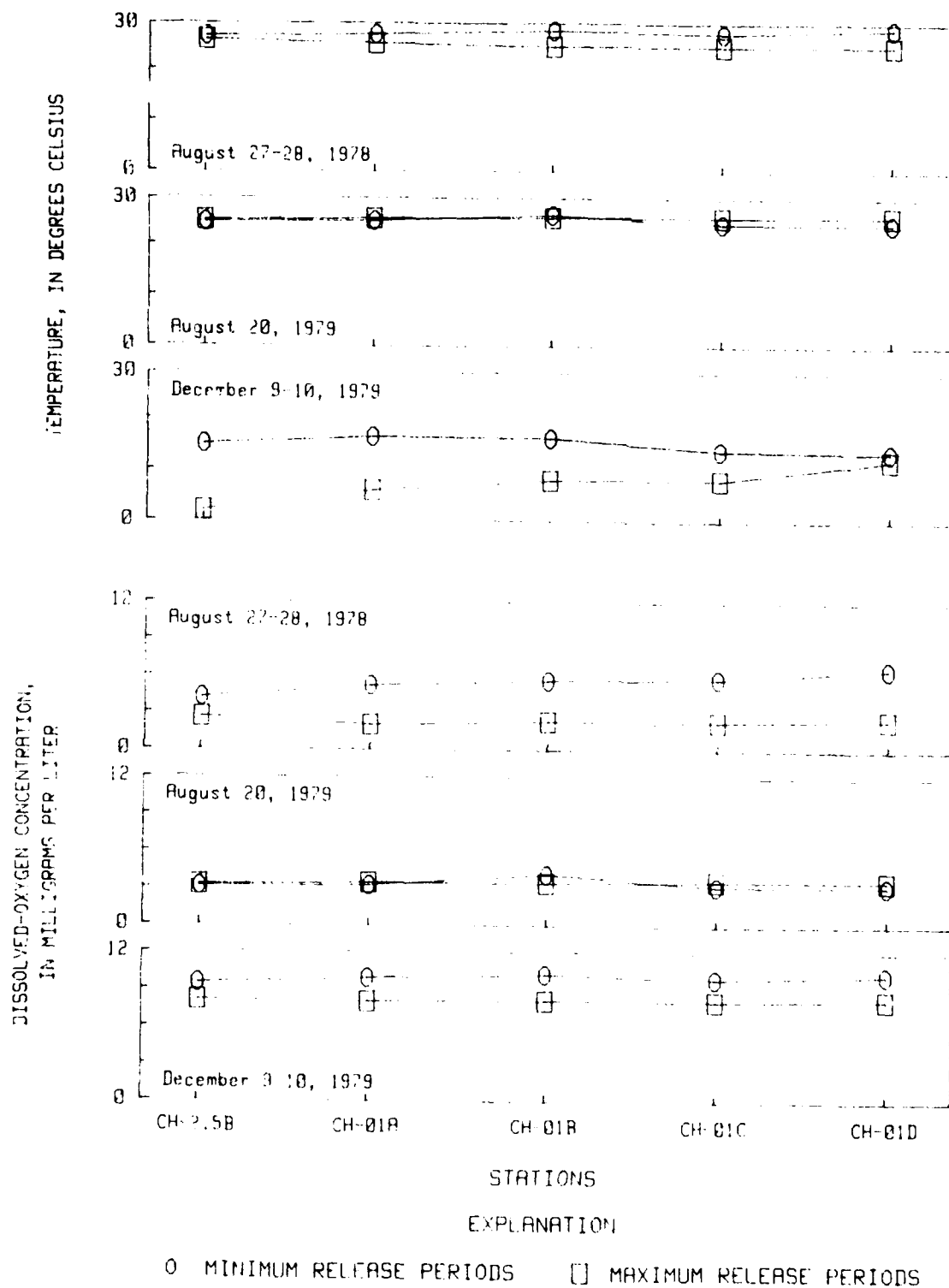


FIGURE 23. Longitudinal distribution of temperature and dissolved-oxygen concentrations in the Chattahoochee River below West Point Dam for selected data-collection trips.

Nonfilterable Residue

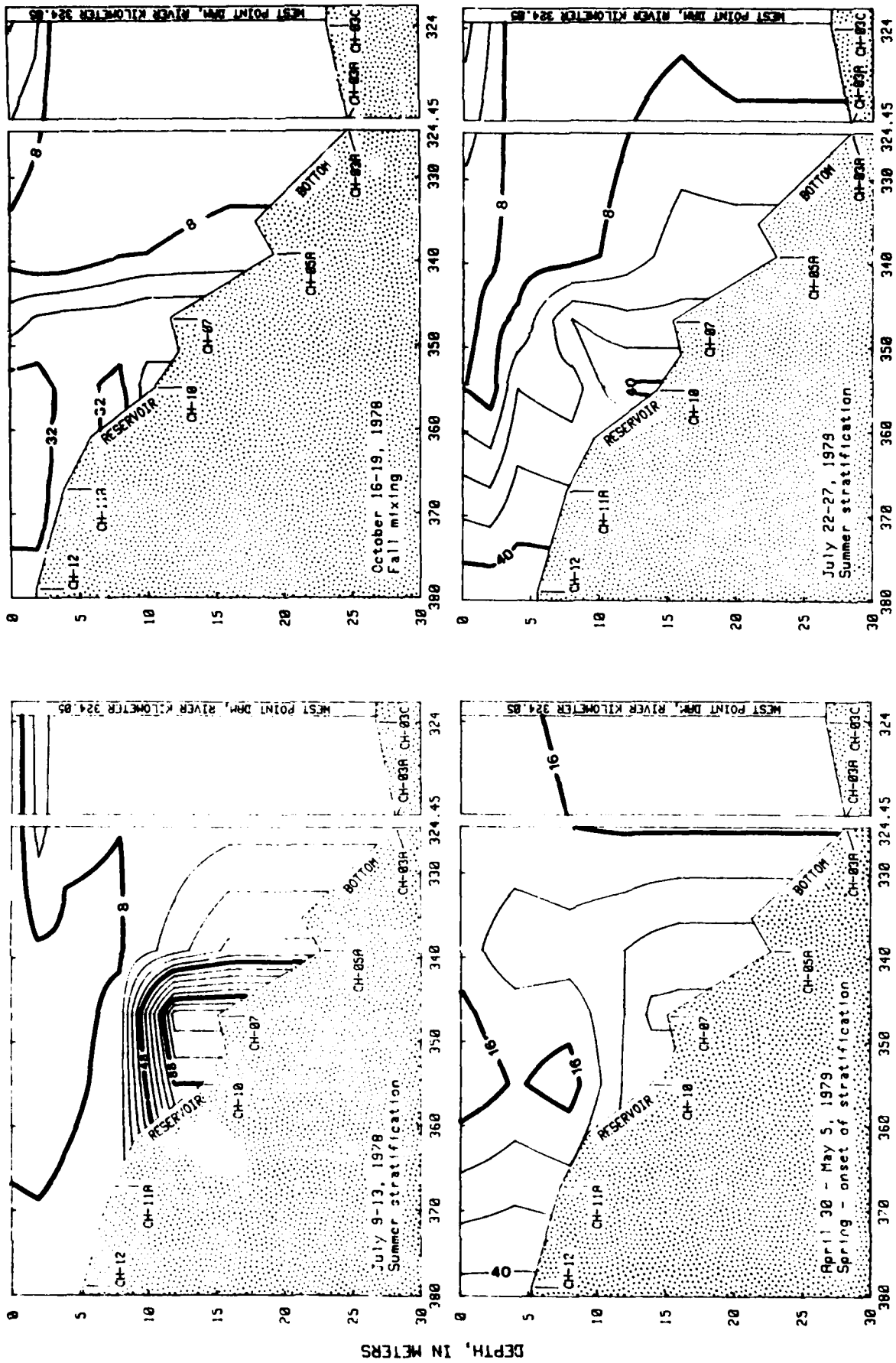
Nonfilterable residue in West Point Reservoir has ecologically important effects on the aquatic communities in the reservoir as well as economically important effects on the water users downstream from West Point Dam. Settling of nonfilterable residue on fish eggs interferes with osmotic exchange processes and, thus, increases mortality rates (National Academy of Sciences, 1974). Silt and clay particles also are effective carriers of charged particles such as ferric and manganese ions (Feltz, 1980). Solubilization of sediment-bound iron and manganese during anoxic conditions in the dam pool of West Point Reservoir resulted in objectionable concentrations of these elements in downstream public water supplies. (Refer to Water-Quality Criteria section.) Deposition of sediment-bound organic pesticides in various parts of the reservoir also poses a serious threat to the aquatic community and human consumers (Feltz, 1980). These residues are incorporated in the food chain by the benthic community and bottom-feeding fish. (Refer to Fish Tissue Quality section.)

Seasonal changes in the nature and distribution of nonfilterable residue observed in West Point Reservoir were caused by (1) the increased particulate loading to the upstream part of the main channel from storm runoff and power pulsing (Faye and others, 1978), and (2) accumulation of particulates in the hypolimnion that originated from biological productivity. The first process is primarily velocity-dependent and thus is affected by river inflow in relation to the pool elevation of the reservoir. High discharges of the Chattahoochee River at Franklin, Ga., and low pool elevations produced the highest nonfilterable residue loads. The second process occurred during periods of high epilimnetic productivity when the reservoir was thermally stratified.

Both processes are illustrated for the main channel by the depth-reservoir reach isopleths of nonfilterable residue in figure 24. Low-flow conditions and higher pool elevations during the July 9-13, 1978, data-collection period resulted in a decreased loading of nonfilterable residue due to lower inflow velocities. Though particulate loading to the main channel was low, high concentrations of suspended matter were observed in the hypolimnion between stations CH-10 and CH-07. Steep vertical concentration gradients (compressed horizontal isopleths) indicate possible interflow and much particulate settling. These particulates were most likely of biological origin. Steep horizontal gradients (compressed vertical isopleths) indicate that the reach of channel between stations CH-07 and CH-05A was functioning as a major sediment sink for the reservoir.

On the other hand, the intense storm activity and higher flows during the April 30-May 5, 1979, sampling period resulted in higher concentrations of particulates in the lotic section of the main channel (fig. 24). At this time, the reservoir was just beginning to stratify. Hypolimnetic accumulation of particulates was not as pronounced as during the July data collection period, probably because a shorter residence time gave the nonfilterable residue a lesser chance to settle and accumulate in the reservoir.

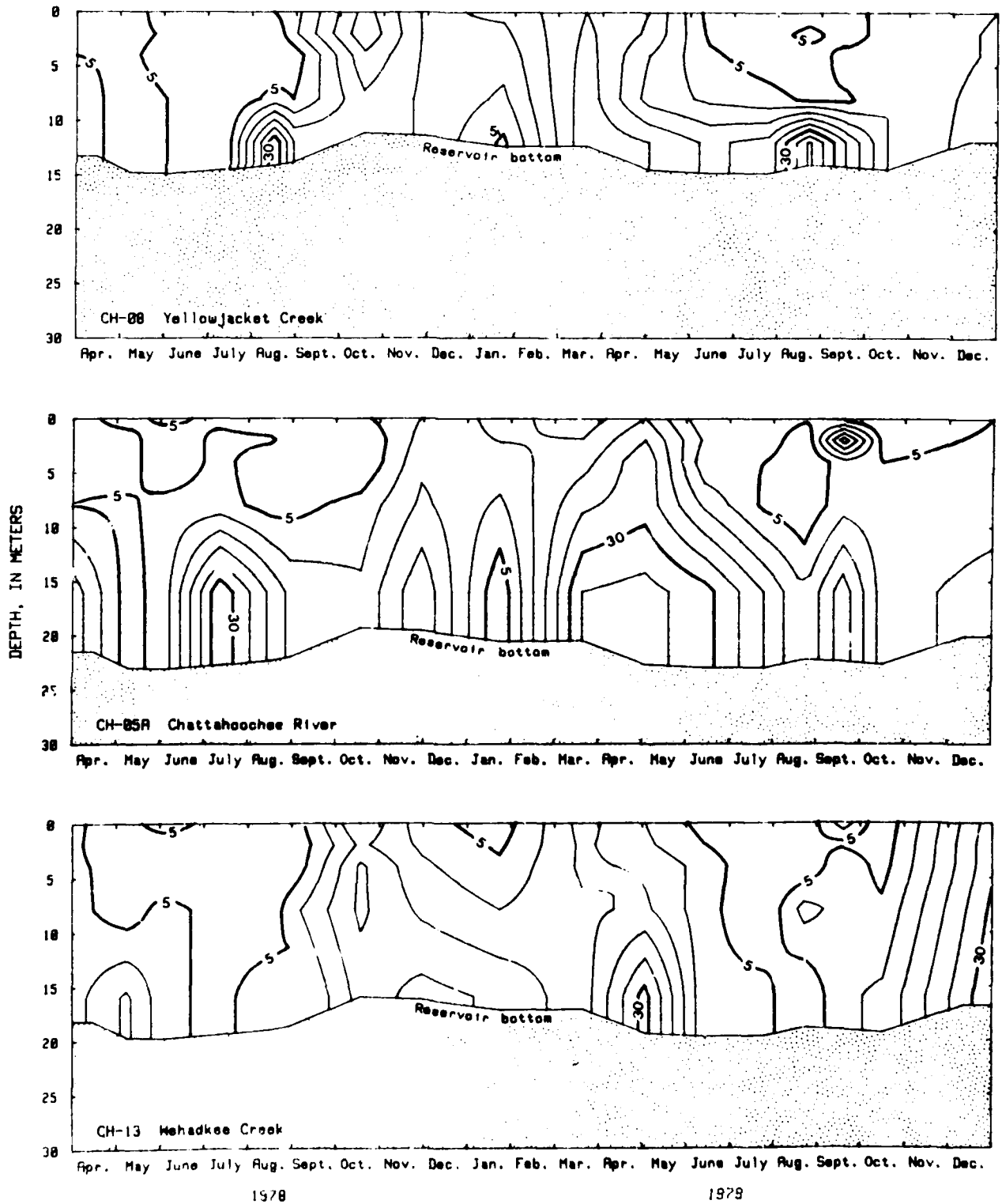
Nonfilterable residue distributions in the main channel at station CH-07 and in Yellowjacket and Wehadkee Creeks are presented in figure 25. The only substantial difference in the distribution was the hypolimnetic accumulation of particulates. The settling was much in evidence in late summer and early fall at both the Yellowjacket Creek and Chattahoochee River stations, but noticeably absent from Wehadkee Creek (fig. 25).



EXPLANATION

—16— LINE OF EQUAL TOTAL NONFILTERABLE RESIDUE CONCENTRATION--Interval 8 milligrams per liter

FIGURE 24.--Comparisons of total nonfilterable residue concentrations in West Point Reservoir for selected data-- collection trips.



EXPLANATION
 —5— LINE OF EQUAL TOTAL NONFILTERABLE RESIDUE--Interval 5 milligrams per liter

FIGURE 25.--Comparisons of total nonfilterable residue at selected main channel and tributary stations in West Point Reservoir, April 1978 - December 1979.

Iron and Manganese Cycling

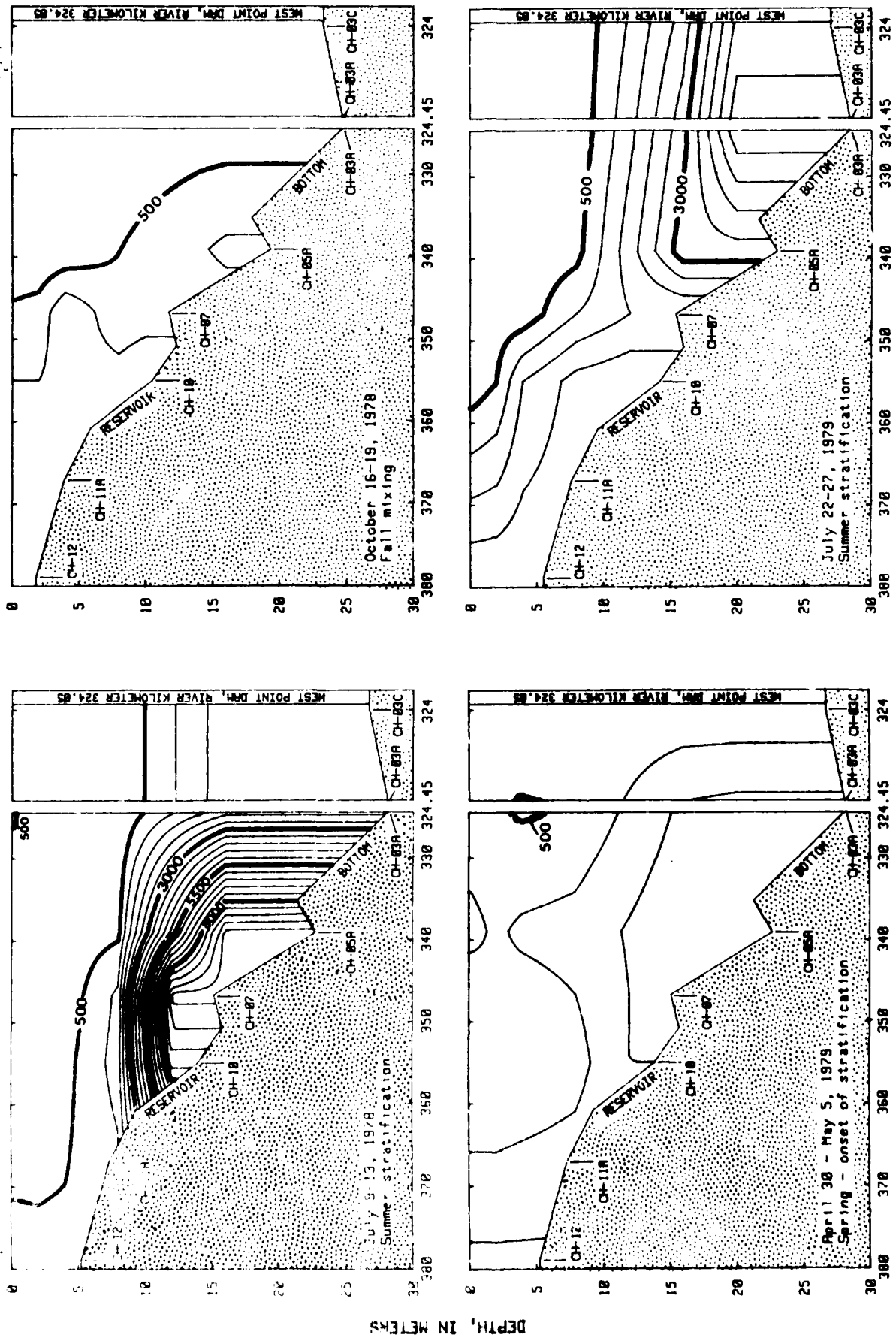
Clays prevalent in the Piedmont province of Georgia contain appreciable quantities of iron and manganese (Cherry, 1961) and are probably the main source of metal loading to West Point Reservoir. During an intensive river-quality assessment of the Upper Chattahoochee River Basin, Faye and others (1978) demonstrated the role of silt-clay particulates as carriers for the suspended phases of a number of metals. The seasonal and longitudinal aspects of the metals cycle in this system are illustrated by the series of depth-reservoir reach isopleths for selected data-collection trips shown in figure 26. These example graphs represent total iron distribution in the main channel during different times of the year and show the effects of up-stream channel erosion, sedimentation, and thermal stratification. Because manganese behaves in a manner similar to iron, these illustrations will be utilized to explain the distribution of both metals.

Thermal stratification and the ensuing hypolimnetic dissolved-oxygen depletion resulted in the high total iron concentrations at station CH-07 in July 1978 (fig. 26). The extent of ferric reduction and subsequent release of soluble ferrous iron from bottom materials was found to vary spatially and temporally with the extent of dissolved-oxygen depletion, as can be seen in figures 19 and 26. Fall mixing and reaeration of the bottom water in the reservoir reduced iron and manganese concentrations in the water column. For example, observed concentrations of total iron also were much lower and more uniform throughout the water column (October 1978 plot in fig. 26).

Most of the total iron in the upper reaches (lotic section) of the reservoir was in the suspended phase, as little ferrous iron was present in the water column (Appendix C-10) in this section. Loading and sedimentation of particulate iron depend on flow conditions in the Chattahoochee River, the reservoir pool elevation, and other factors. At higher flows the river inflow generally carries more suspended material. For example, in July 1978, mean inflow water discharge at Whitesburg, Ga., was $57.2 \text{ m}^3/\text{s}$ with a reservoir pool elevation of 193.7 m (Appendix A-1) and total iron concentrations at Franklin, Ga., were about 500 mg/L. However, in January 1979, mean inflow discharge was $147 \text{ m}^3/\text{s}$ with a reservoir elevation of 191.5 m and inflow total iron concentrations were about 5,400 mg/L. The data collected, however, are insufficient to quantify this complex relation.

In contrast to the upper reaches of the main channel, the large increases in total iron in the bottom water of West Point Reservoir during stratified periods were due primarily to the dissolved phase. Extended periods of hypolimnetic anoxia and low oxidation-reduction potentials resulted in higher dissolved-iron concentrations. The depth-reservoir reach isopleths of dissolved-iron concentrations and oxidation-reduction potentials illustrate the association for the main channel (figs. 27 and 28). These figures show that, for downstream reaches of the main channel, high dissolved-iron concentrations coincide with low oxidation-reduction potentials.

Important differences between the main channel and tributary environments in West Point Reservoir revealed by examination of depth-time isopleths of total iron in Yellowjacket and Wehadkee Creeks (stations CH-08, CH-13) and the Chattahoochee River (station CH-05A) (fig. 29). Yellowjacket Creek tributary showed more persistent dissolved-oxygen depletion than either Wehadkee Creek tributary or the main channel. These conditions resulted in total iron concentrations that were 3 to 3.5 times greater in the

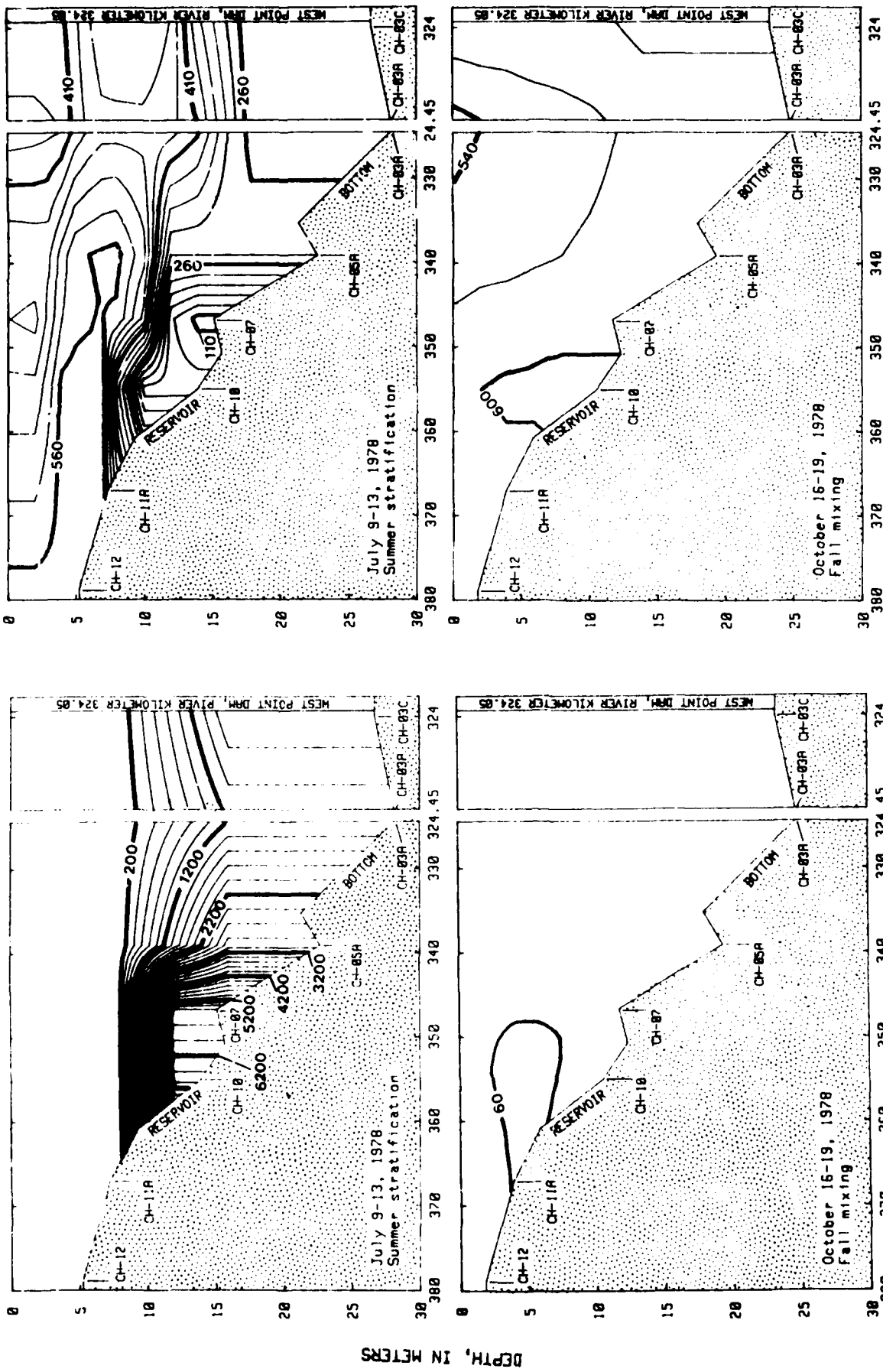


DISTANCE ABOVE THE MOUTH OF THE CHATTRAOCHEE RIVER, IN KILOMETERS

EXPLANATION

500 = LINE OF EQUAL TOTAL IRON CONCENTRATION--Interval 500 micrograms per liter

FIGURE 26.--Comparisons of distribution patterns of total iron concentrations in West Point Reservoir for selected data-collection trips.

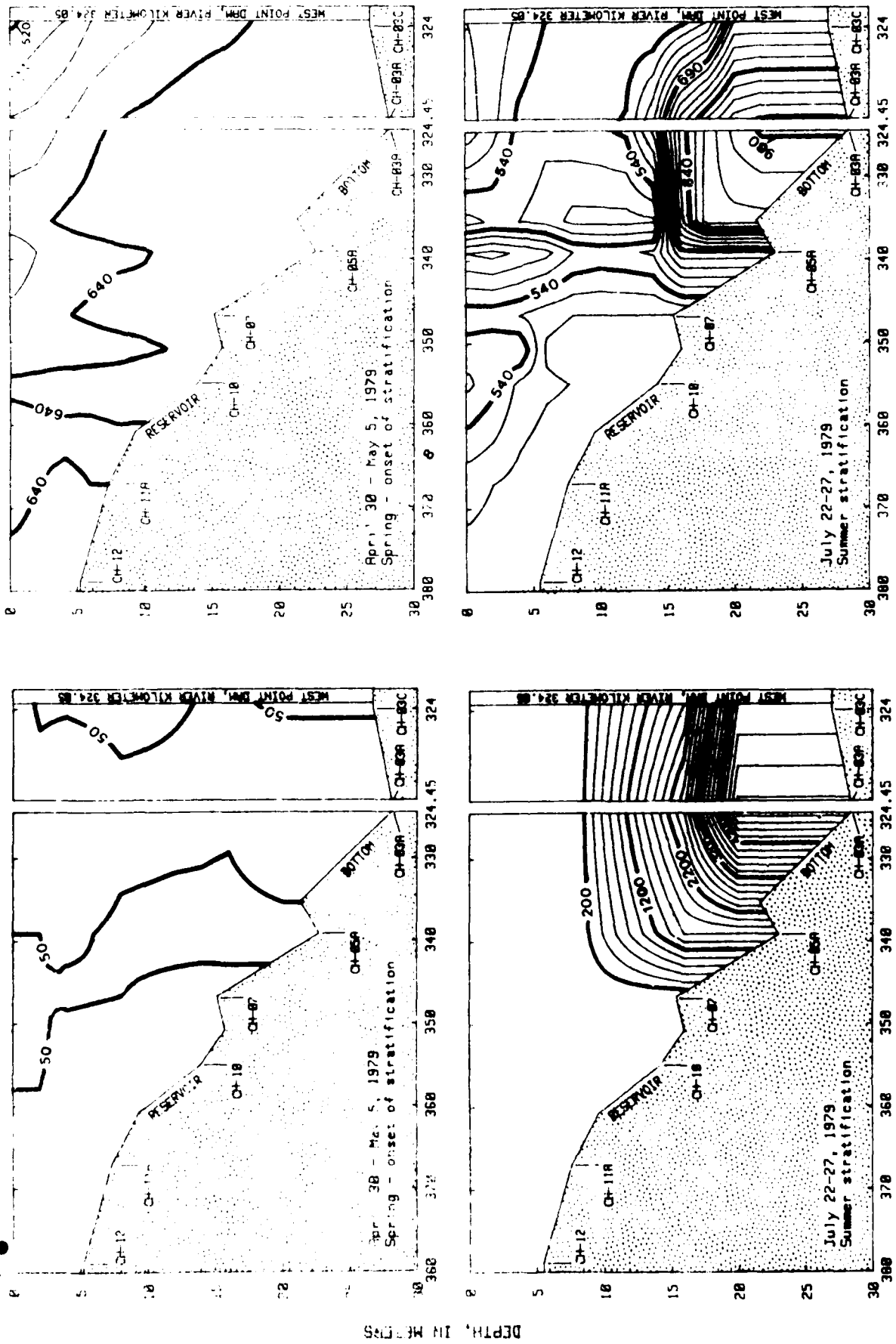


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

LEFT GRAPHS: --- LINE OF EQUAL DISSOLVED IRON CONCENTRATION--Interval 200 micrograms per liter
 RIGHT GRAPHS: - - - LINE OF EQUAL OXIDATION-REDUCTION POTENTIAL--Interval 30 millivolts

FIGURE 27.--Comparisons of distribution patterns of dissolved iron concentrations and oxidation-reduction potential in West Point Reservoir for selected data-collection trips.

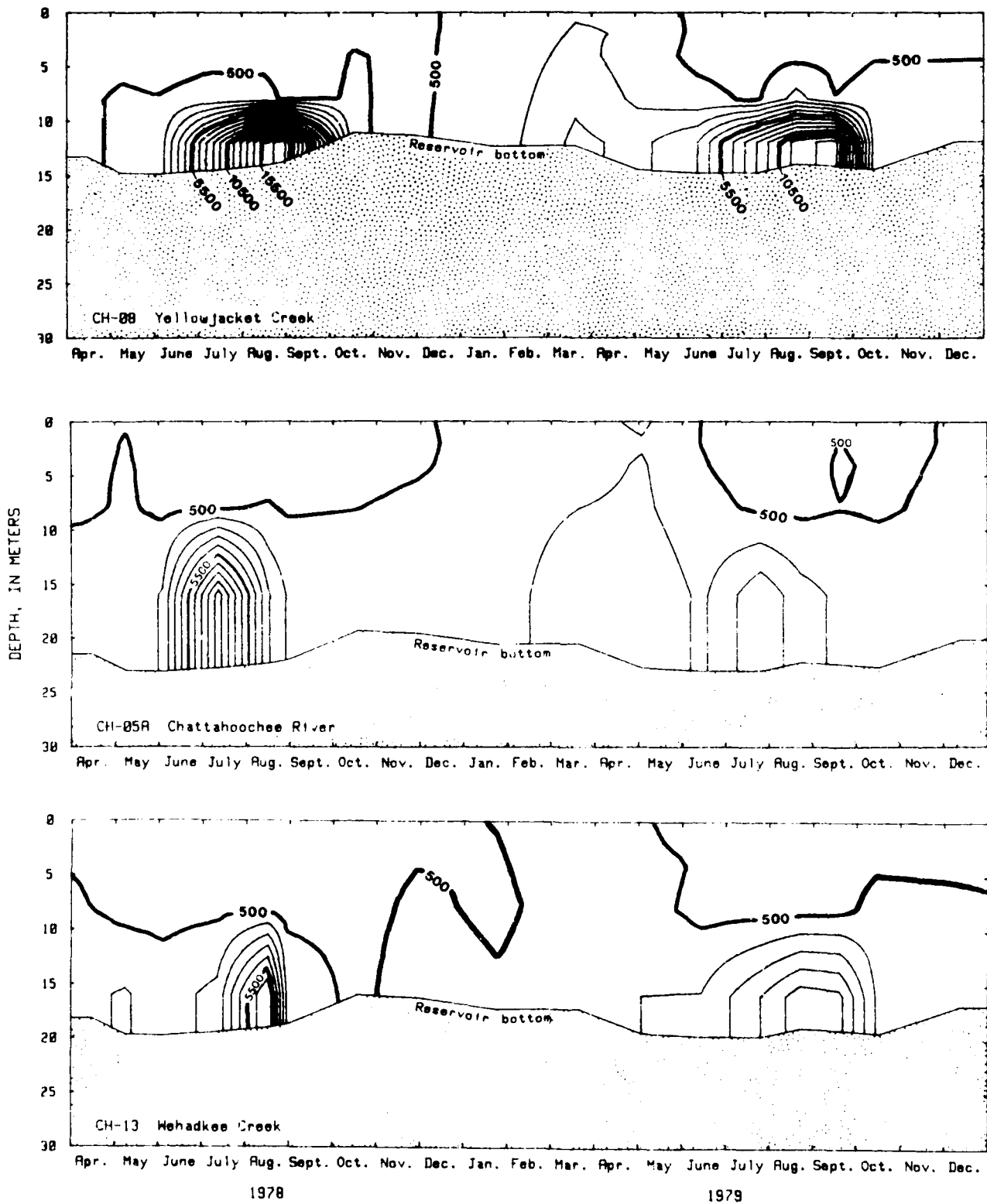


DISTANCE ABOVE THE MOUTH OF THE CHATTAOCHEE RIVER, IN KILOMETERS

EXPLANATION

LEFT GRAPHS: —200— LINE OF EQUAL DISSOLVED IRON CONCENTRATION—Interval 200 micrograms per liter
 RIGHT GRAPHS: —540— LINE OF EQUAL OXIDATION-REDUCTION POTENTIAL—Interval 30 millivolts

FIGURE 28.—Comparisons of distribution patterns of dissolved iron concentrations and oxidation-reduction potential in West Point Reservoir for selected data-collection trips.



EXPLANATION
 —500— LINE OF EQUAL TOTAL IRON CONCENTRATION--Interval 1000 micrograms per liter

FIGURE 29.--Comparisons of total iron concentrations at selected main channel and tributary stations in West Point Reservoir, April 1978 - December 1979.

Yellowjacket Creek tributary than samples from Wehadkee Creek tributary, and from 1.5 to 4 times as much total iron concentrations as samples from the main channel (fig. 29).

Increases in the iron and manganese content of release water from West Point Reservoir were primarily attributable to the hypolimnetic solubilization of these metals during summer months when the lower part of the water column was anoxic. The increases during minimum and maximum daily release periods were mostly coincident with increases in the dissolved metals at the dam pool (figs. 30 and 31). During stratified periods in the reservoir, dissolved metal concentrations accounted for most of the total constituent concentrations. During unstratified periods, most of the total constituent concentrations were comprised of suspended constituents. There was, however, no appreciable difference in the total constituent metal concentrations between minimum and maximum daily release periods and no substantial longitudinal change from stations CH-2.5B to CH-01D (fig. 32).

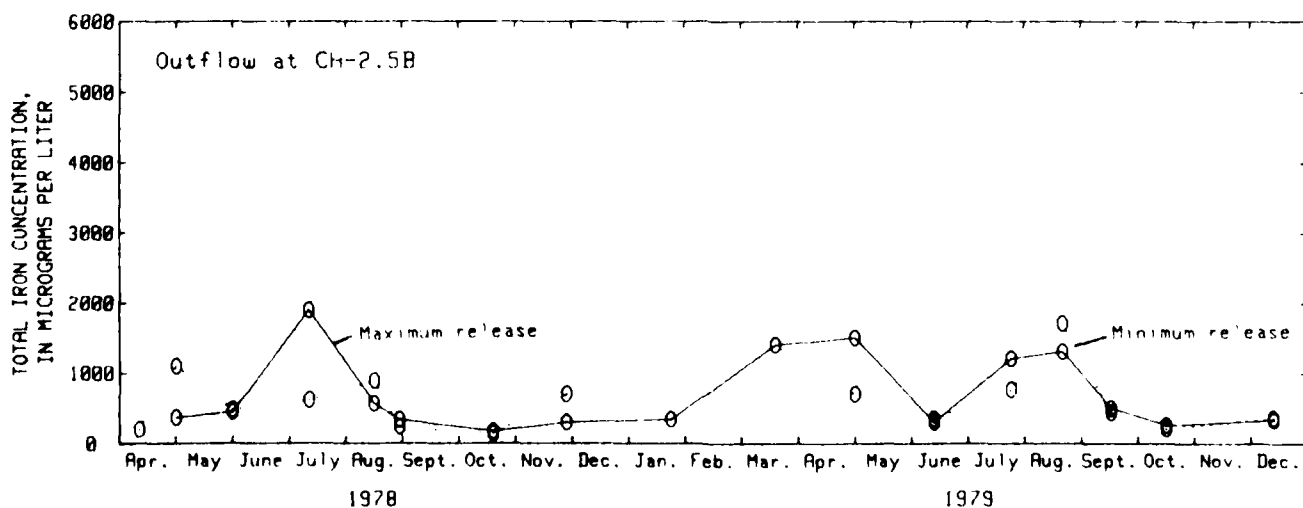
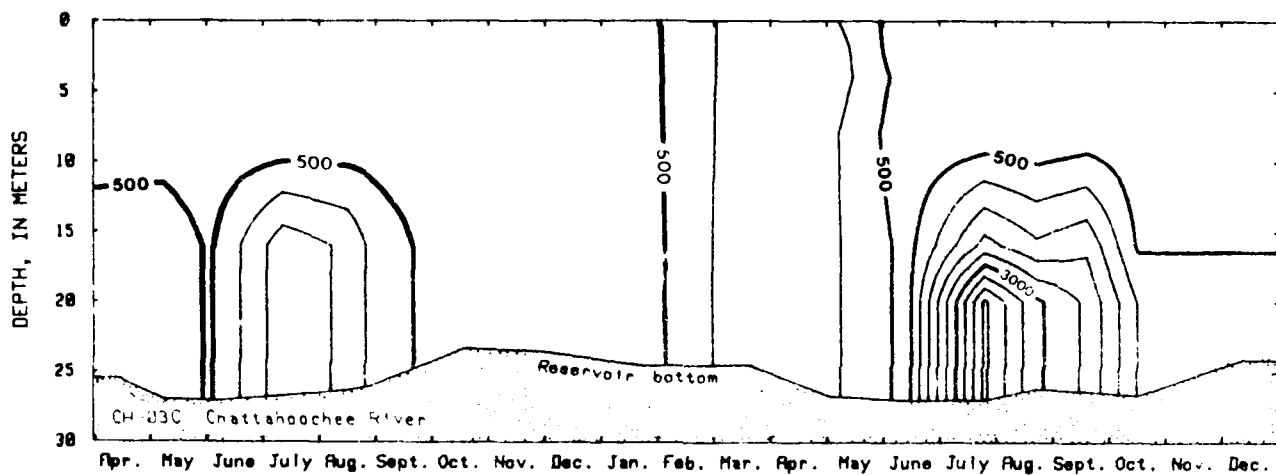
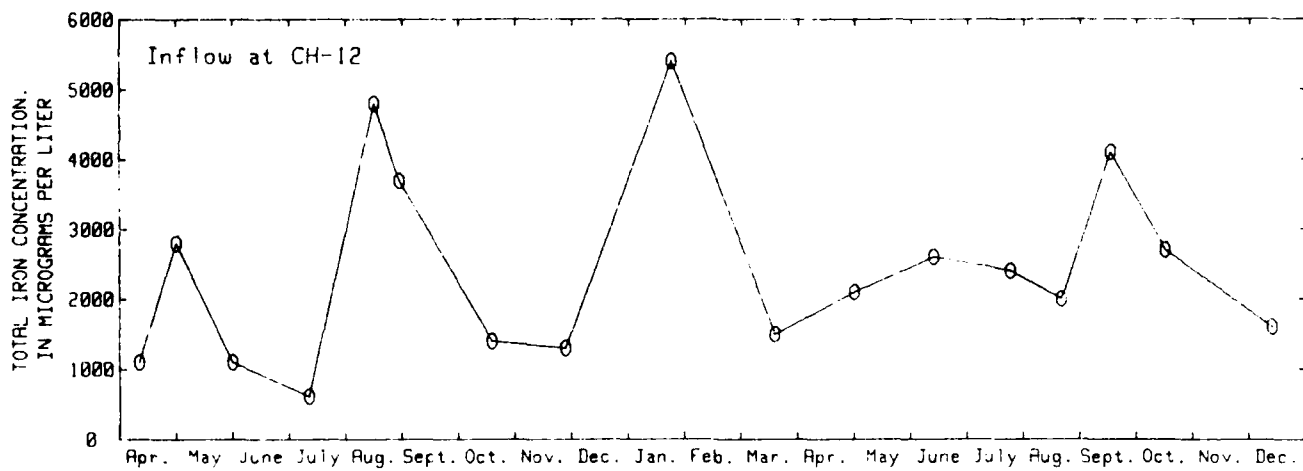
Solubilization of sediment-bound iron and manganese during anoxic conditions in the dam pool of West Point Reservoir resulted in objectionable concentrations of these elements in downstream public water supplies. For a discussion of water-quality violations, refer to the Water-Quality Criteria section of this report.

Nutrient Cycling

Nutrient input to an aquatic system is important in terms of its impact on phytoplankton growth and eutrophication. Excluding Yellowjacket and Wehadkee Creeks, a combination of both point and nonpoint source loading to the Chattahoochee River is the primary nutrient input to West Point Reservoir. Point-source contributions from metropolitan Atlanta dominate during low-flow periods, while nonpoint runoff predominates during high-flow periods and storm events (Stamer and others, 1978). This produces a relation between river discharge and nutrient concentration such that the nutrient load is fairly uniform year-round. Treated sewage and urban runoff are the primary input to Yellowjacket Creek and agricultural runoff is the primary input to Wehadkee Creek.

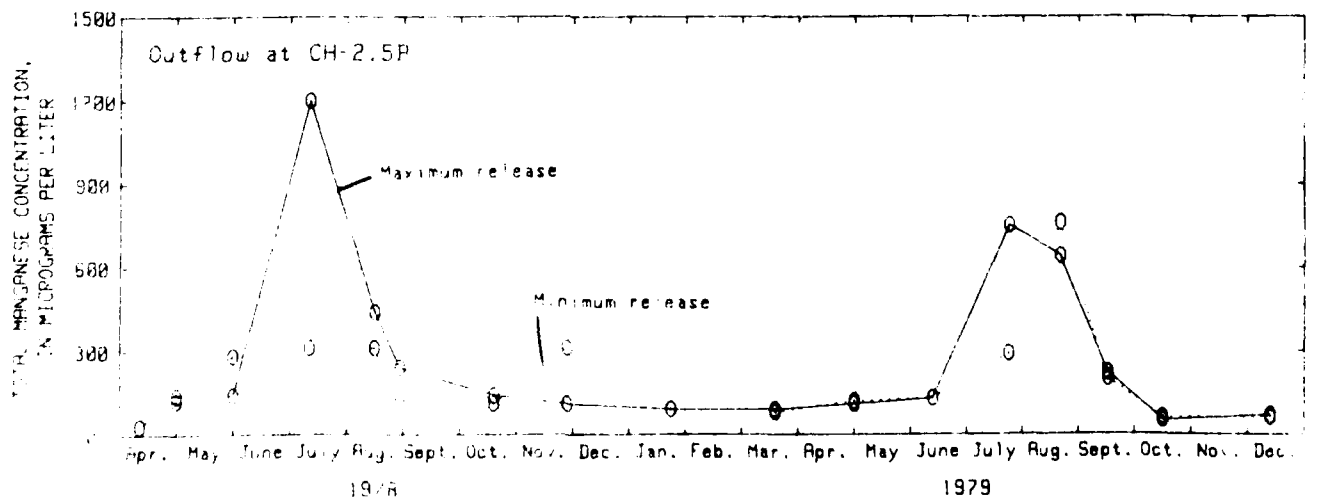
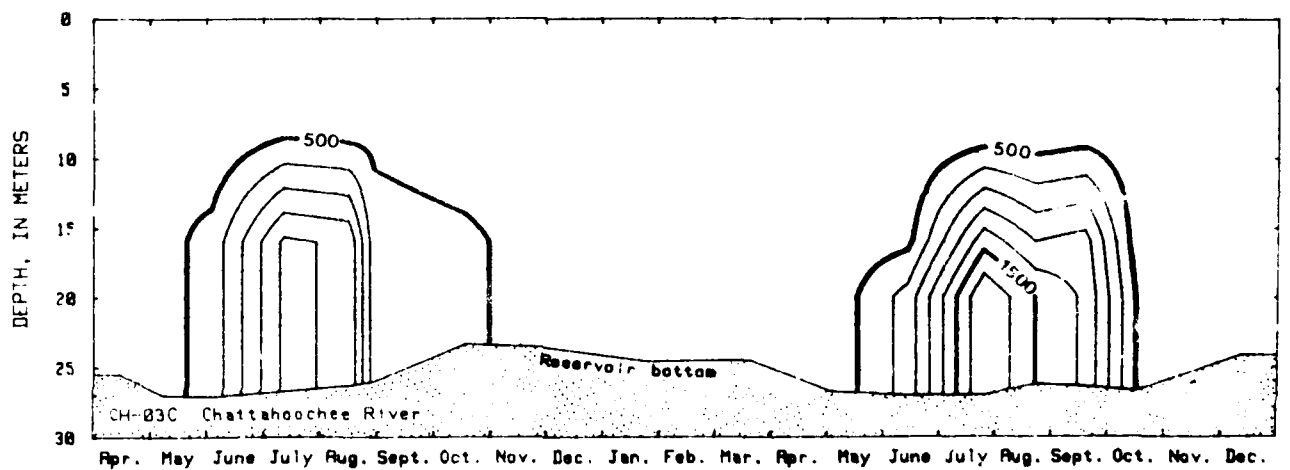
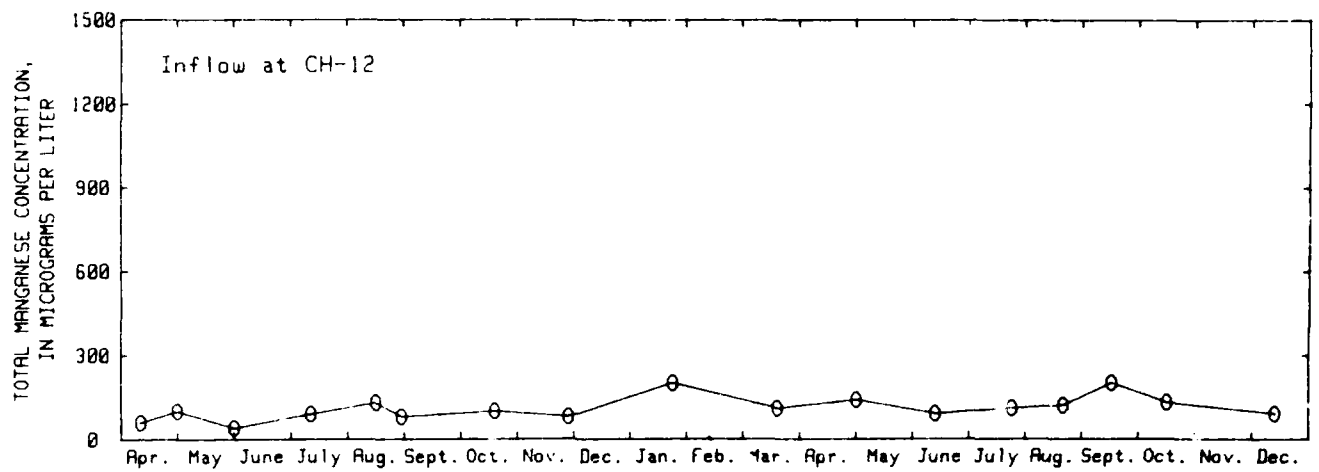
Inflow water discharge, thermal stratification, biologic activity, and interflow affected the distribution of nutrients in West Point Reservoir. The influence of these factors in the main channel of the reservoir will be discussed, utilizing the isopleths in figures 33 through 40 as representative examples.

As shown in the July 1978 graphs in figure 33, inflow concentrations of total phosphorus and dissolved orthophosphate were high (0.42 and 0.28 mg/L, respectively) during the stratified periods. An appreciable amount of this incoming load, however, was removed from the epilimnion by the time water reached the middle of the reservoir. Between stations CH-11A and CH-10, the reservoir quickly deepens, flow velocities decrease, and vertical mixing decreases, thereby facilitating deposition (fig. 33). Removal of phosphorus from the upper water column was probably a result of settling of particulate phosphorus associated with inorganic suspended sediment and plankton, and a result of phytoplankton uptake which depleted the dissolved fraction. Hypolimnetic concentrations of suspended and dissolved phosphorus, as shown in the July 1978 isopleths in figure 33, were relatively high as far downstream



EXPLANATION
 —500— LINE OF EQUAL TOTAL IRON CONCENTRATION--Interval 500 micrograms per liter

FIGURE 30.--Comparisons of total iron concentrations in inflow to West Point Reservoir with seasonal distribution patterns of total iron concentrations at the dam pool and with total iron concentrations in minimum and maximum release from the reservoir, April 1978 - December 1979.



EXPLANATION

—500— LINE OF EQUAL TOTAL MANGANESE CONCENTRATION—Interval 250 micrograms per liter

FIGURE 31. Comparison of total manganese concentrations in inflow to West Point Reservoir. A seasonal distribution patterns of total manganese concentrations in the dam pool and with total manganese concentrations in minimum and maximum inflow from the reservoir. April 1978 - December 1979.

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WATER QUALITY MANAGEMENT STUDIES WEST POINT LAKE
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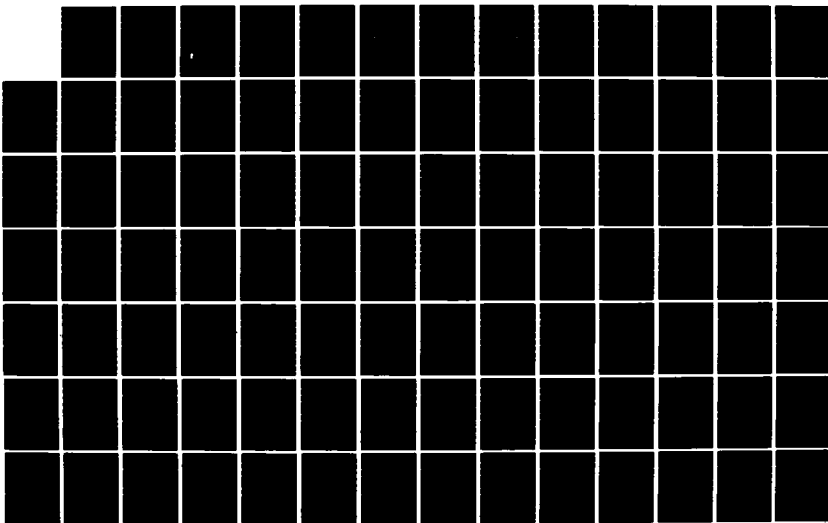
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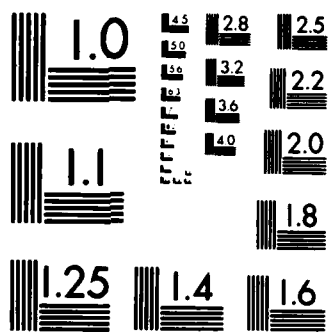
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MICROCOPY RESOLUTION TEST CHART
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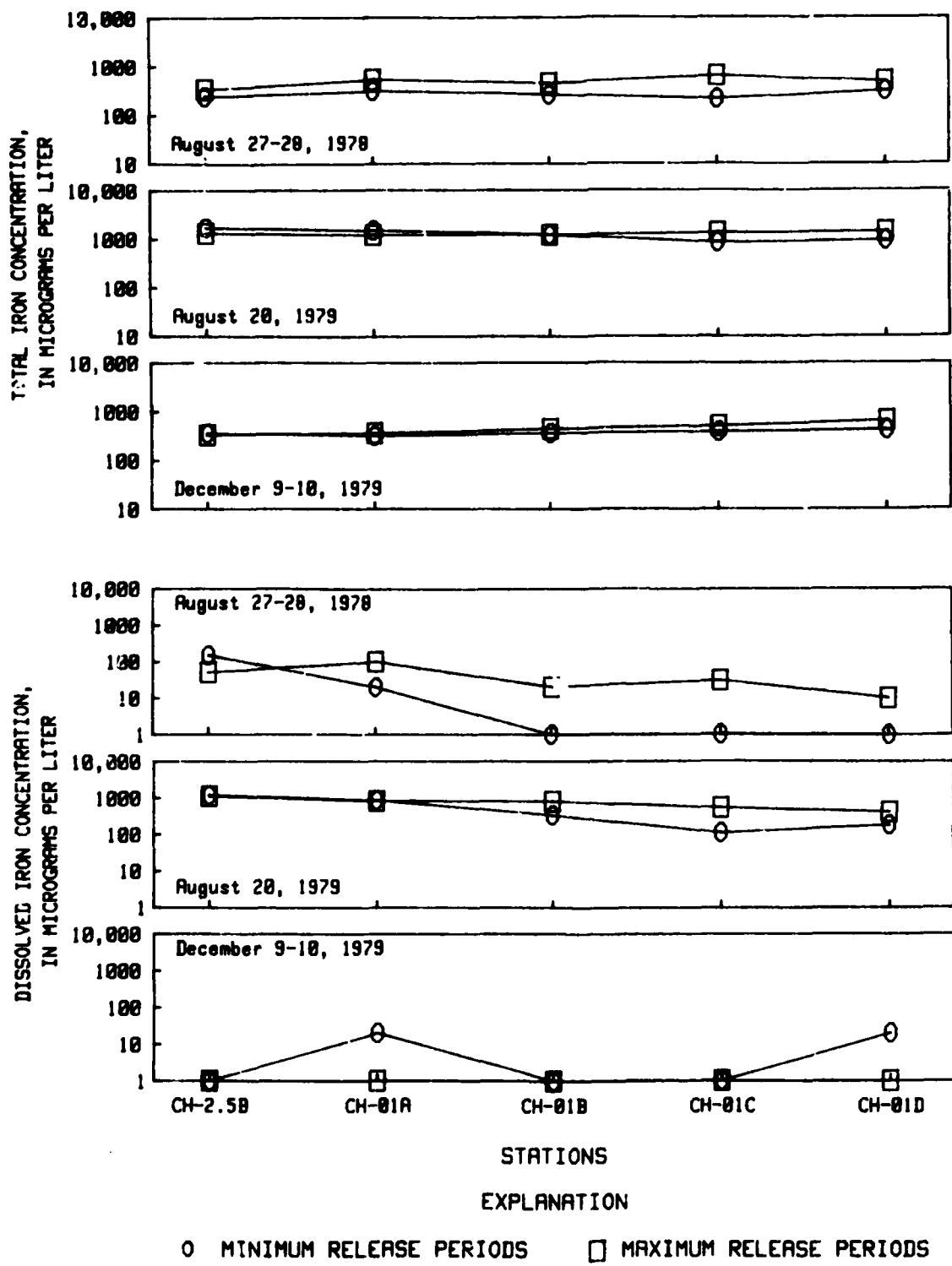
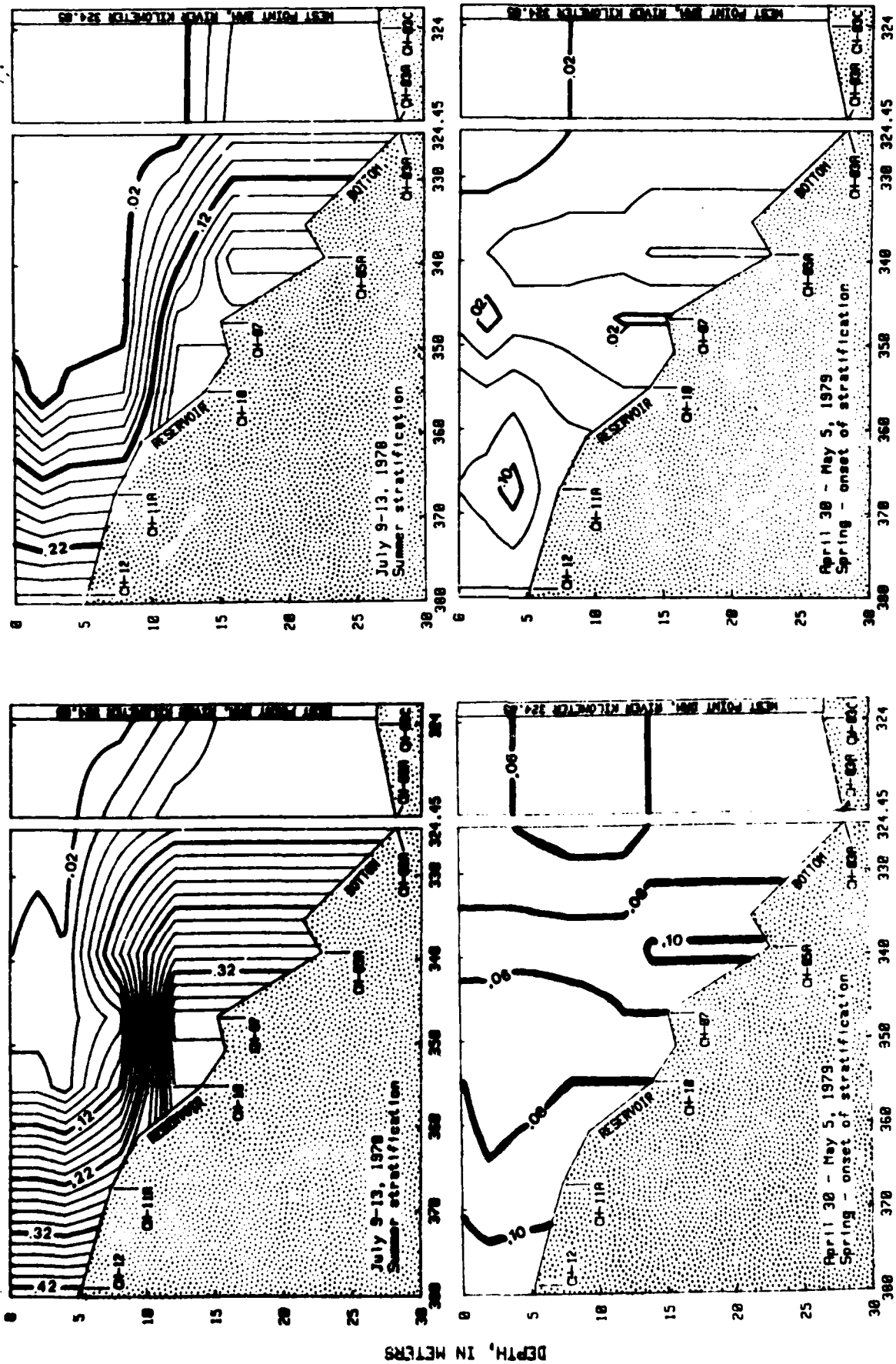


FIGURE 32.--Longitudinal distribution of total and dissolved iron concentrations in the Chattahoochee River below West Point Dam for selected data-collection trips.



EXPLANATION

LEFT GRAPHS: --- LINE OF EQUAL TOTAL PHOSPHORUS CONCENTRATION--Interval 0.02 milligram per liter.
 RIGHT GRAPHS: --- LINE OF EQUAL DISSOLVED ORTHOPHOSPHATE CONCENTRATION--Interval 0.02 milligram per liter

FIGURE 33.--Comparisons of distribution patterns of total phosphorus and dissolved orthophosphate concentrations in West Point Reservoir for selected data-collection trips.

as station CH-05A. The suspended fraction was most likely derived from sestonic settling and from material carried by interflow, whereas the dissolved fraction was probably the result of sestonic decomposition and the release of phosphorus from the sediments. The mobilization of sediment-bound phosphorus is most prevalent during severe stratification when hypolimnial waters are anoxic and have a low oxidation-reduction potential. Once the water column mixes in the fall, reaeration and higher oxidation-reduction potentials could allow much of the hypolimnial dissolved phosphorus to be removed from the water column by coprecipitation with ferric ion (Hutchinson, 1975).

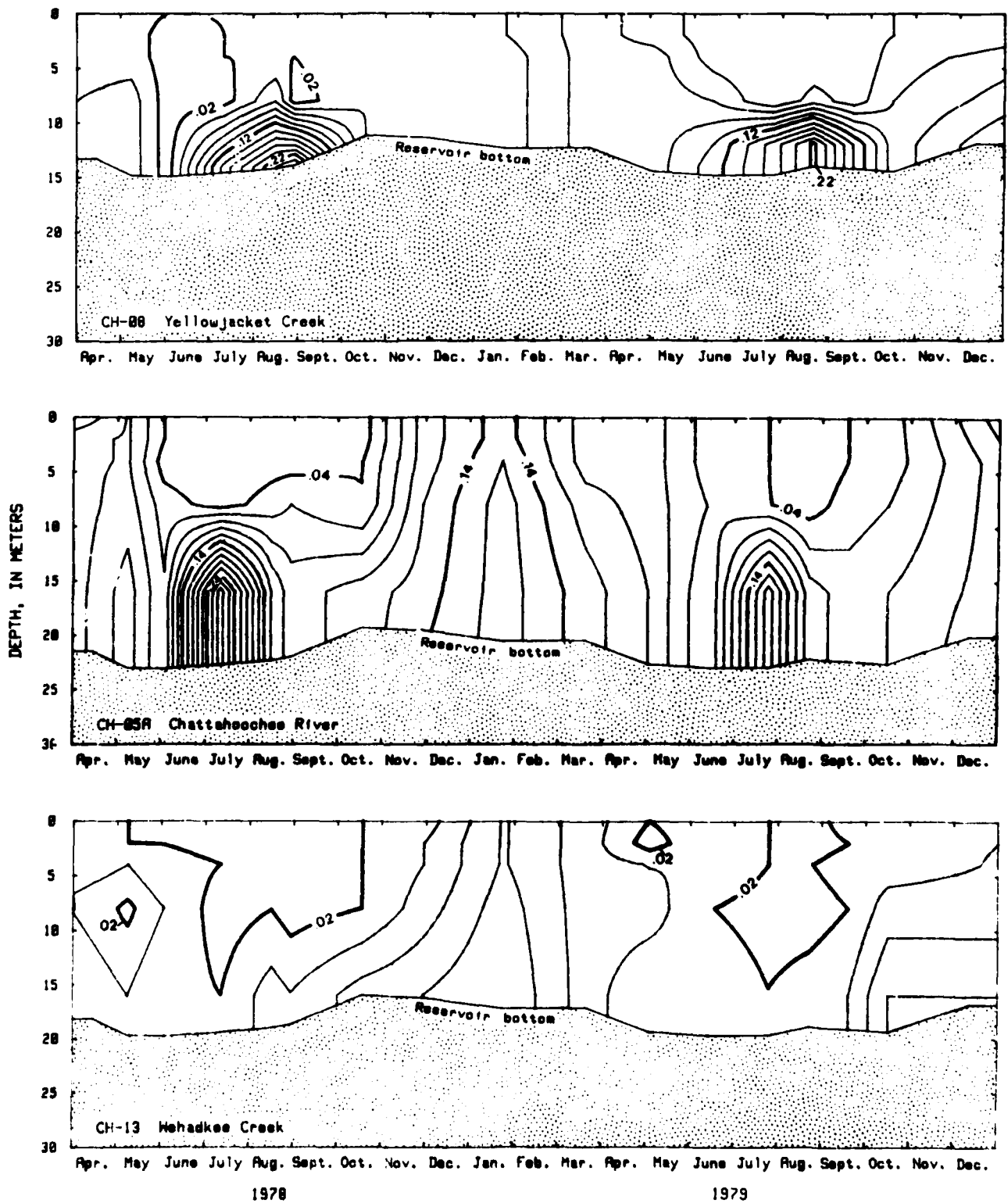
The vertical concentration gradients of total phosphorus and dissolved orthophosphate concentrations during the unstratified periods were negligible and horizontal downstream gradients were much more shallow than during thermal stratification (April-May graph, fig. 33).

Phosphorus data collected at the tributary stations in the reservoir during 1978 and 1979 indicate that Yellowjacket Creek (CH-08) had much greater concentrations of phosphorus than Wehadkee Creek (CH-13). Appreciable hypolimnial concentrations of total phosphorus and dissolved orthophosphate at station CH-08 were observed during the summer months (figs. 34 and 35). The particulate fraction probably represents a combination of sestonic settling and particulates from point and nonpoint sources from the city of LaGrange, Ga. By comparison, the Wehadkee Creek station (CH-13) did not show appreciable concentrations of phosphorus even though anoxic conditions were present in the hypolimnion (figs. 34 and 35).

Phosphorus concentrations in the downstream reaches of the Chattahoochee River were affected by the seasonal chemical stratification and biological activity occurring in the reservoir. Figure 36 shows the total phosphorus concentrations measured at stations CH-12 and CH-2.5B during minimum and maximum daily release periods and the seasonal distribution of total phosphorus at station CH-03C. Figure 37 makes the same comparisons for dissolved orthophosphate. The graphs in figures 36 and 37 show that outflow concentrations of phosphorus from the reservoir generally were low in relation to inflow concentrations.

Nitrite plus nitrate nitrogen and ammonia nitrogen concentrations during the nonstratified periods are illustrated by the April 30-May 5, 1979, isopleth in figure 38. For most of the reservoir reach the water column was well mixed, as indicated by the nearly vertical isopleths of nitrite plus nitrate. The concentrations did show a steady decrease in the downstream direction. Very little ammonia nitrogen was present in the water column at this time, as would be expected in a strongly oxidizing environment.

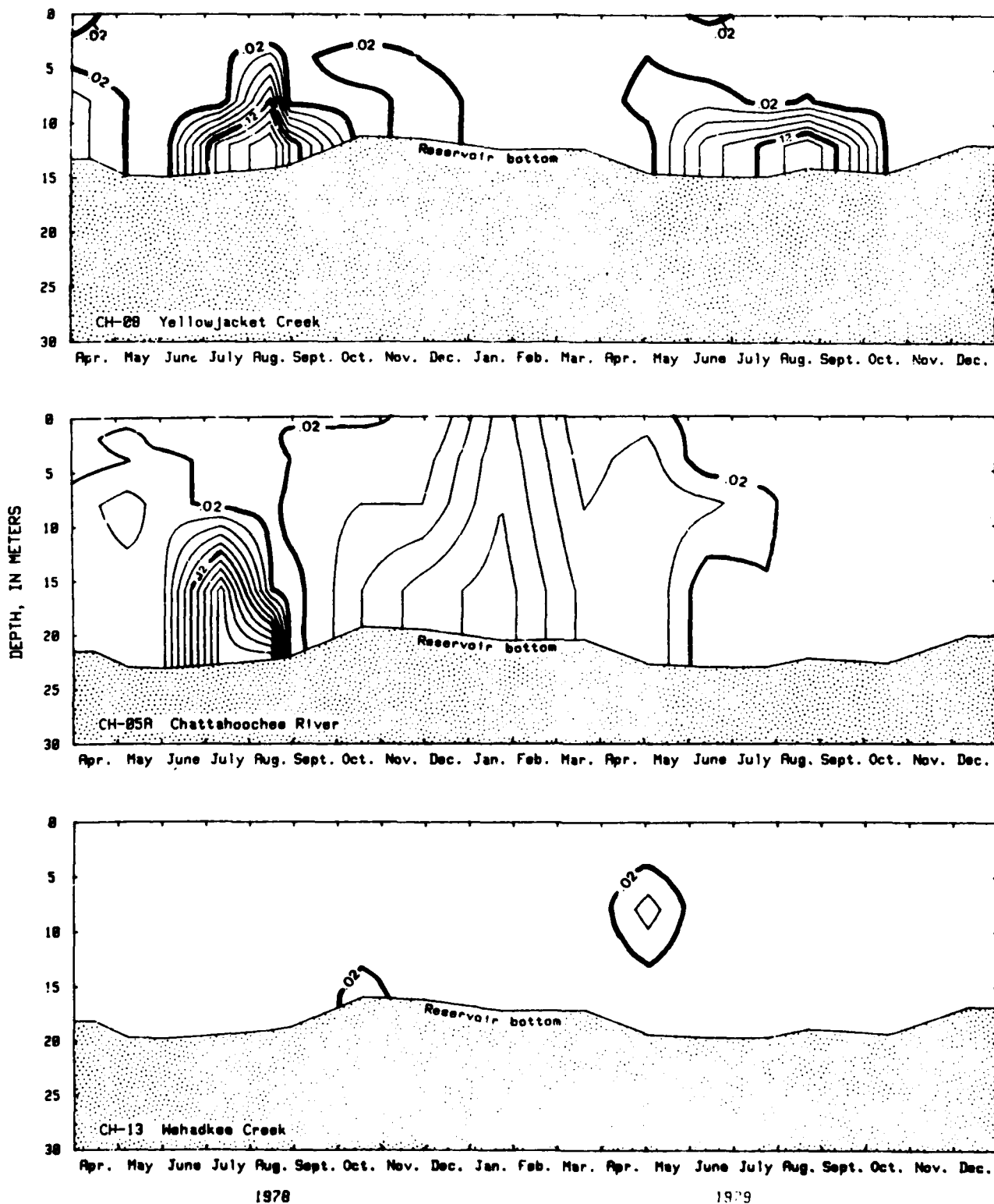
Concentrations of nitrite plus nitrate and ammonia nitrogen were quite different during the stratified periods as the graphs for July 23-27, 1979, in figure 38 indicate. Concentrations of nitrite plus nitrate in the epilimnion and hypolimnion in the lentic section were lower than the concentrations of the input water at CH-12. The lower concentrations in the lentic section of the epilimnion were probably due to nitrogen uptake by phytoplankton, followed by plankton settling. The lower concentrations of nitrite plus nitrate in the lentic section of the hypolimnion were probably due to the reduction of sestonic organic nitrogen to ammonia. Relatively high concentrations of nitrite plus nitrate, however, persisted in the metalimnion as far downstream as the dam pool (station CH-03A) as a result



EXPLANATION

— .02 — LINE OF EQUAL TOTAL PHOSPHORUS CONCENTRATION—Interval 0.02 milligram per liter

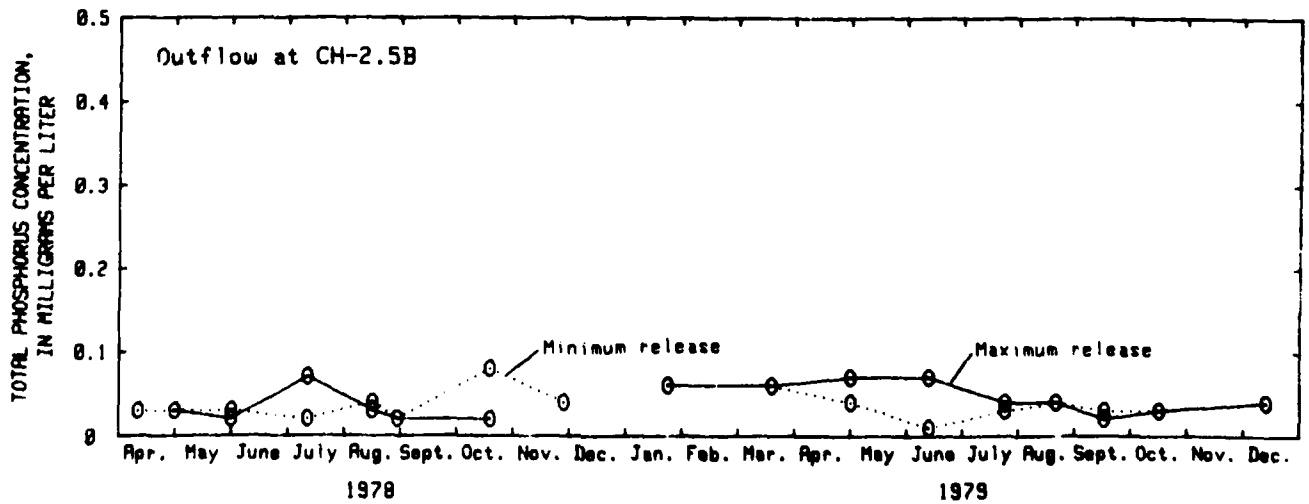
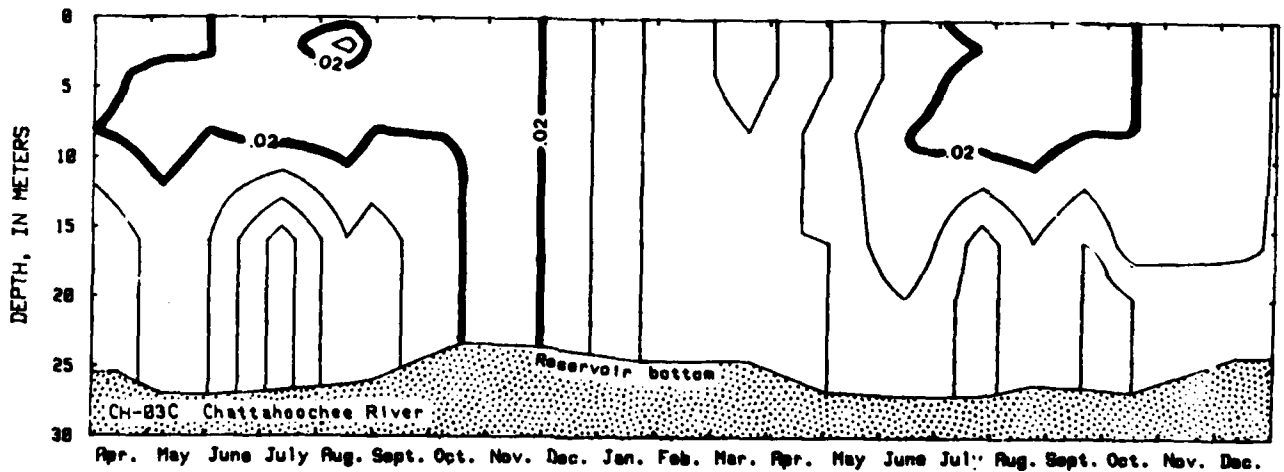
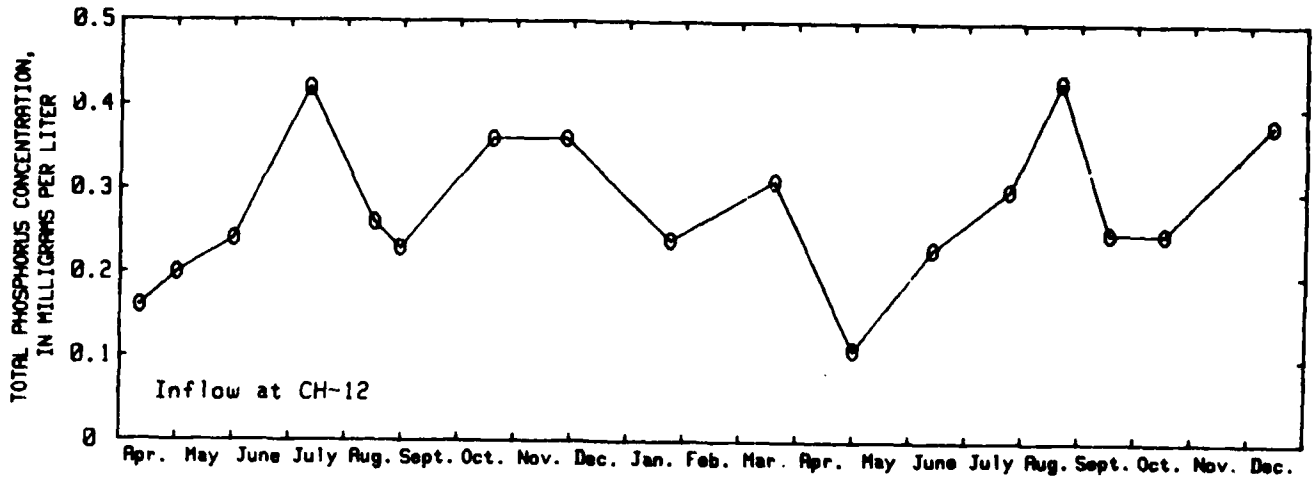
FIGURE 34.--Comparisons of total phosphorus concentrations at selected main channel-tributary stations in West Point Reservoir, April 1978 - December 1979.



EXPLANATION

— 0.1 — LINE OF EQUAL DISSOLVED ORTHOPHOSPHATE CONCENTRATION--Interval 0.02 milligram per liter

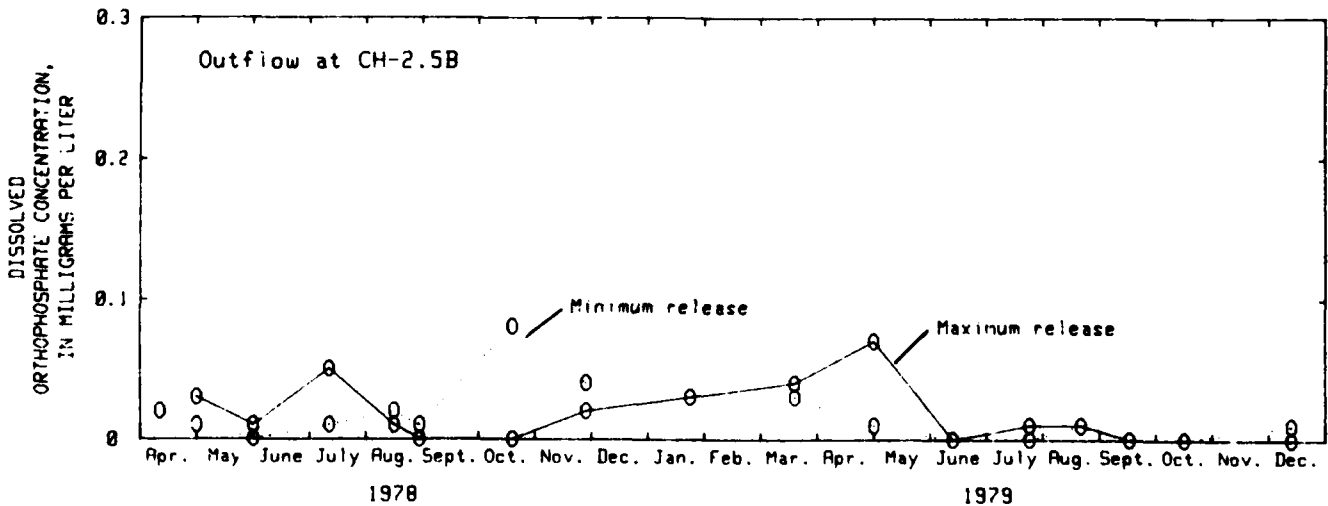
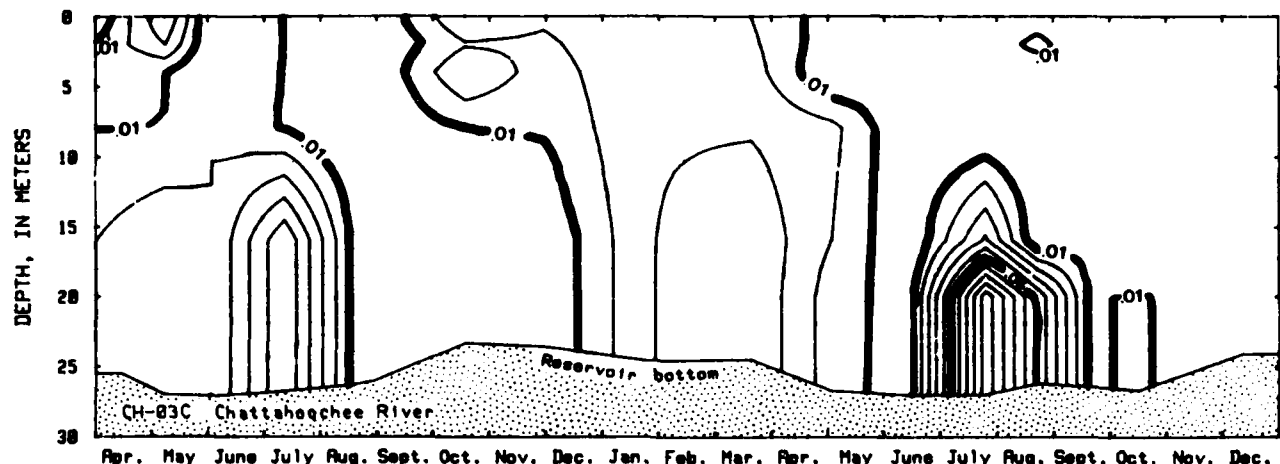
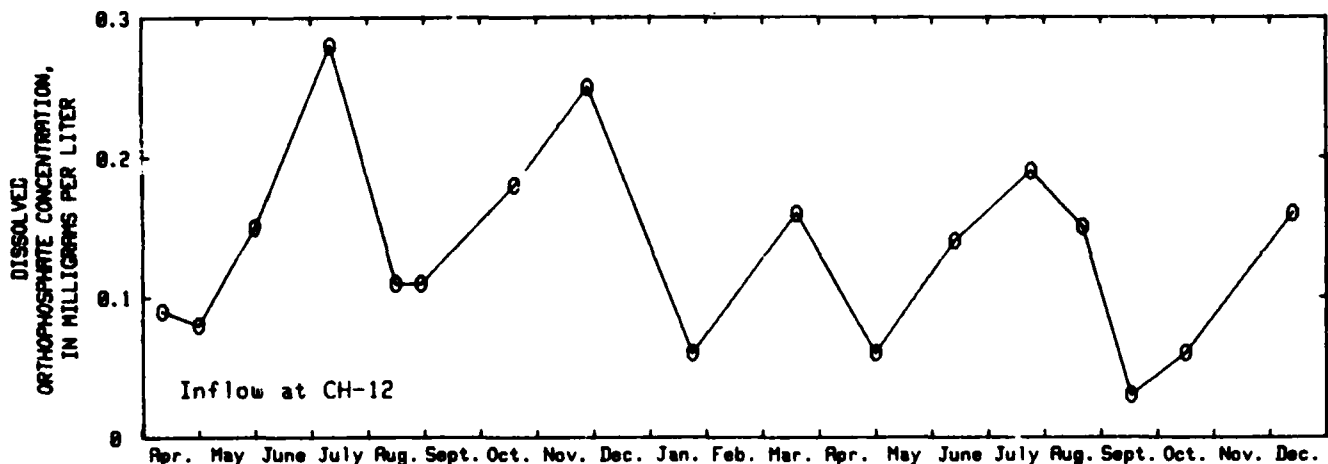
FIGURE 35.--Comparisons of dissolved orthophosphate concentrations at selected main channel-tributary stations in West Point Reservoir, April 1978 - December 1979.



EXPLANATION

—0.02— LINE OF EQUAL TOTAL PHOSPHORUS CONCENTRATION--Interval 0.02 milligram per liter

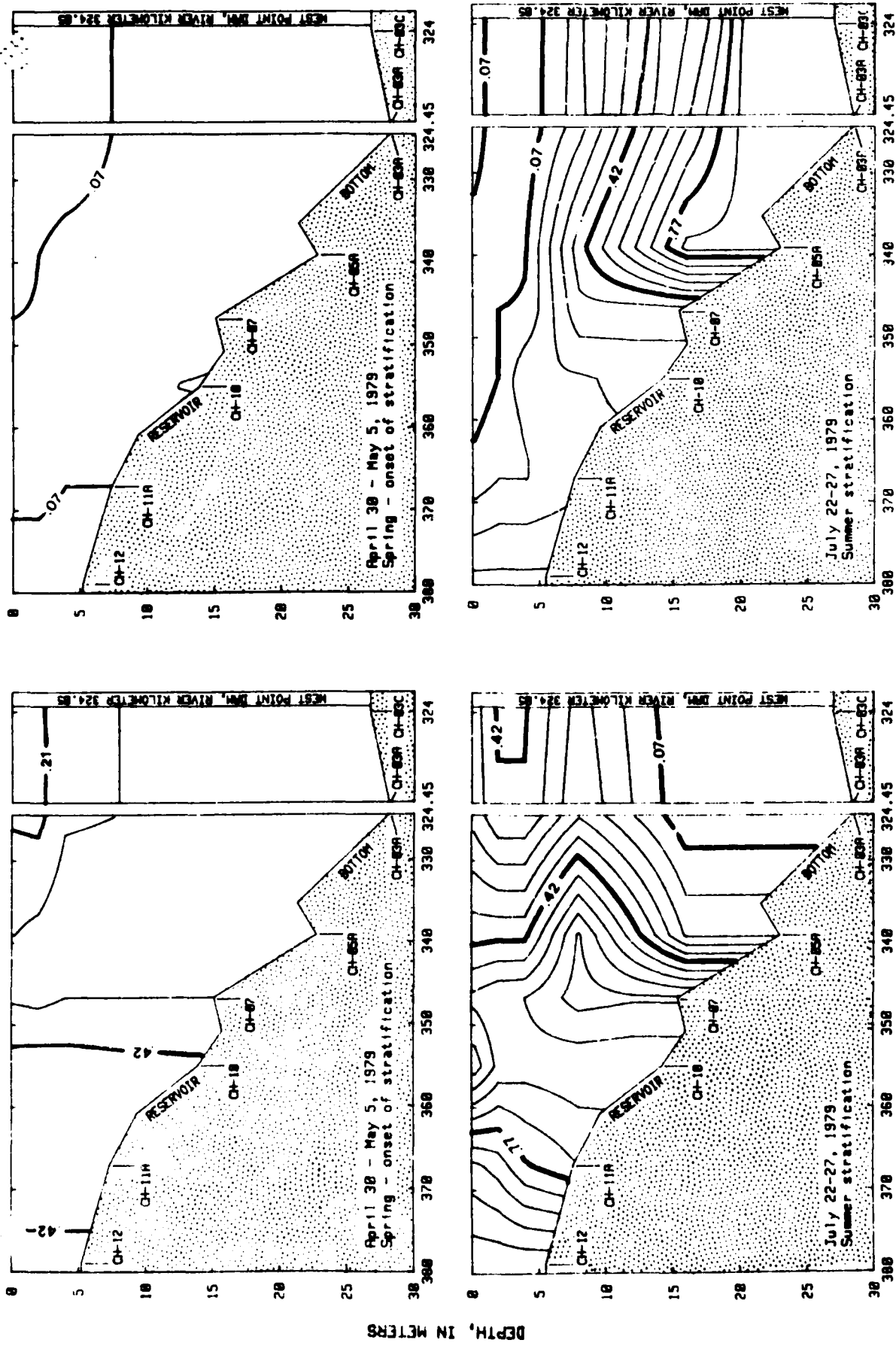
FIGURE 36.--Comparisons of total phosphorus concentrations in inflow to West Point Reservoir with seasonal distribution patterns of total phosphorus concentrations at the dam pool and with total phosphorus concentrations in minimum and maximum release from the reservoir, April 1978 - December 1979.



EXPLANATION

-.01- LINE OF EQUAL DISSOLVED ORTHOPHOSPHATE CONCENTRATION--Interval 0.02 milligram per liter

FIGURE 37.--Comparisons of dissolved orthophosphate concentrations in inflow to West Point Reservoir with seasonal distribution patterns of dissolved orthophosphate concentrations at the dam pool and with dissolved orthophosphate concentrations in minimum and maximum release from the reservoir, April 1978 - December 1979.



DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

LEFT GRAPHS: — .42 — LINE OF EQUAL TOTAL NITRITE PLUS NITRATE CONCENTRATION--Interval 0.07 milligram per liter
 RIGHT GRAPHS: — .07 — LINE OF EQUAL TOTAL AMMONIA CONCENTRATION--Interval 0.07 milligram per liter

FIGURE 38--Comparisons of distribution patterns of total nitrite plus nitrate and total ammonia concentrations in West Point Reservoir for selected data-collection trips.

of interflow. The maximum concentration of total ammonia nitrogen (0.84 mg/L) occurred in the vicinity of river kilometer 340, where dissolved-oxygen depletion was severe and oxidation-reduction potential was low. Some of this ammonia probably originated in the underlying sediment layers and from settling particulate detrital material.

The effects of West Point Reservoir release water on nitrite plus nitrate and ammonia nitrogen concentrations at station CH-2.5B are shown in figures 39 and 40. Concentrations of nitrite plus nitrate nitrogen were much higher than ammonia nitrogen at the dam pool and in the river at station CH-2.5B during the winter, when reservoir waters were well oxygenated. However, concentrations of ammonia nitrogen were much higher than nitrite plus nitrate nitrogen at these two sites during summer stratification periods. Denitrification of nitrite and nitrate nitrogen to ammonia nitrogen in the anoxic hypolimnetic waters resulted in relatively high concentrations of ammonia nitrogen at the dam-pool site and at the downstream site.

High ammonia concentrations in the Chattahoochee River measured at station CH-2.5B coincided with the occurrence of anoxic conditions and high ammonia concentrations at the dam pool (station CH-03C) (fig. 39). There were no appreciable differences between ammonia concentrations during minimum and maximum daily release periods except during periods of high ammonia concentrations at the dam pool.

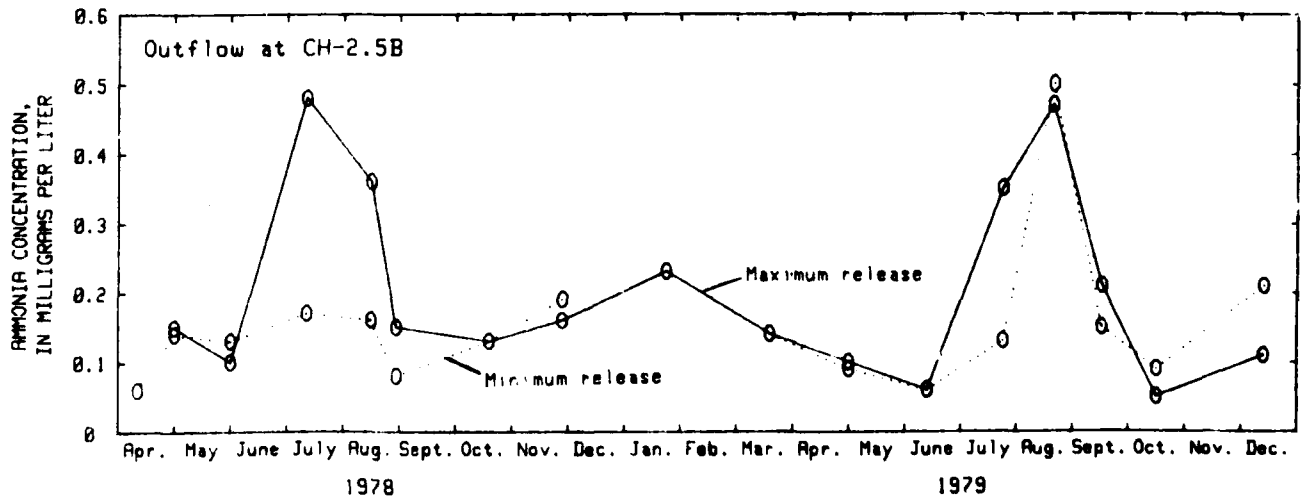
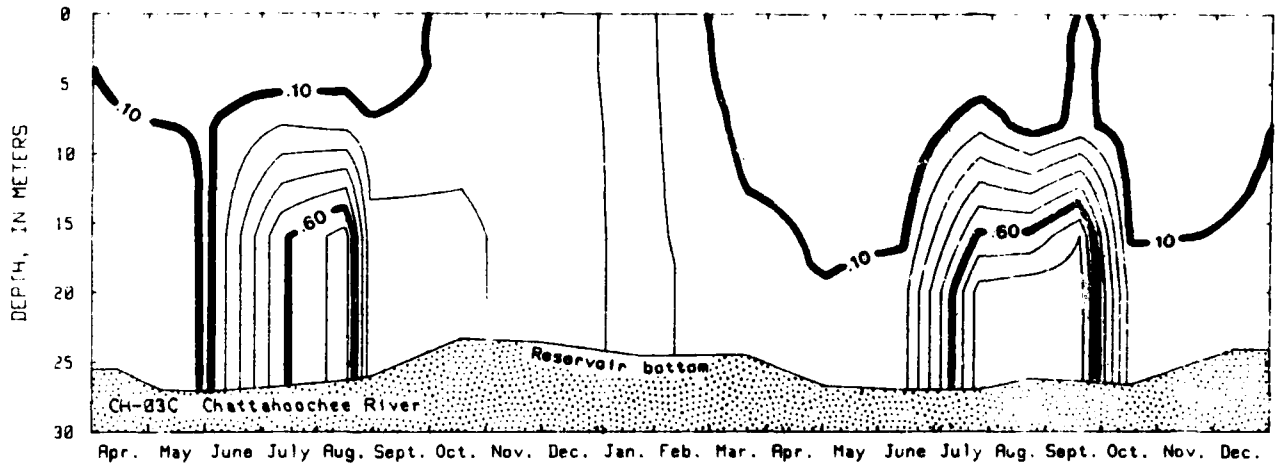
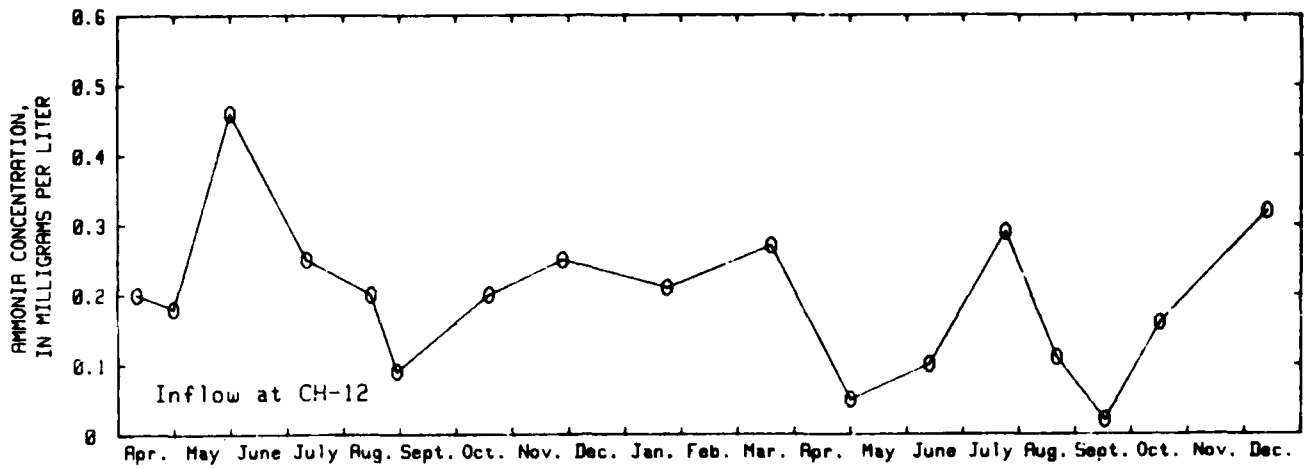
Seasonal variations in nitrite plus nitrate nitrogen at river station CH-2.5E and the seasonal distribution of these ions at the dam pool (station CH-03C) is presented in figure 40. Nitrite plus nitrate concentrations at station CH-2.5B were nearly identical to those in the bottom water at the dam pool. Low concentrations coincided with the occurrence of anoxic conditions at the dam pool, which is indicative of denitrification.

Biologic Characteristics and Responses to Nutrient Enrichment

Plankton is the aggregate of heterotrophic and autotrophic organisms whose movements in water are more or less dependent on currents. Plankton communities are not only a function of water quality; they can have a direct influence on the physical and chemical properties of concern in water-quality studies. Plankton consists of plants (phytoplankton), animals (zooplankton), and bacteria. Among these component groups, complex interrelations exist.

Chlorophyll-bearing plankton such as algae generally constitute the greatest portion of the plankton biomass. The quantity of phytoplankton occurring at a particular station depends on many factors, including sampling depth, time of day, season of the year, nutrient content of the water, quantity of herbivorous zooplankton, and the presence of toxic materials.

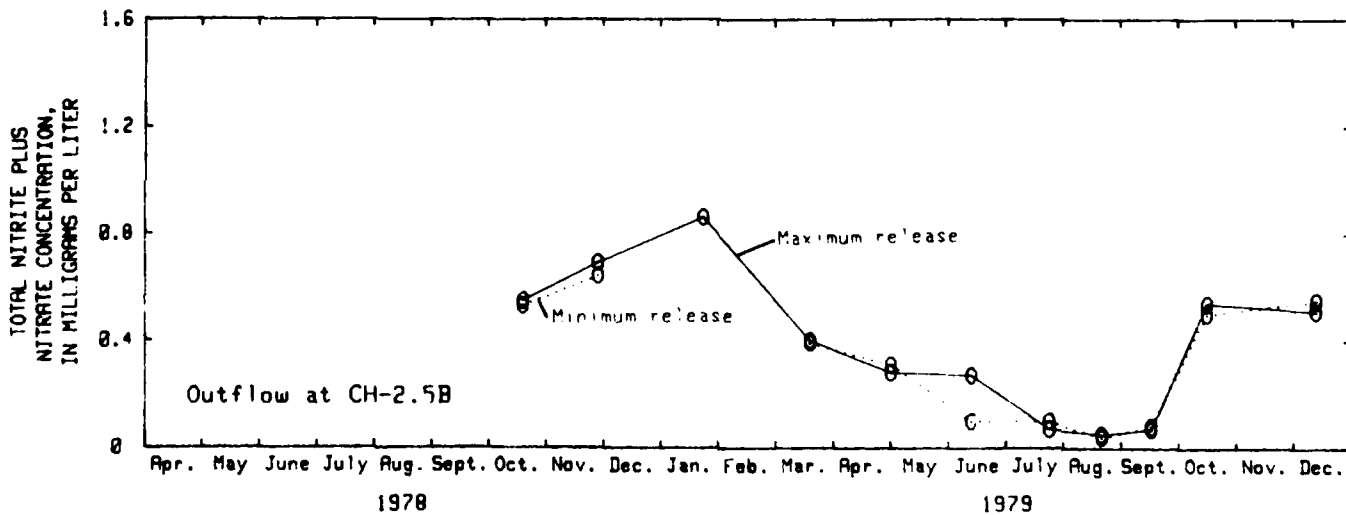
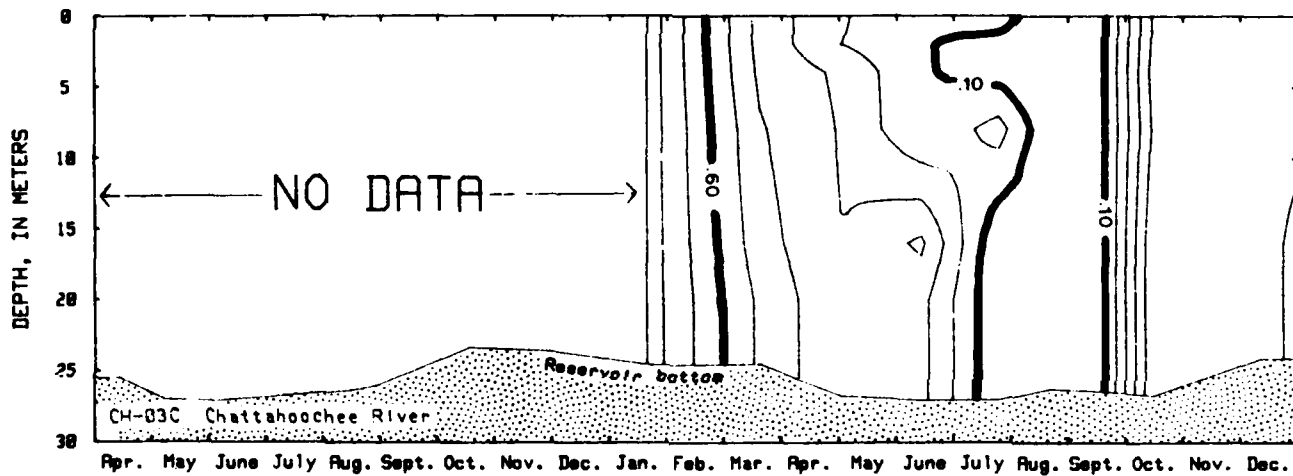
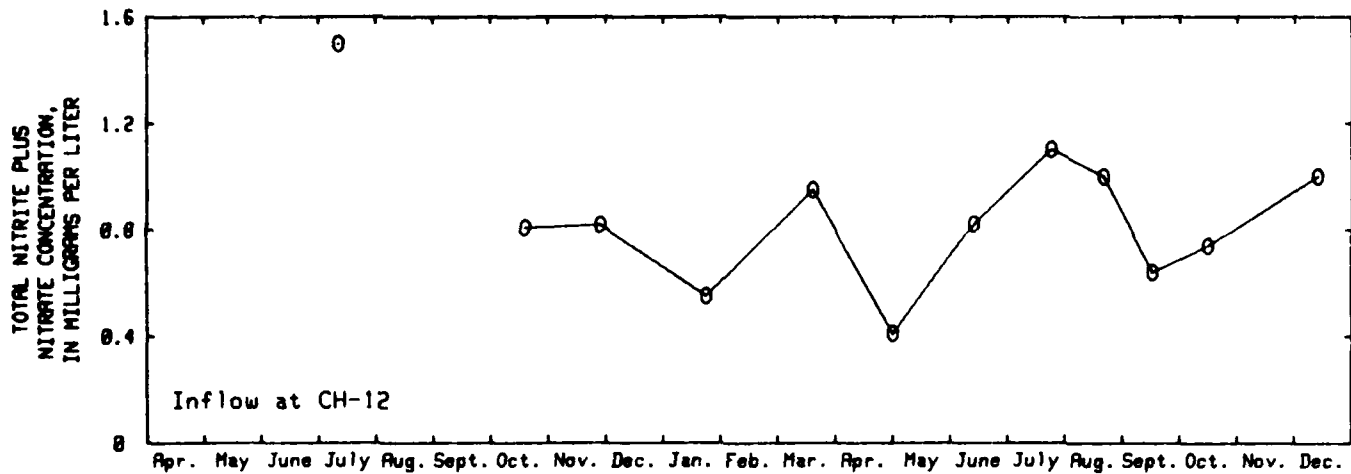
Care must be taken in the interpretation of temporal variations of the plankton data from this study, because the lack of data throughout the annual cycle makes it difficult to infer conclusions concerning periodicity and seasonal patterns in phytoplankton community structure. Some possible explanations, however, can be given as to the longitudinal distribution of autotrophic production. In the lotic environment, production was probably limited by one or a combination of the following:



EXPLANATION

— .10 — LINE OF EQUAL TOTAL AMMONIA CONCENTRATION--Interval 0.10 milligram per liter

FIGURE 39.--Comparisons of total ammonia concentrations in inflow to West Point Reservoir with seasonal distribution patterns of total ammonia concentrations at the dam pool and with ammonia concentrations in minimum and maximum release from the reservoir, April 1978 - December 1979.



EXPLANATION

— .10 — LINE OF EQUAL TOTAL NITRITE PLUS NITRATE CONCENTRATION—Interval 0.10 milligram per liter

FIGURE 40.--Comparisons of total nitrite plus nitrate concentrations in inflow to West Point Reservoir with seasonal distribution patterns of total nitrite plus nitrate concentrations in the dam pool and with total nitrite plus nitrate concentrations in minimum and maximum release from the reservoir, October 1978 - December 1979.

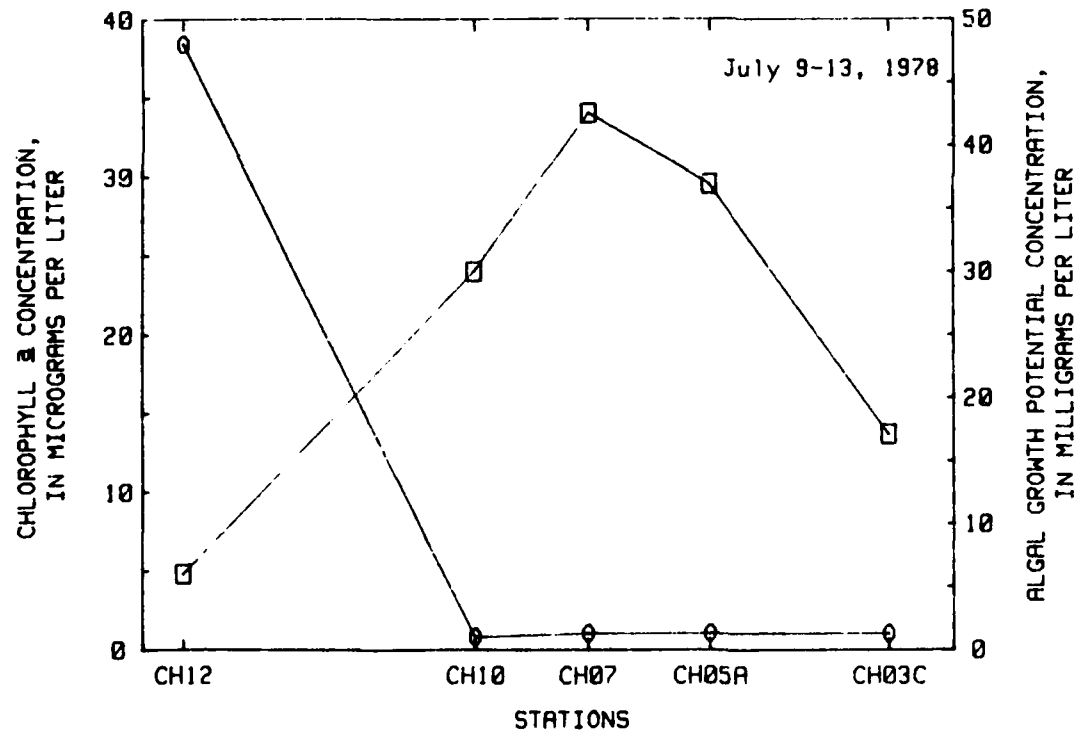
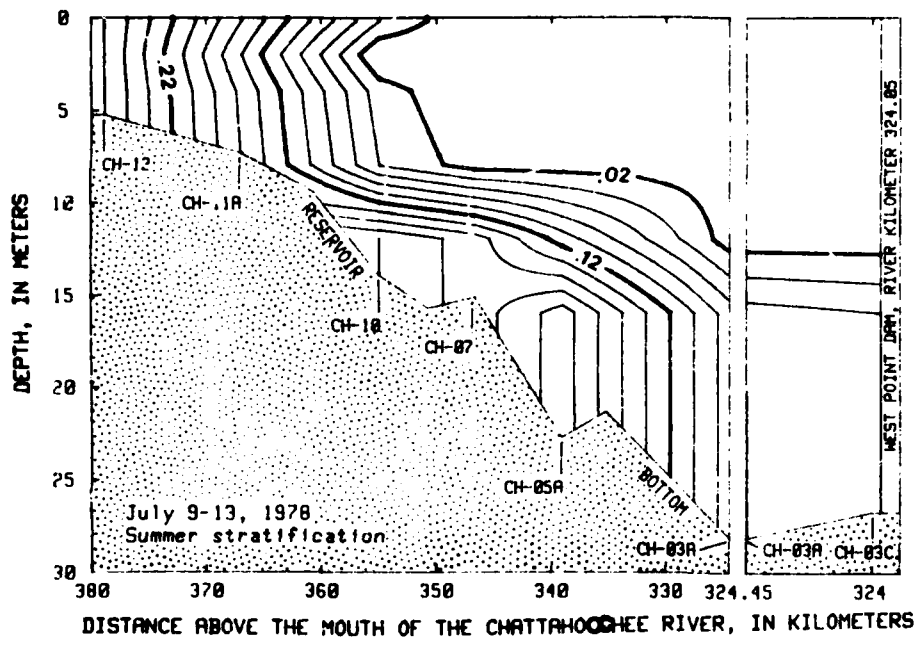
- (1) Water velocities were too great for phytoplankton community development.
- (2) Large concentrations of nonfilterable-residue loading reduced the depth of the euphotic zone.
- (3) Growth was limited by nutrient deficiencies.

The upper lentic section (middle section of the reservoir) had the highest autotrophic production (figs. 5, 9, and 10). This was in response to nutrient availability, a corresponding reduction in water velocity, and an increase in the euphotic zone depth as the reservoir became more lentic in nature. The uptake, utilization, and subsequent depletion of dissolved orthophosphate and zooplankton grazing appeared to be the principal factors in the decline in autotrophic production in the dam pool area during summer stratified periods (fig. 41). In West Point Reservoir during stratified periods, zooplankton pulses generally coincided or immediately followed phytoplankton pulses. Figure 42 shows the longitudinal distribution of phytoplankton and zooplankton populations for selected sampling dates. No single factor (physical, chemical, or biological), however, can be designated as the cause of the seasonal and longitudinal succession of the phytoplankton, because the algae developed in the collective presence of multiple factors.

Plankton sampling during the study period was insufficient for a thorough understanding of community structure and dynamics of phytoplankton and zooplankton populations in West Point Reservoir. Because many factors influence the nature and distribution of plankton in reservoirs, intensive sampling is necessary. It is important to realize that fluctuations in plankton concentrations are sudden, of short duration, and can be easily missed. Unless one can sample at least twice monthly throughout the annual cycle, it is unlikely that plankton community dynamics can be adequately studied for meaningful management strategies. Even shorter sampling intervals may be necessary during bloom conditions. Also, absolute values of today's standing stock may have little to do with the environmental variables at a sampling station. Standing stock is, in fact, yesterday's standing stock multiplied by the growth rate allowed by yesterday's environment less a loss term.

Algal assay has become a valuable test for evaluating water quality, especially in relation to eutrophication (U.S. Environmental Protection Agency, 1971). AGP (algal growth potential) is defined as the maximum algal mass (dry weight) that can be produced in a natural water sample under standardized laboratory conditions (Shoaf and Liam, 1979). AGP is the algal mass present at the stationary phase of the growth curve and is expressed in milligrams dry weight per liter of algae produced (Shoaf and Liam, 1979).

The AGP assay is based on the principal that growth is limited by the nutrient that is present in shortest supply with respect to the needs of the test organism. The significance of measuring AGP is that differentiation can be made between the growth substances of a sample determined by chemical analysis and the growth substances that are actually available for algal growth. By the algal response to the addition of nutrients, alone or in combinations, one can also determine the nutrient or nutrients limiting algal growth and the potential changes in algal growth with changes in nutrient concentrations.



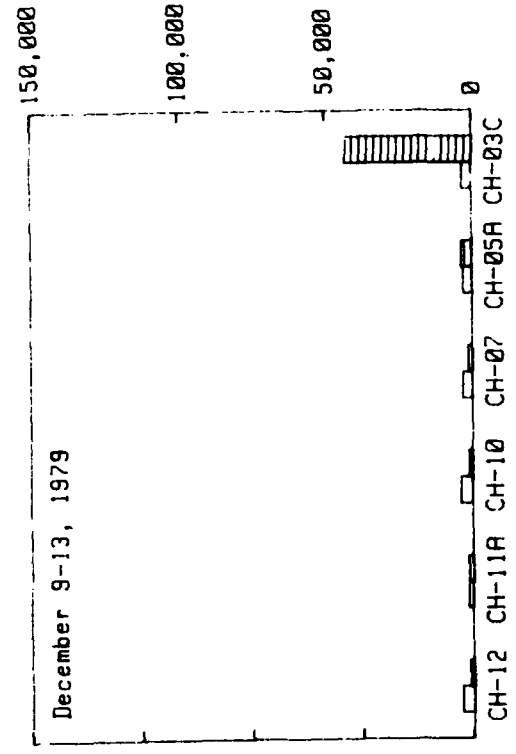
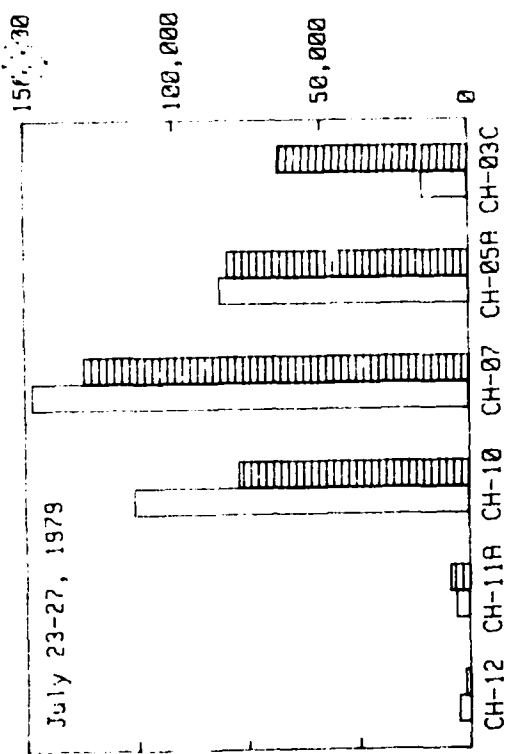
EXPLANATION

TOP GRAPH: —.02— LINE OF EQUAL DISSOLVED ORTHOPHOSPHATE CONCENTRATION-- Interval 0.02 milligram per liter

BOTTOM GRAPH: □ CHLOROPHYLL a ○ ALGAL GROWTH POTENTIAL

FIGURE 41.--Comparisons of distribution patterns of dissolved ortho-phosphate concentrations with chlorophyll a concentrations and algal growth potential concentrations in the euphotic zone of West Point Reservoir, July 9-13, 1978.

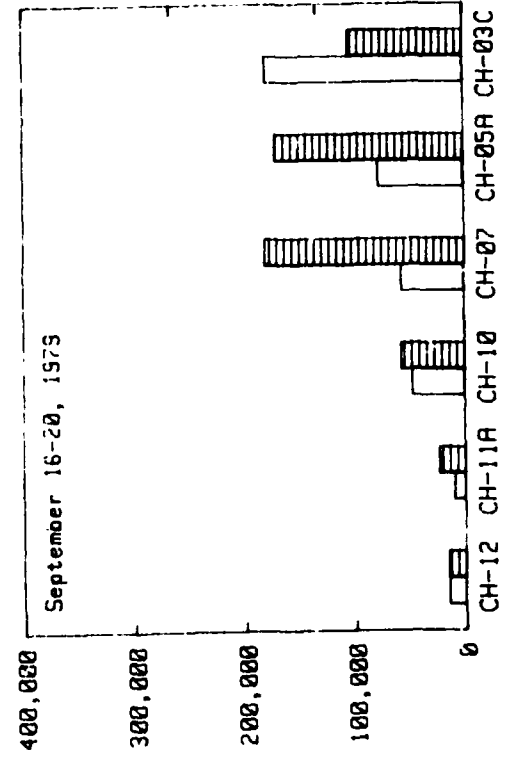
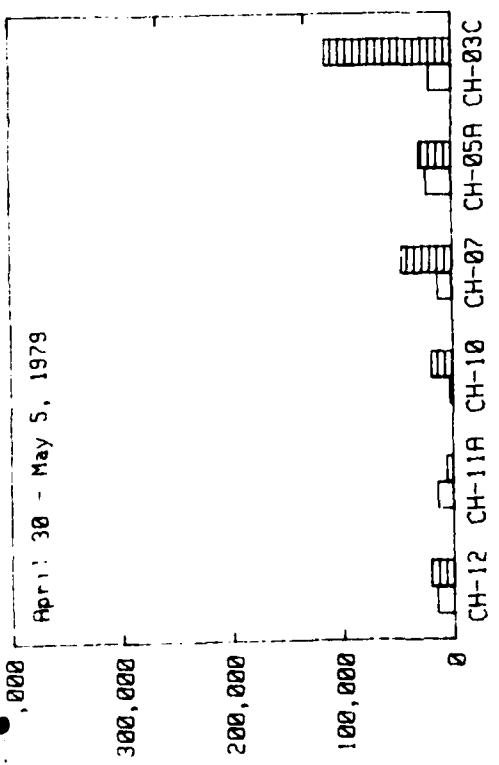
ZOOPLANKTON STANDING STOCK, IN ORGANISMS PER CUBIC METER



STATIONS

EXPLANATION

- PHYTOPLANKTON STANDING STOCK
- ▨ ZOOPLANKTON STANDING STOCK



STATIONS

PHYTOPLANKTON STANDING STOCK, IN CELLS PER MILLILITER

FIGURE 42.--Longitudinal distribution of phytoplankton and zooplankton standing stocks in West Point Reservoir for selected data-collection trips.

The AGP assay data that are derived in the laboratory under controlled conditions of light and temperature do not necessarily reflect conditions in the natural aquatic environment from which the samples are taken. Only the growth potential at a given time is measured under these circumstances, and many environmental factors that could alter the AGP cannot be simulated in a laboratory.

AGP-USGS assay data showed that the availability of nutrients decreased in response to increases in phytoplankton concentrations from the upper to the lower reaches of the reservoir (fig. 41).

The AAP:BT (Algal Assay Procedure: Bottle Test) procedure was used to define possible nutrient limitation in West Point Reservoir, and specifically whether this limitation could be due to nitrogen, phosphorus, or trace element deficiency. This was accomplished by measuring the growth response of Selenastrum capricornutum to singular and combined additions of 0.05 mg/L phosphorus as K_2HPO_4 , 0.01 mg/L nitrogen as $NaNO_3$, and 0.01 mg/L EDTA (ethylenediamine tetraacetate) as Na_2EDTA to the test waters.

Figure 43 shows the effects of nutrient additions to the test water from West Point Reservoir. Growth responses due to nutrient additions were compared to growth responses in inoculated control flasks. The responses obtained in the control plus nitrogen and nitrogen plus EDTA additions identified nitrogen as the primary growth-limiting nutrient during the stratified period in the lotic section of the reservoir. In the lentic section, the growth response indicated that during the stratified periods, phosphorus was the primary growth limiting nutrient. Figure 43 illustrates the effects of uptake and utilization of nutrients in autotrophic production and the subsequent depletion of these nutrients as demonstrated by the AGP response. Also, phosphorus addition in the presence of excess nitrogen seemed to support growth to its maximum.

Synthetic organic ligands such as Na_2EDTA are added to culture media to make sure trace elements are available to support algal growth. The growth responses attained with the addition of EDTA, however, were not conclusive. The algal response to EDTA addition could have been a result of secondary growth-regulating nutrient deficiencies and(or) the ability of S. capricornutum to metabolize the nitrogen contained in the Na_2EDTA complex.

Eutrophication and West Point Reservoir

Chemical and biological changes within West Point Reservoir and downstream from West Point Dam are the result of accelerated eutrophication, largely attributable to the activities of man. Cultural eutrophication, which is generally manifested by excessive growth of aquatic primary producers, could have deleterious effects on the beneficial uses of the reservoir and water downstream from West Point Dam.

In response to concern over potential and realized water-quality deterioration of many lakes and reservoirs in the United States, the Congress included Section 314-A of the Federal Water Pollution Control Act Amendments of 1972 and 1977, which required States to classify their lakes and reservoirs in terms of their degree of eutrophication. For those water bodies found to be excessively fertile, the States are required to develop nutrient control programs to restore the water quality of such lakes and reservoirs.

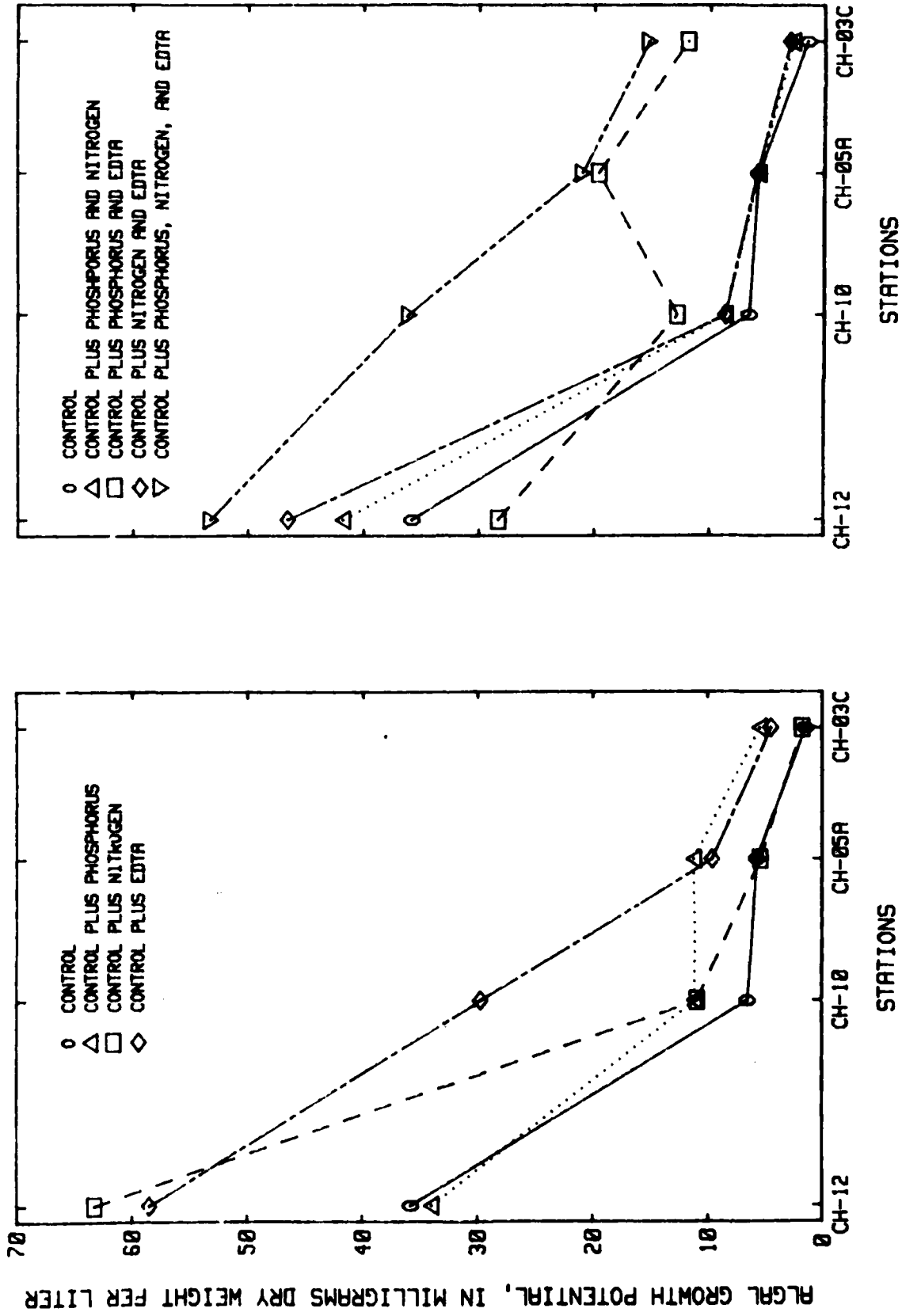


FIGURE 43.--Effect of nutrient addition to water from West Point Reservoir on the growth of Selenastrum capricornutum, August 14-17, 1978.

To accomplish the assessment of reservoir management options described above, it is necessary that water-quality conditions be quantified. A number of schemes for classifying lakes and reservoirs numerically according to trophic status have been reported in the literature (Dillon, 1975; Larsen and Mercier, 1976; Vollenweider 1975; Hern and others, 1981; Carlson, 1977; Canfield and Bachmann, 1981).

To complicate matters even further, there presently exist no generally accepted definitions of the terms used for the different trophic states. This lack of precise definition of trophic status makes it difficult to assess the accuracy of all the different eutrophication schemes. Because the whole concept of eutrophication and trophic status is subjective and highly variable, there is no single approach that will result in unequivocal conclusions concerning the status of or potential for eutrophication.

Numerous attempts have been made to classify West Point Reservoir. The Georgia Department of Natural Resources (1976) related information from West Point Reservoir to the data base of 15 other Georgia reservoirs in the National Eutrophication Survey. From this data base, a reservoir quality index was used to rank reservoirs according to their trophic status and West Point Reservoir ranked next to the most eutrophic. Davis and others (1979), on the other hand, determined that the reservoir was only mesoeutrophic. Results obtained by Vick and others (1976) lead to the conclusion that enough phosphorus was present to produce eutrophic conditions in West Point Reservoir. Their results were plotted against each of three "phosphorus only" models developed by Vollenweider (1975), Dillon (1975), and Larsen and Mercier (1976). West Point Reservoir data consistently plotted within the defined eutrophic zone. J. B. McConnell (U.S. Geological Survey, written commun., 1981), utilizing historic data and data collected during this study, also evaluated West Point Reservoir as being eutrophic. Care must be taken in interpreting the results of these various models. Because of the emphasis on arbitrary ambient total phosphorus levels in these models, excessive primary production or manifestations of nutrient enrichment were not considered. Therefore, the models used above are comparative and not predictive models.

A major point of confusion with existing terminology is that eutrophic conditions are commonly equated with poor water quality. Poor or excellent water quality depends on the designated use of that water. Even though trophic state models evaluated the reservoir as eutrophic, the visually observed quality and use of the reservoir indicated it was not eutrophic to the extent that any designated uses of the reservoir were impaired. The only apparent manifestation of eutrophication in West Point Reservoir during the study period was the anoxic condition of the hypolimnion during summer stratified periods. Also, the various segments of West Point Reservoir react differently under similar environmental stress and the trophic classification changes at different locations within the reservoir, at various times of the year, and under diverse hydrologic regimes.

Bottom Material Characteristics

Particle-size and constituent concentration data of bottom material were collected from West Point Reservoir to provide information on the presence, concentration, and distribution of potentially harmful substances in the bottom sediments of the reservoir and the river below the dam.

The downstream gradation of bottom material particle size from sand to silt plus clay between the headwaters of the reservoir and the dam pool is indicative of decreasing velocities through the reservoir. Sand-size particles carried as suspended and bed load by the Chattahoochee River are retained in the upper section of the reservoir as the flow begins to decrease. Suspended particles finer than sand continue to settle out as the downstream velocities progressively decrease (fig. 44). The particle size of bottom material from tributary stations were more characteristic of mainstem reservoir stations than of the river stations below West Point Dam.

The streambed at the stations below West Point Dam was constantly being scoured by high-velocity water during release periods. This fact, along with the probable absence of silt and clay in the release water, accounts for the sparcity of fine materials in the bottom materials at these stations. The 30-percent fraction of silt and clay at station CH-01A in 1979 was attributed to problems in obtaining a representative sample through the cross section. Most of the riverbed at station CH-01A consisted of scoured bedrock, except for the immediate river's edge.

Within the reservoir, measurable concentrations of certain chemical constituents occurred where silt and clay particles comprised most of the bottom material. The relation of these chemical constituents to particle size is illustrated in figures 45 and 46. Many of these substances (especially the chlorinated hydrocarbons) have low water solubility, which favors their rapid sorption on suspended or sedimented materials.

Little inference should be made from the comparison between 1978 and 1979 data because any conclusions made utilizing only two samples 1 year apart would be pure conjecture. The important point is that measurable quantities of potentially hazardous substances were found in the bottom material.

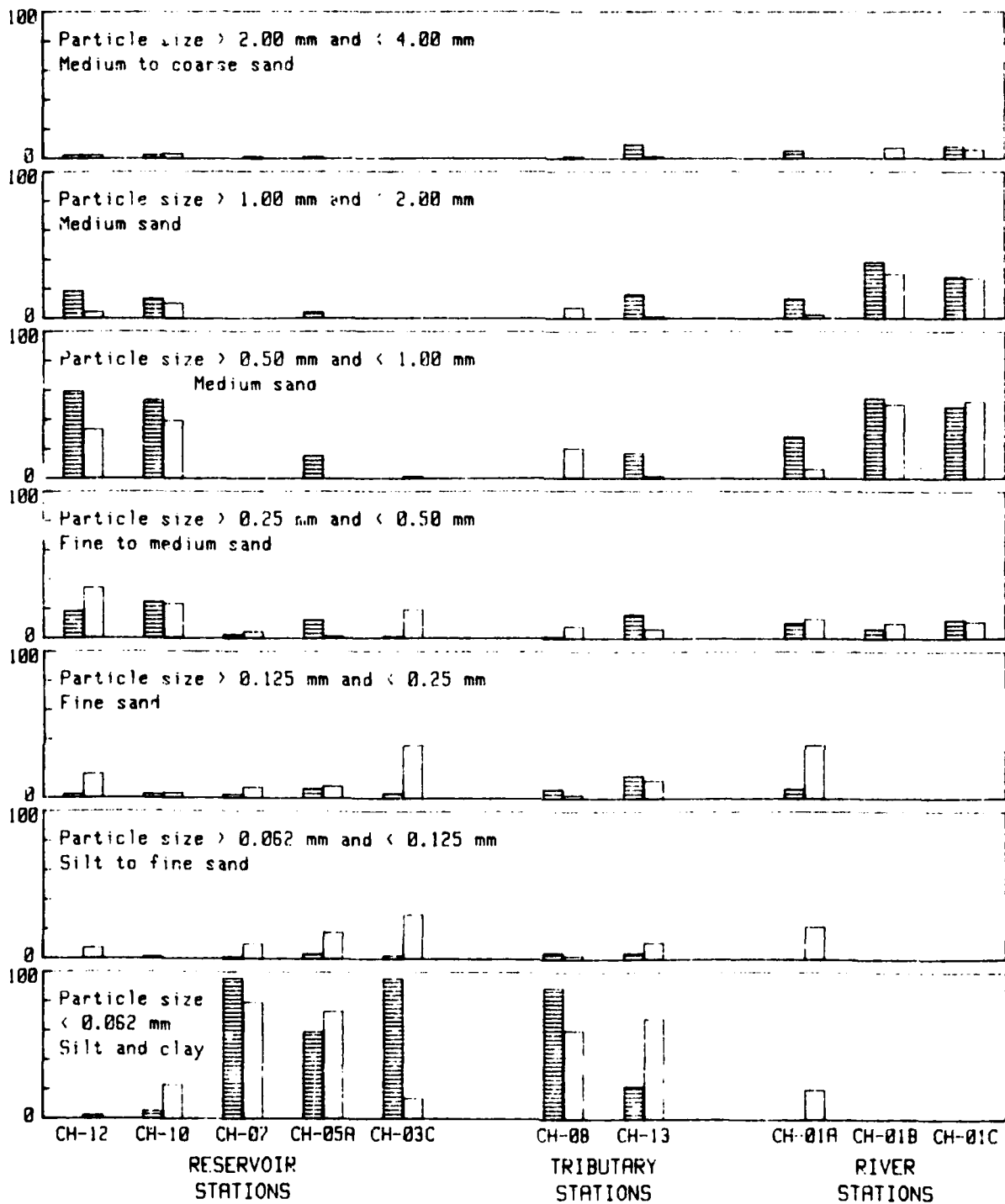
Fish Tissue Quality

The major sources of chlorinated hydrocarbons and trace metals in water are runoff from treated lands, industrial discharges, and domestic sewage. Contributions may also occur in fallout from atmospheric drift and in precipitation.

Chlorinated hydrocarbons and trace elements in the water commonly reach reservoirs in concentrations nonlethal to aquatic organisms (National Academy of Sciences, 1974). These substances have a low water solubility that favors their rapid sorption on suspended and bottom materials and their affinity to plant and animal lipids. In reservoirs, bottom materials apparently act as a sink from which these substances are released into the water according to the solubility of the compound, the concentration in the bottom material, and the type of bottom material. Therefore, accumulation of these contaminants in bottom material may lead to toxicity to aquatic organisms or bioaccumulation within the food chain. For example, concentrations of these contaminants in water below the practical limits of detection have resulted in unacceptable residues in fish for human consumption and have affected reproduction and survival of aquatic organisms.

All of the chlorinated hydrocarbons are subject to metabolic and non-metabolic degradation in the environment. Specific compounds, however, vary widely in their rate of degradation, and some form degradation products that

BOTTOM MATERIAL PARTICLE SIZE, IN PERCENT



EXPLANATION



AUGUST 1978



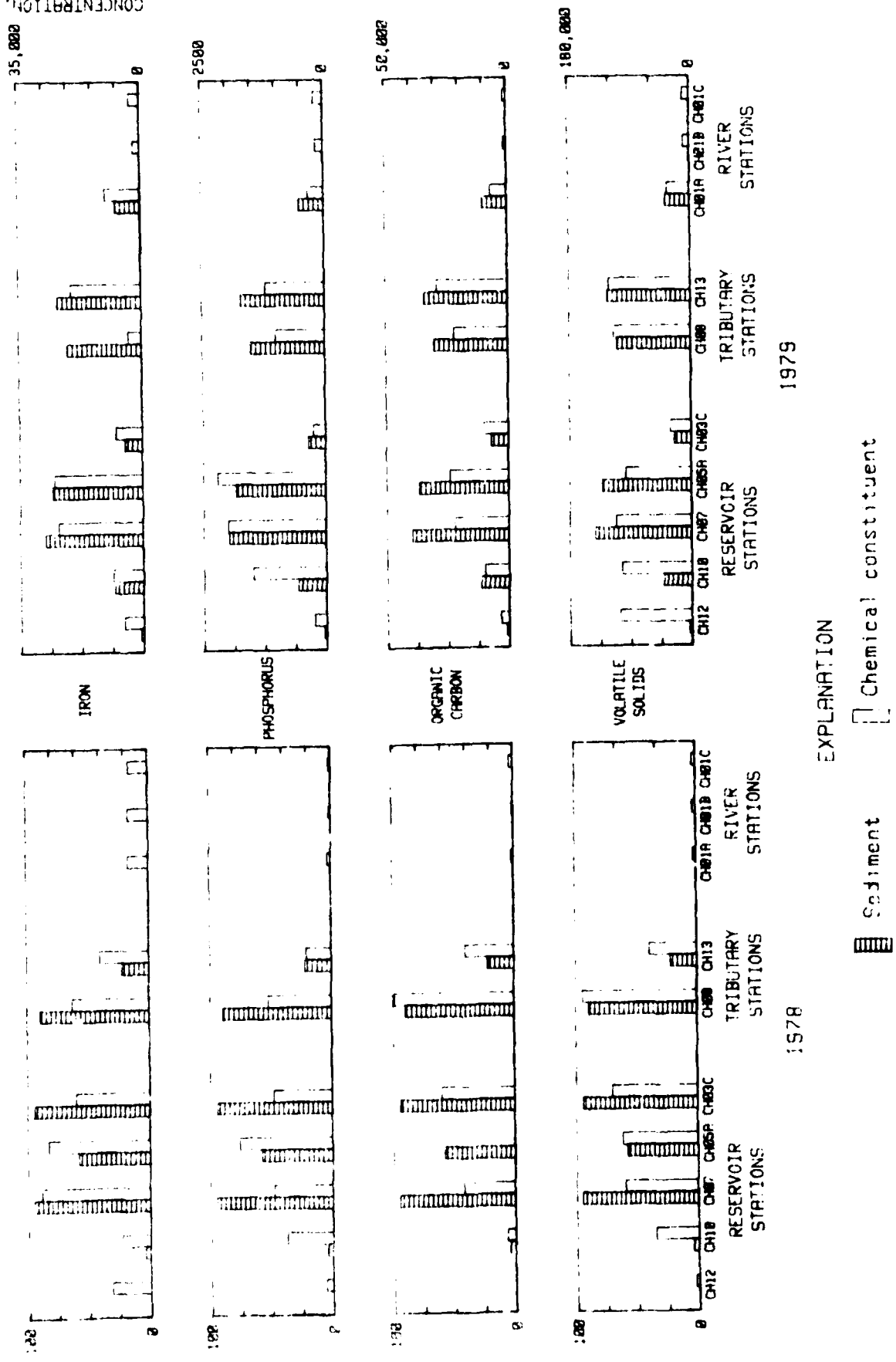
AUGUST 1979

FIGURE 44.—Particle-size distributions of bottom material in and below West Point Reservoir, 1978 and 1979.

PERCENTAGE OF BOTTOM MATERIAL LESS THAN 2.00 MILLIMETER IN DIAMETER

CONCENTRATION, IN MICROGRAMS PER KILOGRAM

CONCENTRATION, IN MILLIGRAMS PER KILOGRAM



1978

1979

EXPLANATION



-  Sediment
-  Chemical constituent

FIGURE 45.--Comparison of the percentage of silt and clay in bottom material to the concentration of iron, phosphorus, organic carbon, and volatile solids in bottom material from West Point Reservoir.

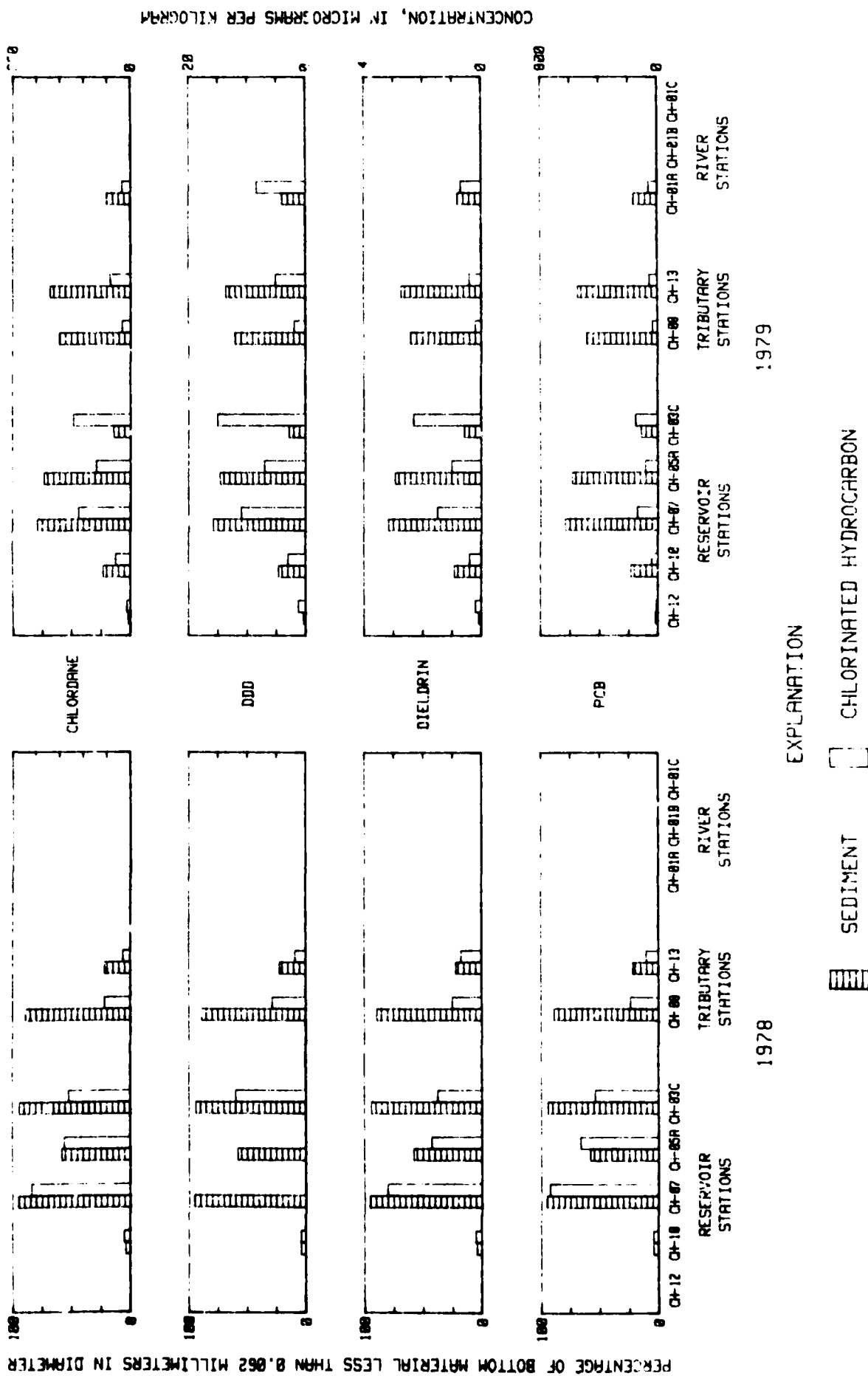


FIGURE 46.--Comparison of the percentage of silt and clay in bottom material to the concentrations of selected hydrocarbons in and downstream from West Point Reservoir.

may be both persistent and toxic. Chlorinated hydrocarbons are extremely stable, degrading slowly or forming persistent degradation products. Aquatic organisms may accumulate these compounds directly by absorption from water or by consumption of contaminated food organisms (National Academy of Sciences, 1974).

In order to document and substantiate contaminant residue bioaccumulation in West Point Reservoir, whole and fillet (1979 only) fish tissue samples from two tributary reservoir sites were analyzed for a select number of chlorinated hydrocarbons and trace metals in 1978 and 1979. Results of the fish tissue analyses for these select substances which form persistent and toxic residues in the environment are presented in Appendix F.

Most of the of tissue samples contained measurable amounts of chlorinated hydrocarbons and trace metals. PCB's (polychlorinated biphenyls), chlordane, and DDT are especially notable because of their concern to human health.

PCB's, which were found in high concentrations (3,800 ug/kg), are highly persistent and can accumulate in the environment. The National Academy of Sciences (1974) recommends that aquatic organisms should be protected so that the maximum residues in general body tissues will not exceed 500 ug/kg. Using this criterion, several whole fish samples from West Point Reservoir contained concentrations far exceeding this maximum recommended concentration (Appendix F).

The cyclodiene pesticides (chlordane, dieldrin, endrin, aldrin, heptachlor, and heptachlor epoxide) present the greatest hazards of all residual pesticides. (Refer to Appendix F for ranges of concentrations in West Point Reservoir fish tissue.) These substances are highly persistent biologically and readily accumulate in the lipids of terrestrial and aquatic organisms. Even at low dosages, they are highly active carcinogens and affect the central nervous system of man and higher animals, leading to irreversible changes in encephalographic and behavioral patterns (National Research Council, 1977).

DDT and its degradation products are of moderately acute toxicity to man and most organisms. However, low water solubility, high lipid solubility, and subsequent bioaccumulation make these substances extremely persistent in living organisms. The major concern about DDT and its derivatives, therefore, is not their acute toxicity, but their long-term chronic effects. DDT and its degradation products are still present (1978-79) in measurable amounts (<0.1 to 49 ug/kg) in fish tissue samples in West Point Reservoir, even though DDT was banned in the United States on January 1, 1973.

The selected trace metals were not present in high concentrations. However, the need exists for expanded monitoring of trace metals through the food chain up to and including man.

The result of fish tissue analyses during 1978 should not be compared with those during 1979 because of the differences in sampling between 1978 and 1979. The apparent discrepancies in the PCB data collected in 1978 and 1979 are, in part, due to the fact that slightly larger fish were collected in 1978 than in 1979. When dealing with small specimens (young-of-the-year), at least 30 to 100 specimens having a minimum total weight of 10g are needed to obtain reliable results. The important point, however, is that

measurable concentrations of potentially hazardous chlorinated hydrocarbons were found in whole and fillet fish samples of specimens that were substantially smaller than the minimum size permitted for legal possession. If legal or larger than legal sized fish had been collected, it is probable that greater concentrations of these hazardous substances would have been found in the tissues.

Water-Quality Criteria

An important objective of the study was to define and evaluate water-quality environmental problems in and immediately downstream from West Point Reservoir. Significant water-quality problems were evaluated in terms of State of Georgia water-quality standards and criteria recommended by the U.S. Environmental Protection Agency (table 10).

The distinction between criteria and standards is important because the words are not interchangeable, nor are they synonyms for such commonly used terms as objectives or goals. The National Technical Advisory Committee (1968, p. vii) on water-quality criteria gave the following definitions:

Standard - "a plan that is established by government authority as a program for water pollution prevention and abatement."

Criteria - "scientific requirements on which a decision or judgment may be based concerning the suitability of water quality to support a designated use."

Criteria are meant, therefore, only as guidelines to be used in conjunction with a thorough knowledge of local conditions. Realistic standards are dependent on criteria, designated uses, and implementation, as well as identification of problems and monitoring procedures.

The standards adopted by the State of Georgia include water-use classifications, criteria necessary to support these uses, and a plan for implementation and enforcement. The objectives and intent of the State of Georgia in establishing water-quality standards are to provide enhancement of water quality and prevention of pollution; to protect public health in accordance with the public interest for drinking-water supplies; conservation of fish, game, and other beneficial aquatic life; and agricultural, industrial, recreational, and other beneficial uses.

Because the State of Georgia drinking-water standards are not appreciably different from the other water-use classifications of aquatic life, fishing, and recreation, compliance and(or) violations are discussed only with reference to drinking-water standards. On the other hand, recommended criteria made to the U.S. Environmental Protection Agency (1976) by the National Academy of Sciences are quite different from each water-use classification (table 10).

At present, the section of the Chattahoochee River encompassed by the West Point Reservoir study is under three separate classifications (Georgia Department of Natural Resources, 1980):

- (1) Franklin, Ga. (station CH-12), downstream to the confluence with New River is classified for fishing and aquatic life;
- (2) The confluence with New River downstream to West Point Dam is classified for recreation;
- (3) West Point Dam downstream to the West Point, Ga., water intake is classified for drinking; and

Table 10. Water quality standards and recommended criteria applicable to West Point Reservoir and the Chattahoochee River downstream from West Point Dam

[Standards and recommended criteria listed as maximum concentrations in milligrams per liter, except as indicated. <, less than; >, greater than]

	Recommended criteria			Standards
	Federal			State (Georgia) ¹
	Public water supply	Aquatic life	Recreation	
Water temperature (°C)	None	² Variable	³ Not <15.0 or >29.5	⁴ 3:
pH (units)	² Not <5.0 or >9.0	² Not <6.5 or >9.0	³ Not <6.5 or >8.3	⁴ not <6.0 or >8.5
Dissolved oxygen	None	⁴ Not <5.0	None	⁴ Not <5.0 (daily mean) ⁴ Not <4.0 (individual sample)
Residue, nonfilterable, total	do.	Not >10 percent reduction in the seasonal norm of the compensation point ²	do.	No standard
Residue, filterable,	³ 500	None	do.	Do.
Alkalinity	⁵ Not <30 or >500	² 20	do.	Do.
Carbon dioxide, free	None	³ 60	do.	Do.
Sulfate, dissolved	² 250	None	do.	Do.
Sulfur sulfide, total	None	² 0.002 undissociated H ₂ S	do.	Do.
Phosphorus, orthophosphate, dissolved	do.	None	do.	Do.
Nitrogen, nitrate, total	² 10	do.	do.	Do.
Nitrogen, ammonia, total	³ 0.5	² 0.02 undissociated NH ₃	do.	Do.
Iron, dissolved	² 0.3	² 1.0	do.	Do.
Manganese, dissolved	² 0.05	² 0.01	do.	Do.
Zinc, total	² 5.0	0.01 of the 96 hr LC50 using bioassay of sensitive organisms	do.	Do.
Color (platinum-cobalt units)	² 75	Not >10 percent reduction in the seasonal norm of the compensation point ²	do.	Do.
Turbidity (nephelometric turbidity units)	None	do.	do.	Do.
Bacteria	³ 2,000 colonies/mL	None	Log mean >200/mL per month or 10 percent samples with >400 mL per month	⁶ Variable

1 State of Georgia standards apply to public water supply, aquatic life, and recreational categories of water.

2 U.S. Environmental Protection Agency, 1976b.

3 National Academy of Sciences, 1974.

4 Georgia Department of Natural Resources, 1977.

5 National Technical Advisory Committee, 1968.

6 The State of Georgia water quality standards for bacteria for the water-use classifications are as follows:
 Drinking water supplies - Fecal coliforms are not to exceed a geometric mean of 1,000 per 100 mL based on at least four samples taken over a 30-day period and not to exceed 4,000 per mL in more than 5 percent of samples in any 90-day period.
 Recreation - Should water quality studies show that natural fecal coliform levels exceed a geometric mean of 200 per 100 mL, mean fecal coliform level shall not exceed 300 per 100 mL in lakes and reservoirs and 500 per 100 mL in free-flowing freshwater streams and rivers.
 Fishing - Fecal coliforms should not exceed a geometric mean of 1,000 per 100 mL based on at least four samples taken over a 30-day period and not exceed a maximum of 4,000 per 100 mL.

(4) The West Point, Ga., water intake downstream to Langdale, Ala., is classified for fishing and aquatic life. Even though sections of West Point Reservoir and the Chattahoochee River in the study area are not classified for public water supply, the following discussion of whether chemical and biological concentrations exceed the limits of water-quality standards is in relation to drinking-water standards. This is a realistic approach because municipal water users withdraw at various locations from Franklin, Ga., downstream to Langdale, Ala.

Most of the parameters listed in table 10 were not present in concentrations considered serious in terms of water-quality standards and(or) criteria. Certain parameters, however, are worthy of mention.

Perhaps the most serious concern was the drastically lowered dissolved-oxygen concentrations during periods of thermal stratification. Water-quality data show severe hypolimnetic oxygen deficiency in the reservoir from stations CH-10 to CH-03C after thermal stratification was established in the spring of 1978 and 1979. This environment favored:

- (1) Increase of free carbon dioxide,
- (2) Reduction of nitrogen compounds to ammonium,
- (3) Reduction of dissolved sulfate to hydrogen sulfide, and
- (4) Solubilization of heavy metals.

Although drinking-water standards and recommendations for aquatic life and recreation do not realistically hold for the hypolimnion of stratified reservoirs, they offer guidelines for the prevention of potentially serious problems downstream from the reservoir. For example, during periods of severe hypolimnetic anoxia, the release water from West Point Reservoir consistently did not meet water-quality standards for dissolved-oxygen concentrations at the data-collection stations immediately below the reservoir (fig. 23). During maximum daily release periods of 1978 and 1979 at these stations, dissolved-oxygen concentrations ranged from 2.0 to 6.3 mg/L, with a mean of 3.8 mg/L. The State of Georgia requires a minimum concentration of 4 mg/L at all times to meet water-quality standards.

Georgia State standards for pH were not always attained in the reservoir and in the river downstream from West Point Dam. Epilimnetic pH values in the reservoir measured greater than 8.5 on several occasions. High pH values were intermittent, of short duration, and associated with phytoplankton-photosynthetic activity. Even though such occurrences were technical violations, they need not be viewed as indicators of a water-quality problem except as an indication of potential eutrophication. In the river downstream from West Point Dam, pH standards were not met during both high and low flows at all times of the year. The standards were most frequently not met in the summer when anoxic hypolimnetic waters were released from the reservoir during maximum daily release periods. The occurrences of low pH in the hypolimnion during the summer are an indirect problem associated with a reducing environment and solubilization of metals. During these conditions of low pH, the potential exists for an increase in the toxicity of the water due to increases in the concentrations of certain metals or metallo-organic complexes.

At present (1980), there are not standards for nonfilterable residue. However, "for a high level of protection," it is recommended that aquatic life not be subjected to concentrations greater than 25 mg/L (National Academy of Sciences, 1974). High concentrations of nonfilterable residue can interfere with fish production and respiration by covering eggs and gill

structures (National Academy of Sciences, 1974). During intense storm activity and subsequent surface runoff, nonfilterable residues above the recommended level were found in the reservoir.

The development of reducing conditions in the hypolimnion after thermal stratification resulted in solubilization of iron and manganese to concentrations that were at times over 50 times greater than the Federal criteria of 0.3 mg/L for dissolved iron and over 100 times greater than the Federal criteria of 0.05 mg/L for dissolved manganese.

Data for metals in the Chattahoochee River downstream from West Point Dam clearly illustrate the influence of hypolimnetic release on downstream water quality. During periods of thermal stratification, the release water from West Point Reservoir consistently did not meet Federal water-quality criteria for iron and manganese concentrations at the data-collection stations immediately below the reservoir. On the other hand, post-mixing releases during unstratified periods rarely exceeded maximum allowable dissolved trace metals concentrations.

Bacteriological data were inadequate to evaluate reservoir and downstream water quality in terms of State standards. For example, the State standard (table 10) requires a minimum of four fecal coliform samples per 30 days for proper evaluation. Sampling frequency during the study was too infrequent to meet this requirement. Also, in the reservoir samples for fecal streptococci analyses were collected instead of the specified fecal coliform samples.

SUMMARY AND CONCLUSIONS

Water-quality, bottom-material, and fish-tissue samples were collected from West Point Reservoir to determine whether water-quality problems have resulted subsequent to impoundment. Water-quality and bottom-material samples were also collected in the Chattahoochee River downstream from the dam to determine the impact of impoundment on river-quality conditions during thermally stratified and unstratified periods.

Significant concentrations of total iron, total manganese, total phosphorus, total organic carbon, and volatile solids in bottom material occurred in the lentic section of the reservoir and at the tributary stations, where silts and clays constitute most of the bottom material. PCB's and chlordane concentrations in the bottom material were also relatively high in this section of the reservoir.

Young bullhead catfish and largemouth bass tissue samples analyzed for chlorinated hydrocarbons showed significant amounts of chlordane and PCB's in whole fish and fillet samples. Concentrations in several of the whole fish samples far exceeded the maximum recommended limit of 500 ug/kg. It is important to note, however, that these samples were from fish substantially smaller than the minimum-size permitted for legal possession.

The lentic section of the reservoir showed the greatest biological activity in terms of plankton standing stock, adenosine triphosphate concentration, and chlorophyll production. The dominant plankton groups, in terms of numbers per unit volume, were blue-green algae and rotifers.

Algal growth potential assay data showed that the availability of nutrients decreased in response to increases in phytoplankton concentrations from the upper to the lower reaches of the reservoir. For example, the maximum algal growth potential value was obtained at the uppermost data-collection station at Franklin, Ga., whereas the minimum value was recorded at the dam pool station. The "Algal Assay Procedure: Bottle Test" identified nitrogen as the primary growth limiting nutrient in the lotic section and phosphorus as the primary growth limiting nutrient in the lentic section during stratified periods. Also phosphorus addition in the presence of excess nitrogen appeared to support growth to its maximum. Even though the AGP assay identified nitrogen as the limiting nutrient in the lotic section, light limitation and relatively rapid water movement are probably the primary causes for limited algal biomass in this section of the reservoir.

Water-quality data show that severe hypolimnetic oxygen deficiency developed in the reservoir after thermal stratification was established in the spring of both 1978 and 1979. This environment favored the release of iron, manganese, phosphorus, and other constituents from the sediments.

During periods of thermal stratification, the release water from West Point Reservoir consistently exceeded the limits of water-quality standards and(or) criteria for iron, manganese, and dissolved-oxygen concentrations at the data-collection stations immediately downstream from the reservoir. The primary influence of the reservoir on downstream river water quality could be attributed to seasonal changes in the chemical nature of the water column at the dam pool, resulting from thermal stratification and dissolved-oxygen depletion.

Physical and chemical differences between minimum and maximum daily release water were, for the most part, negligible because the difference in altitude of the intakes for the main and service turbines is only 1.52 m. Most of the differences that were found resulted from physical and chemical changes of the water occurring immediately after release from the reservoir.

RECOMMENDATIONS

This report provides a data base from which future water-quality investigations of West Point Reservoir and other reservoirs in the Southeastern United States can draw historical information. Water-quality monitoring in the reservoir may need to be continued and expanded to ensure compliance with all aspects of multi-use water-quality criteria. The following are some suggested subjects of study for future consideration:

I. Toxic Substances

The need to manage toxic substances in water supplies has been designated by the U.S. Environmental Protection Agency as a priority in achieving National water-quality goals. Environmental pollutants (toxic, potentially carcinogenic, ecologically damaging) have been the subject of major legislation in the 1972 amendment to the Federal Water Pollution Control Act (PL 92-500), the Safe Drinking Water Act of 1974 (PL 93-523), and the Toxic Substances Control Act (PL 94-469). These laws establish the need for extensive measurements to determine the presence and concentrations of a broad variety of compounds.

Many of these toxic substances have a low water solubility, which favors their rapid sorption on suspended or sedimented materials after introduction to receiving water. In streams, these contaminants are in continuous transport on suspended particulate material or on bottom materials. Major receiving basins and especially reservoirs may accumulate substantial amounts of contaminants. Accumulation of these contaminants in bottom materials may lead to toxicity to aquatic organisms or bioaccumulation within the food chain. Determining their fate in the aquatic environment will be important because these processes may affect human health.

Future studies could emphasize the collection and analysis of suspended-sediment, bottom-material, and biological samples to determine the areal extent and fate of naturally occurring or manmade toxic substances in West Point Reservoir. The objectives of such a study would be to determine the presence, inflow contributions, distribution, and ecological significance of environmental pollutants which could present a health hazard to humans.

II. Constituent Loading and Discharge Rates

Accelerated eutrophication in West Point Reservoir is largely attributable to the activities of man and could have significant deleterious effects on the beneficial uses of the reservoir. The chemical composition of the Chattahoochee River undergoes significant changes during impoundment. The changes which are observed in the out-flow at the dam are attributed to a variety of factors that are related to the action or an interaction of regulated inflow and outflow, thermal stratification, mixing, biological, and microbiological activities.

The relation between nutrient loads and subsequent changes in reservoir water quality needs to be understood and quantified so that water-quality management approaches can be properly evaluated. J. B. McConnell (U.S. Geological Survey, written commun., 1981) states that "data recently collected on the West Point Project will provide information that is needed to help understand eutrophication processes, but will not provide information needed to quantify nutrient load-reservoir response relations; information that will ultimately be needed to evaluate water-quality management approaches."

The objectives of a future study would be to accurately assess seasonal and annual nonpoint transport, loading, and discharge rates for West Point Reservoir. This information would be essential input to nutrient load-reservoir response models that could provide evaluation of various water-quality management alternatives.

III. Community Metabolism

West Point Reservoir must be considered a dynamic trophic system in which flow and constituent loading interact with thermal stratification and community metabolism to alter the water chemistry within the reservoir and the water chemistry of the outflow. Many of the chemical changes are a result of community metabolism, therefore a better understanding of the ecology of naturally occurring populations throughout the various trophic levels is important.

If community metabolism is dependent on various abiotic and biotic factors, can trophic models based solely on nutrient loading adequately describe the potential trophic response? If predicted nutrient responses never materialize, what factor(s) are controlling community metabolism? These are questions which make knowledge of the naturally occurring biological processes and responses important in proper reservoir management strategies.

Future studies could include:

- (1) delineation of seasonal, spatial, and annual abiotic and biotic growth limiting factors (light, temperature, flow, turbidity, nutrients, trace elements, grazing, and possible toxins)
- (2) microbial ecology (composition, function, and processes)
- (3) delineation of seasonal, spatial, and annual rates of productivity
- (4) delineation of seasonal and spatial succession, composition, and distribution of primary and secondary plankton communities.

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GLOSSARY OF SELECTED TERMS

Alga, algae (n.), algal (adj.). Simple, chlorophyll-containing photosynthetic organisms.

Aliquot (n., adj.). A known exact part of a whole sample.

Allochthonous (adj.). Formed elsewhere than in the region where found.

Anaerobic (adj.). Living in or pertaining to the absence of free oxygen.

Anoxia (n.), anoxic (adj.). An abnormally low or absence of free oxygen.

Autochthonous (adj.). Pertaining to an indigenous origin within the reservoir.

Autotroph (n.), autotrophic (adj.). Microorganisms capable of utilizing inorganic materials as a source of food.

Benthos (n.), benthic (adj.). The community of organisms living in or on the bottom of an aquatic ecosystem.

Biomass (n.). The weight of living matter present in a unit area or volume at a given time.

Bottom material (n.). Lake or river bottom substance, usually consisting of varying amounts and combinations of inorganic and organic material.

Compensation point (n.). The point in a column of water at which oxygen production by photosynthesis balances oxygen uptake by respiration of plants and animals. The compensation point is the lower limit of the euphotic zone.

Ecology (n.), ecological (adj.). The science or study of the relation of organisms or groups of organisms to their environment.

Ecosystem (n.). A system formed by the interaction of a group of living organisms with their environment involving the exchange of matter and energy.

Ecotone (n.). The transition zone between two different communities.

Endemic (adj.). An organism peculiar to a particular locality.

Enrichment (n.). Addition or accumulation of plant nutrients within a body of water.

Enteric (adj.). Pertaining to the intestinal tract.

Epilimnion (n.). The upper, relatively warm, circulating zone of water in a thermally stratified lake. The layer of water above the thermocline.

Euphotic zone (n.). That region in a body of water in which the light is sufficient for photosynthesis; commonly considered to be that part of a water body in which the intensity of underwater light equals or exceeds 1 percent of the intensity of surface light.

GLOSSARY OF SELECTED TERMS--Continued

- Eutrophication (n.), eutrophic (adj.). The natural process of enrichment and aging of a body of water that may be accelerated by the activities of man.
- Eutrophic water (n.). Water with a good supply of nutrients. This water may support rich organic production such as algal blooms.
- Heterotroph (n.), heterotrophic (adj.). Organisms involved in the utilization of complex organic materials as a source of food.
- Hypolimnion (n.). The lower, relatively cold, noncirculating water zone in a thermally stratified lake. The layer of water below the thermocline.
- Igneous (adj.). Rocks produced under conditions involving intense heat.
- Isopleth (n.). A line drawn through all points having the same numerical value.
- Lacustrine (adj.). Pertaining to lakelike features.
- Lentic (adj.). Pertaining to or living in still water.
- Limnetic (adj.). Pertaining to or living in the open water of a lake or reservoir.
- Limnology (n.), limnological (adj.). The science or study of the physical, chemical, and biological aspects of inland water.
- Loading (n.). The amount of a given substance or type of material discharged or otherwise entering a body of water in a given unit of time.
- Lotic (adj.). Pertaining to or living in flowing water.
- Mesoeutrophic water (n.). Water that is moderately enriched and moderately productive biologically.
- Metalimnion (n.). The middle layer of water in a thermally stratified body of water in which temperature decreases rapidly with depth.
- Metamorphic (adj.). Rocks exhibiting structural change or metamorphism.
- Monomictic (adj.). A body of water having only one period of free circulation.
- NGVD of 1929 (National Geodetic Vertical Datum of 1929) (n.). A geodetic datum derived from a general adjustment of the first-order level nets of both the United States and Canada. It was formerly called Sea Level Datum of 1929 or mean sea level. Although the datum was derived from the average sea level over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, it does not necessarily represent local mean sea level at any particular place.
- Nutrient (n.). Any chemical element, ion, or compound that is required by an organism for the continuation of growth, reproduction, and other life processes. Trace nutrients are substances required by an organism in very small amounts.
- Oligotrophic water (n.). Water of low nutrient content that characteristically has little organic production.
- Oxidation (n.). The process in which oxygen is added to a substance or in which an element loses electrons.
- Peristaltic pump (n.). A pump which utilizes successive waves of contraction of hollow tubing to force liquids through the tubing. There is no contact between the liquid and the pump.
- Pathogenic (adj.). An organism causing or capable of causing disease.
- Penstocks (n.). A sluice or gate for regulating the flow of water.
- Photosynthesis (n.), photosynthetic (adj.). A process whereby autotrophic organisms utilize light as an energy source and convert chemical compounds to carbohydrates. In the process, carbon dioxide is utilized and oxygen is released.
- Primary production (n.). The weight of new organic material created by photosynthesis, or the energy it represents. Primary productivity is the rate of production.

GLOSSARY OF SELECTED TERMS--Continued

- Reduction (n.). The process in which oxygen is removed from a substance, or in which an element gains electrons.
- Respiration (n.). A life process in which carbon compounds are oxidized to carbon dioxide and water. The liberated energy is used in the metabolic processes of living organisms.
- Riverine (adj.). Relating to, formed by, living in, or resembling a river.
- Secondary production (n.). The weight of the heterotrophic component of an ecosystem.
- Sparte (n.). A sudden rush of freshwater into the reservoir resulting from a sudden and heavy rainstorm.
- Species richness (n.). Total number of species per sample.
- Standing stock (n.). An estimate of population densities.
- Secchi disc (n.). A circular metal plate, 20 centimeters in diameter, the upper surface of which is divided into four equal quadrants and so painted that two quadrants directly opposite each other are black and the intervening ones are white.
- Thermocline (n.). The plane of maximum rate of decrease in temperature in a water body.
- Trophic state (n.). The nutritional status of a water body (stage of eutrophication).
- Trophogenic zone (n.). The surficial layer of a water body in which organic production from mineral substances takes place on the basis of light energy.
- Tropholytic zone (n.). The deeper layer of a water body where organic decomposition predominates because of light deficiency.
- Turbid (adj.), turbidity (n.). The ability of materials suspended in water to reduce the penetration of light.
- Warm monomictic (adj.). Water bodies of warmer latitudes in which the water temperature never falls below 4°C. These water bodies are characterized by only one circulation period during winter and a stratification period during summer.

APPENDIX

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APPENDIX A

Inflow-outflow water discharge and water temperature data

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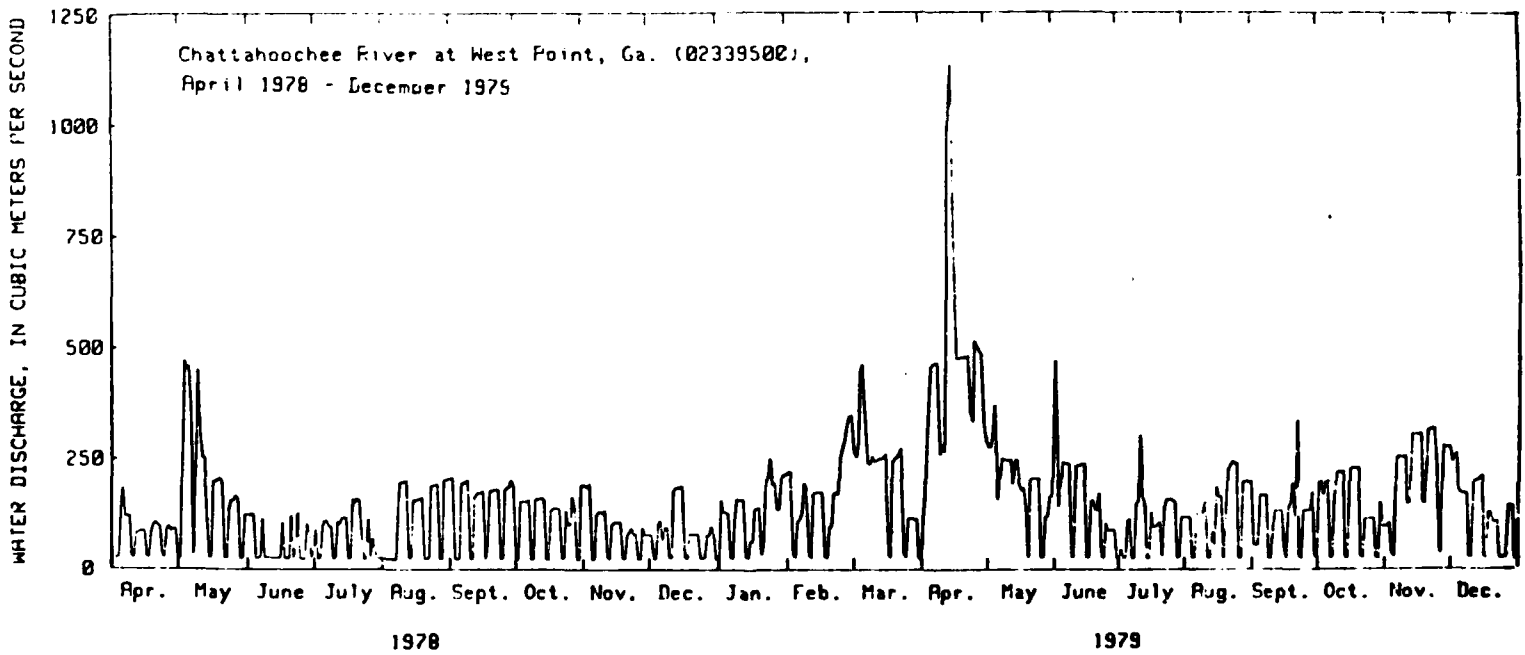
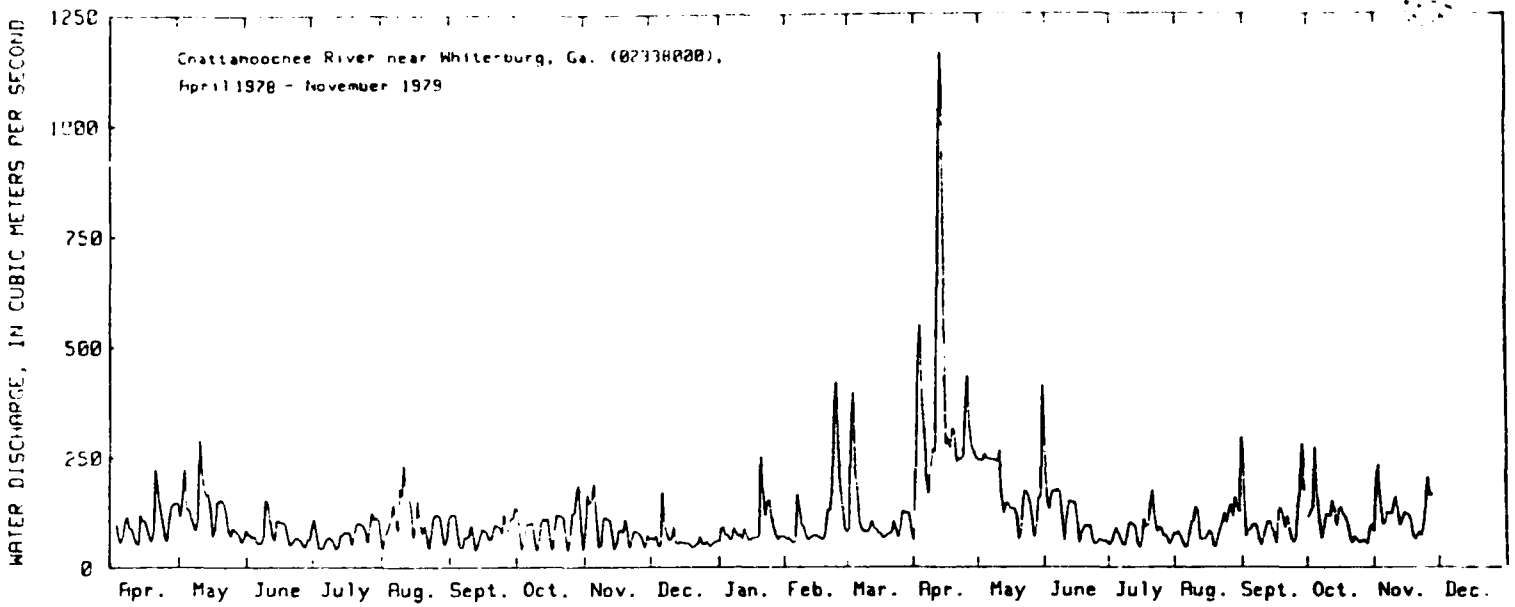
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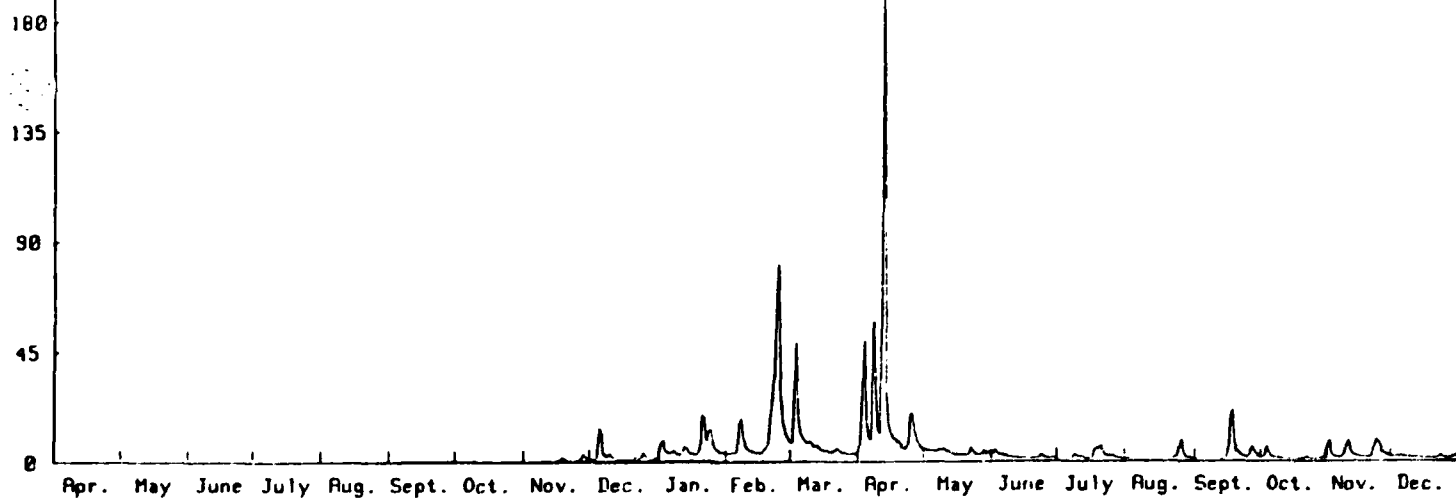
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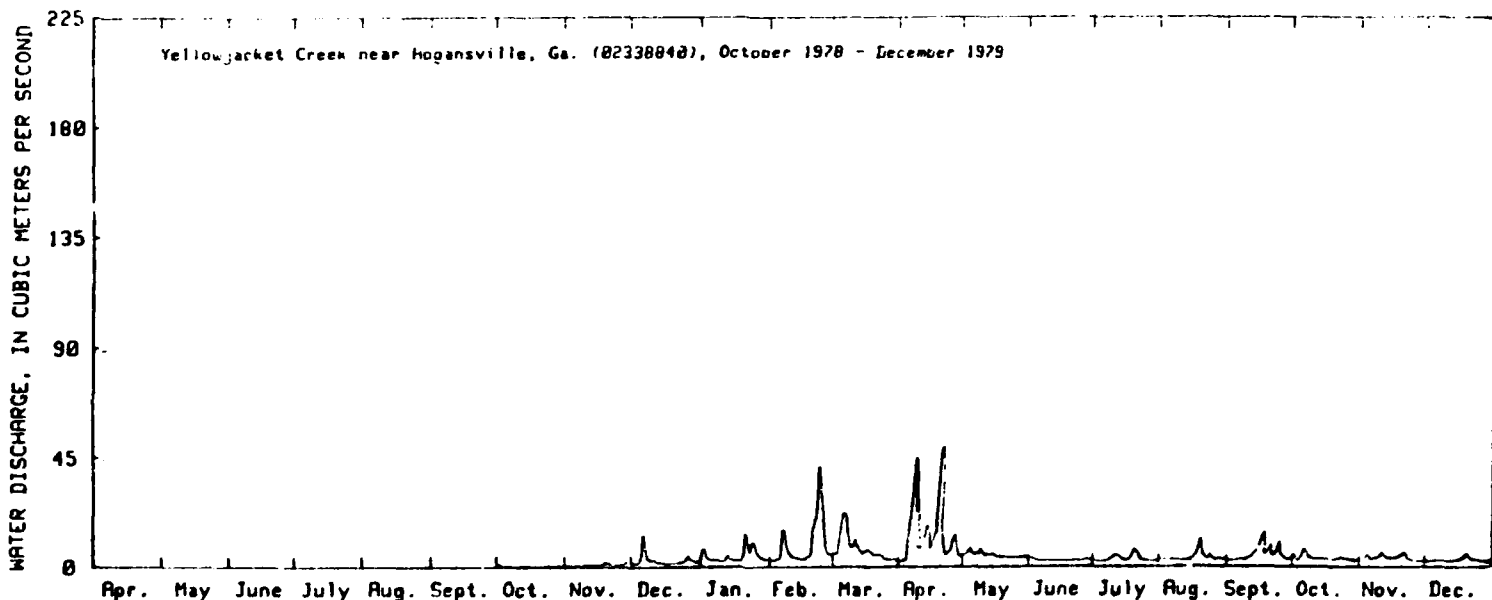


Water discharge of the Chattahoochee River at U.S. Geological Survey gaging stations above and below West Point Reservoir, 1978-79.

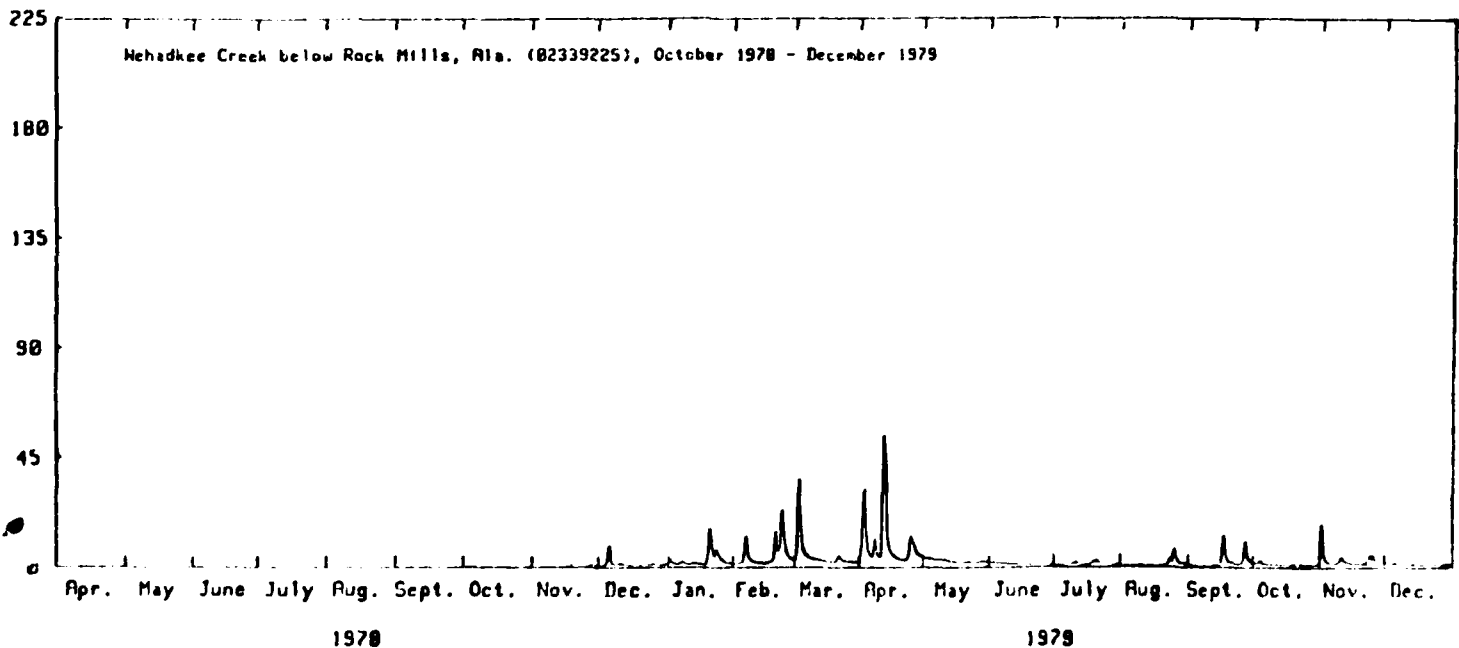
New River near Conit, Ga. (0238442), October 1978 - December 1979



Yellowjacket Creek near Hogansville, Ga. (02338040), October 1978 - December 1979



Neahadkee Creek below Rock Mills, Ala. (02339225), October 1978 - December 1979



Water discharge of selected tributaries at U.S. Geological Survey gaging stations around West Point Reservoir, 1978-79.

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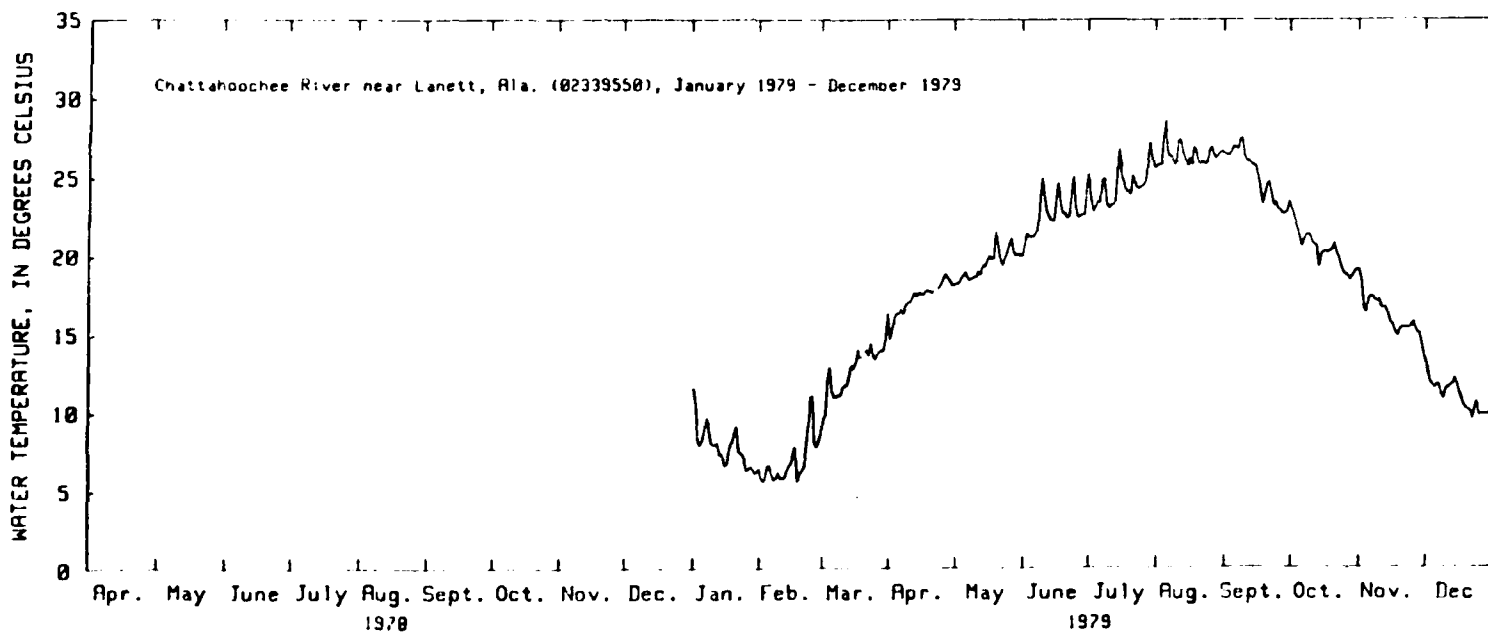
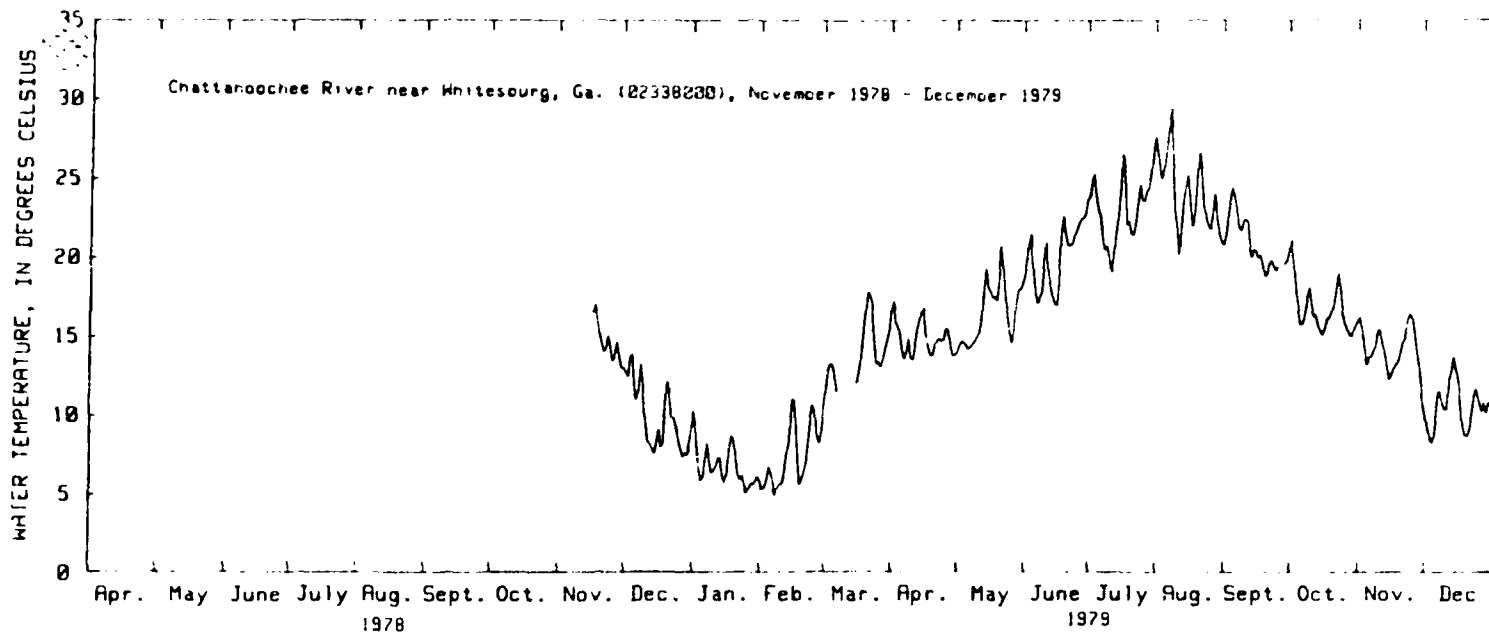
Water temperature at U.S. Geological Survey gaging stations
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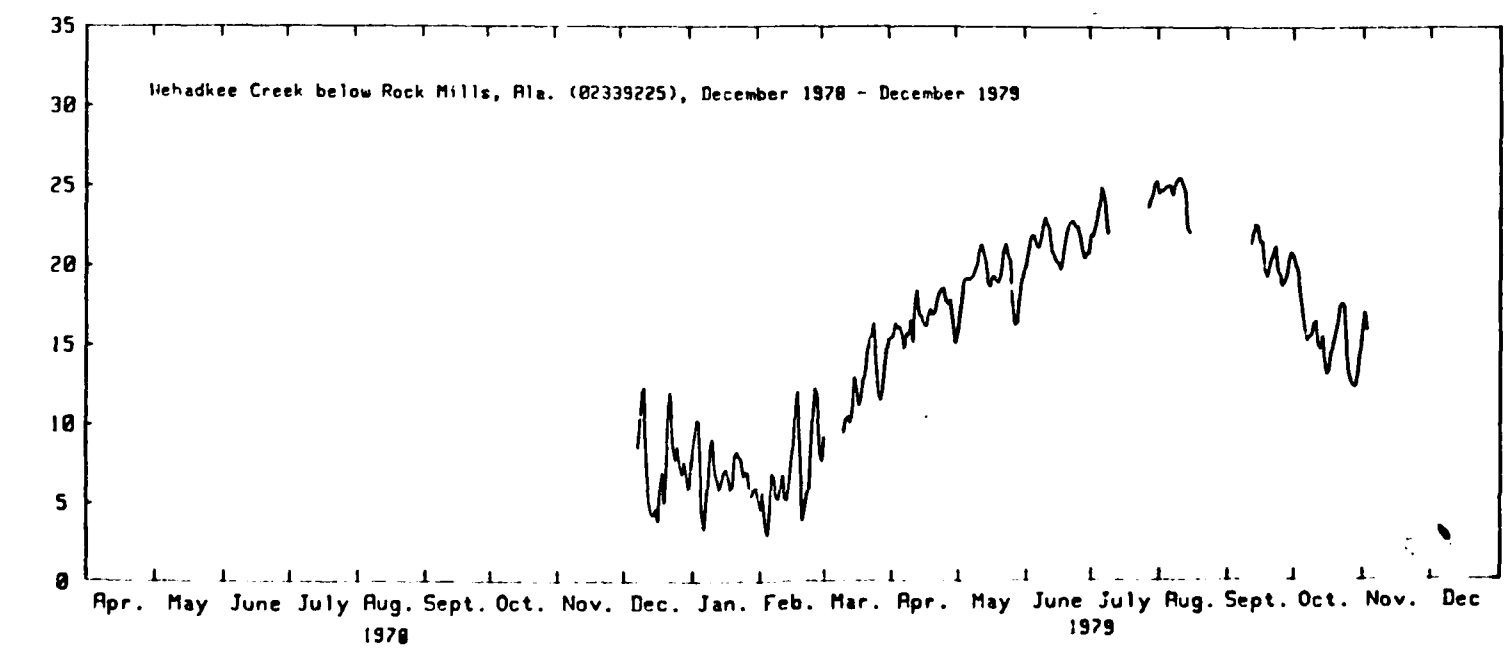
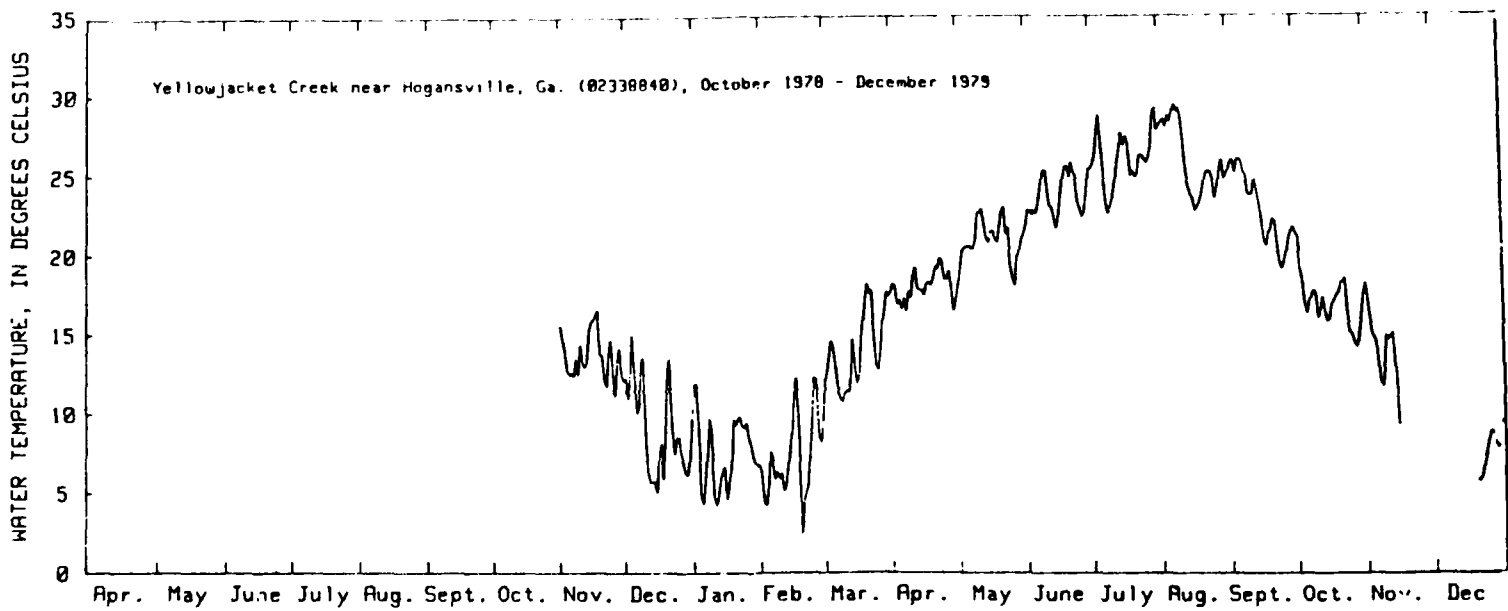
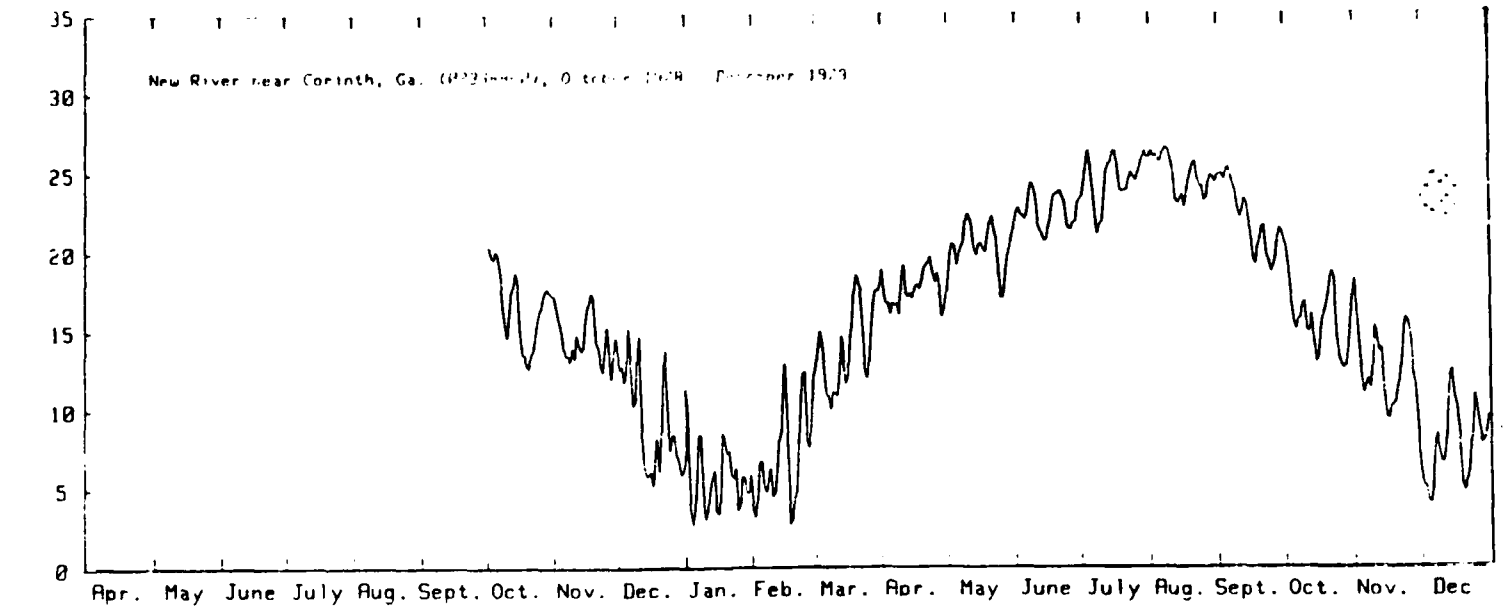
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Graphs showing water temperature at U.S. Geological Survey gaging stations
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Water temperature of the Chattahoochee River at U.S. Geological Survey gaging stations above and below West Point Reservoir, 1978-79.



Water temperature of selected tributaries at U.S. Geological Survey gaging stations around West Point Reservoir, 1978-79.

APPENDIX B

Summary of the physical, chemical, and biological data

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APPENDIX B-1

Explanation of summary data tables

The values have been calculated with respect to annual stratification cycles (stratified versus unstratified, above and below the thermocline); changing flow conditions in the Chattahoochee River below West Point Dam (maximum versus minimum daily release); and depth weighted. Mean values are given only to illustrate temporal and longitudinal trends. Obviously, seasonal perturbations and anomalies are masked by mean values.

The water column above and below the thermocline at the reservoir sites was determined by examining temperature and dissolved-oxygen profiles for all 17 data-collection trips. Approximate thermocline depths (See following table.) were inferred as the inflection points of the corresponding temperature profiles. In cases where temperature profiles alone did not provide sufficient information, approximate thermocline locations were taken as those depths of greatest metalimnetic oxygen depletion rate. Because each data-collection station in the reservoir was characterized by unique temporal and spatial stratification patterns, the following table is provided to aid the reader in defining the unstratified, 1978 stratified, and 1979 stratified periods for each station.

Approximate depth to the thermocline at stations in West Point Reservoir, April 1978-December 1979

[Depth to thermocline in meters. †, unstratified water column; *, station not established]

Data-collection periods	Main stem stations										Tributary stations			
	CH-12	CH-11A	CH-10	CH-07	CH-05A	CH-03A	CH-03B	CH-03C	CH-08	CH-04	CH-13			
April 9-18, 1978	†	*	†	6.5	5.0	†	†	4.5	7.5	*	7.5			
April 30-May 14	†	*	†	†	†	9.0	9.0	7.0	5.0	*	11.0			
May 30-June 6	†	*	4.5	3.5	3.5	3.5	3.5	3.5	4.5	*	3.5			
July 9-13	†	*	7.5	6.0	6.5	7.0	7.0	7.0	5.0	*	7.0			
August 13-18	†	*	2.5	4.0	7.0	1.0	9.0	8.5	4.5	*	9.0			
August 27-31	†	*	3.5	4.5	5.5	4.5	5.0	5.0	4.5	*	7.5			
October 16-19	†	*	†	†	†	†	†	†	†	*	†			
November 27-30	†	*	†	†	†	†	†	†	†	*	†			
March 19-22, 1979	†	†	†	†	†	†	†	†	9.0	†	†			
April 30-May 5	†	†	†	†	†	†	†	†	6.0	†	†			
June 11-15	†	†	†	7.5	6.5	11.5	11.0	12.0	9.5	3.0	13.0			
July 23-27	†	†	3.5	6.0	8.0	9.0	10.0	9.0	6.0	5.0	6.5			
August 20-24	†	†	3.5	3.0	9.0	11.0	11.0	10.5	7.0	5.0	9.0			
September 16-20	†	†	†	†	†	15.0	14.5	†	†	†	†			
October 14-17	†	†	†	†	†	†	†	†	†	†	†			
December 9-13	†	†	†	†	†	†	†	†	†	†	†			

APPENDIX B-2

Means and ranges of on-site physical and chemical measurements

[Water temperature, specific conductance, oxidation-reduction potential, dissolved oxygen, and pH]

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Means and ranges of on-site physical and chemical measurements at Chattahoochee River stations
in West Point Reservoir, April 1978-December 1979

[Stations in downstream order from Franklin, Ga., to West Point Dam. N, number of samples; +, station not established; U, above the thermocline; L, below the thermocline; T, entire water column; #, not applicable]

	Sampling station									
	CH-12			CH-11A			CH-10			
	N	Range	Mean	N	Range	Mean	N	Range	Mean	
<u>Unstratified periods</u>										
Water temperature (°C)----	T	9	6.5-20.5	15.3	25	11.8-20.7	16.9	82	6.2-23.9	16.4
Specific conductance (umhos/cm)-----	T	9	46-90	68	25	49-78	68	82	49-96	66
Oxidation-reduction potential (mV)-----	T	9	495-645	590	25	460-650	585	82	445-665	563
Dissolved oxygen (mg/L)---	T	9	6.9-11.2	8.5	25	5.3-9.3	7.5	82	2.6-11.4	7.8
pH (units)-----	T	9	6.2-6.8	6.4	25	5.8-6.5	6.1	82	5.5-8.4	6.1
<u>1978 stratified period</u>										
Water temperature (°C)----	U	5	18.7-28.9	23.6	+	+	+	17	25.0-29.5	27.6
	L	#	#	#	#	#	#	22	18.6-26.4	22.2
Specific conductance (umhos/cm)-----	U	5	63-96	75	+	+	+	17	57-104	82
	L	#	#	#	#	#	#	22	56-120	74
Oxidation-reduction potential (mV)-----	U	4	480-590	550	+	+	+	17	445-580	505
	L	#	#	#	#	#	#	22	155-580	515
Dissolved oxygen (mg/L)---	U	5	4.7-7.8	6.7	+	+	+	17	1.0-12.6	7.2
	L	#	#	#	#	#	#	22	.1-6.1	3.6
pH (units)-----	U	5	6.4-6.7	6.5	+	+	+	17	6.2-9.3	6.8
	L	#	#	#	#	#	#	22	6.0-7.0	6.3
<u>1979 stratified period</u>										
Water temperature (°C)----	U	3	23.3-26.8	25.4	20	23.7-28.5	26.2	6	25.8-30.2	27.7
	L	#	#	#	#	#	#	14	24.4-26.3	25.2
Specific conductance (umhos/cm)-----	U	3	67-97	78	20	71-82	76	6	70-83	75
	L	#	#	#	#	#	#	14	64-77	71
Oxidation-reduction potential (mV)-----	U	3	455-615	545	20	495-620	570	6	350-550	450
	L	#	#	#	#	#	#	14	415-600	520
Dissolved oxygen (mg/L)---	U	3	5.4-6.7	5.9	20	4.8-7.1	5.5	6	5.5-11.7	9.1
	L	#	#	#	#	#	#	14	2.1-5.0	3.7
pH (units)-----	U	3	6.3-6.8	6.5	20	6.1-6.8	6.4	6	6.9-9.2	7.3
	L	#	#	#	#	#	#	14	6.1-6.5	6.2

Means and ranges of on-site physical and chemical measurements at Chattahoochee River stations
in West Point Reservoir, April 1978-December 1979--Continued

[Stations in downstream order from Franklin, Ga., to West Point Dam. N, number of samples; +, station not established; U, above the thermocline; L, below the thermocline; T, entire water column; #, not applicable]

		Sampling station								
		CH-07			CH-05A			CH-03		
		N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>										
Water temperature (°C)---	T	72	6.7-23.8	15.2	84	6.6-24.4	16.1	82	6.8-25.4	16.7
Specific conductance (umhos/cm)-----	T	72	48-94	69	84	47-83	66	82	44-80	64
Oxidation-reduction potential (mV)-----	T	72	450-665	585	84	260-655	580	82	370-670	590
Dissolved oxygen (mg/L)---	T	72	5.4-12.6	7.5	84	.7-12.2	7.4	82	.7-11.2	6.9
pH (units)-----	T	72	5.5-8.1	6.2	84	5.6-8.0	6.2	82	5.4-7.8	6.1
<u>1978 stratified period</u>										
Water temperature (°C)---	U	22	19.5-30.5	26.3	24	19.5-29.8	26.8	30	17.4-30.4	25.7
	L	30	12.8-26.3	21.1	36	10.5-26.6	20.6	38	9.9-27.2	19.7
Specific conductance (umhos/cm)-----	U	22	57-102	77	24	64-77	71	30	56-72	65
	L	30	56-126	74	36	55-112	71	38	54-95	66
Oxidation-reduction potential (mV)-----	U	22	405-555	485	24	435-560	500	30	340-565	475
	L	30	100-640	535	36	290-650	580	38	235-620	515
Dissolved oxygen (mg/L)---	U	22	.9-13.4	8.0	24	.7-10.4	7.3	30	.1-13.0	6.8
	L	30	.1-5.3	3.1	36	.1-5.2	2.3	38	.1-9.3	2.3
pH (units)-----	U	22	6.1-9.4	6.7	24	5.9-9.1	6.6	30	6.1-9.8	6.7
	L	30	5.7-6.9	6.2	36	5.6-6.9	6.0	38	5.4-7.2	6.0
<u>1979 stratified period</u>										
Water temperature (°C)---	U	13	22.7-26.9	25.6	19	23.1-29.2	26.9	25	23.1-29.1	26.4
	L	18	19.3-27.3	24.2	17	17.9-25.6	21.9	15	19.8-24.9	21.9
Specific conductance (umhos/cm)-----	U	13	59-77	70	19	59-77	72	25	56-71	61
	L	18	60-77	72	17	58-92	71	15	58-102	77
Oxidation-reduction potential (mV)-----	U	13	370-600	545	19	425-595	485	25	425-560	490
	L	18	270-615	520	17	250-615	465	15	100-615	431
Dissolved oxygen (mg/L)---	U	13	4.7-9.7	7.0	19	1.5-9.2	6.0	25	.6-9.0	6.3
	L	18	.1-4.3	2.3	17	.1-2.8	.7	15	.1-3.3	.8
pH (units)-----	U	13	5.9-8.5	6.3	19	6.1-8.6	6.6	25	6.1-8.7	6.8
	L	18	5.6-6.4	5.9	17	5.6-6.2	5.8	15	5.4-7.4	5.9

Means and ranges of on-site physical and chemical measurements at tributary stations
in West Point Reservoir, April 1978-December 1979

[N, number of samples; +, station not established; U, above the thermocline;
L, below the thermocline; T, entire water column]

		Sampling station								
		Yellowjacket Creek			Wehadkee Creek					
		CH-08			CH-04			CH-13		
		N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>										
Water temperature (°C)---	T	42	6.2-24.1	15.3	39	6.0-24.5	16.1	75	6.3-24.5	15.9
Specific conductance (umhos/cm)-----	T	42	50-185	68	39	30-52	44	75	38-126	62
Oxidation-reduction potential (mV)-----	T	42	105-640	555	39	535-690	595	75	150-670	575
Dissolved oxygen (mg/L)---	T	42	.6-10.6	6.7	39	1.4-11.0	7.2	75	.1-11.2	6.8
pH (units)-----	T	42	6.0-7.0	6.4	39	5.4-7.2	6.1	75	5.4-8.2	6.2
<u>1978 stratified period</u>										
Water temperature (°C)---	U	28	13.2-30.6	24.5	+	+	+	36	14.0-30.3	24.9
	L	28	11.7-27.3	22.1	+	+	+	34	8.4-25.7	16.3
Specific conductance (umhos/cm)-----	U	28	55-82	66	+	+	+	36	50-76	64
	L	28	62-230	94	+	+	+	34	4-140	65
Oxidation-reduction potential (mV)-----	U	28	435-575	490	+	+	+	36	370-570	470
	L	28	95-605	410	+	+	+	34	140-620	405
Dissolved oxygen (mg/L)---	U	28	.2-12.7	6.6	+	+	+	36	.1-11.2	6.8
	L	28	.1-5.3	.9	+	+	+	34	.1-7.8	1.7
pH (units)-----	U	28	5.4-9.2	6.3	+	+	+	36	5.7-9.5	6.6
	L	28	6.0-6.8	6.3	+	+	+	34	5.4-7.0	6.0
<u>1979 stratified period</u>										
Water temperature (°C)---	U	27	11.9-29.8	23.1	10	26.0-30.9	27.9	23	20.2-30.7	26.0
	L	20	9.1-26.1	18.5	12	19.0-27.2	22.8	17	16.3-26.2	22.0
Specific conductance (umhos/cm)-----	U	27	37-76	57	10	41-52	50	23	52-73	62
	L	20	48-154	86	12	45-106	65	17	48-106	70
Oxidation-reduction potential (mV)-----	U	27	380-660	540	10	370-605	485	23	375-640	520
	L	20	50-690	350	12	75-635	310	17	70-600	265
Dissolved oxygen (mg/L)---	U	27	1.3-10.9	6.4	10	2.7-8.2	6.9	23	.7-9.0	6.2
	L	20	.1-6.6	.8	12	.1-5.2	.8	17	.1-1.6	.4
pH (units)-----	U	27	5.3-8.8	6.1	10	6.2-7.9	6.9	23	5.5-8.4	6.3
	L	20	5.2-6.2	5.8	12	5.8-6.4	6.1	17	5.4-6.5	5.9

Means and ranges of on-site physical and chemical measurements near the inundated coffer structure
upstream from West Point Dam, April 1978-December 1979

[Stations presented in downstream order. N, number of samples; U, above the thermocline;
L, below the thermocline; T, entire water column]

		Sampling station								
		CH-03A			CH-03B			CH-03C		
		N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>										
Water temperature (°C)----	T	85	6.6-20.9	14.7	86	6.8-21.2	14.9	82	6.8-25.4	16.7
Specific conductance (umhos/cm)-----	T	85	44-78	63	86	44-77	63	82	44-80	64
Oxidation-reduction potential (mV)-----	T	85	440-670	585	86	445-675	575	82	370-670	590
Dissolved oxygen (mg/L)---	T	85	2.3-12.0	6.9	86	1.0-12.3	7.2	82	.7-11.3	6.9
pH (units)-----	T	85	5.3-8.3	6.0	86	5.3-8.4	6.1	82	5.4-7.8	6.1
<u>1978 stratified period</u>										
Water temperature (°C)----	U	28	19.5-29.9	26.4	28	19.5-30	26.4	30	17.4-30.4	25.7
	L	30	15.7-27.5	21.4	30	16.0-27.3	21.4	38	9.9-27.2	19.7
Specific conductance (umhos/cm)-----	U	28	57-73	65	28	56-70	65	30	56-72	65
	L	30	54-80	65	30	54-80	66	38	54-95	66
Oxidation-reduction potential (mV)-----	U	28	365-600	500	28	360-605	490	30	340-565	475
	L	30	240-610	535	30	240-640	535	38	235-620	515
Dissolved oxygen (mg/L)---	U	28	.1-8.5	6.1	28	.1-9.0	6.2	30	.1-13.0	6.8
	L	30	.1-5.8	1.4	30	.0-6.6	1.4	38	.1-9.3	2.3
pH (units)-----	U	28	5.9-9.0	6.6	28	6.1-9.0	6.7	30	6.1-9.8	6.7
	L	30	5.5-6.9	6.0	30	5.6-6.8	6.0	38	5.4-7.2	6.0
<u>1979 stratified period</u>										
Water temperature (°C)----	U	32	22.3-30.3	26.1	34	21.8-30.5	26.0	25	23.1-29.1	26.4
	L	26	17.3-25.8	21.4	23	17.1-25.9	21.3	15	19.8-24.9	21.9
Specific conductance (umhos/cm)-----	U	32	56-73	64	34	55-74	64	25	56-71	61
	L	26	61-116	80	23	58-106	78	15	58-102	77
Oxidation-reduction potential (mV)-----	U	32	315-570	475	34	415-585	505	25	425-560	490
	L	26	80-610	325	23	60-610	360	15	100-615	430
Dissolved oxygen (mg/L)---	U	32	.7-8.3	5.4	34	.1-8.8	5.6	25	.6-9.0	6.3
	L	26	.1-2.6	.5	23	.1-2.5	.5	15	.1-3.3	.8
pH (units)-----	U	32	5.8-8.6	6.8	34	5.8-8.5	6.7	25	6.1-8.7	6.8
	L	26	5.4-7.0	5.9	23	5.4-6.8	5.8	15	5.4-7.4	5.9

Means and ranges of on-site physical and chemical measurements at stations on the Chattahoochee River downstream from West Point Dam, April 1978-December 1979

[Stations presented in downstream order from West Point Dam to Langdale, Ala. N, number of samples; H, maximum release period; L, minimum release period]

		Sampling station														
		CH-25B			CH-01A			CH-01B			CH-01C			CH-01D		
		N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>																
Water temperature (°C)-----	H	8	6.9-24.9	16.1	8	7.0-25.0	16.2	8	7.0-24.8	16.2	8	7.1-24.8	16.1	8	7.2-24.7	16.1
	L	8	12.3-25.7	17.9	8	11.8-25.5	17.8	8	11.8-25.1	17.8	8	11.4-24.4	17.7	8	11.3-24.6	17.6
Specific conduc- tance potential (umhos/cm)-----	H	8	44-78	66	8	44-74	64	8	44-77	64	8	45-75	65	8	45-75	65
	L	8	45-75	62	8	45-73	62	8	46-72	61	8	53-75	66	8	50-77	67
Oxidation-reduc- tion potential (mV)-----	H	8	425-650	560	8	510-615	565	8	540-610	570	8	515-630	565	8	530-605	565
	L	8	515-675	575	8	540-665	570	8	540-640	570	8	500-650	570	8	510-650	575
Dissolved oxygen (mg/L)-----	H	8	4.8-9.9	7.2	8	5.0-10.0	7.3	8	5.3-10.1	7.4	8	5.1-10.1	7.4	8	85.2-10.2	7.5
	L	8	4.6-11.1	7.7	8	6.2-10.0	8.1	8	5.9-10.6	8.2	8	6.0-11.0	8.2	8	6.1-10.2	8.1
pH (units)-----	H	8	6.0-7.2	6.5	8	6.1-6.8	6.4	8	6.1-6.7	6.5	8	6.1-6.7	6.4	8	6.1-6.8	6.5
	L	8	5.9-8.1	6.3	8	6.0-7.1	6.4	8	5.9-7.1	6.4	8	6.0-7.2	6.5	8	6.0-6.9	6.4
<u>1978 stratified period</u>																
Water temperature (°C)-----	H	5	16.1-26.8	22.5	4	16.1-26.0	22.0	5	15.8-26.0	21.9	5	15.5-26.5	22.6	5	15.6-26.0	22.7
	L	5	16.9-27.7	24.2	5	20.6-28.0	24.9	5	21.1-29.2	25.7	5	20.5-29.0	25.3	5	20.4-28.9	25.2
Specific conduc- tance potential (umhos/cm)-----	H	5	51-72	63	4	53-68	63	5	54-74	63	5	54-74	63	5	53-75	65
	L	5	53-76	63	5	54-68	61	5	55-67	62	5	58-71	65	5	59-70	67
Oxidation-reduc- tion potential (mV)-----	H	5	380-540	470	4	380-555	465	5	385-555	485	5	480-570	505	5	480-580	510
	L	4	330-560	410	5	330-585	480	5	465-575	530	4	460-570	530	4	470-570	535
Dissolved oxygen (mg/L)-----	H	5	2.3-6.1	3.5	4	2.0-6.3	3.3	5	2.1-6.0	3.3	5	2.3-5.7	3.8	5	2.5-6.0	3.8
	L	5	4.2-8.9	5.5	5	2.2-8.3	5.8	5	2.2-8.1	5.6	5	2.8-8.8	5.7	5	4.9-8.0	6.0
pH (units)-----	H	5	6.1-6.6	6.3	4	5.5-6.6	5.8	5	5.6-6.4	6.1	5	6.0-6.6	6.2	5	5.9-6.5	6.1
	L	4	6.7-7.0	6.8	5	5.4-7.0	6.0	5	6.0-7.0	6.5	4	6.8-6.9	6.8	4	6.0-7.0	6.8
<u>1979 stratified period</u>																
Water temperature (°C)-----	H	3	23.0-25.6	24.0	3	22.8-26.0	24.3	3	22.8-26.2	24.0	3	22.9-26.3	24.4	3	23.0-27.0	25.5
	L	3	25.3-25.5	25.4	4	23.0-25.7	24.8	3	22.8-26.7	24.9	3	23.5-25.0	24.2	3	24.4-25.0	24.7
Specific conduc- tance potential (umhos/cm)-----	H	3	53-70	64	3	54-69	64	3	54-68	63	3	56-74	65	3	55-68	62
	L	3	53-73	62	4	55-75	62	3	56-66	60	3	54-85	73	3	63-79	69
Oxidation-reduc- tion potential (mV)-----	H	3	190-470	375	3	205-540	415	3	225-530	425	3	245-620	470	3	235-630	470
	L	3	270-600	427	3	235-570	440	3	250-565	440	3	295-500	470	3	390-530	465
Dissolved oxygen (mg/L)-----	H	3	2.1-5.3	3.5	3	2.2-5.6	3.7	3	2.2-5.5	3.7	3	2.9-5.8	4.1	3	3.6-5.8	4.9
	L	3	3.1-7.5	5.2	4	3.2-7.3	5.3	3	4.1-7.3	5.8	3	3.2-7.6	5.6	3	3.2-8.2	5.3
pH (units)-----	H	3	6.3-6.6	6.4	3	6.1-6.6	6.3	3	6.2-6.7	6.4	3	5.7-6.5	6.0	3	5.6-6.6	6.0
	L	3	6.2-6.4	6.3	4	6.5-6.7	6.6	3	6.5-6.8	6.6	3	6.2-6.8	6.4	3	6.4-7.0	6.6

APPENDIX B-3

Means and ranges of optical characteristics

[Euphotic depth, Secchi disc visibility, color, and turbidity]

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Means and ranges of optical characteristics at Chattahoochee River stations
in West Point Reservoir, April 1978-December 1979

[U, above the thermocline; L, below the thermocline; T, entire water column;
+, station not established; *, analysis not required; 0, not applicable]

	Sampling station									
	CH-12			CH-11A			CH-10			
	N	Range	Mean	N	Range	Mean	N	Range	Mean	
<u>Unstratified periods</u>										
Euphotic depth (m)-----	*	*	*	3	2.0-2.0	2.0	9	1.0-2.5	1.9	
Secchi-disc visibility (m)-----	3	0.2-0.7	0.4	5	.3-.7	.6	10	.2-.8	.6	
Color (platinum-cobalt units)----	T	6	5.0-50	21	*	*	*	31	.0-60	18
Turbidity (NTU)-----	T	9	10-65	26	14	10-35	19	40	2.0-90	27
<u>1978 stratified period</u>										
Euphotic depth (m)-----	*	*	*	+	+	+	3	2.0-3.0	2.7	
Secchi-disc visibility (m)-----	*	*	*	+	+	+	4	.7-1.1	.9	
Color (platinum-cobalt units)----	U	5	2.0-4.0	28	+	+	+	10	8.0-50	20
	L	0	0	0	0	0	0	10	8.0-180	62
Turbidity (NTU)-----	U	5	7.0-40	22	+	+	+	10	2.0-10	5.3
	L	0	0	0	0	0	0	10	6.0-60	31
<u>1979 stratified period</u>										
Euphotic depth (m)-----	*	*	*	3	1.0-2.0	1.5	4	2.5-3.0	2.8	
Secchi-disc visibility (m)-----	3	0.4-.65	0.70	3	.30-.45	.38	2	.8-.8	.8	
Color (platinum-cobalt units)----	U	3	15-20	17	*	*	*	4	5.0-2.0	9.2
	L	0	0	0	0	0	0	6	5.0-55	39
Turbidity (NTU)-----	U	3	20-30	27	1	10-45	23	4	3.0-8.0	4.1
	L	0	0	0	0	0	0	6	4.0-40	25

Means and ranges of optical characteristics at Chattahoochee River stations
in West Point Reservoir, April 1978-December 1979--Continued

[U, above the thermocline; L, below the thermocline; T, entire water column;
+, station not established; *, analysis not required; 0, not applicable]

	Sampling station									
	CH-07			CH-05A			CH-03C			
	N	Range	Mean	N	Range	Mean	N	Range	Mean	
<u>Unstratified periods</u>										
Euphotic depth (m)-----	6	1.0-2.0	1.8	6	1.5-4.0	2.4	5	1.5-3.0	2.4	
Secchi-disk visibility (m)-----	9	.15-.90	.59	8	.40-1.1	.78	6	.3-1.5	.92	
Color (platinum-cobalt units)---- T	16	5.0-30	1.	21	2.0-80	18	22	5.0-80	18	
Turbidity (NTU)----- T	30	4.0-90	33	30	1.0-40	20	31	2.0-40	13	
<u>1978 stratified period</u>										
Euphotic depth (m)-----	5	2.5-4.0	3.0	5	3.0-4.0	3.5	6	2.0-6.0	4.2	
Secchi-disk visibility (m)-----	5	1.0-1.6	1.2	5	1.0-1.3	1.2	6	1.0-1.9	1.4	
Color (platinum-cobalt units)---- U	14	8.0-20	15	14	5.0-30	15	18	2.0-30	16	
	L	11	8.0-65	30	10	8.0-200	70	12	5.0-50	30
Turbidity (NTU)----- U	14	1.0-6.0	2.8	14	2.0-5.0	2.9	18	1.0-6.0	3.1	
	L	11	2.0-70	21	12	3.0-45	18	12	2.0-15	6.9
<u>1979 stratified period</u>										
Euphotic depth (m)-----	6	2.0-4.0	3.2	6	2.3-4.0	3.6	6	4.0-6.0	5.1	
Secchi-disk visibility (m)-----	3	.70-1.0	.90	3	1.0-1.2	1.1	3	1.4-1.7	1.5	
Color (platinum-cobalt units)---- U	8	5.0-50	12	10	5.0-10	7.2	12	.0-5.0	4.2	
	L	7	10-45	31	4	15-45	30	6	2.0-100	39
Turbidity (NTU)----- U	8	3.0-15	5.9	10	2.0-10	4.6	12	1.0-2.0	1.7	
	L	7	2.0-25	18	4	15-15	15	6	3.0-7.0	5.8

Means and ranges of optical characteristics at tributary stations
 In West Point Reservoir, April 1978-December 1979

[U, above the thermocline; L, below the thermocline; T, entire water column;
 +, station not established; *, analysis not required]

	Sampling station								
	Yellowjacket Creek			Wehadkee Creek					
	CH-08			CH-04			CH-13		
	N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>									
Euphotic depth (m)-----	3	2-2	2	4	1-2	1.6	5	1.5-3	2.5
Secchi-disc visibility (m)-----	6	.7-1.2	1.0	8	.35-1.0	.7	8	.5-1.8	1.1
Color (platinum-cobalt units)----	T 9	5-150	23.8	*	*	*	16	5-50	6
Turbidity (NTU)-----	T 17	2-25	10	18	3-40	16	25	1-25	14
<u>1978 stratified period</u>									
Euphotic depth (m)-----	3	3-3	3	+	+	+	6	3-4	3.6
Secchi-disc visibility (m)-----	4	1.0-1.2	1.1	+	+	+	5	1.0-1.3	1.2
Color (platinum-cobalt units)----	U 18	8-30	20	+	+	+	17	8-20	11.9
	L 9	20-400	132	+	+	+	10	8-95	42
Turbidity (NTU)-----	U 18	1-7	3.4	+	+	+	17	1-6	3.2
	L 9	1-50	18	+	+	+	10	1-30	15
<u>1979 stratified period</u>									
Euphotic depth (m)-----	5	1.3-4	2.6	3	4-5	4.3	3	3-5	4.3
Secchi-disc visibility (m)-----	5	.4-1.1	.8	3	1.3-1.6	1.4	3	.95-1.4	1.3
Color (platinum-cobalt units)----	U 14	5-100	27	*	*	*	11	0-5	3.9
	L 8	5-300	11	*	*	*	4	5-150	68
Turbidity (NTU)-----	U 14	2-35	13	8	2-5	4	11	2-6	2.6
	L 8	3-45	28	4	2-15	8	4	1-9	5.6

Means and ranges of optical characteristics at stations on the Chattahoochee River
downstream from West Point Dam, April 1978-December 1979

[H, maximum release; L, minimum release; *, analysis not required.]

	Sampling station														
	CH-2.5B			CH-01A			CH-01B			CH-01C			CH-01D		
	N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>															
Euphotic depth (m)-----	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Secchi disc visibility (m)-	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Color (platinum-cobalt units)---H	6	5-55	21	6	5-45	18	7	5-60	20	6	5-80	26	6	5-50	22
L	5	10-70	26	5	5-60	28	5	5-70	33	5	5-70	27	5	5-70	31
Turbidity (NTU)---H	8	1-30	10	7	2-30	9	8	2-30	10	8	2-35	11	8	1-35	11
L	8	2-35	10	8	3-35	10	8	3-35	11	7	3-30	11	8	2-35	15
<u>1978 stratified period</u>															
Euphotic depth (m)-----	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Secchi disc visibility (m)-	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Color (platinum-cobalt units)---H	5	15-45	28	5	10-50	28	5	15-40	25	5	15-45	26	5	15-45	26
L	5	20-45	30	4	10-30	23	5	20-30	26	5	10-30	22	5	10-30	20
Turbidity (NTU)---H	5	3-25	8	5	1-8	4.6	5	2-10	4.4	5	2-8	4.4	5	3-10	6
L	5	2-7	4	4	4-15	7	5	3-15	6.2	5	3-10	5	5	3-10	5.8
<u>1979 stratified period</u>															
Euphotic depth (m)-----	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Secchi disc visibility (m)---	*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Color (platinum-cobalt units)---H	3	8-40	19	3	10-35	20	3	10-25	17	3	15-20	18	3	10-60	30
L	3	10-30	20	3	5-25	13	3	10-25	18	3	10-25	17	3	10-15	12
Turbidity (NTU)---H	3	2-7	5	3	5-5	5	3	4-6	4.7	3	3-10	6	3	4-20	15
L	3	4-5	4.3	3	4-6	4.7	3	4-5	4.3	3	5-6	5.7	3	5-15	8.3

APPENDIX B-4

Means and ranges of chemical concentrations

[Residue, nonfilterable total; residue, filterable, total; alkalinity;
carbon dioxide; bicarbonate; sulfur, sulfate, dissolved;
sulfur, sulfide, total]

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Means and ranges of chemical concentrations at Chattahoochee River stations
in West Point Reservoir, April 1978-December 1979

[N, number of samples; U, above the thermocline; L, below the thermocline; T, entire water column;
†, station not established; *, analysis not required; †, not applicable. Results in milligrams per liter]

		Sampling station								
		CH-12			CH-11A			CH-10		
		N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>										
Residue, nonfilterable, total----	T	9	14-90	40	*	*	*	40	0-101	25
Residue, filterable, total-----	T	9	38-66	50	*	*	*	40	40-65	47
Alkalinity-----	T	9	8-20	13	*	9-18	*	40	8-41	13
Carbon dioxide-----	T	9	2.5-17.0	10.0	14	6.8-39.0	17.5	40	.1-99	23
Bicarbonate-----	T	4	10-19	15	*	*	*	19	11-50	17
Sulfur, sulfate, dissolved-----	T	9	2.9-8.8	6.6	*	*	*	40	4.0-7.7	6.0
Sulfur, sulfide, total-----	T	9	.0-.0	.0	*	*	*	41	.0-.2	.03
<u>1978 stratified period</u>										
Residue, nonfilterable, total----	U	5	6-63	35	†	†	†	10	0-13	4
	L	†	†	†	†	†	†	10	1.0-88	33
Residue, filterable, total-----	U	5	44-62	54	†	†	†	10	45-91	55
	L	†	†	†	†	†	†	10	12-70	45
Alkalinity-----	U	5	11-17	14	†	†	†	10	15-28	18
	L	†	†	†	†	†	†	10	9-26	17
Carbon dioxide-----	U	5	6.4-11	7.9	†	†	†	10	0-20	3
	L	†	†	†	†	†	†	10	3.4-29	15
Bicarbonate-----	U	5	13-21	18	†	†	†	10	18-32	22
	L	†	†	†	†	†	†	10	11-32	21
Sulfur, sulfate, dissolved-----	U	5	5.6-9.9	8.2	†	†	†	10	6.8-11	7.9
	L	†	†	†	†	†	†	10	5.5-10	6.7
Sulfur, sulfide, total-----	U	5	.0-.0	.0	†	†	†	10	.0-.0	.0
	L	†	†	†	†	†	†	10	.0-.0	.0
<u>1979 stratified period</u>										
Residue, nonfilterable, total----	U	3	44-52	47	*	*	*	4	2-8	4
	L	†	†	†	†	†	†	6	4-41	25
Residue, filterable, total-----	U	3	50-62	55	*	*	*	4	48-54	48
	L	†	†	†	†	†	†	6	46-56	52
Alkalinity-----	U	3	11-20	16	11	12-18	16	4	17-31	22
	L	†	†	†	†	†	†	6	12-18	15
Carbon dioxide-----	U	3	6.2-11.0	8.3	11	4.9-20.0	12.1	4	.0-2.2	.5
	L	†	†	†	†	†	†	6	11-26	21
Bicarbonate-----	U	3	*	*	*	*	*	*	*	*
	L	†	†	†	†	†	†	*	*	*
Sulfur, sulfate, dissolved-----	U	3	5.1-9.8	7.2	*	*	*	4	7.0-8.0	7.0
	L	†	†	†	†	†	†	6	6.7-8.8	7.4
Sulfur, sulfide, total-----	U	3	.0-.0	.0	*	*	*	4	.0-.0	.0
	L	†	†	†	†	†	†	6	.0-.0	.0

Means and ranges of chemical concentrations at Chattahoochee River stations
in West Point Reservoir, April 1978-December 1979--Continued

[N, number of samples; U, above the thermocline; L, below the thermocline; T, entire water column;
+, station not established; *, analysis not required; #, not applicable. Results in milligrams per liter]

	Sampling station									
	CH-07			CH-05A			CH-03C			
	N	Range	Mean	N	Range	Mean	N	Range	Mean	
<u>Unstratified periods</u>										
Residue, nonfilterable, total----	T	30	0-103	32	30	0-37	16	31	0-31	12
Residue, filterable, total-----	T	30	36-54	48	29	31-57	47	31	36-90	53
Alkalinity-----	T	30	8-19	13	30	6-21	13	31	7-23	14
Carbon dioxide-----	T	30	.3-99	16	30	.2-59	17	31	0.2-59	25
Bicarbonate-----	T	14	10-23	16	14	7-23	17	9	14-25	19
Sulfur, sulfate, dissolved-----	T	30	4.2-9.4	7.1	30	3.8-12	6.9	31	3.6-9.0	6.4
Sulfur, sulfide, total-----	T	30	.0-.1	.00	30	.0-.0	.0	31	.0-.0	.0
<u>1978 stratified period</u>										
Residue, nonfilterable, total----	U	14	0-13	5	14	0-8	4	18	0-20	3
	L	11	.0-109	29	11	2.0-34	17	12	0-11	5
Residue, filterable, total-----	U	14	43-71	54	14	44-56	48	18	22-71	48
	L	11	46-66	53	11	44-74	52	12	40-63	53
Alkalinity-----	U	14	8-27	17	14	14-33	19	18	11-26	18
	L	11	10-22	15	11	11-36	18	12	8-27	16
Carbon dioxide-----	U	14	0-23	4	14	0-40	8	18	0-25	4
	L	11	7.7-51	22	11	8.6-72	26	12	4-56	33
Bicarbonate-----	U	14	10-33	20	14	17-36	23	18	13-28	19
	L	11	12-27	13	11	13-14	22	12	10-32	19
Sulfur, sulfate, dissolved-----	U	14	4.9-9.9	6.9	14	4.1-8.0	6.3	18	4.7-7.3	5.9
	L	11	4.3-8.0	6.0	11	4.7-7.3	6.0	12	4.3-7.3	5.6
Sulfur, sulfide, total-----	U	14	.0-.0	.0	14	.0-.0	.0	18	.0-.0	.0
	L	11	.0-.0	.0	11	.0-.0	.0	12	.0-0.1	.0
<u>1979 stratified period</u>										
Residue, nonfilterable, total----	U	8	1.0-10	4.6	10	.0-9.0	4.8	12	.0-27	5.6
	L	7	3-32	20	4	10-32	20	6	2-14	8
Residue, filterable, total-----	U	8	44-54	48	10	44-58	50	12	19-52	39
	L	7	42-55	47	4	20-57	44	6	37-64	51
Alkalinity-----	U	8	8.0-28	18	10	14-22	18	12	11-21	18
	L	7	8.0-18	12	4	12-19	26	6	8-26	17
Carbon dioxide-----	U	8	.1-20	6.3	10	.1-33	8.0	12	.1-13	3.1
	L	7	14-55	31	4	22-59	39	6	1.6-62	32
Bicarbonate-----	U	*	*	*	*	*	*	*	*	*
	L	*	*	*	*	*	*	*	*	*
Sulfur, sulfate, dissolved-----	U	8	5.1-8.1	6.4	10	5.4-7.5	6.5	12	3.1-5.9	4.5
	L	7	4.8-8.4	6.6	4	4.1-5.8	5.1	6	4.3-5.6	5.0
Sulfur, sulfide, total-----	U	8	.0-.6	.05	10	.0-.8	.2	12	.0-.0	.0
	L	7	.0-.3	.01	4	.0-.3	.02	6	.0-.0	.0

Means and ranges of chemical concentrations at tributary stations
in West Point Reservoir, April 1978-December 1979

[N, number of samples; U, above the thermocline; L, below the thermocline;
T, entire water column; +, station not established; *, analysis not required.
Results in milligrams per liter]

		Sampling station								
		Yellowjacket Creek			Wehadkee Creek					
		CH-08			CH-04			CH-13		
		N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>										
Residue, nonfilterable, total----	T	17	0.0-29	14	2	17-19	2	25	1.0-34	18
Residue, filterable, total-----	T	17	45-87	52	2	53-64	54	25	32-54	47
Alkalinity-----	T	17	8.0-29	15	18	7-27	15	25	8.0-21	14
Carbon dioxide-----	T	15	3.4-28	12	18	2.6-49	20	25	.1-94	28
Bicarbonate-----	T	8	15-24	20	2	19-23	19	9	13-25	18
Sulfur, sulfate, dissolved-----	T	17	2.0-6.8	5.6	2	2.4-3.0	.35	25	3.2-8.0	5.9
Sulfur, sulfide, total-----	T	17	.0-.0	.0	*	*	*	25	.0-.0	.0
<u>1978 stratified period</u>										
Residue, nonfilterable, total----	U	18	0.0-9.0	4.7	+	+	+	17	0.0-7.0	2.1
	L	9	.0-36	12	+	+	+	10	.0-15	7
Residue, filterable, total-----	U	18	39-96	52	+	+	+	17	25-100	44
	L	9	33-109	61	+	+	+	10	37-103	57
Alkalinity-----	U	18	13-26	18	+	+	+	17	6.0-23	16
	L	9	11-52	25	+	+	+	10	10-27	19
Carbon dioxide-----	U	18	.0-25	2.6	+	+	+	17	.0-18	2.5
	L	9	11-32	18	+	+	+	10	12-106	33
Bicarbonate-----	U	18	15-27	22	+	+	+	17	7-28	19
	L	9	14-63	31	+	+	+	10	12-33	23
Sulfur, sulfate, dissolved-----	U	18	3.9-11	5.4	+	+	+	17	5.2-10	6.2
	L	9	2.3-9.5	5.5	+	+	+	10	2.8-7.2	5.0
Sulfur, sulfide, total-----	U	18	.0-.0	.0	+	+	+	17	.0-.2	.02
	L	9	.0-.0	.0	+	+	+	10	.0-.0	.0
<u>1979 stratified period</u>										
Residue, nonfilterable, total----	U	14	0.0-25	10.1	*	*	*	11	0.0-12	3.3
	L	8	4.0-41	24	*	*	*	4	.0-7.0	4.0
Residue, filterable, total-----	U	14	37-52	41	*	*	*	11	37-56	44
	L	8	39-82	55	*	*	*	4	34-58	46
Alkalinity-----	U	14	7.0-21	15	8	11-21	14	11	12-21	17
	L	8	9.0-46	23	4	12-30	20	4	8.0-29	19
Carbon dioxide-----	U	14	.0-44	6.3	8	.2-21	2.6	11	.1-37	6.0
	L	8	14-180	62	4	9.8-92	53	4	16-50	35
Sulfur, sulfate, dissolved-----	U	14	2.5-6.0	4.2	*	*	*	11	3.4-8.8	5.3
	L	8	2.2-4.9	3.7	*	*	*	4	2.1-4.4	2.9
Sulfur, sulfide, total-----	U	14	.0-.8	.1	*	*	*	11	.0-.0	.0
	L	8	.0-.0	.0	*	*	*	4	.0-.0	.0

Means and ranges of chemical concentrations in the Chattahoochee River
downstream from West Point Dam, April 1978-December 1979

[N, number of samples; H, maximum release; L, minimum release. Results in milligrams per liter]

		Sampling station														
		CH-2.5B			CH-01A			CH-01B			CH-01C			CH-01D		
		N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>																
Residue, nonfilterable, total-	H 8	0-32	13	8	1-28	12	8	6-27	14	8	7-47	22	8	9-33	18	
	L 8	1-20	7	7	0-14	6	8	0-21	7	8	0-20	9	8	0-16	8	
Residue, filterable, total----	H 8	34-54	47	8	32-51	46	8	32-51	46	8	32-54	47	8	36-53	47	
	L 8	33-62	50	7	40-56	49	8	34-58	47	8	37-54	49	8	36-60	50	
Alkalinity-----	H 8	10-26	16	8	10-19	14	8	8-26	14	7	8-25	14	8	10-26	15	
	L 8	9-19	14	7	9-19	14	8	10-18	13	8	7-2-	15	8	11-17	15	
Carbon di-oxide-----	H 8	2-22	10	8	3.3-19	9.2	8	4.7-13	8.0	7	4-16	8.2	8	5-17	8.6	
	L 8	.3-44	15	7	2.5-24	10	8	1.8-25	9.7	8	1-27	11	8	4-22	9.0	
Bicarbonate-----	H 3	18-22	19	3	13-20	17	3	15-17	16	3	10-19	16	3	18-20	19	
	L 3	13-20	17	2	20-23	22	3	14-21	17	3	9-20	15	3	14-20	18	
Sulfur, sulfate, dissolved-----	H 8	4.6-8.9	6.6	8	4.3-8.7	6.4	8	4.6-8.5	6.4	8	5.1-8.2	6.3	8	4.3-8.7	6.2	
	L 8	4.4-7.0	6.2	7	3.2-6.8	5.6	8	3.9-6.5	5.9	8	5.0-7.0	6.2	8	4.6-7.0	6.3	
Sulfur, sulfide, total-----	H 8	0-0	0	8	0-0	0	8	0-0	0	7	0-0	0	8	0-0	0	
	L 8	0-0	0	8	0-0	0	8	0-2.8	.4	8	0-0	0	8	.0-.1	.0	
<u>1978 stratified period</u>																
Residue, nonfilterable, total-	H 5	0-8	2	5	0-16	7	5	0-12	6	5	0-7.0	3	5	4-13	9	
	L 5	0-31	10	5	0-12	5	5	0-10	2	5	0-12	4	5	1-12	4	
Residue, filterable, total----	H 5	46-101	61	5	42-100	58	5	46-99	59	5	44-107	60	5	46-104	61	
	L 5	42-98	55	5	42-90	54	5	45-102	58	5	50-101	60	5	50-101	61	
Alkalinity-----	H 5	15-22	18	5	15-21	18	5	12-21	17	5	14-24	17	5	17-24	21	
	L 5	14-21	17	5	13-21	17	5	15-22	18	5	17-25	20	5	16-19	17	
Carbon di-oxide-----	H 5	7.2-32	17	5	8-111	39	5	9.6-88	29	5	6.6-32	20	5	15-44	33	
	L 5	4.0-7.7	5.5	5	3-127	31	5	4.3-34	11	4	5.6-6.1	5.9	4	3.0-8.0	5.6	
Bicarbonate-----	H 5	18-27	22	5	19-25	22	5	15-26	21	5	17-29	21	5	21-29	25	
	L 5	17-25	21	5	16-25	20	5	18-27	22	5	21-30	24	5	19-23	20	
Sulfur, sulfate, dissolved-----	H 5	4.9-7.1	6.1	5	5.1-7.1	6.2	5	4.8-6.9	6.0	5	5.1-7.0	6.1	5	5.1-6.8	6.1	
	L 5	5.3-7.1	6.3	5	5.0-6.8	5.9	5	4.5-7.0	5.5	5	5.4-7.2	6.3	5	5.2-7.2	6.2	
Sulfur, sulfide, total-----	H 5	0-0	0	5	0-0	0	5	0-0	0	5	0-0	0	5	0-0	0	
	L 5	0-0	0	5	0-0	0	5	0-0	0	5	0-0	0	5	0-0	0	
<u>1979 stratified period</u>																
Residue, nonfilterable, total-	H 3	0-32	11	3	0-16	7	3	0-10	4	3	0-4	2	3	0-25	15	
	L 3	0-9	4	3	0-5	2	3	0-14	5	3	2-8	5	3	10-18	13	
Residue, filterable, total----	H 3	46-56	50	3	44-54	48	3	42-56	47	3	45-54	49	3	41-61	49	
	L 3	41-59	47	3	40-54	46	3	40-52	45	3	46-57	54	3	50-55	53	
Alkalinity-----	H 3	13-20	17	3	14-21	18	3	15-19	18	3	15-19	18	3	17-21	19	
	L 3	15-20	17	4	15-19	18	3	16-19	18	3	17-19	18	3	14-22	18	
Carbon di-oxide-----	H 3	8.8-20	13	3	10-31	17	3	17-24	14	3	12-74	33	3	10-99	41	
	L 3	12-20	16	3	5.9-12	8.2	3	5.0-12	8.0	3	5.3-21	13.8	3	3.3-14	9.4	
Sulfur, sulfate, dissolved-----	H 3	4.3-5.7	4.8	3	4.1-5.4	4.6	3	3.8-5.4	4.5	3	4.0-5.5	4.6	3	4.2-5.8	5.2	
	L 3	4.0-5.7	4.7	3	3.3-5.3	4.2	3	3.9-5.4	4.4	3	4.1-5.7	4.9	3	4.5-5.7	5.0	
Sulfur, sulfide, total-----	H 3	0-0	0	3	.0-.5	.2	3	0-0	0	3	0-0	0	3	0-0	0	
	L 3	0-0	0	3	0-0	0	3	0-0	0	3	.0-.6	.2	3	.0-.7	.2	

APPENDIX B-5

Means and ranges of nutrient concentrations

[Phosphorus, total; phosphorus, orthophosphate, dissolved; nitrogen, total; nitrogen, nitrite plus nitrate, total; nitrogen, ammonia, total; nitrogen, organic, total; nitrogen, Kjeldahl, total; carbon, organic, total; carbon, organic, dissolved]

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Means and ranges of nutrient concentrations at eight Chesapeake River stations in West Point Reservoir, April 1978-December 1979

U, number of samples; U, above the thermocline; L, below the thermocline; T, entire water column; *, station not established; †, deleted because of questionable analytical results; ‡, analysis not required; †, not applicable.

Results in milligram per liter

	Sampling station									
	CH-12			CH-11A			CH-10			
	N	Range	Mean	N	Range	Mean	N	Range	Mean	
<u>Unstratified periods</u>										
Phosphorus, total-----	T	9	0.11-0.38	0.27	*	*	*	40	0.06-0.25	0.14
Phosphorus, orthophosphate, dissolved-----	T	9	.03-.25	.12	14	0.05-.12	0.07	40	.00-.23	.05
Nitrogen, total-----	T	7	.67-1.7	1.3	*	*	*	33	.69-1.30	1.08
Nitrogen, nitrite plus nitrate, total-----	T	8	.41-1.0	.74	14	.47-1.0	.67	33	.28-.85	.63
Nitrogen, ammonia, total-----	T	9	.02-.32	.19	14	.05-.38	.15	40	.00-1.5	.29
Nitrogen, organic, total-----	T	8	.11-.56	.35	*	*	*	40	.00-1.0	.28
Nitrogen, Kjeldahl, total-----	T	8	.26-.77	.54	*	*	*	40	.24-1.3	.68
Carbon, organic, total-----	T	9	2.7-10	4.5	14	1.9-6.6	3.5	38	1.4-10	4.2
Carbon, organic, dissolved-----	T	9	2.1-4.2	3.1	14	1.5-4.4	2.5	40	1.4-7	3.4
<u>1978 stratified period</u>										
Phosphorus, total-----	U	5	0.20-0.42	0.27	†	†	†	10	0.01-0.06	0.04
	L	†	†	†	†	†	†	10	.04-.36	.15
Phosphorus, orthophosphate, dissolved-----	U	5	.08-.28	.15	†	†	†	10	.00-.04	.01
	L	†	†	†	†	†	†	10	.02-.20	.08
Nitrogen, total-----	U	5	§	§	†	†	†	5	§	§
	L	†	†	†	†	†	†	5	§	§
Nitrogen, nitrite plus nitrate, total-----	U	5	§	§	†	†	†	5	§	§
	L	†	†	†	†	†	†	5	§	§
Nitrogen, ammonia, total-----	U	5	.09-.46	.24	†	†	†	10	.00-.29	.05
	L	†	†	†	†	†	†	10	.06-1.8	.64
Nitrogen, organic, total-----	U	5	.19-.65	.37	†	†	†	10	.45-.75	.57
	L	†	†	†	†	†	†	10	.04-.49	.28
Nitrogen, Kjeldahl, total-----	U	5	.31-.90	.60	†	†	†	10	.57-.75	.62
	L	†	†	†	†	†	†	10	.25-2.2	.92
Carbon, organic, total-----	U	5	4.6-17	8.8	†	†	†	10	4.3-14	7.9
	L	†	†	†	†	†	†	10	2.7-11	5.3
Carbon, organic, dissolved-----	U	5	2.6-4.7	3.6	†	†	†	10	2.4-8.0	5.0
	L	†	†	†	†	†	†	9	1.0-5.2	2.9
<u>1979 stratified period</u>										
Phosphorus, total-----	U	3	0.23-0.45	0.32	†	†	†	4	0.07-0.09	0.07
	L	†	†	†	†	†	†	6	.10-.20	.15
Phosphorus, orthophosphate, dissolved-----	U	3	.14-.19	.16	11	0.06-.13	0.09	4	.00-.03	.01
	L	†	†	†	†	†	†	6	.03-.06	.05
Nitrogen, total-----	U	3	1.1-1.9	1.40	4	1.3-1.5	1.40	4	.52-1.2	.83
	L	†	†	†	†	†	†	6	1.2-1.5	1.27
Nitrogen, nitrite plus nitrate, total-----	U	3	.81-1.1	.97	11	.7-1.2	1.01	4	.12-.58	.31
	L	†	†	†	†	†	†	6	.57-.87	.72
Nitrogen, ammonia, total-----	U	3	.10-.29	.17	11	.07-.35	.17	4	.01-.07	.02
	L	†	†	†	†	†	†	6	.20-.41	.30
Nitrogen, organic, total-----	U	3	.00-.46	.25	4	.43-.98	.46	4	.39-.74	.50
	L	†	†	†	†	†	†	6	.00-.42	.26
Nitrogen, Kjeldahl, total-----	U	3	.11-.75	.42	4	.55-.67	.60	4	.40-.76	.53
	L	†	†	†	†	†	†	6	.36-.66	.56
Carbon, organic, total-----	U	3	5.6-11	8.0	10	2.2-6.1	3.7	4	2.7-4.9	3.8
	L	†	†	†	†	†	†	6	2.3-3.8	2.9
Carbon, organic, dissolved-----	U	3	1.9-6.8	4.1	11	2.0-3.4	2.7	4	2.7-4.9	3.3
	L	†	†	†	†	†	†	6	2.3-3.8	2.6

Means and ranges of nutrient concentrations at Chattahoochee River stations
in West Point Reservoir, April 1978-December 1979--Continued

	Sampling station								
	CH-07			CH-05A			CH-03C		
	N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>									
Phosphorus, total-----	T 30	0.06-0.36	0.15	30	0.03-0.17	0.11	31	0.01-0.09	0.04
Phosphorus, orthophosphate, dissolved-----	T 30	.01-.14	.05	30	.00-.11	.05	31	.00-.04	.01
Nitrogen, total-----	T 25	.63-1.7	1.18	28	.53-1.5	1.09	31	.55-1.4	1.01
Nitrogen, nitrite plus nitrate, total-----	T 25	.34-.91	.67	28	.29-.99	.60	31	.06-.84	.49
Nitrogen, ammonia, total-----	T 30	.01-.42	.22	30	.02-.46	.22	31	.01-.36	.19
Nitrogen, organic, total-----	T 30	.15-.58	.30	30	.06-.48	.25	31	.05-.81	.32
Nitrogen, Kjeldahl, total-----	T 30	.26-.81	.52	30	.18-.64	.47	31	.24-1.2	.51
Carbon, organic, total-----	T 29	1.7-12	3.9	30	2.2-9.2	4.2	30	1.8-9.8	4.1
Carbon, organic, dissolved-----	T 30	1.4-8.7	3.1	29	1.6-8.0	3.3	31	1.6-7.5	3.3
<u>1978 stratified period</u>									
Phosphorus, total-----	U 14	0.03-0.08	0.05	14	0.02-0.08	0.04	18	0.01-0.05	0.02
	L 11	.06-.39	.13	11	.03-.29	.11	12	.01-.06	.05
Phosphorus, orthophosphate, dissolved-----	U 14	.00-.05	.02	14	.00-.04	.01	18	.00-.04	.01
	L 11	.01-.17	.06	11	.01-.21	.05	12	.00-.06	.02
Nitrogen, total-----	U 5	\$	\$	5	\$	\$	5	\$	\$
	L 5	\$	\$	5	\$	\$	5	\$	\$
Nitrogen, nitrite plus nitrate, total-----	U 5	\$	\$	5	\$	\$	5	\$	\$
	L 5	\$	\$	5	\$	\$	5	\$	\$
Nitrogen, ammonia, total-----	U 14	.00-.18	.05	14	.00-.12	.04	18	.00-.17	.03
	L 11	.19-1.6	.47	11	.15-1.5	.50	12	.03-.74	.31
Nitrogen, organic, total-----	U 14	.23-.70	.46	14	.24-1.1	.48	16	.20-1.0	.43
	L 10	.11-.40	.21	11	.20-.73	.36	10	.14-.45	.21
Nitrogen, Kjeldahl, total-----	U 14	.34-.72	.50	14	.34-1.1	.52	16	.20-1.1	.38
	L 11	.26-2.0	.68	11	.46-1.7	.86	10	.24-1.2	.43
Carbon, organic, total-----	U 14	3.1-11	6.7	14	1.6-17	6.7	18	1.8-16	6.6
	L 11	1.4-11	7.0	11	2.0-9.2	5.3	12	2.5-17	5.7
Carbon, organic, dissolved-----	U 14	1.4-10	4.7	14	1.3-9.0	4.7	18	1.7-9.4	4.4
	L 11	1.1-8.2	4.7	11	1.9-8.2	4.1	12	1.7-6.9	3.9
<u>1979 stratified period</u>									
Phosphorus, total-----	U 8	0.04-0.08	0.06	10	0.02-0.05	0.04	12	0.01-0.03	0.04
	L 7	.03-.11	.08	4	.04-.18	.10	6	.02-.13	.06
Phosphorus, orthophosphate, dissolved-----	U 8	.00-.04	.02	10	.00-.01	.00	12	.00-.01	.00
	L 7	.00-.05	.03	4	.01-.05	.01	6	.00-.11	.03
Nitrogen, total-----	U 8	.51-1.7	.95	10	.36-.99	.77	12	.17-.98	.77
	L 7	.98-1.5	1.21	4	.67-1.4	1.10	6	.59-1.2	.93
Nitrogen, nitrite plus nitrate, total-----	U 8	.12-.63	.40	10	.12-.40	.31	12	.00-.24	.07
	L 7	.41-.73	.59	4	.18-.53	.25	6	.00-.42	.14
Nitrogen, ammonia, total-----	U 8	.01-.11	.05	10	.01-.41	.08	12	.00-.17	.08
	L 7	.18-.47	.34	4	.23-.86	.59	6	.08-.88	.51
Nitrogen, organic, total-----	U 8	.15-1.0	.50	10	.17-.57	.39	12	.16-.87	.39
	L 7	.02-.48	.28	4	.22-.34	.27	6	.11-.48	.26
Nitrogen, Kjeldahl, total-----	U 8	.39-1.1	.56	10	.24-.60	.46	12	.17-.87	.46
	L 7	.34-.80	.62	4	.49-1.2	.87	6	.23-1.2	.78
Carbon, organic, total-----	U 8	3.2-6.5	4.2	10	1.0-8.9	4.4	12	3.2-5.7	4.4
	L 7	2.7-5.0	3.9	4	1.7-4.2	3.3	6	2.1-5.6	4.0
Carbon, organic, dissolved-----	U 8	2.3-6.5	3.7	10	2.3-6.5	3.4	12	2.3-4.7	3.4
	L 7	2.3-5.0	3.5	4	2.6-31	2.8	6	2.0-4.2	2.6

Means and ranges of nutrient concentrations at tributary stations
in West Point Reservoir, April 1978-December 1979

[N, number of samples; U, above the thermocline; L, below the thermocline; T, entire water column; +, station not established; *, analysis not required; \$, deleted because of questionable analytical results. Results in milligrams per liter]

		Sampling station								
		Yellowjacket Creek			Wehadkee Creek					
		CH-08			CI-04			CH-13		
		N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>										
Phosphorus, total-----	T	17	0.02-0.14	0.06	*	*	*	25	0.01-0.10	0.06
Phosphorus, orthophosphate, dissolved-----	T	17	.00-.11	.02	21	.00-.06	.01	25	.00-.07	.03
Nitrogen, total-----	T	17	.55-3.1	1.1	2	.73-.76	.10	24	.31-1.3	.95
Nitrogen, nitrite plus nitrate, total-----	T	17	.02-.86	.58	21	.00-.24	.10	24	.02-.85	.49
Nitrogen, ammonia, total---	T	17	.08-2.2	.29	21	.01-.30	.11	25	.01-.88	.22
Nitrogen, organic, total---	T	17	.10-.90	.27	2	.31-.33	.32	25	.00-.45	.24
Nitrogen, Kjeldahl, total--	T	17	.23-3.1	.57	2	.61-.63	.09	25	.16-1.3	.46
Carbon, organic, total-----	T	17	2.3-16	4.4	20	2.5-15	4.4	25	1.7-8.8	3.8
Carbon, organic, dissolved-----	T	17	1.9-6.9	3.5	19	2.3-8.2	3.2	25	1.7-8.3	3.0
<u>1978 stratified period</u>										
Phosphorus, total-----	U	18	0.01-0.04	0.03	+	+	+	17	0.01-0.04	0.02
	L	9	.01-.27	.09	+	+	+	10	.01-.05	.06
Phosphorus, orthophosphate, dissolved-----	U	17	.00-.03	.01	+	+	+	17	.00-.04	.01
	L	9	.00-.20	.06	+	+	+	10	.00-.02	.01
Nitrogen, total (N)-----	U	\$	\$	\$	+	+	+	\$	\$	\$
	L	\$	\$	\$	+	+	+	\$	\$	\$
Nitrogen, nitrite plus nitrate, total-----	U	\$	\$	\$	+	+	+	\$	\$	\$
	L	\$	\$	\$	+	+	+	\$	\$	\$
Nitrogen, ammonia, total---	U	18	.00-.21	.03	+	+	+	17	.00-.18	.04
	L	9	.16-2.9	.84	+	+	+	10	.09-.95	.34
Nitrogen, organic, total---	U	18	.31-1.0	.46	+	+	+	17	.19-.52	.36
	L	9	.00-.30	.19	+	+	+	8	.02-.45	.18
Nitrogen, Kjeldahl, total--	U	18	.36-1.0	.50	+	+	+		.26-.56	.40
	L	9	.40-2.6	.73	+	+	+	8	.23-1.4	.45
Carbon, organic, total-----	U	18	2.8-11	6.3	+	+	+	17	2.9-17	7.3
	L	9	3.6-20	7.0	+	+	+	10	3.6-14	7.3
Carbon, organic, dissolved-----	U	18	2.0-9.7	4.8	+	+	+	17	2.7-8.6	4.7
	L	9	2.6-11	4.5	+	+	+	10	2.5-8.4	4.4

Means and ranges of nutrient concentrations at tributary stations
in West Point Reservoir, April 1978-December 1979--Continued

[N, number of samples; U, above the thermocline; L, below the thermocline; T, entire water column;
+, station not established; *, analysis not required; †, deleted because of questionable
analytical results. Results in milligrams per liter]

	Sampling station									
	Yellowjacket Creek			Wehadkee Creek						
	CH-08			CH-04			CH-13			
	N	Range	Mean	N	Range	Mean	N	Range	Mean	
<u>1979 stratified period</u>										
Phosphorus, total-----	U	14	0.02-0.07	0.04	*	*	*	11	0.01-0.04	0.02
	L	8	.02-.22	.11	*	*	*	4	.01-.04	.03
Phosphorus, orthophosphate, dissolved-----	U	14	.00-.03	.01	8	0.00-0.03	0.00	11	.00-.00	.00
	L	8	.00-.16	.07	4	.01-.01	.01	4	.00-.01	.01
Nitrogen, total (N)-----	U	14	.10-1.1	.56	3	.40-.80	.48	11	.07-1.5	.58
	L	8	.61-2.1	1.1	1	.40	—	4	.38-.98	.74
Nitrogen, nitrite plus nitrate, total-----	U	14	.01-.56	.19	8	.00-.01	.00	11	.00-.26	.15
	L	8	.00-.35	.11	4	.00-.05	.02	4	.00-.13	.05
Nitrogen, ammonia, total--	U	14	.00-.21	.04	8	.00-.18	.02	11	.01-.19	.03
	L	8	.12-2.0	.80	4	.02-.67	.26	4	.13-1.0	.57
Nitrogen, organic, total--	U	14	.08-.46	.33	3	.39-.62	.43	11	.02-1.3	.40
	L	8	.01-.60	.23	1	.34	—	4	.00-.30	.13
Nitrogen, Kjeldahl, total--	U	14	.09-.59	.37	3	.39-.80	.47	11	.06-1.3	.43
	L	8	.36-2.1	1.03	1	.36	—	4	.25-.98	.69
Carbon, organic, total-----	U	14	2.7-9.0	4.6	8	3.3-11	4.2	11	2.7-6.2	4.3
	L	8	2.2-11	5.2	4	2.5-4.0	3.6	4	2.9-4.1	3.6
Carbon, organic, dissolved-----	U	14	2.0-6.2	3.9	8	2.3-4.2	3.4	11	2.2-6.0	3.4
	L	8	2.0-9.2	4.4	4	2.4-2.8	2.6	4	2.9-4.1	3.6

Means and ranges of nutrient concentrations at stations on the Chattahoochee River, downstream from West Point Dam, April 1978-December 1979

[N, number of samples; H, maximum release; L, minimum release; \$, deleted because of questionable analytical results. Results in milligrams per liter]

	Sampling station														
	CH-2.5B			CH-01A			CH-01B			CH-01C			CH-01D		
	N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>															
Phosphorus, total-----	H 7	0.02-0.07	0.04	8	0.02-0.07	0.04	8	0.02-0.07	0.04	7	0.04-0.07	0.05	8	0.03-0.06	0.05
	L 8	.03-.08	.04	7	.02-.06	.03	8	.02-.06	.04	8	.03-.07	.05	8	.02-.10	.05
Phosphorus, orthophosphate, dissolved-----	H 8	.00-.07	.02	7	.00-.04	.01	8	.00-.04	.02	7	.00-.04	.02	8	.00-.06	.02
	L 8	.00-.08	.02	7	.00-.03	.01	8	.00-.03	.01	8	.00-.04	.02	8	.00-.04	.03
Nitrogen, total-----	H 8	.56-1.6	1.0	8	.51-1.7	1.0	8	.47-1.4	.94	8	.51-1.5	1.0	8	.57-1.1	.89
	L 8	.58-1.1	.95	7	.47-1.2	.83	8	.33-1.0	.78	8	.35-1.2	.76	7	.39-1.1	.75
Nitrogen, nitrite plus nitrate, total-----	H 8	.07-.86	.49	8	.07-.82	.48	8	.07-.84	.52	8	.09-.82	.49	8	.10-.82	.49
	L 8	.08-.64	.41	7	.11-.76	.39	8	.12-.64	.41	8	.12-.67	.41	8	.12-.6-	.41
Nitrogen, ammonia, total-----	H 8	.05-.23	.14	8	.05-.22	.14	8	.05-.30	.16	8	.05-.26	.13	8	.04-.24	.12
	L 3	.06-.21	.13	7	.02-.15	.10	8	.01-.15	.10	8	.00-.16	.09	8	.00-.15	.09
Nitrogen, organic, total-----	H 8	.10-.70	.36	8	.10-1.1	.35	8	.08-.67	.26	8	.05-.90	.36	8	.10-.61	.29
	L 8	.16-.55	.31	7	.22-.57	.34	8	.03-.43	.28	8	.07-.37	.26	7	.10-.39	.27
Nitrogen, Kjeldahl, total-----	H 8	.28-.86	.50	8	.23-1.2	.49	8	.19-.87	.41	8	.23-.99	.49	8	.28-.85	.41
	L 8	.27-.64	.45	7	.24-.62	.44	8	.04-.50	.38	8	.07-.53	.35	7	.10-.51	.35
Carbon, organic, total-----	H 8	1.1-6.2	3.3	8	1.5-4.2	3.1	8	1.6-4.6	3.1	8	1.8-6.9	3.6	8	2.3-4.3	3.0
	L 8	3.1-5.2	4.2	7	2.4-4.1	3.0	8	1.6-8.2	3.7	8	2.3-5.0	3.4	8	2.5-6.6	4.1
Carbon, organic, dissolved-----	H 8	1.1-3.7	2.7	8	1.3-4.1	2.6	8	1.6-4.6	3.0	8	1.1-5.6	2.7	8	2.0-4.3	3.0
	L 8	1.6-5.2	3.4	7	2.0-4.0	2.8	7	1.6-4.3	2.7	8	2.3-.3	3.0	8	2.5-6.6	3.9
<u>1978 stratified period</u>															
Phosphorus, total-----	H 5	0.02-0.07	0.03	5	0.03-0.06	0.04	5	0.03-0.06	0.04	5	0.03-0.06	0.04	5	0.03-0.09	0.05
	L 5	.02-.04	.03	5	.02-.07	.04	5	.02-.03	.03	5	.03-.07	.04	5	.06-.12	.08
Phosphorus, orthophosphate, dissolved-----	H 5	.00-.05	.02	5	.01-.02	.01	4	.00-.01	.01	5	.01-.03	.01	5	.00-.04	.02
	L 5	.00-.02	.01	5	.00-.07	.02	5	.00-.03	.01	5	.01-.05	.03	5	.01-.07	.04
Nitrogen, total-----	H \$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
	L \$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Nitrogen, nitrite plus nitrate, total-----	H \$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
	L \$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$	\$
Nitrogen, ammonia, total-----	H 5	.10-.48	.25	5	.13-.41	.24	5	.13-.46	.26	5	.13-.44	.21	5	.10-.46	.23
	L 5	.06-.21	.14	5	.04-.13	.10	5	.03-.14	.08	5	.02-.14	.09	5	.02-.25	.11
Nitrogen, organic, total-----	H 5	.13-.74	.31	5	.21-.79	.36	5	.14-.27	.20	4	.15-.28	.20	5	.20-.38	.28
	L 5	.17-.94	.42	5	.18-.37	.28	5	.18-.40	.30	5	.14-.36	.25	5	.16-.62	.30
Nitrogen, Kjeldahl, total-----	H 5	.31-1.1	.56	5	.36-1.2	.60	5	.35-.68	.46	4	.31-.59	.43	5	.36-.84	.51
	L 5	.34-1.1	.55	4	.31-.46	.37	5	.26-.54	.36	5	.21-.50	.34	5	.24-.87	.41
Carbon, organic, total-----	H 5	2.3-8.2	5.2	5	2.6-5.2	4.7	5	2.9-13	6.3	5	3.8-26	9.5	5	2.7-9.0	6.5
	L 5	3.1-6.2	4.4	5	2.7-6.5	4.7	5	3.0-9.6	6.4	5	3.0-12	6.2	5	4.2-7.9	5.6
Carbon, organic, dissolved-----	H 5	1.4-8.2	4.8	5	.60-4.6	2.3	5	1.6-4.6	2.7	5	2.0-14	5.9	5	1.9-8.0	4.8
	L 5	1.6-4.1	3.0	5	1.5-4.8	3.2	5	2.2-5.2	4.0	5	2.6-6.0	4.1	5	1.7-4.8	3.5

Means and ranges of nutrient concentrations at stations on the Chattahoochee River, downstream from West Point, Ga.,
April 1978-December 1979--Continued

[N, number of samples; H, maximum release; L, minimum release; †, deleted because of questionable analytical results. Results in milligrams per liter]

		Sampling station														
		CH-2.5B			CH-01A			CH-01B			CH-01C			CH-01D		
		N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>1979 stratified period</u>																
Phosphorus, total-----	H	3	0.01-0.04	0.03	3	0.02-0.04	0.03	3	0.01-0.03	0.02	3	0.02-0.04	0.03	3	0.02-0.07	0.04
	L	3	.01-.04	.03	4	.02-.06	.03	3	.01-.04	.03	3	.03-.05	.04	3	.05-.10	.07
Phosphorus, orthophosphate, dissolved-----	H	3	.01-.02	.01	3	.00-.01	.01	3	.01-.01	.01	3	.00-.02	.01	3	.00-.01	.01
	L	3	.00-.02	.01	3	.00-.01	.01	3	.00-.01	.00	3	.00-.02	.01	3	.01-.05	.03
Nitrogen, total-----	H	3	.72-.84	.77	0	-	-	3	.58-.66	.61	3	.59-.63	.61	3	.55-.60	.57
	L	3	.47-.67	.57	3	.49-.62	.54	3	.47-.54	.51	3	.48-.58	.53	3	.33-.63	.59
Nitrogen, nitrite plus nitrate, total-----	H	3	.05-.27	.13	3	.05-.27	.13	3	.05-.28	.13	3	.06-.31	.15	3	.07-.32	.16
	L	3	.04-.10	.08	4	.05-.22	.12	3	.06-.25	.13	3	.10-.27	.16	3	.10-.26	.17
Nitrogen, ammonia, total-----	H	3	.06-.47	.29	3	.06-.40	.27	3	.06-.41	.26	3	.06-.40	.24	3	.05-.38	.16
	L	3	.06-.50	.23	4	.02-.46	.16	3	.06-.31	.15	3	.02-.18	.12	3	.00-.14	.08
Nitrogen, or- ganic, total----	H	3	.30-.41	.34	3	.14-.38	.28	3	.12-.30	.22	3	.18-.27	.22	3	.15-.40	.35
	L	3	.13-.34	.26	3	.11-.31	.22	3	.17-.30	.23	3	.19-.28	.24	3	.13-.35	.27
Nitrogen, Kjel- dahl, total----	H	3	.47-.79	.64	3	.37-.72	.54	3	.31-.60	.48	3	.28-.58	.46	3	.24-.53	.41
	L	3	.37-.63	.49	3	.30-.57	.43	3	.28-.48	.38	3	.21-.46	.36	3	.23-.49	.32
Carbon, or- ganic, total----	H	3	3.5-4.3	3.9	3	2.2-3.1	2.7	3	2.4-4.9	3.5	3	2.7-3.5	3.2	3	2.1-4.0	3.0
	L	3	2.8-5.4	4.0	4	2.6-5.0	3.6	3	2.3-10	5.4	3	2.7-4.4	3.6	3	2.6-5.9	3.9
Carbon, organic, dissolved-----	H	3	2.1-3.9	2.9	3	2.0-2.9	2.4	3	2.0-2.9	2.4	3	2.0-3.5	2.7	3	2.0-3.2	2.7
	L	3	2.8-3.9	3.3	3	1.9-2.9	2.5	3	2.2-10	4.9	3	2.5-3.2	2.8	3	2.8-4.7	3.5

APPENDIX B-6

Means and ranges of metal concentrations

[Iron, total; iron, dissolved; manganese, total; manganese, dissolved; zinc, total; calcium, total; magnesium, total; potassium, total; sodium, total]

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Means and ranges of metal concentrations at Chattahoochee River
stations in West Point Reservoir, April 1978-December 1979

(N, number of samples, U, above the thermocline; L, below the thermocline;
T, entire water column; +, station not established; *, analysis not
required; #, not applicable. Results in micrograms per liter)

		Sampling station								
		CH-12			CH-11A			CH-10		
		N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>										
Metals:										
Iron, total-----	T	9	1,100-5,400	2,400	2	1,300-2,000	1,700	40	450-4,800	1,900
Iron, dissolved-----	T	9	10-120	50	2	100-120	110	40	10-340	80
Manganese, total-----	T	9	60-200	120	*	*	*	40	50-520	180
Manganese, dissolved--	T	9	20-40	30	*	*	*	40	0-180	100
Zinc, total-----	T	1	20	--	*	*	*	11	20-60	30
Calcium, total-----	T	1	3,300	--	*	*	*	5	3,200-3,500	3,300
Magnesium, total-----	T	1	1,100	--	*	*	*	5	1,000-1,200	1,100
Potassium, total-----	T	1	1,600	--	*	*	*	5	1,700-1,800	1,700
Sodium, total-----	T	1	5,400	--	*	*	*	5	5,200-5,500	5,400
<u>1978 stratified period</u>										
Metals:										
Iron, total-----	U	5	610-4,800	2,600	+	+	+	10	90-580	250
	L	#	#	#	#	#	#	10	360-8,700	3,300
Iron, dissolved-----	U	5	20-70	40	+	+	+	9	0-80	18
	L	#	#	#	#	#	#	9	0-6,500	1,500
Manganese, total-----	U	5	40-130	90	+	+	+	10	10-110	40
	L	#	#	#	#	#	#	8	70-2,500	880
Manganese, dissolved--	U	5	20-70	40	+	+	+	10	0-20	3
	L	#	#	#	#	#	#	9	0-2,500	840
Zinc, total-----	U	5	30-80	50	+	+	+	10	10-50	30
	L	#	#	#	#	#	#	9	10-60	40
Calcium, total-----	U	1	3,500	--	+	+	+	2	4,100	4,100
	L	#	#	#	#	#	#	3	3,600-3,800	3,600
Magnesium, total-----	U	1	1,200	--	+	+	+	2	1,200	1,200
	L	#	#	#	#	#	#	3	1,100-1,200	1,100
Potassium, total-----	U	1	2,000	--	+	+	+	2	2,000	2,000
	L	#	#	#	#	#	#	3	2,000	2,000
Sodium, total-----	U	1	4,500	--	+	+	+	2	5,100-5,200	5,200
	L	#	#	#	#	#	#	3	4,300-4,700	4,400
<u>1979 stratified period</u>										
Metals:										
Iron, total-----	U	3	2,000-2,600	2,300	*	*	*	4	160-490	240
	L	#	#	#	#	#	#	6	360-2,400	1,800
Iron, dissolved-----	U	3	20-60	40	*	*	*	4	10-20	20
	L	#	#	#	#	#	#	6	30-40	30
Manganese, total-----	U	3	90-120	110	*	*	*	4	30-40	30
	L	#	#	#	#	#	#	6	70-480	270
Manganese, dissolved--	U	33	10-60	N	*	*	*	4	0-30	10
	L	#	#	#	#	#	#	6	0-410	150

Means and ranges of metal concentrations at Chattahoochee River
stations in West Point Reservoir, April 1978-December 1979--Continued

[N, number of samples; U, above the thermocline; L, below the thermocline;
T, entire water column; †, station not established; *, analysis not
required; ‡, not applicable. Results in micrograms per liter]

		Sampling station								
		CH-97			CH-USA			CH-63C		
		N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>										
Metals:										
Iron, total-----	T	30	340-6,300	2,000	30	60-2,400	1,200	30	80-2,400	700
Iron, dissolved-----	T	30	0-250	80	30	10-140	50	31	0-210	60
Manganese, total-----	T	30	40-550	200	31	20-240	140	31	30-1,200	180
Manganese, dissolved--	T	30	0-240	100	31	0-210	90	31	0-1,100	120
Zinc, total-----	T	5	20-30	20	5	20-30	20	*	*	*
Calcium, total-----	T	*	*	*	*	*	*	†	†	†
Magnesium, total-----	T	*	*	*	*	*	*	†	†	†
Potassium, total-----	T	*	*	*	*	*	*	†	†	†
Sodium, total-----	T	*	*	*	*	*	*	†	†	†
<u>1978 stratified period</u>										
Metals:										
Iron, total-----	U	14	90-310	160	13	50-210	120	18	40-250	120
	L	11	200-10,000	2,400	11	150-10,000	2,800	12	90-1,800	880
Iron, dissolved-----	U	14	0-60	10	14	0-50	10	18	0-40	10
	L	11	10-5,600	770	11	0-2,900	610	12	0-1,800	290
Manganese, total-----	U	14	10-150	40	14	10-30	20	18	0-120	20
	L	11	50-1,900	530	11	30-3,500	1,000	12	20-1,300	530
Manganese, dissolved--	U	14	0-110	15	14	0-20	10	18	0-20	10
	L	11	0-1,900	440	11	0-3,500	980	12	10-1,300	520
Zinc, total-----	U	14	10-300	30	13	10-80	30	18	0-160	40
	L	11	20-110	40	11	10-90	40	12	0-70	50
Calcium, total-----	U	6	3,400-4,100	3,700	6	3,100-3,900	3,800	6	3,000-4,000	3,800
	L	4	3,200-3,900	3,800	4	3,100-3,700	3,700	4	2,800-3,700	3,200
Magnesium, total-----	U	6	1,100-1,300	1,200	6	1,000-1,200	1,200	6	900-1,300	1,200
	L	4	1,100-1,200	1,200	4	1,100	1,100	4	900-1,100	1,000
Potassium, total-----	U	6	1,500-2,100	1,800	6	1,400-1,900	1,600	6	1,200-1,800	1,700
	L	4	1,400-2,000	1,700	4	1,400-1,800	1,600	4	1,200-1,800	1,500
Sodium, total-----	U	6	5,000-5,400	5,200	6	4,500-5,400	4,900	6	3,600-5,500	5,200
	L	4	3,900-5,100	4,500	4	3,600-5,000	4,300	4	3,500-5,100	4,100
<u>1979 stratified period</u>										
Metals:										
Iron, total-----	U	8	120-770	320	10	110-550	260	12	80-250	120
	L	7	190-1,500	1,100	4	780-3,300	2,100	6	340-4,600	1,900
Iron, dissolved-----	U	8	10-100	30	10	10-70	20	12	0-30	10
	L	7	20-80	40	4	30-1,600	670	6	0-4,400	1,500
Manganese, total-----	U	8	20-80	40	10	0-30	20	12	0-30	10
	L	7	20-760	410	4	110-1,700	1,300	6	170-2,000	1,100
Manganese, dissolved--	U	8	0-20	10	10	0-150	10	12	0-10	0
	L	7	0-720	330	4	50-1,600	1,200	6	30-2,000	1,000

Means and ranges of metal concentrations in tributary stations
in West Point Reservoir, April 1978-December 1979

[N, number of samples; U, above the thermocline; L, below the thermocline; T, entire water column; *, analysis not required. Results in micrograms per liter]

Sampling station						
Yellowjacket Creek			Wehadkee Creek			
CH-08			CH-13			
	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>						
Metals:						
Iron, total-----	T 17	760-1,300	1,300	25	120-4,800	1,100
Iron, dissolved-----	T 17	0-12,000	700	25	0-4,200	320
Manganese, total-----	T 17	60-5,200	470	25	40-2,300	330
Manganese, dissolved----	T 17	0-5,200	380	25	0-2,300	280
Calcium, total-----	T *	*	*	*	*	*
Magnesium, total-----	T *	*	*	*	*	*
Potassium, total-----	T *	*	*	*	*	*
Sodium, total-----	T *	*	*	*	*	*
<u>1978 stratified period</u>						
Metals:						
Iron, total-----	U 18	100-310	180	17	10-260	120
	L 9	230-17,000	4,400	10	130-7,800	2,400
Iron, dissolved-----	U 18	0-70	20	17	0-100	20
	L 9	10-16,000	3,300	10	10-2,500	780
Manganese, total-----	U 18	20-90	30	16	10-40	20
	L 9	40-5,700	1,900	10	30-2,500	1,200
Manganese, dissolved----	U 18	0-20	10	17	0-50	16
	L 9	10-5,700	1,800	10	0-2,500	1,000
Calcium, total-----	U 6	3,000-4,400	4,200	4	3,300-4,200	4,100
	L 3	3,000-6,500	4,400	3	2,400-4,300	3,100
Magnesium, total-----	U 6	1,000-1,500	1,300	3	1,000-1,300	1,000
	L 3	400-2,000	1,300	3	900-1,200	1,000
Potassium, total-----	U 6	1,300-2,100	2,000	4	1,200-2,100	2,000
	L 3	1,400-2,100	1,800	3	1,200-2,100	1,600
Sodium, total-----	U 6	3,800-5,300	4,900	4	4,300-5,400	5,200
	L 3	3,500-5,000	4,000	3	2,900-5,200	3,600
<u>1979 stratified period</u>						
Metals:						
Iron, total-----	U 14	160-1,400	660	11	90-370	160
	L 8	310-12,000	4,800	4	130-5,100	3,200
Iron, dissolved-----	U 14	10-80	40	11	0-60	20
	L 8	50-11,000	3,500	4	0-5,000	2,600
Manganese, total-----	U 14	10-640	70	11	0-90	10
	L 8	100-5,100	2,900	4	20-2,100	1,500
Manganese, dissolved----	U 14	0-40	10	11	0-30	0
	L 8	40-4,400	2,000	4	0-2,100	1,500

Means and ranges of metal concentrations at stations near the inundated coffer structure upstream from West Point Dam, April 1978-December 1979

[N, number of samples; U, above the thermocline; L, below the thermocline; T, entire water column; *, analysis not required. Results in micrograms per liter]

		Sampling station								
		CH-03A			CH-03B			CH-03C		
		N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>										
Iron, total-----	T	14	130-2,100	800	31	80-2,700	790	30	80-2,400	620
Iron, dissolved-----	T	29	80-2,200	30	31	0-90	20	31	0-210	30
Manganese, total-----	T	*	*	*	*	*	*	31	30-1,200	150
Manganese, dissolved-----	T	*	*	*	*	*	*	31	0-1,100	100
<u>1978 stratified period</u>										
Iron, total-----	U	16	10-550	140	16	30-1,300	160	18	40-250	120
	L	9	80-2,500	1,100	8	80-1,800	950	12	90-1,800	800
Iron, dissolved-----	U	16	0-60	20	16	0-50	20	18	0-40	10
	L	9	0-1,200	290	9	0-1,500	320	12	0-1,800	420
Manganese, total-----	U	*	*	*	*	*	*	18	0-120	20
	L	*	*	*	*	*	*	12	20-1,300	400
Manganese, dissolved-----	U	*	*	*	*	*	*	18	0-20	10
	L	*	*	*	*	*	*	12	10-1,300	430
<u>1979 stratified period</u>										
Iron, total-----	U	16	60-200	120	16	60-220	120	12	90-250	120
	L	9	150-3,100	3,500	8	530-6,600	3,100	6	340-4,600	2,100
Iron, dissolved-----	U	16	0-60	20	16	10-100	20	12	0-30	10
	L	9	20-1,700	2,400	8	20-3,000	2,000	6	0-4,400	1,600
Manganese, total-----	U	*	*	*	*	*	*	12	0-30	10
	L	*	*	*	*	*	*	6	0-1,000	1,100
Manganese, dissolved-----	U	*	*	*	*	*	*	12	0-10	5
	L	*	*	*	*	*	*	6	30-2,000	1,100

Means and ranges of metal concentrations at stations on the Chattahoochee River
Downstream from West Point Dam, April 1978-December 1979

[N, number of samples; H, maximum release; L, minimum release; *, analysis not required.
Results in micrograms per liter]

		Sampling station														
		CH-2-5b			CH-01A			CH-01B			CH-01C			CH-01d		
		N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>Unstratified periods</u>																
Lead		8	170-1,500	600	8	350-1,700	760	8	240-1,700	800	7	330-1,400	980	8	560-1,200	1,200
Lead	-----	L: 8	150-1,400	520	7	150-1,400	570	8	130-1,500	560	8	170-1,500	570	8	150-1,600	610
Cadmium		8	0-90	30	8	0-110	30	8	0-410	80	8	0-310	80	8	0-70	30
Cadmium	-----	L: 8	0-120	40	6	10-130	40	8	0-120	40	8	0-80	30	8	10-130	50
Copper		8	30-220	110	8	70-220	120	8	70-210	130	7	80-440	170	8	90-280	170
Copper	-----	L: 8	30-30	120	7	60-130	90	8	60-210	90	8	30-220	90	8	60-180	90
Zinc		8	10-130	50	8	10-130	50	8	10-120	50	8	10-220	60	8	10-110	30
Zinc	-----	L: 8	10-220	70	7	10-80	40	8	10-130	50	8	10-130	40	8	10-110	40
Chromium		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Chromium	-----	L: 1	3,200	--	1	3,300	--	1	3,150	--	1	3,200	--	1	3,200	--
Vanadium		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Vanadium	-----	L: 1	1,000	--	1	1,200	--	1	1,100	--	1	1,100	--	1	1,100	--
Barium		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Barium	-----	L: 1	1,200	--	1	1,100	--	1	1,200	--	1	1,300	--	1	1,200	--
Strontium		*	*	*	*	*	*	*	*	*	*	*	*	*	*	*
Strontium	-----	L: 1	4,800	--	1	3,800	--	1	4,000	--	1	4,800	--	1	5,000	--
<u>1978 stratified period</u>																
Lead		5	170-1,900	730	5	600-1900	1,080	5	230-1,900	980	5	550-1,900	990	5	490-1,500	1,000
Lead	-----	L: 5	250-1,100	670	5	320-1,300	660	5	260-930	600	5	210-1,600	670	5	320-1,300	680
Cadmium		5	0-1,900	430	5	0-260	110	5	0-1,100	360	5	20-190	90	5	10-250	90
Cadmium	-----	L: 5	10-260	100	5	10-100	50	5	0-330	100	5	0-80	40	5	0-90	50
Copper		5	140-1,900	430	5	210-1,000	460	5	210-1,100	490	5	190-710	420	5	210-960	490
Copper	-----	L: 5	140-310	230	5	70-280	180	5	70-240	170	5	40-230	150	5	70-240	140
Zinc		5	110-1,200	420	5	170-310	160	5	200-1,100	490	5	150-680	380	5	130-840	440
Zinc	-----	L: 5	80-310	220	5	90-280	140	5	20-230	160	5	10-220	120	5	20-240	110
Chromium		*	4,100	--	1	4,300	--	1	4,600	--	1	4,100	--	1	4,300	--
Chromium	-----	L: 1	4,200	--	--	--	--	1	4,400	--	1	4,600	--	1	4,400	--
Vanadium		*	1,200	--	1	1,200	--	1	1,200	--	1	1,200	--	1	1,200	--
Vanadium	-----	L: 1	1,300	--	--	--	--	1	1,300	--	1	1,400	--	1	1,400	--
Barium		*	2,100	--	1	2,100	--	1	2,100	--	1	2,100	--	1	2,100	--
Barium	-----	L: 1	2,000	--	--	--	--	1	2,000	--	1	2,000	--	1	2,000	--
Strontium		*	5,200	--	1	5,600	--	1	5,300	--	1	5,100	--	1	5,300	--
Strontium	-----	L: 1	5,000	--	--	--	--	1	5,600	--	1	6,600	--	1	7,300	--
<u>1979 stratified period</u>																
Lead		3	300-1,300	940	3	290-1,200	900	3	400-1,200	900	3	320-1,300	940	3	640-2,500	1,510
Lead	-----	L: 3	350-1,200	940	3	350-1,500	910	3	290-1,200	800	3	340-1,100	750	3	380-1,500	940
Cadmium		3	10-1,100	630	3	20-810	480	3	30-800	500	3	20-530	290	3	20-410	210
Cadmium	-----	L: 3	10-1,200	510	3	10-830	320	3	0-330	160	3	10-120	80	3	10-180	110
Copper		3	110-750	410	3	160-730	480	3	110-730	500	3	110-740	500	3	90-700	410
Copper	-----	L: 3	130-760	390	3	110-710	360	3	70-500	280	3	40-430	270	3	30-640	360
Zinc		3	120-750	500	3	110-730	460	3	110-750	500	3	100-740	490	3	90-690	310
Zinc	-----	L: 3	120-760	390	3	110-710	360	3	70-500	260	3	30-430	250	3	30-640	350

APPENDIX B-7

Means and ranges of biological data from West Point Reservoir

[Euphotic depth; Secchi disc visibility; seston, dry weight; seston, ash weight; seston, volatile weight; phytoplankton, standing stock; chlorophyll a; chlorophyll b; zooplankton, standing stock; adenosine triphosphate; algal growth potential]

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Means and ranges of biological data from West Point Reservoir, 1978 and 1979

[Euphotic zone: that column of water absorbing 99 percent of the incident surface light. All sampling, with the exception of zooplankton, restricted to the euphotic zone. Zooplankton were analyzed from samples composited over the entire water column. *, no euphotic depth determined at this station; x, station not established; †, not required for this station.]

	Sampling stations								
	CH-12			CH-11A			CH-10		
	N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>April-October 1978</u>									
Euphotic depth (m)-----	*	*	*	x	x	x	7	1.0-3.0	2.1
Secchi-disc visibility (m)---	†	†	†	x	x	x	7	.20-1.10	.71
Seston, dry weight (mg/L)---	6	8.0-60.0	32.0	x	x	x	5	3.0-50.0	16.6
Seston, ash weight (mg/L)---	6	12.0-50.0	29.4	x	x	x	5	0.0-27.0	7.4
Seston, volatile weight (mg/L)-----	6	2.0-10.0	7.4	x	x	x	5	3.0-23.0	9.2
Phytoplankton standing stock (cells/mL)-----	6	510-5,840	2,430	x	x	x	6	5,540-458,600	183,130
Chlorophyll <u>a</u> (ug/L)-----	7	1.12-4.81	2.60	x	x	x	7	2.99-34.7	2.6
Chlorophyll <u>b</u> (ug/L)-----	7	—	.00	x	x	x	7	.00-3.43	1.17
Zooplankton standing stock (organisms/m)-----	5	0-1,000	700	x	x	x	6	1,000-71,000	34,300
Adenosine triphosphate (ug/L)-----	5	.10-.44	.23	x	x	x	5	.18-2.34	1.24
Algal growth potential (mg/L)-----	7	27-48	37.4	x	x	x	5	4.1-1.90	3.05
<u>March-December 1979</u>									
Euphotic depth (m)-----	*	*	*	8	1.0-2.0	1.6	7	1.5-3.0	2.3
Secchi-disc visibility (m)---	6	0.20-.65	0.40	8	.30-.65	.48	8	.55-.80	.71
Seston, dry weight (mg/L)---	7	28.0-99.0	57.5	7	17.3-39.5	24.0	7	9.3-22.0	14.8
Seston, ash weight (mg/L)---	7	22.0-86.5	48.1	7	13.7-35.0	19.9	7	3.5-18.3	10.6
Seston, volatile weight (mg/L)-----	7	6.0-12.5	10.7	7	2.7-6.0	4.1	7	1.7-7.5	4.0
Phytoplankton standing stock (cells/mL)-----	7	10,030-22,260	14,010	7	2,060-18,800	9,379	7	2,000-302,840	88,460
Chlorophyll <u>a</u> (ug/L)-----	2	2.02-2.72	2.37	4	3.54-9.36	6.48	8	3.60-26.8	11.1
Chlorophyll <u>b</u> (ug/L)-----	8	—	.00	8	—	.00	6	.00-.79	.10
Zooplankton standing stock (organisms/m)-----	7	1,190-7,850	3,950	7	1,300-8,770	4,743	7	1,130-98,180	41,120
Adenosine triphosphate (ug/L)-----	5	.11-1.10	.48	5	.20-1.00	.46	5	.45-4.4	1.69
Algal growth potential (mg/L)-----	†	†	†	†	†	†	†	†	†

Means and ranges of biological data from West Point Reservoir, 1978 and 1979--Continued

[Euphotic zone: that column of water absorbing 99 percent of the incident surface light. All sampling, with the exception of zooplankton, restricted to the euphotic zone. Zooplankton were analyzed from samples composited over the entire water column. *, no euphotic depth determined at this station; x, station not established; †, not required for this station.]

	Sampling stations								
	CH-07			CH-05A			CH-03C		
	N	Range	Mean	N	Range	Mean	N	Range	Mean
<u>April-October 1978</u>									
Euphotic depth (m)-----	6	1.0-4.0	2.7	7	2.0-4.0	3.4	7	2.0-6.0	4.0
Secchi-disc visibility (m)---	6	.20-1.60	1.05	7	.80-1.30	1.10	6	1.00-1.90	1.44
Seston, dry weight (mg/L)---	6	6.0-27.0	12.8	6	6.0-13.0	8.8	6	2.0-8.0	6.3
Seston, ash weight (mg/L)---	6	2.0-13.0	4.5	5	2.0-4.0	2.4	6	.0-3.0	1.3
Seston, volatile weight (mg/L)-----	6	3.0-14.0	8.2	5	4.0-8.0	5.6	6	1.0-6.0	5.0
Phytoplankton standing stock (cells/mL)-----	6	22,190-666,280	229,090	6	18,810-276,110	128,110	6	5,870-123,530	66,560
Chlorophyll <u>a</u> (ug/L)-----	6	8.55-34.3	23.7	6	7.85-31.5	20.5	7	9.22-21.3	14.2
Chlorophyll <u>b</u> (ug/L)-----	6	.00-2.76	.46	6	--	.00	7	.00-2.93	.42
Zooplankton standing stock (organisms/m)-----	6	2,000-65,000	37,700	6	6,000-102,000	41,800	5	1,000-21,000	11,800
Adenosine triphosphate (ug/L)-----	4	.44-2.67	1.64	4	.06-1.94	.98	4	.22-3.12	1.24
Algal growth potential (mg/L)-----	2	1.30-1.50	1.40	7	.60-4.00	1.93	7	.40-2.40	1.07
<u>March-December 1979</u>									
Euphotic depth (m)-----	7	1.5-4.0	2.5	7	1.5-4.0	2.9	7	1.5-5.5	3.7
Secchi-disc visibility (m)---	8	.45-1.00	.78	7	.4-1.20	.89	7	.40-1.70	1.14
Seston, dry weight (mg/L)---	8	6.0-16.7	9.5	7	4.0-11.3	7.2	7	2.0-10.3	5.2
Seston, ash weight (mg/L)---	7	2.3-9.0	5.1	7	.7-6.7	4.1	7	.5-7.7	2.9
Seston, volatile weight (mg/L)-----	7	1.2-7.7	4.4	7	1.4-4.6	3.1	7	.0-3.5	2.3
Phytoplankton standing stock (cells/mL)-----	7	11,050-393,690	111,360	7	7,790-225,650	97,370	7	8,140-180,410	67,800
Chlorophyll <u>a</u> (ug/L)-----	7	3.46-20.0	7.92	8	5.7-19.4	12.4	8	3.80-35.0	11.03
Chlorophyll <u>b</u> (ug/L)-----	7	--	.00	8	.00-.94	.12	8	--	.00
Zooplankton standing stock (organisms/m)-----	7	160-191,300	86,700	7	3,550-284,200	100,340	7	33,780-139,520	60,680
Adenosine triphosphate (ug/L)-----	7	.50-3.10	1.60	5	.20-1.40	.96	5	.10-1.66	.77
Algal growth potential (mg/L)-----	+	+	+	+	+	+	+	+	+

APPENDIX C

Physical and chemical data

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APPENDIX C-1

Water-quality on-site measurements at stations in West Point Reservoir and the Chattahoochee River below West Point Dam, April 1978-December 1979

[Water temperature, specific conductance, oxidation-reduction potential, dissolved oxygen, pH, Secchi disc transparency, euphotic depth, and light light incident]

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DATE	TEMPER- ATURE, AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)	TRANS- PAR- ENCY (SECCHI DISK) (M)
APR . 1978								
18...	21.0	1.0	19.6	7.4	6.6	72	495	--
MAY								
08...	22.0	1.0	18.7	7.8	6.5	70	480	--
JUN								
06...	20.0	1.0	25.1	4.7	6.7	96	570	--
JUL								
13...	31.5	1.0	28.9	6.7	6.7	82	--	--
AUG								
17...	27.0	1.0	22.4	7.2	6.4	64	560	--
31...	30.0	1.0	22.7	7.1	6.5	63	590	--
OCT								
19...	23.4	1.0	14.9	9.1	6.6	62	575	--
NOV								
30...	12.0	1.0	13.5	8.4	6.8	71	530	--
JAN . 1979								
24...	-2.0	1.0	6.5	11.2	6.8	54	615	--
MAR								
22...	--	1.0	17.7	7.6	6.3	84	615	.65
MAY								
03...	25.5	1.0	14.8	9.1	6.2	46	645	.30
JUN								
13...	--	1.0	23.3	6.7	6.3	67	560	1.30
JUL								
26...	33.0	1.0	26.1	5.4	6.8	97	615	.40
AUG								
23...	35.0	1.0	26.8	5.7	6.6	71	455	.45
SEPT								
20...	23.0	1.0	20.5	6.9	6.2	69	630	.20
OCT								
17...	19.0	1.0	15.8	8.2	6.3	61	605	--
DEC								
13...	19.0	1.0	14.2	8.6	6.4	90	585	--

CH-11A (0233b570) Chattahoochee River above N w River, near Corluth, Ga., 1979

DATE	TEMPER- ATURE AIP (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXID- ATION REDU- CTION POTEN- TIAL (MV)	TRANS- PAR- ANCY (SECCHI DISK) (M)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCI- DENT PERCENT REMAIN- ING AT DEPTH
MAR . 1979										
21...	25.0	.20	17.3	8.1	6.0	77	630	.65	2.00	--
21...	--	1.0	--	--	--	--	--	--	--	5.0
21...	--	2.0	17.2	8.1	5.9	77	630	--	--	1.0
21...	--	4.0	17.1	8.0	5.9	78	630	--	--	--
21...	--	5.0	17.1	7.9	5.8	78	630	--	--	--
MAY										
03...	10.0	.20	15.7	8.4	6.2	49	635	.65	2.00	--
03...	--	1.0	--	--	--	--	--	--	--	5.0
03...	--	2.0	15.6	8.4	6.2	49	640	--	--	1.0
03...	--	4.0	15.6	8.4	6.1	49	650	--	--	--
03...	--	6.0	15.5	8.4	6.1	49	640	--	--	--
JUN										
13...	33.0	.20	25.2	6.5	6.3	41	610	.45	1.50	--
13...	--	1.0	--	--	--	--	--	--	--	6.0
13...	--	1.5	--	--	--	--	--	--	--	1.0
13...	--	2.0	24.5	6.3	6.3	42	610	--	--	--
13...	--	4.0	23.8	6.1	6.2	78	615	--	--	--
13...	--	6.0	23.7	6.1	6.1	77	620	--	--	--
JUL										
26...	28.0	.20	27.5	7.1	6.8	76	590	.30	1.00	--
26...	--	1.0	--	--	--	--	--	--	--	1.0
26...	--	2.0	26.0	5.6	6.4	75	600	--	--	--
26...	--	3.0	25.7	5.4	6.4	74	610	--	--	--
26...	--	4.0	25.6	5.3	6.3	74	610	--	--	--
26...	--	5.0	25.5	5.2	6.3	73	615	--	--	--
26...	--	6.0	25.4	5.0	6.3	71	620	--	--	--
26...	--	7.0	25.1	5.0	6.3	71	620	--	--	--
26...	--	8.0	25.3	5.0	6.3	71	620	--	--	--
AUG										
23...	34.0	.20	28.5	5.6	6.7	79	495	.40	2.00	--
23...	--	1.0	--	--	--	--	--	--	--	4.0
23...	--	2.0	27.8	5.2	6.6	77	500	--	--	1.0
23...	--	3.0	27.6	5.1	6.6	75	500	--	--	--
23...	--	4.0	27.5	5.0	6.5	78	505	--	--	--
23...	--	5.0	27.4	4.9	6.5	78	515	--	--	--
23...	--	6.0	27.4	4.9	6.5	78	505	--	--	--
23...	--	7.0	27.4	4.8	6.5	79	510	--	--	--
23...	--	8.0	27.3	4.9	6.5	79	510	--	--	--
SEP										
20...	19.5	.20	20.7	5.5	6.1	71	530	.30	--	NO
20...	--	1.0	--	--	--	--	--	--	--	--
20...	--	2.0	20.7	5.5	6.1	71	540	--	--	--
20...	--	3.0	20.7	5.5	6.1	71	550	--	--	--
20...	--	4.0	20.7	5.5	6.1	71	555	--	--	--
20...	--	5.0	20.7	5.4	6.2	71	560	--	--	--
20...	--	6.0	20.7	5.4	6.1	70	560	--	--	--
20...	--	7.0	20.7	5.4	6.1	70	565	--	--	--
20...	--	8.0	20.7	5.3	6.1	70	565	--	--	--
OCT										
17...	17.0	.20	15.4	8.0	6.2	67	625	.50	--	NO
17...	--	2.0	15.4	8.0	6.4	67	620	--	--	--
17...	--	4.0	15.4	7.9	6.4	67	615	--	--	--
17...	--	6.0	15.4	7.9	6.4	68	615	--	--	--
17...	--	8.0	15.4	7.9	6.4	68	615	--	--	--
DEC										
12...	23.0	.2	12.0	4.3	6.5	73	570	.65	2.00	--
12...	--	1.0	--	--	--	--	--	--	--	4.0
12...	--	2.0	11.9	4.3	6.5	73	545	--	--	1.0
12...	--	4.0	11.8	4.1	6.4	73	475	--	--	--
12...	--	5.0	11.8	4.2	6.5	73	420	--	--	--

Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978 and 1979

DATE	TEMPER- ATURE AT 100 CM	SAM- PLING DEPTH (CM)	TEMPER- ATURE (CELS C)	DRYBUL- DIS- SOLVED (MG/L)	DW (G/ML)	SPE- CIFIC CON- DUCT- ANCE (MICHO- MMOS)	ORJU- ATION COEF- FICIENT POTEN- TIAL (MV)	TRANS- PAR- ENCY (SEC/CM)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCI- DENT OF PENETRA- TION AT DEPTH
1978	17.00	29.0	22.1	11.0	8.9	72	655	460	1.50	--
17.00	--	1.0	--	--	--	--	--	--	--	6.0
17.00	--	1.5	--	--	--	--	--	--	--	1.0
17.00	--	2.0	20.0	9.2	6.0	72	670	--	--	--
17.00	--	3.0	19.5	6.6	6.1	75	690	--	--	--
17.00	--	4.0	19.0	5.7	5.9	75	505	--	--	--
17.00	--	5.0	18.7	5.4	5.7	74	515	--	--	--
17.00	--	6.0	18.6	5.5	5.5	75	525	--	--	--
17.00	--	7.0	18.5	5.5	5.6	77	525	--	--	--
17.00	--	8.0	18.4	5.3	5.6	76	525	--	--	--
17.00	--	10.0	18.1	4.8	5.6	76	520	--	--	--
17.00	--	11.0	17.4	4.5	5.7	77	515	--	--	--
17.00	--	12.0	17.2	3.6	5.7	75	515	--	--	--
1979	02.00	22.0	17.2	8.1	6.8	76	515	420	1.00	--
02.00	--	1.0	--	--	--	--	--	--	--	1.0
02.00	--	2.0	18.5	8.0	6.1	72	515	--	--	--
02.00	--	4.0	18.4	7.9	6.1	72	540	--	--	--
02.00	--	6.0	18.1	7.8	6.2	70	565	--	--	--
02.00	--	8.0	18.2	7.8	6.1	78	565	--	--	--
02.00	--	10.0	18.2	7.8	6.1	76	510	--	--	--
02.00	--	12.0	18.2	7.8	6.0	76	515	--	--	--
05.00	21.8	29.0	24.0	12.5	9.0	102	480	485	--	ND
05.00	--	2.0	27.0	8.1	7.6	100	510	--	--	--
05.00	--	3.0	26.4	8.1	8.9	102	525	--	--	--
05.00	--	4.0	25.0	7.2	8.4	104	540	--	--	--
05.00	--	5.0	24.0	7.2	8.4	104	540	--	--	--
05.00	--	6.0	22.3	6.1	6.1	102	520	--	--	--
05.00	--	8.0	18.7	6.1	6.2	72	505	--	--	--
05.00	--	10.0	18.9	6.1	6.1	76	495	--	--	--
05.00	--	12.0	18.6	6.1	6.1	102	455	--	--	--
12.00	26.3	29.0	29.3	4.7	8.6	88	485	1.00	3.00	--
12.00	--	1.0	--	--	--	--	--	--	--	2.0
12.00	--	2.0	29.3	8.3	4.6	86	480	--	--	5.0
12.00	--	3.0	29.4	8.4	8.6	87	480	--	--	1.0
12.00	--	4.0	28.8	5.0	6.7	87	520	--	--	--
12.00	--	5.0	28.0	4.0	6.7	88	520	--	--	--
12.00	--	6.0	27.4	3.8	6.7	86	520	--	--	--
12.00	--	7.0	27.0	3.1	6.7	86	580	--	--	--
12.00	--	8.0	26.4	6.1	6.1	89	580	--	--	--
12.00	--	10.0	24.0	6.1	6.3	106	360	--	--	--
12.00	--	12.0	22.0	6.1	6.3	120	355	--	--	--
18.00	29.0	29.0	27.5	12.2	9.1	78	485	470	2.00	--
18.00	--	1.0	--	--	--	--	--	--	--	4.0
18.00	--	2.0	28.5	11.6	4.9	61	650	--	--	1.0
18.00	--	3.0	25.2	9.0	7.5	57	485	--	--	--
18.00	--	4.0	21.7	5.4	6.7	56	515	--	--	--
18.00	--	5.0	21.5	6.0	6.4	56	570	--	--	--
18.00	--	6.0	21.0	5.6	6.2	57	540	--	--	--
18.00	--	7.0	20.7	5.5	6.1	57	560	--	--	--
18.00	--	8.0	20.7	5.5	6.0	57	565	--	--	--
18.00	--	10.0	20.6	5.5	6.0	57	570	--	--	--
18.00	--	11.0	20.5	5.5	6.0	56	570	--	--	--
19.00	28.0	29.0	24.5	10.9	9.1	73	460	1.10	3.00	--
19.00	--	1.0	--	--	--	--	--	--	--	1.0
19.00	--	2.0	24.5	9.1	6.7	68	480	--	--	6.0
19.00	--	3.0	26.2	6.5	7.1	68	520	--	--	1.0
19.00	--	4.0	25.2	6.1	7.0	63	535	--	--	--
19.00	--	5.0	24.5	5.4	6.8	67	545	--	--	--
19.00	--	6.0	23.6	5.2	6.6	67	555	--	--	--
19.00	--	7.0	23.2	5.4	6.5	60	560	--	--	--
19.00	--	8.0	23.0	5.4	6.4	60	565	--	--	--
19.00	--	10.0	22.5	5.6	6.4	50	570	--	--	--
19.00	--	11.0	22.5	5.6	6.1	60	580	--	--	--
1979	12.00	19.6	15.6	4.0	6.5	49	590	450	2.00	--
12.00	--	1.0	--	--	--	--	--	--	--	3.0
12.00	--	2.0	15.0	7.9	6.5	60	600	--	--	1.0
12.00	--	3.0	15.4	7.4	6.5	50	605	--	--	--
12.00	--	4.0	15.4	7.4	6.5	60	605	--	--	--
12.00	--	5.0	15.4	7.4	6.5	60	610	--	--	--
12.00	--	10.0	15.4	7.4	6.5	60	605	--	--	--
19.00	13.0	29.0	14.6	4.6	6.7	65	605	470	2.00	--
19.00	--	1.0	--	--	--	--	--	--	--	6.0
19.00	--	2.0	14.6	4.6	6.7	64	605	--	--	1.0
19.00	--	3.0	14.6	4.6	6.7	64	610	--	--	--
19.00	--	4.0	14.6	4.6	6.7	64	610	--	--	--
19.00	--	5.0	14.6	4.6	6.7	64	610	--	--	--
19.00	--	6.0	14.6	4.6	6.7	64	610	--	--	--
19.00	--	7.0	14.6	4.6	6.7	64	610	--	--	--
19.00	--	8.0	14.6	4.6	6.7	64	610	--	--	--
19.00	--	9.0	14.6	4.6	6.7	64	610	--	--	--
19.00	--	10.0	14.6	4.6	6.7	64	610	--	--	--

DATE	TEMPERATURE (DEG. C)	SAMPLES (NO.)	TEMPERATURE (DEG. C)	OXYGEN (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICHOHMS)	ORIENTATION MEASUREMENT POTENTIAL (MV)	TRANS-MANOMETER (DISK) (MV)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCIDENT PERCENT REMAINING AT DEPTH
APR 1978										
26....	20	20	6.2	11.0	6.7	69	595	--	--	ND
26....	--	2.0	6.4	10.9	6.6	69	600	--	--	--
26....	--	4.0	6.5	10.8	6.6	69	600	--	--	--
26....	--	6.0	6.5	10.8	6.6	69	600	--	--	--
26....	--	8.0	6.5	10.8	6.6	69	600	--	--	--
26....	--	10.0	6.6	10.8	6.6	69	600	--	--	--
26....	--	12.0	6.6	10.8	6.6	69	610	--	--	--
MAY										
21....	25.7	20	16.7	11.4	7.0	76	595	.70	2.50	--
21....	--	1.0	--	--	--	--	--	--	--	11
21....	--	2.0	17.2	9.2	6.7	76	610	--	--	2.0
21....	--	2.5	--	--	--	--	--	--	--	1.0
21....	--	4.0	16.1	8.4	6.0	77	675	--	--	--
21....	--	6.0	15.9	8.4	5.8	77	635	--	--	--
21....	--	8.0	15.8	8.0	5.8	77	640	--	--	--
21....	--	10.0	14.8	7.7	5.7	74	645	--	--	--
21....	--	12.0	14.8	7.6	5.6	74	650	--	--	--
MAY										
03....	26.0	20	16.3	8.5	6.7	52	650	.55	2.00	ND
03....	--	2.0	16.0	8.3	6.1	52	655	--	--	--
03....	--	4.0	15.9	8.3	6.0	52	640	--	--	--
03....	--	6.0	15.9	8.3	6.0	52	660	--	--	--
03....	--	8.0	15.8	8.3	6.0	52	660	--	--	--
03....	--	10.0	15.4	8.3	6.0	52	665	--	--	--
03....	--	12.0	15.7	8.2	6.0	52	665	--	--	--
JUN										
13....	32.0	20	23.4	9.4	6.4	59	580	.70	2.50	--
13....	--	1.0	--	--	--	--	--	--	--	13
13....	--	2.0	23.7	8.8	6.5	59	585	--	--	2.0
13....	--	2.5	--	--	--	--	--	--	--	1.0
13....	--	4.0	22.9	8.1	6.4	59	590	--	--	--
13....	--	6.0	22.3	6.9	6.0	60	600	--	--	--
13....	--	7.0	22.2	6.3	6.0	60	610	--	--	--
13....	--	8.0	21.9	5.7	5.9	61	610	--	--	--
13....	--	9.0	21.8	5.7	5.9	61	615	--	--	--
13....	--	10.0	21.8	5.1	5.8	62	620	--	--	--
13....	--	12.0	21.7	4.8	5.8	62	620	--	--	--
13....	--	14.0	21.1	3.9	5.7	64	620	--	--	--
13....	--	--	--	--	--	--	--	--	2.00	--
JUN										
26....	32.0	20	27.0	10.6	6.4	74	505	.80	2.50	--
26....	--	1.0	--	--	--	--	--	--	--	15
26....	--	2.0	26.0	7.7	7.2	70	510	--	--	3.0
26....	--	2.5	--	--	--	--	--	--	--	1.0
26....	--	3.0	25.8	7.5	6.7	70	540	--	--	--
26....	--	4.0	25.0	5.0	6.4	69	580	--	--	--
26....	--	5.0	24.7	4.4	6.3	66	590	--	--	--
26....	--	6.0	24.6	4.3	6.3	66	595	--	--	--
26....	--	7.0	24.5	4.3	6.3	66	600	--	--	--
26....	--	8.0	24.5	4.3	6.2	64	600	--	--	--
26....	--	10.0	24.5	4.1	6.2	64	600	--	--	--
26....	--	12.0	24.4	3.8	6.1	66	600	--	--	--
26....	--	--	--	--	--	--	--	--	2.50	--
JUL										
22....	32.0	20	30.2	11.6	9.2	83	350	.80	3.00	--
22....	--	1.0	--	--	--	--	--	--	--	24
22....	--	2.0	28.9	11.7	9.1	74	355	--	--	6.0
22....	--	3.0	24.3	5.5	6.4	74	345	--	--	1.0
22....	--	4.0	26.3	5.0	6.5	77	415	--	--	--
22....	--	5.0	26.2	3.7	5.3	76	430	--	--	--
22....	--	6.0	26.0	2.7	6.3	75	435	--	--	--
22....	--	7.0	25.4	2.9	6.2	75	445	--	--	--
22....	--	8.0	25.8	2.4	6.2	76	450	--	--	--
22....	--	10.0	25.2	2.3	6.1	76	455	--	--	--
22....	--	12.0	24.4	2.1	6.1	76	460	--	--	--
22....	--	--	--	--	--	--	--	--	3.00	--
AUG										
19....	27.0	20	23.4	6.4	6.5	64	545	.80	--	ND
19....	--	2.0	22.7	6.2	6.7	64	585	--	--	--
19....	--	4.0	21.8	6.0	6.7	64	580	--	--	--
19....	--	6.0	21.2	6.1	6.7	67	580	--	--	--
19....	--	8.0	21.2	6.3	6.6	67	585	--	--	--
19....	--	10.0	21.1	6.0	6.6	65	585	--	--	--
19....	--	12.0	21.0	6.3	6.7	66	580	--	--	--
SEP										
18....	17.0	20	17.3	7.5	6.5	71	535	.70	--	ND
18....	--	2.0	17.0	7.4	6.5	71	545	--	--	--
18....	--	4.0	17.0	7.3	6.4	71	550	--	--	--
18....	--	6.0	16.9	7.4	6.4	71	555	--	--	--
18....	--	8.0	16.9	7.3	6.4	71	560	--	--	--
18....	--	10.0	16.9	7.2	6.4	71	560	--	--	--
18....	--	12.0	16.9	7.0	6.4	71	560	--	--	--
OCT										
12....	21.0	20	11.7	10.5	6.6	65	560	.80	2.00	--
12....	--	1.0	--	--	--	--	--	--	--	7.0
12....	--	2.0	11.2	9.6	6.6	66	565	--	--	1.0
12....	--	4.0	10.5	9.4	6.5	67	570	--	--	--
12....	--	6.0	10.7	9.5	6.4	67	575	--	--	--
12....	--	8.0	10.4	9.4	6.5	67	575	--	--	--
12....	--	10.0	10.2	9.2	6.4	66	580	--	--	--

OH-17 (02118720) Chattahoochee River (City of LaGrange Intake) near LaGrange, Ga., 1978 and 1979

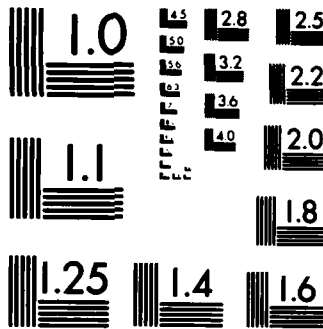
DATE	TEMPER- ATURE AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)	TRANS- PAR- ENCY (SFCCM) DISK (M)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCI- DENT PERCENT REMAIN- ING AT DEPTH
APR 1978										
12....	18.0	.20	20.2	8.4	6.4	78	500	1.00	2.50	--
12....	--	1.0	20.0	8.0	6.4	78	480	--	--	14
12....	--	2.0	19.9	7.7	6.2	78	490	--	--	3.0
12....	--	2.5	--	--	--	--	--	--	--	1.0
12....	--	4.0	19.8	7.3	6.2	78	490	--	--	--
12....	--	6.0	19.5	6.9	6.1	77	490	--	--	--
12....	--	7.0	17.3	3.8	5.9	75	500	--	--	--
12....	--	8.0	16.2	3.6	5.9	72	495	--	--	--
12....	--	9.0	15.4	3.4	5.8	69	500	--	--	--
12....	--	10.0	14.0	3.3	5.8	64	510	--	--	--
12....	--	11.0	12.8	2.3	5.7	62	510	--	--	--
MAY										
04....	15.5	.20	17.5	7.7	6.7	94	490	.20	1.00	--
04....	--	1.0	--	--	--	--	--	--	--	1.0
04....	--	2.0	16.9	7.3	6.4	90	500	--	--	--
04....	--	4.0	16.7	7.2	6.2	84	505	--	--	--
04....	--	6.0	16.6	7.2	6.1	88	515	--	--	--
04....	--	8.0	16.6	7.2	6.0	84	520	--	--	--
04....	--	10.0	16.6	7.2	6.0	84	520	--	--	--
04....	--	12.0	16.6	7.2	6.0	84	520	--	--	--
04....	--	13.0	16.5	7.1	6.0	84	510	--	--	--
04....	--	14.0	16.5	7.1	6.0	84	520	--	--	--
JUN										
01....	29.5	.20	29.0	13.4	9.4	102	405	1.40	3.00	--
01....	--	1.0	--	--	--	--	--	--	--	20
01....	--	2.0	26.8	7.8	8.9	92	440	--	--	4.0
01....	--	3.0	28.0	8.6	7.7	90	500	--	--	1.0
01....	--	4.0	23.6	3.3	6.3	90	565	--	--	--
01....	--	5.0	22.1	2.8	6.2	86	600	--	--	--
01....	--	6.0	20.3	2.8	6.1	82	630	--	--	--
01....	--	8.0	19.1	2.9	6.1	82	600	--	--	--
01....	--	10.0	18.7	2.0	6.1	84	620	--	--	--
01....	--	12.0	18.5	1.2	6.1	88	635	--	--	--
01....	--	14.0	18.0	.2	6.1	92	640	--	--	--
JUL										
11....	26.0	.20	30.5	10.1	9.0	83	440	1.10	4.00	--
11....	--	1.0	--	--	--	--	--	--	--	31
11....	--	2.0	10.0	10.1	8.9	83	470	--	--	15
11....	--	3.0	29.4	7.8	7.5	81	480	--	--	3.0
11....	--	4.0	28.6	3.6	6.5	82	530	--	--	1.0
11....	--	5.0	26.0	2.1	6.3	82	550	--	--	--
11....	--	6.0	27.4	4.9	6.2	80	555	--	--	--
11....	--	7.0	26.3	4.1	6.2	80	560	--	--	--
11....	--	8.0	25.2	4.1	6.3	83	555	--	--	--
11....	--	10.0	23.9	4.1	6.4	92	460	--	--	--
11....	--	12.0	22.8	4.1	6.7	114	145	--	--	--
11....	--	14.0	20.2	4.1	6.9	126	100	--	--	--
AUG										
17....	25.0	.20	28.6	10.6	9.1	66	505	1.60	2.50	--
17....	--	1.0	--	--	--	--	--	--	--	11
17....	--	2.0	28.5	10.4	9.0	66	495	--	--	3.0
17....	--	2.5	--	--	--	--	--	--	--	1.0
17....	--	3.0	27.6	9.2	8.5	61	510	--	--	--
17....	--	4.0	25.2	6.8	7.3	57	510	--	--	--
17....	--	5.0	22.9	5.3	6.4	56	570	--	--	--
17....	--	6.0	22.1	5.0	6.3	56	580	--	--	--
17....	--	7.0	21.6	4.4	6.2	56	590	--	--	--
17....	--	8.0	21.5	4.9	6.2	57	595	--	--	--
17....	--	10.0	21.5	4.9	6.1	57	600	--	--	--
17....	--	12.0	21.3	4.7	6.1	59	605	--	--	--
17....	--	13.0	21.2	4.6	6.1	58	610	--	--	--
17....	14.0	.20	29.9	9.9	9.1	70	445	1.00	3.00	--
29....	--	1.0	--	--	--	--	--	--	--	16
29....	--	2.0	29.0	9.4	9.0	68	455	--	--	4.0
29....	--	3.0	28.1	7.6	7.8	68	490	--	--	1.0
29....	--	4.0	27.1	6.1	7.2	70	510	--	--	--
29....	--	5.0	26.1	4.6	6.8	68	525	--	--	--
29....	--	6.0	25.2	4.6	6.6	66	540	--	--	--
29....	--	7.0	24.5	4.5	6.5	65	550	--	--	--
29....	--	8.0	24.1	4.4	6.4	64	555	--	--	--
29....	--	10.0	23.3	5.0	6.4	62	560	--	--	--
29....	--	12.0	23.1	4.9	6.3	61	570	--	--	--
OCT										
17....	15.8	.20	16.8	7.8	6.8	57	575	.70	2.00	--
17....	--	1.0	--	--	--	--	--	--	--	7.0
17....	--	2.0	16.8	7.7	6.6	58	580	--	--	1.0
17....	--	4.0	16.8	7.8	6.6	59	585	--	--	--
17....	--	6.0	16.8	7.7	6.6	60	590	--	--	--
17....	--	8.0	16.6	7.7	6.5	60	590	--	--	--
17....	--	10.0	16.7	7.6	6.5	61	595	--	--	--
NOV										
29....	13.0	.20	14.7	8.0	6.8	78	595	.8	2.00	--
29....	--	1.0	--	--	--	--	--	--	--	7.0
29....	--	2.0	14.8	7.9	6.6	71	600	--	--	1.0
29....	--	4.0	14.9	7.9	6.6	72	600	--	--	--
29....	--	6.0	14.9	7.9	6.6	72	605	--	--	--
29....	--	8.0	14.9	7.9	6.6	72	610	--	--	--
29....	--	10.0	14.9	7.7	6.6	72	610	--	--	--
29....	--	11.0	14.9	7.6	6.6	72	610	--	--	--

DATE	TEMPERATURE AIR (DEG C)	SAMPLING DEPTH (M)	TEMPERATURE (DEG C)	OXYGEN-DISSOLVED (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	Oxidation-Reduction Potential (MV)	TRANSPARANCY (SEC/CM DISK)	DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCIDENT PERCENT REMAINING AT DEPTH
JAN 1979										
24...	1.0	2.0	6.7	9.7	6.5	54	615	.15	--	ND
24...	--	2.0	6.7	9.7	6.4	54	615	--	--	--
24...	--	4.0	6.8	9.6	6.4	54	620	--	--	--
24...	--	6.0	6.9	9.6	6.4	54	620	--	--	--
24...	--	8.0	6.9	9.6	6.4	55	625	--	--	--
24...	--	10.0	6.9	9.6	6.4	54	625	--	--	--
24...	--	11.0	6.9	9.6	6.4	54	630	--	--	--
24...	--	12.0	6.9	9.6	6.4	55	625	--	--	--
MAR										
21...	28.2	2.0	14.6	12.6	8.1	73	515	.75	2.00	--
21...	--	1.0	--	--	--	--	--	--	--	9.0
21...	--	2.0	16.8	8.2	7.1	73	545	--	--	1.0
21...	--	4.0	13.7	7.6	6.0	75	620	--	--	--
21...	--	6.0	13.4	7.3	5.8	74	635	--	--	--
21...	--	8.0	13.1	6.9	5.7	73	645	--	--	--
21...	--	10.0	12.9	6.6	5.6	73	655	--	--	--
21...	--	11.0	12.8	6.6	5.5	73	660	--	--	--
21...	--	12.0	12.7	6.4	5.5	73	665	--	--	--
MAY										
02...	31.0	2.0	17.4	8.5	6.1	48	620	.45	2.00	--
02...	--	1.0	--	--	--	--	--	--	--	5.0
02...	--	2.0	16.8	8.0	6.0	48	630	--	--	1.0
02...	--	4.0	16.2	7.6	6.0	48	640	--	--	--
02...	--	6.0	16.0	7.9	5.9	44	645	--	--	--
02...	--	8.0	15.9	7.9	5.9	49	650	--	--	--
02...	--	10.0	15.9	7.8	5.9	51	650	--	--	--
02...	--	12.0	15.8	7.8	5.9	50	660	--	--	--
02...	--	14.0	15.7	7.5	5.8	50	665	--	--	--
JUN										
12...	11.0	2.0	24.6	7.5	6.3	59	565	.70	2.00	--
12...	--	1.0	--	--	--	--	--	--	--	12
12...	--	2.0	24.1	7.2	6.2	60	570	--	--	1.0
12...	--	4.0	23.7	5.9	6.1	60	580	--	--	--
12...	--	5.0	23.1	5.3	6.0	60	590	--	--	--
12...	--	6.0	22.9	5.4	6.0	60	590	--	--	--
12...	--	7.0	22.7	4.7	5.9	60	600	--	--	--
12...	--	8.0	21.5	2.1	5.7	60	610	--	--	--
12...	--	10.0	20.9	1.1	5.6	62	615	--	--	--
12...	--	12.0	20.2	.6	5.6	64	615	--	--	--
12...	--	14.0	19.3	<.1	5.6	68	585	--	--	--
JUL										
26...	30.0	2.0	27.0	8.5	7.5	74	560	1.00	3.00	--
26...	--	1.0	--	--	--	--	--	--	--	20
26...	--	2.0	26.9	7.9	7.7	74	560	--	--	5.0
26...	--	3.0	26.9	7.8	7.0	74	565	--	--	1.0
26...	--	4.0	26.8	7.5	6.9	74	570	--	--	--
26...	--	5.0	26.5	4.7	6.4	75	580	--	--	--
26...	--	6.0	25.6	4.0	6.2	75	590	--	--	--
26...	--	7.0	25.0	3.3	6.1	72	600	--	--	--
26...	--	8.0	24.7	2.8	6.1	72	600	--	--	--
26...	--	10.0	24.5	3.1	6.0	70	600	--	--	--
26...	--	12.0	24.4	2.7	6.0	70	630	--	--	--
26...	--	14.0	24.3	2.3	6.1	72	600	--	--	--
AUG										
22...	33.0	2.0	29.6	9.7	8.3	76	570	1.00	4.00	--
22...	--	1.0	--	--	--	--	--	--	--	22
22...	--	2.0	28.9	9.2	8.5	77	580	--	--	6.0
22...	--	3.0	28.2	7.5	7.5	76	400	--	--	2.0
22...	--	4.0	27.3	4.1	6.4	76	430	--	--	1.0
22...	--	5.0	26.8	4.1	6.3	74	445	--	--	--
22...	--	6.0	26.6	3.6	6.2	74	455	--	--	--
22...	--	7.0	26.0	3.4	6.1	74	460	--	--	--
22...	--	8.0	25.6	2.8	6.0	74	470	--	--	--
22...	--	10.0	25.2	1.9	6.0	77	470	--	--	--
22...	--	12.0	24.8	1.5	5.9	77	475	--	--	--
22...	--	14.0	24.4	.8	5.9	76	475	--	--	--
22...	--	15.0	24.0	.5	5.9	76	470	--	--	--
SEP										
19...	23.0	2.0	23.8	5.9	6.3	76	550	.90	--	ND
19...	--	2.0	23.6	6.3	6.5	77	555	--	--	--
19...	--	4.0	23.3	5.9	6.4	77	560	--	--	--
19...	--	6.0	23.2	5.9	6.4	77	560	--	--	--
19...	--	8.0	23.1	5.4	6.4	76	560	--	--	--
19...	--	10.0	22.9	5.7	6.4	75	565	--	--	--
19...	--	12.0	22.7	5.4	6.3	74	565	--	--	--
19...	--	14.0	22.6	5.5	6.3	74	565	--	--	--
19...	--	15.0	22.6	5.5	6.3	73	450	--	--	--
OCT										
16...	10.0	2.0	17.7	6.5	6.5	74	550	.85	--	ND
16...	--	2.0	17.7	6.5	6.5	74	555	--	--	--
16...	--	4.0	17.7	6.5	6.5	74	560	--	--	--
16...	--	6.0	17.7	6.4	6.5	74	570	--	--	--
16...	--	8.0	17.7	6.3	6.5	74	570	--	--	--
16...	--	10.0	17.7	6.0	6.4	74	570	--	--	--
16...	--	12.0	17.7	6.0	6.4	73	575	--	--	--
16...	--	14.0	17.7	5.9	6.4	72	575	--	--	--
16...	--	16.0	17.6	5.8	6.3	72	580	--	--	--
NOV										
11...	20.0	2.0	10.4	8.4	6.2	68	590	.57	1.50	--
11...	--	1.0	--	--	--	--	--	--	--	5.0
11...	--	1.5	--	--	--	--	--	--	--	1.0
11...	--	2.0	10.0	8.1	6.2	68	590	--	--	--
11...	--	4.0	9.5	8.2	6.1	69	595	--	--	--
11...	--	6.0	9.1	8.2	6.1	70	595	--	--	--
11...	--	8.0	8.9	8.2	6.1	71	595	--	--	--
11...	--	10.0	8.8	8.1	6.1	72	600	--	--	--
11...	--	12.0	8.8	8.0	6.1	72	600	--	--	--
11...	--	14.0	8.8	8.0	6.1	72	600	--	--	--

WATER TEMPERATURE, SALINITY AND OXYGEN CONTENT AT STATE HIGHWAY 201, NEAR ABBOTTSFORD, Vt., 1978 and 1979

DATE	TEMPERATURE SURF (DEG C)	SALINITY SURF (PSU)	TEMPERATURE DEPTH (DEG C)	OXYGEN SURF (MG/L)	PH	SPECIFIC CONDUCTANCE (MICHOHMS)	DURATION OF POTENTIAL (MIN)	TRANSMISSION COEFFICIENT (1/DISK)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCIDENT PERCENT REMAINING AT DEPTH
1978										
12.00	20.0	2.0	20.0	8.2	8.2	76	500	1.30	3.50	--
12.00	--	1.0	19.8	8.2	8.2	76	490	--	--	20
12.00	--	2.0	20.0	8.1	8.1	76	500	--	--	4.0
12.00	--	3.0	--	--	--	--	--	--	--	2.0
12.00	--	3.0	--	--	--	--	--	--	--	1.0
12.00	--	3.0	--	--	--	74	500	--	--	--
12.00	--	4.0	19.5	8.2	8.2	68	505	--	--	--
12.00	--	5.0	19.9	8.2	8.2	66	519	--	--	--
12.00	--	13.0	19.6	8.2	8.2	61	519	--	--	--
12.00	--	12.0	19.7	8.2	8.2	56	519	--	--	--
12.00	--	14.0	19.6	8.1	8.1	55	515	--	--	--
12.00	--	16.0	19.5	8.1	8.1	55	515	--	--	--
12.00	18.0	2.0	18.1	8.2	8.2	58	490	4.80	2.00	--
12.00	--	1.0	--	--	--	56	500	--	--	8.0
12.00	--	2.0	18.0	8.2	8.2	57	505	--	--	1.0
12.00	--	4.0	17.8	8.2	8.2	58	519	--	--	--
12.00	--	6.0	17.7	8.2	8.2	58	515	--	--	--
12.00	--	8.0	17.7	8.2	8.2	60	520	--	--	--
12.00	--	10.0	17.4	8.2	8.2	60	520	--	--	--
12.00	--	12.0	17.5	8.2	8.2	60	525	--	--	--
12.00	--	14.0	17.4	8.1	8.1	60	525	--	--	--
12.00	--	16.0	17.7	8.2	8.2	60	525	--	--	--
12.00	--	18.0	17.6	8.2	8.2	62	450	--	--	--
12.00	23.0	2.0	23.0	8.1	8.1	64	500	1.30	4.00	--
12.00	--	1.0	--	--	--	--	--	--	--	26
12.00	--	2.0	23.7	8.2	8.2	64	505	--	--	8.0
12.00	--	3.0	23.0	8.2	8.2	64	505	--	--	2.0
12.00	--	4.0	23.4	8.2	8.2	66	525	--	--	1.0
12.00	--	5.0	21.5	8.1	8.1	66	515	--	--	--
12.00	--	6.0	20.2	8.2	8.2	66	520	--	--	--
12.00	--	8.0	19.1	8.2	8.2	66	525	--	--	--
12.00	--	10.0	18.0	8.1	8.1	68	650	--	--	--
12.00	--	12.0	18.8	8.2	8.2	70	650	--	--	--
12.00	--	14.0	18.9	8.2	8.2	72	650	--	--	--
12.00	--	16.0	17.4	8.1	8.1	80	640	--	--	--
12.00	--	18.0	17.5	8.1	8.1	84	625	--	--	--
12.00	25.0	2.0	24.7	8.2	8.2	76	470	1.30	4.00	--
12.00	--	1.0	--	--	--	--	--	--	--	31
12.00	--	2.0	24.6	8.2	8.2	73	470	--	--	9.0
12.00	--	3.0	24.6	8.2	8.2	74	465	--	--	3.0
12.00	--	4.0	24.1	8.0	8.0	77	515	--	--	1.0
12.00	--	5.0	24.6	8.2	8.2	76	525	--	--	--
12.00	--	6.0	24.0	8.1	8.1	73	560	--	--	--
12.00	--	7.0	25.8	8.1	8.1	72	565	--	--	--
12.00	--	8.0	25.2	8.2	8.2	74	570	--	--	--
12.00	--	10.0	23.6	8.1	8.1	76	510	--	--	--
12.00	--	12.0	22.0	8.1	8.1	98	290	--	--	--
12.00	--	14.0	20.6	8.1	8.1	108	--	--	--	--
12.00	--	16.0	19.2	8.1	8.1	110	--	--	--	--
12.00	--	18.0	18.9	8.1	8.1	112	--	--	--	--
12.00	26.0	2.0	26.0	10.4	9.1	71	440	1.00	3.00	--
12.00	--	1.0	--	--	--	--	--	--	--	18
12.00	--	2.0	26.4	9.9	9.0	72	435	--	--	5.0
12.00	--	3.0	27.4	8.2	8.1	69	460	--	--	1.0
12.00	--	4.0	27.0	8.2	8.2	68	515	--	--	--
12.00	--	5.0	26.6	8.2	8.2	68	540	--	--	--
12.00	--	6.0	26.1	8.2	8.2	66	560	--	--	--
12.00	--	7.0	25.4	8.2	8.2	65	580	--	--	--
12.00	--	8.0	25.0	8.2	8.2	66	600	--	--	--
12.00	--	10.0	24.3	8.1	8.1	62	605	--	--	--
12.00	--	12.0	23.8	8.2	8.2	59	610	--	--	--
12.00	--	14.0	23.1	8.2	8.2	59	615	--	--	--
12.00	--	16.0	22.4	8.2	8.2	58	620	--	--	--
12.00	--	18.0	22.7	8.1	8.1	54	620	--	--	--
12.00	31.0	2.0	31.0	9.0	8.0	70	485	1.00	3.00	--
12.00	--	1.0	--	--	--	--	--	--	--	16
12.00	--	2.0	29.4	8.0	8.0	70	470	--	--	5.0
12.00	--	3.0	29.6	8.2	8.2	69	465	--	--	1.0
12.00	--	4.0	29.9	8.2	8.2	67	480	--	--	--
12.00	--	5.0	28.0	8.0	8.0	64	525	--	--	--
12.00	--	6.0	26.6	8.0	8.1	69	565	--	--	--
12.00	--	7.0	25.8	8.2	8.1	68	590	--	--	--
12.00	--	8.0	25.1	8.2	8.1	64	600	--	--	--
12.00	--	10.0	24.3	8.2	8.1	66	605	--	--	--
12.00	--	12.0	23.9	8.2	8.2	68	610	--	--	--
12.00	--	14.0	23.5	8.2	8.2	64	570	--	--	--
12.00	--	16.0	23.2	8.1	8.1	64	580	--	--	--
12.00	--	18.0	23.1	8.1	8.1	65	575	--	--	--
1979										
18.00	20.0	2.0	19.5	8.2	8.2	61	555	1.00	4.00	--
18.00	--	1.0	--	--	--	--	--	--	--	21
18.00	--	2.0	19.4	8.2	8.2	61	560	--	--	8.0
18.00	--	3.0	--	--	--	--	--	--	--	3.0
18.00	--	4.0	19.5	8.2	8.2	64	560	--	--	1.0
18.00	--	6.0	19.0	8.2	8.2	64	565	--	--	--
18.00	--	8.0	19.8	8.2	8.2	65	570	--	--	--
18.00	--	10.0	19.4	8.2	8.2	68	575	--	--	--
18.00	--	12.0	19.4	8.2	8.2	68	580	--	--	--
18.00	--	14.0	19.3	8.2	8.2	70	560	--	--	--
18.00	--	16.0	19.1	8.2	8.2	71	565	--	--	--
18.00	18.0	2.0	18.8	8.1	8.2	68	580	1.00	3.00	--
18.00	--	1.0	--	--	--	--	--	--	--	10
18.00	--	2.0	19.8	8.2	8.2	68	585	--	--	2.0
18.00	--	3.0	--	--	--	--	--	--	--	1.0
18.00	--	4.0	18.7	8.2	8.2	68	590	--	--	--
18.00	--	6.0	18.7	8.2	8.2	68	595	--	--	--
18.00	--	8.0	18.6	8.2	8.2	70	600	--	--	--
18.00	--	10.0	18.4	8.2	8.2	75	600	--	--	--
18.00	--	12.0	18.2	8.2	8.2	76	600	--	--	--
18.00	--	14.0	18.2	8.1	8.2	78	605	--	--	--

DATE	TEMPERATURE OF AIR (DEG F)	SAMPLE DEPTH (M)	TEMPERATURE (DEG F)	OXYGEN, DIS-SOLVED (MG/L)	PH (UNITS)	SPECIFIC CONDUCTIVITY (MICHOHMS)	Oxidation-Reduction Potential (MV)	TRANS-MAN-EN-CE (PSF)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INTEN-SITY PERCENT REMAIN-ING AT DEPTH
JAN. 1970										
23....	11.0	2.0	7.1	10.0	6.7	65	580	255	--	50
23....	--	2.0	7.1	10.0	6.9	76	580	--	--	--
23....	--	4.0	7.1	9.9	6.8	76	580	--	--	--
23....	--	6.0	7.0	9.9	6.8	75	585	--	--	--
23....	--	8.0	7.0	9.9	6.8	77	585	--	--	--
23....	--	10.0	6.8	9.9	6.8	76	590	--	--	--
23....	--	12.0	6.7	9.8	6.8	76	580	--	--	--
23....	--	14.0	6.6	9.8	6.8	76	580	--	--	--
MAR										
20....	24.0	2.0	15.9	12.2	8.0	67	570	280	1.50	--
20....	--	1.0	--	--	--	--	--	--	--	4.0
20....	--	1.0	--	--	--	--	--	--	--	1.0
20....	--	2.0	15.9	9.1	6.5	68	570	--	--	--
20....	--	4.0	13.3	8.1	6.2	67	605	--	--	--
20....	--	6.0	13.0	7.9	6.0	66	620	--	--	--
20....	--	8.0	12.8	7.6	5.9	65	630	--	--	--
20....	--	10.0	12.6	7.5	5.8	64	640	--	--	--
20....	--	12.0	12.5	7.3	5.7	64	645	--	--	--
20....	--	14.0	12.3	6.9	5.7	63	650	--	--	--
20....	--	15.0	12.2	6.9	5.6	63	650	--	--	--
20....	--	16.0	11.9	6.2	5.6	61	655	--	--	--
MAY										
01....	26.0	2.0	20.2	9.1	6.5	67	585	280	1.50	--
01....	--	1.0	--	--	--	--	--	--	--	4.0
01....	--	1.0	--	--	--	--	--	--	--	1.0
01....	--	2.0	18.1	8.4	6.2	68	610	--	--	--
01....	--	4.0	17.2	7.4	6.0	69	620	--	--	--
01....	--	6.0	16.8	7.1	5.9	69	630	--	--	--
01....	--	8.0	16.7	7.2	5.8	69	635	--	--	--
01....	--	10.0	16.6	7.2	5.8	69	640	--	--	--
01....	--	12.0	16.5	7.0	5.8	50	645	--	--	--
01....	--	14.0	16.5	6.9	5.8	50	650	--	--	--
01....	--	16.0	16.4	6.8	5.8	50	655	--	--	--
JUN										
12....	27.0	2.0	24.7	7.3	6.3	59	580	1.00	2.30	--
12....	--	1.0	--	--	--	--	--	--	--	16
12....	--	2.0	24.4	7.0	6.3	59	585	--	--	3.0
12....	--	2.3	--	--	--	--	--	--	--	1.0
12....	--	4.0	24.1	6.7	6.3	59	585	--	--	--
12....	--	6.0	23.1	5.9	6.2	61	595	--	--	--
12....	--	7.0	21.2	2.8	5.9	62	605	--	--	--
12....	--	8.0	20.8	2.3	5.8	61	610	--	--	--
12....	--	9.0	20.5	2.0	5.7	62	615	--	--	--
12....	--	10.0	20.4	1.9	5.7	63	615	--	--	--
12....	--	12.0	19.2	1.3	5.7	64	615	--	--	--
12....	--	14.0	18.1	1.1	5.7	60	640	--	--	--
12....	--	16.0	18.0	1.1	5.6	58	640	--	--	--
12....	--	18.0	17.9	1.1	5.6	58	685	--	--	--
15....	--	--	--	--	--	--	--	--	3.50	--
JUL										
25....	13.0	2.0	27.5	8.5	8.5	74	450	1.20	4.00	--
25....	--	1.0	--	--	--	--	--	--	--	28
25....	--	2.0	27.5	8.3	8.1	74	460	--	--	4.0
25....	--	3.0	27.4	8.1	8.1	74	450	--	--	3.0
25....	--	4.0	27.4	8.0	8.0	74	455	--	--	1.0
25....	--	5.0	27.4	7.8	7.8	74	465	--	--	--
25....	--	6.0	27.4	7.7	7.6	74	470	--	--	--
25....	--	7.0	26.9	4.3	6.6	77	485	--	--	--
25....	--	8.0	25.1	4	6.2	80	510	--	--	--
25....	--	10.0	23.9	1.1	6.1	84	520	--	--	--
25....	--	12.0	23.5	1.1	6.1	85	515	--	--	--
25....	--	14.0	23.4	1.1	6.0	86	505	--	--	--
25....	--	16.0	22.8	1.1	6.2	82	490	--	--	--
27....	--	--	--	--	--	--	--	--	4.00	--
AUG										
22....	10.0	2.0	24.2	9.2	8.6	75	425	1.10	4.00	--
22....	--	1.0	--	--	--	--	--	--	--	32
22....	--	2.0	24.6	7.4	8.2	73	440	--	--	4.0
22....	--	3.0	27.9	4.5	6.9	74	450	--	--	3.0
22....	--	4.0	27.6	4.1	6.6	75	460	--	--	1.0
22....	--	5.0	27.6	3.8	6.4	75	465	--	--	--
22....	--	6.0	27.4	3.3	6.3	74	470	--	--	--
22....	--	7.0	27.3	2.6	6.2	76	475	--	--	--
22....	--	8.0	27.0	1.5	6.1	76	480	--	--	--
22....	--	10.0	25.6	1.5	6.0	75	485	--	--	--
22....	--	12.0	25.1	1.5	6.0	75	490	--	--	--
22....	--	14.0	24.5	1.5	6.0	75	470	--	--	--
22....	--	16.0	24.0	1.5	6.0	75	460	--	--	--
22....	--	18.0	23.6	1.5	6.0	73	470	--	--	--
24....	--	--	--	--	--	--	--	--	4.00	--



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

CII-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978 and 1979

DATE	TEMPER- ATURE AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICHO- MHOS)	OXI- DATION REDU- CTION POTEN- TIAL (MV)	TRANS- PAR- ENCY (SECCHI DISK) (M)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCI- DENT PERCENT REMAIN- ING AT DEPTH
SEP										
16...	22.0	.20	24.4	5.6	6.4	67	600	--	--	ND
16...	--	2.0	24.2	5.5	6.4	67	595	--	--	--
16...	--	4.0	24.2	5.1	6.4	67	590	--	--	--
16...	--	6.0	24.2	5.3	6.4	67	590	--	--	--
16...	--	4.0	24.2	5.1	6.3	67	590	--	--	--
16...	--	10.0	24.2	5.1	6.3	67	590	--	--	--
16...	--	12.0	24.2	5.0	6.1	67	590	--	--	--
16...	--	14.0	24.1	4.9	6.3	67	590	--	--	--
16...	--	16.0	24.1	4.8	6.3	67	590	--	--	--
16...	--	18.0	23.9	.9	6.1	73	535	--	--	--
16...	--	19.0	23.7	.7	6.2	83	260	--	--	--
OCT										
16...	24.0	.20	19.4	7.7	6.7	68	545	1.10	--	ND
16...	--	2.0	19.7	7.6	6.6	68	550	--	--	--
16...	--	4.0	19.0	7.3	6.6	68	555	--	--	--
16...	--	6.0	19.0	7.2	6.5	68	560	--	--	--
16...	--	8.0	19.0	7.1	6.5	69	560	--	--	--
16...	--	10.0	18.9	7.1	6.5	69	565	--	--	--
16...	--	12.0	18.8	6.8	6.4	69	570	--	--	--
16...	--	14.0	18.4	6.5	6.4	69	570	--	--	--
16...	--	16.0	18.2	6.2	6.3	70	575	--	--	--
16...	--	18.0	18.1	6.0	6.3	70	575	--	--	--
DEC										
13...	15.0	.20	10.0	9.5	6.4	73	585	.80	2.50	--
13...	--	1.0	--	--	--	--	--	--	--	10
13...	--	2.0	9.9	9.3	6.4	73	590	--	--	2.0
13...	--	2.5	--	--	--	--	--	--	--	1.0
13...	--	4.0	9.7	9.2	6.3	73	590	--	--	--
13...	--	6.0	9.6	9.2	6.3	73	590	--	--	--
13...	--	8.0	9.4	8.9	6.3	74	590	--	--	--
13...	--	10.0	9.3	8.9	6.3	74	595	--	--	--
13...	--	12.0	9.3	8.9	6.3	74	595	--	--	--
13...	--	14.0	9.3	8.9	6.3	74	595	--	--	--
13...	--	16.0	9.3	8.8	6.3	74	595	--	--	--

CH-01A (02339302) Chattahoochee River above coffer dam, above West Point Dam, 1978 and 1979

DATE	TEMPERATURE AIR (DEG C)	SAMPLING DEPTH (IN)	TEMPERATURE (DEG C)	OXYGEN DISSOLVED (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	OXIDATION REDUCTION POTENTIAL (MV)
APR 1978							
11...	22.0	.20	18.0	11.4	8.3	50	440
11...	--	2.0	16.0	8.5	6.9	50	450
11...	--	4.0	14.0	8.3	6.6	50	465
11...	--	6.0	13.8	8.0	6.5	50	480
11...	--	8.0	12.2	8.4	6.3	50	490
11...	--	10.0	11.1	7.7	6.2	55	500
11...	--	12.0	10.2	7.3	6.1	55	505
11...	--	14.0	9.9	6.8	6.1	55	495
11...	--	16.0	9.5	6.6	6.1	55	490
MAY							
14...	23.4	.21	20.0	8.1	6.5	57	480
14...	--	2.0	20.8	8.1	6.4	60	480
14...	--	4.0	19.9	7.9	6.3	58	490
14...	--	6.0	19.9	7.8	6.1	58	500
14...	--	8.0	19.5	7.8	5.9	57	510
14...	--	10.0	18.1	5.0	5.8	58	510
14...	--	12.0	17.4	4.9	5.7	58	515
14...	--	14.0	17.0	4.2	5.6	58	520
14...	--	16.0	16.5	3.5	5.6	54	525
14...	--	18.0	15.7	2.1	5.5	56	525
31...	21.5	.20	20.2	8.5	9.0	64	475
31...	--	2.0	20.2	8.5	8.9	64	475
31...	--	3.0	25.3	7.9	8.3	64	500
31...	--	4.0	22.0	5.8	8.0	64	540
31...	--	5.0	21.0	3.4	6.6	64	560
31...	--	6.0	21.0	2.5	6.6	64	595
31...	--	8.0	20.0	3.0	6.3	64	570
31...	--	10.0	19.4	2.5	6.3	64	580
31...	--	12.0	18.3	1.2	6.2	64	590
31...	--	14.0	17.6	.6	6.1	64	600
31...	--	16.0	17.0	.3	6.1	68	600
JUL							
14...	26.2	.20	29.7	8.5	9.0	65	365
14...	--	2.0	29.9	8.5	8.9	65	370
14...	--	3.0	29.6	8.4	8.9	64	375
14...	--	4.0	29.0	8.5	8.9	64	380
14...	--	5.0	28.0	9.8	7.2	68	420
14...	--	6.0	28.0	1.6	6.4	62	445
14...	--	7.0	26.5	.3	6.3	63	460
14...	--	8.0	25.0	<.1	6.3	66	460
14...	--	10.0	23.3	<.1	6.2	64	460
14...	--	12.0	20.0	<.1	6.3	62	450
14...	--	14.0	19.5	<.1	6.3	66	415
14...	--	16.0	19.0	<.1	6.4	70	330
14...	--	18.0	18.3	<.1	6.5	77	240
AUG							
14...	25.0	.20	27.5	6.1	7.0	65	560
14...	--	2.0	27.5	6.0	6.9	65	565
14...	--	3.0	27.5	6.0	6.9	64	565
14...	--	4.0	27.5	6.0	6.9	64	565
14...	--	5.0	27.5	5.9	6.9	66	570
14...	--	6.0	27.5	5.9	6.9	66	570
14...	--	7.0	27.5	6.3	6.7	67	575
14...	--	8.0	27.2	.3	6.3	70	590
14...	--	10.0	26.2	.3	6.1	73	600
14...	--	12.0	25.0	<.1	6.1	73	605
14...	--	14.0	24.5	<.1	6.1	74	605
14...	--	16.0	24.0	<.1	6.1	96	660
30...	27.0	.20	28.5	8.5	8.3	69	535
30...	--	2.0	28.5	8.2	8.3	69	520
30...	--	3.0	28.5	5.9	7.6	69	535
30...	--	4.0	28.2	1.1	6.8	69	550
30...	--	5.0	27.5	.1	6.3	70	575
30...	--	6.0	27.0	<.1	6.2	70	585
30...	--	7.0	26.5	<.1	6.2	70	595
30...	--	8.0	26.0	<.1	6.1	67	600
30...	--	10.0	25.0	<.1	6.0	64	605
30...	--	12.0	23.0	<.1	6.0	62	610
30...	--	14.0	23.1	<.1	6.0	62	610
30...	--	16.0	22.6	<.1	6.0	62	610
OCT							
14...	19.0	.20	20.0	6.7	6.8	67	530
14...	--	2.0	20.7	6.5	6.7	67	540
14...	--	4.0	20.7	6.2	6.7	68	545
14...	--	6.0	20.6	6.0	6.7	68	550
14...	--	8.0	20.6	6.0	6.6	68	550
14...	--	10.0	20.6	5.3	6.6	68	560
14...	--	12.0	20.4	4.1	6.6	68	570
14...	--	14.0	20.0	3.7	6.3	68	575
NOV							
28...	14.0	.20	16.0	6.3	6.7	68	560
28...	--	2.0	16.2	6.2	6.5	61	570
28...	--	4.0	16.3	6.1	6.6	61	575
28...	--	6.0	16.2	6.1	6.3	60	580
28...	--	8.0	16.2	6.0	6.3	61	580
28...	--	10.0	16.2	5.9	6.3	60	585
28...	--	12.0	16.1	5.8	6.3	60	590
28...	--	14.0	16.1	5.9	6.2	60	590

CH-UJA (G2339382) Chattahoochee River above coffer dam, above West Point Dam, 1978 and 1979

DATE	TEMPER- ATURE, AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIF- CON- DUCT- ANCE (MICRO- MHOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)
JAN . 1979							
22...	5.0	.20	6.8	9.7	6.4	78	600
22...	--	2.0	6.8	9.6	6.4	78	605
22...	--	4.0	6.8	9.6	6.3	78	610
22...	--	6.0	6.7	9.6	6.2	79	615
22...	--	8.0	6.6	9.5	6.2	79	615
22...	--	10.0	6.6	9.5	6.2	79	620
22...	--	12.0	6.6	9.5	6.1	79	620
22...	--	14.0	6.6	9.5	6.1	79	625
22...	--	16.0	6.6	9.5	6.1	79	625
MAR							
20...	20.0	.20	19.2	12.0	8.1	50	525
20...	--	2.0	15.9	10.8	6.8	50	555
20...	--	4.0	13.6	8.8	6.2	51	580
20...	--	6.0	12.8	8.5	6.1	52	600
20...	--	8.0	12.6	8.3	5.9	51	610
20...	--	10.0	12.5	8.9	5.9	54	620
20...	--	12.0	11.7	8.2	5.8	56	625
20...	--	14.0	10.2	7.0	5.6	58	640
20...	--	16.0	9.5	6.3	5.5	58	645
20...	--	18.0	9.3	5.8	5.5	60	655
20...	--	20.0	9.1	5.1	5.4	63	660
20...	--	21.0	9.0	5.1	5.4	63	665
20...	--	22.0	9.0	5.2	5.3	63	665
MAY							
01...	23.0	.20	20.5	10.2	7.1	44	590
01...	--	2.0	20.5	10.0	7.1	44	595
01...	--	4.0	18.2	7.9	6.5	45	615
01...	--	6.0	17.7	7.5	6.0	45	635
01...	--	8.0	17.6	7.7	5.9	45	645
01...	--	10.0	17.5	7.8	5.9	46	650
01...	--	12.0	17.2	7.5	5.8	46	655
01...	--	14.0	16.7	5.8	5.6	47	665
01...	--	16.0	16.4	5.0	5.5	48	670
01...	--	18.0	16.1	4.0	5.5	49	670
01...	--	20.0	16.0	3.7	5.5	50	670
01...	--	22.0	15.7	2.3	5.5	52	670
JUN							
14...	25.0	.20	25.2	8.3	8.3	56	480
14...	--	2.0	25.2	8.3	8.3	57	485
14...	--	4.0	25.2	8.2	8.2	57	490
14...	--	6.0	25.2	8.2	8.1	57	495
14...	--	8.0	25.1	8.0	7.9	57	500
14...	--	10.0	23.2	4.6	6.4	59	540
14...	--	11.0	22.3	3.2	5.8	59	570
14...	--	12.0	21.4	2.6	5.7	61	585
14...	--	14.0	20.0	1.1	5.5	63	600
14...	--	16.0	18.6	<.1	5.4	62	610
14...	--	18.0	18.1	<.1	5.4	62	520
14...	--	20.0	17.6	<.1	5.4	64	480
14...	--	22.0	17.3	<.1	5.5	68	335
14...	--	20.0	17.6	<.1	5.4	64	480
JUL							
24...	27.0	.20	27.3	7.3	8.1	56	465
24...	--	2.0	27.3	7.2	8.1	56	500
24...	--	3.0	26.5	4.0	6.9	58	535
24...	--	4.0	26.0	3.1	7.0	59	550
24...	--	5.0	25.5	1.9	6.9	63	560
24...	--	6.0	25.3	1.6	6.9	64	565
24...	--	7.0	25.0	1.2	6.7	64	570
24...	--	8.0	24.8	.7	6.6	62	550
24...	--	10.0	23.9	<.1	6.6	64	545
24...	--	12.0	22.9	<.1	6.6	70	535
24...	--	14.0	21.8	<.1	6.7	74	440
24...	--	16.0	21.0	<.1	6.9	79	260
24...	--	18.0	20.4	<.1	6.9	82	170
24...	--	20.0	20.0	<.1	6.9	88	110
24...	--	22.0	19.6	<.1	7.0	93	85.0

CH-03A (U23J9382) Chattahoochee River above coffer dam, above West Point Dam, 1978 and 1979

DATE	TEMPER- ATURE, AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)
AUG . 1979							
21...	34.6	.20	30.3	7.2	8.4	68	315
21...	--	2.0	29.4	7.4	8.5	68	320
21...	--	3.0	28.9	7.9	8.6	67	335
21...	--	4.0	28.3	7.6	8.3	65	350
21...	--	5.0	28.0	6.0	7.7	64	360
21...	--	6.0	27.8	6.0	7.1	64	380
21...	--	7.0	27.7	5.3	6.9	67	390
21...	--	8.0	27.5	5.1	6.8	68	395
21...	--	10.0	27.2	3.9	6.5	69	400
21...	--	12.0	25.8	.7	6.1	71	195
21...	--	14.0	24 .	.6	6.0	80	200
21...	--	16.0	23.3	.6	6.2	91	145
21...	--	18.0	22.8	.5	6.2	96	120
21...	--	20.0	22.0	.5	6.2	100	100
21...	--	22.0	21.5	.5	6.3	105	90.0
21...	--	24.0	20.6	.5	6.3	112	80.0
SEP							
17...	19.0	.20	25.3	5.6	6.7	72	510
17...	--	2.0	25.3	5.6	6.7	72	510
17...	--	4.0	25.3	5.5	6.7	72	515
17...	--	6.0	25.3	5.5	6.7	73	515
17...	--	8.0	25.3	5.4	6.7	72	520
17...	--	10.0	25.3	4.8	6.7	72	520
17...	--	12.0	25.3	4.7	6.6	73	520
17...	--	14.0	25.2	4.1	6.5	73	525
17...	--	16.0	24.6	.9	6.2	77	520
17...	--	18.0	23.9	.7	6.1	79	480
17...	--	20.0	23.7	.7	6.1	79	450
17...	--	22.0	23.3	.6	6.2	88	270
17...	--	24.0	22.3	.7	6.4	116	180
OCT							
15...	23.0	.20	20.9	6.8	6.8	70	550
15...	--	2.0	20.5	6.2	6.6	71	560
15...	--	4.0	20.4	5.8	6.5	71	560
15...	--	6.0	20.4	5.7	6.5	71	560
15...	--	8.0	20.4	5.7	6.5	71	565
15...	--	10.0	20.4	5.9	6.5	71	565
15...	--	12.0	20.4	5.7	6.5	71	570
15...	--	14.0	20.3	5.7	6.5	71	570
15...	--	16.0	20.0	5.2	6.4	71	575
15...	--	18.0	19.8	3.9	6.2	71	580
15...	--	20.0	19.7	3.6	6.1	72	580
15...	--	22.0	19.6	3.4	6.1	72	585
15...	--	23.0	19.6	3.4	6.1	72	585
15...	--	24.0	19.6	3.3	6.1	72	585
DEC							
10...	20.5	.20	12.3	7.7	6.4	66	565
10...	--	2.0	11.9	7.4	6.3	67	575
10...	--	4.0	11.7	7.1	6.2	67	580
10...	--	6.0	11.6	7.0	6.2	67	585
10...	--	8.0	11.6	7.0	6.2	67	585
10...	--	10.0	11.6	7.0	6.2	68	590
10...	--	12.0	11.6	6.9	6.2	67	590
10...	--	14.0	11.5	6.8	6.1	67	590
10 .	--	16.0	11.2	6.5	6.1	67	595
10 .	--	18.0	10.9	6.4	6.1	66	595
10...	--	20.0	10.9	6.4	6.1	66	595
10...	--	22.0	10.9	6.4	6.1	67	600

DATE	TEMPER- ATURE AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN+ DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MMOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)
APR 1978							
11...	26.0	.20	17.7	11.2	8.4	56	445
11...	--	2.0	15.8	8.2	6.9	58	460
11...	--	4.0	14.1	8.1	6.8	56	470
11...	--	6.0	13.2	8.2	6.7	58	475
11...	--	8.0	12.3	8.4	6.6	58	480
11...	--	12.0	10.8	7.5	6.5	56	490
11...	--	16.0	9.8	6.0	6.3	56	500
MAY							
14...	23.4	.20	20.0	9.0	6.8	58	465
14...	--	2.0	20.0	8.7	6.6	57	470
14...	--	4.0	20.0	8.3	6.6	56	480
14...	--	6.0	19.9	7.7	6.1	56	500
14...	--	8.0	19.5	7.2	6.2	60	495
14...	--	10.0	18.0	5.1	5.8	58	505
14...	--	12.0	17.4	5.0	5.8	56	515
14...	--	14.0	17.0	4.3	5.6	54	520
14...	--	16.0	16.5	3.5	5.6	55	525
14...	--	18.0	16.0	2.4	5.6	56	530
31...	21.5	.20	20.0	8.5	9.0	68	465
31...	--	2.0	20.0	8.8	8.9	68	475
31...	--	3.0	25.4	8.6	8.7	68	485
31...	--	4.0	23.1	6.6	6.8	68	535
31...	--	5.0	21.2	3.2	6.2	68	570
31...	--	6.0	21.0	2.7	6.2	68	568
31...	--	8.0	20.0	2.9	6.3	66	575
31...	--	10.0	19.4	2.7	6.2	68	585
31...	--	12.0	18.4	1.5	6.1	68	595
31...	--	14.0	17.6	.7	6.1	68	600
31...	--	16.0	17.2	.3	6.1	68	605
JUL							
10...	27.0	.20	30.0	8.4	8.9	63	360
10...	--	2.0	30.0	8.4	8.9	63	365
10...	--	3.0	29.8	8.6	8.9	62	370
10...	--	4.0	29.3	8.7	8.9	62	375
10...	--	5.0	28.4	5.1	6.9	61	415
10...	--	6.0	28.0	2.2	6.3	63	425
10...	--	7.0	26.5	.2	6.2	63	430
10...	--	8.0	25.1	<.1	6.2	66	430
10...	--	10.0	23.4	<.1	6.2	66	435
10...	--	12.0	21.1	<.1	6.2	63	415
10...	--	14.0	19.6	<.1	6.3	66	385
10...	--	16.0	18.9	<.1	6.4	71	310
10...	--	18.0	18.3	<.1	6.5	78	240
AUG							
14...	25.7	.20	27.8	6.5	7.1	64	520
14...	--	2.0	27.3	6.4	7.0	68	520
14...	--	3.0	27.2	6.0	6.9	68	525
14...	--	4.0	27.2	6.0	6.9	68	530
14...	--	5.0	27.2	5.7	6.8	68	535
14...	--	6.0	27.1	5.5	6.7	69	540
14...	--	7.0	27.0	3.7	6.4	70	550
14...	--	8.0	26.9	.6	6.2	70	560
14...	--	10.0	25.5	.1	6.0	74	565
14...	--	12.0	24.7	<.1	6.0	74	565
14...	--	14.0	24.2	<.1	6.0	74	565
14...	--	16.0	23.7	<.1	6.1	80	440
30...	25.0	.20	28.5	8.1	8.1	69	570
30...	--	2.0	28.6	8.0	8.1	68	550
30...	--	3.0	28.6	6.3	7.3	68	565
30...	--	4.0	28.4	3.1	6.7	.7	685
30...	--	5.0	27.8	.1	6.4	70	605
30...	--	6.0	27.3	<.1	6.2	70	615
30...	--	7.0	26.7	<.1	6.2	70	620
30...	--	8.0	26.8	<.1	6.1	67	630
30...	--	10.0	26.9	<.1	6.0	64	640
30...	--	12.0	26.8	<.1	6.0	63	640
30...	--	14.0	23.1	<.1	6.0	62	640
30...	--	16.0	22.7	.0	6.0	62	640
OCT							
16...	16.5	.20	20.6	6.7	6.8	68	565
16...	--	2.0	20.6	6.6	6.7	68	570
16...	--	4.0	20.7	6.3	6.7	68	570
16...	--	6.0	20.6	6.2	6.7	68	570
16...	--	8.0	20.7	6.1	6.6	68	575
16...	--	10.0	20.7	6.1	6.6	68	580
16...	--	12.0	20.2	3.7	6.4	64	580
16...	--	14.0	20.0	3.7	6.3	64	590
16...	--	16.0	19.5	4.2	6.3	66	595
16...	--	18.0	19.3	4.4	6.3	66	600
16...	--	20.0	19.2	4.5	6.3	65	600
NOV							
28...	14.0	.20	16.0	6.1	6.6	61	585
28...	--	2.0	16.3	6.1	6.6	61	520
28...	--	4.0	16.3	6.1	6.6	61	530
28...	--	6.0	16.3	6.0	6.5	60	545
28...	--	8.0	16.3	6.0	6.6	60	550
28...	--	10.0	16.3	6.0	6.3	60	560
28...	--	12.0	16.4	6.0	6.3	60	570
28...	--	14.0	16.3	5.8	6.3	61	580

DATE	TEMPER- ATURE. AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN. DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXID- ATION RED- UCTIO- N POTEN- TIAL (MV)
JAN . 1979							
22...	6.5	.20	6.9	9.9	6.5	77	585
22...	--	2.0	6.9	9.8	6.4	77	590
22...	--	4.0	6.9	9.8	6.3	77	595
22...	--	6.0	6.9	9.8	6.3	77	600
22...	--	8.0	6.8	9.9	6.2	76	605
22...	--	10.0	6.8	9.9	6.2	76	610
22...	--	12.0	6.8	9.9	6.2	76	610
22...	--	14.0	6.8	9.9	6.1	76	615
22...	--	16.0	6.8	9.9	6.1	76	620
22...	--	18.0	6.8	9.9	6.1	76	620
22...	--	19.0	6.8	9.9	6.0	76	620
22...	--	20.0	6.8	9.9	6.0	76	625
MAR							
20...	28.0	.20	19.5	12.3	8.2	51	580
20...	--	2.0	14.9	10.3	6.5	51	595
20...	--	4.0	13.6	9.0	6.1	52	615
20...	--	6.0	12.9	8.6	5.9	52	630
20...	--	8.0	12.6	8.4	5.8	52	640
20...	--	10.0	12.5	8.9	5.7	53	650
20...	--	12.0	11.6	8.1	5.7	58	655
20...	--	14.0	11.3	8.2	5.6	58	660
20...	--	16.0	9.7	6.6	5.5	60	665
20...	--	18.0	9.4	6.3	5.4	59	670
20...	--	20.0	9.2	5.9	5.3	60	675
MAY							
01...	23.0	.20	20.6	10.2	7.4	44	565
01...	--	2.0	20.3	10.1	7.2	44	570
01...	--	4.0	18.7	8.7	6.5	44	600
01...	--	6.0	17.8	7.7	6.0	45	620
01...	--	8.0	17.7	7.6	5.9	45	640
01...	--	10.0	17.6	7.6	5.8	46	645
01...	--	12.0	17.4	7.8	5.9	46	650
01...	--	14.0	16.7	5.8	5.7	47	660
01...	--	16.0	16.4	4.9	5.5	47	665
01...	--	18.0	16.1	3.9	5.5	49	670
01...	--	20.0	15.9	3.2	5.5	50	670
01...	--	22.0	15.7	2.3	5.4	53	670
01...	--	23.0	15.1	1.0	5.5	61	515
JUN							
14...	28.0	.20	25.4	8.6	8.5	55	480
14...	--	2.0	25.3	8.6	8.4	55	485
14...	--	4.0	25.3	8.5	8.4	55	485
14...	--	6.0	25.2	8.4	8.3	55	490
14...	--	8.0	25.2	8.0	7.7	55	500
14...	--	9.0	24.1	5.8	6.6	57	530
14...	--	10.0	23.1	4.6	6.1	57	555
14...	--	11.0	21.8	2.9	5.8	57	580
14...	--	12.0	21.7	2.5	5.6	58	595
14...	--	14.0	19.7	1.2	5.4	60	605
14...	--	16.0	18.4	<.1	5.4	59	610
14...	--	18.0	18.1	<.1	5.4	59	550
14...	--	20.0	17.8	<.1	5.4	60	465
14...	--	22.0	17.3	<.1	5.4	65	380
14...	--	24.0	17.1	<.1	5.5	69	325
JUL							
24...	30.0	.20	27.2	7.2	7.8	56	515
24...	--	2.0	27.2	7.1	7.5	56	520
24...	--	3.0	26.4	4.2	7.4	59	555
24...	--	4.0	25.8	2.8	7.2	60	585
24...	--	5.0	25.6	2.2	7.0	61	585
24...	--	6.0	25.2	1.5	6.8	61	540
24...	--	7.0	25.0	1.0	6.6	61	545
24...	--	8.0	24.7	.7	6.5	61	550
24...	--	10.0	24.1	<.1	6.2	62	540
24...	--	12.0	22.6	<.1	6.2	68	545
24...	--	14.0	22.2	<.1	6.1	66	545
24...	--	16.0	21.0	<.1	6.3	76	290
24...	--	18.0	20.2	<.1	6.6	82	150
24...	--	20.0	19.5	<.1	6.7	92	95.0
24...	--	22.0	18.5	<.1	6.8	106	60.0

CN-038 (U2339387) Chattahoochee River east of coffer dam, above West Point Dam, 1978 and 1979

DATE	TEMPER- ATURE AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)
AUG							
21...	34.5	.20	30.5	8.3	8.3	68	415
21...	--	2.0	29.6	8.7	8.4	67	415
21...	--	3.0	28.8	8.8	8.5	67	415
21...	--	4.0	28.4	8.4	8.4	66	420
21...	--	5.0	28.1	7.7	8.0	65	425
21...	--	6.0	27.9	6.2	7.1	63	440
21...	--	7.0	27.8	6.5	7.0	66	450
21...	--	8.0	27.6	5.7	6.8	68	460
21...	--	10.0	27.3	4.5	6.5	69	465
21...	--	12.0	25.9	.5	6.1	75	480
21...	--	14.0	24.7	.5	6.0	78	455
21...	--	16.0	24.0	.5	6.1	86	185
21...	--	18.0	22.7	.5	6.2	92	130
21...	--	20.0	22.2	.5	6.3	102	100
21...	--	22.0	21.4	.5	6.3	106	90.0
SEP							
17...	19.0	.20	25.3	5.7	6.8	72	530
17...	--	2.0	25.3	5.6	6.7	72	530
17...	--	4.0	25.3	5.6	6.7	72	530
17...	--	6.0	25.3	5.6	6.7	72	535
17...	--	8.0	25.3	5.6	6.7	72	535
17...	--	10.0	25.3	5.6	6.7	74	535
17...	--	12.0	25.3	5.5	6.7	73	540
17...	--	14.0	25.3	5.2	6.7	73	540
17...	--	16.0	24.5	.7	6.2	73	500
17...	--	18.0	23.9	.7	6.1	78	475
17...	--	20.0	23.7	.7	6.1	79	455
17...	--	22.0	23.2	.6	6.3	97	175
OCT							
15...	23.0	.20	21.2	7.2	6.7	70	535
15...	--	2.0	20.7	6.3	6.6	70	540
15...	--	4.0	20.6	6.2	6.5	70	545
15...	--	6.0	20.5	6.1	6.5	70	550
15...	--	8.0	20.5	6.1	6.5	70	550
15...	--	10.0	20.5	6.1	6.4	70	550
15...	--	12.0	20.4	6.1	6.4	70	555
15...	--	14.0	20.5	6.0	6.4	70	560
15...	--	16.0	20.2	5.2	6.3	71	560
15...	--	18.0	19.8	3.9	6.2	71	565
15...	--	20.0	19.8	3.8	6.1	71	570
15...	--	22.0	19.7	3.4	6.1	72	575
15...	--	23.0	19.7	3.3	6.1	72	575
DEC							
10...	19.0	.20	13.1	9.5	6.9	62	480
10...	--	2.0	13.0	9.5	6.8	65	490
10...	--	4.0	11.8	8.6	6.8	64	495
10...	--	6.0	11.7	8.3	6.7	66	505
10...	--	8.0	11.7	8.2	6.6	66	510
10...	--	10.0	11.7	8.3	6.6	66	510
10...	--	12.0	11.6	8.2	6.6	66	515
10...	--	14.0	11.6	8.1	6.6	66	520
10...	--	16.0	11.5	7.8	6.5	66	520
10...	--	18.0	11.5	7.7	6.5	66	525
10...	--	20.0	11.5	7.8	6.5	66	525

CH-01C (02319188) Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979

DATE	TEMPERATURE AIR (DEG C)	SAMPLING DEPTH (M)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	DILUTION NEUTRALIZATION POTENTIAL (MV)	TRANS-PAR-ENCY (SEC/CM DISK)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCIDENT PERCENT REMAINING AT DEPTH
APR 1978										
10...	29.0	.20	21.1	12.8	9.8	66	360	1.00	2.00	ND
10...	--	2.0	20.7	13.0	9.8	63	360	--	--	--
10...	--	3.0	19.1	12.4	9.2	58	365	--	--	--
10...	--	4.0	17.4	10.6	8.7	56	375	--	--	--
10...	--	5.0	16.3	9.3	7.2	59	400	--	--	--
10...	--	6.0	15.3	8.1	6.0	57	420	--	--	--
10...	--	8.0	12.6	7.8	6.0	46	435	--	--	--
10...	--	12.0	11.1	7.2	6.4	56	445	--	--	--
10...	--	15.0	10.0	6.3	6.3	55	455	--	--	--
10...	--	16.0	9.0	5.0	6.3	55	460	--	--	--
MAY										
14...	23.4	.20	19.7	8.0	6.5	58	515	1.25	1.00	--
14...	--	1.0	--	--	--	--	--	--	--	27
14...	--	2.0	19.7	8.0	6.3	58	520	--	--	5.0
14...	--	3.0	--	--	--	--	--	--	--	1.0
14...	--	4.0	19.6	7.9	6.1	58	530	--	--	--
14...	--	6.0	19.6	7.5	6.1	58	530	--	--	--
14...	--	8.0	18.3	5.6	5.9	58	540	--	--	--
14...	--	10.0	17.8	5.1	5.8	56	545	--	--	--
14...	--	12.0	17.1	4.8	5.7	54	540	--	--	--
14...	--	14.0	16.7	4.0	5.6	54	545	--	--	--
14...	--	16.0	16.3	3.1	5.5	54	550	--	--	--
14...	--	18.0	15.4	1.9	5.4	54	555	--	--	--
31...	21.5	.20	26.2	8.6	6.9	72	480	1.90	5.00	--
31...	--	1.0	--	--	--	--	--	--	--	38
31...	--	2.0	26.0	8.7	6.7	72	485	--	--	14
31...	--	3.0	--	--	--	--	--	--	--	5.0
31...	--	4.0	22.9	6.0	6.7	70	550	--	--	2.0
31...	--	5.0	--	--	--	--	--	--	--	1.0
31...	--	6.0	20.6	2.5	6.2	70	580	--	--	--
31...	--	8.0	20.0	2.9	6.2	72	590	--	--	--
31...	--	10.0	19.2	2.6	6.2	72	605	--	--	--
31...	--	12.0	18.2	1.1	6.1	72	615	--	--	--
31...	--	14.0	17.5	.6	6.0	72	620	--	--	--
31...	--	16.0	17.0	.3	6.0	72	620	--	--	--
31...	--	18.0	16.2	.2	6.2	72	610	--	--	--
JUN										
10...	--	--	--	--	--	--	--	--	--	2.0
JUL										
10...	29.6	.20	30.4	8.3	6.9	62	410	1.70	5.00	--
10...	--	1.0	--	--	--	--	--	--	--	34
10...	--	2.0	30.1	8.5	6.9	63	400	--	--	18
10...	--	3.0	29.8	8.6	6.9	63	400	--	--	9.0
10...	--	4.0	29.2	8.8	6.9	62	400	--	--	4.0
10...	--	5.0	28.6	6.6	7.4	60	430	--	--	2.0
10...	--	6.0	28.1	2.4	6.5	60	465	--	--	1.0
10...	--	7.0	26.5	.2	6.2	63	490	--	--	--
10...	--	8.0	25.1	<.1	6.2	66	495	--	--	--
10...	--	10.0	23.2	<.1	6.2	64	500	--	--	--
10...	--	12.0	21.2	<.1	6.2	63	470	--	--	--
10...	--	14.0	19.3	<.1	6.4	68	360	--	--	--
10...	--	16.0	18.6	<.1	6.4	72	295	--	--	--
10...	--	18.0	18.0	<.1	6.5	78	235	--	--	--
AUG										
14...	25.0	.20	27.4	6.0	6.9	66	500	1.70	5.00	--
14...	--	1.0	--	--	--	--	--	--	--	38
14...	--	2.0	27.4	5.9	6.9	68	505	--	--	11
14...	--	3.0	27.4	5.9	6.8	68	510	--	--	5.0
14...	--	4.0	27.5	5.8	6.8	68	510	--	--	1.0
14...	--	5.0	27.4	5.8	6.8	68	515	--	--	2.0
14...	--	6.0	27.3	5.7	6.8	68	520	--	--	--
14...	--	7.0	27.3	3.9	6.6	69	525	--	--	--
14...	--	8.0	27.0	1.1	6.2	71	540	--	--	--
14...	--	10.0	25.6	.1	6.1	74	550	--	--	--
14...	--	12.0	24.9	<.1	6.1	74	550	--	--	--
14...	--	14.0	24.4	<.1	6.1	75	550	--	--	--
14...	--	16.0	24.0	<.1	6.1	80	450	16.0	--	--
14...	--	18.0	22.8	<.1	6.3	95	330	--	--	--
30...	27.8	.20	28.4	6.0	6.3	69	520	1.10	4.00	--
30...	--	1.0	--	--	--	--	--	--	--	14
30...	--	2.0	26.5	8.3	6.3	69	510	--	--	6.0
30...	--	3.0	26.4	4.6	7.3	68	530	--	--	2.0
30...	--	4.0	26.2	2.6	6.8	69	550	--	--	1.0
30...	--	5.0	27.5	.1	6.3	70	585	--	--	--
30...	--	6.0	27.2	<.1	6.2	71	575	--	--	--
30...	--	7.0	26.6	<.1	6.1	64	580	--	--	--
30...	--	8.0	26.0	<.1	6.1	67	590	--	--	--
30...	--	10.0	24.9	<.1	6.0	65	595	--	--	--
30...	--	12.0	23.8	<.1	6.0	63	595	--	--	--
30...	--	14.0	23.2	<.1	6.0	62	600	--	--	--
30...	--	16.0	22.8	<.1	6.0	62	600	--	--	--
OCT										
14...	16.8	.20	20.6	6.4	6.8	67	540	--	3.00	--
14...	--	1.0	--	--	--	--	--	--	--	14
14...	--	2.0	20.8	6.3	6.7	67	590	--	--	4.0
14...	--	3.0	--	--	--	--	--	--	--	1.0
14...	--	4.0	20.8	6.3	6.7	67	590	--	--	--
14...	--	6.0	20.9	6.2	6.7	67	595	--	--	--
14...	--	8.0	20.8	6.1	6.7	67	595	--	--	--
14...	--	10.0	20.8	6.1	6.7	64	600	--	--	--
14...	--	12.0	20.7	4.0	6.5	66	600	--	--	--
14...	--	14.0	20.4	2.1	6.3	65	610	--	--	--
NOV										
28...	10.8	.20	16.2	6.3	6.6	61	580	1.80	2.50	--
28...	--	1.0	--	--	--	--	--	--	--	18
28...	--	2.0	16.3	6.3	6.4	68	590	--	--	2.0
28...	--	2.5	--	--	--	--	--	--	--	1.0
28...	--	4.0	16.4	6.2	6.4	68	590	--	--	--
28...	--	6.0	16.3	6.1	6.4	68	595	--	--	--
28...	--	8.0	16.1	6.1	6.3	68	600	--	--	--
28...	--	10.0	16.1	6.0	6.3	68	600	--	--	--
28...	--	12.0	15.2	6.0	6.1	68	600	--	--	--
28...	--	14.0	16.2	5.9	6.1	62	605	--	--	--

CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979

DATE	TEMPERATURE AIR (DEG C)	SAMPLING DEPTH (M)	TEMPERATURE (DEG C)	OXYGEN DISSOLVED (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICROMHOS)	OXIDATION REDUCTION POTENTIAL (MV)	TRANSPARENCY (SECCHI DISK) (M)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCIDENT PERCENT REMAINING AT DEPTH
JAN. 1979										
22...	2.0	.20	6.8	9.6	6.3	78	570	1.10	--	ND
22...	--	2.0	6.8	9.6	6.2	78	580	--	--	--
22...	--	4.0	6.8	9.6	6.2	78	585	--	--	--
22...	--	6.0	6.8	9.6	6.2	78	590	--	--	--
22...	--	8.0	6.8	9.6	6.1	78	595	--	--	--
22...	--	10.0	6.8	9.6	6.1	78	600	--	--	--
22...	--	12.0	6.8	9.6	6.1	78	600	--	--	--
22...	--	14.0	6.8	9.6	6.1	78	605	--	--	--
22...	--	15.0	6.8	9.6	6.0	80	605	--	--	--
MAR										
20...	28.0	.20	17.2	11.3	7.5	50	585	.40	1.50	--
20...	--	1.0	--	--	--	--	--	--	--	2.0
20...	--	1.5	--	--	--	--	--	--	--	1.0
20...	--	2.0	14.3	9.5	6.4	51	590	--	--	--
20...	--	4.0	13.1	9.1	6.1	53	610	--	--	--
20...	--	6.0	13.0	9.0	5.9	53	625	--	--	--
20...	--	9.0	12.9	8.8	5.8	53	635	--	--	--
20...	--	10.0	12.7	8.5	5.7	52	640	--	--	--
20...	--	12.0	12.5	8.4	5.7	52	645	--	--	--
20...	--	14.0	12.5	8.4	5.6	52	655	--	--	--
20...	--	16.0	12.2	8.4	5.6	55	655	--	--	--
20...	--	18.0	12.1	8.7	5.6	55	660	--	--	--
20...	--	20.0	9.9	6.8	5.4	59	670	--	--	--
MAY										
01...	26.0	.20	20.4	10.5	7.8	44	515	.50	2.00	--
01...	--	1.0	--	--	--	--	--	--	--	3.0
01...	--	2.0	20.3	10.3	7.6	44	535	--	--	1.0
01...	--	4.0	19.9	9.8	7.1	44	550	--	--	--
01...	--	6.0	18.5	8.5	6.4	44	580	--	--	--
01...	--	8.0	17.8	7.6	6.1	45	595	--	--	--
01...	--	10.0	17.7	7.6	5.9	45	605	--	--	--
01...	--	12.0	17.6	7.5	5.8	46	620	--	--	--
01...	--	14.0	17.4	7.6	5.8	46	625	--	--	--
01...	--	16.0	17.4	7.6	5.8	46	630	--	--	--
01...	--	18.0	17.4	7.6	5.8	46	640	--	--	--
01...	--	20.0	16.4	5.8	5.6	48	650	--	--	--
01...	--	22.0	16.3	4.5	5.5	48	655	--	--	--
JUN										
14...	26.0	.20	25.6	8.9	8.7	56	460	1.50	4.00	--
14...	--	1.0	--	--	--	--	--	--	--	3.0
14...	--	2.0	25.6	8.9	8.6	57	470	--	--	4.0
14...	--	3.0	--	--	--	--	--	--	--	4.0
14...	--	4.0	25.6	4.0	8.6	57	470	--	--	1.0
14...	--	6.0	25.5	8.7	8.4	56	480	--	--	--
14...	--	4.0	25.4	8.5	8.3	56	485	--	--	--
14...	--	10.0	24.7	7.4	7.0	56	510	--	--	--
14...	--	11.0	24.0	5.8	6.7	57	530	--	--	--
14...	--	12.0	23.1	5.5	6.1	58	560	--	--	--
14...	--	14.0	21.5	3.3	5.7	58	575	--	--	--
14...	--	16.0	21.2	3.0	5.6	54	595	--	--	--
14...	--	18.0	20.4	2.2	5.5	60	605	--	--	--
14...	--	20.0	20.2	1.0	5.4	60	615	--	--	--
15...	--	--	--	--	--	--	--	--	5.00	--
JUL										
24...	32.0	.20	27.4	7.5	8.1	57	480	1.40	5.00	--
24...	--	1.0	--	--	--	--	--	--	--	2.0
24...	--	2.0	27.3	7.5	7.6	57	490	--	--	1.0
24...	--	3.0	27.2	7.4	7.0	54	505	--	--	6.0
24...	--	4.0	27.1	7.2	6.4	57	515	--	--	3.0
24...	--	5.0	26.0	2.8	6.7	60	525	--	--	1.0
24...	--	6.0	25.6	2.0	6.5	62	540	--	--	--
24...	--	7.0	25.1	1.3	6.4	64	550	--	--	--
24...	--	8.0	24.7	.6	6.4	64	560	--	--	--
24...	--	10.0	23.5	<.1	6.0	67	570	--	--	--
24...	--	12.0	22.5	<.1	6.7	68	560	--	--	--
24...	--	14.0	21.6	<.1	7.4	76	575	--	--	--
24...	--	16.0	21.0	<.1	7.3	78	590	--	--	--
24...	--	18.0	20.2	<.1	6.7	84	510	--	--	--
24...	--	20.0	19.4	<.1	6.4	88	360	--	--	--
27...	--	--	--	--	--	--	--	--	6.00	--

CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979

DATE	TEMPERATURE AIR (DEG C)	SAMPLING DEPTH (M)	TEMPERATURE (DEG C)	OXYGEN DIS-SOLVED (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	OXIDATION REDUCTION POTENTIAL (MV)	TRANSPARENCY (SECCHI DISK) (M)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCIDENT PERCENT REMAINING AT DEPTH
AUG										
21...	34.0	.20	29.1	8.3	8.3	68	425	1.70	5.50	--
21...	--	1.0	--	--	--	--	--	--	--	42
21...	--	2.0	28.4	8.6	8.4	68	425	--	--	10
21...	--	3.0	28.2	8.0	8.2	67	435	--	--	10
21...	--	4.0	27.9	6.9	7.3	65	450	--	--	4.0
21...	--	5.0	27.9	6.8	7.0	64	470	--	--	2.0
21...	--	5.5	--	--	--	--	--	--	--	1.0
21...	--	6.0	27.7	6.3	6.9	67	480	--	--	--
21...	--	7.0	27.6	5.8	6.7	67	490	--	--	--
21...	--	8.0	27.5	5.4	6.6	67	495	--	--	--
21...	--	10.0	26.9	2.0	6.2	71	505	--	--	--
21...	--	12.0	24.9	.5	5.9	78	400	--	--	--
21...	--	14.0	23.9	.5	6.0	87	190	--	--	--
21...	--	16.0	23.1	.5	6.1	92	140	--	--	--
21...	--	18.0	22.5	.5	6.2	97	120	--	--	--
21...	--	20.0	21.8	.5	6.2	102	100	--	--	--
24...	--	--	--	--	--	--	--	--	5.00	--
SEP										
17...	19.0	.20	25.4	5.7	6.7	73	565	--	--	ND
17...	--	2.0	25.4	5.7	6.7	73	560	--	--	--
17...	--	4.0	25.4	5.7	6.7	73	565	--	--	--
17...	--	6.0	25.4	5.7	6.7	73	565	--	--	--
17...	--	8.0	25.4	5.7	6.7	73	565	--	--	--
17...	--	10.0	25.4	5.7	6.7	72	565	--	--	--
17...	--	12.0	25.4	6.2	6.7	73	570	--	--	--
17...	--	14.0	25.3	5.9	6.6	73	570	--	--	--
17...	--	16.0	25.3	5.8	6.6	72	570	--	--	--
17...	--	18.0	25.0	3.4	6.4	75	575	--	--	--
17...	--	20.0	24.0	1.1	6.1	78	510	--	--	--
17...	--	21.0	23.8	.7	6.1	78	370	--	--	--
OCT										
15...	20.6	.20	21.1	6.4	6.6	70	565	1.50	--	ND
15...	--	2.0	20.6	6.5	6.5	70	570	--	--	--
15...	--	4.0	20.5	6.1	6.5	71	575	--	--	--
15...	--	6.0	20.4	5.5	6.5	70	575	--	--	--
15...	--	8.0	20.4	6.0	6.4	70	580	--	--	--
15...	--	10.0	20.4	5.6	6.4	70	580	--	--	--
15...	--	12.0	20.4	5.9	6.4	70	580	--	--	--
15...	--	14.0	20.3	5.5	6.4	70	585	--	--	--
15...	--	16.0	20.0	4.5	6.2	71	590	--	--	--
15...	--	18.0	19.9	3.8	6.1	71	545	--	--	--
15...	--	20.0	19.7	3.7	6.1	72	600	--	--	--
NOV										
10...	21.0	.20	12.3	7.8	6.2	67	580	1.00	3.00	--
10...	--	1.0	--	--	--	--	--	--	--	1.0
10...	--	2.0	11.8	7.4	6.2	67	585	--	--	5.0
10...	--	3.0	--	--	--	--	--	--	--	1.0
10...	--	4.0	11.7	7.1	6.1	67	590	--	--	--
10...	--	6.0	11.6	7.1	6.1	67	595	--	--	--
10...	--	8.0	11.6	7.0	6.1	67	595	--	--	--
10...	--	10.0	11.6	6.9	6.1	67	600	--	--	--
10...	--	12.0	11.5	6.8	6.1	67	600	--	--	--
10...	--	14.0	11.5	6.7	6.1	67	600	--	--	--
10...	--	16.0	11.2	6.5	6.0	67	605	--	--	--
10...	--	18.0	11.2	6.5	6.0	67	605	--	--	--
10...	--	20.0	11.1	6.1	6.1	67	605	--	--	--
11...	--	--	--	--	--	--	--	--	3.00	--
11...	--	1.0	--	--	--	--	--	--	--	1.0
11...	--	2.0	--	--	--	--	--	--	--	5.0
11...	--	3.0	--	--	--	--	--	--	--	1.0

CH-8 (113902) Yellowjacket Creek at Cameron Hill Road, near LaGrange, Ga., 1978 and 1979

DATE	TEMPERATURE AT SURFACE (DEG C)	SAMPLING DEPTH (M)	TEMPERATURE AT DEPTH (DEG C)	OXYGEN DISEQUILIBRIUM (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	Oxidation-Reduction Potential (MV)	TRANSMITTANCE (% CCMI DISK)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INTENSITY PERCENT REMAINING AT DEPTH
APR 1978										
17...	28.0	2.0	22.7	12.7	8.6	62	440	--	--	ND
17...	--	2.0	21.4	12.5	8.6	63	440	--	--	--
17...	--	3.0	19.7	9.6	8.1	71	485	--	--	--
17...	--	4.0	14.5	6.4	6.9	79	475	--	--	--
17...	--	5.0	16.0	2.9	5.5	55	515	--	--	--
17...	--	6.0	15.1	1.2	5.4	55	515	--	--	--
17...	--	7.0	13.2	.2	5.6	44	480	--	--	--
17...	--	8.0	11.7	.1	6.2	95	275	--	--	--
MAY										
02...	20.0	2.0	19.6	9.6	7.7	57	490	--	--	ND
02...	--	1.0	19.4	9.1	7.5	56	495	--	--	--
02...	--	2.0	19.2	8.3	7.1	57	505	--	--	--
02...	--	4.0	14.5	6.1	6.7	58	515	--	--	--
02...	--	6.0	17.4	5.3	6.4	62	525	--	--	--
02...	--	8.0	16.9	5.1	6.5	65	530	--	--	--
02...	--	10.0	15.9	.3	6.7	75	375	--	--	--
JUN										
05...	29.4	2.0	24.0	10.0	9.2	82	435	1.20	--	ND
05...	--	2.0	27.6	9.8	9.1	90	445	--	--	--
05...	--	3.0	26.5	3.1	7.6	78	500	--	--	--
05...	--	4.0	25.1	5.2	6.7	74	530	--	--	--
05...	--	5.0	22.4	2.0	6.3	66	550	--	--	--
05...	--	6.0	21.0	.3	6.2	62	560	--	--	--
05...	--	8.0	14.5	.1	6.2	68	570	--	--	--
05...	--	10.0	14.6	<.1	6.3	44	560	--	--	--
JUL										
12...	30.9	2.0	30.6	9.1	9.9	71	440	1.20	3.00	--
12...	--	1.0	--	--	--	--	--	--	--	17
12...	--	2.0	29.5	8.9	8.9	69	475	--	--	4.0
12...	--	3.0	29.3	8.1	8.6	68	450	--	--	1.0
12...	--	4.0	29.1	7.2	8.0	67	470	--	--	--
12...	--	5.0	28.3	5.5	6.5	70	520	--	--	--
12...	--	6.0	27.3	<.1	6.2	71	555	--	--	--
12...	--	7.0	26.0	<.1	6.3	72	290	--	--	--
12...	--	8.0	24.6	<.1	6.4	73	210	--	--	--
12...	--	10.0	22.3	<.1	6.7	102	120	--	--	--
12...	--	12.0	20.1	<.1	6.8	129	95.0	--	--	--
12...	--	13.0	20.0	<.1	6.7	138	120	--	--	--
AUG										
15...	29.0	2.0	24.4	9.3	8.4	64	500	1.10	3.00	--
15...	--	1.0	--	--	--	--	--	--	--	19
15...	--	2.0	24.0	7.5	7.3	64	515	--	--	4.0
15...	--	3.0	27.2	3.1	6.4	64	550	--	--	1.0
15...	--	4.0	26.4	.5	6.1	68	575	--	--	--
15...	--	5.0	25.2	2.2	6.0	65	585	--	--	--
15...	--	6.0	24.5	2.4	6.0	63	595	--	--	--
15...	--	7.0	24.4	2.4	6.0	62	600	--	--	--
15...	--	8.0	24.1	2.2	6.0	62	600	--	--	--
15...	--	10.0	23.9	2.1	6.0	63	605	--	--	--
15...	--	12.0	22.5	<.1	6.5	164	150	--	--	--
15...	--	13.0	21.4	<.1	6.6	144	100	--	--	--
28...	27.0	2.0	24.9	9.2	8.4	67	495	1.00	3.00	--
28...	--	1.0	--	--	--	--	--	--	--	15
28...	--	2.0	29.3	4.9	8.9	67	485	--	--	4.0
28...	--	4.0	29.0	4.7	7.8	65	505	--	--	1.0
28...	--	6.0	29.0	1.2	6.4	66	560	--	--	--
28...	--	5.0	27.1	.1	6.2	58	580	--	--	--
28...	--	6.0	26.0	<.1	6.2	78	585	--	--	--
28...	--	7.0	25.3	<.1	6.2	76	585	--	--	--
28...	--	8.0	24.7	<.1	6.2	73	590	--	--	--
28...	--	10.0	23.9	<.1	6.4	121	370	--	--	--
28...	--	12.0	22.0	<.1	6.7	160	150	--	--	--
28...	--	13.0	21.1	<.1	6.4	230	95.0	--	--	--
SEP										
17...	18.5	2.0	14.0	5.1	6.7	68	575	.90	2.00	--
17...	--	1.0	--	--	--	--	--	--	--	7.0
17...	--	2.0	14.4	4.9	6.5	68	540	--	--	1.0
17...	--	4.0	14.6	5.3	6.5	68	598	--	--	--
17...	--	6.0	14.5	5.5	6.5	68	598	--	--	--
OCT										
29...	13.0	2.0	15.5	5.8	6.6	62	600	1.00	2.00	--
29...	--	1.0	--	--	--	--	--	--	--	6.0
29...	--	2.0	15.5	5.4	6.4	62	605	--	--	1.0
29...	--	4.0	15.4	6.1	6.4	63	610	--	--	--
29...	--	6.0	15.6	6.1	6.4	63	610	--	--	--
29...	--	7.0	15.6	6.0	6.4	63	610	--	--	--
29...	--	8.0	15.6	5.3	6.3	64	610	--	--	--
29...	--	10.0	15.6	3.0	6.2	67	620	--	--	--

CR-08 (23)M-20 Yellowjacket Creek at Lameron Mill Road, near Lawrence, Mo., 1976 and 1979

DATE	TEMPER- ATURE AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXY- GEN CON- CENT- RATION (MG/L)	TRANS- PAR- ENCY (SECCHI DISK)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INTEN- SITY REMAIN- ING AT DEPTH
JAN 1979										
21...	10.0	2.0	6.7	10.6	7.0	50	570	400	--	NO
21...	--	2.0	6.6	10.6	7.0	50	575	--	--	--
21...	--	4.0	6.5	10.4	7.0	50	580	--	--	--
21...	--	6.0	6.5	10.4	6.9	54	580	--	--	--
21...	--	8.0	6.3	10.1	6.9	54	580	--	--	--
21...	--	10.0	6.2	10.3	6.9	54	580	--	--	--
21...	--	11.0	6.2	10.3	6.9	54	585	--	--	--
21...	--	12.0	6.2	10.2	6.9	54	585	--	--	--
FEB										
21...	24.0	2.0	17.1	10.4	6.4	50	610	400	1.30	--
21...	--	1.0	--	--	--	--	--	--	--	2.0
21...	--	1.1	--	--	--	--	--	--	--	1.0
21...	--	2.0	13.7	8.2	6.0	38	630	--	--	--
21...	--	4.0	13.1	8.4	5.7	38	640	--	--	--
21...	--	6.0	12.9	8.2	5.5	37	650	--	--	--
21...	--	8.0	11.9	8.6	5.3	35	660	--	--	--
21...	--	10.0	10.2	10.9	5.2	48	670	--	--	--
21...	--	11.0	9.5	8.8	5.2	52	665	--	--	--
21...	--	12.0	9.1	8.5	5.2	56	660	--	--	--
MAY										
01...	24.5	2.0	23.0	10.3	7.0	39	625	400	1.30	--
01...	--	1.0	--	--	--	--	--	--	--	2.0
01...	--	1.1	--	--	--	--	--	--	--	1.0
01...	--	2.0	19.7	9.4	6.6	38	640	--	--	--
01...	--	4.0	18.1	7.1	6.1	41	640	--	--	--
01...	--	6.0	16.5	7.1	5.9	49	675	--	--	--
01...	--	8.0	16.1	6.6	5.7	48	680	--	--	--
01...	--	10.0	16.2	3.1	5.5	48	690	--	--	--
01...	--	12.0	14.2	<1	5.7	64	665	--	--	--
01...	--	13.0	13.9	<1	5.8	70	460	--	--	--
JUN										
12...	12.5	2.0	26.5	9.3	9.2	54	510	1.00	3.00	--
12...	--	1.0	--	--	--	--	--	--	--	2.0
12...	--	2.0	26.3	9.2	8.1	54	515	--	--	5.0
12...	--	3.0	--	--	--	--	--	--	--	1.0
12...	--	4.0	25.8	9.0	8.0	55	520	--	--	--
12...	--	5.0	22.9	6.0	6.0	60	575	--	--	--
12...	--	6.0	22.2	2.7	5.8	60	590	--	--	--
12...	--	7.0	21.5	2.6	5.8	60	600	--	--	--
12...	--	8.0	21.2	2.7	5.8	62	600	--	--	--
12...	--	9.0	20.4	1.9	5.7	63	605	--	--	--
12...	--	10.0	19.5	<1	6.1	67	310	--	--	--
12...	--	12.0	17.0	<1	6.2	92	180	--	--	--
12...	--	14.0	16.2	<1	6.4	108	150	--	--	--
JUL										
25...	31.0	2.0	26.0	9.7	8.8	68	470	1.10	4.00	--
25...	--	1.0	--	--	--	--	--	--	--	2.0
25...	--	2.0	27.8	9.5	8.6	67	470	--	--	9.0
25...	--	3.0	27.5	8.7	8.0	67	485	--	--	4.0
25...	--	4.0	26.4	3.0	6.3	76	515	--	--	1.0
25...	--	5.0	25.8	2.0	6.0	76	535	--	--	--
25...	--	6.0	25.2	.3	5.9	71	555	--	--	--
25...	--	7.0	24.8	<1	6.0	69	560	--	--	--
25...	--	8.0	24.4	<1	6.0	70	560	--	--	--
25...	--	10.0	23.0	<1	6.3	84	170	--	--	--
25...	--	12.0	21.2	<1	6.5	124	110	--	--	--
25...	--	13.0	20.5	<1	6.4	132	90.0	--	--	--
25...	--	14.0	20.0	<1	6.5	154	80.0	--	--	--
AUG										
22...	35.0	2.0	29.8	8.3	8.4	63	380	1.10	3.50	--
22...	--	1.0	--	--	--	--	--	--	--	3.0
22...	--	2.0	29.2	7.9	8.7	62	385	--	--	1.0
22...	--	3.0	28.6	6.8	7.4	62	405	--	--	2.0
22...	--	3.5	--	--	--	--	--	--	--	1.0
22...	--	4.0	28.0	4.1	6.7	66	420	--	--	--
22...	--	5.0	27.6	2.6	6.4	66	435	--	--	--
22...	--	6.0	27.3	1.3	6.3	70	445	--	--	--
22...	--	7.0	26.7	.8	6.2	76	450	--	--	--
22...	--	8.0	26.1	.7	6.2	81	165	--	--	--
22...	--	10.0	25.0	1.0	6.4	87	90.0	--	--	--
22...	--	12.0	23.2	.7	6.5	114	65.0	--	--	--
22...	--	14.0	21.7	.5	6.5	147	50.0	--	--	--
SEP										
19...	22.0	2.0	24.0	5.0	6.0	73	510	1.20	--	NO
19...	--	4.0	24.1	4.8	6.2	69	535	--	--	--
19...	--	6.0	24.1	4.8	6.2	69	545	--	--	--
19...	--	8.0	24.1	4.5	6.2	69	550	--	--	--
19...	--	10.0	24.0	3.4	6.2	64	555	--	--	--
19...	--	12.0	23.9	3.3	6.2	64	560	--	--	--
19...	--	14.0	23.3	1.3	6.3	113	150	--	--	--
19...	--	14.0	22.2	.6	6.4	185	105	--	--	--

CH-08 (02339020) Yellowjacket Creek at Cameron Mill Road, near LaGrange, Ga., 1978 and 1979

DATE	TEMPER- ATURE (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICHO- MMOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)	TRANS- PAR- ENCY (SECCHI DISK) (M)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCI- DENT PERCENT REMAIN- ING AT DEPTH
OCT										
16...	13.0	2.0	19.2	6.7	6.5	66	545	1.20	--	ND
16...	--	2.0	19.2	6.7	6.5	66	510	--	--	--
16...	--	4.0	19.2	6.6	6.5	66	520	--	--	--
16...	--	6.0	19.2	6.6	6.5	66	530	--	--	--
16...	--	8.0	18.6	6.3	6.4	68	540	--	--	--
16...	--	10.0	18.4	6.0	6.3	68	545	--	--	--
16...	--	12.0	18.2	5.8	6.3	69	550	--	--	--
16...	--	14.0	18.2	5.5	6.2	69	555	--	--	--
DEC										
12...	13.0	2.0	10.9	10.0	6.2	61	640	.73	2.00	--
12...	--	1.0	--	--	--	--	--	--	--	9.0
12...	--	2.0	10.7	9.5	6.4	61	625	--	--	1.0
12...	--	4.0	10.2	8.7	6.4	61	625	--	--	--
12...	--	6.0	9.7	8.2	6.3	64	625	--	--	--
12...	--	8.0	9.2	8.4	6.3	64	630	--	--	--
12...	--	10.0	9.2	8.3	6.3	64	630	--	--	--
12...	--	11.0	9.1	8.2	6.2	64	490	--	--	--

DATE	TEMPERATURE AT 1 M (DEG C)	SAMPLING DEPTH (M)	TEMPERATURE (DEG C)	OXYGEN DISSOLVED (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICHO-MHOS)	Oxidation-Reduction Potential (mV)	TRANSPARANCY (SEC/DISK)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCIDENT PERCENT REMAINING AT DEPTH
OCT 1978										
18....	15.8	.20	18.2	6.4	7.2	52	570	.60	1.50	--
18....	--	1.0	--	--	--	--	--	--	--	3.0
18....	--	1.5	--	--	--	--	--	--	--	1.0
18....	--	2.0	18.4	6.7	6.4	51	570	--	--	--
18....	--	4.0	18.4	6.6	6.4	51	580	--	--	--
18....	--	6.0	18.4	6.6	6.7	51	580	--	--	--
NOV										
28....	12.8	.20	15.9	6.0	6.7	52	575	.70	2.00	--
28....	--	1.0	--	--	--	--	--	--	--	6.0
28....	--	2.0	15.8	5.9	6.5	52	580	--	--	1.0
28....	--	4.0	15.8	5.8	6.5	52	585	--	--	--
JAN 1979										
23....	13.0	.20	6.3	11.0	7.0	31	570	.40	--	ND
23....	--	2.0	6.1	11.0	6.9	40	580	--	--	--
23....	--	4.0	6.1	11.0	6.9	40	580	--	--	--
23....	--	6.0	6.0	11.0	6.9	40	585	--	--	--
23....	--	8.0	6.0	10.4	6.4	40	585	--	--	--
MAR										
20....	26.5	.20	19.3	10.4	6.2	31	650	.35	1.00	--
20....	--	1.0	--	--	--	--	--	--	--	1.0
20....	--	2.0	18.3	8.8	5.9	32	665	--	--	--
20....	--	4.0	13.1	7.4	5.6	33	680	--	--	--
20....	--	5.0	12.4	7.4	5.4	33	690	--	--	--
20....	--	6.0	12.0	7.3	5.4	33	690	--	--	--
APR										
30....	28.5	.20	22.1	9.1	6.5	30	595	.65	2.00	--
30....	--	1.0	--	--	--	--	--	--	--	4.0
30....	--	2.0	19.8	8.3	6.3	30	615	--	--	1.0
30....	--	4.0	18.7	6.4	5.9	30	640	--	--	--
30....	--	6.0	16.8	3.7	5.5	31	660	--	--	--
30....	--	8.0	16.3	1.4	5.5	36	660	--	--	--
MAY										
14....	27.5	.20	26.1	8.1	7.0	41	605	1.00	5.00	--
14....	--	1.0	--	--	--	--	--	--	--	35
14....	--	2.0	26.0	8.2	7.1	41	600	--	--	12
14....	--	3.0	--	--	--	--	--	--	--	4.0
14....	--	4.0	23.6	5.2	6.2	45	620	--	--	2.0
14....	--	5.0	--	--	--	--	--	--	--	1.0
14....	--	6.0	22.0	1.3	5.4	45	635	--	--	--
14....	--	8.0	20.0	4.1	5.8	56	325	--	--	--
14....	--	9.0	19.0	4.1	6.0	71	240	--	--	--
JUL										
25....	29.2	.20	27.7	7.4	7.4	52	580	1.30	4.00	--
25....	--	1.0	--	--	--	--	--	--	--	23
25....	--	2.0	27.6	7.6	7.8	52	495	--	--	7.0
25....	--	3.0	27.6	7.6	7.7	52	495	--	--	3.0
25....	--	4.0	27.5	7.3	7.3	52	500	--	--	1.0
25....	--	5.0	26.5	2.3	6.3	56	530	--	--	--
25....	--	6.0	25.9	.9	6.2	46	540	--	--	--
25....	--	7.0	25.0	4.1	6.2	56	350	--	--	--
25....	--	8.0	24.2	4.1	6.3	64	220	--	--	--
25....	--	10.0	23.0	4.1	6.4	84	150	--	--	--
AUG										
21....	32.0	.20	30.4	7.3	7.8	51	370	1.30	4.00	--
21....	--	1.0	--	--	--	--	--	--	--	33
21....	--	2.0	28.4	6.4	6.4	52	390	--	--	12
21....	--	3.0	28.4	5.6	6.7	51	430	--	--	4.0
21....	--	4.0	27.8	2.7	6.2	52	440	--	--	1.0
21....	--	5.0	27.5	2.3	6.1	53	450	--	--	--
21....	--	6.0	27.2	.6	6.0	56	350	--	--	--
21....	--	7.0	26.1	.5	6.1	74	130	--	--	--
21....	--	8.0	25.4	.5	6.2	81	100	--	--	--
21....	--	10.0	24.5	.5	6.3	106	75.0	--	--	--
SEP										
18....	19.0	.20	24.4	5.4	6.3	52	535	.90	--	ND
18....	--	2.0	24.5	5.1	6.3	52	540	--	--	--
18....	--	4.0	24.5	5.0	6.3	52	545	--	--	--
18....	--	6.0	24.5	5.0	6.3	52	550	--	--	--
18....	--	8.0	24.1	5.3	6.3	51	550	--	--	--
OCT										
18....	26.0	.20	21.9	7.2	6.3	50	560	1.00	--	ND
18....	--	2.0	20.2	6.4	6.3	50	565	--	--	--
18....	--	4.0	19.9	6.2	6.2	50	565	--	--	--
18....	--	6.0	19.8	6.2	6.3	50	570	--	--	--
18....	--	8.0	19.6	6.1	6.2	50	575	--	--	--
18....	--	10.0	19.6	6.1	6.2	49	580	--	--	--
18....	--	12.0	19.6	6.0	6.2	50	580	--	--	--
DEC										
11....	17.0	.20	4.5	8.1	6.3	46	580	.70	--	ND
11....	--	2.0	4.6	4.2	6.3	46	580	--	--	--
11....	--	4.0	4.6	8.3	6.3	46	585	--	--	--
11....	--	6.0	4.5	8.3	6.2	45	590	--	--	--
11....	--	8.0	4.6	4.3	6.2	46	590	--	--	--

CH-13 (U2339362) Wehadkee Creek at State Highway 238, near Abbottsford, Ga., 1978 and 1979

DATE	TEMPER- ATURE AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)	TRANS- PAR- ENCY (SECCHI DISK) (M)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCI- DENT PERCENT REMAIN- ING AT DEPTH
APR . 1978										
11...	--	2.0	--	--	--	--	--	--	3.00	--
11...	29.0	1.0	20.4	11.1	9.0	58	430	1.00	--	13
11...	--	2.0	20.7	11.1	9.3	59	380	--	--	2.0
11...	--	3.0	--	--	--	--	--	--	--	1.0
11...	--	4.0	20.7	11.2	9.3	58	380	--	--	--
11...	--	6.0	20.3	10.9	9.5	58	370	--	--	--
11...	--	7.0	19.0	7.8	6.6	50	465	--	--	--
11...	--	8.0	15.0	7.7	7.0	50	420	--	--	--
11...	--	9.0	12.3	7.4	6.5	44	460	--	--	--
11...	--	10.0	10.2	6.6	6.4	45	470	--	--	--
11...	--	12.0	9.8	6.4	6.5	40	455	--	--	--
11...	--	16.0	8.5	2.3	6.4	45	465	--	--	--
11...	--	17.0	8.4	2.2	6.2	43	470	--	--	--
MAY										
04...	14.0	2.0	14.3	7.4	6.8	54	485	1.20	4.00	--
04...	--	1.0	--	--	--	--	--	--	--	23
04...	--	2.0	14.3	7.8	6.6	54	510	--	--	8.0
04...	--	3.0	--	--	--	--	--	--	--	3.0
04...	--	4.0	18.2	7.7	6.5	54	515	--	--	1.0
04...	--	6.0	18.2	7.7	6.4	56	515	--	--	--
04...	--	8.0	17.4	6.5	6.3	52	525	--	--	--
04...	--	10.0	16.4	5.4	6.1	55	530	--	--	--
04...	--	11.0	15.7	4.8	5.7	52	470	--	--	--
04...	--	12.0	14.8	3.2	5.8	48	--	--	--	--
04...	--	13.0	13.2	2.2	5.4	43	465	--	--	--
04...	--	14.0	12.7	2.0	5.5	42	--	--	--	--
04...	--	16.0	11.4	1.0	5.5	42	--	--	--	--
04...	--	18.0	10.6	.1	5.6	54	440	--	--	--
31...	30.4	2.0	24.0	10.8	9.0	76	450	1.30	3.50	--
31...	--	1.0	--	--	--	--	--	--	--	28
31...	--	2.0	26.5	10.4	9.1	75	460	--	--	6.0
31...	--	3.0	--	--	--	--	--	--	--	2.0
31...	--	3.5	--	--	--	--	--	--	--	1.0
31...	--	4.0	22.0	4.6	6.4	76	565	--	--	--
31...	--	6.0	20.2	2.4	6.1	76	590	--	--	--
31...	--	8.0	19.5	3.0	6.1	76	600	--	--	--
31...	--	10.0	14.9	2.1	6.1	76	610	--	--	--
31...	--	12.0	14.2	.5	6.0	72	620	--	--	--
31...	--	14.0	17.5	.2	6.0	74	620	--	--	--
31...	--	16.0	16.2	.1	6.1	80	450	--	--	--
JUL . 1978										
10...	25.0	2.0	23.6	4.8	9.0	64	465	--	4.00	--
10...	--	1.0	--	--	--	--	--	--	--	29
10...	--	2.0	24.6	4.7	9.0	65	465	--	--	10
10...	--	3.0	24.2	7.3	8.0	66	500	--	--	3.0
10...	--	4.0	24.7	5.4	7.2	65	535	--	--	1.0
10...	--	5.0	24.4	4.1	6.7	65	560	--	--	--
10...	--	6.0	24.0	2.2	6.5	65	570	--	--	--
10...	--	7.0	26.5	.1	6.3	63	570	--	--	--
10...	--	8.0	25.1	.1	6.3	67	570	--	--	--
10...	--	10.0	23.3	<.1	6.3	56	250	--	--	--
10...	--	12.0	21.0	<.1	6.4	55	175	--	--	--
10...	--	14.0	19.5	<.1	6.4	60	140	--	--	--
10...	--	16.0	18.4	<.1	6.6	75	--	--	--	--
10...	--	18.0	17.3	<.1	6.7	105	--	--	--	--
AUG										
16...	30.0	2.0	24.0	9.1	8.1	70	470	1.20	4.00	--
16...	--	1.0	24.0	9.1	8.3	70	420	--	--	34
16...	--	2.0	24.0	8.9	8.3	70	420	--	--	15
16...	--	3.0	24.0	8.6	8.1	64	530	--	--	4.0
16...	--	4.0	27.5	5.4	7.2	68	440	--	--	1.0
16...	--	5.0	27.5	4.6	6.7	70	450	--	--	--
16...	--	6.0	27.5	3.8	6.6	72	450	--	--	--
16...	--	7.0	27.0	4.0	6.5	72	460	--	--	--
16...	--	8.0	27.0	2.5	6.3	72	460	--	--	--
16...	--	10.0	25.5	.5	6.1	64	470	--	--	--
16...	--	12.0	24.5	.2	6.0	64	470	--	--	--
16...	--	14.0	24.0	<.1	6.0	64	440	--	--	--
16...	--	16.0	22.5	<.1	6.1	104	140	--	--	--

OH-13 (02339302) Mehadkee Creek at State Highway 238, near Abbottsford, Ga., 1978 and 1979

DATE	TEMPERATURE AIR (DEG C)	SAMPLING DEPTH (M)	TEMPERATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	OXIDATION-REDUCTION POTENTIAL (MV)	TRANSPARANCY (SECCM DISK)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCIDENT PERCENT REMAINING AT DEPTH
AUG										
24...	33.0	.20	30.3	4.5	6.7	64	450	1.10	3.00	--
24...	--	1.0	--	--	--	--	--	--	--	20
24...	--	2.0	24.5	4.5	6.8	69	440	--	--	6.0
24...	--	3.0	24.0	7.4	6.6	68	445	--	--	1.0
24...	--	4.0	24.5	4.1	7.1	64	445	--	--	--
24...	--	5.0	27.7	.9	6.3	68	520	--	--	--
24...	--	6.0	27.3	.1	6.2	68	535	--	--	--
24...	--	7.0	26.6	<.1	6.1	70	545	--	--	--
24...	--	8.0	25.7	<.1	6.0	67	550	--	--	--
24...	--	10.0	24.7	<.1	6.0	65	560	--	--	--
24...	--	12.0	23.6	<.1	5.9	62	565	--	--	--
24...	--	14.0	23.0	<.1	5.9	62	570	--	--	--
24...	--	16.0	22.5	<.1	6.0	69	560	--	--	--
24...	--	18.0	21.0	<.1	6.4	140	220	--	--	--
NOV										
16...	20.0	.20	20.6	6.6	6.7	64	540	1.20	3.00	--
16...	--	1.0	--	--	--	--	--	--	--	10
16...	--	2.0	20.2	6.5	6.7	65	550	--	--	2.0
16...	--	3.0	--	--	--	--	--	--	--	1.0
16...	--	4.0	20.6	6.5	6.7	66	550	--	--	--
16...	--	6.0	20.4	6.2	6.6	66	555	--	--	--
16...	--	8.0	20.2	6.0	6.6	65	560	--	--	--
16...	--	10.0	19.8	4.7	6.4	66	570	--	--	--
16...	--	12.0	19.6	5.3	6.3	64	580	--	--	--
16...	--	14.0	17.2	5.4	6.3	64	580	--	--	--
16...	--	16.0	17.2	5.4	6.3	64	580	--	--	--
NOV										
28...	12.0	.20	16.0	6.4	6.9	60	545	1.20	3.00	--
28...	--	1.0	--	--	--	--	--	--	--	14
28...	--	2.0	16.0	6.8	6.4	59	605	--	--	2.0
28...	--	3.0	--	--	--	--	--	--	--	1.0
28...	--	4.0	16.1	6.4	6.6	58	610	--	--	--
28...	--	6.0	16.1	6.7	6.5	58	610	--	--	--
28...	--	8.0	16.1	6.8	6.5	58	610	--	--	--
28...	--	10.0	16.1	6.5	6.5	54	615	--	--	--
28...	--	12.0	15.0	5.6	6.4	60	620	--	--	--
28...	--	14.0	15.9	5.2	6.5	61	590	--	--	--
28...	--	16.0	15.9	5.2	6.5	61	590	--	--	--

CR-11 (7-33962) Mehakree Creek at State Highway 238, near Abbottsford, Ga., 1978 and 1979

DATE	TEMPER- ATURE AT (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MMOS)	Oxid- ATION RED- UCTION POTEN- TIAL (MV)	TRANS- PAR- ENCY (%CCM) (DISK)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCID- ENT PERCENT REMAIN- ING AT DEPTH
JAN 1979										
23...	9.0	.20	6.3	10.3	6.7	60	590	.90	--	ND
23...	--	2.0	6.5	10.3	6.6	62	595	--	--	--
23...	--	4.0	6.5	10.3	6.7	67	595	--	--	--
23...	--	6.0	6.4	10.2	6.7	68	600	--	--	--
23...	--	8.0	6.4	10.2	6.7	68	600	--	--	--
23...	--	10.0	6.3	10.1	6.7	68	600	--	--	--
23...	--	12.0	6.3	10.1	6.7	68	600	--	--	--
23...	--	14.0	6.3	10.0	6.7	68	600	--	--	--
23...	--	16.0	6.3	10.2	6.8	69	600	--	--	--
MAR										
20...	29.5	.20	22.3	11.7	8.0	46	550	.50	1.50	--
20...	--	1.0	--	--	--	--	--	--	--	4.0
20...	--	1.5	--	--	--	--	--	--	--	1.0
20...	--	2.0	14.2	8.7	6.8	48	570	--	--	--
20...	--	4.0	13.2	8.9	6.3	46	595	--	--	--
20...	--	6.0	12.7	9.4	6.0	44	610	--	--	--
20...	--	8.0	12.3	9.7	6.0	43	625	--	--	--
20...	--	10.0	11.6	9.3	5.9	44	635	--	--	--
20...	--	12.0	9.6	7.1	5.6	48	650	--	--	--
20...	--	13.0	8.2	5.8	5.6	50	665	--	--	--
APR										
30...	29.0	.20	20.9	10.5	8.2	38	540	.80	2.00	--
30...	--	1.0	--	--	--	--	--	--	--	11
30...	--	2.0	18.2	8.4	6.4	40	590	--	--	1.0
30...	--	4.0	17.2	8.0	6.2	46	610	--	--	--
30...	--	6.0	17.0	7.9	6.0	47	625	--	--	--
30...	--	8.0	16.9	7.7	6.0	47	630	--	--	--
30...	--	10.0	16.8	7.4	5.9	47	645	--	--	--
30...	--	12.0	16.1	5.0	5.6	43	660	--	--	--
30...	--	14.0	15.1	3.0	5.4	45	670	--	--	--
30...	--	16.0	14.1	.6	5.5	52	665	--	--	--
30...	--	18.0	13.3	<.1	5.7	62	430	--	--	--
JUN										
14...	29.0	.20	25.0	8.7	8.2	56	535	.95	3.00	--
14...	--	1.0	--	--	--	--	--	--	--	26
14...	--	2.0	25.1	8.7	8.2	56	530	--	--	6.0
14...	--	3.0	--	--	--	--	--	--	--	1.0
14...	--	4.0	25.0	8.5	8.0	56	540	--	--	--
14...	--	6.0	24.5	7.6	6.7	57	565	--	--	--
14...	--	7.0	23.6	5.4	6.1	58	605	--	--	--
14...	--	8.0	21.9	2.5	5.8	52	620	--	--	--
14...	--	9.0	21.3	2.0	5.7	52	670	--	--	--
14...	--	10.0	21.0	1.8	5.6	54	630	--	--	--
14...	--	12.0	20.2	.7	5.5	52	640	--	--	--
14...	--	14.0	18.4	<.1	5.4	48	550	--	--	--
14...	--	16.0	17.7	<.1	5.5	54	350	--	--	--
14...	--	18.0	16.7	<.1	5.6	60	485	--	--	--
14...	--	19.0	16.3	<.1	5.9	76	280	--	--	--
JUL										
25...	28.0	.20	27.4	7.9	8.2	64	565	1.40	5.00	--
25...	--	1.0	--	--	--	--	--	--	--	26
25...	--	2.0	27.4	7.8	8.1	64	595	--	--	11
25...	--	3.0	27.4	7.7	7.6	64	560	--	--	6.0
25...	--	4.0	27.4	7.8	7.5	64	555	--	--	2.0
25...	--	5.0	27.4	7.7	7.5	64	550	--	--	1.0
25...	--	6.0	26.9	5.7	6.4	60	570	--	--	--
25...	--	7.0	26.0	1.6	6.0	58	590	--	--	--
25...	--	8.0	25.4	.8	5.9	56	600	--	--	--
25...	--	10.0	24.5	<.1	6.0	57	420	--	--	--
25...	--	12.0	23.4	<.1	6.2	58	180	--	--	--
25...	--	14.0	22.2	<.1	6.2	61	140	--	--	--
25...	--	16.0	21.3	<.1	6.4	78	90.0	--	--	--
25...	--	18.0	20.0	<.1	6.5	98	70.0	--	--	--
AUG										
21...	36.0	.20	30.7	8.5	8.3	65	375	1.40	5.00	--
21...	--	1.0	--	--	--	--	--	--	--	46
21...	--	2.0	29.6	9.0	8.4	64	380	--	--	16
21...	--	3.0	28.9	8.9	8.3	65	385	--	--	6.0
21...	--	4.0	27.8	6.9	7.2	72	420	--	--	2.0
21...	--	5.0	27.6	5.9	6.8	72	430	--	--	1.0
21...	--	6.0	27.4	4.7	6.4	73	440	--	--	--
21...	--	7.0	27.3	4.1	6.4	72	445	--	--	--
21...	--	8.0	27.2	3.6	6.3	71	450	--	--	--
21...	--	10.0	26.2	.5	6.0	72	440	--	--	--
21...	--	12.0	25.0	.5	6.0	68	190	--	--	--
21...	--	14.0	24.1	.5	6.1	69	130	--	--	--
21...	--	16.0	23.3	.5	6.2	88	95.0	--	--	--
21...	--	18.0	22.4	.5	6.2	97	85.0	--	--	--
21...	--	19.0	21.0	.5	6.2	106	80.0	--	--	--

CH-13 (024393b2) Whedakee Creek at State Highway 238, near Abbottsford, Cal., 1978 and 1979

DATE	TEMPERATURE AIR (DEG C)	SAMPLING DEPTH (M)	TEMPERATURE (DEG C)	OXYGEN SOLVED (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	OXIDATION REDUCTION POTENTIAL (MV)	TRANSPARENCY (SECCHI DISK)	LIGHT DEPTH TO 1% OF SURFACE LIGHT (FEET)	LIGHT INCIDENT PERCENT REMAINING AT DEPTH
SEP										
18...	20.0	.20	24.3	5.8	6.5	72	545	1.30	4.00	--
18...	--	1.0	--	--	--	--	--	--	--	65
18...	--	2.0	24.5	5.7	6.4	71	545	--	--	20
18...	--	3.0	--	--	--	--	--	--	--	11
18...	--	4.0	24.4	5.8	6.4	71	550	--	--	1.0
18...	--	6.0	24.5	5.8	6.4	71	550	--	--	--
18...	--	8.0	24.5	5.8	6.4	71	555	--	--	--
18...	--	10.0	24.5	5.7	6.4	71	555	--	--	--
18...	--	12.0	24.5	5.7	6.4	71	560	--	--	--
18...	--	14.0	24.5	5.7	6.4	71	560	--	--	--
18...	--	16.0	24.2	1.1	6.0	83	215	--	--	--
18...	--	18.0	23.0	.9	6.2	126	150	--	--	--
OCT										
16...	24.0	.20	21.2	6.5	6.5	68	535	1.80	--	ND
16...	--	2.0	20.8	6.7	6.5	68	540	--	--	--
16...	--	4.0	20.0	6.4	6.5	68	540	--	--	--
16...	--	6.0	20.0	6.2	6.4	68	545	--	--	--
16...	--	8.0	19.8	6.2	6.4	70	550	--	--	--
16...	--	10.0	19.8	6.4	6.4	70	550	--	--	--
16...	--	12.0	19.7	6.4	6.4	70	555	--	--	--
16...	--	14.0	19.6	6.1	6.3	70	555	--	--	--
16...	--	16.0	19.0	4.6	6.2	69	560	--	--	--
16...	--	18.0	18.5	4.2	6.2	69	550	--	--	--
DEC										
11...	20.5	.20	11.7	7.4	6.2	58	580	1.15	3.00	--
11...	--	1.0	--	--	--	--	--	--	--	14
11...	--	2.0	11.5	7.2	6.2	59	585	--	--	2.0
11...	--	3.0	--	--	--	--	--	--	--	1.0
11...	--	4.0	11.4	7.1	6.1	60	585	--	--	--
11...	--	6.0	11.2	6.9	6.1	63	590	--	--	--
11...	--	8.0	11.1	6.9	6.1	65	590	--	--	--
11...	--	10.0	11.0	6.8	6.1	66	595	--	--	--
11...	--	12.0	10.6	6.8	6.1	67	595	--	--	--
11...	--	14.0	10.2	7.0	6.1	66	595	--	--	--
11...	--	16.0	10.0	7.2	6.1	67	600	--	--	--
11...	--	17.0	9.9	7.2	6.1	67	600	--	--	--

CI-2.58 (02339402) Chattahoochee River below West Point Dam, 1978 and 1979

DATE	TEMPER- ATURE, AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)
APR . 1978							
09...	25.0	.70	17.1	11.1	8.1	54	515
MAY							
01...	22.0	.70	16.9	8.9	--	56	--
01...	27.0	1.0	16.1	6.1	6.2	55	435
30...	21.0	.70	21.5	5.3	6.8	53	355
30...	28.0	1.0	20.5	7.6	6.1	51	470
JUL							
09...	29.2	.70	27.4	4.9	6.8	63	395
10...	30.0	1.0	22.8	2.3	6.6	68	380
AUG							
13...	29.7	.70	27.7	4.4	7.0	76	330
14...	26.0	1.0	26.4	3.1	6.4	72	530
27...	33.0	.70	27.5	4.2	6.7	67	560
28...	34.0	1.0	26.8	2.6	6.6	67	540
OCT							
18...	20.5	.70	20.0	6.3	6.7	64	580
19...	17.5	1.0	19.5	6.5	6.6	64	605
NOV							
27...	17.0	.70	16.3	4.6	6.4	62	540
28...	13.0	1.0	16.5	6.5	7.2	60	555
JAN . 1979							
22...	5.5	1.0	6.9	9.9	6.7	76	530
MAR							
19...	17.2	1.0	12.0	8.7	6.4	55	600
19...	26.0	.70	13.8	9.3	6.3	53	580
APR							
30...	19.0	1.0	17.5	7.0	6.0	44	650
MAY							
02...	14.5	.70	17.5	7.1	5.9	45	675
JUN							
11...	24.0	.70	25.5	7.5	6.4	53	600
11...	28.0	1.0	23.0	5.3	6.4	53	470
JUL							
23...	31.0	.70	25.5	4.9	6.3	60	395
23...	25.0	1.0	23.5	2.1	6.3	70	470
AUG							
20...	31.5	.70	25.7	3.1	6.3	73	270
20...	33.9	1.0	25.6	3.2	6.6	70	190
SEP							
16...	23.0	.70	25.7	6.7	6.4	75	575
17...	19.0	1.0	24.9	4.4	6.6	73	425
OCT							
14...	21.0	.70	20.8	7.3	6.4	69	590
15...	9.2	1.0	20.2	6.4	6.6	78	525
DEC							
09...	16.0	.70	12.3	9.5	5.9	73	525
10...	3.0	1.0	11.4	4.1	5.4	74	575

CH-01A (02339500) Chattahoochee River at West Point, Ga., 1978 and 1979

DATE	TEMPER- ATURE, AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MMOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)
APR . 1978							
09...	26.0	.70	18.0	10.0	7.1	57	540
13...	15.0	1.0	15.4	8.2	6.2	61	490
MAY							
01...	27.0	1.0	16.1	6.3	5.7	53	450
14...	27.0	.70	20.6	8.3	5.4	58	545
30...	21.5	.70	21.7	6.2	6.4	54	445
30...	28.0	1.0	19.3	3.0	5.5	54	495
JUN							
09...	27.0	.70	28.0	3.3	6.9	60	500
10...	30.0	1.0	23.0	2.0	6.4	68	380
AUG							
13...	28.6	.70	26.6	6.0	7.0	67	330
14...	27.0	1.0	25.5	3.0	6.3	74	450
27...	33.0	.70	27.8	5.2	6.6	68	585
28...	34.0	1.0	26.0	2.0	6.6	66	555
OCT							
18...	21.0	.70	19.7	7.1	6.8	69	555
19...	17.5	1.0	19.5	6.3	6.7	64	600
NOV							
27...	17.0	.70	15.9	6.3	6.7	62	540
28...	13.0	1.0	16.3	6.5	6.8	60	555
JAN . 1979							
22...	5.5	1.0	7.0	10.0	6.6	71	575
MAR							
19...	18.6	1.0	12.4	9.1	6.3	55	570
19...	28.0	.70	13.4	9.2	6.4	54	570
APR							
30...	22.0	1.0	17.6	7.4	6.1	44	615
MAY							
02...	17.0	.70	17.4	7.6	6.0	45	665
JUN							
11...	26.0	.70	23.2	7.3	6.7	55	570
11...	26.0	1.0	22.8	5.6	6.4	54	540
JUL							
23...	29.0	.70	25.7	5.4	6.7	60	510
23...	26.0	1.0	24.0	2.2	6.1	68	500
AUG							
20...	34.7	.70	25.6	3.7	6.5	71	235
20...	34.6	1.0	26.0	3.4	6.6	69	205
SEP							
16...	22.0	.70	25.5	6.2	6.6	73	575
17...	18.0	1.0	25.0	5.0	6.5	73	510
OCT							
14...	21.0	.70	20.3	8.3	6.6	68	545
15...	13.0	1.0	20.2	6.4	6.6	74	550
DEC							
09...	17.5	.70	11.4	4.4	6.1	70	570
10...	7.0	1.0	11.6	8.0	6.5	68	550

CH-018 (02339550) Chattahoochee River (city of Lanett intake) at Lanett, Ala., 1978 and 1979

DATE	TEMPER- ATURE, AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN, DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MHOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)
APR . 1978							
09...	26.0	.70	18.0	10.6	7.1	53	540
13...	15.0	1.0	15.4	7.9	6.3	62	470
MAY							
01...	26.0	1.0	15.8	6.0	5.6	55	520
14...	25.0	.70	21.1	8.1	6.0	58	530
30...	23.4	.70	22.0	6.6	6.8	55	465
30...	28.0	1.0	19.5	3.3	6.4	54	485
JUL							
09...	28.0	.70	29.2	2.2	7.0	63	520
10...	30.0	1.0	22.5	2.1	6.4	68	385
AUG							
13...	28.0	.70	27.7	5.4	6.8	65	570
14...	27.0	1.0	26.0	2.8	6.3	74	470
27...	33.0	.70	28.6	5.6	6.7	67	575
28...	34.0	1.0	25.5	2.3	6.4	66	555
OCT							
18...	21.5	.70	20.4	7.1	6.7	67	580
19...	17.0	1.0	19.5	6.1	6.7	66	575
NOV							
27...	17.0	.70	16.4	5.9	6.8	61	555
28...	13.0	1.0	16.2	6.8	6.5	60	565
JAN . 1979							
22...	7.0	1.0	7.0	10.1	6.7	77	570
MAR							
14...	23.0	1.0	12.4	8.7	6.5	55	600
19...	27.4	.70	13.8	9.0	6.4	54	555
APR							
30...	19.5	1.0	17.6	7.3	6.1	44	610
MAY							
02...	17.0	.70	17.2	7.6	6.2	46	640
JUN							
11...	25.5	.70	22.8	7.3	6.7	56	565
11...	29.0	1.0	22.8	5.5	6.4	54	530
JUL							
23...	29.0	.70	25.4	6.0	6.8	58	505
23...	28.0	1.0	23.0	2.2	6.2	68	520
AUG							
20...	33.0	.70	26.7	4.1	6.5	66	250
20...	36.0	1.0	26.2	3.4	4.7	64	225
SEP							
16...	26.0	.70	25.1	6.3	6.6	72	565
17...	--	1.0	24.8	5.3	6.5	73	545
OCT							
14...	21.0	.70	19.9	8.6	6.6	67	560
15...	13.0	1.0	20.1	6.8	6.7	72	545
DEC							
09...	17.2	.70	11.8	10.2	5.9	71	565
10...	9.0	1.0	11.6	8.1	6.6	67	560

CH-01C (02339560) Chattahoochee River above junction of Long Cane Creek, near West Point, Ga., 1978 and 1979

DATE	TEMPERATURE AIR (DEG C)	SAMPLING DEPTH (M)	TEMPERATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	PH (UNITS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	OXIDATION REDUCTION POTENTIAL (MV)
APR , 1978							
09...	25.0	.70	18.5	11.0	7.7	61	500
10...	--	.30	--	--	--	--	--
14...	--	.30	--	--	--	--	--
MAY							
01...	25.5	1.0	15.5	5.7	6.0	54	505
14...	24.5	.70	21.1	8.8	--	58	--
30...	26.0	.70	20.5	5.3	6.8	63	460
30...	27.5	1.0	19.3	3.1	6.2	56	490
JUL							
09...	26.5	.70	24.0	2.8	6.9	65	525
10...	28.5	1.0	26.5	5.0	6.6	64	480
AUG							
13...	26.2	.70	28.0	5.9	6.8	70	570
14...	27.0	1.0	26.0	2.8	6.3	74	480
27...	33.0	.70	28.0	5.8	6.8	71	570
28...	33.0	1.0	25.5	2.3	6.2	67	570
OCT							
18...	22.0	.70	20.4	7.1	6.8	70	575
19...	17.0	1.0	19.3	6.3	6.7	68	585
NOV							
27...	17.0	.70	16.5	6.0	6.5	66	590
28...	13.0	1.0	16.0	6.8	6.6	61	515
JAN , 1979							
22...	6.5	1.0	7.1	10.1	6.6	75	580
MAR							
19...	24.5	1.0	12.4	8.9	6.1	55	585
19...	25.0	.70	13.5	9.3	6.3	60	570
APR							
30...	24.0	1.0	17.6	7.3	6.2	45	630
MAY							
02...	18.0	.70	17.3	7.4	6.0	53	650
JUN							
11...	26.0	.70	23.5	7.8	6.8	65	560
11...	24.0	1.0	22.5	5.4	6.4	56	550
JUL							
23...	24.0	.70	24.0	5.7	6.4	70	560
23...	29.0	1.0	24.0	2.9	5.7	66	620
AUG							
20...	26.0	.70	25.0	3.2	6.2	85	290
20...	36.8	1.0	26.3	3.6	6.5	74	245
SEP							
16...	20.0	.70	24.4	6.5	6.8	75	550
17...	19.0	1.0	24.8	5.1	6.5	73	565
OCT							
14...	21.0	.70	19.3	8.3	6.7	70	540
15...	13.0	1.0	20.0	6.4	6.6	72	555
DEC							
09...	14.8	.70	11.4	9.9	6.4	75	590
10...	9.0	1.0	11.6	8.1	6.7	67	520

CH-01D (02339780) Chattahoochee River at Langdale, Ala., 1978 and 1979

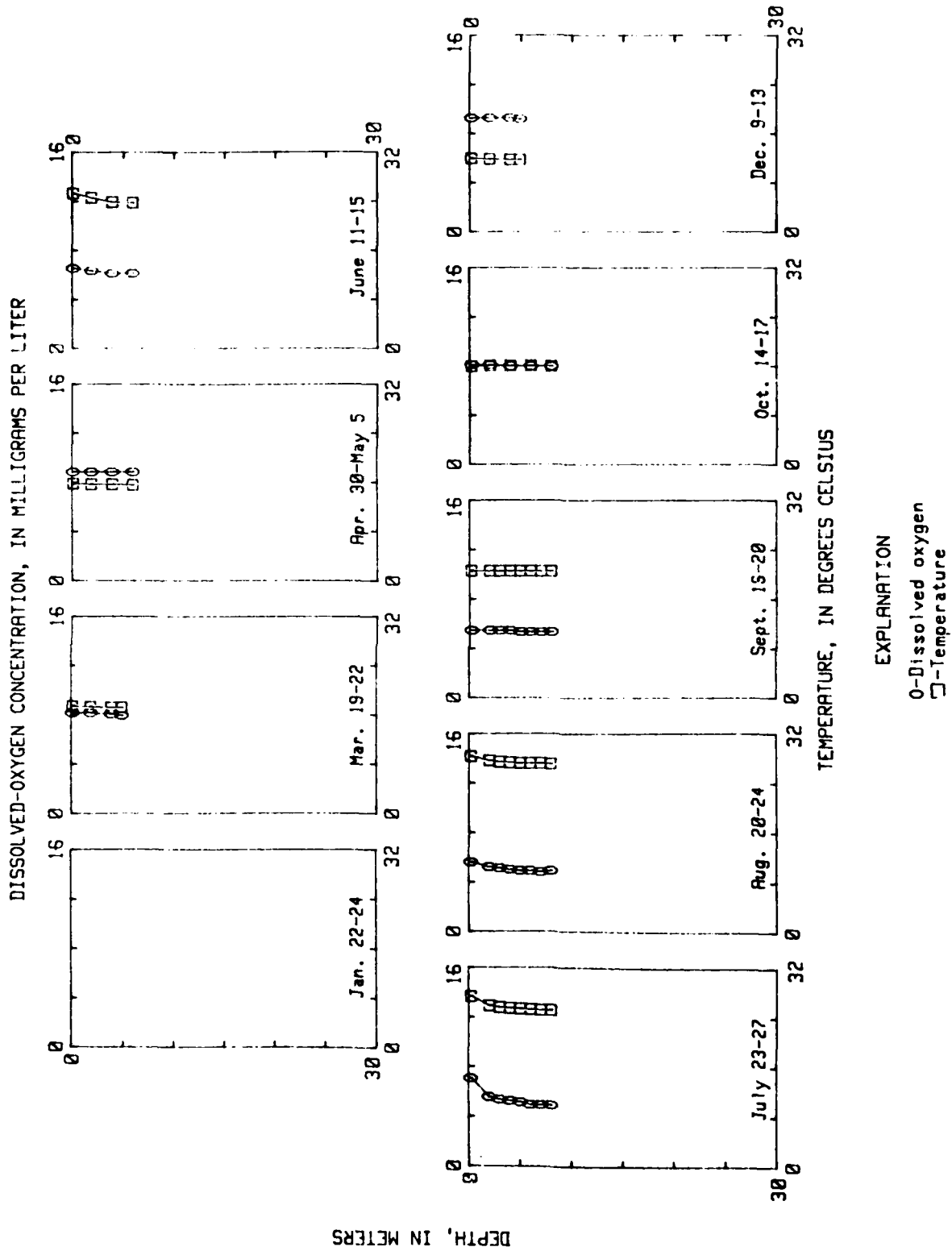
DATE	TEMPER- ATURE AIR (DEG C)	SAM- PLING DEPTH (M)	TEMPER- ATURE (DEG C)	OXYGEN: DIS- SOLVED (MG/L)	PH (UNITS)	SPE- CIFIC CON- DUCT- ANCE (MICRO- MMOS)	OXID- ATION RED- UCTION POTEN- TIAL (MV)
APR . 1978							
09...	25.0	.70	19.5	10.1	6.9	64	510
MAY							
01...	23.0	1.0	15.6	6.0	5.9	53	480
14...	21.0	.70	20.4	8.0	--	59	--
30...	27.0	.70	20.5	4.9	6.6	64	470
30...	26.0	1.0	20.9	4.6	5.9	56	495
JUL							
09...	28.3	.70	28.6	4.9	7.0	66	530
10...	28.0	1.0	25.5	3.1	6.5	72	485
AUG							
13...	25.4	.70	27.6	5.6	6.6	72	570
14...	27.0	1.0	26.0	2.6	6.3	75	510
27...	33.0	.70	28.9	6.6	7.0	76	565
28...	35.0	1.0	25.5	2.5	6.2	68	580
OCT							
18...	22.0	.70	20.3	7.2	6.8	68	580
19...	17.0	1.0	19.0	6.8	6.8	68	580
NOV							
27...	17.0	.70	16.5	6.5	6.6	64	595
28...	13.0	1.0	15.8	7.1	6.6	62	550
JAN . 1979							
22...	6.5	1.0	7.2	10.2	6.8	75	560
MAR							
19...	27.0	1.0	12.6	8.9	6.1	55	565
19...	24.0	.70	13.6	9.2	6.2	60	585
APR							
30...	24.0	1.0	17.8	7.2	6.3	45	605
MAY							
02...	14.0	.70	17.4	7.5	6.0	50	650
JUN							
11...	26.0	.70	24.6	8.2	7.0	63	530
11...	29.0	1.0	23.0	5.8	6.4	55	450
JUL							
23...	29.0	.70	24.4	4.4	6.4	66	480
23...	29.0	1.0	27.0	5.3	5.6	62	630
AUG							
20...	35.5	1.0	26.4	3.6	6.6	68	235
23...	26.0	.70	25.0	3.2	6.5	79	340
SEP							
16...	21.0	.70	24.6	6.1	6.7	74	530
17...	19.0	1.0	24.7	5.2	6.5	73	550
OCT							
14...	21.0	.70	18.8	8.2	6.7	76	545
15...	14.4	1.0	19.7	6.7	6.6	72	560
DEC							
09...	14.5	.70	11.3	10.2	6.4	77	540
10...	13.0	1.0	11.7	8.2	6.7	66	530

APPENDIX C-2

Graphs showing variations in water-quality on-site measurements with reservoir depth at stations in West Point Reservoir, April 1978-December 1979

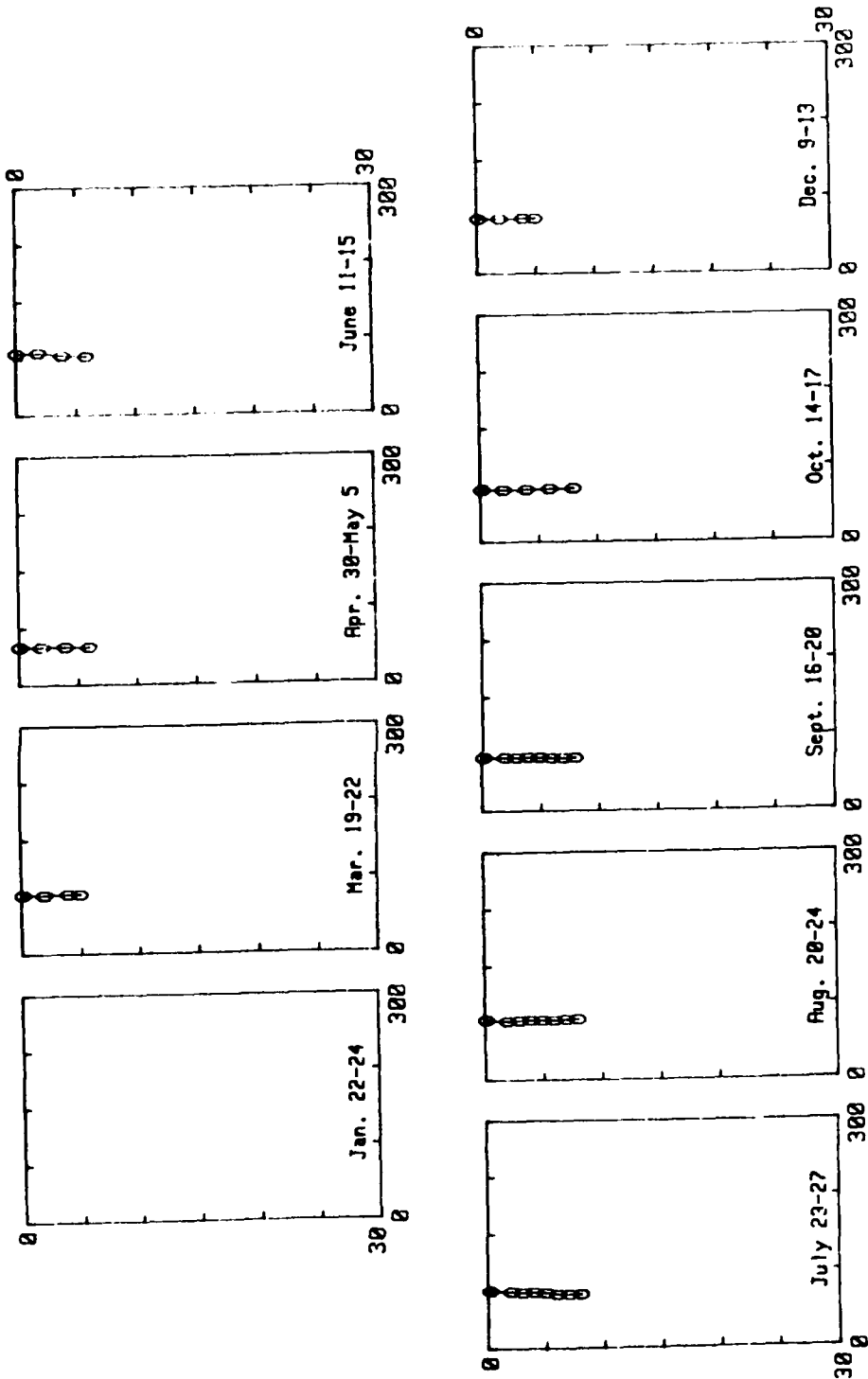
[Water temperature, specific conductance, oxidation-reduction potential, dissolved oxygen, and pH]

		Page
CH-11A (02338570)	Chattahoochee River above New River, near Corinth, Ga., 1979.....	204
CH-10 (02338710)	Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978 and 1979.....	207
CH-07 (02338720)	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1978 and 1979.....	213
CH-05A (02339190)	Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978 and 1979.....	219
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CH-11A (02338570) Chattahoochee River above New River, near Corinth, Ga., 1979

DEPTH, IN METERS

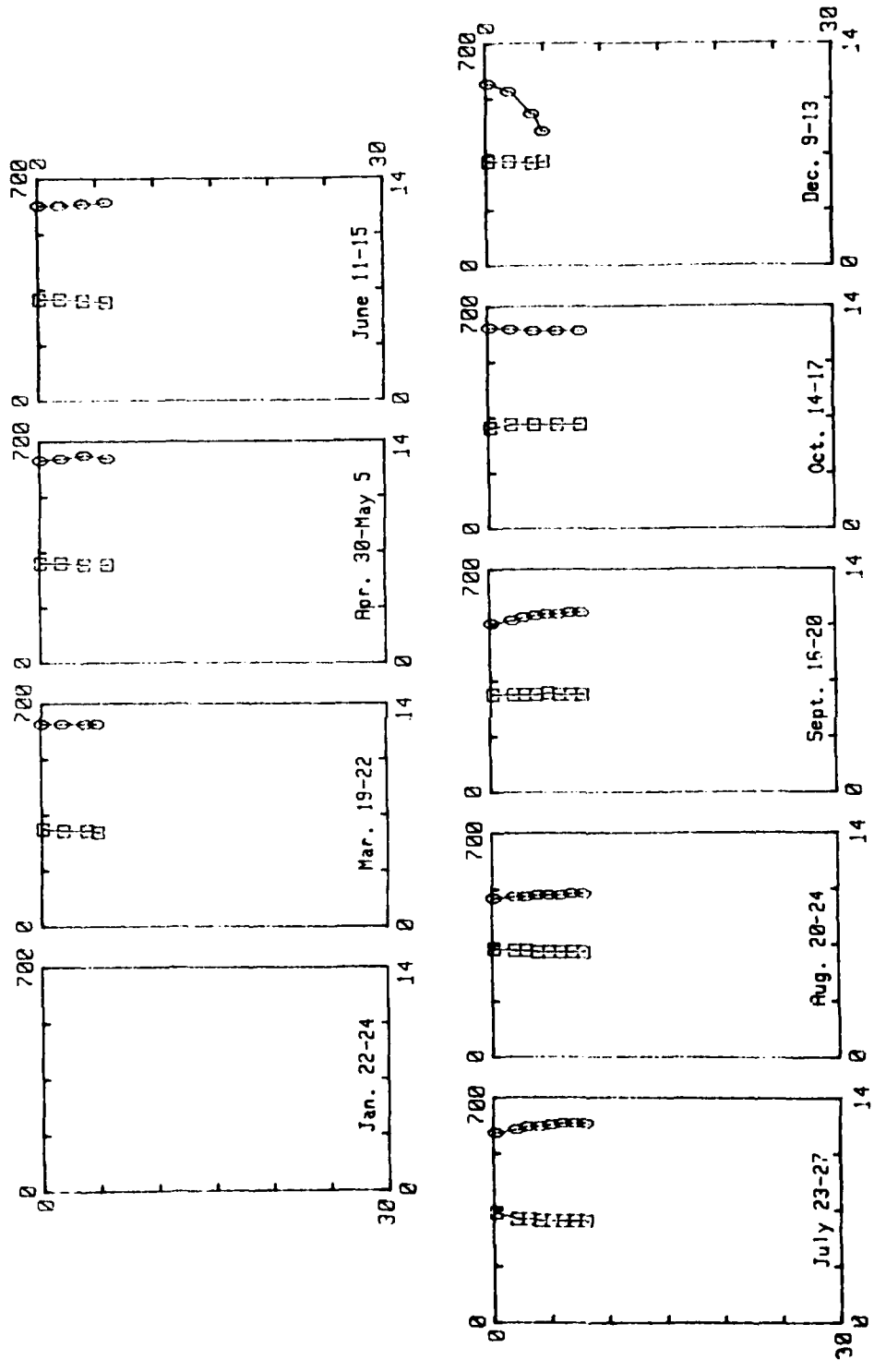


SPECIFIC CONDUCTANCE, IN MICROMHOS PER CENTIMETER

EXPLANATION

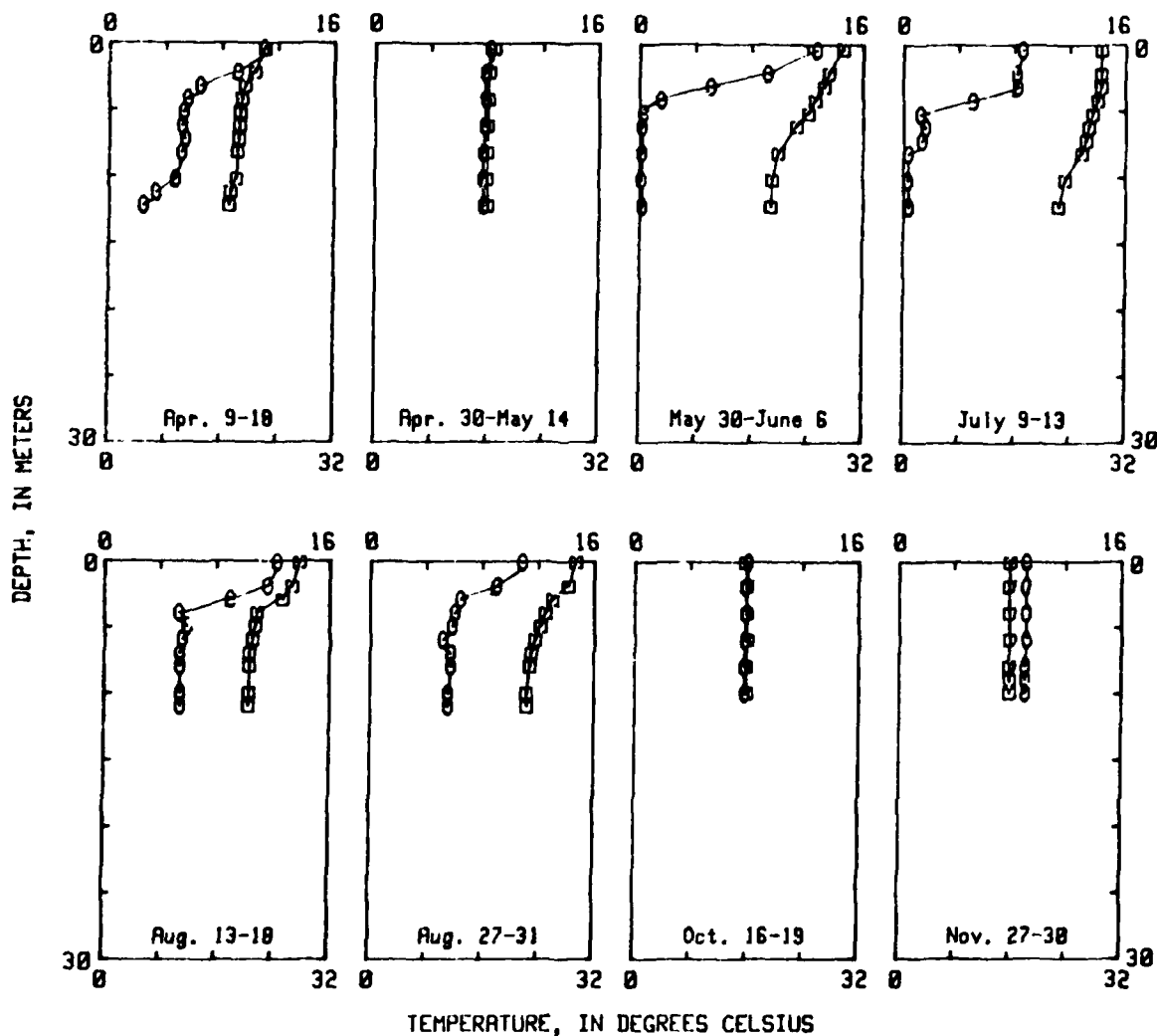
0-Specific conductance

OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS



CH-11A (02338570) Chattahoochee River above New River, near Corinth, Ga., 1979

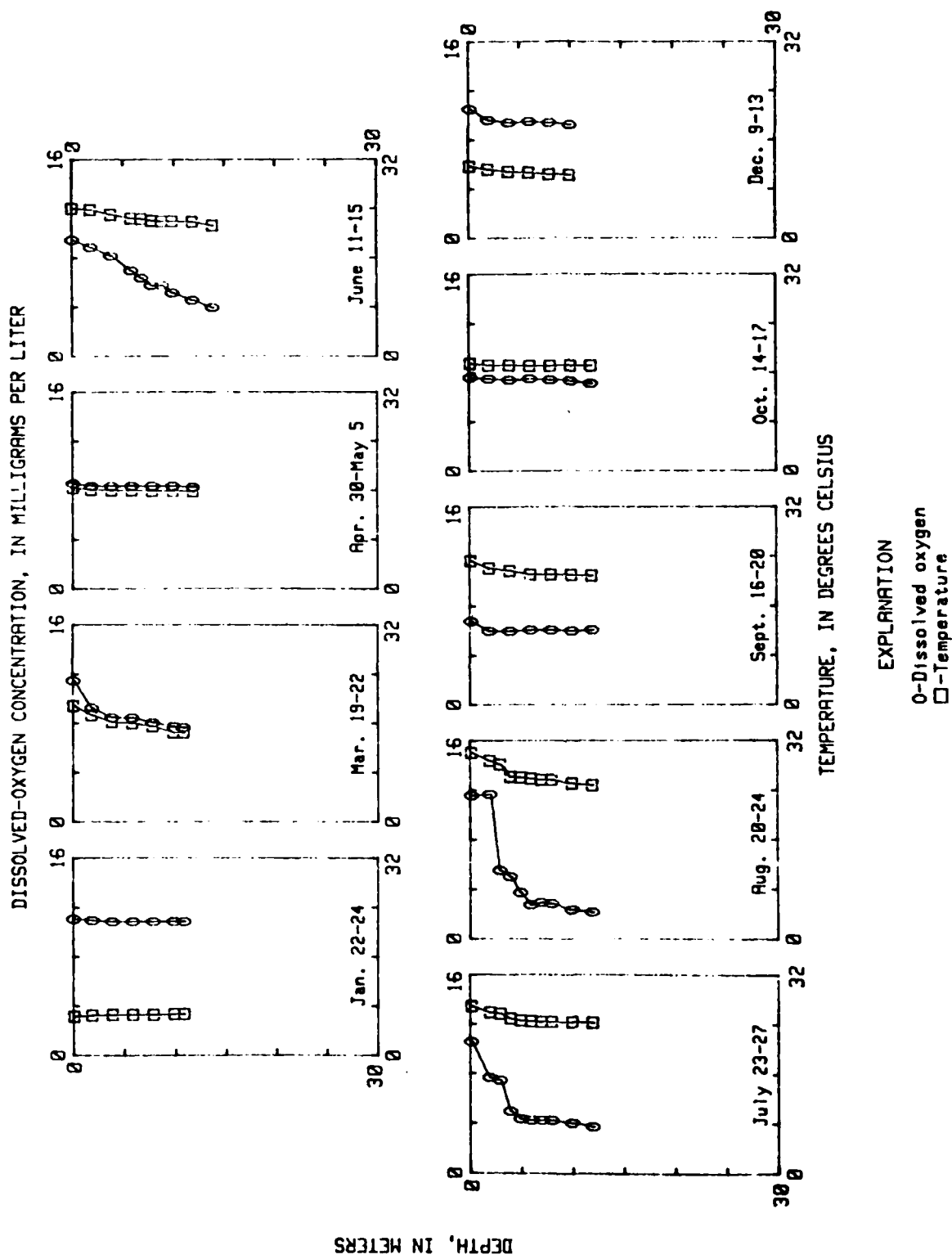
DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER



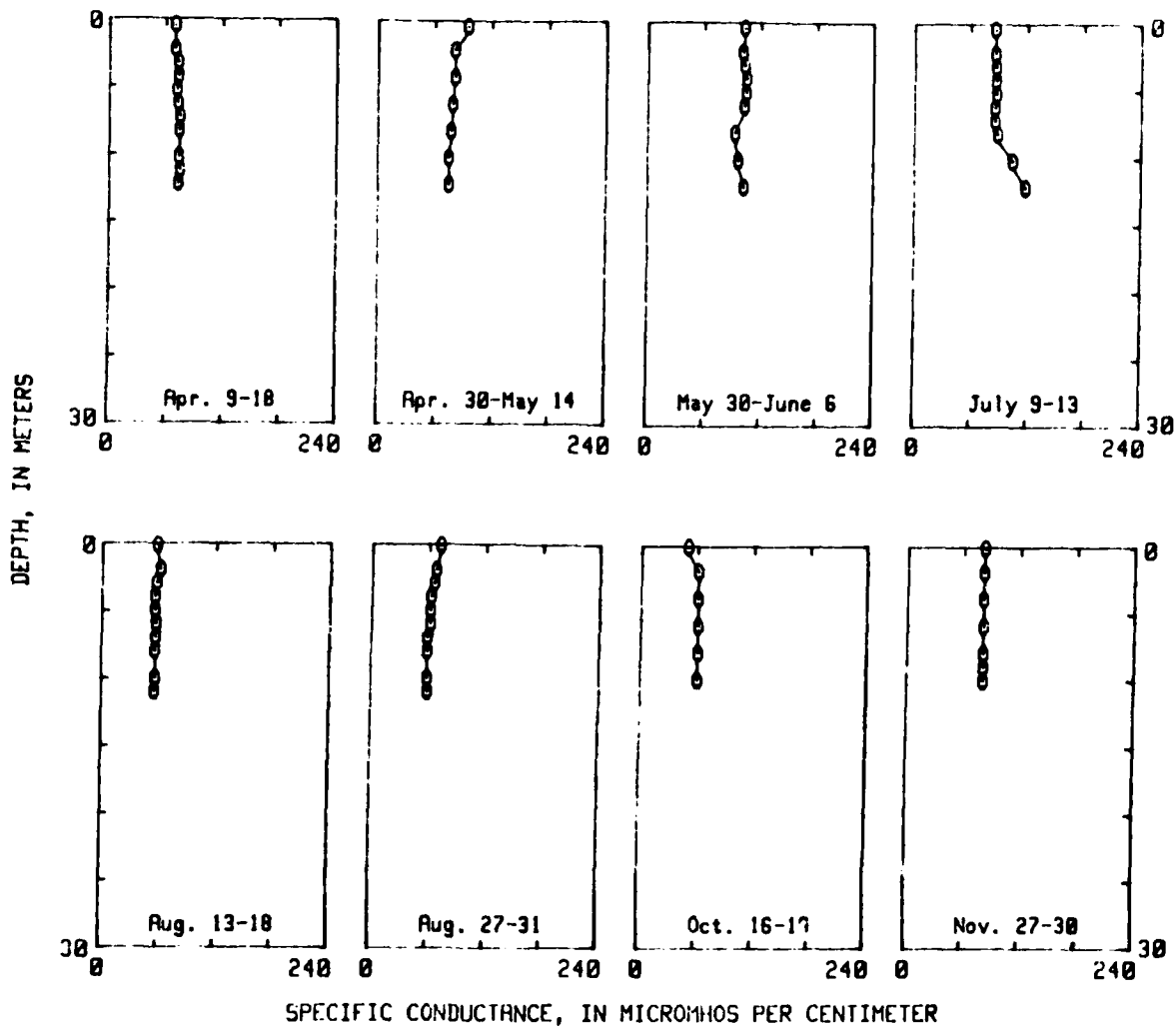
EXPLANATION

□-Temperature ○-Dissolved oxygen

CH-10 (02J38710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978



CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1979

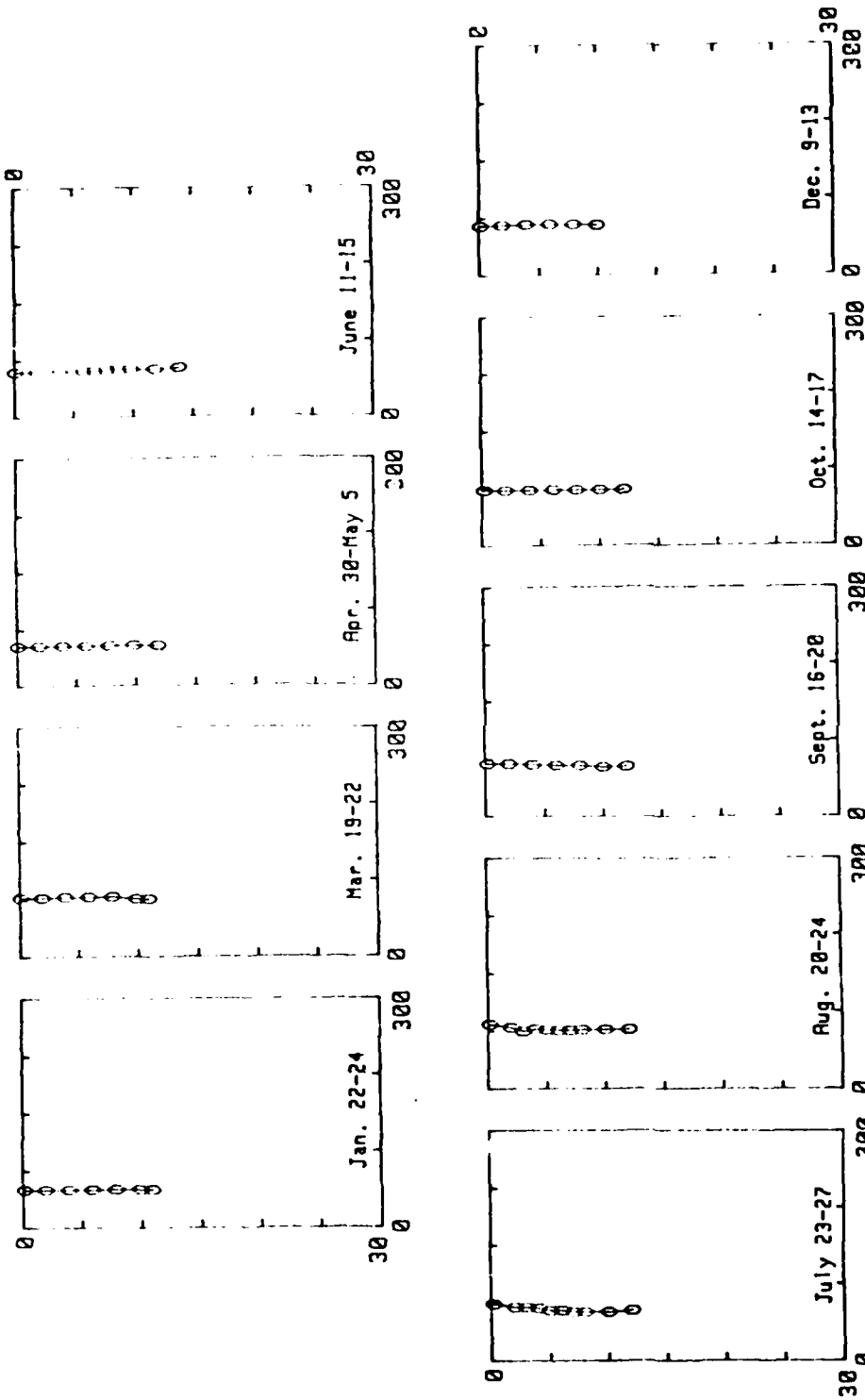


EXPLANATION

0-Specific conductance

CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978

DEPTH, IN METERS



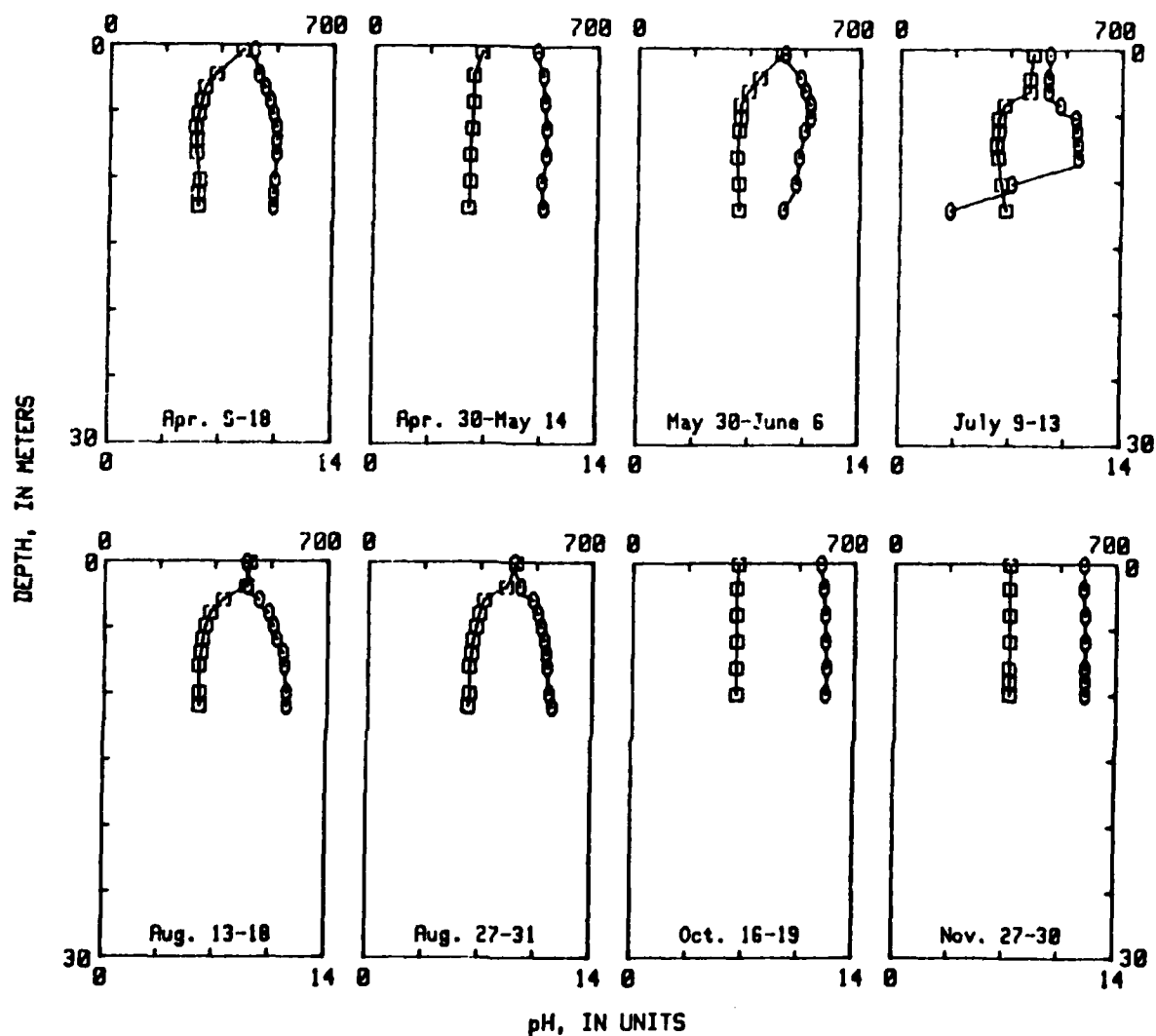
SPECIFIC CONDUCTANCE, IN MICROMHOS PER CENTIMETER

EXPLANATION

○-Specific conductance

CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1979

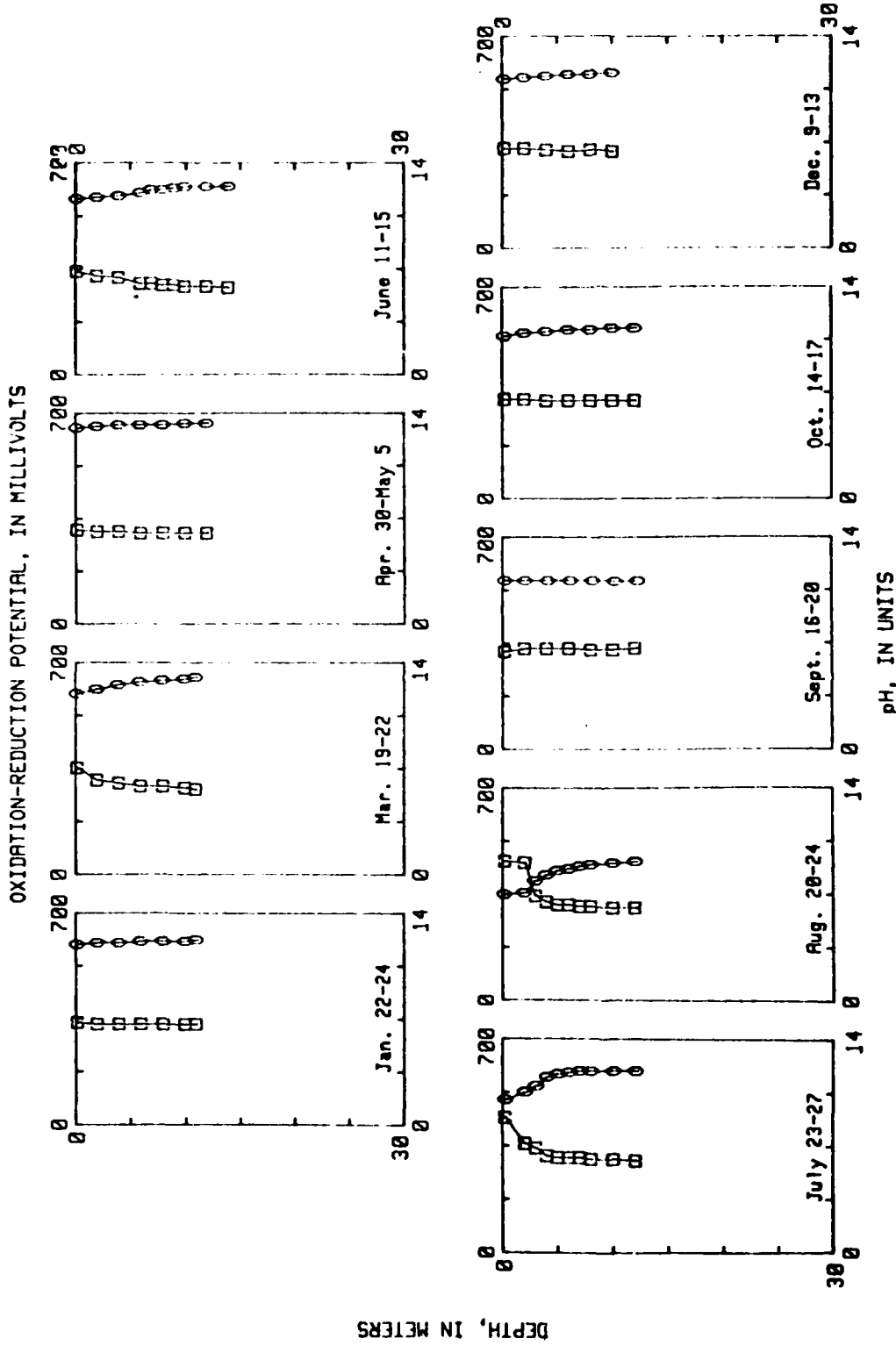
OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS



EXPLANATION

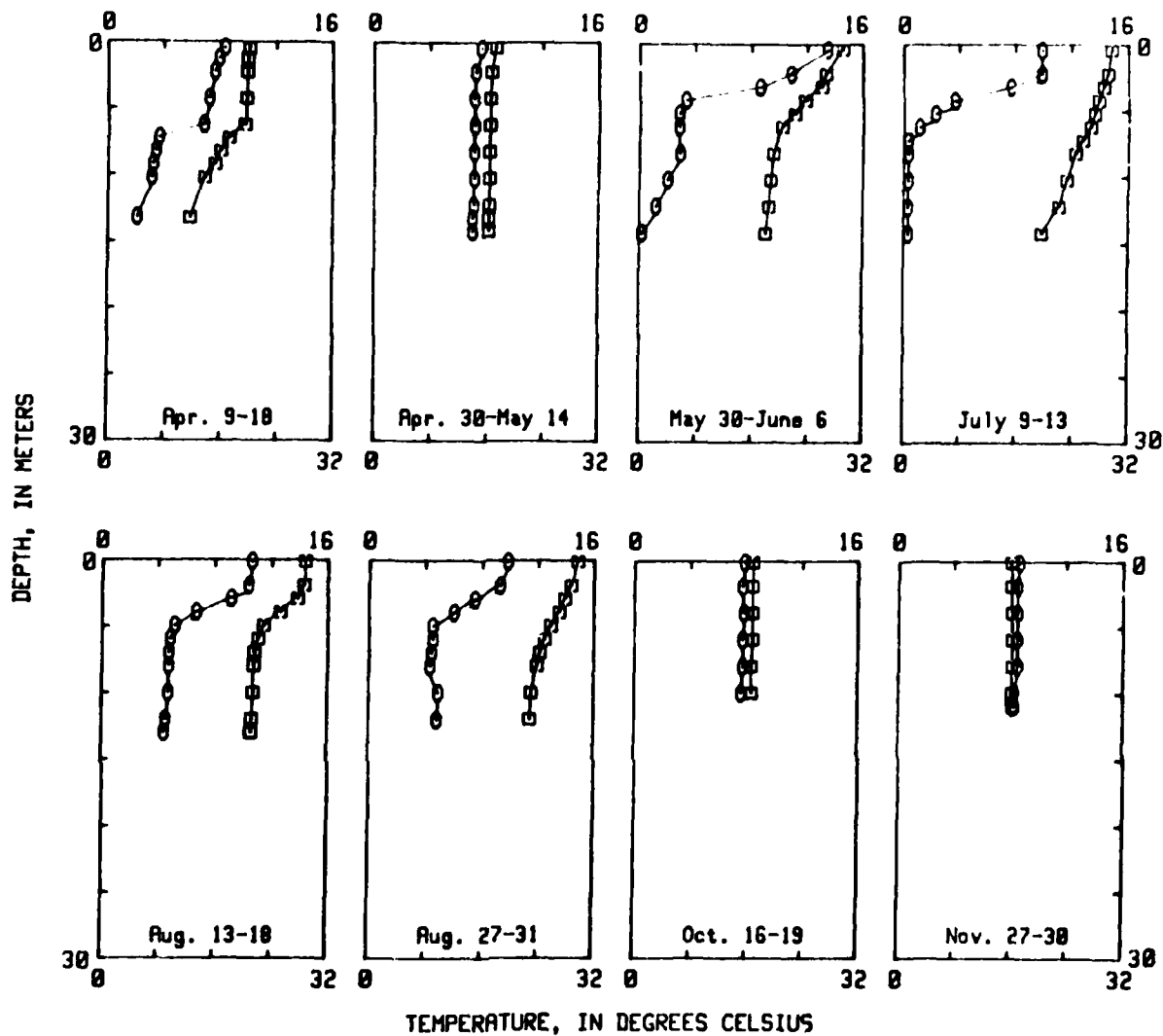
○-Oxidation-reduction potential
 □-pH

CH-10 (02038710) Chattahoochee River at State Highway 219, near
 LaGrange, Ga., 1978



CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1979

DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER

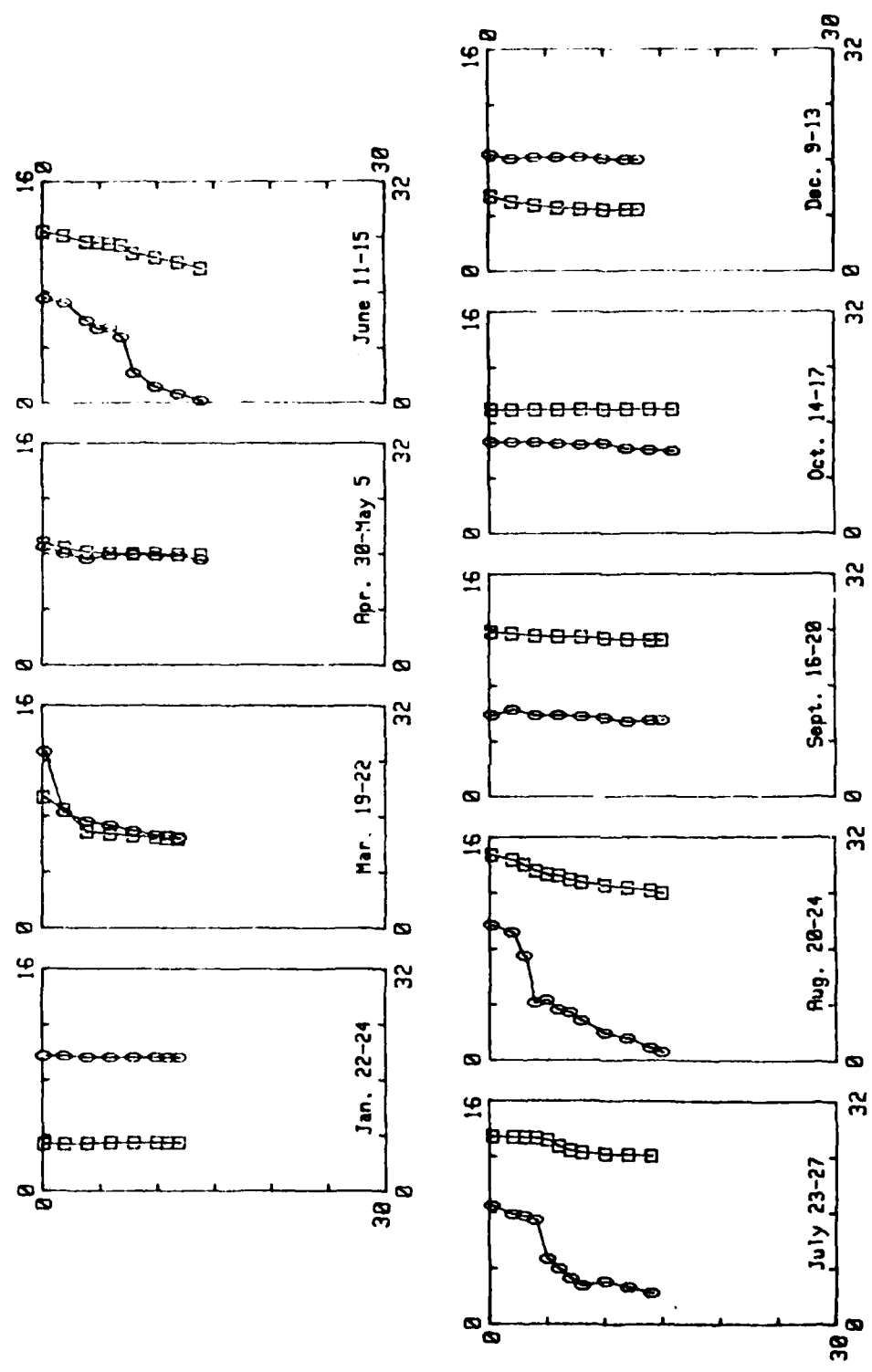


EXPLANATION

□-Temperature ○-Dissolved oxygen

CH-07 (02338720) Chattahoochee River (city of LaGrange intake)
near LaGrange, Ga., 1978

DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER

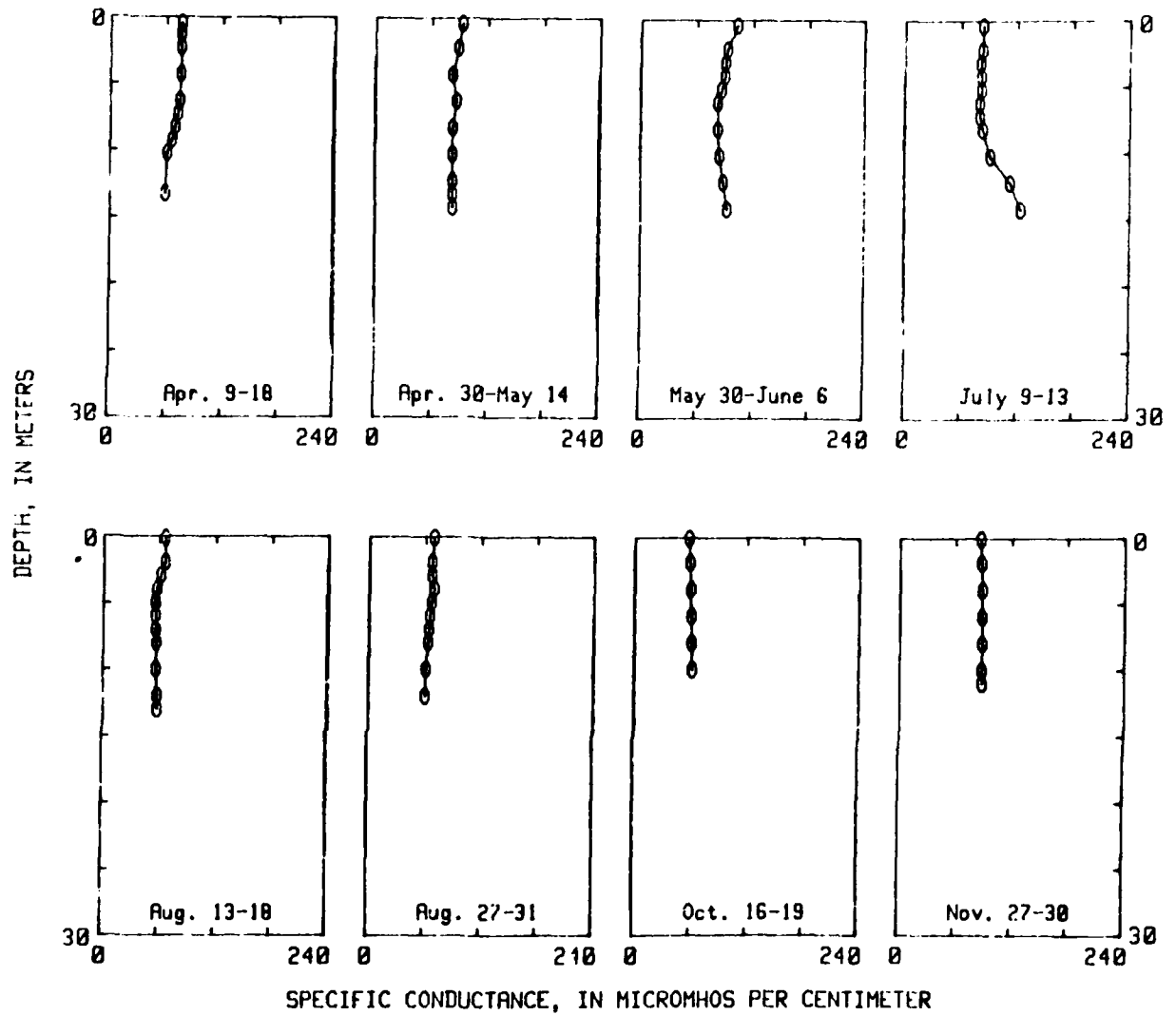


TEMPERATURE, IN DEGREES CELSIUS

EXPLANATION

- Dissolved oxygen
- Temperature

CH-07 (02338720) Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1979

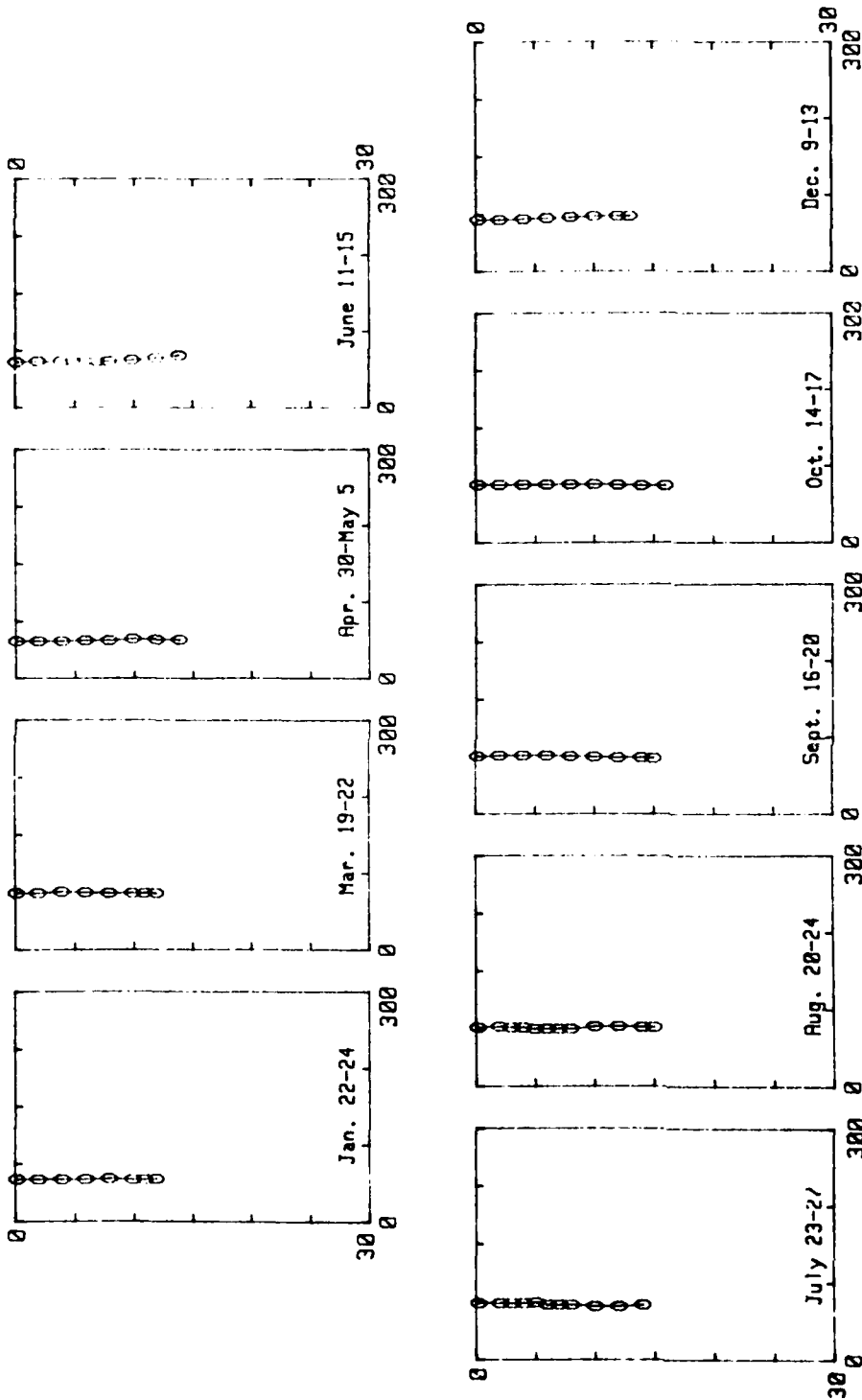


EXPLANATION

○-Specific conductance

CH-07 (02338720) Chattahoochee River (city of LaGrange Intake)
near LaGrange, Ga., 1978

DEPTH, IN METERS



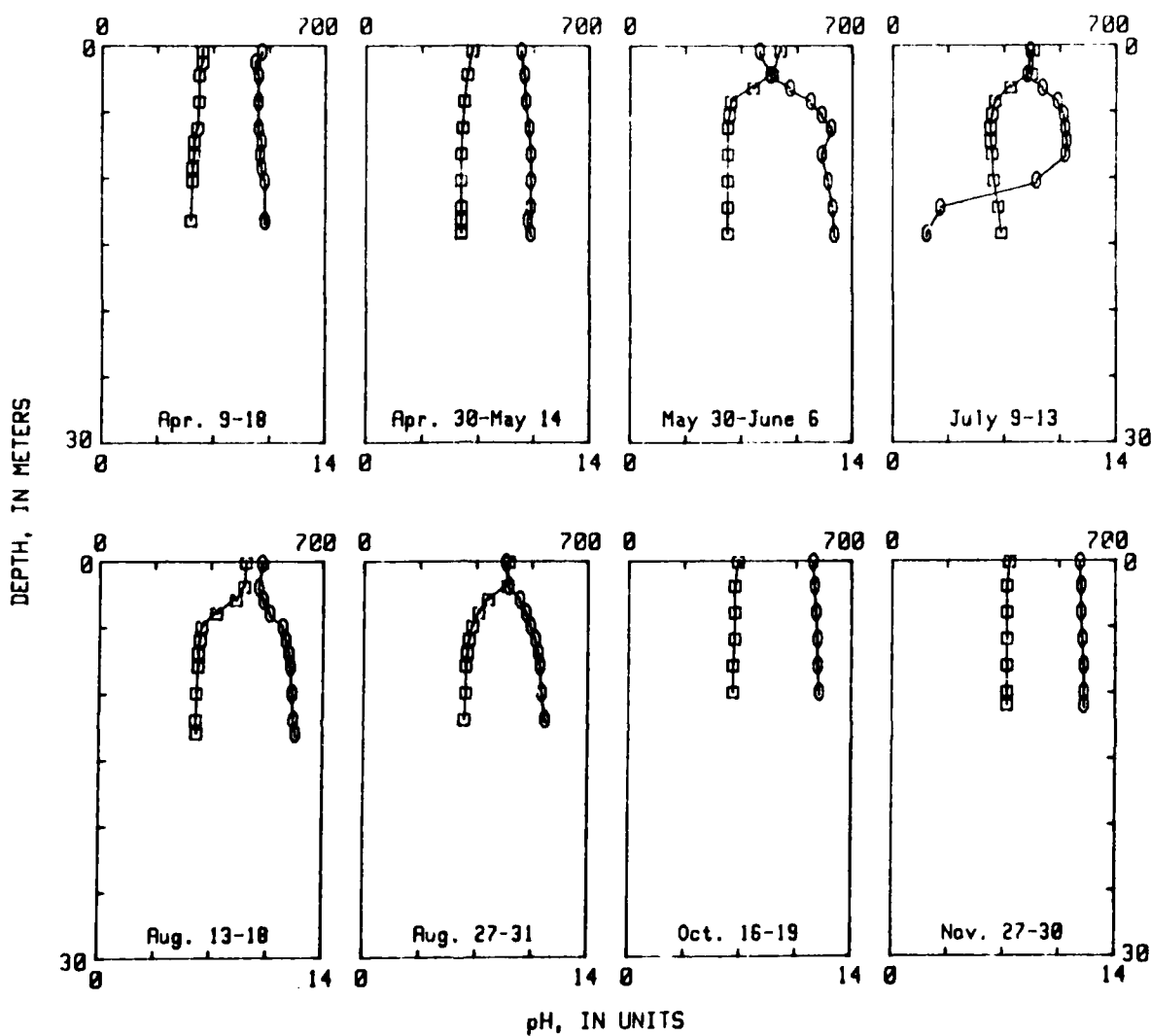
SPECIFIC CONDUCTANCE, IN MICROMHOS PER CENTIMETER

EXPLANATION

0-Specific conductance

CH-07 (02338720) Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1979

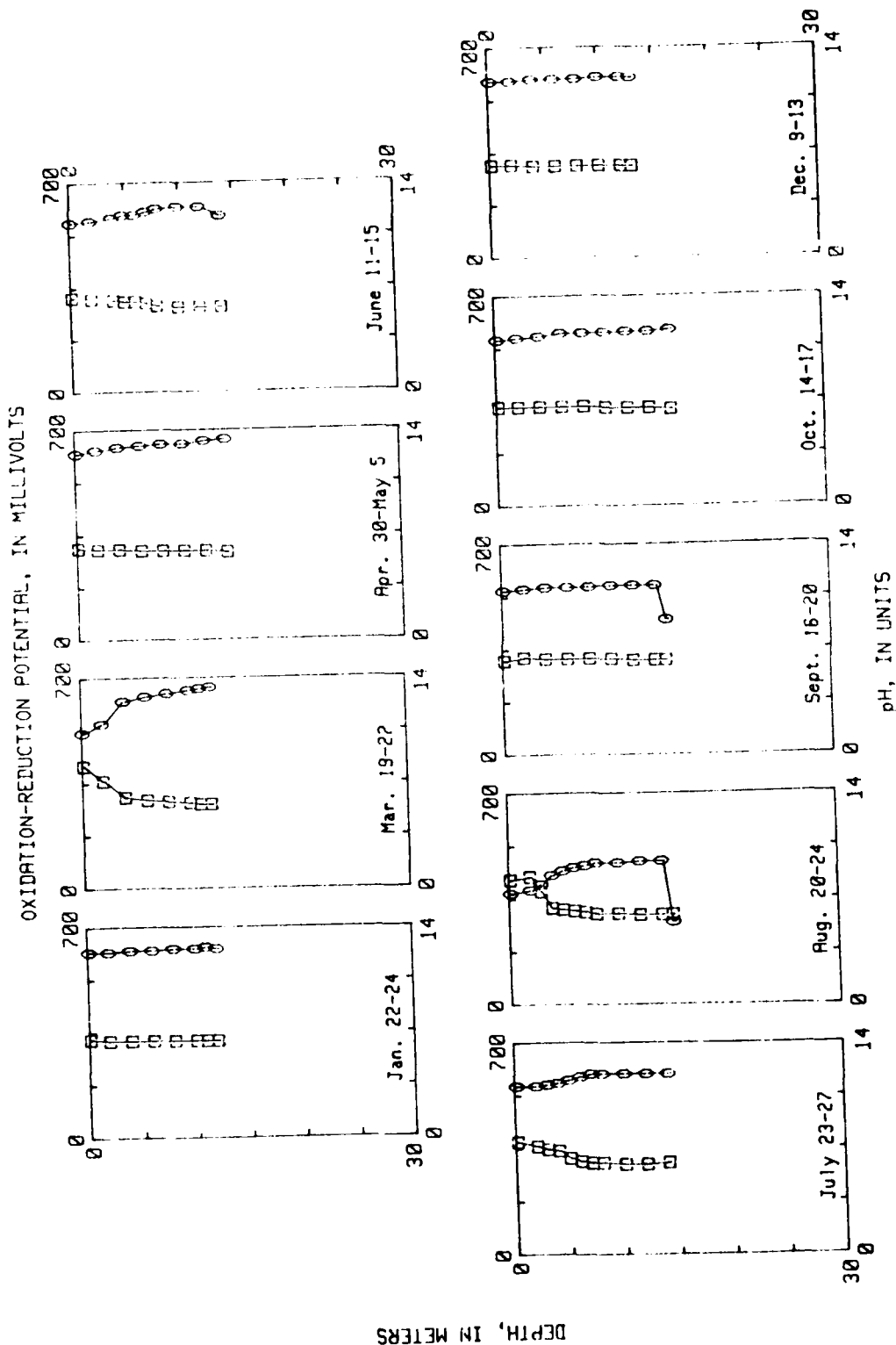
OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS



EXPLANATION

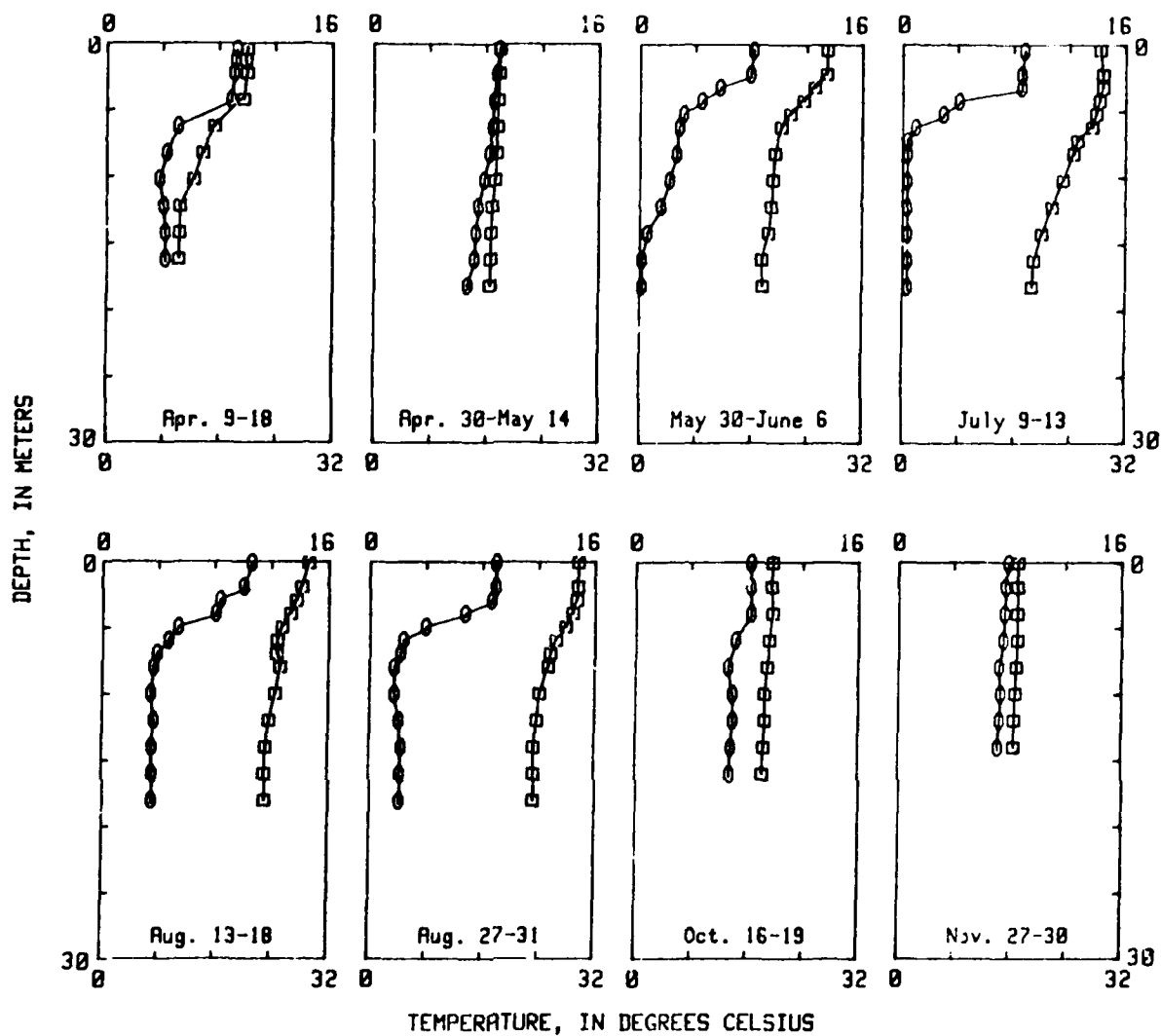
○-Oxidation-reduction potential
 □-pH

CH-07 (02303720) Chattahoochee River (city of LaGrange Intake)
 near LaGrange, Ga., 1978



CH-07 (02338720) Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1979

DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER

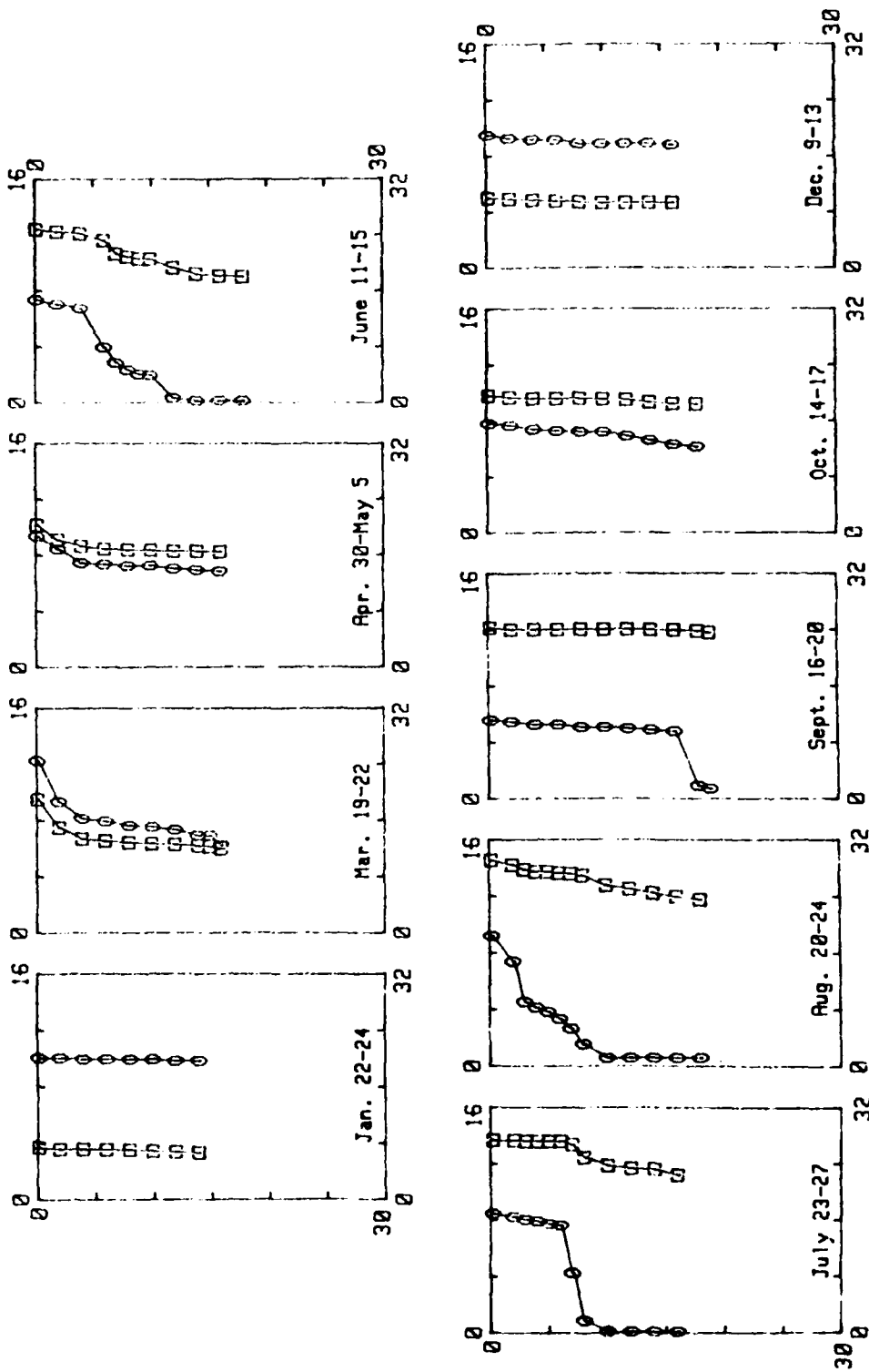


EXPLANATION

□-Temperature ○-Dissolved oxygen

CH-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978

DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER



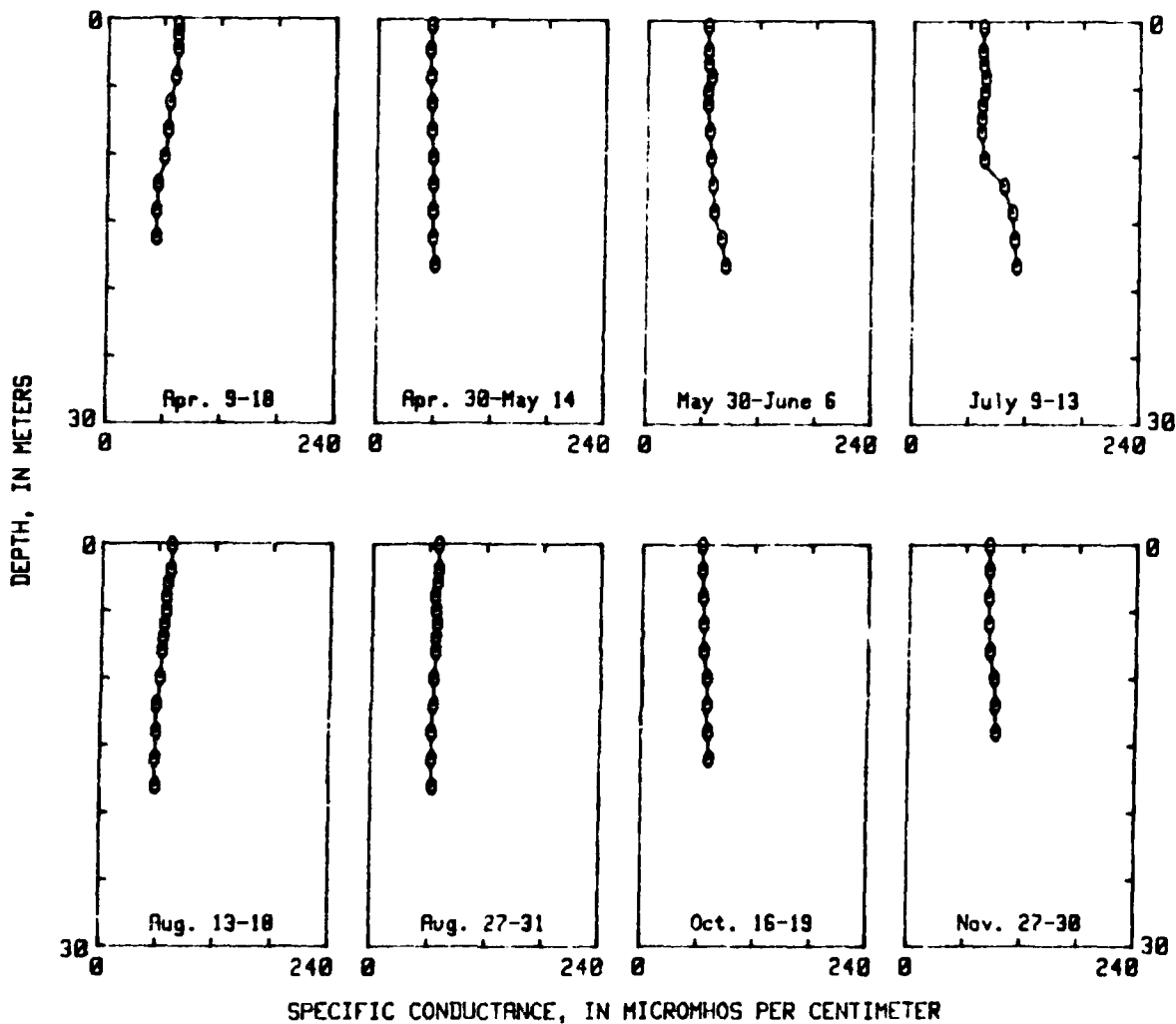
DEPTH, IN METERS

TEMPERATURE, IN DEGREES CELSIUS

EXPLANATION

- Dissolved oxygen
- Temperature

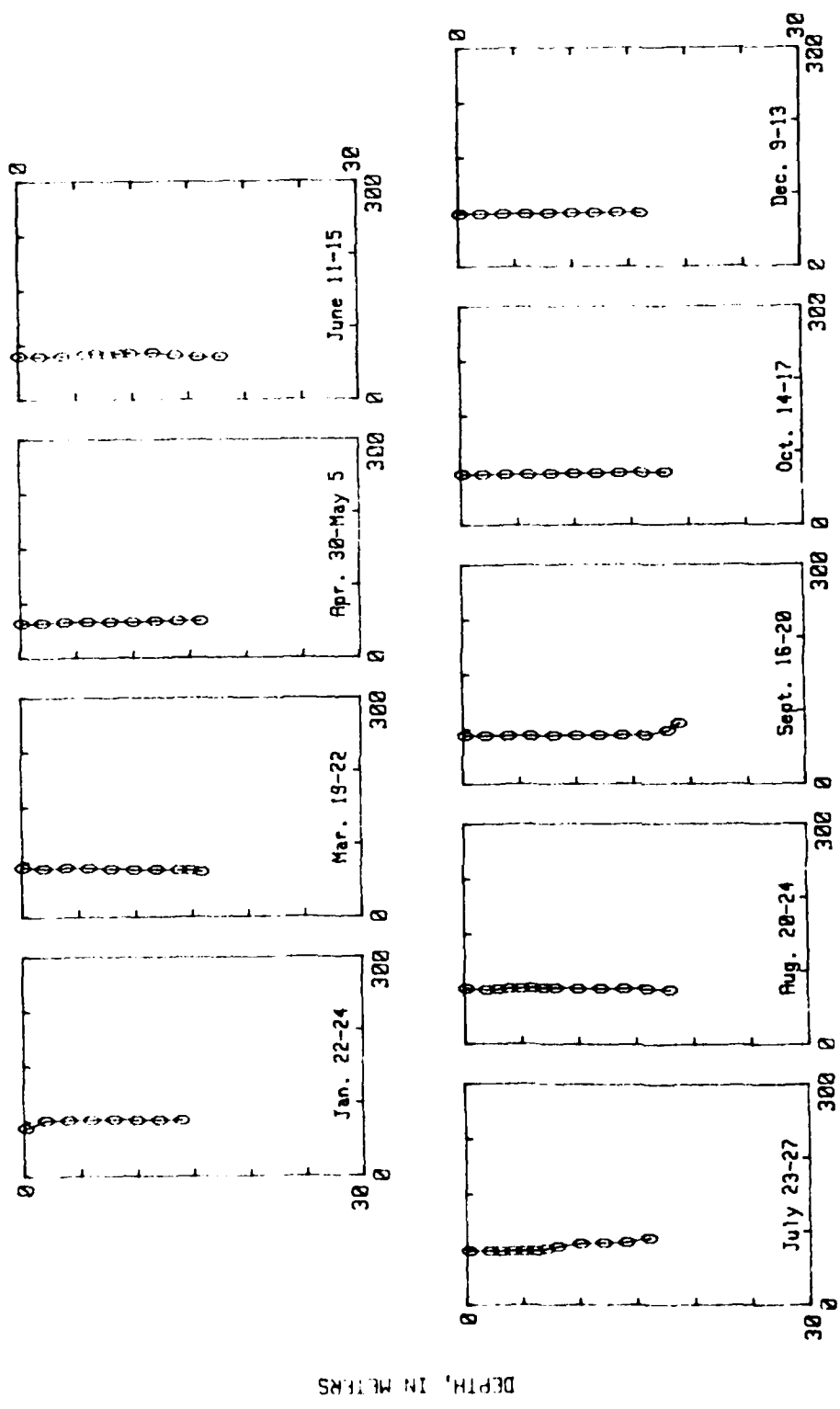
CH-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1979



EXPLANATION

0-Specific conductance

CH-05A (22339190) Chattahoochee River at State Highway 701, near
Abbottsford, Ga., 1978



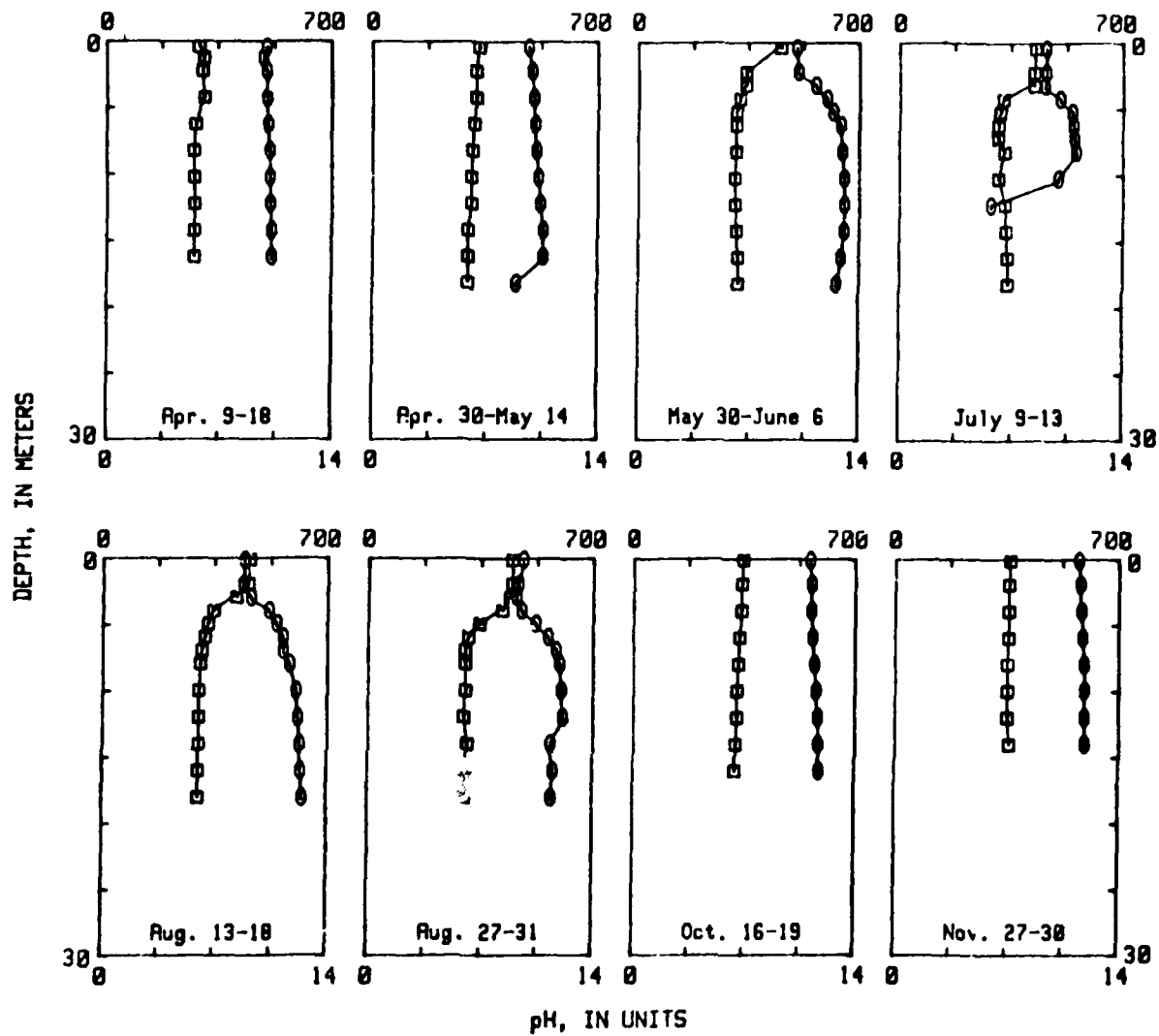
SPECIFIC CONDUCTANCE, IN MICROMHOS PER CENTIMETER

EXPLANATION

○-Specific conductance

CH-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1979

OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS

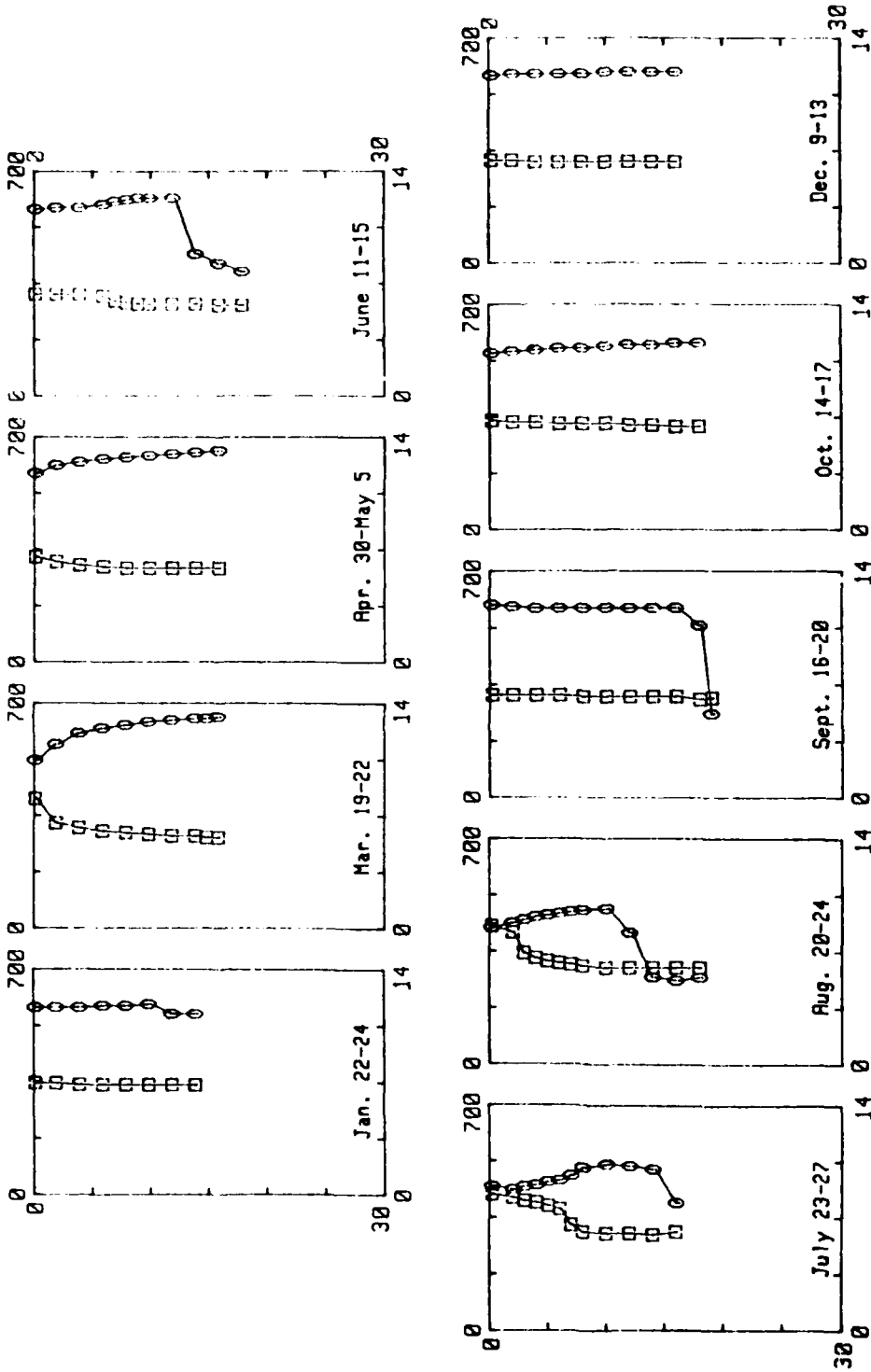


EXPLANATION

- Oxidation-reduction potential
- pH

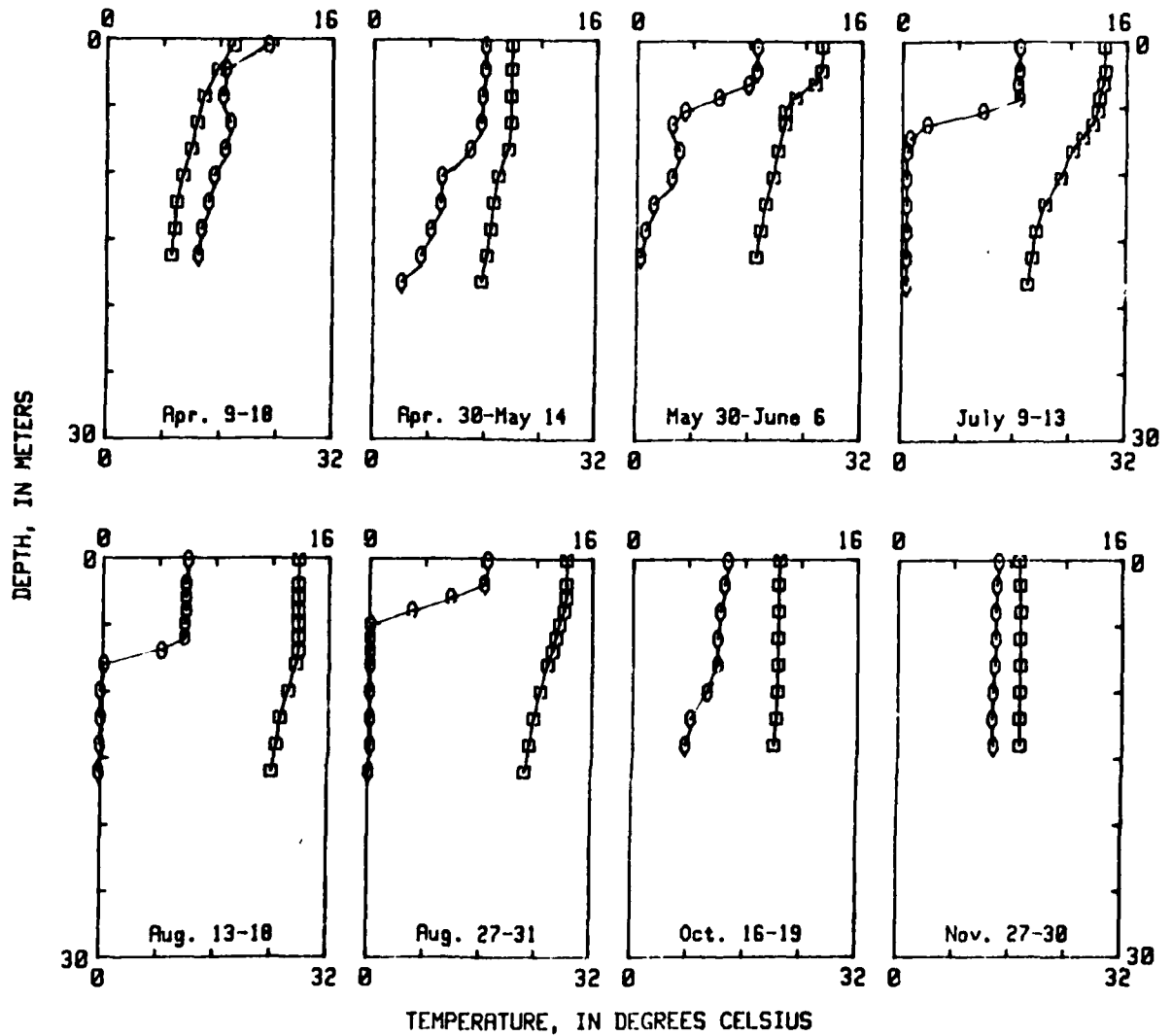
CH-05A (0339190) Chattahoochee River at State Highway 701, near
 Abbottsford, Ga., 1978

OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS



CH-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1979

DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER

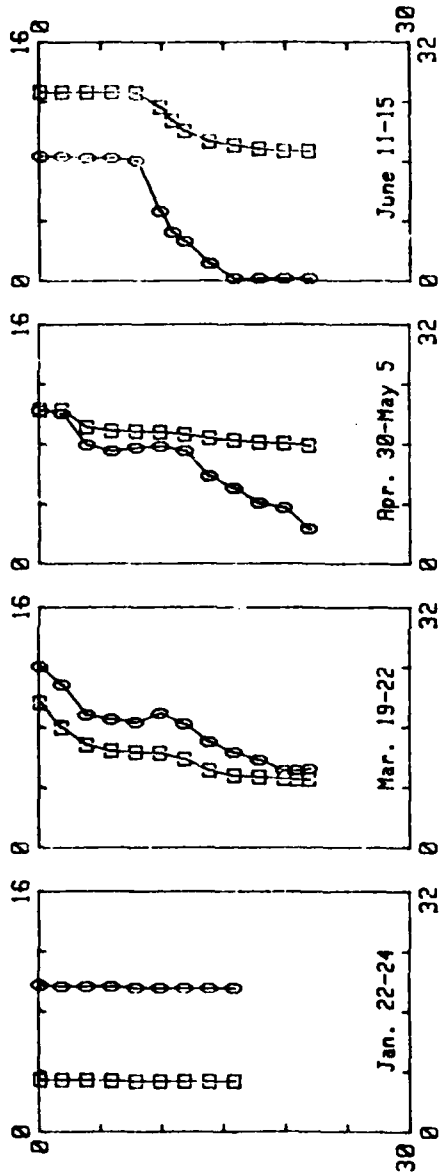


EXPLANATION

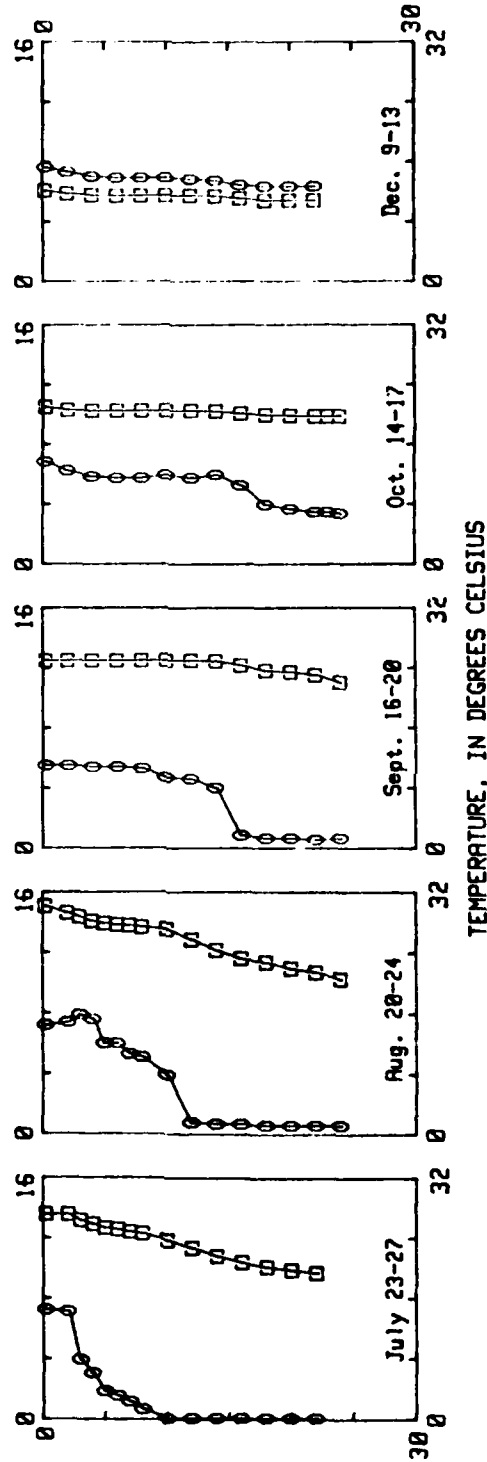
□-Temperature ○-Dissolved oxygen

CH-03A (02339382) Chattahoochee River above coffer dam, above West Point Dam, 1978

DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER



DEPTH, IN METERS

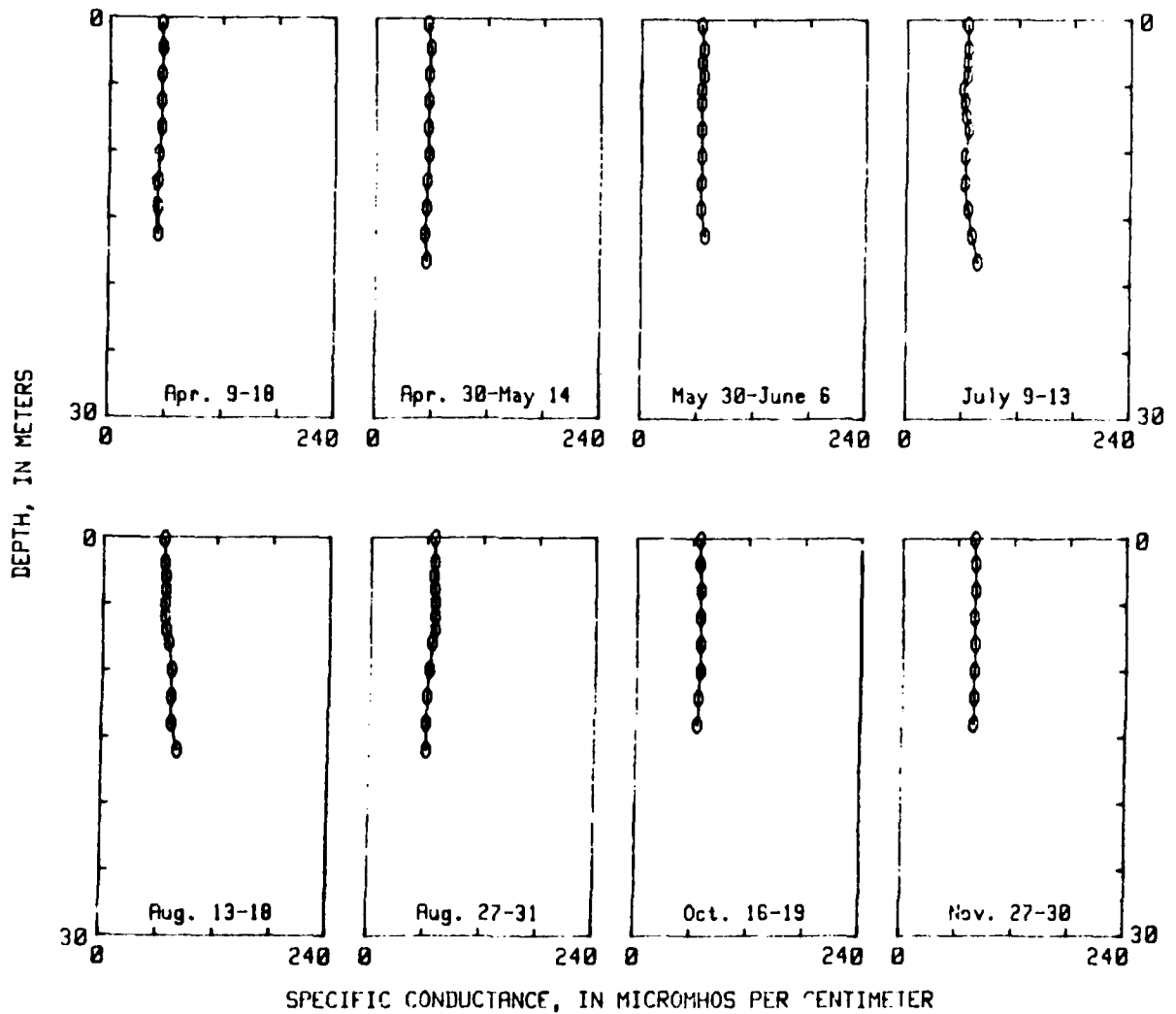


TEMPERATURE, IN DEGREES CELSIUS

EXPLANATION

- Dissolved oxygen
- Temperature

CH-03A (02339382) Chattahoochee River above coffer dam, above West Point Dam, 1979

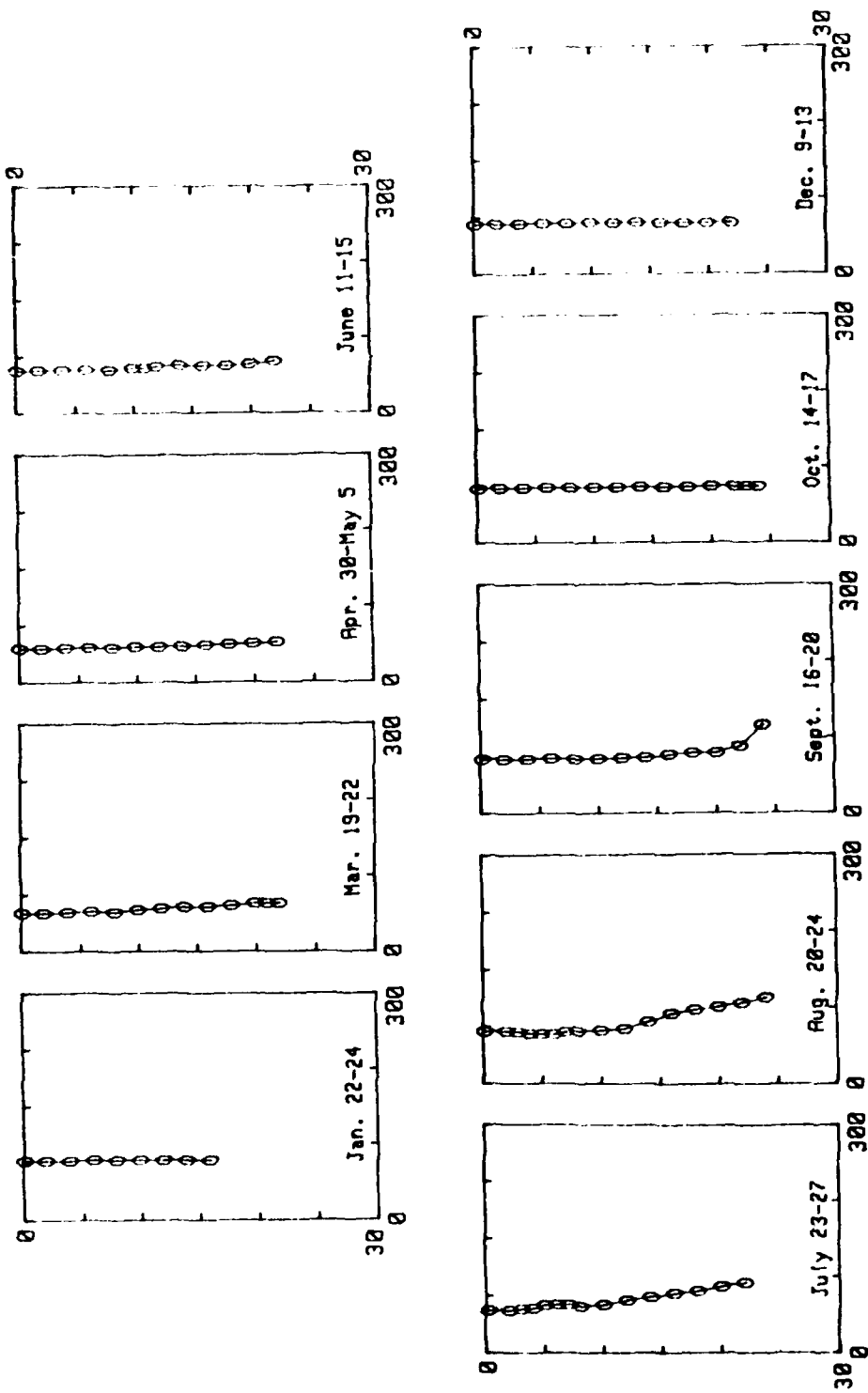


EXPLANATION

○ Specific conductance

CH-03A (02339382) Chattahoochee River above coffer dam, above West Point Dam, 1978

DEPTH, IN METERS



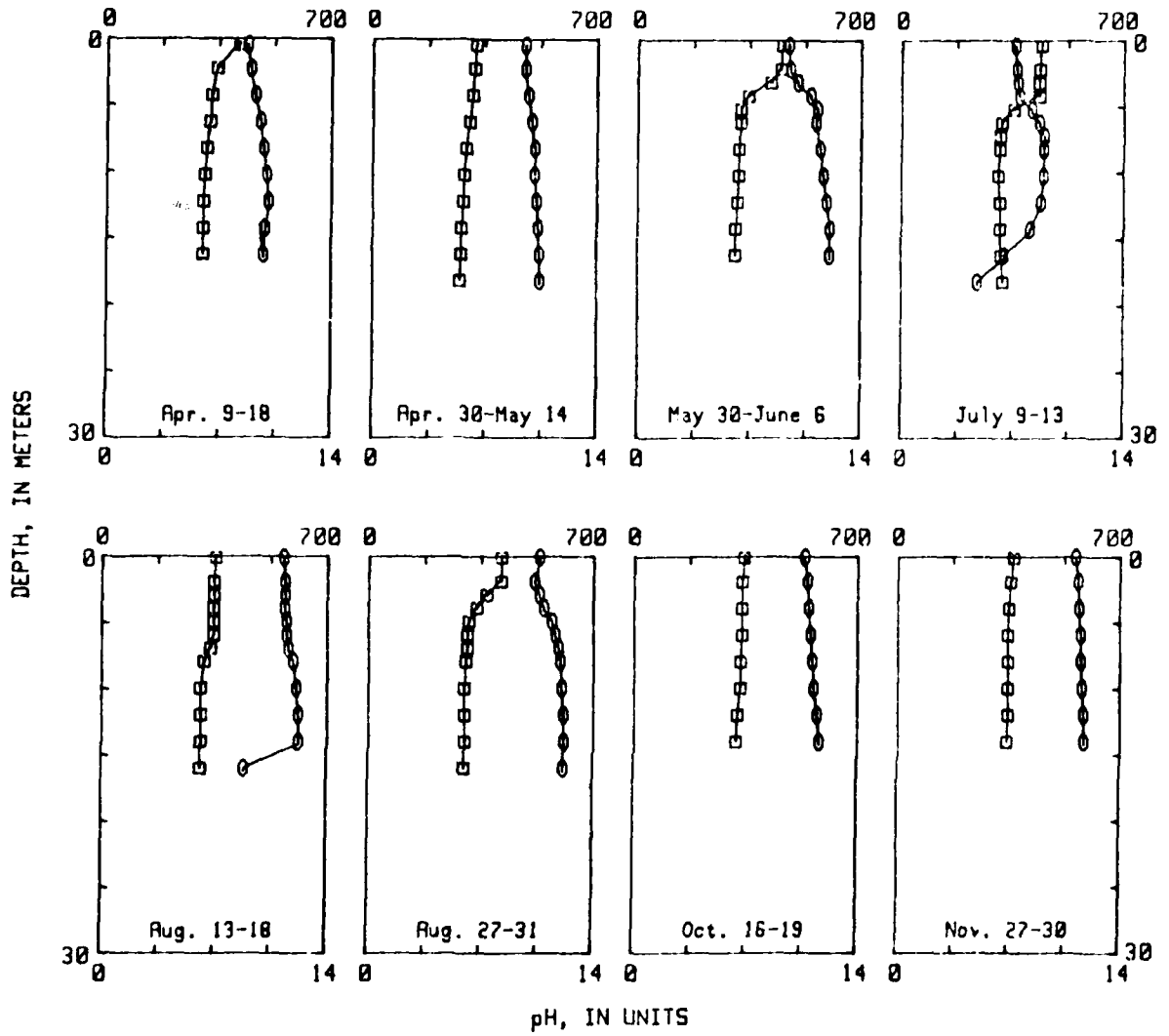
SPECIFIC CONDUCTANCE, IN MICROMHOS PER CENTIMETER

EXPLANATION

○ Specific conductance

CH-03R (02339382) Chattahoochee River above coffer dam, above West Point Dam, 1979

OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS

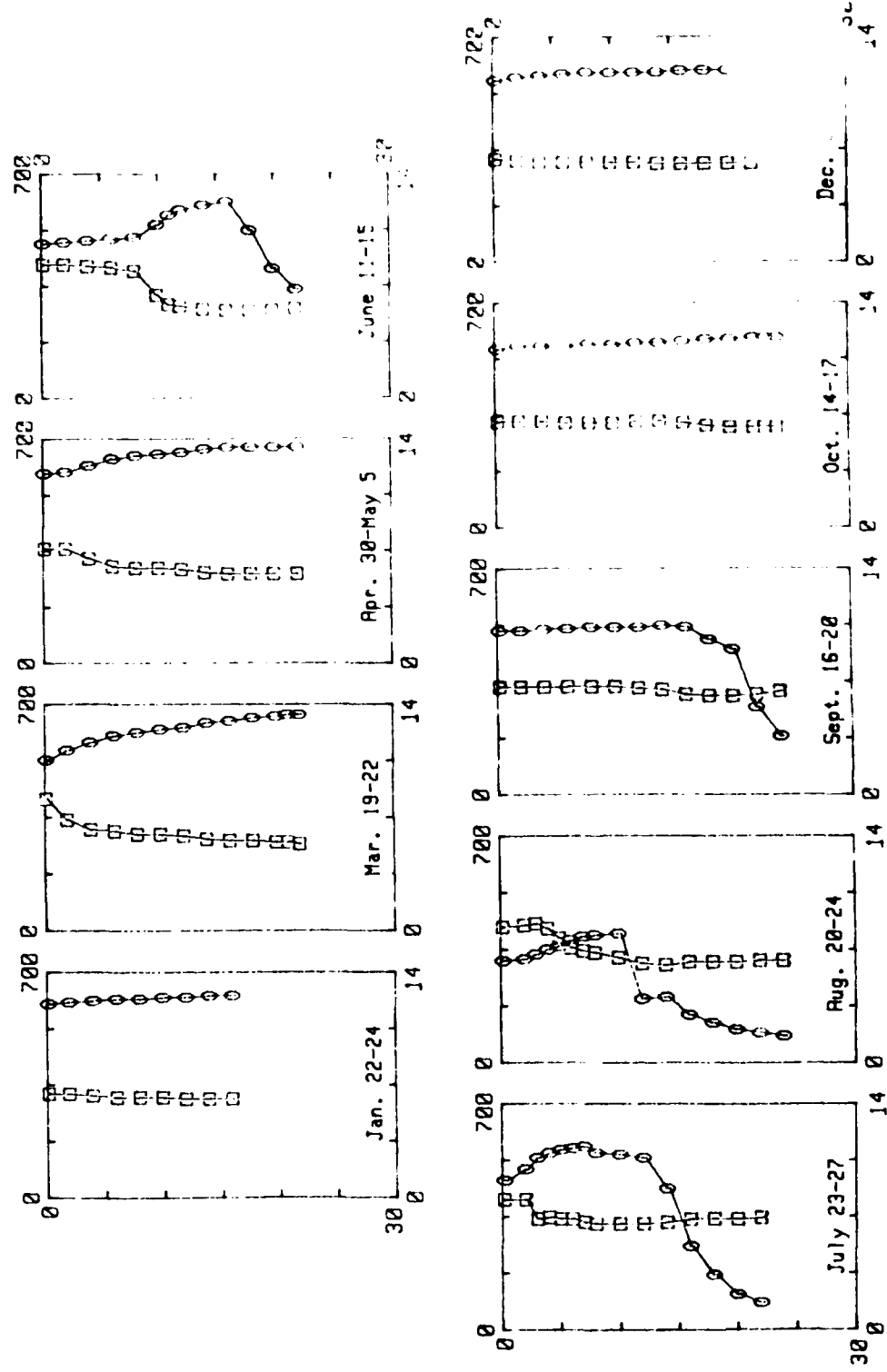


EXPLANATION

○-Oxidation-reduction potential
 □-pH

CH-03A (02339382) Chattahoochee River above coffer dam, above West Point Dam, 1978

OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS



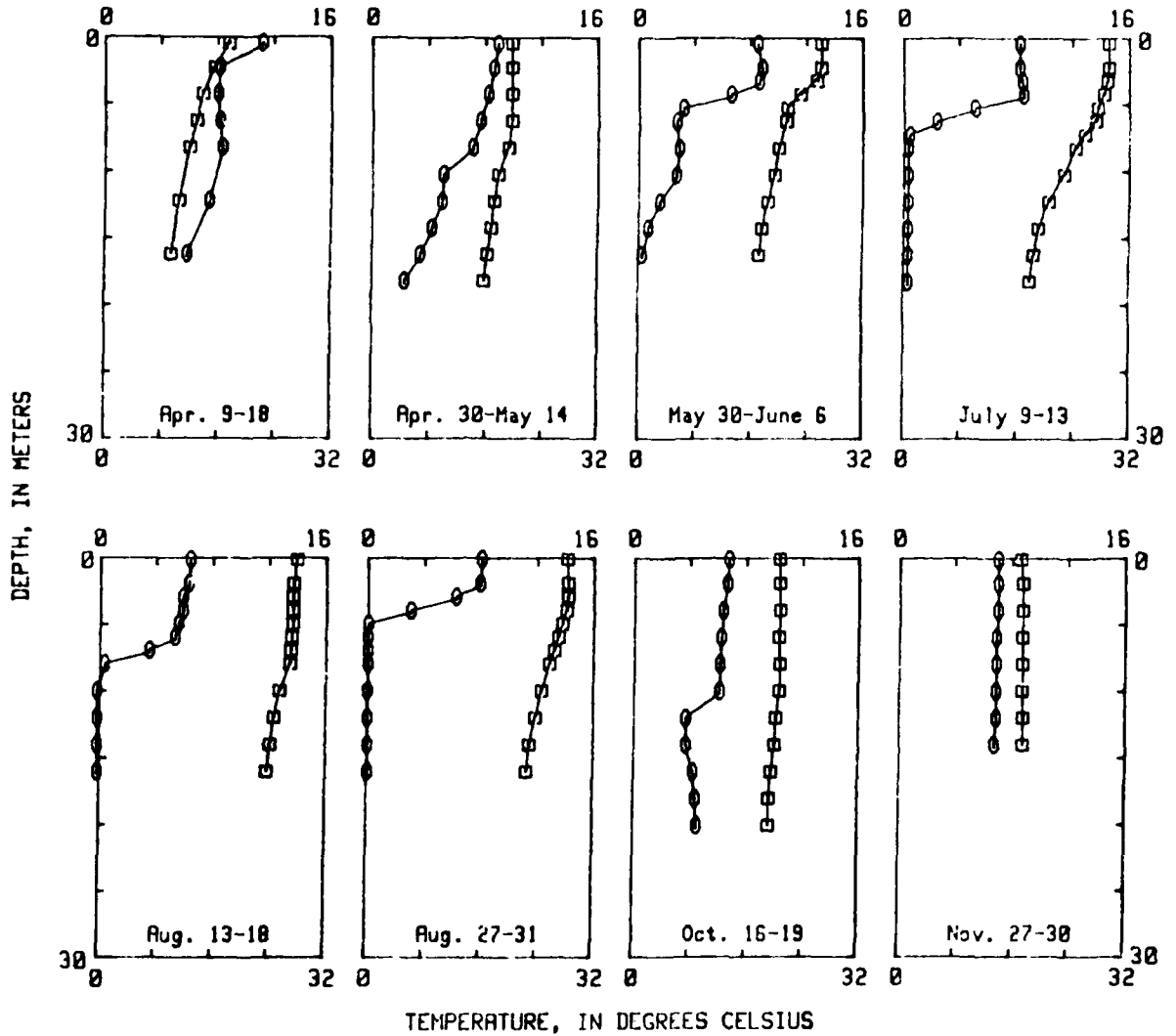
DEPTH, IN METERS

pH, IN UNITS

EXPLANATION
 ○-Oxidation-reduction potential
 □-pH

CH-03A (02339382) Chattahoochee River above coffer dam, above West Point Dam, 1979

DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER

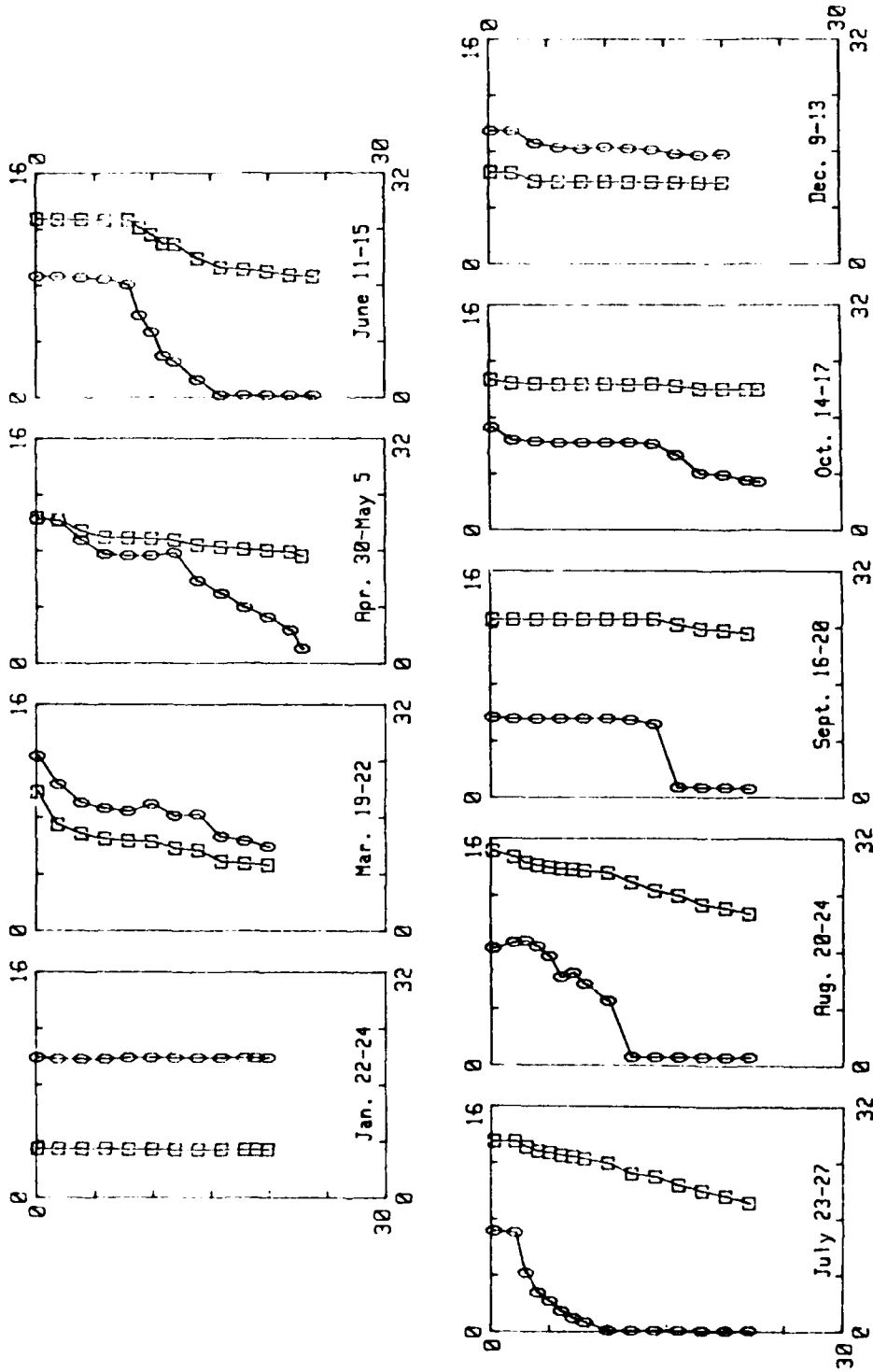


EXPLANATION

□ - Temperature ○ - Dissolved oxygen

CH-03B (02339387) Chattahoochee River east of coffer dam, above West Point Dam, 1978

DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER

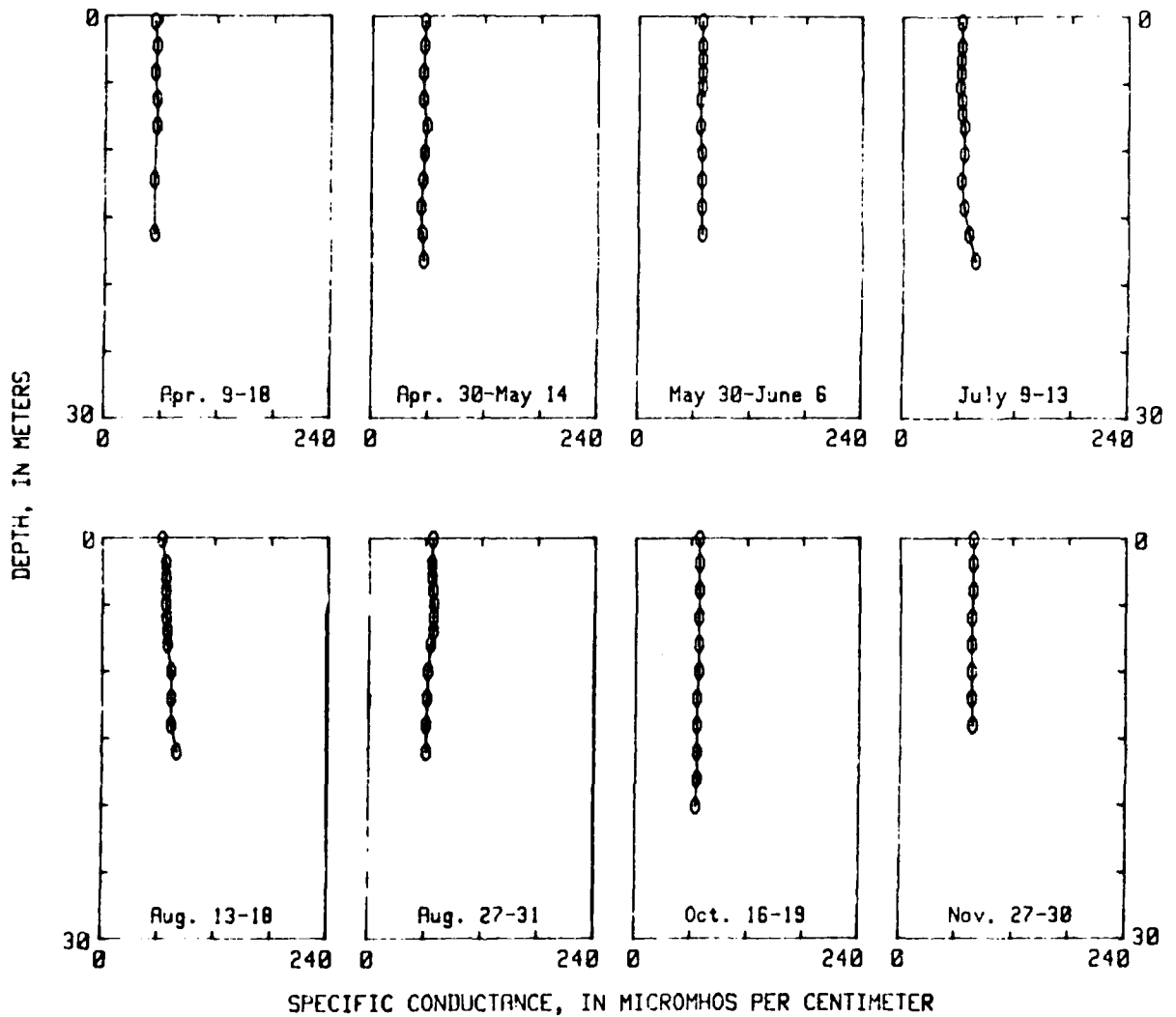


TEMPERATURE, IN DEGREES CELSIUS

EXPLANATION

- Dissolved oxygen
- Temperature

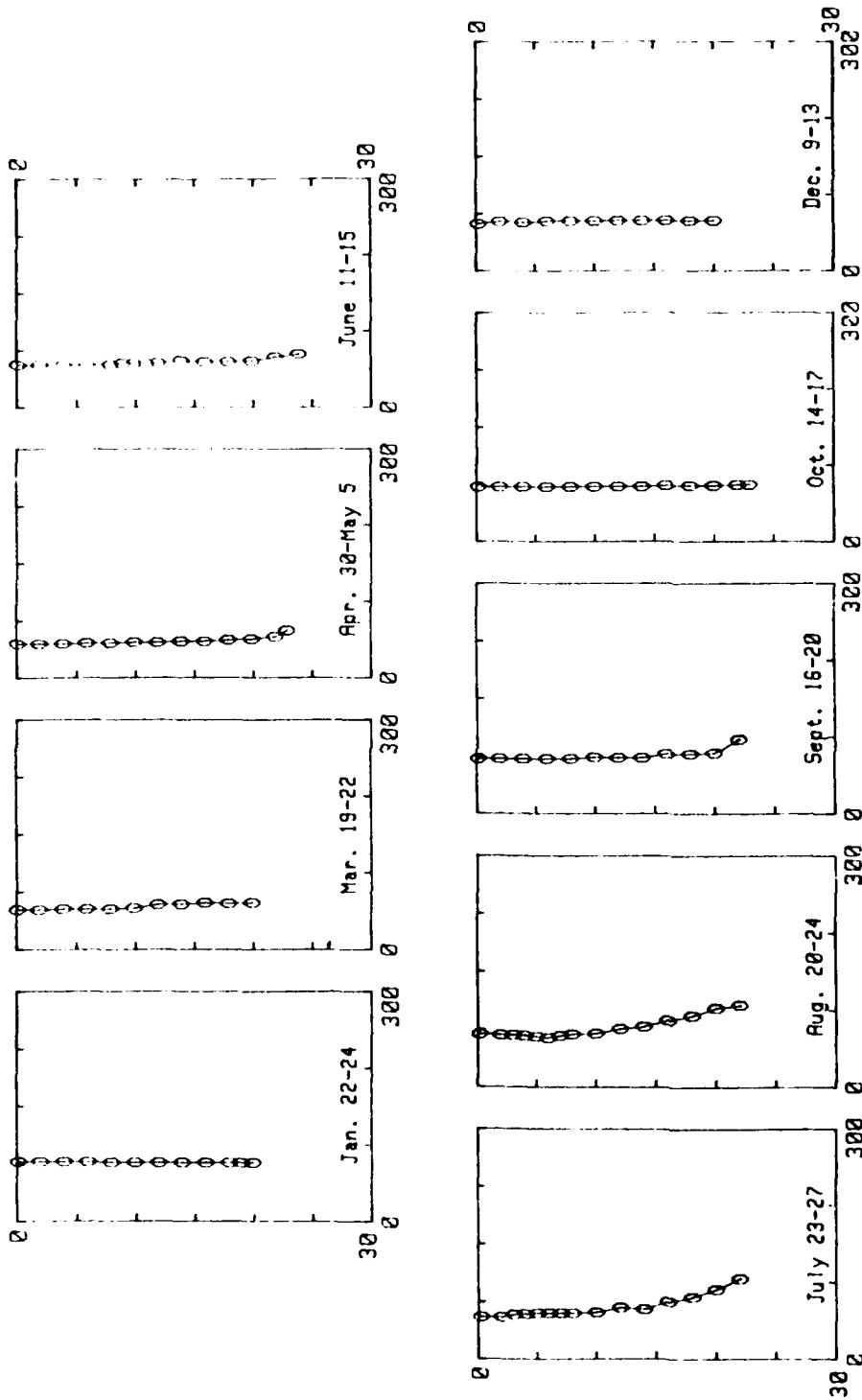
CH-03B (02339387) Chattahoochee River east of coffer dam, above West Point Dam, 1979



EXPLANATION

○-Specific conductance

CH-03B (02339387) Chattahoochee River east of coffer dam, above West Point Dam, 1978



DEPTH, IN METERS

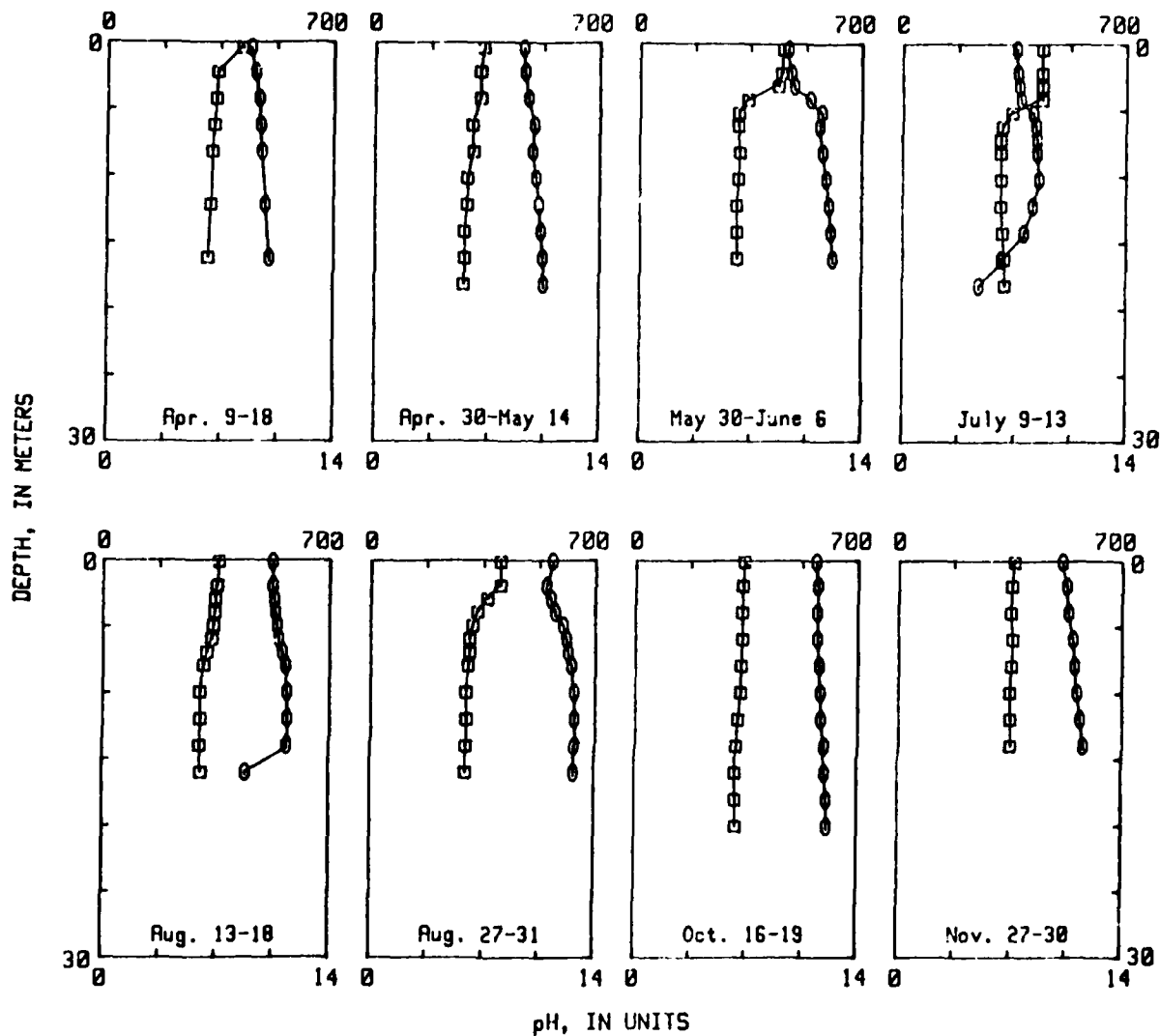
SPECIFIC CONDUCTANCE, IN MICROMHOS PER CENTIMETER

EXPLANATION

○ Specific conductance

CH-03B (023339387) Chattahoochee River east of coffer dam, above West Point Dam, 1979

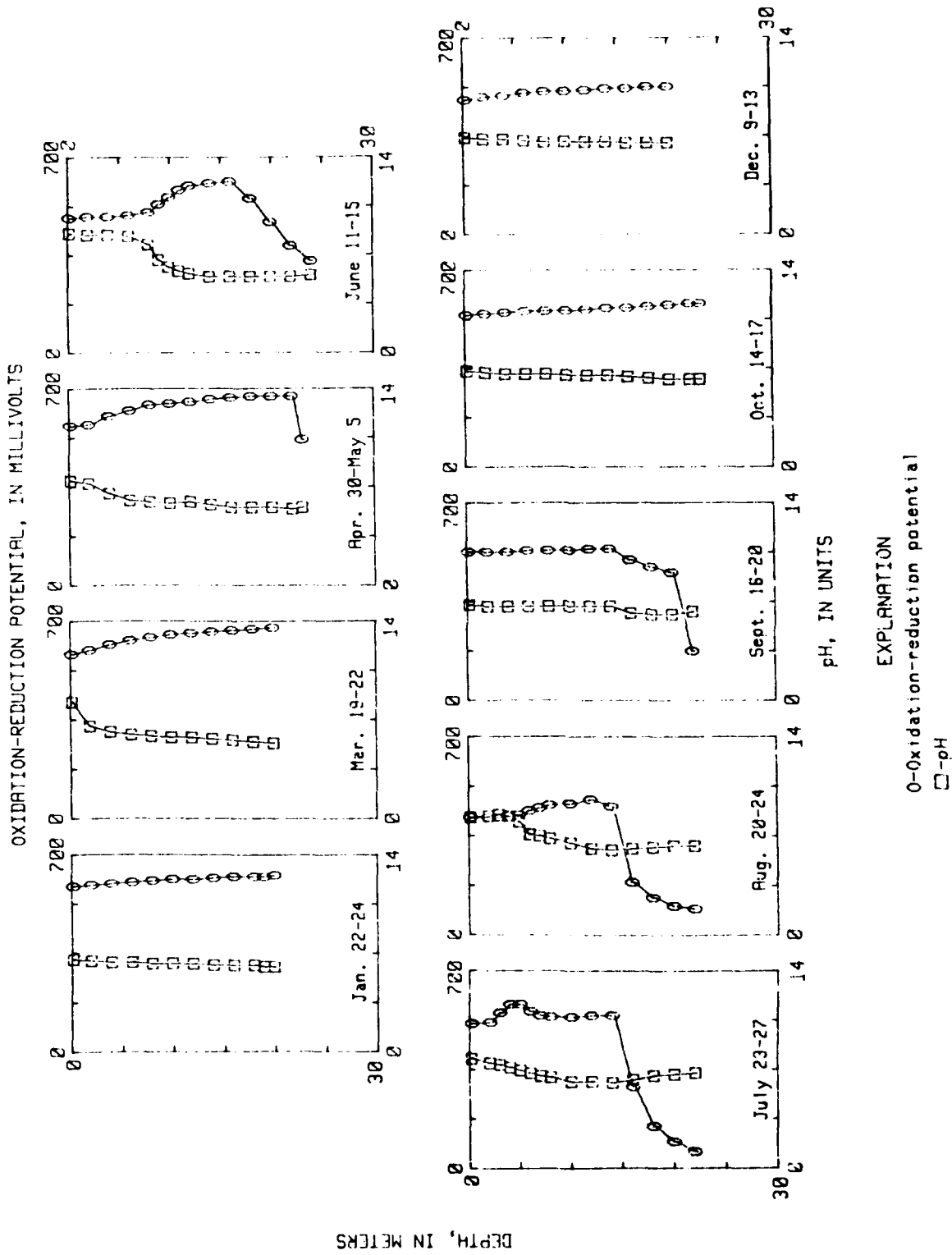
OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS



EXPLANATION

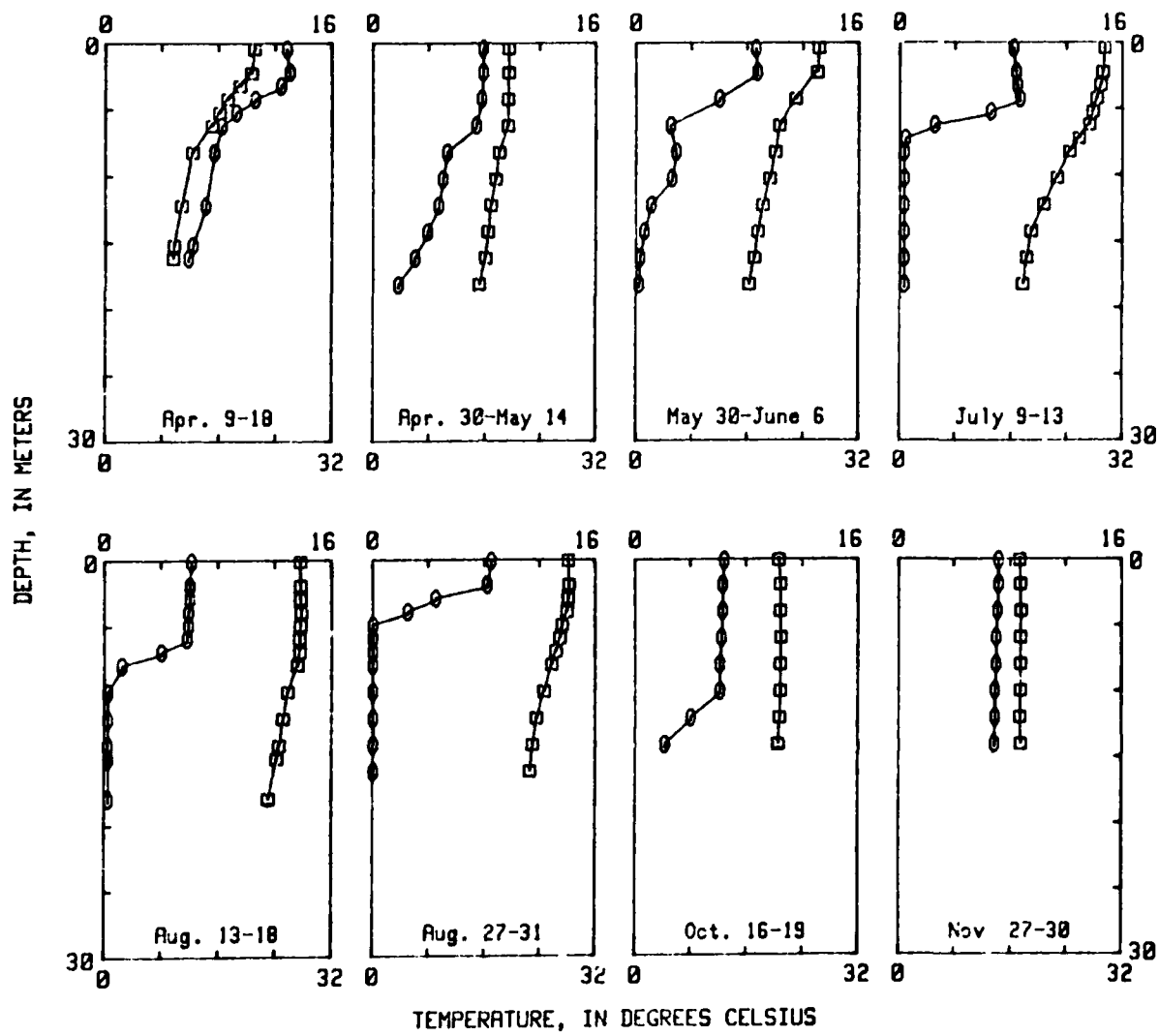
○-Oxidation-reduction potential
 □-pH

CH-03B (01-339387) Chattahoochee River east of coffer dam, above West Point Dam, 1978



CH-03B (02339387) Chattahoochee River east of coffer dam, above West Point Dam, 1979

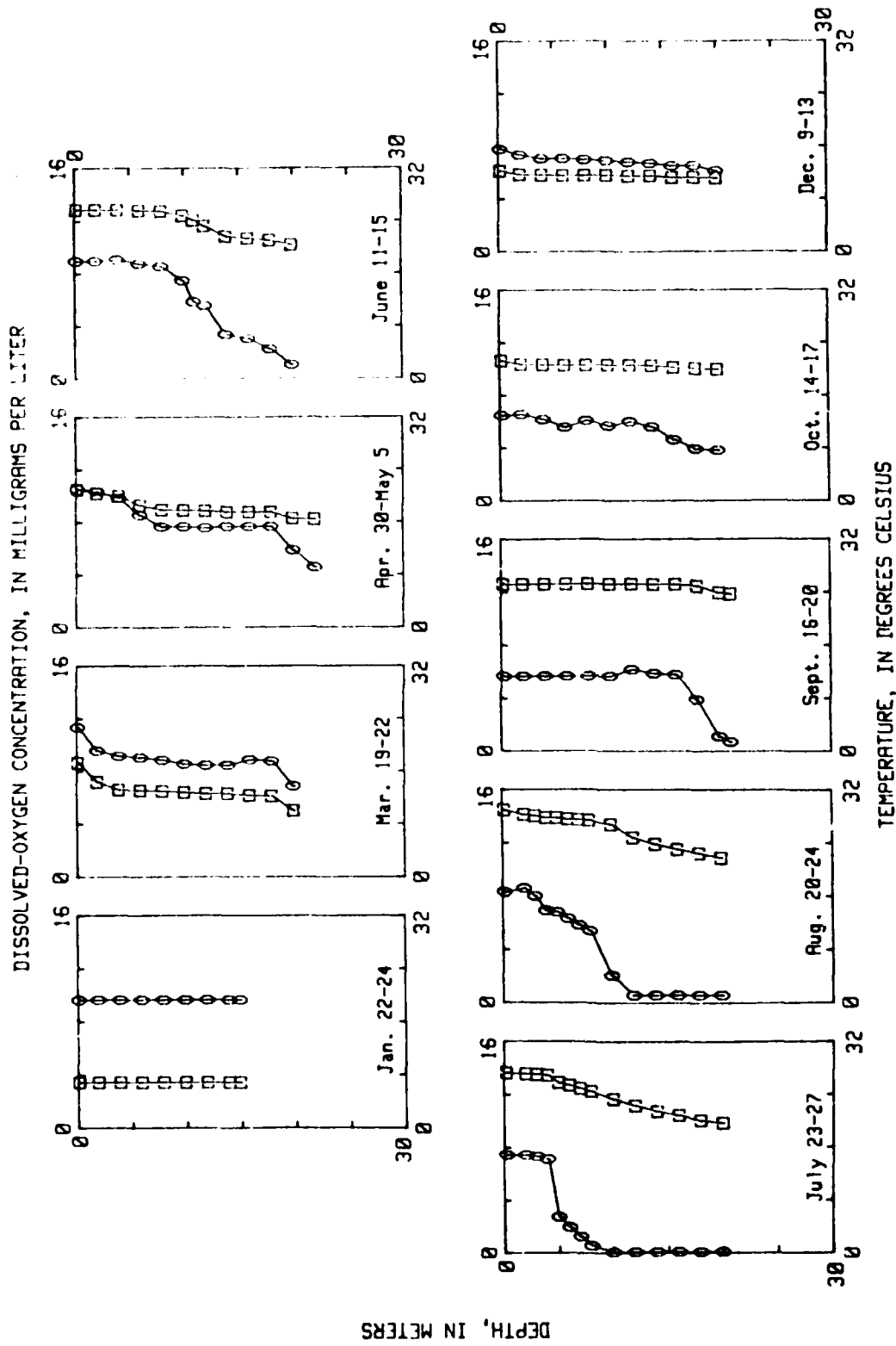
DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER



EXPLANATION

□-Temperature ○-Dissolved oxygen

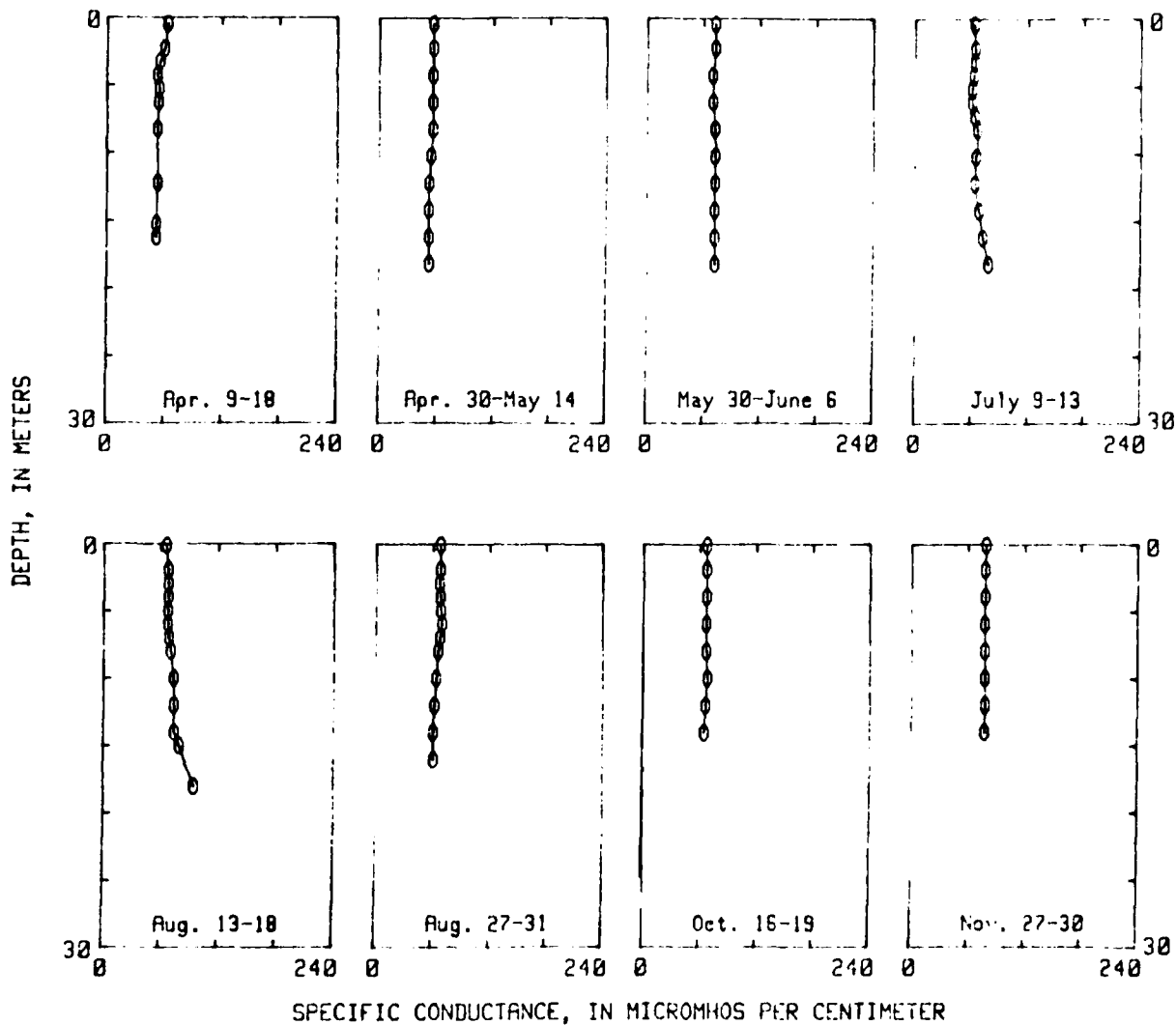
CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1978



EXPLANATION

- - Dissolved oxygen
- - Temperature

CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1979

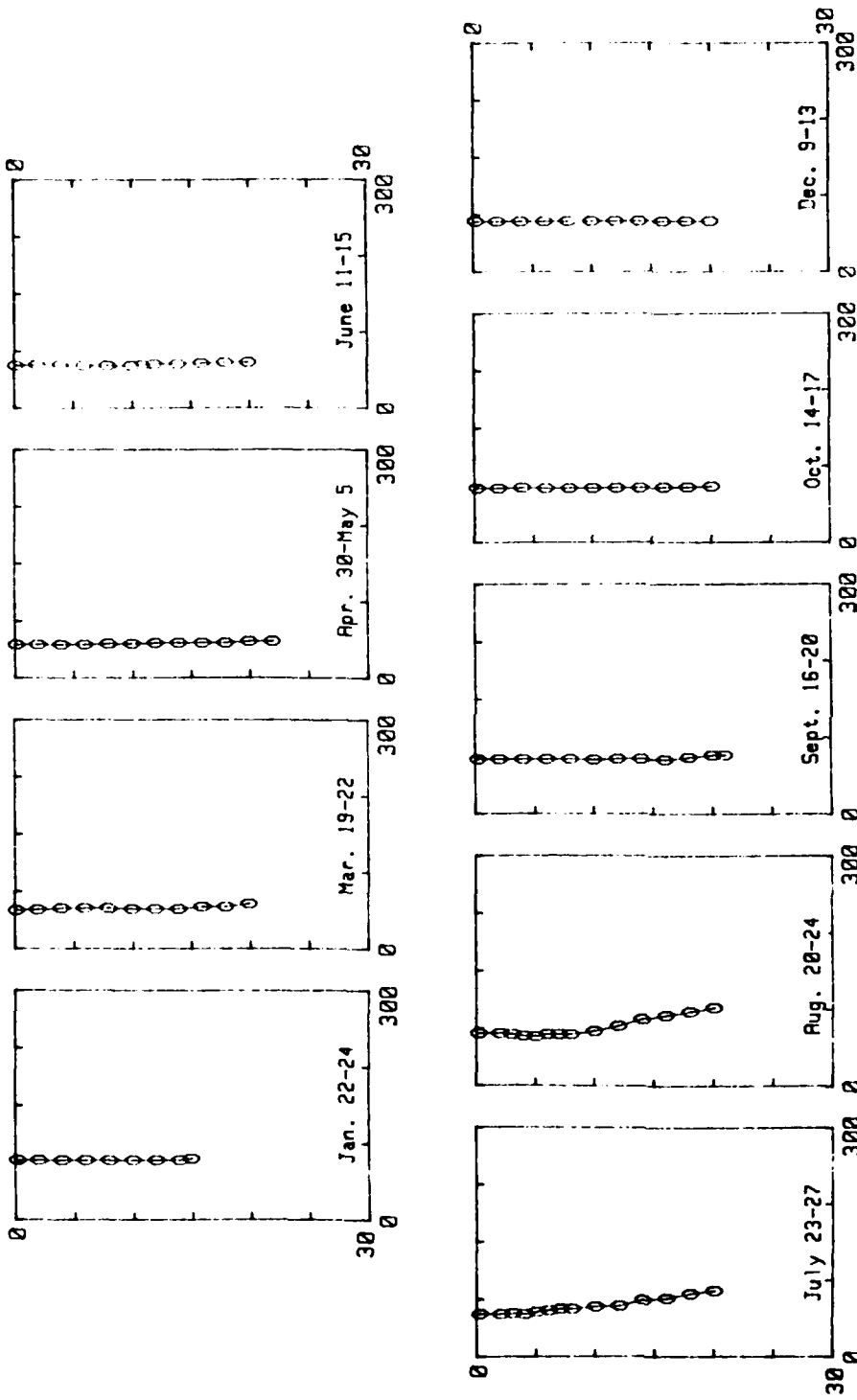


EXPLANATION

○ Specific conductance

CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1978

DEPTH, IN METERS



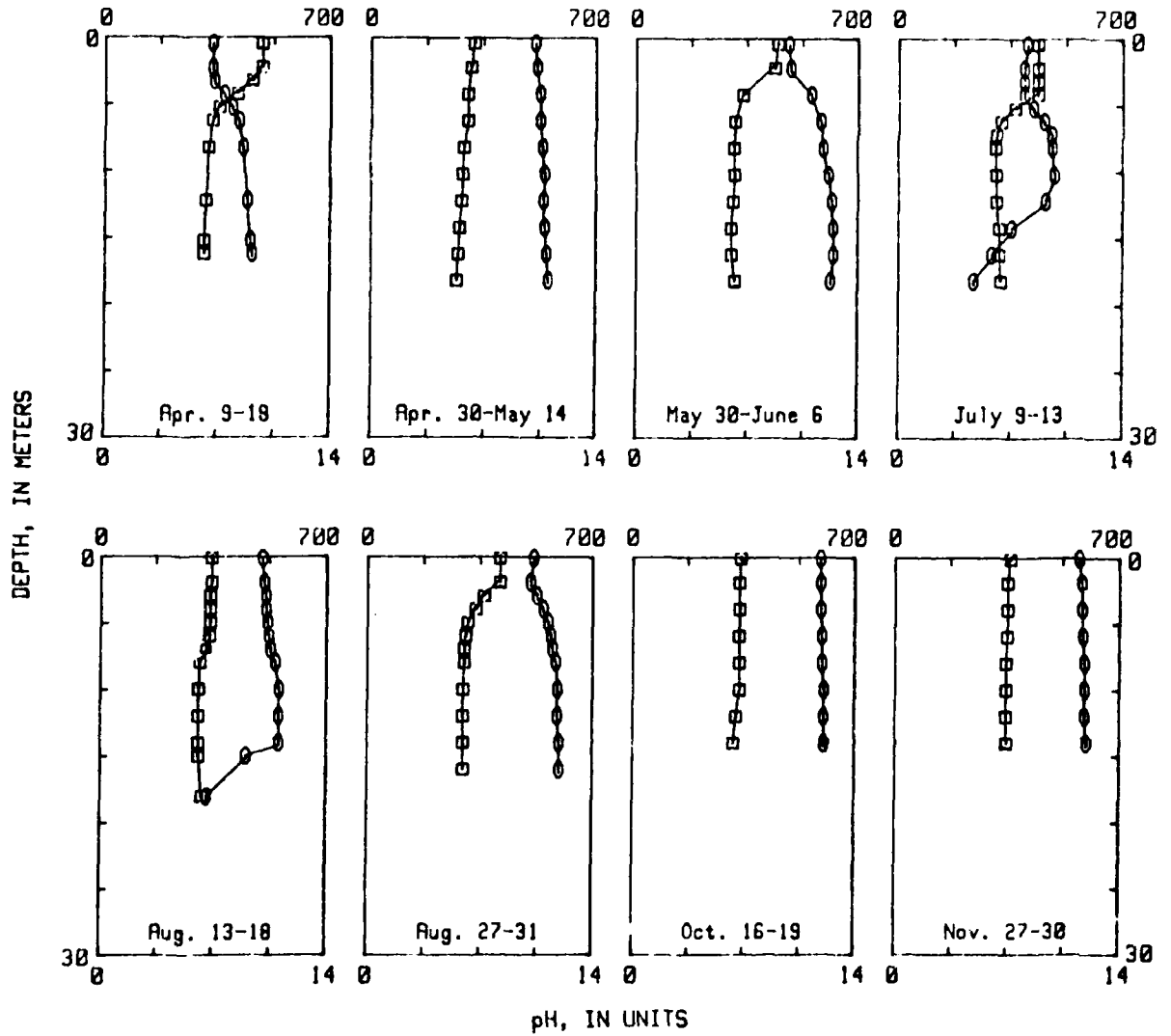
SPECIFIC CONDUCTANCE, IN MICROMHOS PER CENTIMETER

EXPLANATION

○-Specific conductance

CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1979

OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS

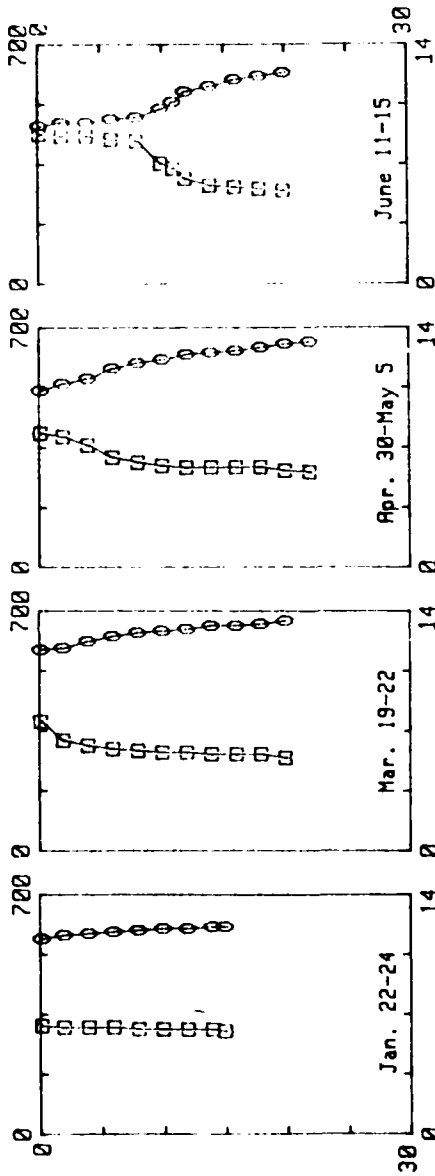


EXPLANATION

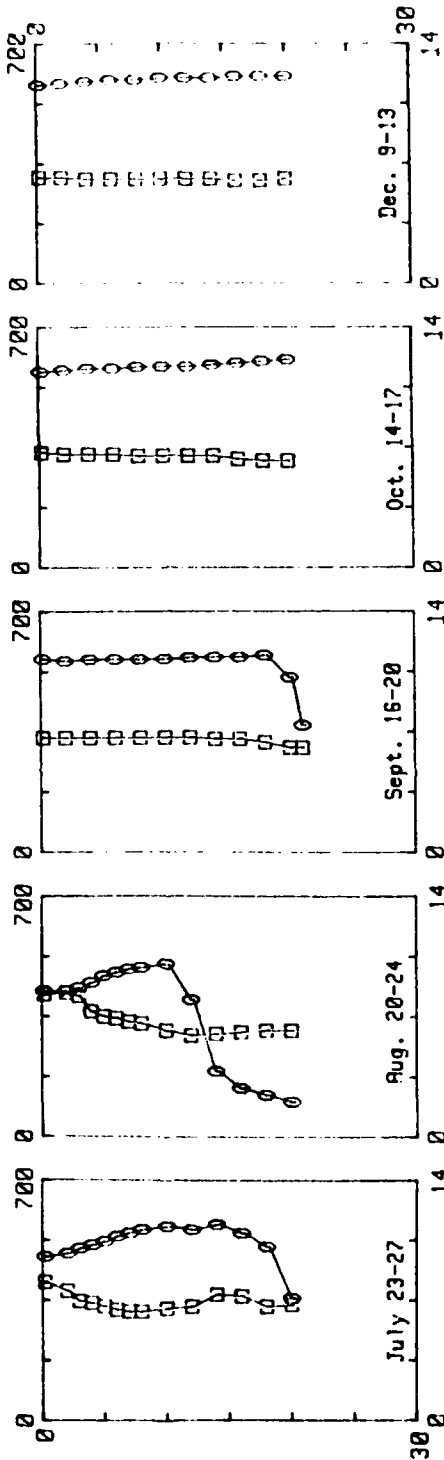
○-Oxidation-reduction potential
 □-pH

CH 03C (2339388) Chattahoochee River below coffer dam, above West Point Dam, 1978

OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS



DEPTH, IN METERS

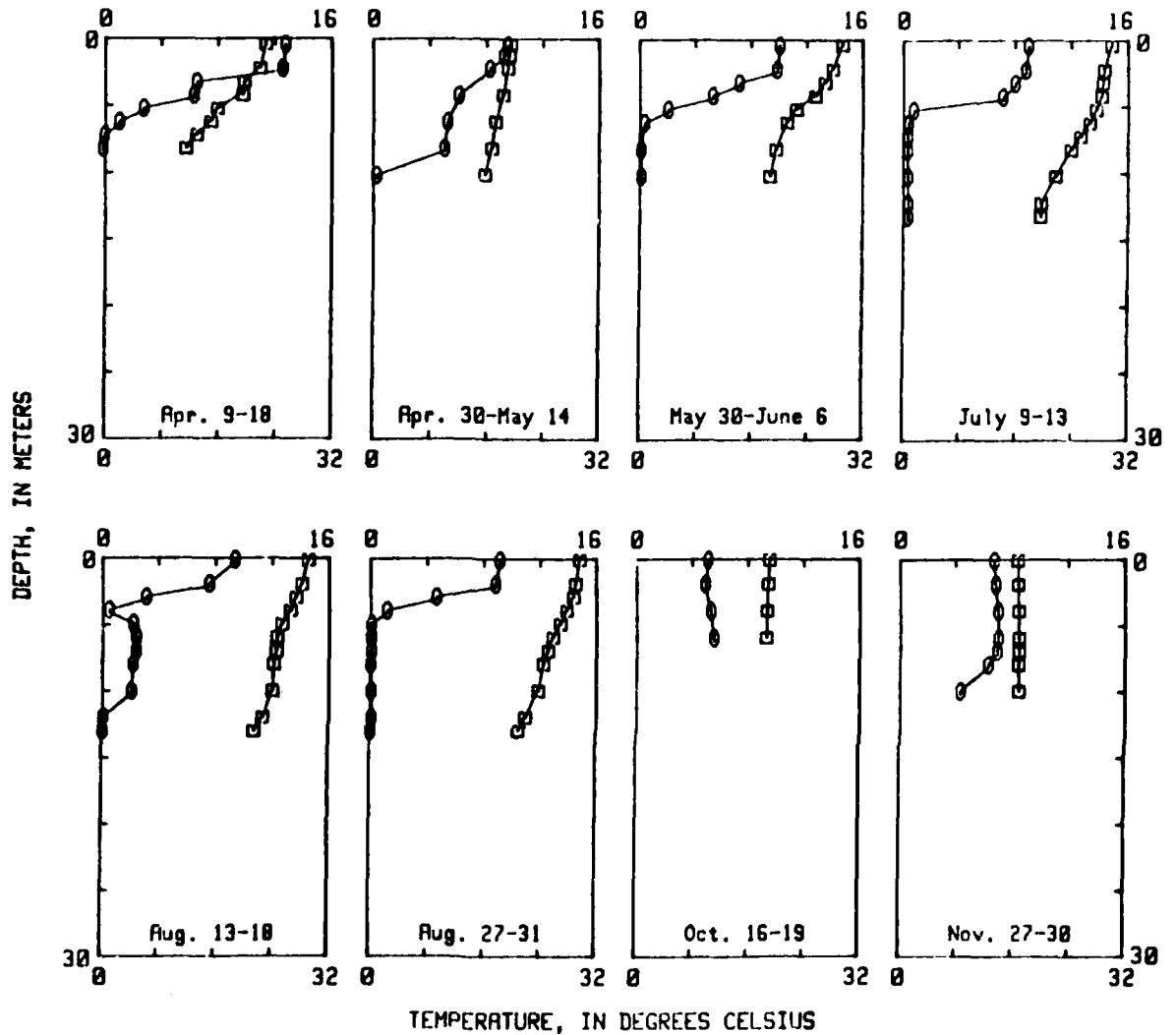


pH, IN UNITS

EXPLANATION
 ○ Oxidation-reduction potential
 □ pH

CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1979

DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER

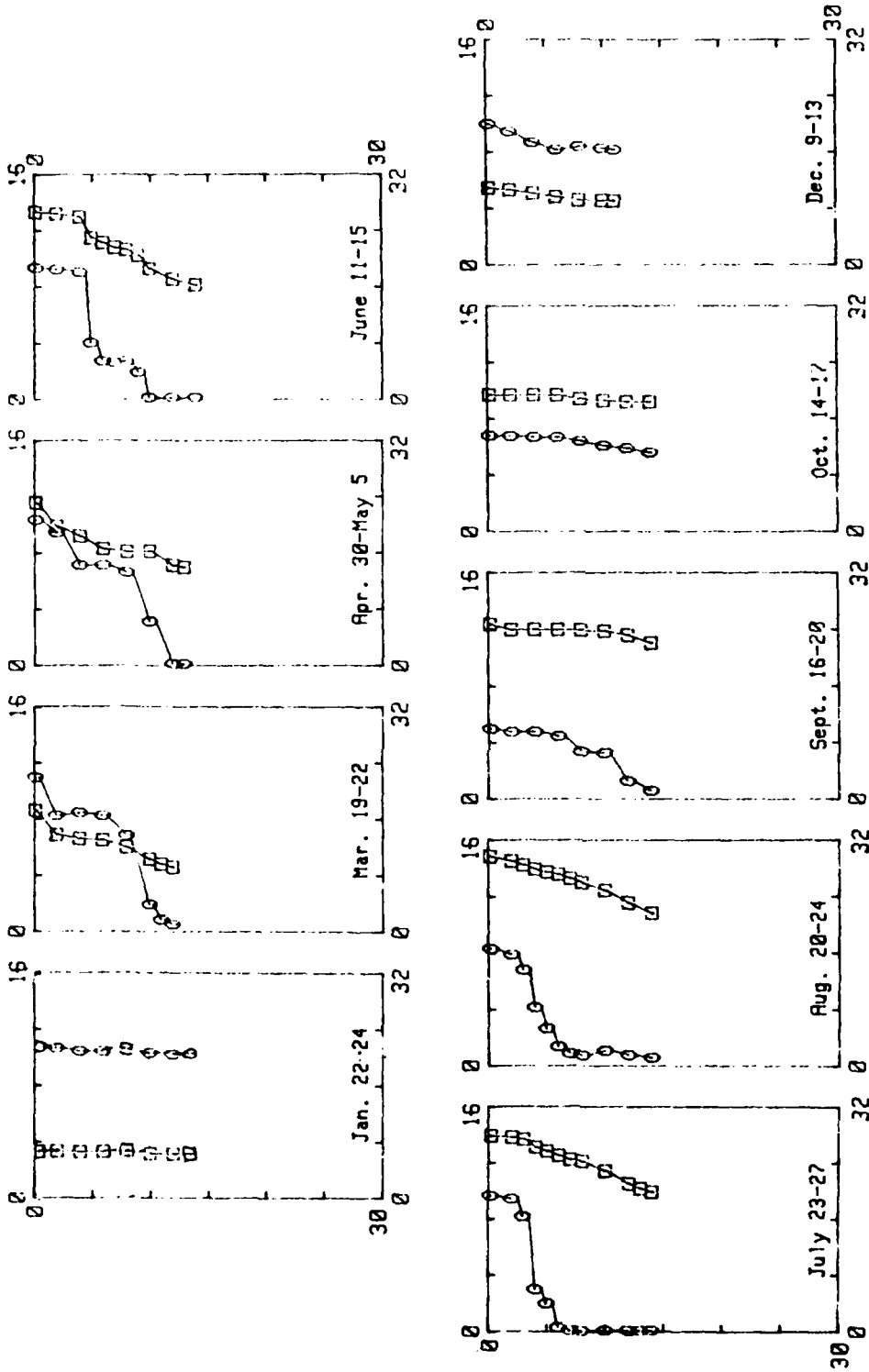


EXPLANATION

□ - Temperature ○ - Dissolved oxygen

CH-08 (02339020) Chattahoochee River at Cameron Mill Road, near LaGrange, Ga., 1978

DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER



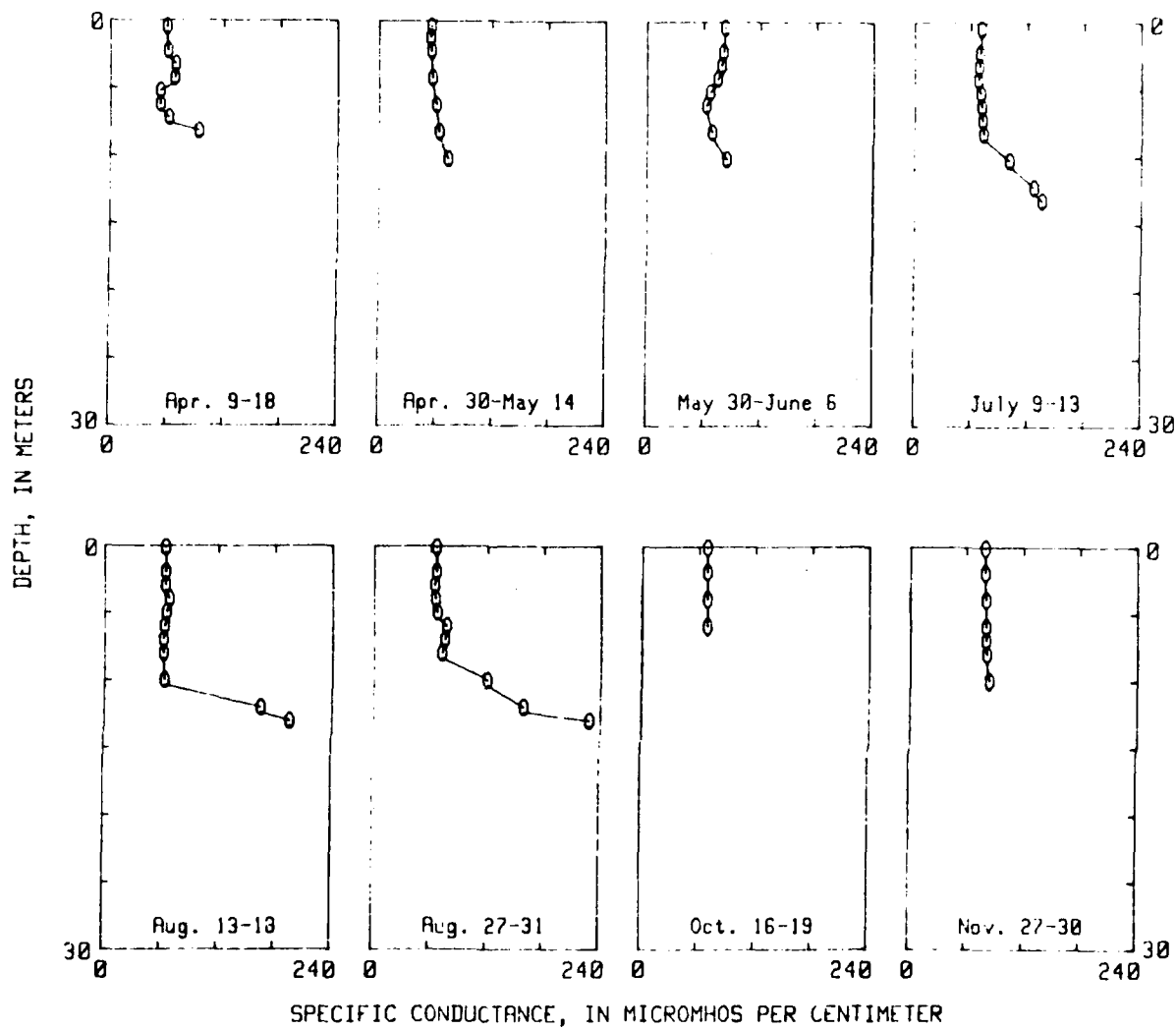
DEPTH, IN METERS

TEMPERATURE, IN DEGREES CELSIUS

EXPLANATION

- Dissolved oxygen
- Temperature

CH-08 (02339020) Chattahoochee River at Cameron Mill Road, near LaGrange, Ga., 1979

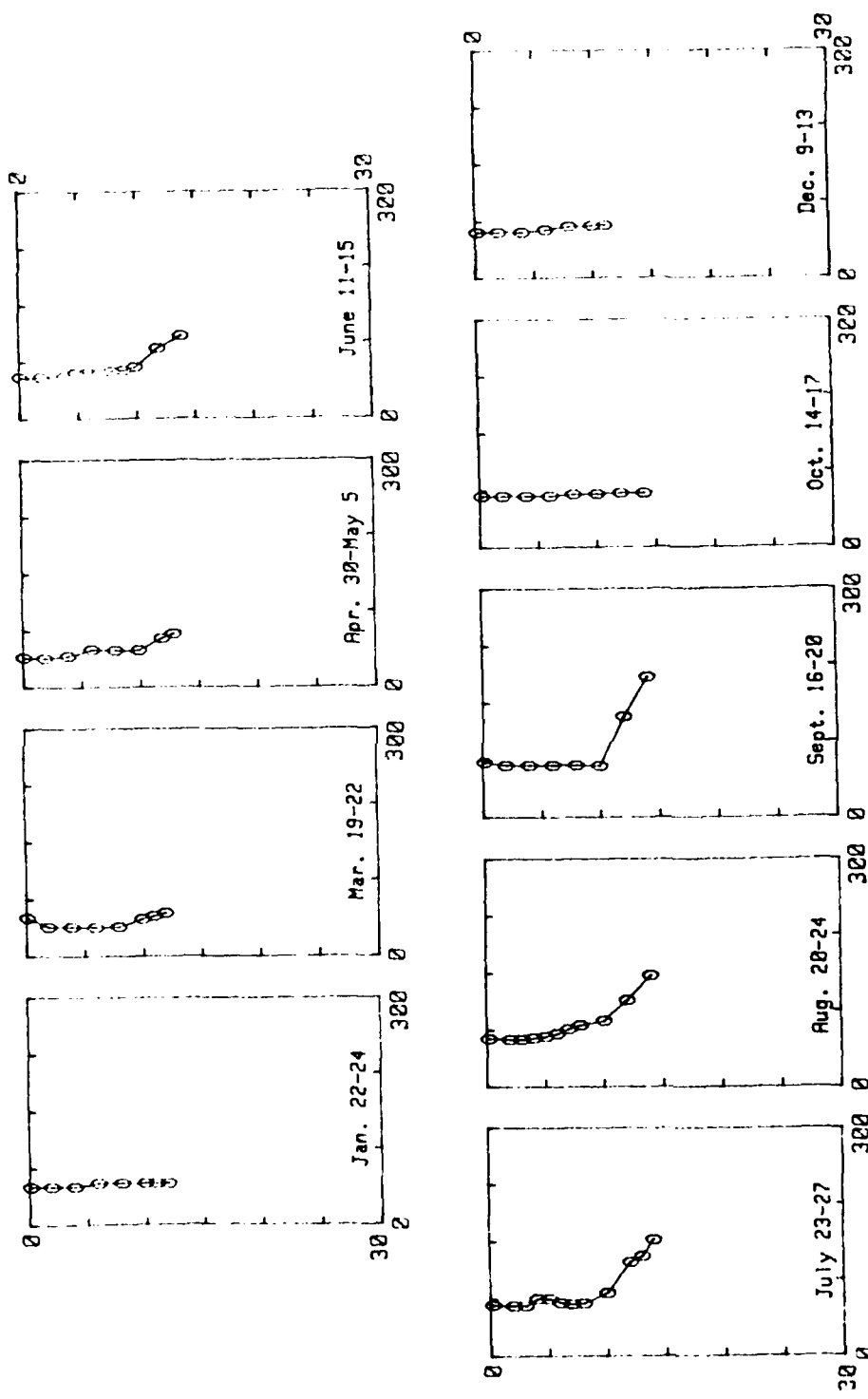


EXPLANATION

○ Specific conductance

CH 08 (02339020) Chattahoochee River at Cameron Mill Road, near LaGrange, Ga., 1978

DEPTH, IN METERS



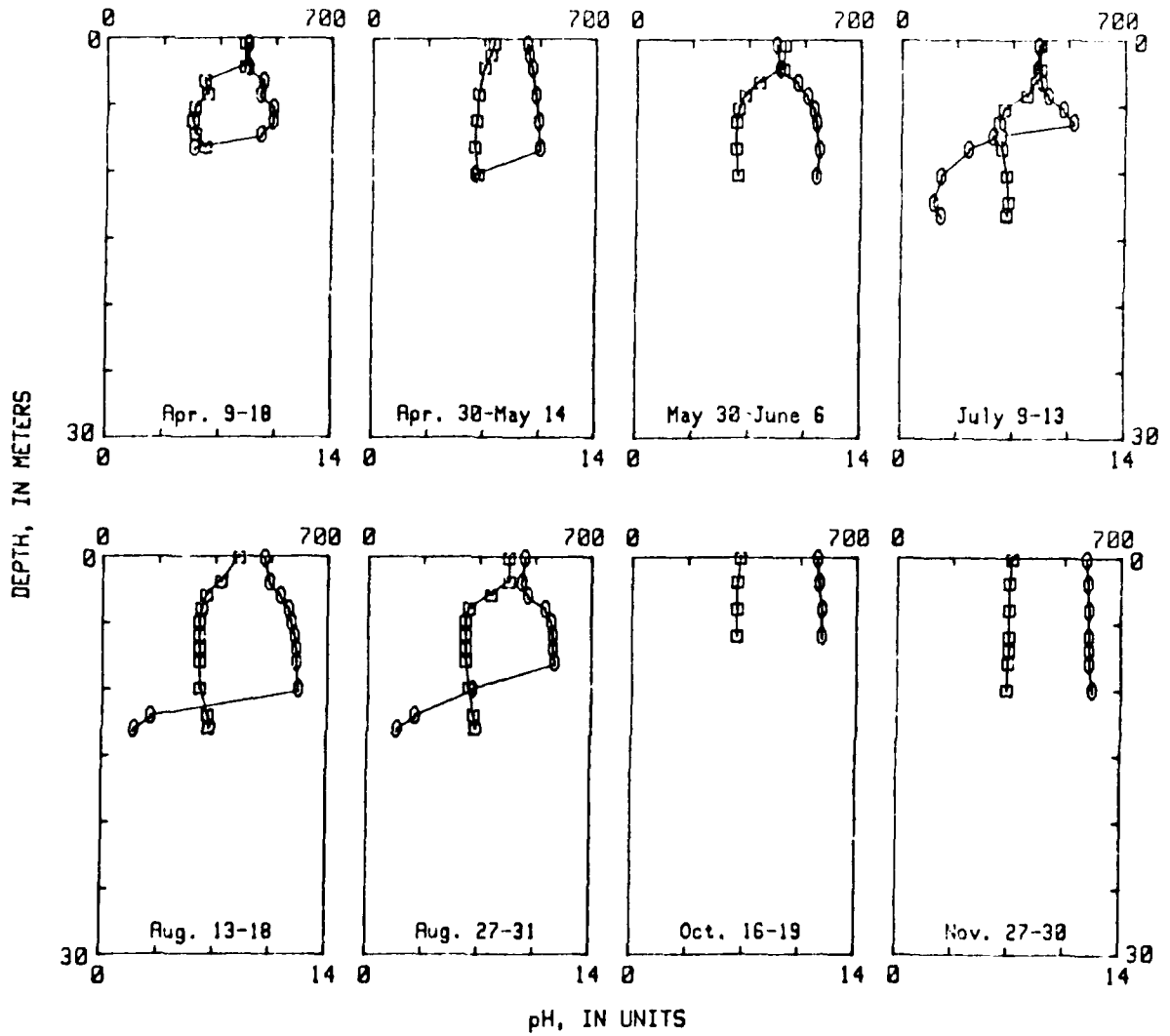
SPECIFIC CONDUCTANCE, IN MICROMHOS PER CENTIMETER

EXPLANATION

○ Specific conductance

CH-08 (02339020) Chattahoochee River at Cameron Mill Road, near LaGrange, Ga., 1979

OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS

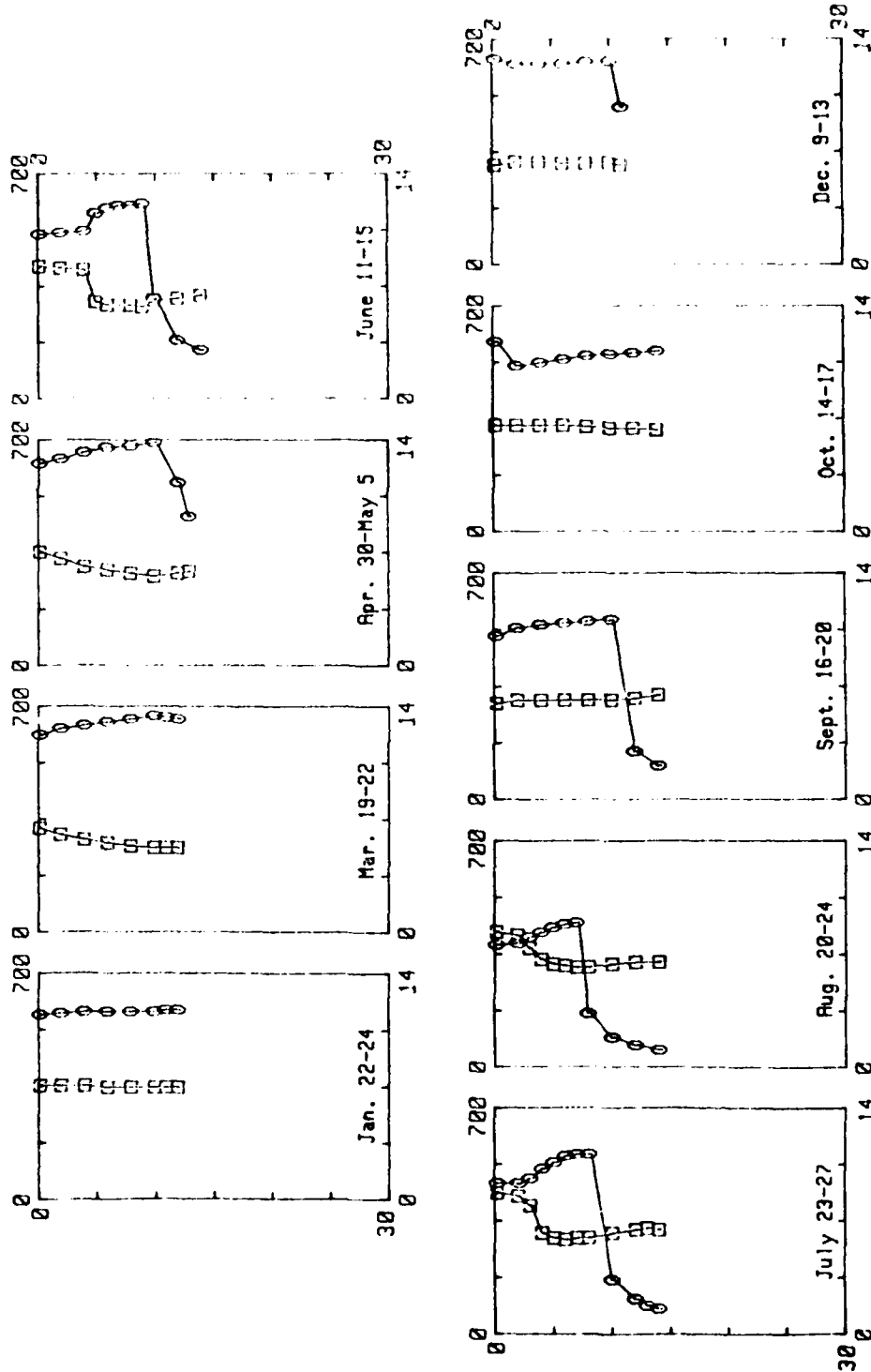


EXPLANATION

- Oxidation-reduction potential
- pH

CH 08 (0339020) Chattahoochee River at Cameron Mill Road, near LaGrange, Ga., 1978

OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS



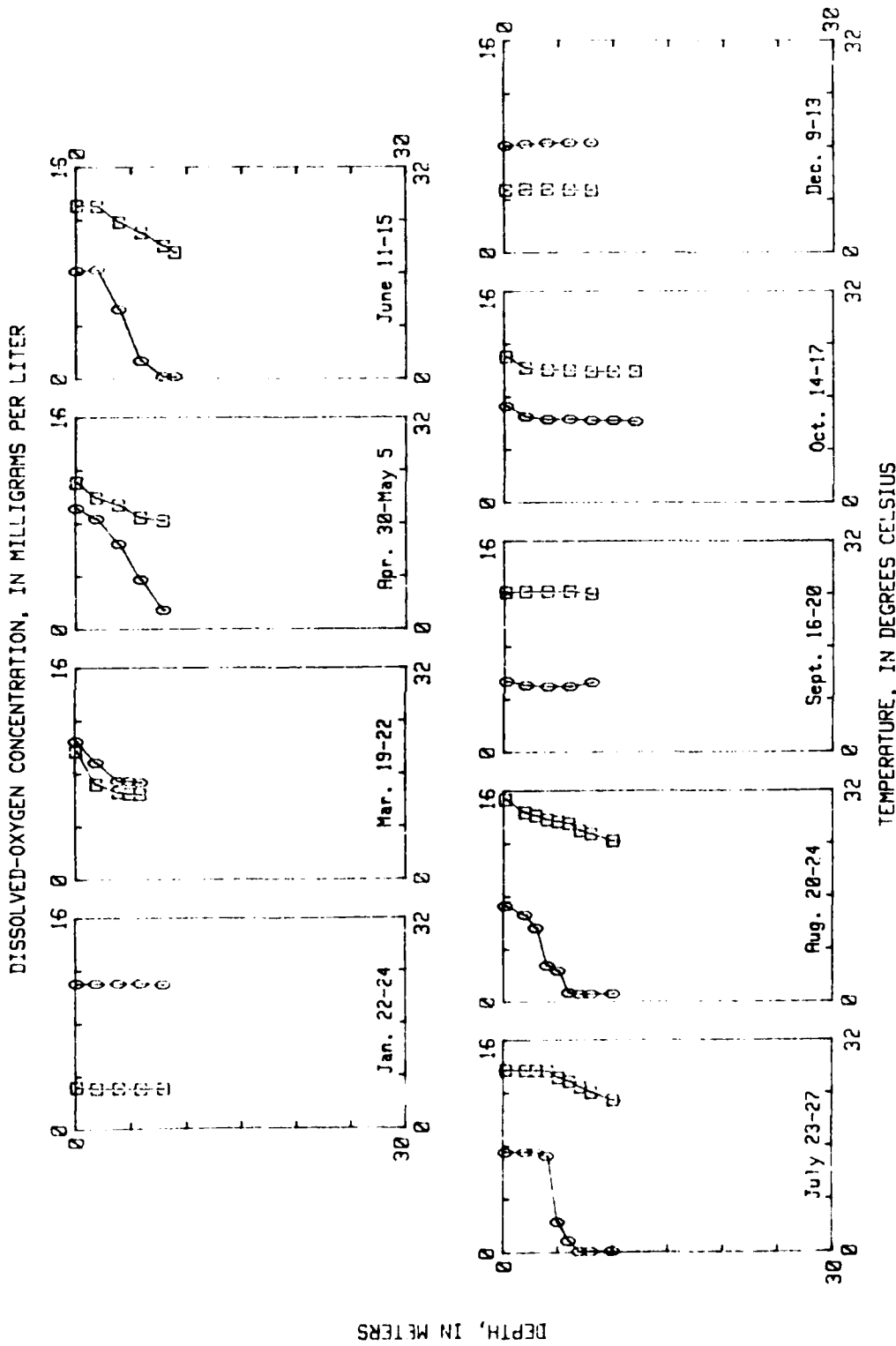
DEPTH, IN METERS

pH, IN UNITS

EXPLANATION

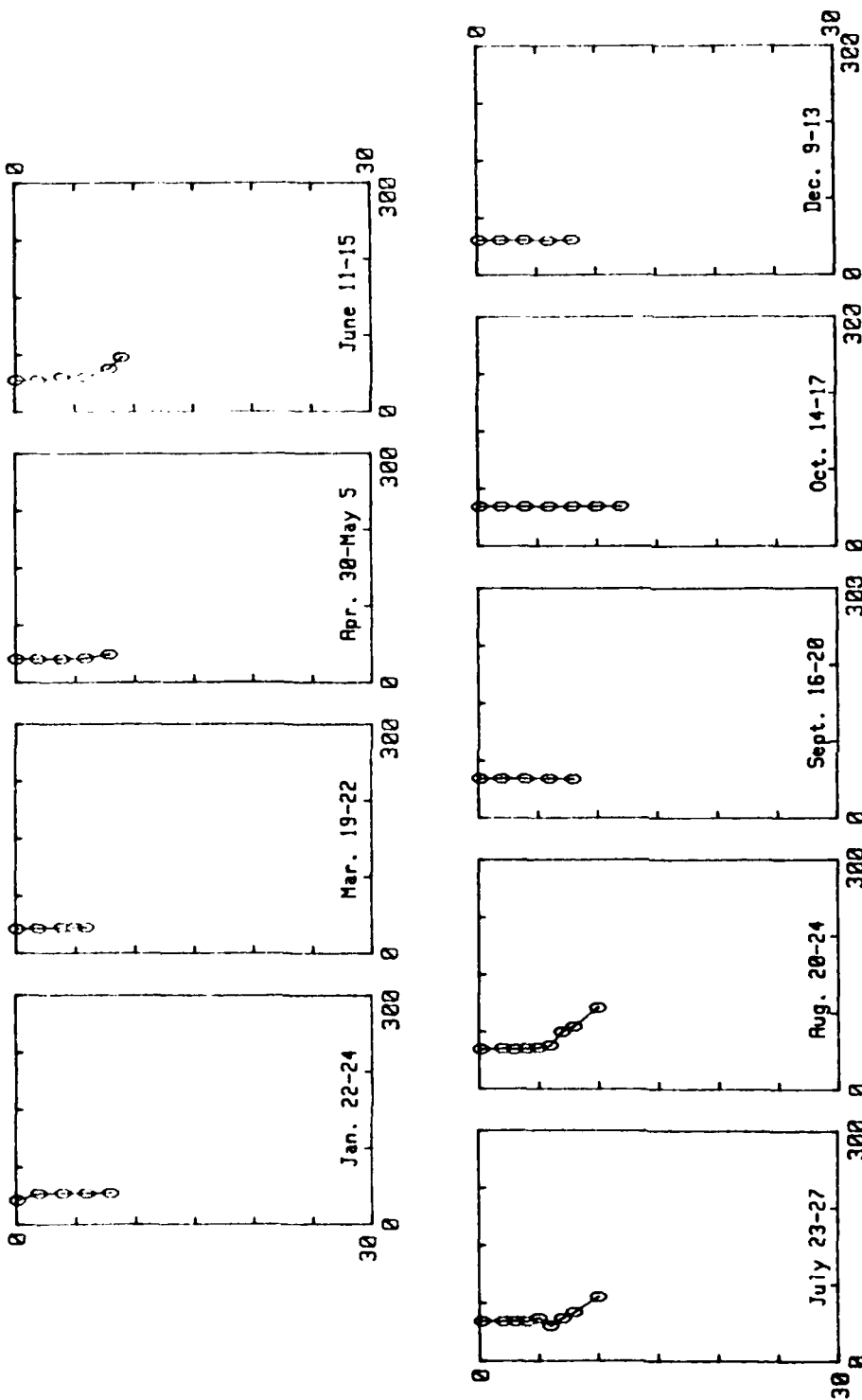
○-Oxidation-reduction potential
 □-pH

CH-08 (02339020) Chattahoochee River at Cameron Mill Road, near LaGrange, Ga., 1979



CH-04 (02339350) Wehadkee Creek at State Highway 244, near Abbottsford, Ga., 1979

DEPTH, IN METERS

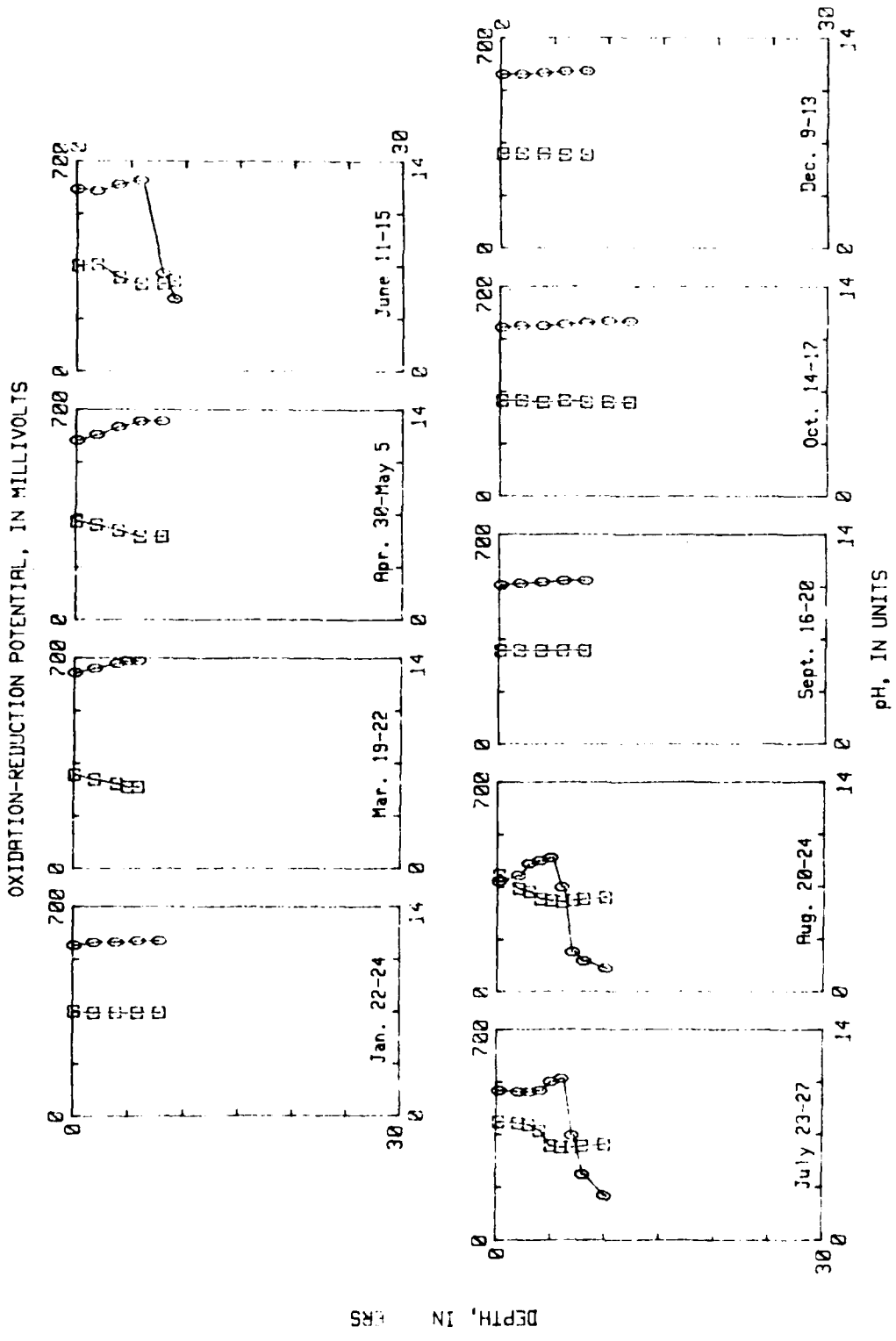


SPECIFIC CONDUCTANCE, IN MICROMHOS PER CENTIMETER

EXPLANATION

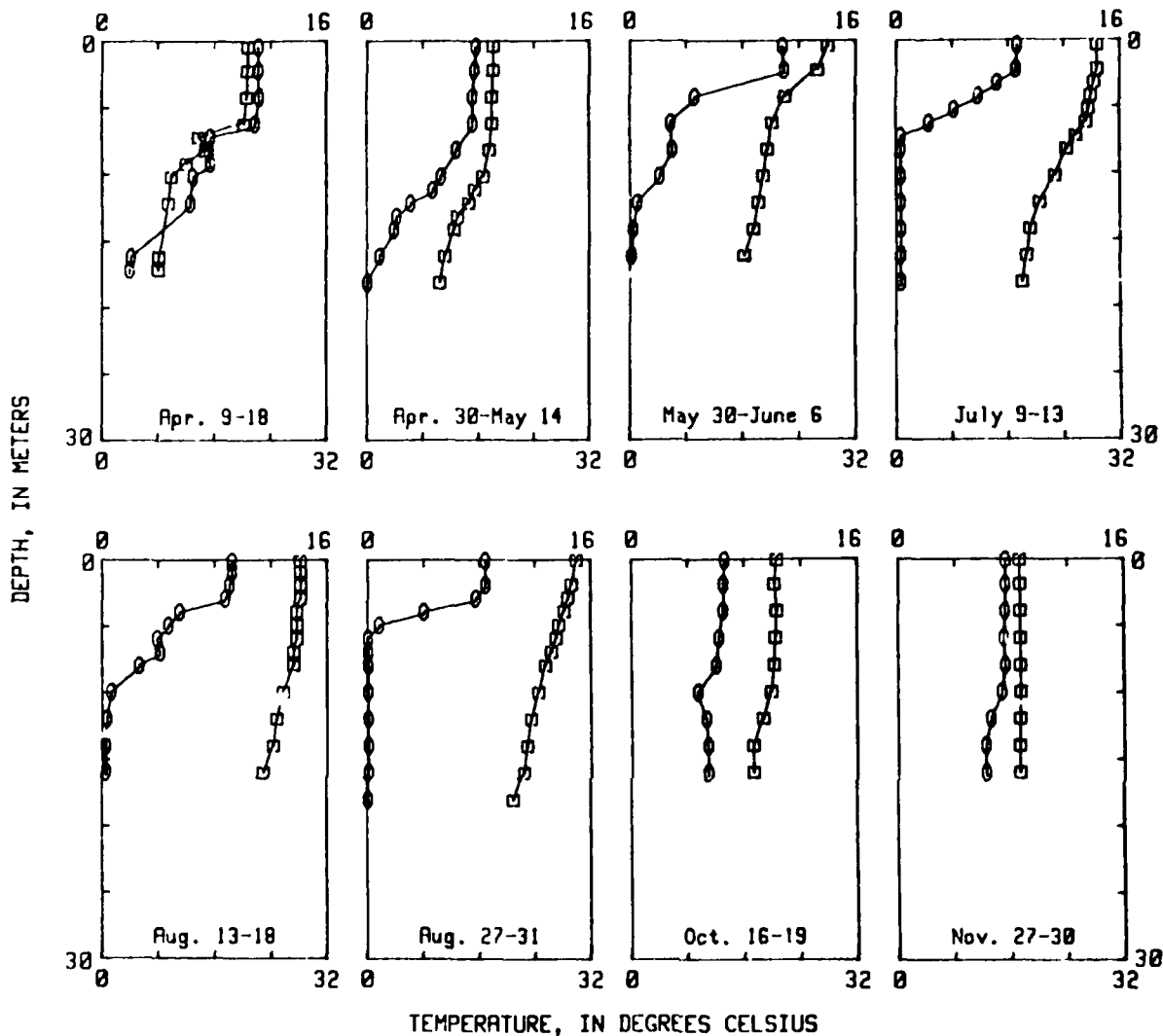
0-Specific conductance

CH-04 (02339350) Wehadkee Creek at State Highway 244, near Abbottsford, Ga., 1979



CH-04 (02339350) Mehadkee Creek at State Highway 244, near Abbottsford, Ga., 1979

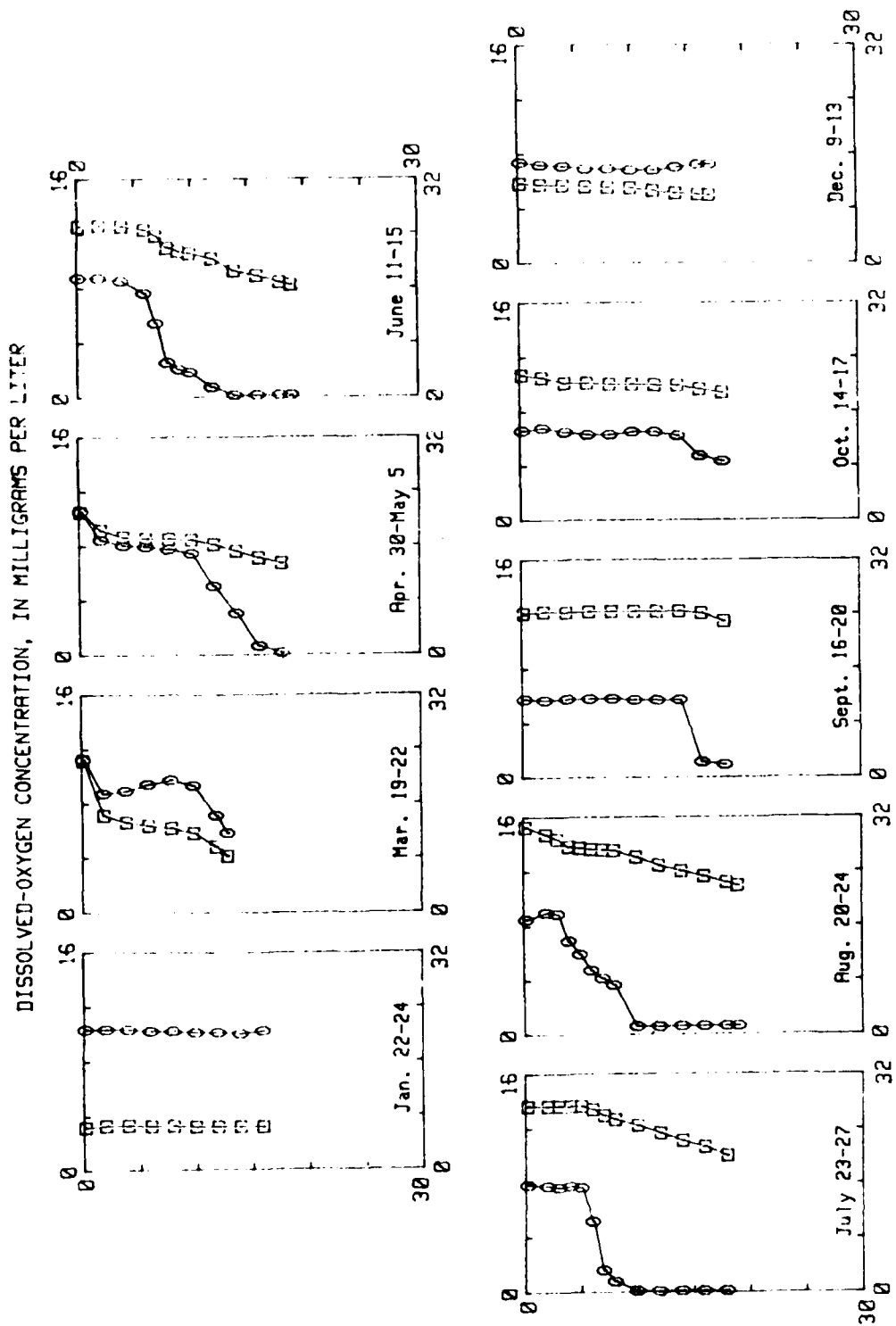
DISSOLVED-OXYGEN CONCENTRATION, IN MILLIGRAMS PER LITER



EXPLANATION

[] - Temperature O - Dissolved oxygen

CH-13 (02339362) Webadkee Creek at State Highway 238, near
Abbotsford, Ga., 1978



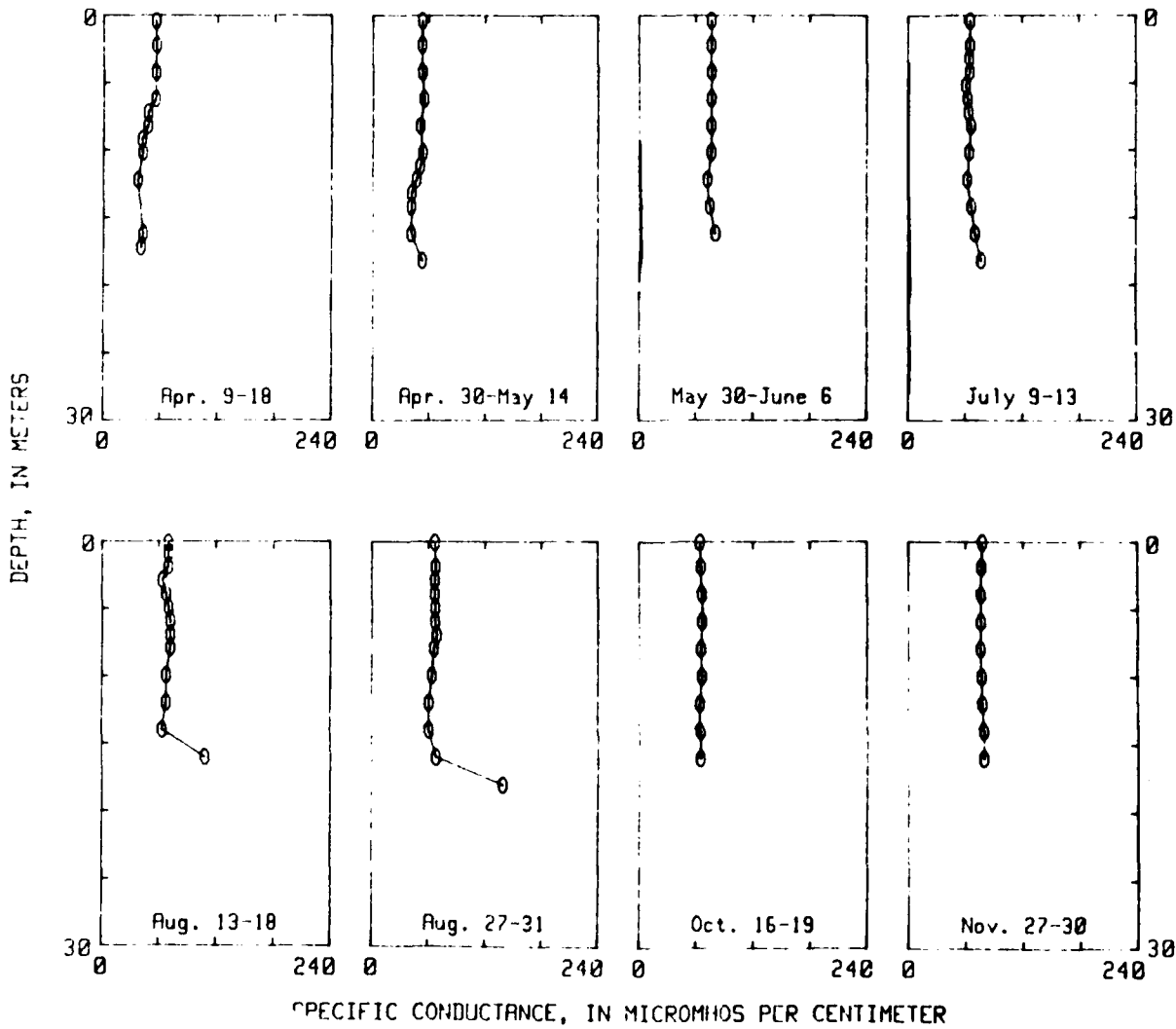
DEPTH, IN METERS

TEMPERATURE, IN DEGREES CELSIUS

EXPLANATION

- Dissolved oxygen
- Temperature

CH-13 (02339362) Mehadkee Creek at State Highway 238, near Abbottsford, Ga., 1979

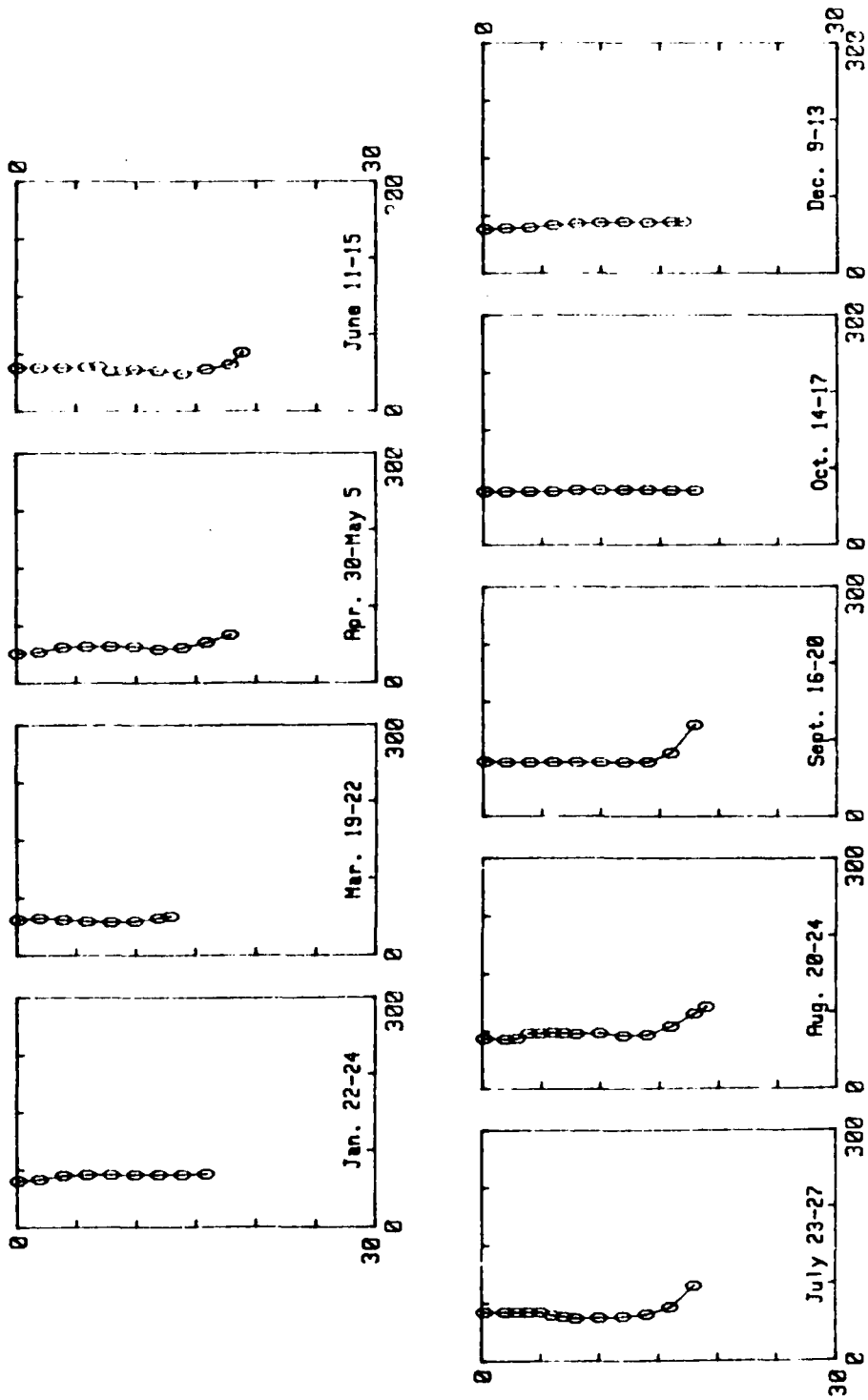


EXPLANATION

○ Specific conductance

CH-13 (02339362) Wehadkee Creek at State Highway 238, near
Abbottsford, Ga., 1978

DEPTH, IN METERS

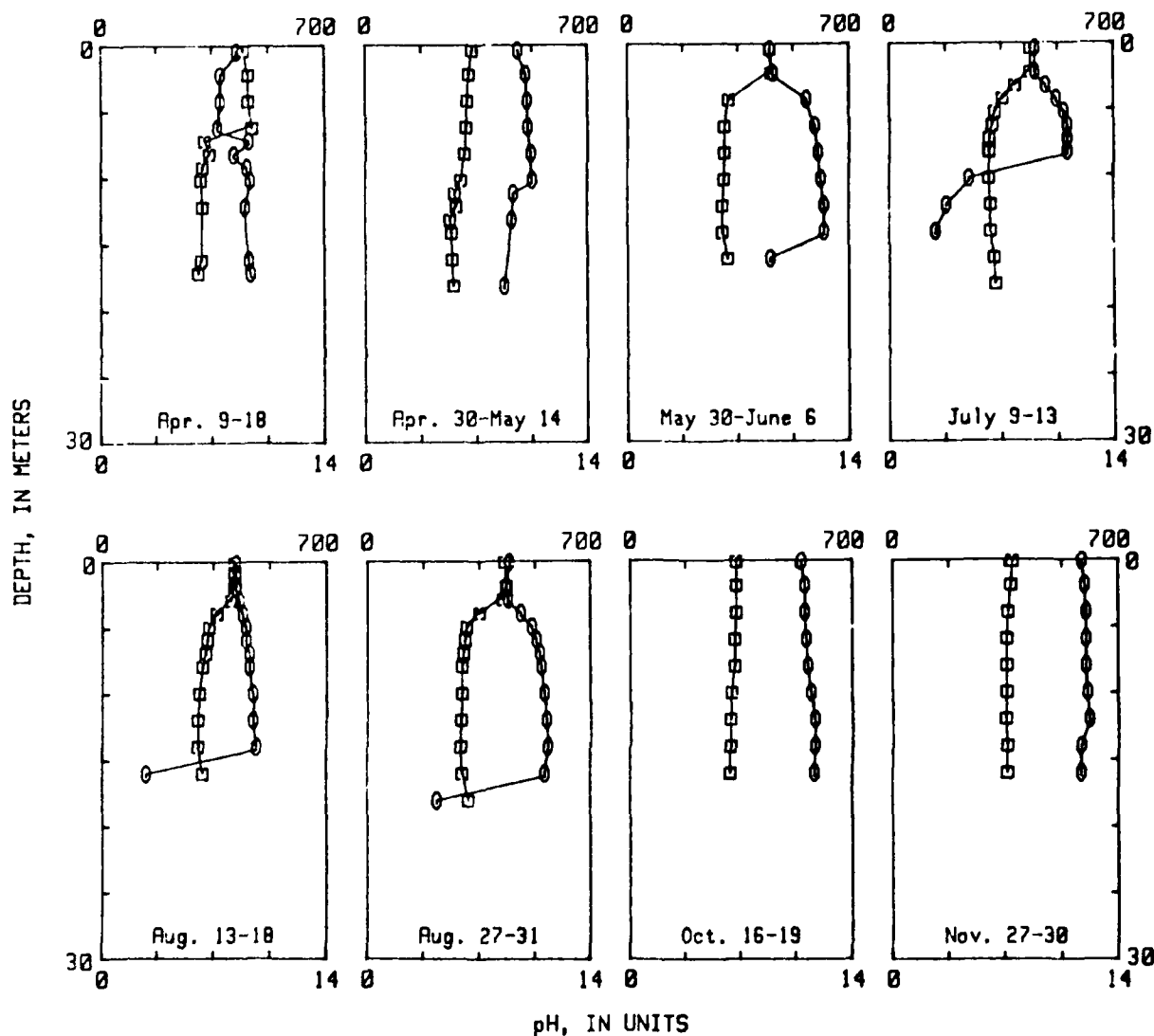


SPECIFIC CONDUCTANCE, IN MICROMHOS PER CENTIMETER

EXPLANATION

○ Specific conductance

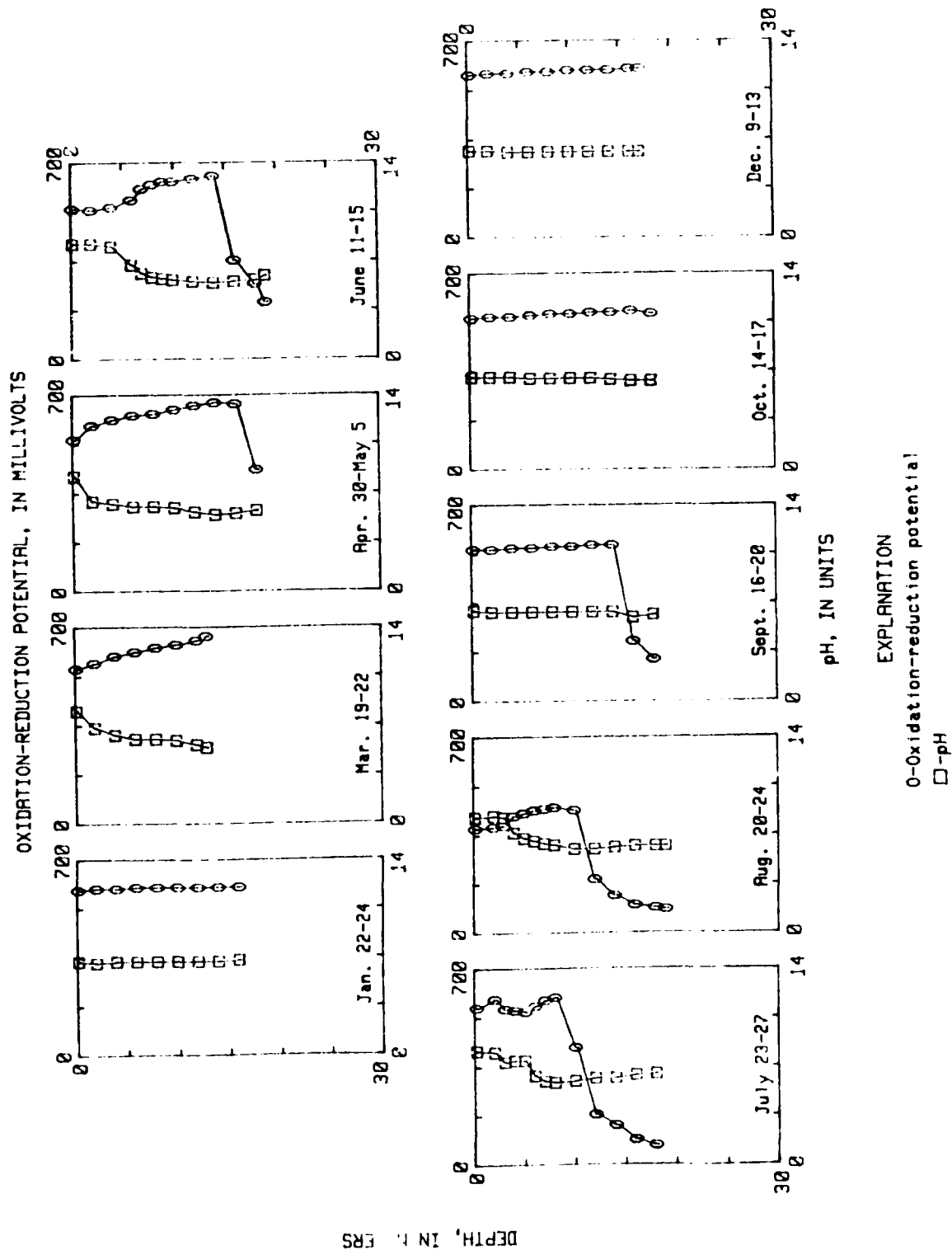
OXIDATION-REDUCTION POTENTIAL, IN MILLIVOLTS



EXPLANATION

○-Oxidation-reduction potential
 □-pH

CH-13 (02339362) Wehadkee Creek at State Highway 238, near
 Abbottsford, Ga., 1978



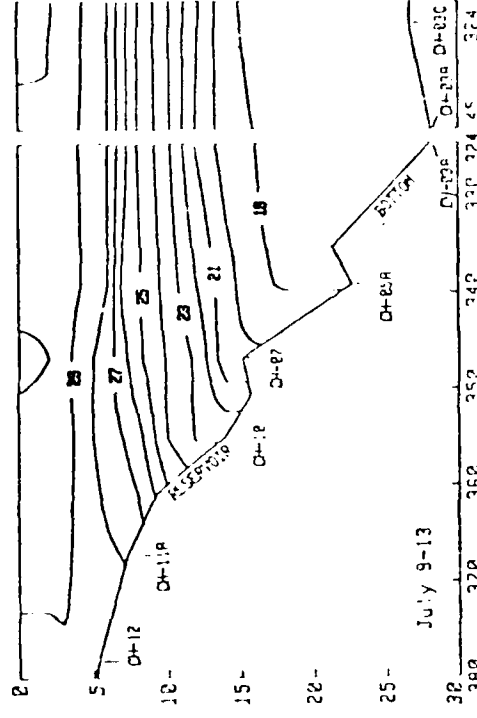
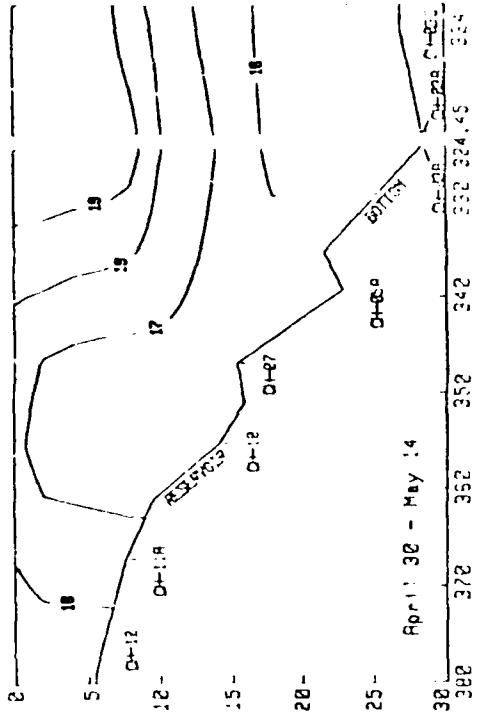
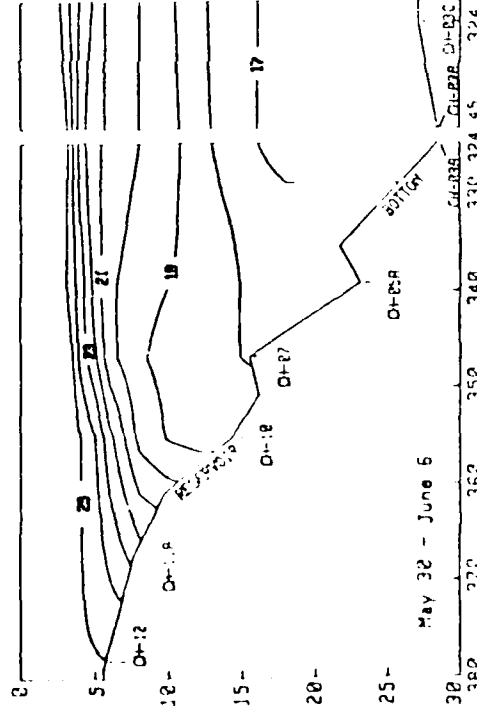
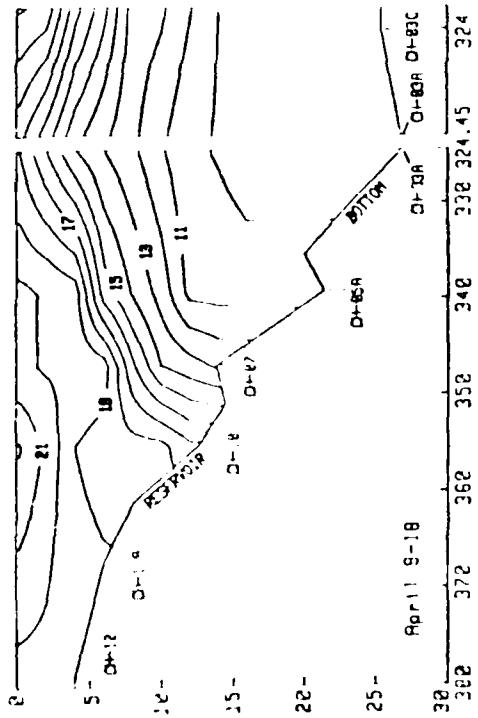
CH-13 (02339362) Wehadkee Creek at State Highway 238, near Abbottsford, Ga., 1979

APPENDIX C-3

Isopleths showing longitudinal variations in on-site physical and chemical parameters in West Point Reservoir, April 1978-December 1979

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DEPTH, IN METERS



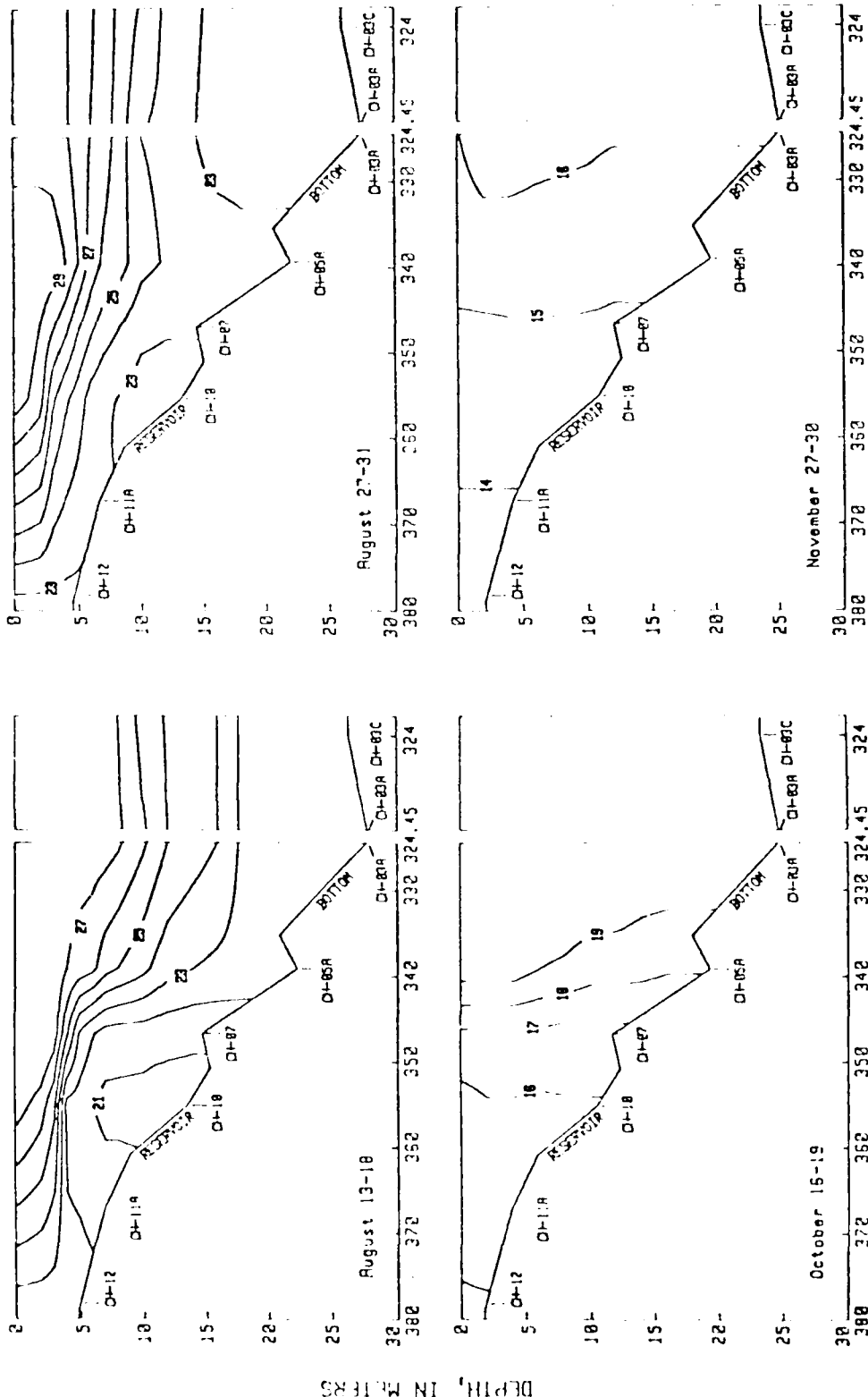
DISTANCE ABOVE THE MOUTH OF THE CHATTahoochee RIVER, IN KILOMETERS

EXPLANATION

-20- LINE OF EQUAL WATER TEMPERATURE - Interval 1 degree Celsius

CH-05A WATER SAMPLING STATION

Water temperature, April-July 1979

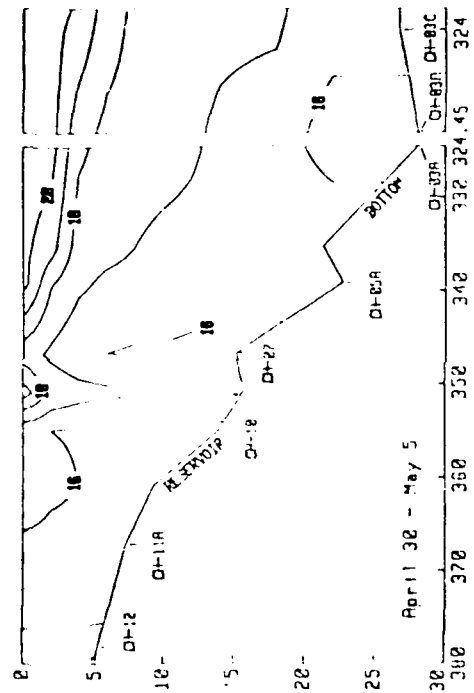
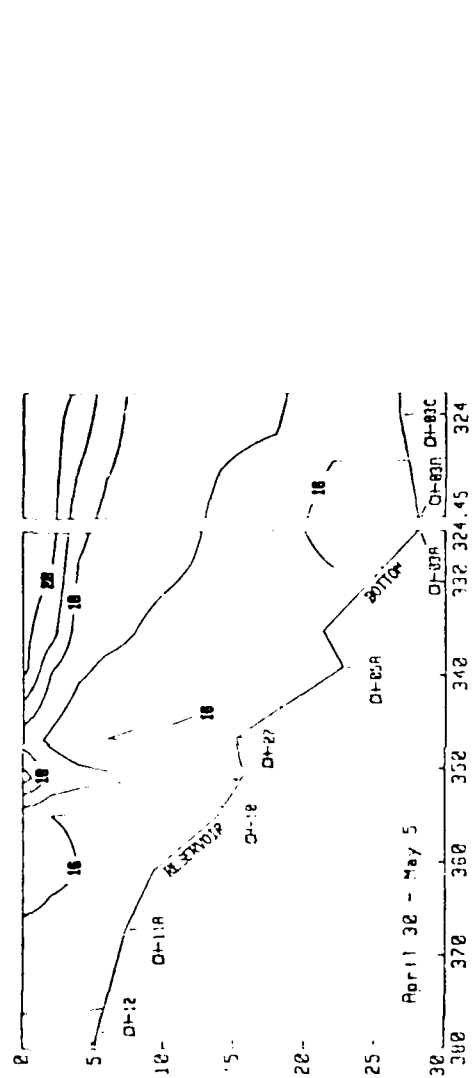
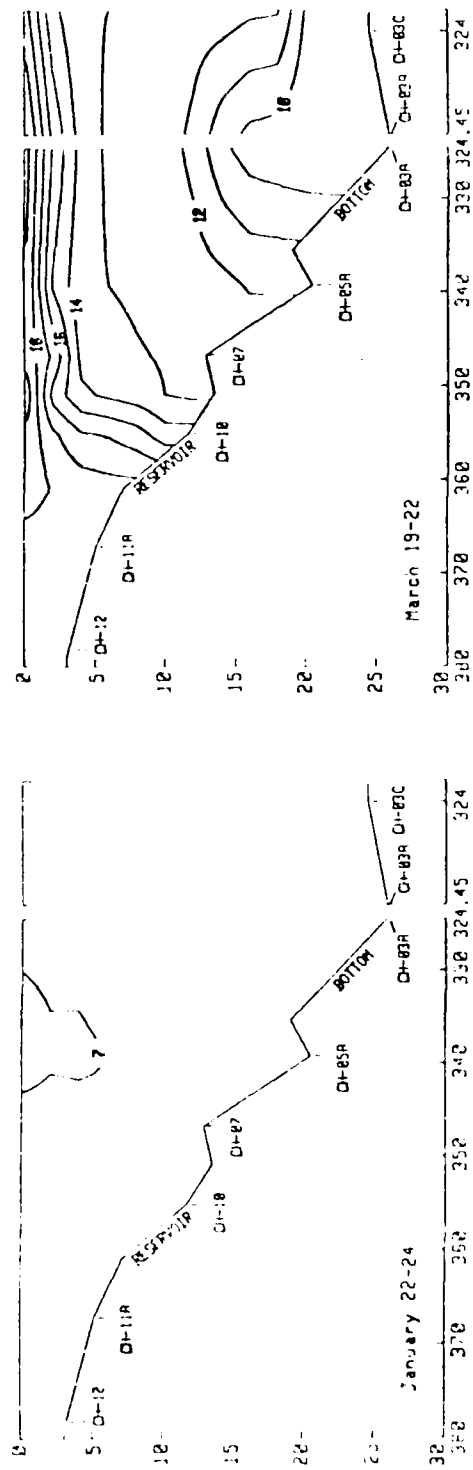


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 21- LINE OF EQUAL WATER TEMPERATURE - Interval 1 degree Celsius
- CH-05A WATER SAMPLING STATION

Water temperature, August-November 1978



DISTANCE ABOVE THE MOUTH OF THE CHIRIQUO RIVER IN KILOMETERS

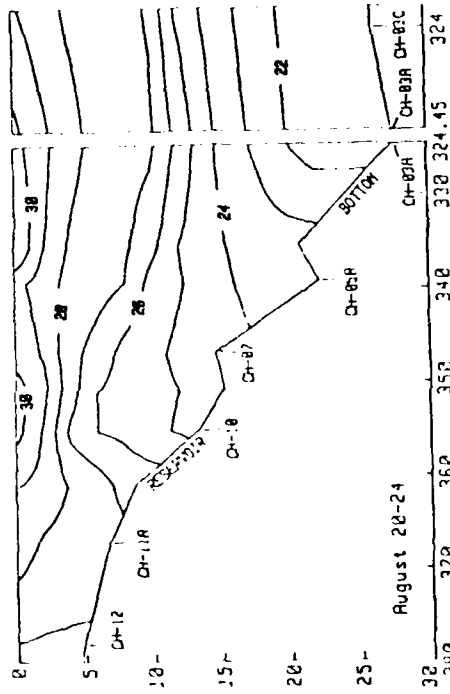
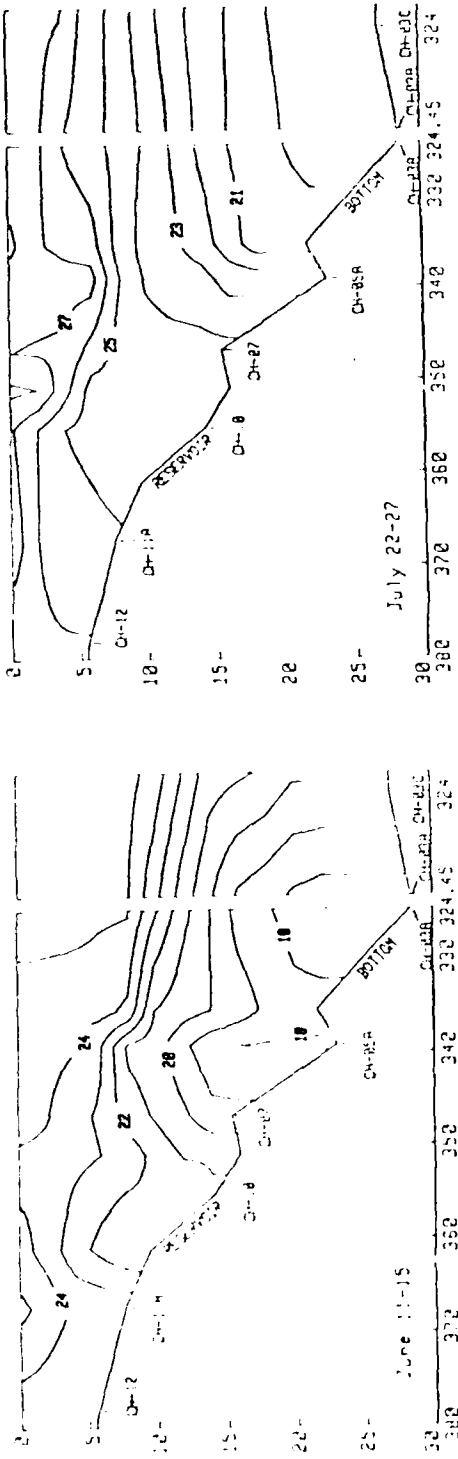
EXPLANATION

--18-- LINE OF EQUAL WATER TEMPERATURE - Interval 1 degree Celsius

CH-25R WATER SAMPLING STATION

Water temperature, January-May 1979

DEPTH, IN METERS

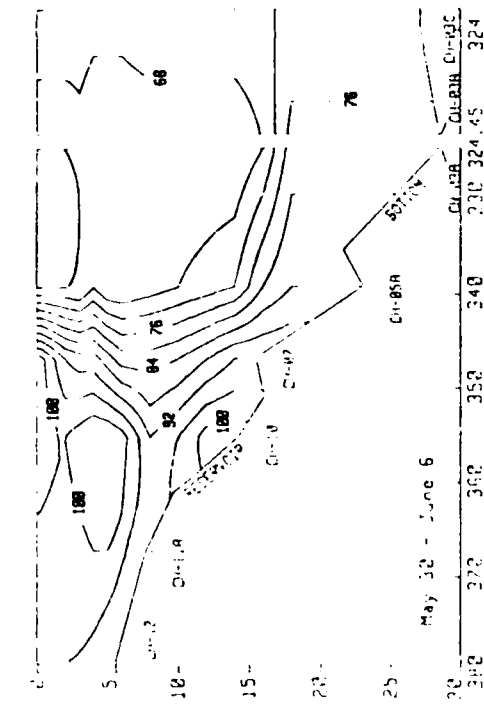
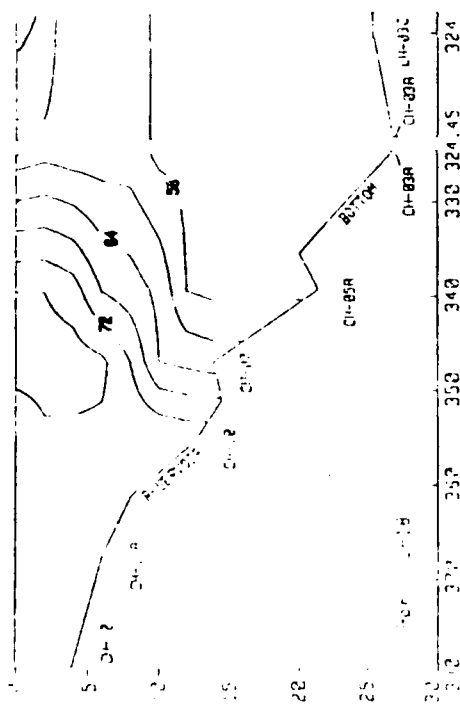
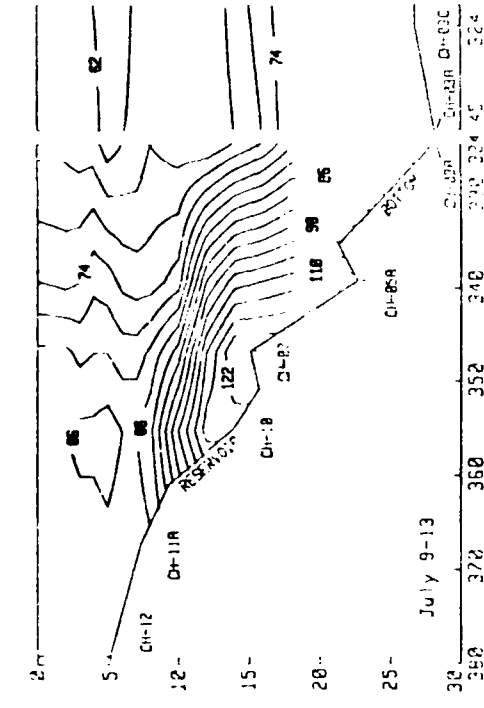
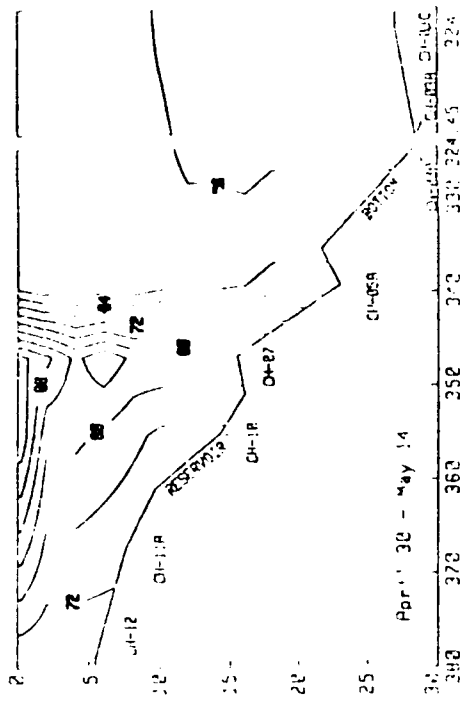


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 24-- LINE OF EQUAL WATER TEMPERATURE - Interval 1 degree Celsius
- CH-859 WATER SAMPLING STATION

Water temperature, June-August 1979

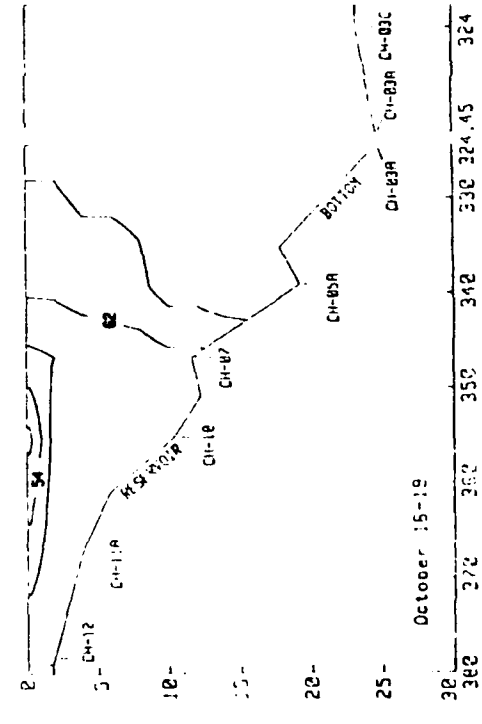
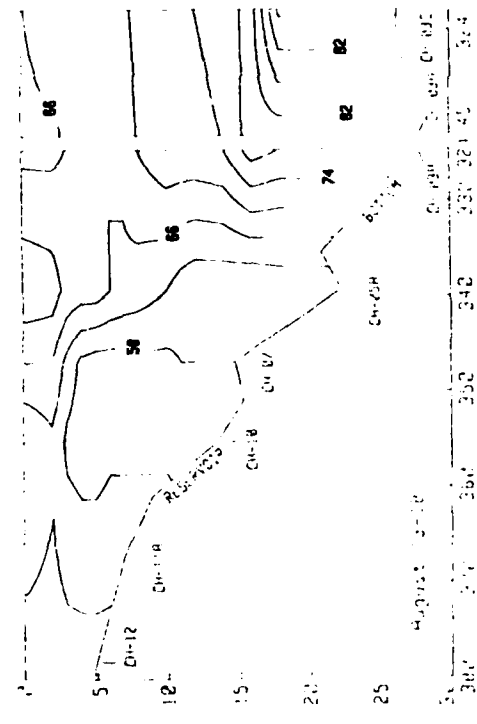
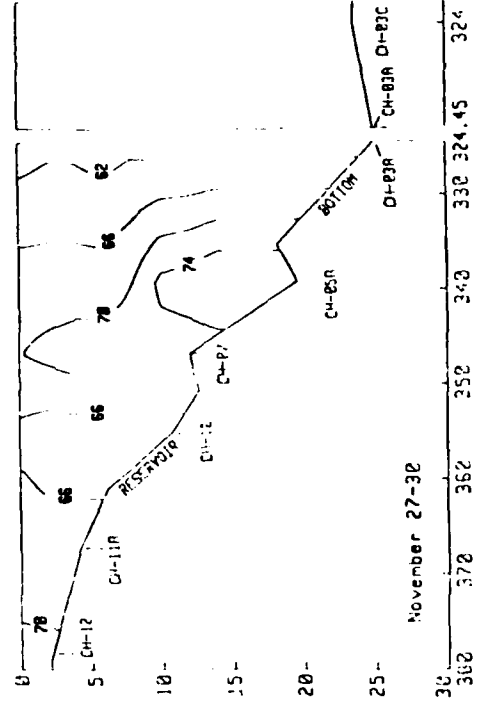
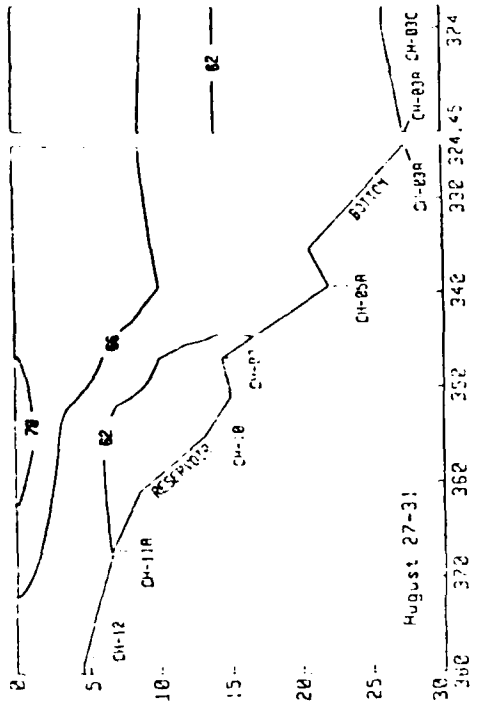


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 55--- LINE OF EQUAL SPECIFIC CONDUCTANCE - Interval 4 micromhos per centimeter
- CH-25A WATER SAMPLING STATION

Specific conductance, April-July 1978

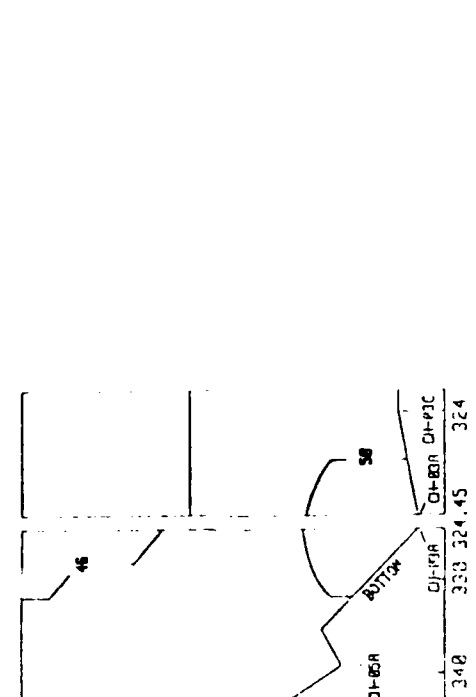
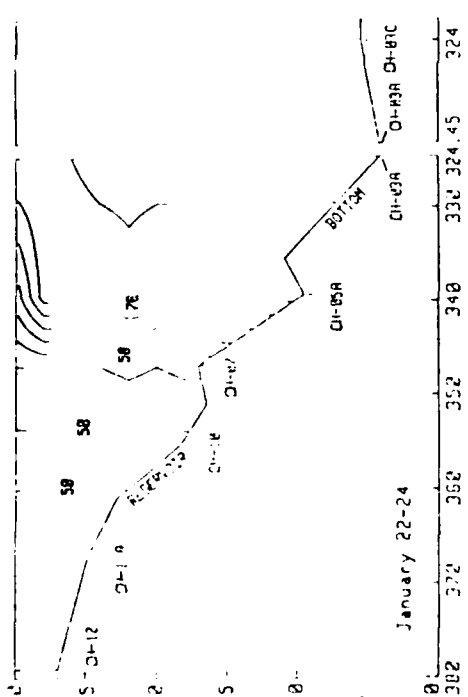
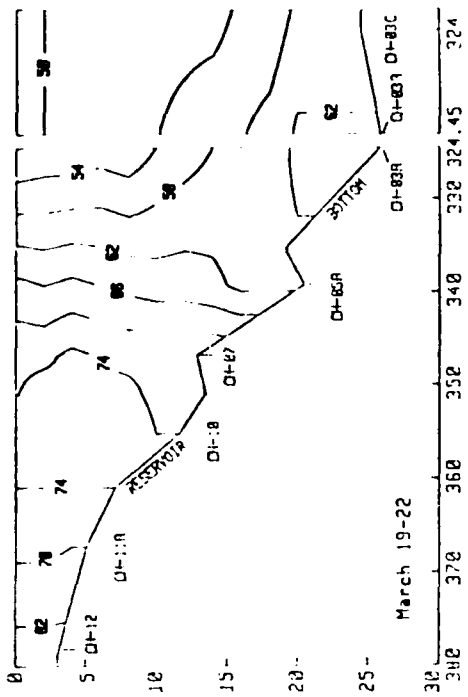


DISTANCE ABOVE THE MOUTH OF THE CHARITAPHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 58 - LINE OF FORMAL SPECIFIC CONDUCTANCE - Interval 4 micromhos per centimeter
- CH-05A WATER SAMPLING STATION

Specific conductance, August-November 1978

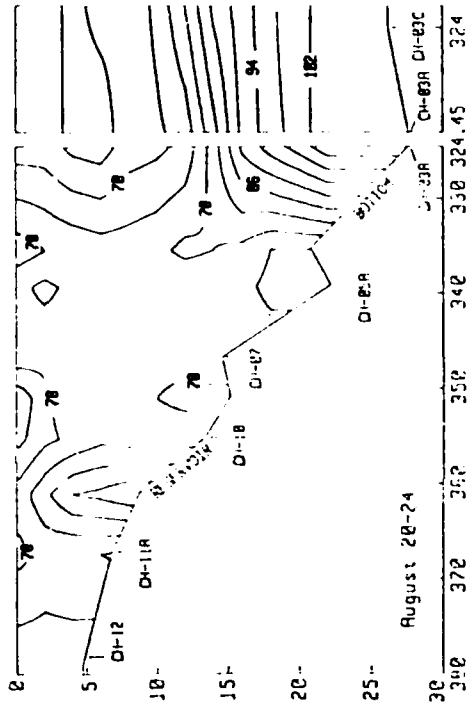
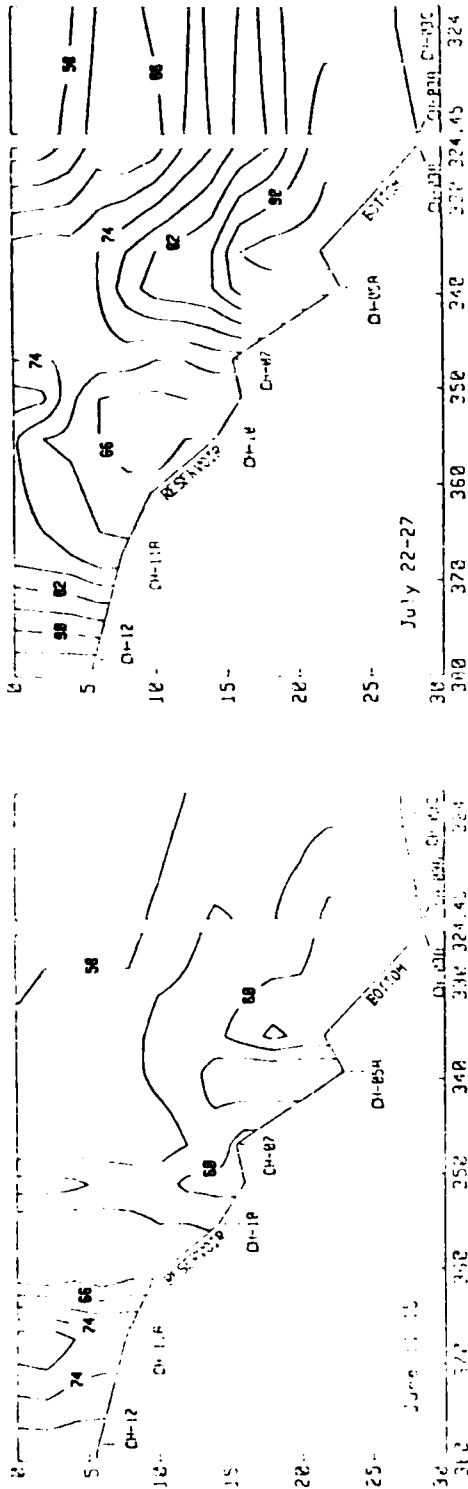


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 50-- LINE OF EQUAL SPECIFIC CONDUCTANCE - Interval 4 micromhos per centimeter
- CH-05A WATER SAMPLING STATION

Specific conductance, January-May 1979



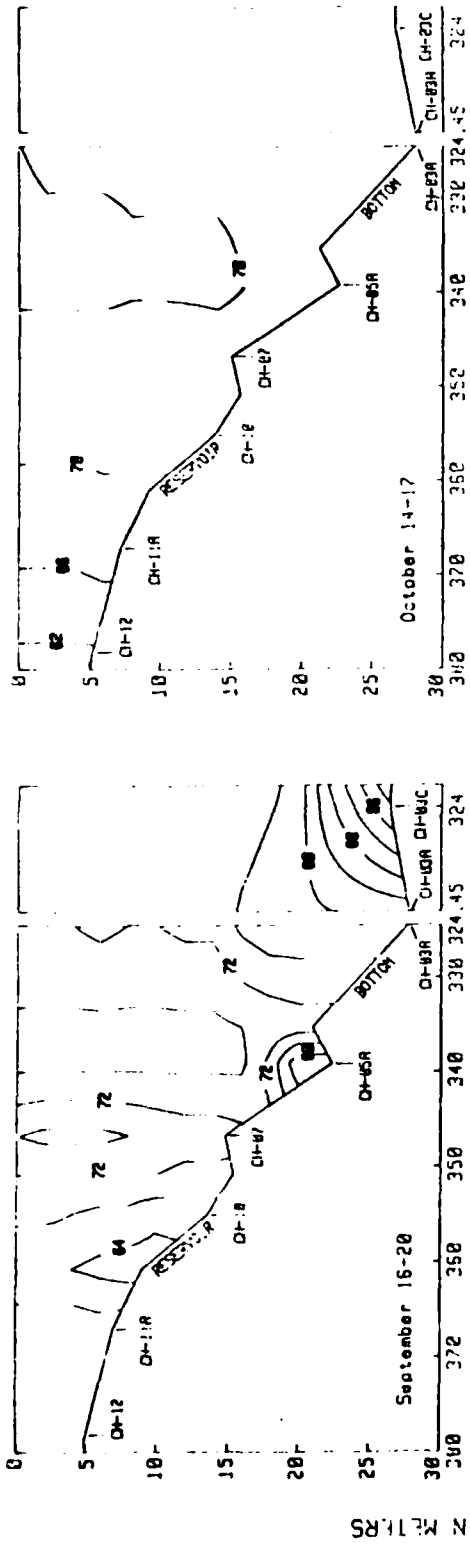
DISTANCE ABOVE THE MOUTH OF THE CATAPHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

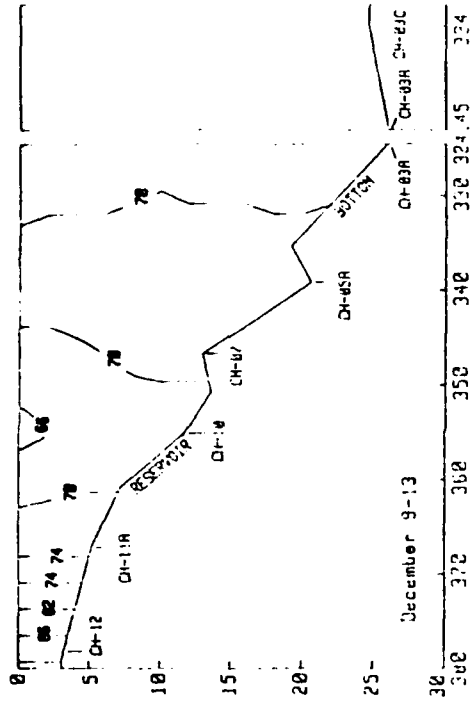
--62-- LINE OF EQUAL SPECIFIC CONDUCTANCE - Interval 4 micromhos per centimeter

CH-05A WATER SAMPLING STATION

Specific conductance, June-August 1979



DEPTH, IN METERS

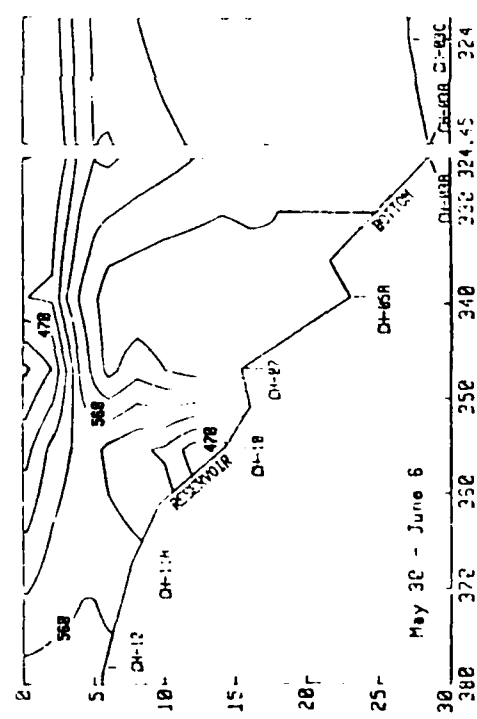
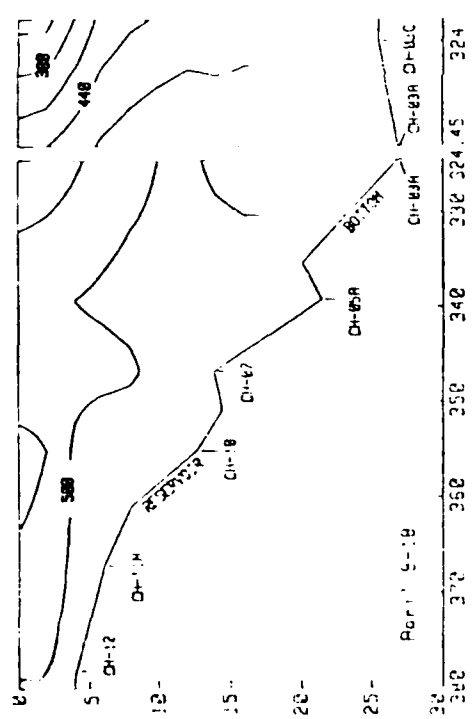
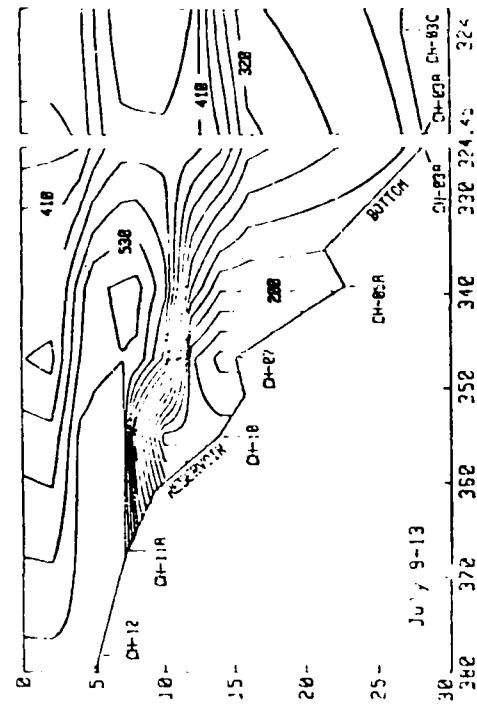
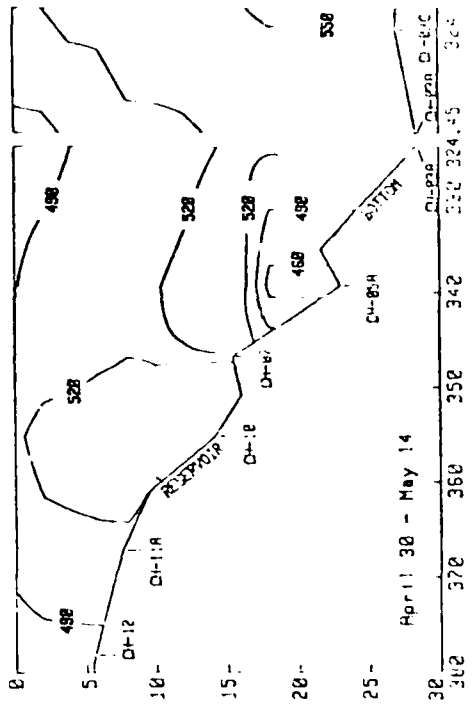


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- SS-- LINE OF EQUAL SPECIFIC CONDUCTANCE - Interval 4 micromhos per centimeter
- CH-25A WATER SAMPLING STATION

Specific conductance, September-December 1979

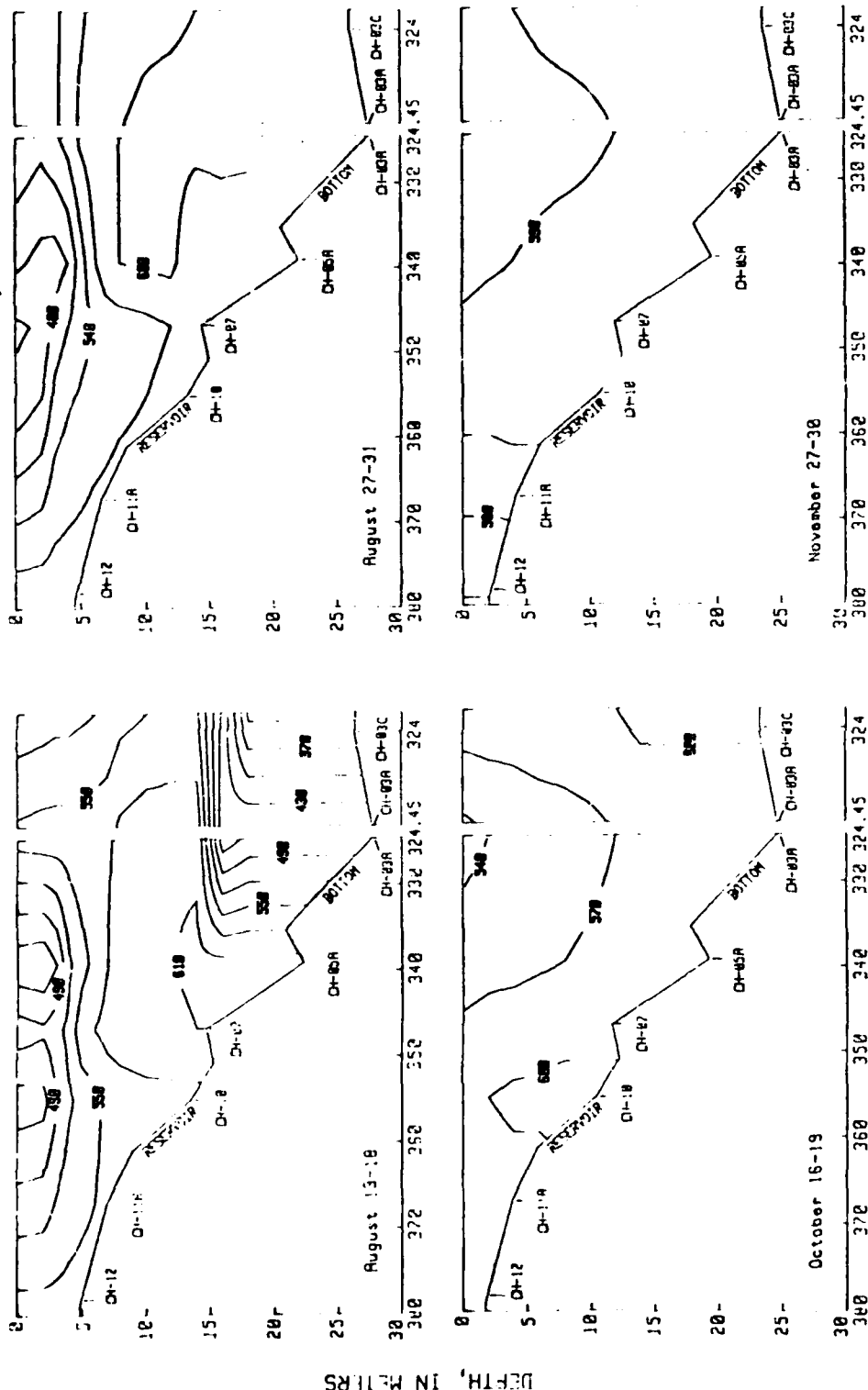


DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION
 --500-- LINE OF EQUAL OXIDATION-REDUCTION POTENTIAL - Interval 30 millivolts
 CH-05A WATER SAMPLING STATION

Oxidation-reduction potential, April-July 1978

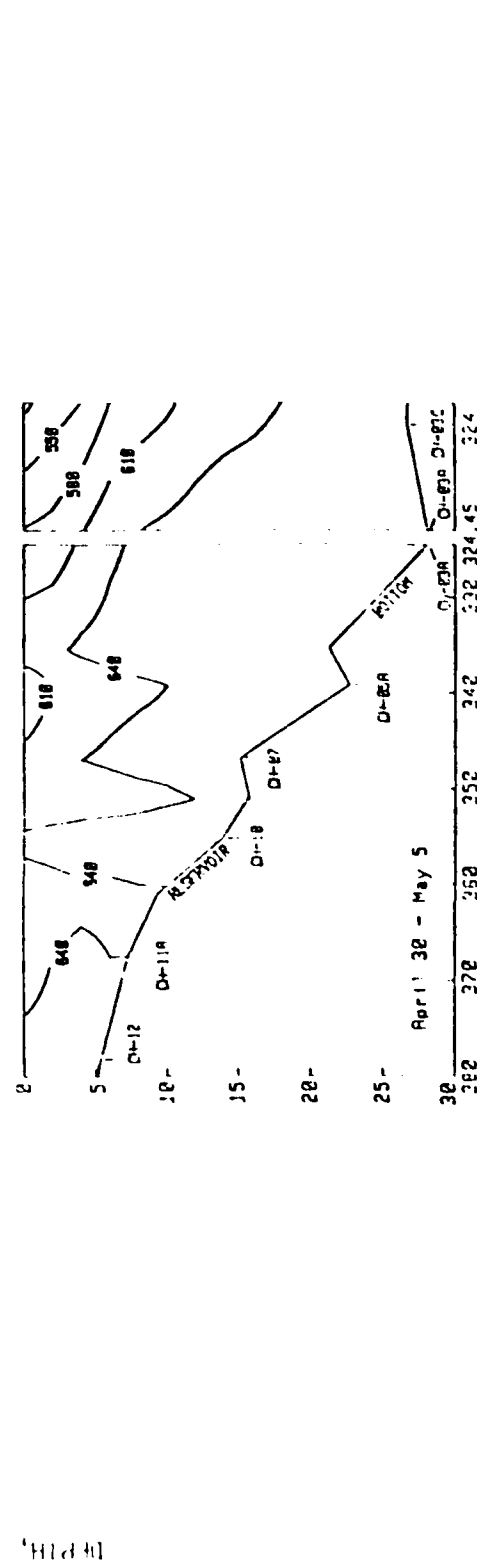
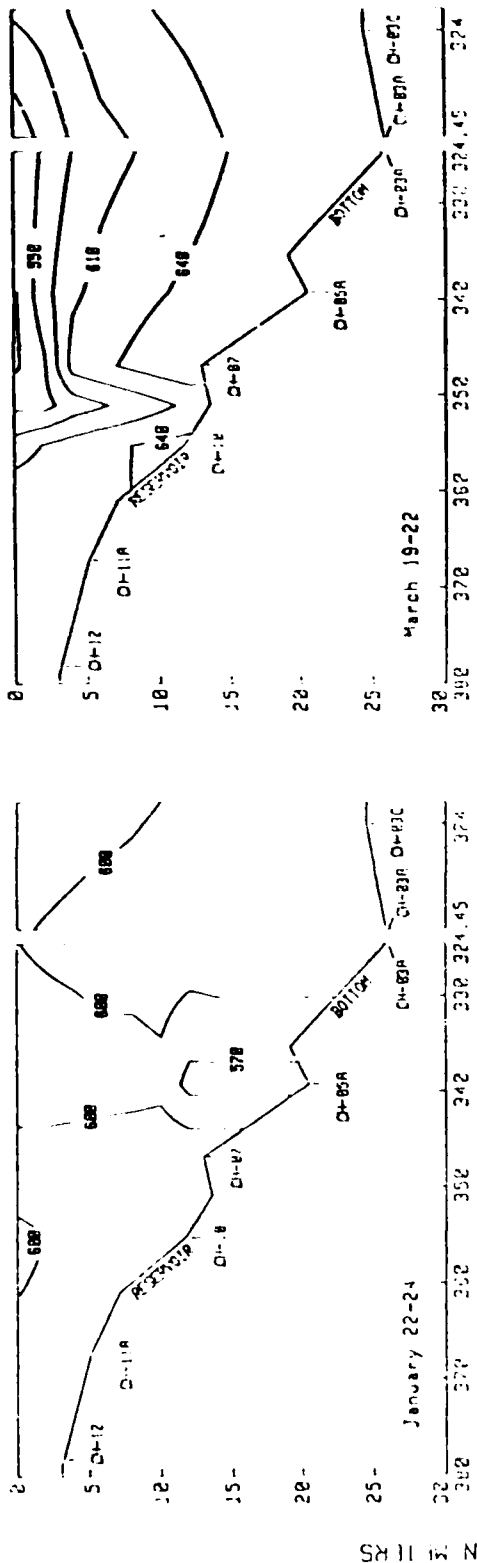


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 502-- LINE OF EQUAL OXIDATION-REDUCTION POTENTIAL - Intervals 30 millivolts
- CH-05A WATER SAMPLING STATION

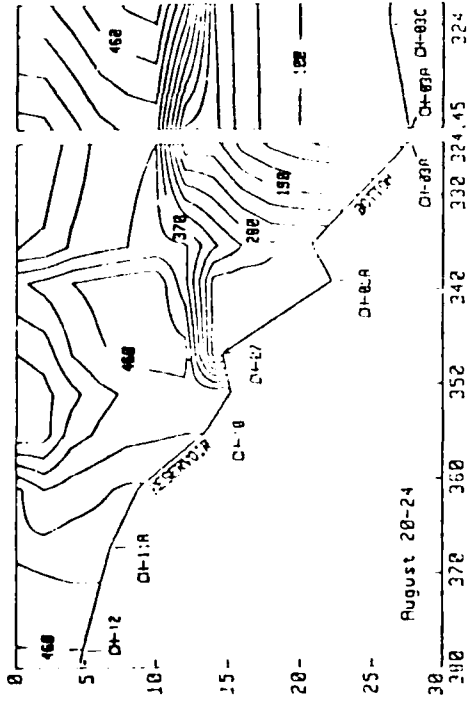
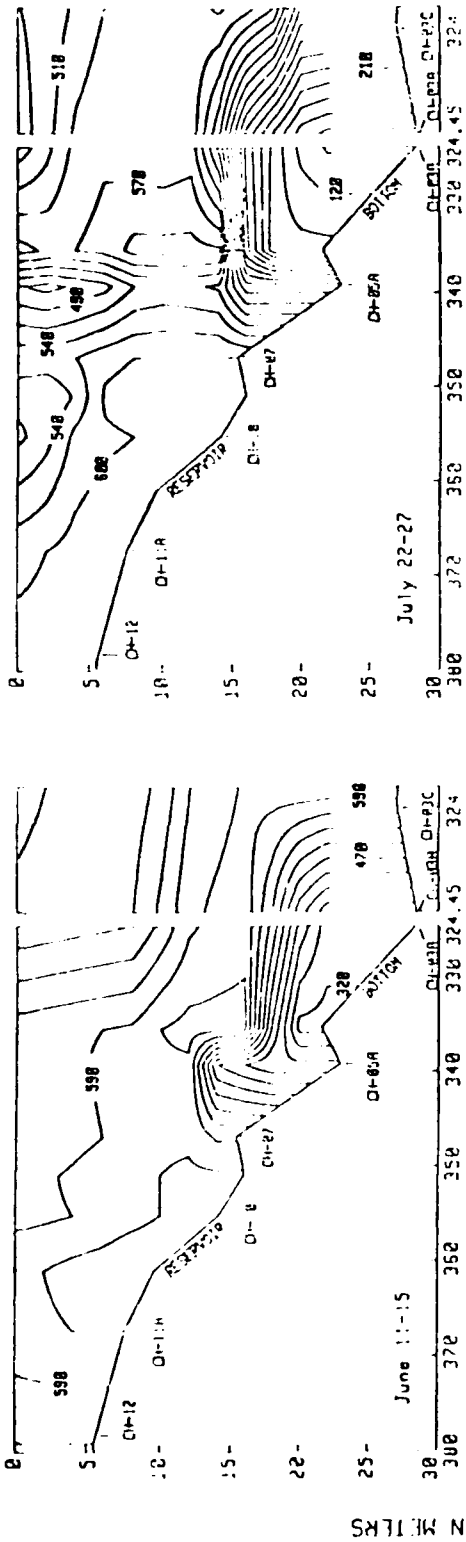
Oxidation-reduction potential, August-November 1978



DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION
 --500-- LINE OF 50 mV OXIDATION-REDUCTION POTENTIAL - Interval 30 millivolts
 CH-05A WATER SAMPLING STATION

Oxidation-reduction potential, January-May 1979



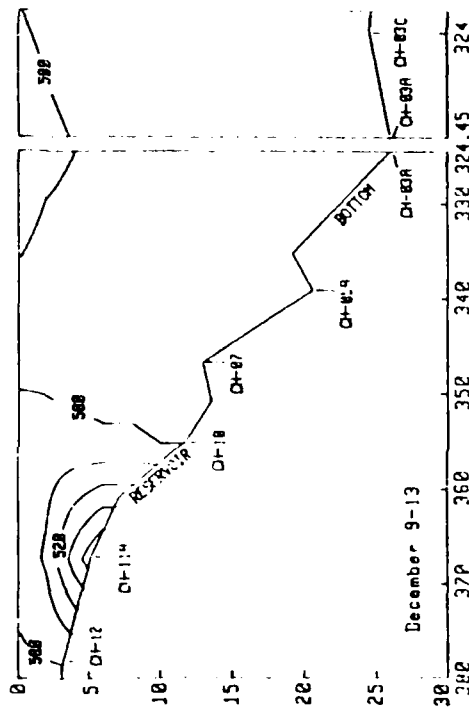
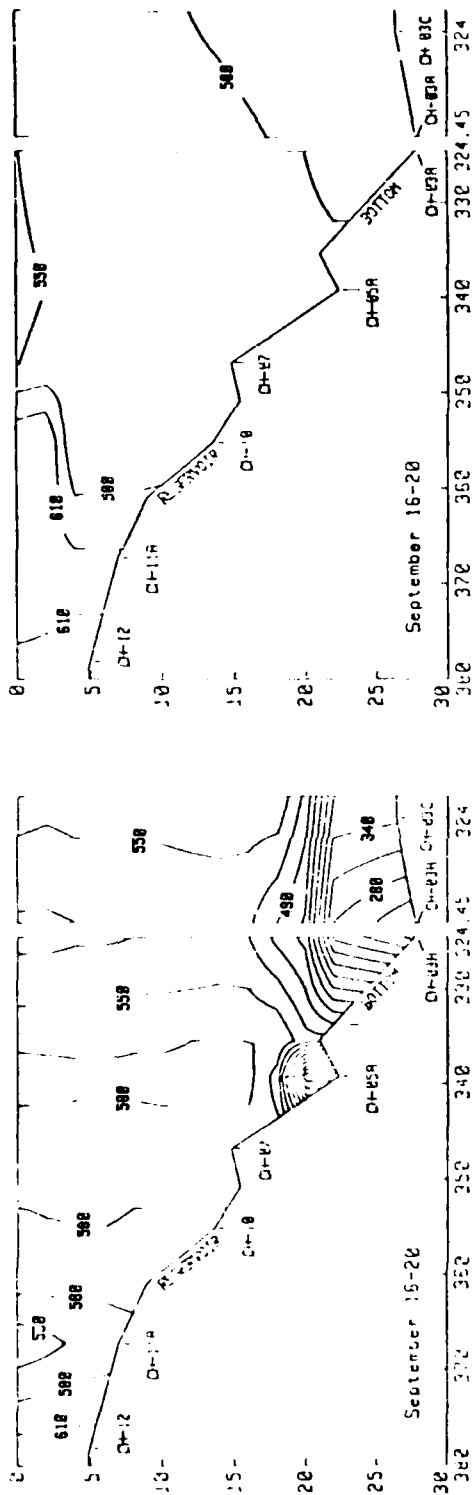
DISTANCE ABOVE THE MOUTH OF THE CHATTOOCHEE RIVER, IN KILOMETERS

EXPLANATION

--620-- LINE OF EQUAL OXIDATION-REDUCTION POTENTIAL - Interval 30 millivolts
 CH-05R WATER SAMPLING STATION

Oxidation-reduction potential, June-August 1979

DEPTH, IN METERS



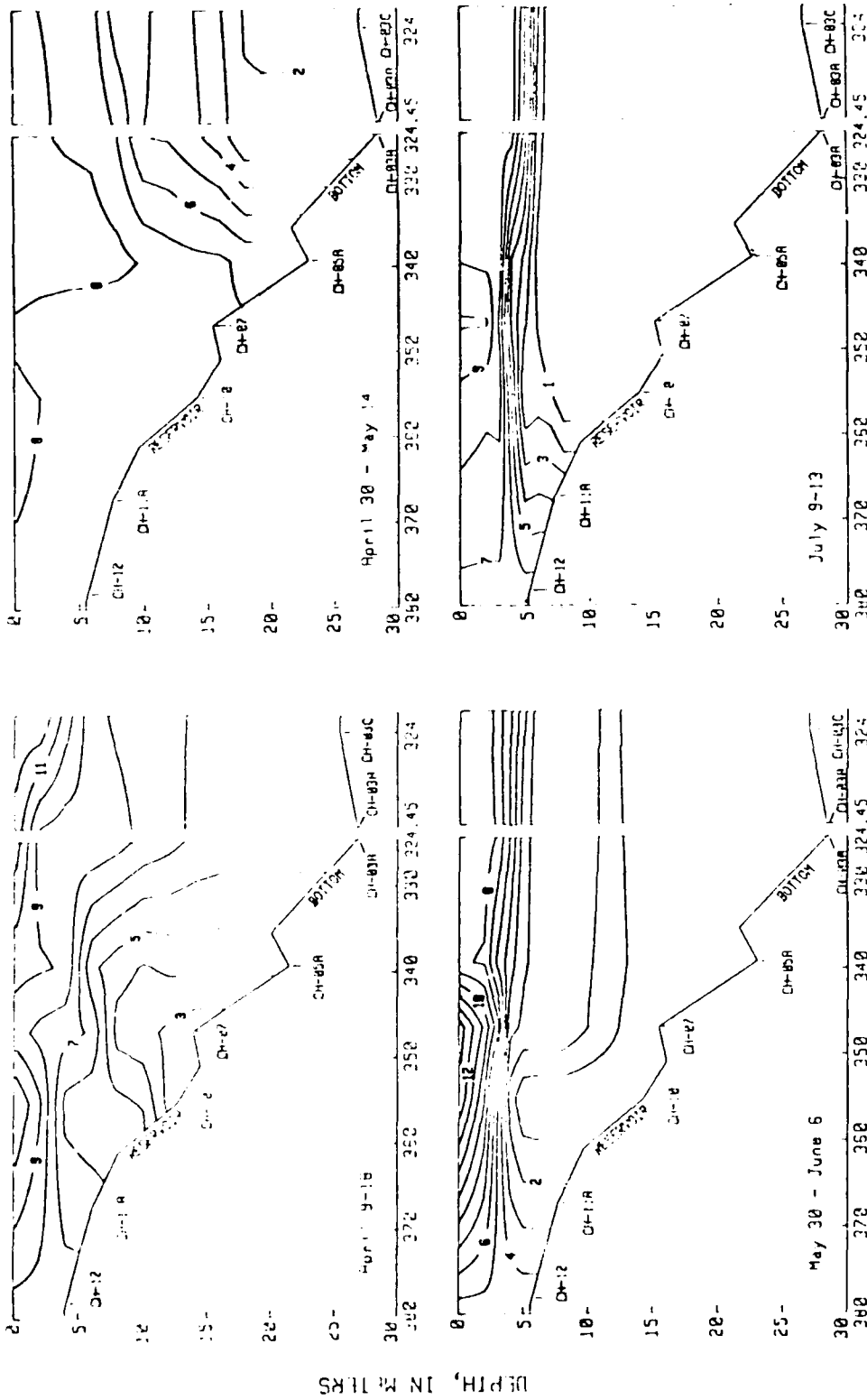
DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

--582-- LINE OF EQUAL OXIDATION-REDUCTION POTENTIAL - Interval 30 millivolts

CH-05A WATER SAMPLING STATION

Oxidation-reduction potential, September-December 1979

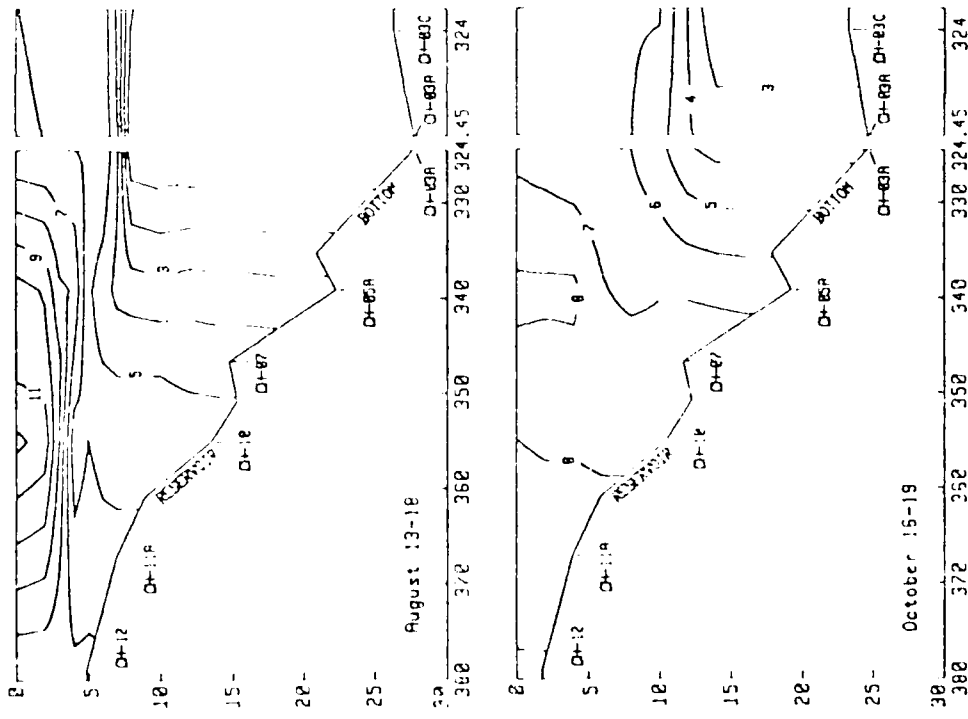
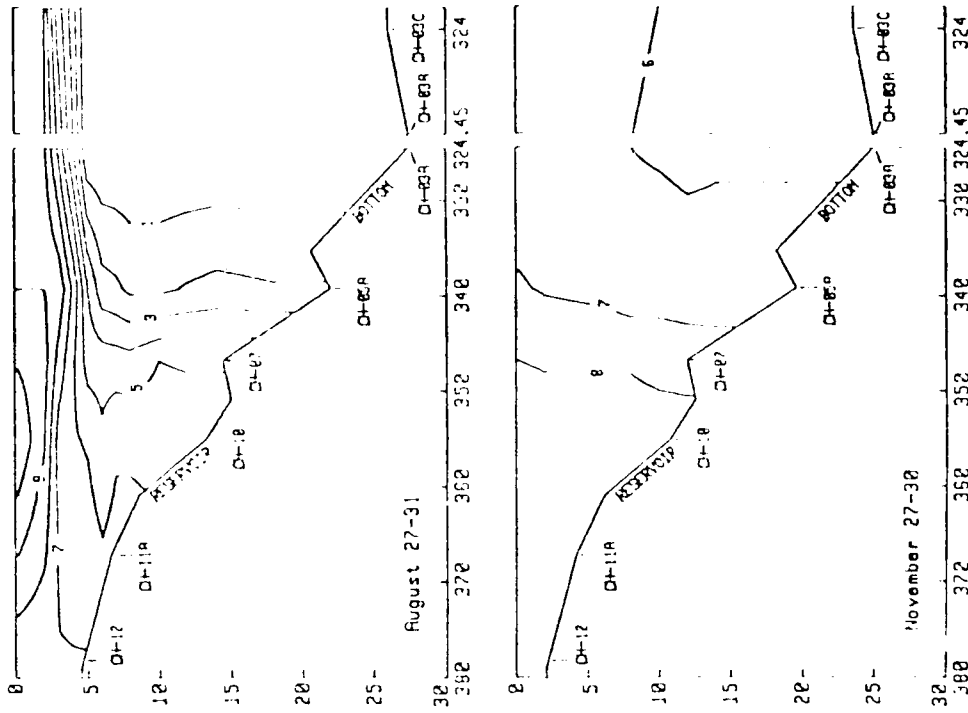


DISTANCE ABOVE THE MOUTH OF THE CHATTOOGHEE RIVER, IN KILOMETERS

EXPLANATION

--10-- LINE OF EQUAL DISSOLVED-OXYGEN CONCENTRATION - Interval 1 milligram per liter
 CH-25A WATER SAMPLING STATION

Dissolved-oxygen concentration, April-July 1978

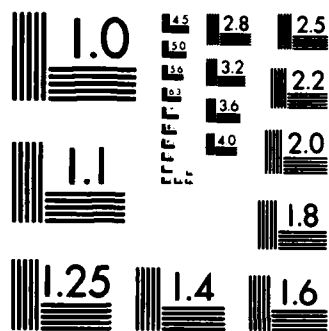


DEPTH, IN METERS

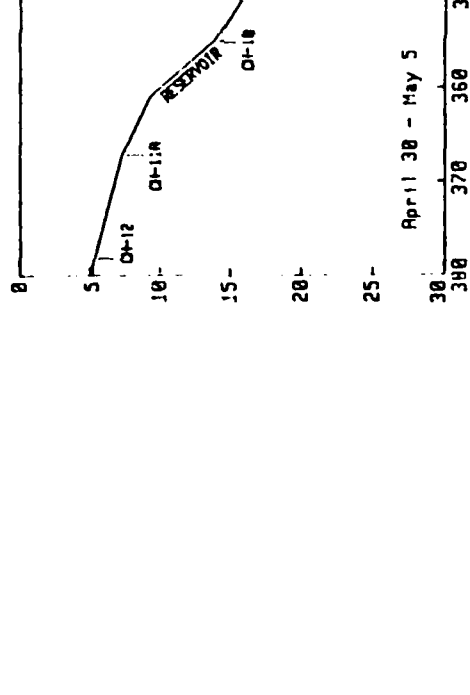
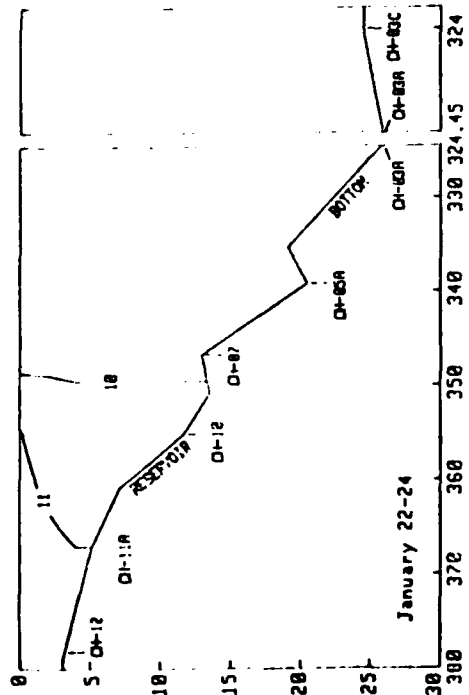
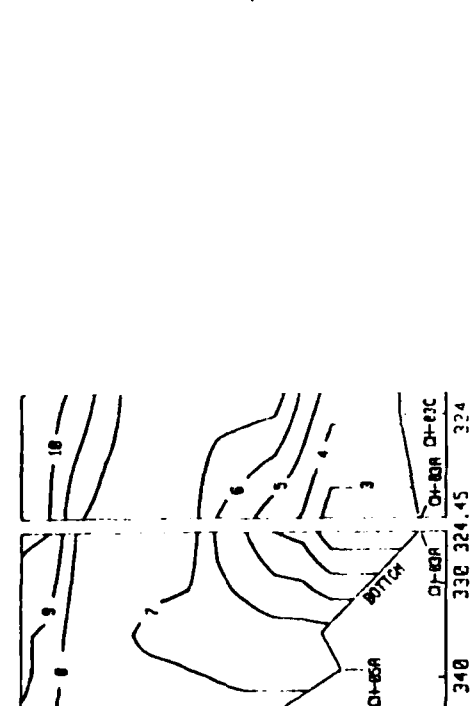
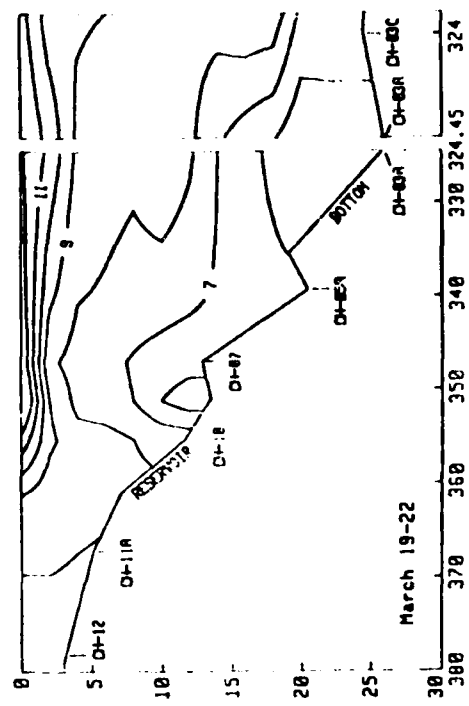
DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION
 -10- LINE OF EQUAL DISSOLVED-OXYGEN CONCENTRATION - Interval: 1 milligram per liter
 CH-05A WATER SAMPLING STATION

Dissolved-oxygen concentration August-November 1978



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A



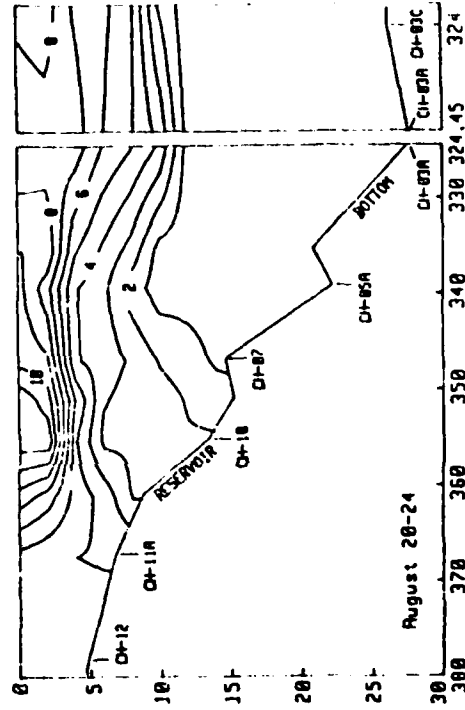
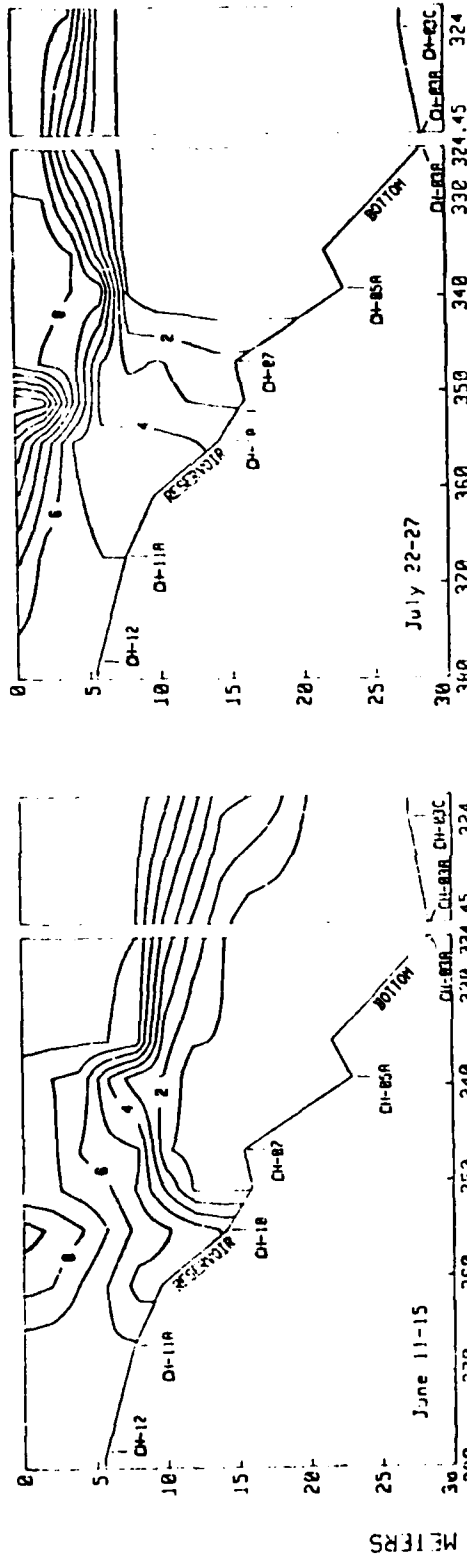
DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 10-- LINE OF EQUAL DISSOLVED-OXYGEN CONCENTRATION - Interval : milligram per liter
- CH-05A WATER SAMPLING STATION

Dissolved-oxygen concentration, January-May 1979

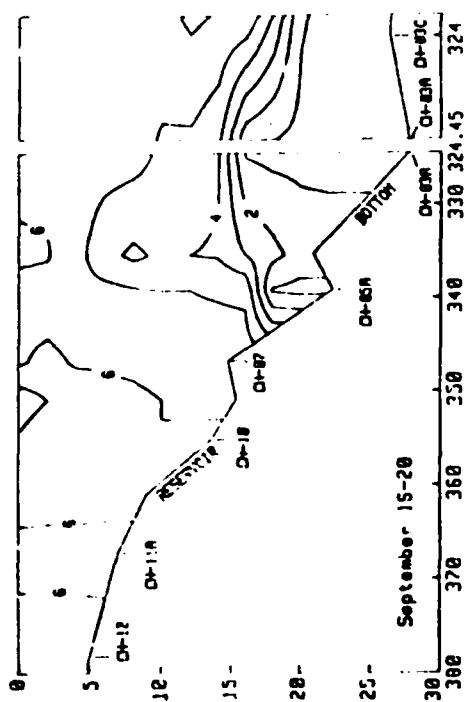
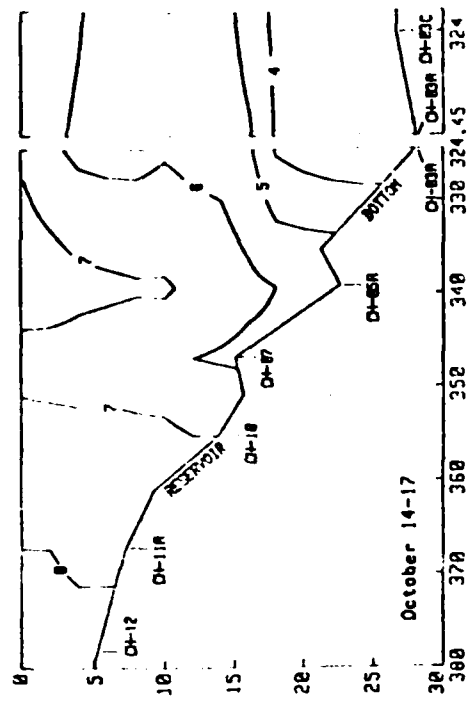


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

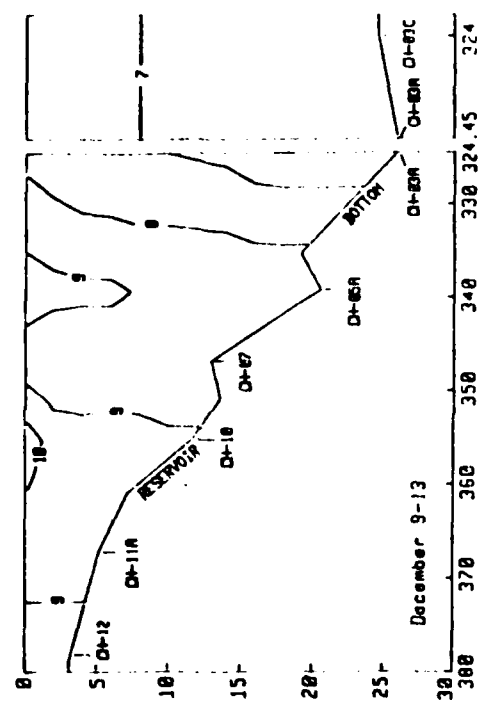
EXPLANATION

- 10-- LINE OF EQUAL DISSOLVED OXYGEN CONCENTRATION - Interval 1 milligram per liter
- CH-85A WATER SAMPLING STATION

Dissolved-oxygen concentration, June-August 1979



DEPTH, IN METERS

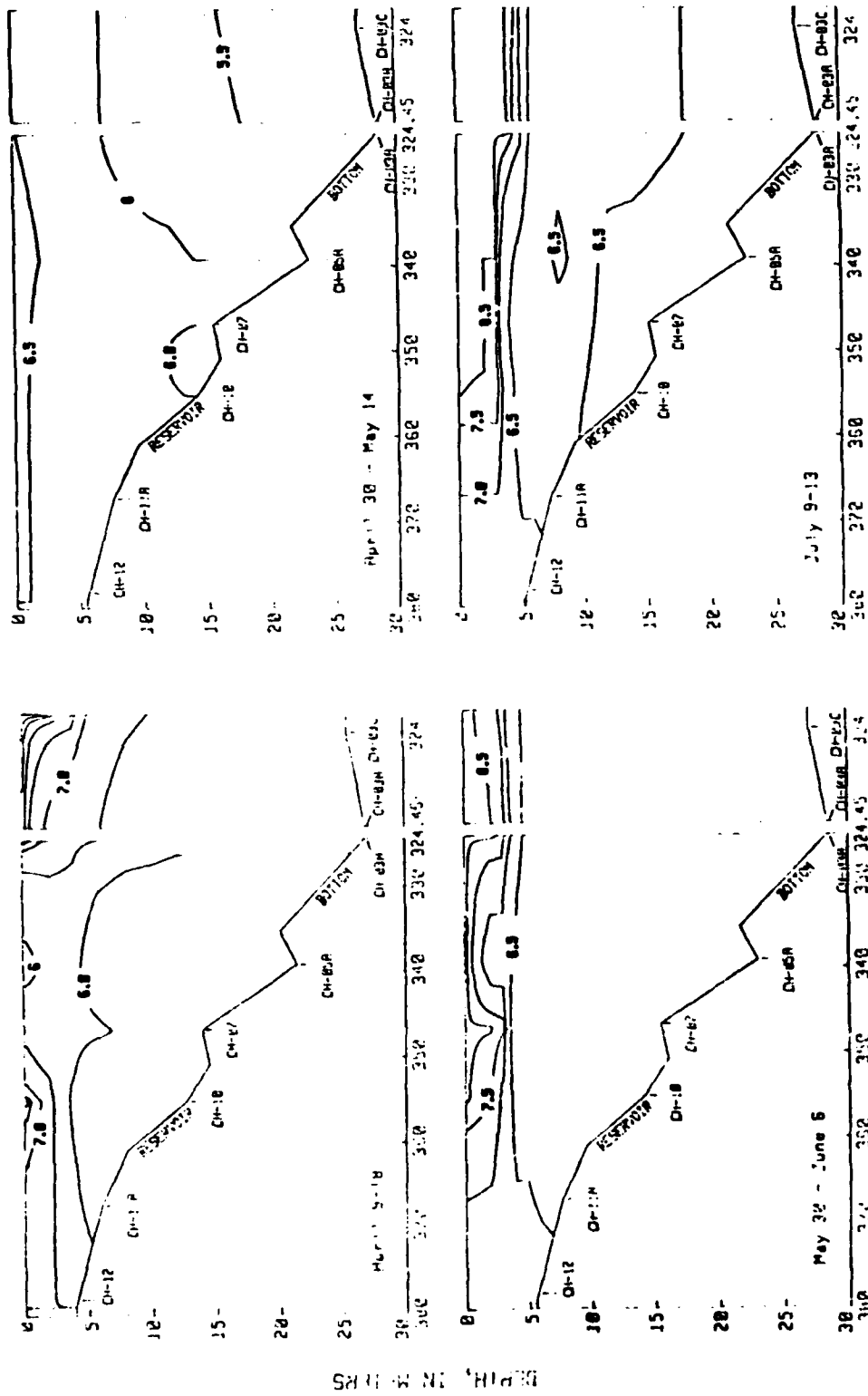


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 10-- LINE OF EQUAL DISSOLVED-OXYGEN CONCENTRATION - Interval : milligram per liter
- CH-05A WATER SAMPLING STATION

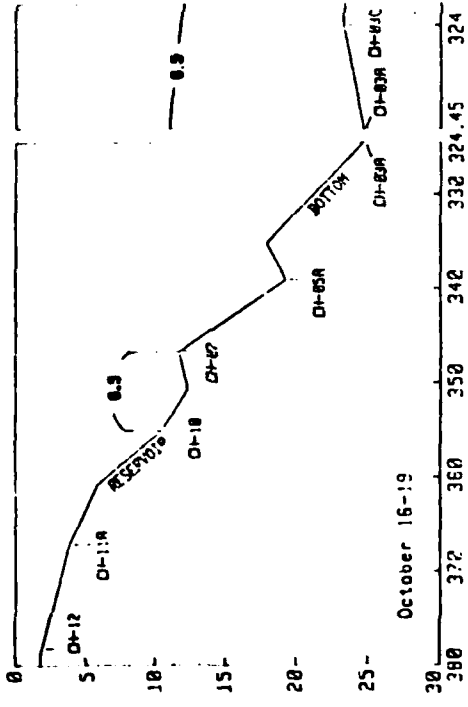
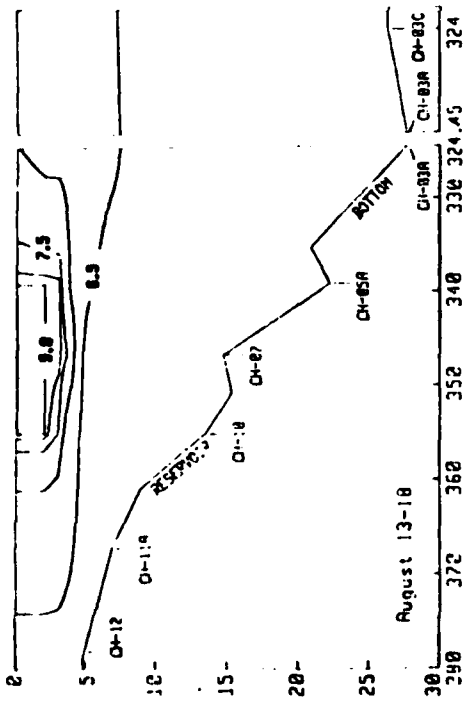
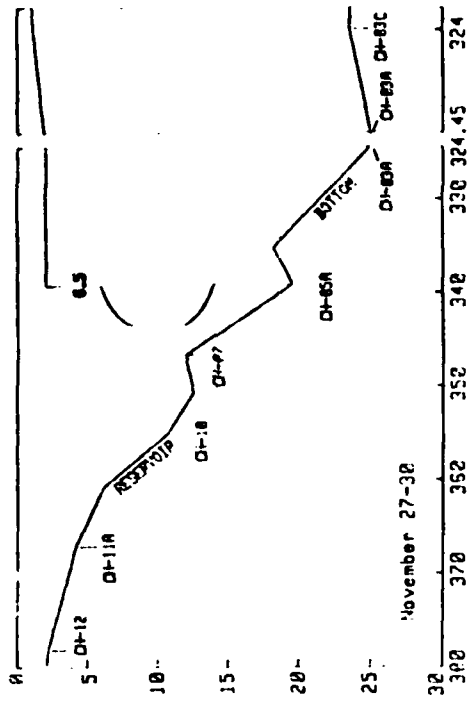
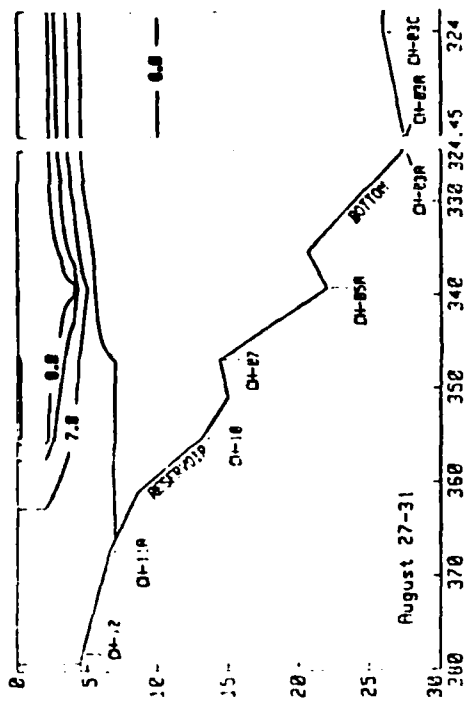
Dissoved-oxygen concentration, September-December 1979



DISTANCE ABOVE THE MOUTH OF THE CHATHAM-TOOCHEE RIVER, IN KILOMETERS.

EXPLANATION
 --6.5-- LINE OF EQUAL pH - Interval 0.5 pH unit
 CH-68A WATER SAMPLING STATION

pH, April-July 1978



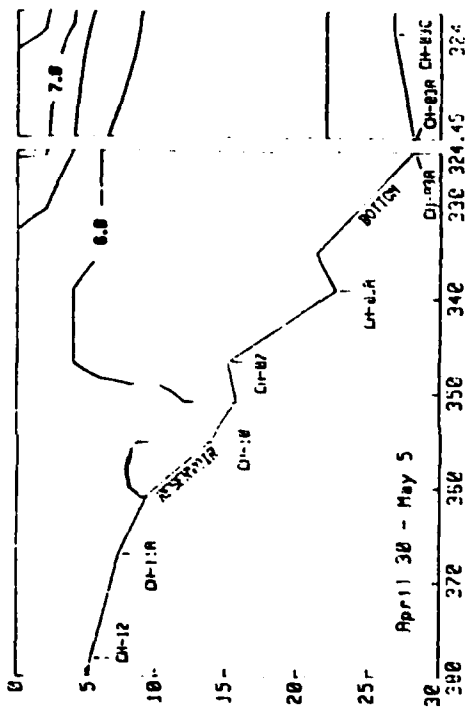
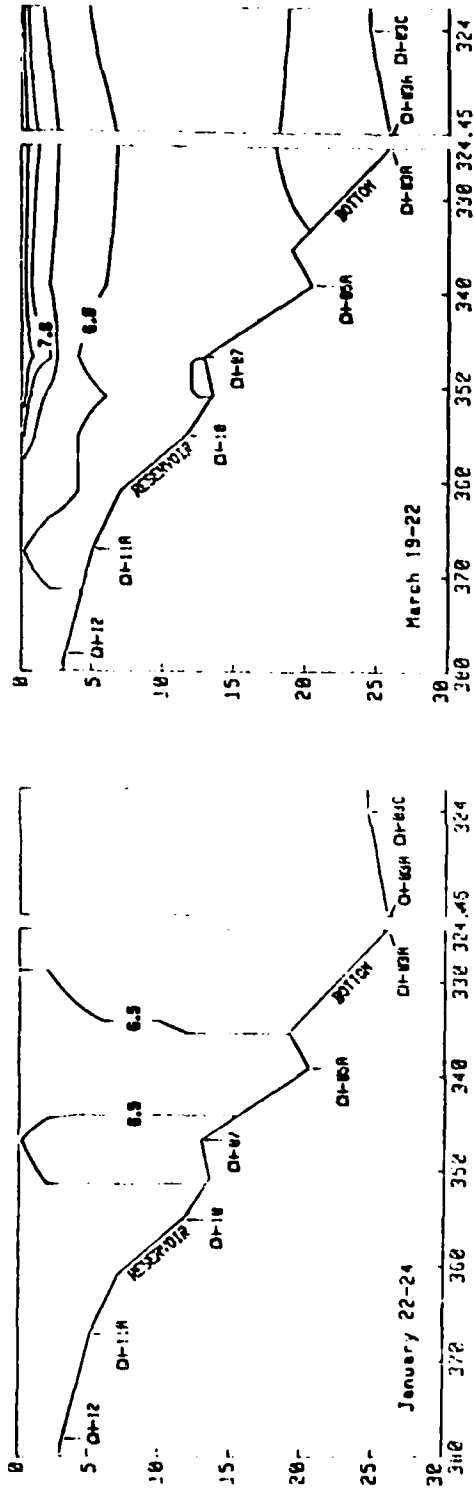
DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION
 --8.5-- LINE OF EQUAL pH - Interval 0.5 pH unit
 CH-25A WATER SAMPLING STATION

pH, August-November 1978

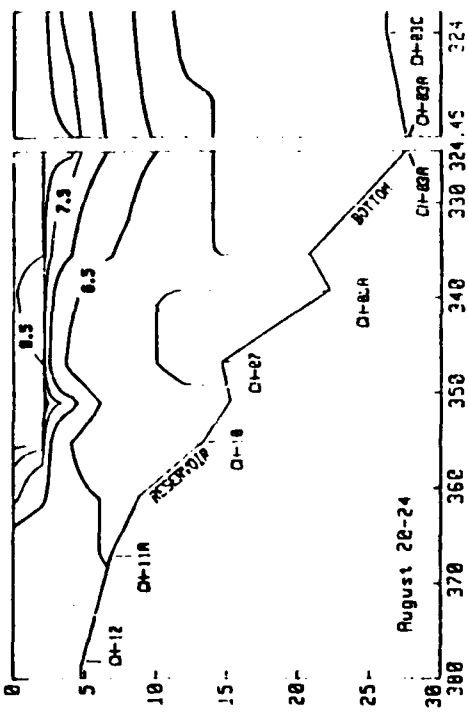
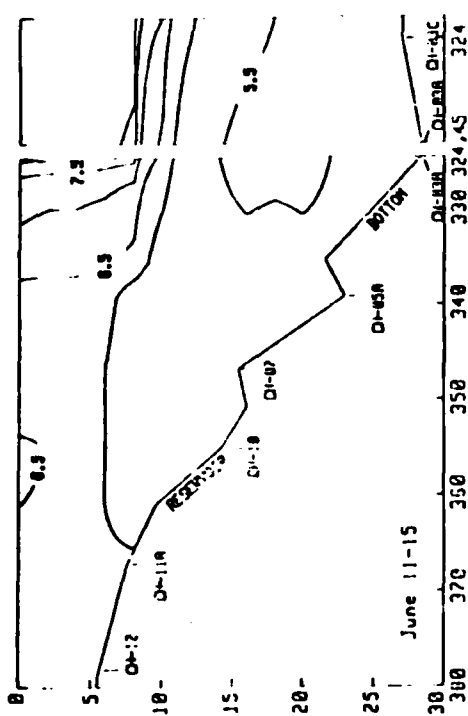
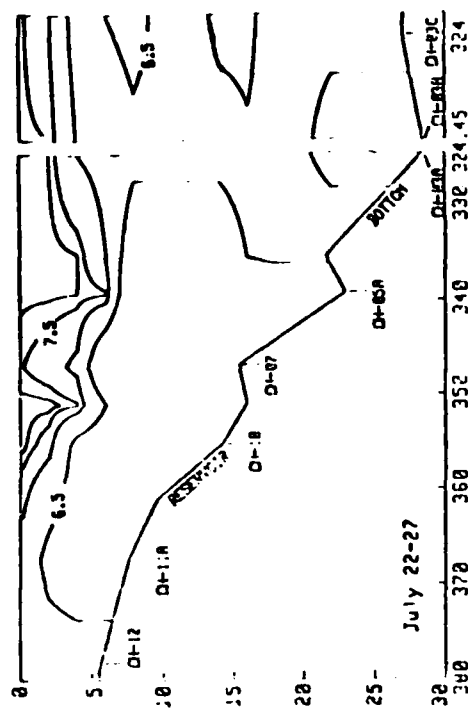
DEPTH, IN METERS



DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION
 --6.5-- LINE OF EQUAL pH - Interval 0.5 pH unit
 CH-05A WATER SAMPLING STATION

pH, January-May 1979

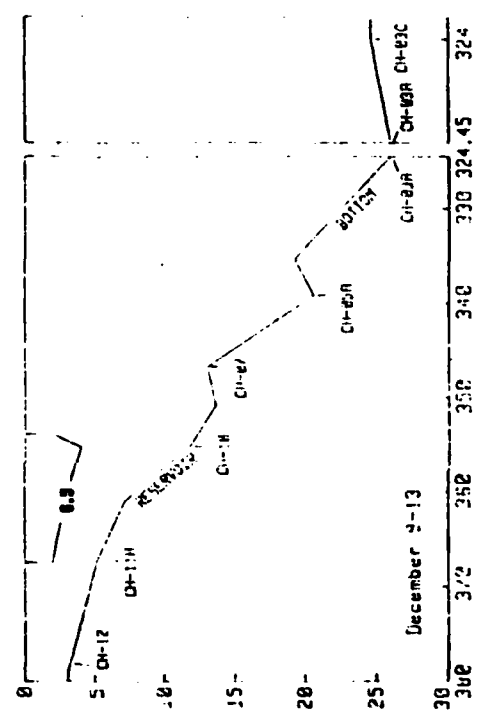
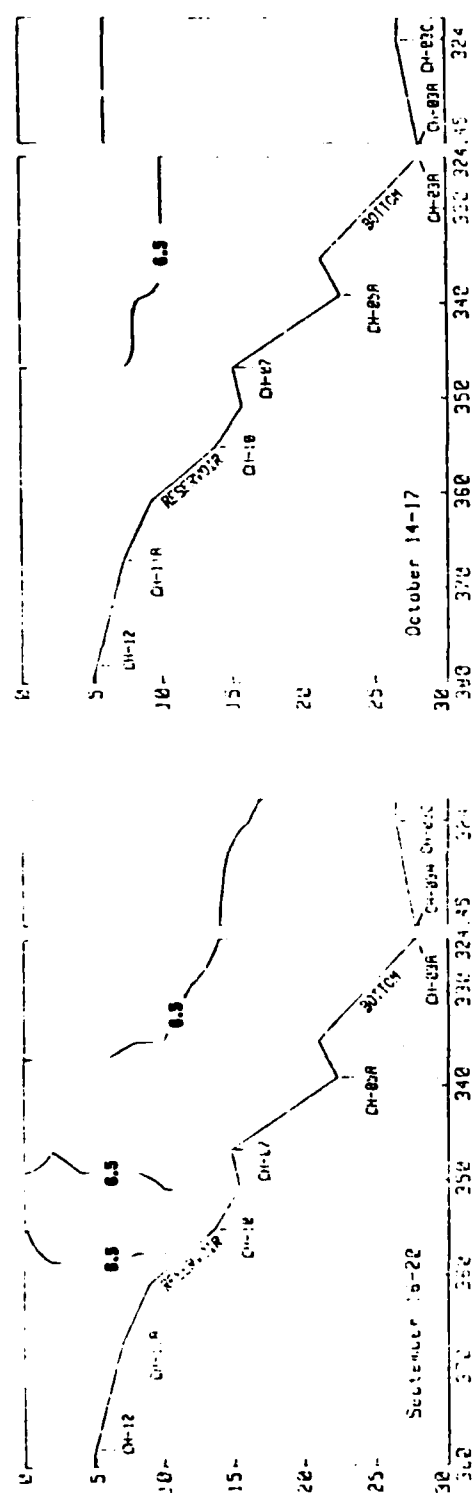


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION
 --6.5-- LINE OF EQUAL pH - Interval 0.5 pH unit
 CH-05A WATER SAMPLING STATION

pH, June-August 1979

INVERTED



DISTANCE ABOVE THE MOUTH OF THE CHARLENOOCHEE RIVER, IN KILOMETERS

EXPLANATION
 --6.5-- LINE OF EQUAL pH - Interval 0.5 pH UNIT
 CH-83A WATER SAMPLING STATION

pH, September-December 1979

APPENDIX C-4

Physical measurements and chemical concentrations in West Point Reservoir and the Chattahoochee River below West Point Dam, April 1978-December 1979

[Turbidity; residue, filterable, total; residue, nonfilterable, total; color; alkalinity; carbon dioxide; bicarbonate; sulfate, dissolved; and sulfide, total]

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OH-12 (0238500) Chattahoochee River at U.S. Highway 27, at Franklin, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	TUR- -ID- ITY (NTU)	SOLIDS. RESIDUE AT 105 DEG. C. SUS- PENDE (MG/L)	SOLIDS. RESIDUE AT 180 DEG. C. DIS- SOLVED (MG/L)	COLON (PLAT- INUM CORALY UNITS)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
APR . 1978										
1P...	1.0	15	34	57	20	13	6.4	16	6.9	.0
MAY										
04...	1.0	30	43	54	40	17	11	21	8.4	.0
JUN										
06...	1.0	10	6	61	40	16	6.4	20	9.8	.0
JUL										
13...	1.0	7.0	14	62	2	16	6.4	20	9.9	.0
AUG										
17...	1.0	40	63	50	30	11	8.9	14	7.2	.0
31...	1.0	25	51	44	30	11	6.6	13	5.6	.0
OCT										
19...	1.0	10	31	41	--	16	7.6	14	6.5	.0
NOV										
30...	1.0	12	14	58	--	11	3.3	13	7.3	.0
1979										
APR										
24...	1.0	65	90	44	--	8	2.5	10	8.8	.0
MAY										
22...	1.0	20	19	59	5	17	17	--	8.1	.0
JUN										
03...	1.0	20	42	38	20	12	15	--	2.9	.0
JUL										
13...	1.0	30	44	52	15	11	11	--	5.1	.0
AUG										
26...	1.0	30	45	62	20	20	6.2	--	9.8	.0
SEP										
23...	1.0	20	52	50	15	16	7.8	--	6.7	.0
OCT										
20...	1.0	55	65	46	50	10	12	--	6.0	.0
NOV										
17...	1.0	20	50	47	10	11	11	--	4.3	.0
DEC										
13...	1.0	20	16	66	20	20	15	--	8.4	.0

CH-11A (02338570) Chattahoochee River above New River, near Corinth, Ga., 1979

DATE	TUR- BIO- ITY (NTU)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)
MAR , 1979			
21...	10	18	35
21...	15	16	39
MAY			
03...	15	12	15
03...	15	11	14
03...	15	13	20
03...	15	13	20
JUN			
13...	10	15	15
13...	15	12	12
13...	15	16	20
JUL			
26...	25	16	4.9
26...	35	16	12
26...	35	16	16
26...	45	18	18
AUG			
23...	15	16	6.2
23...	15	18	8.8
23...	20	16	9.9
23...	25	16	9.9
SEP			
20...	30	11	17
20...	30	9	14
20...	35	10	16
20...	35	9	14
OCT			
17...	15	13	16
17...	15	13	10
DEC			
12...	10	11	6.8
12...	15	11	8.5

DATE	SAM- PLING DEPTH (M)	TUR- BID- ITY (INTU)	SOLIDS RESIDUE AT 0.5 DEG. C. SUS- PENDED (MG/L)	SOLIDS RESIDUE AT 10.0 DEG. C DTC- SOLVED (MG/L)	COLOR (PLAT- INUM COBALT UNITS)	ALKA- LINITY (MG/L AS CaCO3)	CARBON DIOXIDE DIS- SOLV'D (MG/L AS CO2)	MILAR- MONATE (MG/L AS MgO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
AUG. 1978										
17...	2.0	7.0	9	65	47	15	11	18	6.4	.0
17...	2.0	9.0	7	52	20	15	11	20	7.0	.0
17...	4.0	10	14	51	20	4	22	11	7.1	.0
17...	4.0	15	9	44	50	14	72	11	6.7	.0
17...	11.0	25	25	50	50	20	77	24	7.1	.0
MAY										
02...	2.0	7.5	51	42	60	41	13	20	4.3	.0
02...	2.0	80	57	44	60	16	16	20	5.0	.0
02...	4.0	85	58	44	60	16	16	20	4.3	.0
02...	4.0	90	101	44	40	10	15	17	4.2	.0
02...	12.0	90	77	42	40	16	30	14	4.5	.0
JUN										
05...	2.0	6.0	4	47	40	18	10	22	7.5	.0
05...	2.0	7.0	13	46	40	21	10	26	7.5	.0
05...	4.0	6.0	2	50	50	18	14	18	7.5	.0
05...	4.0	20	14	50	40	21	26	26	5.6	.0
05...	12.0	15	9	41	30	14	18	23	5.5	.0
JUL										
12...	2.0	2.0	7	56	4	14	11	23	11	.0
12...	2.0	2.0	0	64	4	15	11	18	11	.0
12...	4.0	2.0	5	57	4	21	20	25	11	.0
12...	4.0	10	12	60	4	21	20	25	10	.0
12...	12.0	40	88	70	140	26	8.1	32	8.5	.0
AUG										
16...	2.0	10	0	45	20	16	10	14	6.8	.0
16...	2.0	6.0	0	46	10	15	10	18	7.0	.0
16...	4.0	20	1	50	20	10	10	17	6.6	.0
16...	4.0	35	22	46	35	4	18	11	6.8	.0
16...	11.0	40	37	45	35	19	24	16	6.0	.0
MAY										
29...	2.0	7.0	4	41	20	28	12	12	6.0	.0
29...	2.0	4.0	6	42	20	14	11	23	7.1	.0
29...	4.0	6.0	7	54	15	17	14	21	6.5	.0
29...	4.0	10	8	12	20	10	7.6	12	6.5	.0
29...	11.0	30	14	22	20	11	11	14	6.5	.0
OCT										
17...	2.0	14	36	44	--	16	7.6	14	6.8	.0
17...	2.0	14	36	48	--	11	6.6	14	7.2	.0
17...	4.0	15	29	42	--	14	6.6	17	6.9	.0
17...	4.0	14	34	50	--	11	6.6	13	6.8	.0
17...	10.0	14	20	44	--	16	4.6	14	7.0	.0
NOV										
24...	2.0	15	13	55	--	16	6.6	20	6.7	.0
29...	4.0	15	15	51	--	15	7.7	18	6.3	.0
JAN. 1979										
24...	2.0	60	51	44	--	14	5.4	17	7.7	.0
24...	11.0	65	41	42	--	12	6.0	15	7.7	.0
MAR										
21...	2.0	15	12	46	5	20	14.4	--	5.8	.0
21...	11.0	15	26	50	5	20	9.4	--	6.8	.0
MAY										
03...	2.0	10	10	40	20	15	14	--	4.0	.0
03...	2.0	15	13	40	20	12	14	--	4.0	.0
03...	4.0	15	16	40	30	12	14	--	4.0	.0
03...	4.0	15	12	40	25	12	24	--	4.0	.0
03...	12.0	20	33	47	20	11	22	--	4.2	.0
JUN										
13...	2.0	6.0	4	44	5	4	2.8	--	4.9	.0
13...	2.0	5.0	4	46	0	16	4.4	--	4.6	.0
13...	4.0	5.0	4	48	0	12	4.4	--	4.3	.0
13...	8.0	10	14	45	5	18	4.0	--	4.2	.0
13...	12.0	15	14	44	5	13	27	--	4.2	.0
JUL										
26...	2.0	3.0	8	48	5	17	10	--	7.1	.0
26...	2.0	8.0	4	54	5	18	2.2	--	7.0	.0
26...	4.0	25	24	48	30	14	11	--	6.8	.0
26...	4.0	40	20	46	50	16	20	--	6.9	.0
26...	12.0	35	41	53	50	12	14	--	6.7	.0
AUG										
22...	2.0	1.0	4	52	10	31	10	--	7.7	.0
22...	2.0	4.0	2	51	20	27	10	--	8.0	.0
22...	4.0	4.0	4	36	5	18	11	--	8.8	.0
22...	4.0	7.0	11	53	8	16	20	--	8.1	.0
22...	12.0	20	30	55	55	17	26	--	8.0	.0
SEPT										
19...	2.0	2.0	7	54	25	10	6.2	--	7.3	.0
19...	2.0	15	11	53	10	11	4.3	--	7.2	.0
19...	4.0	20	16	54	15	9	3.5	--	7.2	.0
19...	4.0	20	16	50	10	9	4.6	--	7.1	.0
19...	12.0	30	32	53	25	10	3.4	--	7.1	.0
OCT										
16...	2.0	15	0	52	10	12	7.4	--	6.0	.0
16...	12.0	20	7	50	15	13	10	--	5.5	.0
DEC										
17...	2.0	10	14	50	30	23	11	--	5.2	.0
17...	4.0	20	22	50	30	0	4.4	--	5.6	.0

CH-07 (02338720) Chattahoochee River (City of LaGrange Intake) near LaGrange, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (IN)	TUR- BID- ITY (INTU)	SOLIDS RESIDUE AT 10% DEB. C. SUS- PENDED (MG/L)	SOLIDS RESIDUE AT 10% DEB. C. DIS- SOLVED (MG/L)	COLOR (PMT- NUM) COBALT UNITS)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
APR - 1978										
12...	.20	6.0	12	51	10	15	11	18	6.7	.0
12...	2.0	4.0	13	52	10	19	23	23	6.7	.0
12...	4.0	6.0	7	50	20	16	20	20	6.6	.0
12...	8.0	7.0	9	48	30	19	40	23	6.8	.0
12...	13.0	7.0	20	48	20	17	51	16	6.3	.0
MAY										
04...	.20	50	31	36	--	15	5.7	18	5.5	.1
04...	2.0	50	20	38	--	13	10	16	5.6	.1
04...	4.0	60	31	46	--	8	10	10	9.6	.1
04...	8.0	70	22	39	--	14	27	17	7.9	.0
04...	13.0	75	68	30	--	16	32	20	6.8	.0
JUN										
01...	.20	2.0	2	56	20	18	.0	22	5.4	.0
01...	2.0	3.0	5	55	20	21	.1	25	4.9	.0
01...	4.0	4.0	6	54	20	21	20	25	5.1	.0
01...	8.0	4.0	0	50	20	15	23	18	4.3	.0
01...	12.0	2.0	9	48	30	17	27	21	5.4	.0
JUL										
11...	.20	2.0	2	58	8	16	.0	19	9.7	.0
11...	2.0	2.0	4	60	8	16	.0	19	9.7	.0
11...	4.0	2.0	5	59	8	17	11	21	9.9	.0
11...	8.0	6.0	10	59	8	22	22	27	7.4	.0
11...	12.0	70	109	66	65	20	7.7	24	8.0	.0
AUG										
17...	.20	1.0	0	71	15	18	.0	22	7.3	.0
17...	2.0	2.0	4	48	15	8	1.0	18	7.2	.0
17...	4.0	3.0	5	43	15	20	1.9	24	7.1	.0
17...	8.0	17	16	49	30	10	12	12	6.7	.0
17...	12.0	30	12	46	30	11	17	13	6.0	.0
29...	.20	4.0	6	59	20	17	.0	33	7.0	.0
29...	2.0	3.0	6	59	20	17	.0	21	7.0	.0
29...	4.0	1.0	7	63	20	19	2.3	23	7.2	.0
29...	8.0	3.0	26	63	20	11	8.9	14	6.1	.0
29...	12.0	40	41	50	30	11	11	14	6.0	.0
OCT										
17...	.20	8.0	20	43	--	11	3.6	14	7.7	.0
17...	2.0	7.0	25	44	--	14	6.8	17	7.3	.0
17...	4.0	7.0	27	44	--	11	5.2	13	7.4	.0
17...	8.0	9.0	28	44	--	15	9.1	18	7.5	.0
17...	10.0	9.4	31	49	--	11	7.1	14	7.4	.0
NOV										
29...	.20	18	16	52	--	19	5.6	23	7.7	.0
29...	11.0	15	8	52	--	12	6.0	15	7.7	.0
JAN - 1979										
24...	.20	65	52	44	--	13	8.1	16	7.7	.0
24...	11.0	80	103	48	--	14	11	17	8.3	.0
MAR										
21...	.20	10	12	48	5	19	.3	--	7.0	.0
21...	12.0	25	28	52	30	16	99	--	7.2	.0
MAY										
02...	.20	50	14	44	30	16	16	--	6.2	.0
02...	2.0	40	18	38	30	12	24	--	4.3	.1
02...	4.0	30	20	41	30	12	24	--	4.6	.0
02...	8.0	40	19	48	25	9	22	--	4.7	.0
02...	14.0	90	42	38	30	10	31	--	4.7	.0
JUN										
12...	.20	10	3	53	5	8	7.9	--	5.1	.0
12...	2.0	10	3	44	10	16	20	--	5.1	.0
12...	4.0	15	5	44	10	12	19	--	5.1	.0
12...	9.0	25	14	42	45	14	55	--	5.2	.3
12...	17.0	20	23	43	45	8	39	--	4.8	.0
JUL										
26...	.20	3.0	10	50	50	21	1.3	--	7.2	.0
26...	2.0	3.0	6	50	5	16	2.0	--	7.2	.0
26...	4.0	3.0	9	49	5	18	4.4	--	7.2	.0
26...	8.0	20	32	44	20	11	17	--	7.1	.0
26...	12.0	25	26	44	30	8	16	--	6.0	.0
AUG										
22...	.20	3.0	3	53	10	20	.3	--	7.5	.0
22...	2.0	3.0	2	54	10	22	.1	--	8.1	.0
22...	4.0	2.0	3	52	10	18	14	--	7.0	.0
22...	8.0	8.0	6	54	30	16	31	--	7.9	.0
22...	12.0	15	11	55	15	18	44	--	8.4	.0
SEP										
19...	.20	5.0	8	54	5	9	8.8	--	8.7	.0
19...	2.0	4.0	8	52	8	11	6.8	--	8.7	.0
19...	4.0	6.0	9	53	5	15	12	--	8.2	.0
19...	8.0	8.0	12	54	5	10	7.8	--	8.8	.0
19...	12.0	9.0	20	50	5	12	12	--	7.2	.0
OCT										
14...	.20	9.0	13	50	10	12	7.4	--	6.5	.0
14...	12.0	20	15	54	6	15	12	--	6.5	.0
DEC										
11...	.20	7.0	40	44	30	15	18	--	6.8	.0
11...	12.0	15	35	48	30	13	20	--	7.4	.0

USDA (16-119)X) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978 and 1979

DATE	SAMPLE DEPTH (M)	TURBIDITY (NTU)	SOLIDS RESIDUE AT 105 DEG. C SUSPENDED (MG/L)	SOLIDS RESIDUE AT 180 DEG. C DISSOLVED (MG/L)	COLOR (PLATINUM CUBALT UNITS)	ALKALINITY (MG/L AS CaCO3)	CARBON DIOXIDE (MG/L AS CO2)	BICARBONATE (MG/L AS HCO3)	SULFATE (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
AUG 1978										
12...	.20	3.0	4	44	10	16	0	20	6.0	.0
12...	2.0	3.0	4	47	5	19	24	23	5.2	.0
12...	4.0	3.0	4	44	5	14	17	17	5.0	.0
12...	8.0	4.0	5	44	20	15	16	16	5.4	.0
12...	14.0	15	14	46	30	14	18	17	4.7	.0
MAY										
03...	.20	10	2	46	30	16	6.4	20	6.0	.0
03...	2.0	10	4	31	30	15	9.1	18	12	.0
03...	4.0	10	4	45	20	7	4.0	8	5.5	.0
03...	8.0	10	4	--	30	6	5.6	7	11	.0
03...	14.0	10	3	44	20	7	13	8	6.2	.0
JUN										
01...	.20	2.0	7	44	20	14	0	23	4.1	.0
01...	2.0	4.0	2	52	20	21	6.3	25	5.2	.0
01...	4.0	3.0	2	48	20	17	13	21	4.9	.0
01...	8.0	3.0	5	50	20	18	22	22	5.6	.0
01...	16.0	10	14	54	60	19	18	23	4.9	.0
JUL										
11...	.20	2.0	3	46	4	16	.1	20	7.6	.0
11...	2.0	2.0	7	54	8	20	.1	24	7.8	.0
11...	4.0	2.0	7	50	8	20	4.6	24	8.0	.0
11...	8.0	5.0	7	51	8	22	8.8	27	8.4	.0
11...	16.0	25	34	74	200	36	16.9	44	6.4	.0
AUG										
15...	.20	3.0	0	44	20	21	0	24	7.7	.0
15...	2.0	3.0	4	50	20	24	0	27	7.7	.0
15...	4.0	3.0	0	50	20	14	3.4	17	7.6	.0
15...	8.0	4.0	1	46	30	15	23	18	7.3	.0
15...	16.0	45	14	46	--	11	21	13	7.1	.0
30...	.20	5.0	3	53	25	17	0	19	6.9	.0
30...	2.0	5.0	2	48	30	33	.1	36	6.9	.0
30...	4.0	2.0	0	53	20	25	.2	31	7.0	.0
30...	8.0	8.0	3	44	20	13	20	16	6.7	.0
30...	16.0	8.0	14	47	45	13	20	16	6.3	.0
OCT										
14...	.20	1.0	4	50	--	11	2.8	14	6.5	.0
14...	2.0	1.0	0	51	--	14	5.8	23	6.3	.0
14...	4.0	2.0	0	44	--	8	2.5	10	6.4	.0
14...	8.0	4.0	7	42	--	17	8.4	21	6.2	.0
14...	16.0	13	10	52	--	11	6.9	14	8.0	.0
NOV										
20...	.20	5.0	10	50	--	16	7.6	19	6.7	.0
20...	14.0	15	22	56	--	17	11	21	7.6	.0
JAN 1979										
27...	.20	15	17	57	--	16	3.8	19	9.5	.0
23...	14.0	15	3	55	--	18	5.6	22	4.8	.0
MAY										
20...	.20	20	12	2	5	12	.2	--	7.5	.0
20...	15.0	40	35	4	30	12	59	--	7.3	.0
MAY										
01...	.20	30	20	36	80	7	4.3	--	3.8	.0
01...	2.0	35	25	37	70	16	28	--	3.9	.0
01...	4.0	30	30	34	65	8	16	--	3.9	.0
01...	8.0	30	28	36	70	11	38	--	3.9	.0
01...	16.0	40	37	34	80	8	25	--	3.9	.0
JUN										
12...	.20	10	6	48	10	14	14	--	5.6	.0
12...	2.0	10	9	44	10	17	17	--	5.6	.7
12...	4.0	10	5	44	10	17	17	--	5.4	.6
12...	8.0	15	14	44	45	15	47	--	5.8	.3
12...	16.0	15	12	20	45	12	59	--	4.1	.0
JUL										
25...	.20	2.0	9	51	5	21	.1	--	7.5	.0
25...	2.0	2.0	9	44	5	21	.2	--	7.3	.0
25...	4.0	2.0	5	54	5	16	.3	--	7.3	.0
25...	8.0	3.0	4	58	5	16	20	--	7.6	.0
25...	16.0	15	20	57	15	18	22	--	5.5	.0
AUG										
22...	.20	2.0	6	52	10	22	.1	--	7.4	.0
22...	2.0	2.0	0	58	10	16	.2	--	7.5	.0
22...	4.0	2.0	0	57	5	21	10	--	7.2	.0
22...	8.0	3.0	1	53	5	21	33	--	6.9	.0
22...	16.0	15	10	52	30	19	37	--	5.5	.0
SEP										
14...	.20	1.0	3	46	2	9	7.0	--	7.5	.0
14...	2.0	8.0	28	44	5	11	8.5	--	7.2	.0
14...	4.0	7.0	8	44	5	12	9.3	--	7.2	.0
14...	8.0	6.0	4	47	5	8	7.8	--	7.6	.0
14...	14.0	20	23	43	5	11	11	--	7.2	.0
OCT										
14...	.20	5.0	0	50	10	15	5.8	--	5.6	.0
14...	14.0	20	4	54	10	8	7.8	--	5.8	.0
DEC										
13...	.20	7.0	4	51	20	11	8.5	--	5.7	.0
13...	14.0	20	12	52	20	21	28	--	5.6	.0

Ch-UJC (02339)88) Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979

DATE	SAM- PLING DEPTH (M)	TUR- BID- ITY (NTU)	SOLIDS RESIDUE AT 10% DEG. C. SUS- PENDED (MG/L)	SOLIDS RESIDUE AT 100 DEG. C. DISE- SOLVED (MG/L)	COLOR (PLAT- INIM COBAL7 UNITS)	ALKA- LINITY AS CACO3)	CANNON DIOXIDE SOLVED (MG/L AS CO2)	RICAN- MONATE (MG/L AS MCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
APR - 1978										
10...	.20	3.0	2	60	15	28	.0	14	6.3	.0
10...	2.0	3.0	1	38	20	26	.0	13	6.3	.0
10...	4.0	3.0	1	22	10	11	.1	14	6.3	.0
10...	8.0	4.0	2	40	15	4	4.4	11	6.3	.0
10...	16.0	15	5	42	30	16	15	14	6.1	.0
MAY										
14...	.20	6.0	2	48	10	15	1.1	14	5.6	.0
14...	2.0	6.0	1	46	20	16	16	20	5.2	.0
14...	4.0	6.0	1	46	20	14	22	17	5.7	.0
14...	8.0	6.0	1	48	20	19	46	21	5.8	.1
14...	16.0	15	3	46	50	14	86	17	5.3	.0
31...	.20	2.0	0	52	20	21	.1	25	4.9	.0
31...	2.0	3.0	10	50	20	17	.1	21	4.7	.0
31...	4.0	3.0	8	50	20	16	6.4	20	5.2	.0
31...	8.0	3.0	4	44	30	14	21	23	5.3	.0
31...	16.0	6.0	5	52	20	21	40	25	4.6	.0
JUL										
10...	.20	1.0	2	50	2	13	.0	16	5.8	.0
10...	2.0	1.0	20	52	10	16	.0	14	5.6	.0
10...	4.0	3.0	9	52	2	14	.0	23	5.6	.0
10...	8.0	2.0	9	52	9	19	23	23	5.4	.0
10...	16.0	6.0	11	57	8	8	6.4	10	6.3	.0
AUG										
14...	.20	2.0	0	50	5	14	3.4	17	7.3	.0
14...	2.0	1.0	0	44	30	16	3.4	14	7.3	.0
14...	4.0	1.0	0	49	5	18	5.6	22	7.3	.0
14...	8.0	1.0	3	44	30	21	25	25	7.1	.0
14...	16.0	5.0	2	54	30	27	42	33	5.9	.0
30...	.20	5.0	2	54	10	17	.2	21	7.2	.0
30...	2.0	5.0	2	71	20	23	.2	28	7.1	.0
30...	4.0	4.0	1	61	20	15	4.6	18	7.2	.0
30...	8.0	4.0	4	53	45	8	13	10	7.3	.0
30...	16.0	15	5	65	45	11	22	14	6.4	.0
OCT										
14...	.20	2.0	25	50	--	21	6.3	25	7.1	.0
14...	2.0	2.0	19	52	--	16	6.4	25	7.1	.0
14...	4.0	2.0	0	48	--	21	8.0	25	6.9	.0
14...	8.0	2.0	0	48	--	15	5.7	18	7.0	.0
14...	16.0	3.0	0	49	--	17	17	21	7.0	.0
NOV										
28...	.20	5.0	7	47	--	14	6.8	17	6.0	.0
28...	16.0	6.0	14	47	--	11	11	14	6.1	.0
JAN - 1979										
22...	.20	6.0	8	58	--	14	14	17	9.0	.0
22...	15.0	5.0	6	54	--	19	35	22	8.7	.0
MAR										
20...	.20	35	13	49	25	11	.7	--	6.1	.0
20...	16.0	40	17	48	50	12	59	--	6.6	.0
MAY										
01...	.20	30	23	36	80	8	.2	--	4.3	.0
01...	2.0	30	17	38	75	7	.3	--	4.2	.0
01...	4.0	35	17	37	65	4	1.4	--	3.7	.0
01...	8.0	30	15	36	80	9	1.4	--	3.6	.0
01...	16.0	25	13	37	50	7	22	--	3.7	.0
01...	20.0	25	10	42	70	7	34	--	3.7	.0
JUN										
14...	.20	2.0	5	35	3	16	.1	--	3.4	.0
14...	2.0	2.0	9	31	5	17	.1	--	3.8	.0
14...	4.0	2.0	6	36	8	16	.1	--	4.0	.0
14...	8.0	2.0	8	32	5	17	.2	--	4.0	.0
14...	16.0	3.0	7	38	2	11	54	--	4.6	.0
14...	20.0	8.0	14	37	5	8	62	--	4.3	.0
JUL										
24...	.20	2.0	27	19	5	11	.2	--	4.6	.0
24...	2.0	1.0	16	25	5	10	.9	--	4.5	.0
24...	4.0	1.0	1	44	5	14	3.4	--	4.6	.0
24...	8.0	1.0	1	51	5	17	13	--	5.2	.0
24...	16.0	6.0	6	54	50	16	1.6	--	5.0	.0
24...	20.0	7.0	2	54	100	17	5.3	--	5.0	.0
AUG										
21...	.20	2.0	0	52	5	16	.2	--	5.2	.0
21...	2.0	2.0	0	52	5	21	.2	--	3.1	.0
21...	4.0	2.0	1	48	5	17	1.7	--	5.9	.0
21...	8.0	2.0	0	50	5	21	10	--	5.4	.0
21...	16.0	7.0	10	58	25	24	34	--	5.6	.0
21...	20.0	6.0	9	58	75	20	72	--	5.6	.0
SEP										
17...	.20	3.0	0	54	15	13	5.1	--	6.7	.0
17...	2.0	3.0	0	54	8	14	7.0	--	6.5	.0
17...	4.0	4.0	0	54	15	16	6.2	--	6.8	.0
17...	8.0	5.0	0	53	10	20	7.8	--	6.5	.0
17...	16.0	20	14	54	15	14	6.9	--	5.9	.0
17...	20.0	20	7	56	10	15	23	--	6.0	.0
OCT										
15...	.20	2.0	6	44	15	8	3.0	--	6.2	.0
15...	2.0	2.0	6	42	15	4	4.9	--	6.5	.0
15...	4.0	2.0	8	49	5	14	8.6	--	6.2	.0
15...	8.0	2.0	8	46	5	13	10	--	6.5	.0
15...	16.0	5.0	13	48	10	12	15	--	6.2	.0
15...	20.0	8.0	7	52	15	8	12	--	6.1	.0
DEC										
18...	.20	2.0	31	40	10	23	11	--	7.0	.0
18...	16.0	3.0	30	40	10	23	45	--	6.9	.0

CR-28 (133902) Yellowjacket Creek at Cameron Hill Road, near Laurance, Ga., 1978 and 1979

DATE	SAM- PLING (DEPTH)	TUR- BID- ITY (INCH)	SOLIDS- RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L)	SOLIDS- RESIDUE AT 180 DEG. C. DIS- SOLVED (MG/L)	COLOU- (PLAT- IMM CORAL)	ALKA- LINITY AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
APR - 1978										
17...	.20	6.0	8	41	20	22	.1	15	3.9	.0
17...	2.0	7.0	8	39	30	26	.1	24	4.3	.0
17...	4.0	3.0	5	47	20	13	13	16	4.9	.0
17...	4.0	4.0	2	33	20	13	16	16	2.3	.0
MAY										
12...	.20	5.0	4	46	30	21	.8	23	4.2	.0
12...	2.0	5.0	7	47	30	18	2.0	22	4.0	.0
12...	4.0	5.0	6	47	30	19	7.3	23	5.3	.0
12...	4.0	10	8	52	30	16	11	22	7.0	.0
JUN										
15...	.20	4.0	0	44	30	19	.0	23	5.3	.0
15...	2.0	5.0	4	47	30	17	.0	21	5.1	.0
15...	4.0	4.0	2	42	20	13	5.1	16	4.9	.0
15...	4.0	15	5	44	70	16	20	20	2.0	.0
JUL										
12...	.20	2.0	1	47	8	16	.0	20	8.1	.0
12...	2.0	2.0	4	44	8	21	.1	25	11	.0
12...	4.0	2.0	4	46	8	22	.4	27	8.0	.0
12...	4.0	5.0	0	44	40	27	21	33	5.0	.0
12...	13.0	30	16	79	230	39	15	44	6.9	.0
AUG										
15...	.20	3.0	5	53	10	22	2.2	27	5.1	.0
15...	2.0	3.0	1	49	20	22	2.2	27	5.3	.0
15...	4.0	2.0	0	44	20	16	25	20	6.1	.0
15...	4.0	22	7	48	120	11	22	14	7.6	.0
15...	12.0	50	14	102	400	52	32	63	5.0	.0
24...	.20	2.0	8	96	20	20	.0	24	6.0	.0
24...	2.0	2.0	9	91	20	17	.0	21	6.4	.0
24...	4.0	1.0	2	48	10	22	17	27	5.4	.0
24...	4.0	1.0	5	109	20	17	21	.1	6.1	.0
24...	13.0	40	20	85	400	49	15	60	4.5	.0
OCT										
17...	.20	4.0	27	47	--	20	7.7	24	6.4	.0
17...	2.0	4.0	29	52	--	13	6.1	16	6.6	.0
17...	4.0	4.0	24	50	--	12	7.6	15	6.8	.0
17...	4.0	6.0	23	54	--	17	11	21	6.7	.0
NOV										
24...	.20	6.0	14	48	--	13	6.4	16	5.4	.0
24...	7.0	6.0	14	45	--	17	13	21	5.0	.0
JAN - 1979										
23...	.20	8.0	16	48	--	17	3.4	21	4.0	.0
23...	11.0	20	5	48	--	18	4.4	22	3.6	.0
MAY										
21...	.20	25	25	37	30	13	18	--	6.1	.0
21...	11.0	45	30	42	80	15	180	--	2.2	.0
MAY										
01...	.20	35	20	38	100	10	2.3	--	2.5	.0
01...	2.0	35	19	39	100	10	4.9	--	2.6	.0
01...	4.0	25	15	38	60	7	11	--	3.0	.0
01...	4.0	10	13	39	50	9	15	--	4.0	.0
01...	12.0	30	25	45	70	15	59	--	3.5	.0
JUN										
12...	.20	4.0	3	38	5	17	.0	--	3.6	.0
12...	2.0	5.0	4	38	5	20	.0	--	3.1	.5
12...	4.0	6.0	6	38	5	15	.0	--	4.2	.7
12...	4.0	20	9	52	40	14	44	--	5.8	.0
12...	12.0	15	19	59	50	27	33	--	4.0	.0
JUL										
25...	.20	2.0	0	50	5	21	.1	--	5.2	.0
25...	2.0	2.0	1	45	5	17	.1	--	5.1	.0
25...	4.0	2.0	2	48	5	16	.0	--	6.0	.0
25...	4.0	3.0	7	43	5	15	29	--	4.7	.0
25...	12.0	25	22	82	200	23	14	--	4.1	.0
AUG										
22...	.20	2.0	0	48	5	16	.1	--	5.1	.0
22...	2.0	2.0	8	40	5	21	.3	--	5.0	.0
22...	4.0	2.0	0	48	5	20	7.0	--	5.5	.0
22...	4.0	7.0	4	59	50	26	32	--	4.9	.0
22...	12.0	40	41	64	380	46	28	--	4.4	.0
SEP										
19...	.20	2.0	0	50	8	12	29	--	6.1	.0
19...	2.0	3.0	0	50	5	12	15	--	4.3	.0
19...	4.0	3.0	10	44	5	10	20	--	6.3	.0
19...	4.0	5.0	4	52	5	13	16	--	6.3	.0
19...	12.0	25	21	87	150	29	28	--	5.5	.0
OCT										
14...	.20	4.0	10	50	10	8	6.9	--	5.2	.0
14...	12.0	20	18	50	20	12	12	--	6.1	.0
NOV										
12...	.20	4.0	15	52	10	15	--	--	2.0	.0
12...	11.0	4.0	19	52	30	16	--	--	5.7	.0

CM-04 (C233935U) Wehadkee Creek at State Highway 244, near Abbottsford, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	TUR- BID- ITY (NTU)	SOLIDS RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L)	SOLIDS RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	COLOR (PLAT- INUM CORAL UNITS)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
NOV . 1978										
24...	.20	8.0	19	64	--	14	7.3	23	3.0	--
28...	4.0	8.0	17	53	--	16	4.6	14	2.4	--

DATE	TUR- BID- ITY (NTU)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)
JAN . 1979			
23...	25	16	2.6
23...	25	15	3.0
MAR			
20...	35	12	9.8
20...	40	8	42
APR			
30...	15	7	2.4
30...	10	9	5.9
30...	15	7	11
30...	35	12	49
JUN			
14...	2.0	11	1.5
14...	2.0	12	1.2
14...	3.0	12	9.8
14...	8.0	16	34
JUL			
25...	2.0	12	.2
25...	2.0	14	.3
25...	5.0	21	1.4
25...	2.0	14	42
AUG			
21...	2.0	18	.6
21...	2.0	18	4.4
21...	2.0	17	21
21...	15	30	37
SEPT			
18...	3.0	13	13
18...	3.0	15	15
18...	3.0	13	13
18...	6.0	12	12
OCT			
16...	3.0	12	12
16...	7.0	15	19
DEC			
11...	5.0	9	8.8
11...	8.0	27	33

DATE	S&M- PHTC DEPTH- (M)	TUR- -10- 15- (INT)	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L)	SOLIDS, RESIDUE AT 100 DEG. C. D15- SOLVED (MG/L)	COLOR (PLAT- FORM COBAL) (UNITS)	ALKA- LINITV (MG/L AS CaCO3)	CARBON DIOXIDE D15- SOLVED (MG/L AS CO2)	BICAR- BONATE (MG/L AS HCO3)	SULFATE D15- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
APR - 1978										
11....	1.0	2.0	0	25	10	0	0	7	5.0	.0
11....	16.0	25	0	37	50	16	12	14	6.2	.0
MAY										
06....	2.0	4.0	2	40	20	16	0.0	19	6.4	.0
06....	2.0	4.0	1	39	20	10	0.0	22	5.0	.2
06....	4.0	3.0	3	41	10	13	0.1	10	5.7	.1
06....	4.0	5.0	2	43	10	17	17	21	10	.2
06....	16.0	20	15	40	40	17	100	21	3.9	.0
31....	2.0	2.0	7	44	20	10	.0	21	5.2	.0
31....	2.0	2.0	0	44	20	21	.0	23	5.0	.0
31....	4.0	3.0	0	50	20	19	15	23	6.0	.0
31....	4.0	5.0	7	50	20	16	25	20	4.3	.0
31....	16.0	7.0	7	52	20	19	10	23	2.0	.0
JUL										
10....	2.0	4.0	2	55	0	21	.0	25	5.7	.0
10....	2.0	2.0	0	50	0	21	.0	25	5.7	.0
10....	4.0	1.0	0	52	0	15	1.0	18	6.6	.0
10....	4.0	5.0	3	49	0	21	21	26	5.0	.0
10....	16.0	4.0	3	60	0	24	12	24	6.3	.0
AUG										
16....	2.0	4.0	0	49	15	14	.2	21	7.3	.0
16....	2.0	4.0	0	52	15	20	.2	24	7.3	.0
16....	4.0	3.0	1	46	10	11	1.3	13	6.4	.0
16....	4.0	3.0	0	50	10	10	10	22	7.0	.0
16....	16.0	10	9	50	25	27	26	33	6.4	.0
24....	2.0	2.0	1	100	10	23	.1	28	6.6	.1
24....	2.0	3.0	0	44	10	20	.1	24	6.0	.0
24....	4.0	2.0	0	43	10	21	3.3	26	6.0	.0
24....	8.0	1.0	0	103	20	13	26	16	7.1	.0
24....	16.0	3.0	1	103	30	10	19	12	7.2	.0
OCT										
16....	2.0	2.0	20	50	--	16	6.4	20	5.5	.0
16....	2.0	1.0	15	50	--	21	8.0	25	5.4	.0
16....	4.0	1.0	21	48	--	16	6.4	20	5.5	.0
16....	4.0	2.0	21	50	--	21	10	25	5.5	.0
16....	16.0	9.0	18	44	--	16	15	19	6.0	.0
NOV										
24....	2.0	3.0	7	50	--	15	3.6	18	5.0	.0
24....	16.0	15	22	44	--	11	6.6	13	6.1	.0
JAN - 1979										
23....	2.0	7.0	2	50	--	16	5.6	17	7.1	.0
23....	16.0	9.0	19	54	--	15	4.6	18	6.0	.0
MAR										
20....	2.0	25	17	41	20	12	.2	--	4.5	.0
20....	13.0	20	12	44	45	12	0	--	4.5	.0
APR										
10....	2.0	10	10	32	20	12	.1	--	3.2	.0
10....	2.0	15	11	36	40	9	7.5	--	3.3	.0
10....	4.0	20	15	37	30	11	14	--	4.1	.0
10....	8.0	20	16	31	25	0	10	--	4.0	.0
10....	16.0	20	32	30	50	15	0.3	--	3.5	.0
JUN										
16....	2.0	3.0	3	41	0	10	.2	--	4.6	.0
16....	2.0	4.0	5	47	0	13	.1	--	4.3	.0
16....	4.0	6.0	8	40	0	16	.2	--	4.6	.0
16....	8.0	3.0	7	37	5	12	37	--	3.4	.0
16....	16.0	9.0	6	34	10	8	50	--	2.8	.0
JUL										
25....	2.0	2.0	5	44	5	12	.1	--	5.5	.0
25....	2.0	2.0	0	45	5	21	.3	--	5.4	.0
25....	4.0	2.0	0	44	5	21	1.3	--	5.5	.0
25....	8.0	1.0	0	42	5	12	20	--	4.6	.0
25....	16.0	3.0	7	48	50	21	10	--	2.1	.0
AUG										
21....	2.0	2.0	0	45	5	21	.2	--	5.5	.0
21....	2.0	2.0	4	52	5	16	.1	--	6.0	.0
21....	4.0	2.0	0	50	5	21	2.0	--	6.6	.0
21....	8.0	2.0	12	52	5	17	17	--	6.4	.0
21....	16.0	5.0	0	50	150	20	36	--	3.3	.0
SEP										
18....	2.0	3.0	11	30	5	12	7.4	--	6.0	.0
18....	2.0	2.0	5	40	5	12	9.3	--	6.7	.0
18....	4.0	4.0	0	45	0	16	12	--	7.0	.0
18....	8.0	3.0	0	44	5	11	8.5	--	7.2	.0
18....	16.0	10	9	52	50	15	29	--	5.2	.0
OCT										
16....	2.0	2.0	1	50	5	14	6.6	--	5.2	.0
16....	16.0	25	11	54	30	12	15	--	5.0	.0
DEC										
11....	2.0	3.0	20	42	20	10	20	--	6.1	.0
11....	16.0	9.0	16	46	40	10	25	--	6.0	.0

CH-2.5B (02339-2) Chattahoochee River below West Point Dam, 1978 and 1979

DATE	SAM- PLING (DEPTH (M))	TUR- BID- ITY (NTU)	SOLIDS RESIDUE AT 105 DFG. C. SUS- PENDED (MG/L)	SOLIDS RESIDUE AT 180 DEG. C. DIS- SOLVED (MG/L)	COLOR (PLAT- INUM COBALT UNITS)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
APR . 1978										
04...	.70	5.0	6	52	10	16	.3	20	5.7	.0
MAY										
01...	.70	25	31	44	30	14	--	17	6.6	.0
01...	1.0	7.0	4	51	30	17	21	21	6.2	.0
30...	.70	3.0	1	42	20	16	5.1	20	5.5	.0
30...	1.0	2.0	0	46	20	21	12	24	5.6	.0
JUL										
09...	.70	3.0	5	46	15	10	5.1	20	5.3	.0
10...	1.0	4.0	4	53	45	16	7.6	19	4.9	.0
AUG										
13...	.70	4.0	0	98	45	21	4.0	25	6.9	.0
14...	1.0	4.0	0	54	35	22	17	27	6.9	.0
27...	.70	5.0	14	46	30	20	7.7	24	7.1	.0
28...	1.0	3.0	0	101	20	15	7.2	18	7.1	.0
OCT										
18...	.70	1.0	2	46	--	15	5.7	18	6.1	.0
19...	1.0	2.0	3	46	--	18	6.8	22	6.1	.0
NOV										
27...	.70	8.0	5	62	--	11	8.3	17	6.6	.0
28...	1.0	6.0	14	46	--	15	1.8	18	6.0	.0
JAN . 1979										
22...	1.0	6.0	5	53	--	15	5.7	18	8.9	.0
MAR										
19...	1.0	35	17	47	70	10	7.8	--	6.4	.0
19...	.70	30	14	48	55	9	6.8	--	6.3	.0
APR										
30...	1.0	20	26	36	30	11	22	--	4.6	.0
MAY										
02...	.70	25	20	33	40	10	25	--	4.4	.1
JUN										
11...	.70	6.0	9	41	10	16	12	--	4.0	.0
11...	1.0	4.0	0	46	10	13	10	--	4.3	.0
JUL										
23...	.70	2.0	2	42	8	15	15	--	4.3	.0
23...	1.0	4.0	2	48	20	20	20	--	4.3	.0
AUG										
20...	.70	7.0	0	59	40	20	20	--	5.7	.0
20...	1.0	5.0	32	56	30	10	6.8	--	5.7	.0
SEP										
16...	.70	5.0	3	54	5	19	15	--	7.0	.0
17...	1.0	5.0	0	54	10	18	6.8	--	6.9	.0
OCT										
14...	.70	3.0	1	50	8	12	9.3	--	6.7	.0
15...	1.0	3.0	3	46	10	12	5.9	--	6.7	.0
DEC										
09...	.70	4.0	7	54	10	18	44	--	6.5	.0
10...	1.0	3.0	32	46	10	26	20	--	6.9	.0

CH-01A (U2339500) Chattahoochee River at West Point, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	TUR- BID- ITY (NTU)	SOLIDS. RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L)	SOLIDS. RESIDUE AT 180 DEG. C. DIS- SOLVED (MG/L)	COLOR (PLAT- INUM COBALT UNITS)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
APR . 1978										
09...	.70	4.0	4	56	10	16	2.5	20	4.3	.0
13...	1.0	7.0	13	46	10	3	4.0	4	5.0	.0
MAY										
01...	1.0	15	16	42	30	16	61	19	6.5	.0
14...	.70	8.0	3	49	50	16	127	20	5.7	.0
30...	.70	1.0	2	44	20	13	10	16	5.6	.0
30...	1.0	4.0	0	46	20	18	111	22	5.5	.0
JUL										
09...	.70	2.0	10	45	15	21	5.0	25	5.0	.0
10...	1.0	5.0	13	44	30	21	16	25	5.1	.0
AUG										
13...	.70	8.0	0	90	45	16	3.0	19	6.6	.0
14...	1.0	5.0	0	56	30	20	19	24	6.6	.0
27...	.70	4.0	12	42	10	17	8.4	21	6.8	.0
28...	1.0	6.0	7	100	10	16	8.0	20	7.1	.0
OCT										
18...	.70	2.0	0	46	--	19	5.8	23	6.0	.0
19...	1.0	3.0	1	49	--	14	5.4	17	6.5	.0
NOV										
28...	1.0	5.0	18	48	--	11	3.3	13	5.8	.0
JAN . 1979										
22...	1.0	10	8	50	--	16	8.0	20	8.7	.0
MAR										
19...	1.0	35	20	46	55	10	9.8	--	6.3	.0
19...	.70	30	13	51	45	10	7.8	--	6.3	.0
APR										
30...	1.0	15	28	32	60	12	19	--	4.3	.0
MAY										
02...	.70	15	14	40	30	12	24	--	3.2	.0
JUN										
11...	.70	5.0	2	44	10	15	5.0	--	4.8	.0
11...	1.0	6.0	16	44	18	14	11	--	4.2	.5
JUL										
23...	.70	5.0	5	40	15	17	6.7	--	3.3	.0
23...	1.0	4.0	5	47	5	20	31	--	4.1	.0
AUG										
20...	.70	5.0	0	54	35	19	12	--	5.3	.0
20...	1.0	4.0	0	54	25	21	10	--	5.4	.0
SEP										
16...	.70	5.0	0	56	5	18	8.8	--	6.6	.0
17...	1.0	5.0	5	51	10	19	12	--	7.8	.0
OCT										
14...	.70	4.0	3	51	8	14	6.9	--	6.8	.0
15...	1.0	3.0	9	46	5	13	6.4	--	6.3	.0
DEC										
09...	.70	3.0	6	44	10	9	14	--	6.2	.0
10...	1.0	6.0	8	46	10	15	9.3	--	6.6	.0

CH-01B (02339550) Chattahoochee River (city of Lanett intake) at Lanett, Ala., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	TUR- BID- ITY (NTU)	SOLIDS RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L)	SOLIDS RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	COLOR (PLAT- INUM COBALT UNITS)	ALKA- LITY (MG/L AS CaCO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
APR . 1978										
09...	.70	4.0	6	34	20	11	1.8	14	5.4	.0
MAY										
01...	1.0	15	12	46	30	18	88	22	6.6	.0
14...	.70	10	2	50	30	17	34	21	4.5	.0
30...	.70	2.0	0	47	20	15	4.6	14	5.2	.0
30...	1.0	4.0	1	46	20	19	15	23	5.3	.0
JUL										
09...	.70	3.0	0	45	15	22	4.3	27	5.0	.0
10...	1.0	5.0	7	50	30	21	17	26	4.8	.0
AUG										
13...	.70	5.0	0	102	40	20	6.1	24	5.6	.0
14...	1.0	4.0	0	56	30	16	15	19	6.6	.0
27...	.70	2.0	10	48	20	16	6.1	19	7.0	.0
28...	1.0	3.0	9	99	20	12	4.6	15	6.4	.0
OCT										
14...	.70	2.0	5	48	7	17	6.7	21	6.4	.0
14...	1.0	3.0	4	51	--	14	5.4	17	6.1	.0
NOV										
27...	.70	7.0	10	45	--	13	4.1	16	6.1	.0
28...	1.0	4.0	19	45	--	12	7.6	15	5.4	.0
JAN . 1979										
22...	1.0	7.0	13	51	--	14	5.4	17	4.5	.0
MAR										
19...	1.0	35	17	46	70	11	6.8	--	6.3	.0
19...	.70	30	8	55	60	11	8.6	--	6.3	.0
APR										
30...	1.0	15	27	32	70	8	12	--	4.6	.0
MAY										
02...	.70	25	21	36	35	12	15	--	3.4	.0
JUN										
11...	.70	4.0	2	43	10	19	7.4	--	3.4	.0
11...	1.0	5.0	3	43	10	16	12	--	4.3	.0
JUL										
23...	.70	6.0	14	40	15	16	5.0	--	3.4	.0
23...	1.0	4.0	10	42	20	19	24	--	3.8	.0
AUG										
20...	.70	4.0	0	52	25	19	12	--	5.4	.0
20...	1.0	4.0	0	56	25	18	7.0	--	5.4	.0
SEP										
14...	.70	5.0	0	54	5	18	8.8	--	6.5	.0
17...	1.0	6.0	8	48	10	15	4.3	--	6.9	.0
OCT										
14...	.70	2.0	2	58	5	15	7.4	--	6.1	2.8
15...	1.0	5.0	11	46	5	12	4.7	--	6.1	.0
DEC										
09...	.70	4.0	6	48	10	10	25	--	6.1	.0
10...	1.0	6.0	6	48	10	26	13	--	6.6	.0

CH-01C (0349560) Chattahoochee River above junction of Long Cane Creek, near West Point, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	TUR- RID- ITY (NTU)	SOLIDS RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L)	SOLIDS RESIDUE AT 180 DEG. C DIS- SOLVED (MG/L)	COLOR (PLAT- INUM CORALY) (UNITS)	ALKA- LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO2)	BICAR- BONATE (MG/L AS HCO3)	SULFATE DIS- SOLVED (MG/L AS SO4)	SULFIDE TOTAL (MG/L AS S)
APR . 1978										
09...	.70	3.0	6	37	20	7	.9	9	5.6	.0
MAY										
01...	1.0	10	7	45	30	16	32	20	6.0	.0
14...	.70	7.0	4	50	30	17	--	21	5.6	.0
30...	.70	2.0	5	50	20	18	5.6	22	7.0	.0
30...	1.0	3.0	1	44	20	18	22	22	5.7	.0
JUL										
09...	.70	2.0	1	50	15	25	6.0	30	5.4	.0
10...	1.0	4.0	7	44	10	14	6.8	17	5.1	.0
AUG										
13...	.70	8.0	0	101	45	20	6.1	24	6.4	.0
14...	1.0	5.0	0	58	30	24	23	24	6.6	.0
27...	.70	3.0	12	50	20	19	5.8	23	7.2	.0
28...	1.0	3.0	1	107	20	15	18	18	7.0	.0
OCT										
18...	.70	2.0	3	50	--	16	5.1	20	6.3	.0
19...	1.0	3.0	7	47	--	16	6.1	19	6.2	.0
NOV										
27...	.70	8.0	16	54	--	14	8.6	17	6.6	.0
28...	1.0	9.0	25	44	--	8	4.0	10	5.7	.0
JAN . 1979										
22...	1.0	9.0	18	52	--	15	7.2	18	8.2	.0
MAR										
19...	1.0	30	15	47	70	10	16	--	6.1	.0
19...	.70	30	16	50	80	12	12	--	6.5	.0
MAY										
02...	.70	35	20	38	35	14	27	--	5.0	.0
JUN										
11...	.70	5.0	8	48	20	17	5.3	--	5.0	.6
11...	1.0	6.0	1	45	10	15	12	--	4.3	.0
JUL										
21...	.70	10	4	57	20	19	15	--	4.0	.0
23...	1.0	5.0	0	48	15	19	74	--	4.0	.0
AUG										
20...	.70	3.0	2	56	15	17	21	--	5.7	.0
20...	1.0	6.0	4	56	25	19	12	--	5.5	.0
SEP										
16...	.70	5.0	2	54	5	21	6.5	--	7.0	.0
17...	1.0	15	22	54	5	14	8.6	--	6.4	.0
OCT										
14...	.70	4.0	0	54	5	13	5.1	--	6.2	.0
15...	1.0	3.0	9	50	10	12	5.9	--	6.1	.0
DEC										
09...	.70	3.0	6	54	10	24	19	--	6.5	.0
11...	1.0	5.0	11	47	14	25	9.7	--	6.6	.0

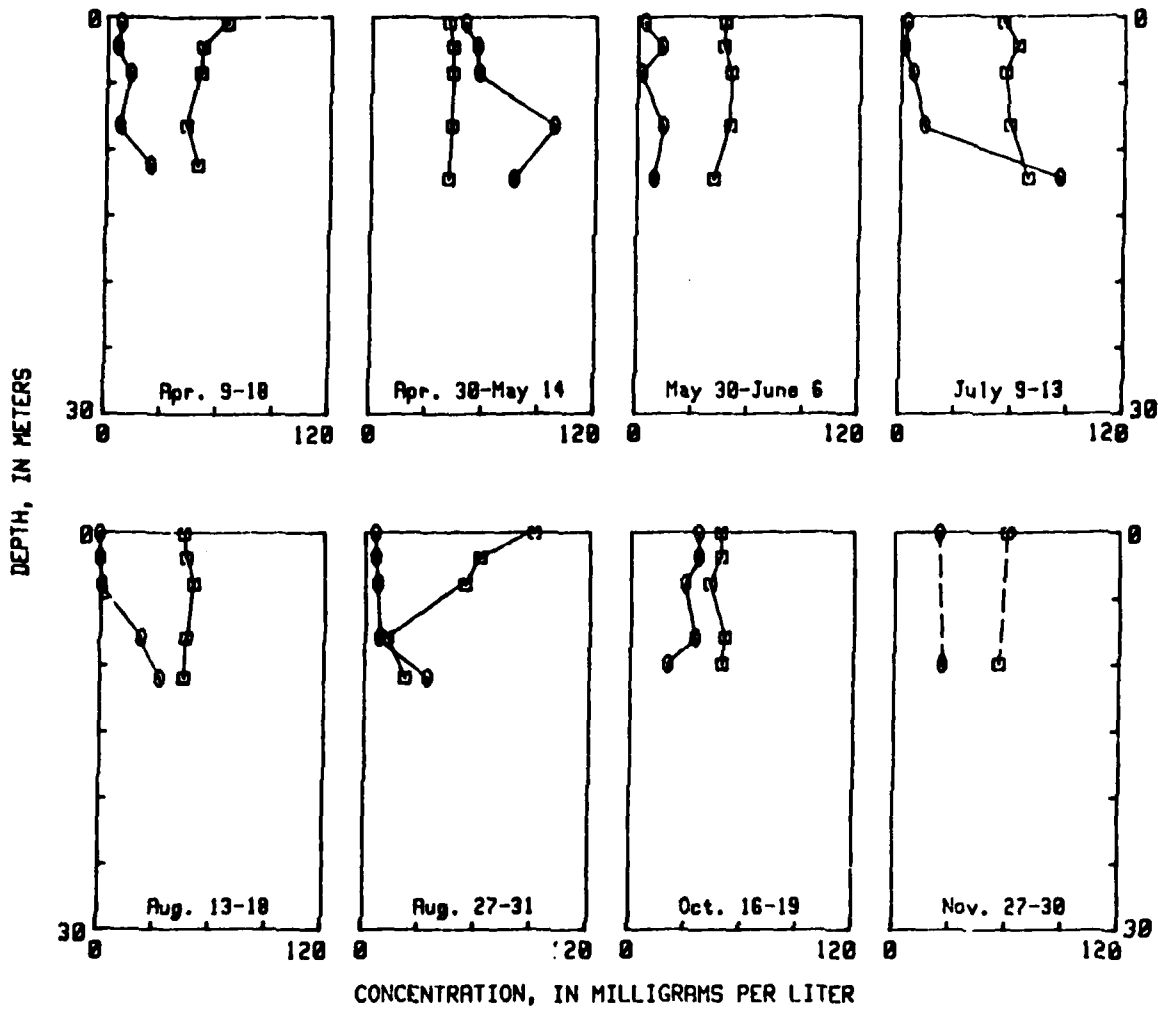
CH-01D (02339780) Chatahoochee River at Langdale, Ala., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	TUR- HID- ITY (NTU)	SOLIDS, RESIDUE AT 105 DEG. C. SUS- PENDED (MG/L)	SOLIDS, RESIDUE AT 180 DEG. C. DIS- SOLVED (MG/L)	COLOR (PLAT- INUM COBALT UNITS)	ALKA- LINITY (MG/L AS CaCO ₃)	CARBON DIOXIDE DIS- SOLVED (MG/L AS CO ₂)	BICAH- RONATE (MG/L AS HCO ₃)	SULFATE DIS- SOLVED (MG/L AS SO ₄)	SULFIDE TOTAL (MG/L AS S)
APR . 1978										
09...	.70	5.0	6	42	10	16	4.0	20	5.7	.0
MAY										
01...	1.0	10	11	47	30	17	42	21	6.1	.0
14...	.70	10	1	52	30	19	--	23	5.2	.0
30...	.70	4.0	4	51	20	16	8.0	20	6.6	.0
30...	1.0	7.0	10	46	20	18	44	22	6.0	.0
JUL										
09...	.70	3.0	1	50	15	16	3.2	20	5.4	.0
10...	1.0	5.0	13	50	10	24	15	29	5.1	.0
AUG										
13...	.70	8.0	1	101	45	16	8.0	20	6.6	.0
14...	1.0	4.0	4	56	30	24	23	29	6.5	.0
27...	.70	5.0	12	52	20	16	3.0	19	7.2	.0
28...	1.0	7.0	9	104	10	21	25	25	6.8	.0
OCT										
18...	.70	1.0	1	48	--	16	5.1	20	6.6	.0
19...	1.0	2.0	10	47	--	16	5.1	20	5.9	.0
NOV										
27...	.70	8.0	13	44	--	11	5.6	14	6.3	.0
28...	1.0	15	33	49	--	16	8.0	20	5.3	.0
JAN . 1979										
22...	1.0	15	16	53	--	15	4.6	18	8.7	.0
MAR										
19...	1.0	35	18	48	60	11	17	--	6.3	.0
19...	.70	35	18	50	50	11	14	--	6.9	.0
APR										
30...	1.0	35	24	36	70	10	9.8	--	4.3	.0
MAY										
02...	.70	30	18	38	35	11	22	--	4.6	.1
JUN										
11...	.70	4.0	10	50	10	17	3.3	--	4.3	.7
11...	1.0	5.0	19	41	10	17	13	--	4.2	.0
JUL										
23...	.70	20	18	53	60	14	11	--	4.5	.0
23...	1.0	15	25	45	10	20	99	--	5.	.0
AUG										
20...	1.0	5.0	0	61	15	21	10	--	5.7	.0
23...	.70	20	10	55	20	22	14	--	5.7	.0
SEP										
16...	.70	5.0	0	60	5	16	6.2	--	7.0	.0
17...	1.0	7.0	17	48	10	14	8.6	--	6.6	.0
OCT										
14...	.70	3.0	0	58	20	17	6.6	--	6.5	.0
15...	1.0	7.0	15	48	10	11	5.4	--	6.0	.0
DEC										
09...	.70	4.0	5	56	10	17	13	--	6.4	.0
10...	1.0	4.0	9	44	5	26	10	--	6.6	.0

APPENDIX C-5

Graphs showing variations in residue concentration with reservoir depth
at stations in West Point Reservoir, April 1978-December 1979

			Page
CH-10	(02338710)	Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978 and 1979.....	300
CH-07	(02338720)	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1978 and 1979.....	302
CH-05A	(02339190)	Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978 and 1979.....	304
CH-03C	(02339388)	Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979.....	306
CH-08	(02339020)	Yellowjacket Creek at Cameron Mill Road, near LaGrange, Ga., 1978 and 1979.....	308
CH-13	(02339362)	Wehadkee Creek at State Highway 238, near Abbots- ford, Ga., 1978 and 1979.....	310

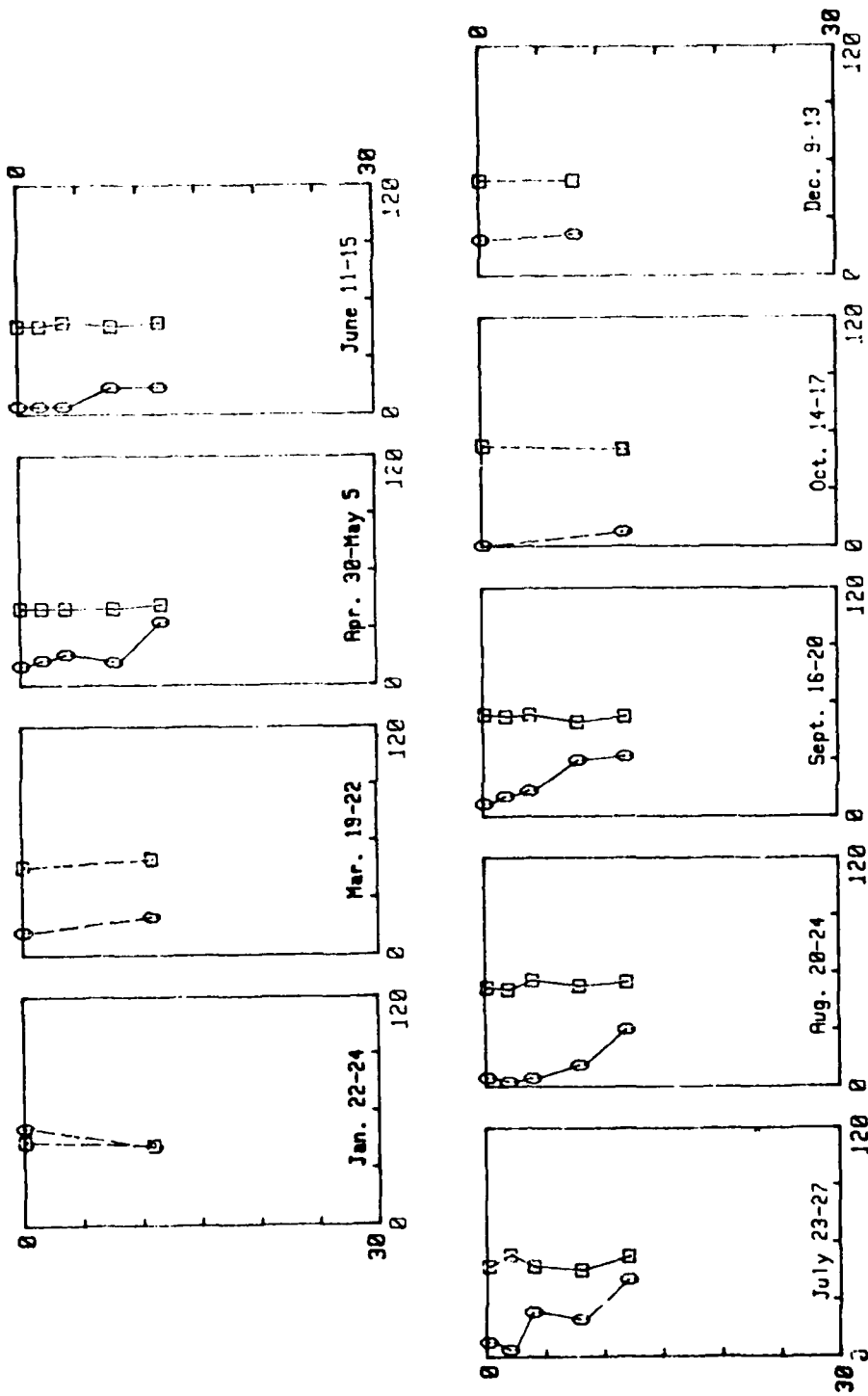


EXPLANATION

- Nonfilterable residue
- Filterable residue

CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978

DEPTH, IN METERS

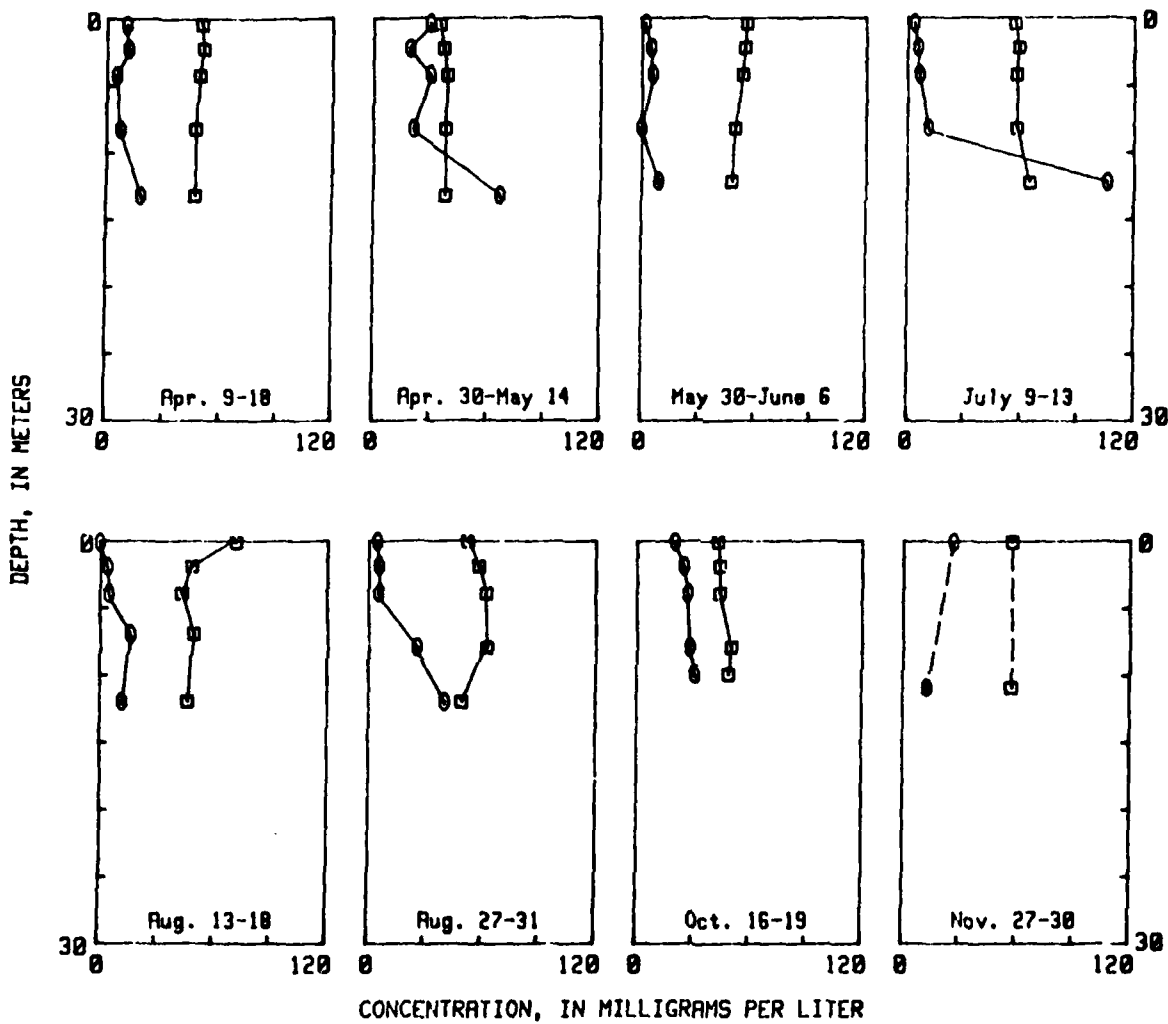


CONCENTRATION, IN MILLIGRAMS PER LITER

EXPLANATION

- Nonfilterable residue
- Filterable residue

CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1979

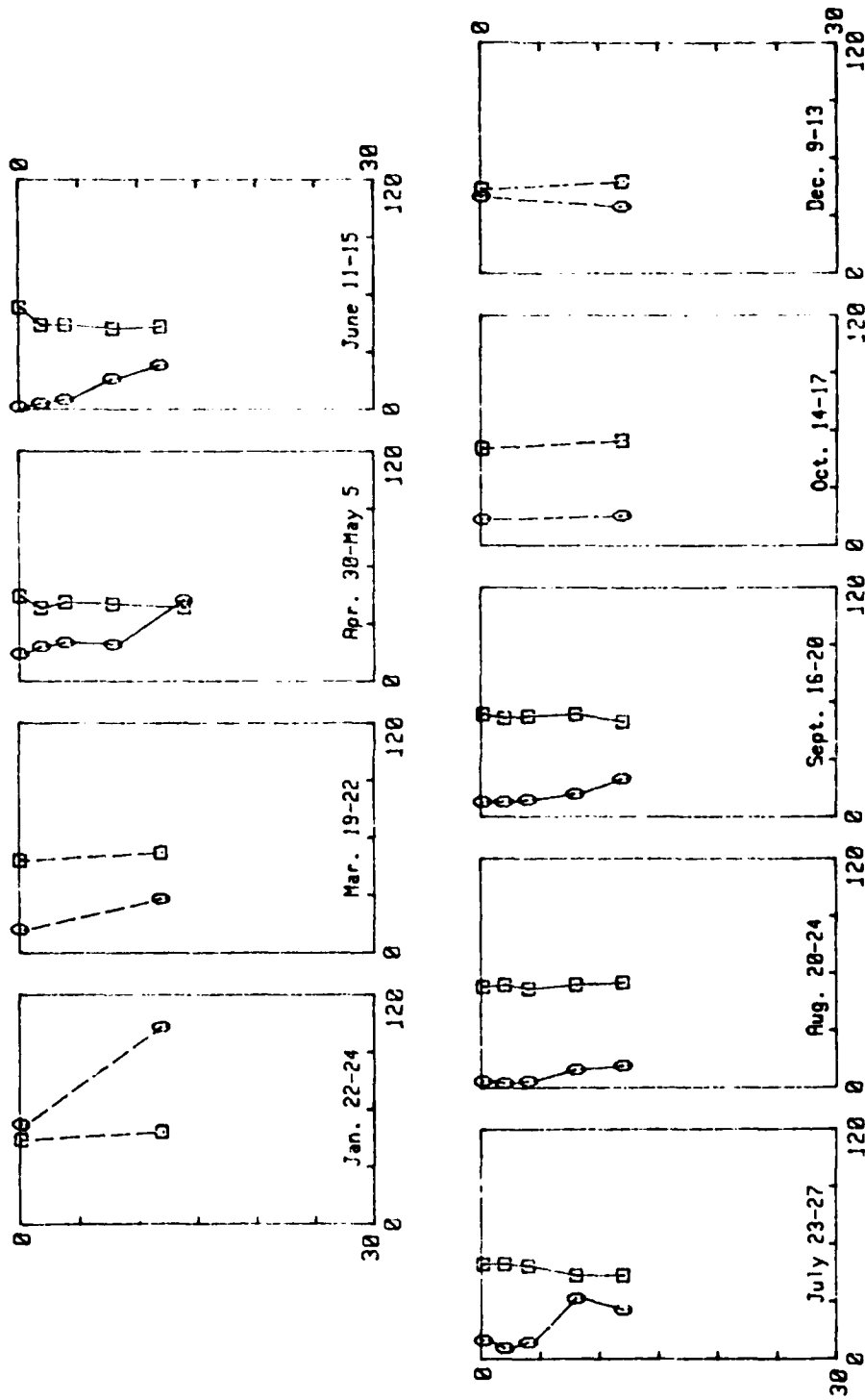


EXPLANATION

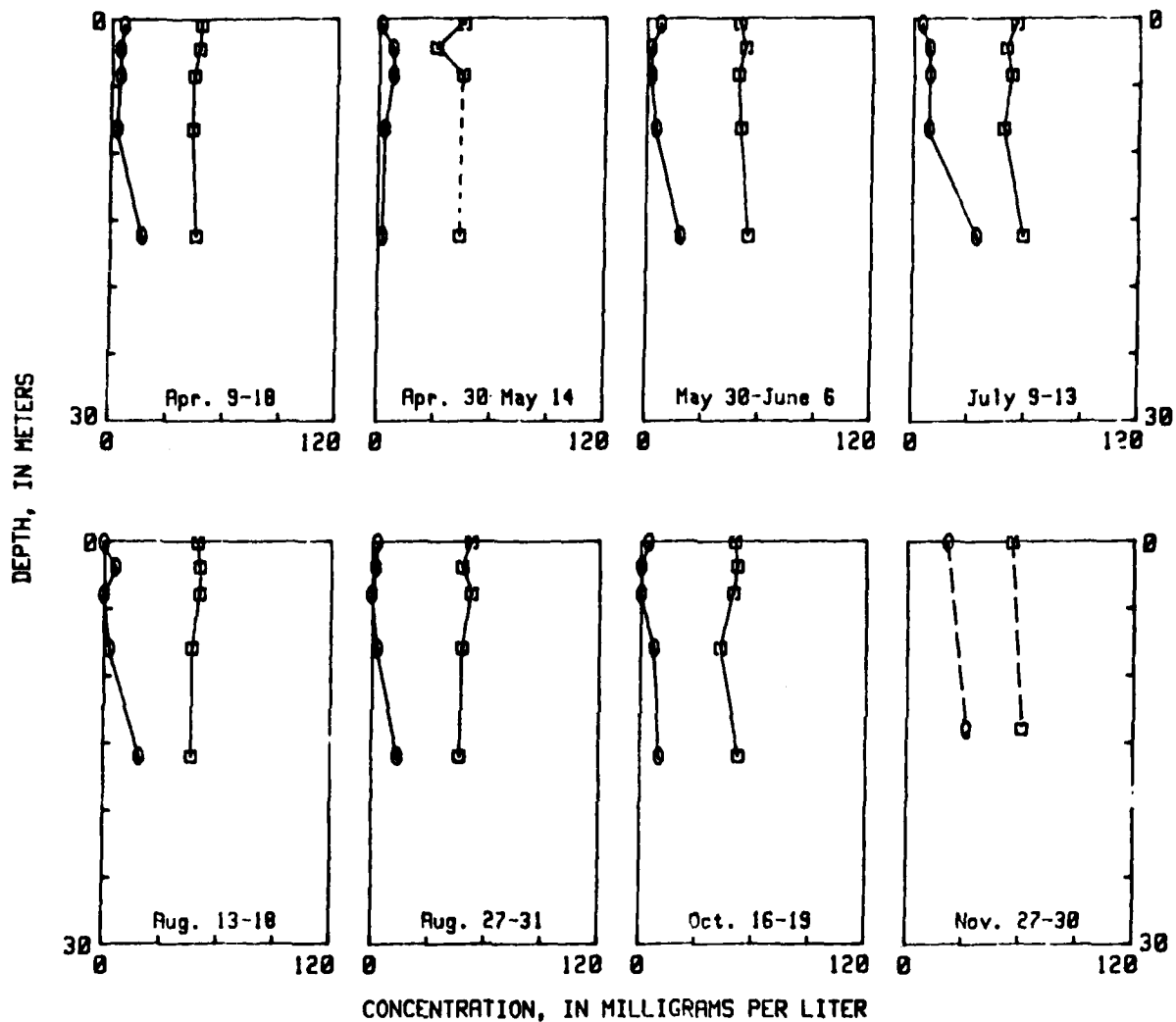
- Nonfilterable residue
- Filterable residue

CH-07 (02338720) Chattahoochee River (city of LaGrange intake)
near LaGrange, Ga., 1978

DEPTH, IN METERS



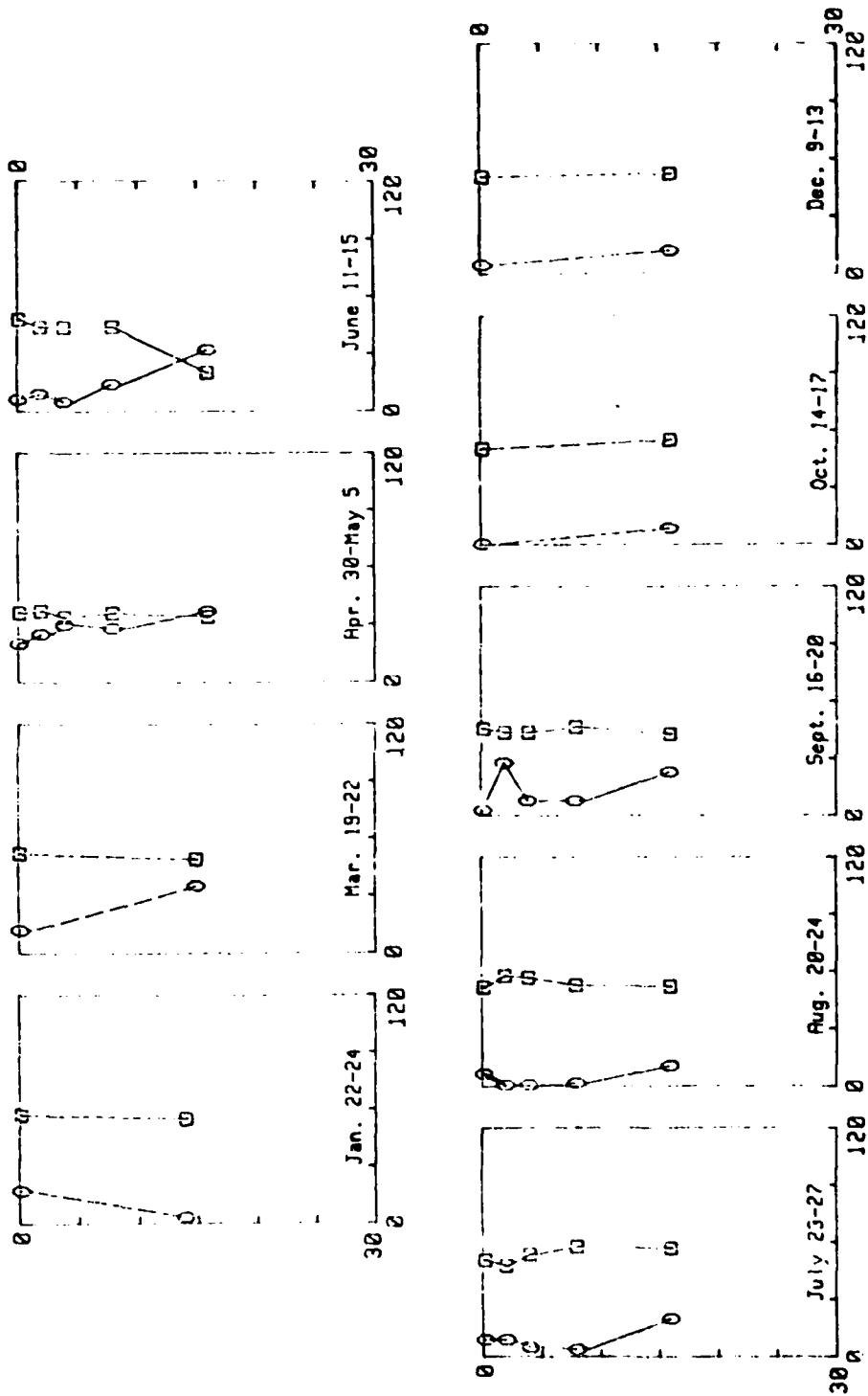
CH-07 (02338720; Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1979



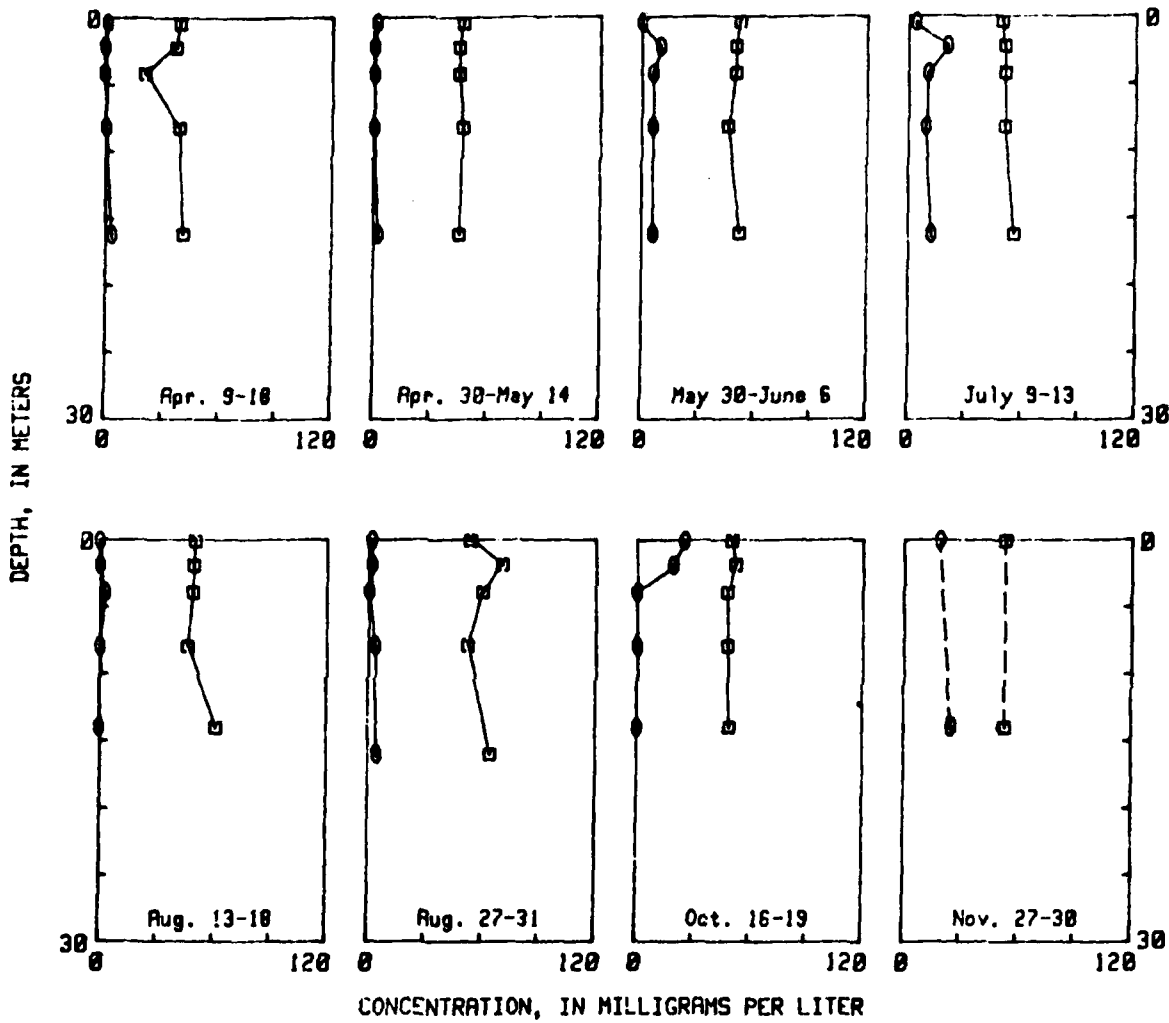
EXPLANATION

- Nonfilterable residue
- Filterable residue

CH-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978



CH-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1979

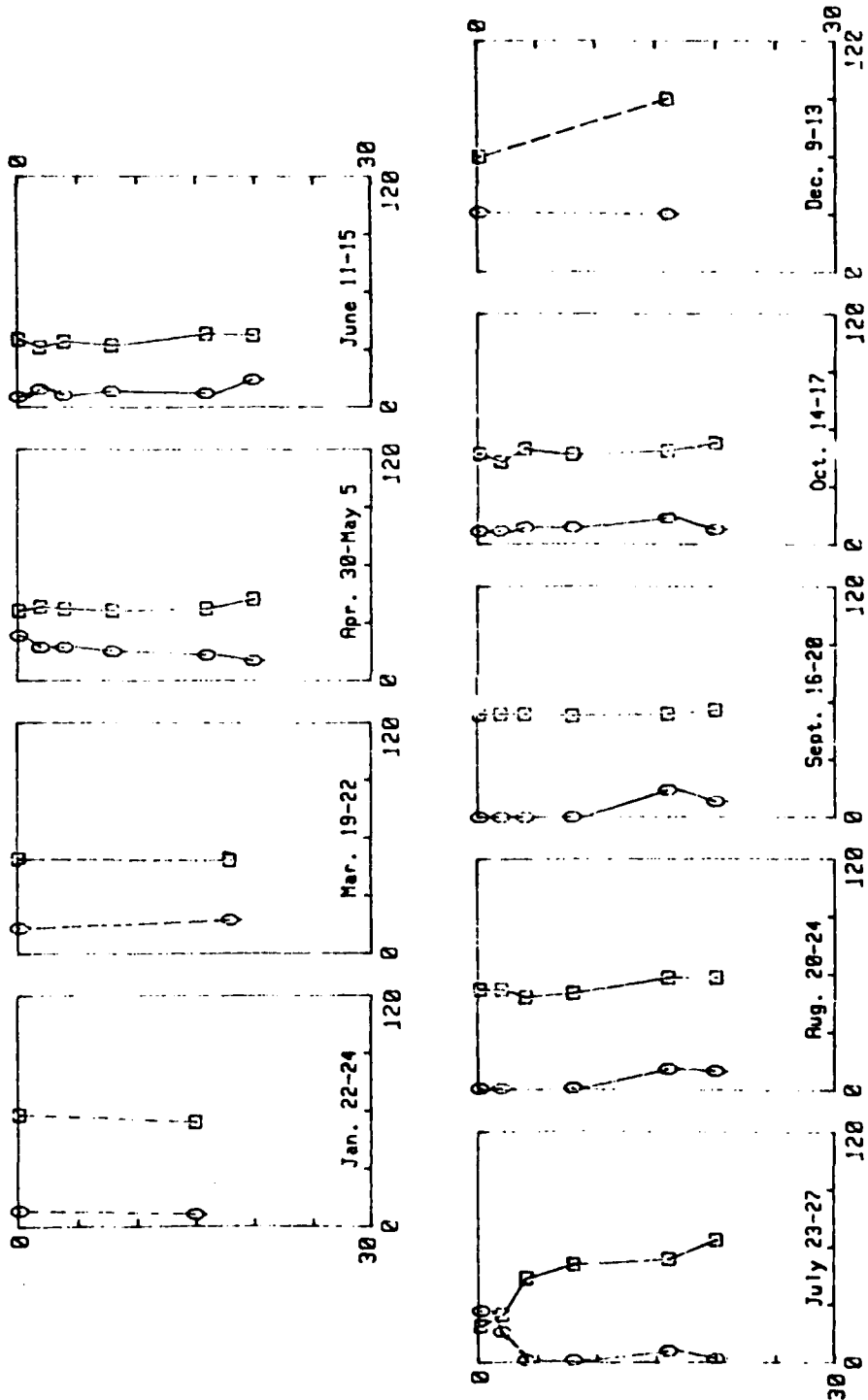


EXPLANATION

- Nonfilterable residue
- Filterable residue

CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1978

DEPTH, IN METERS

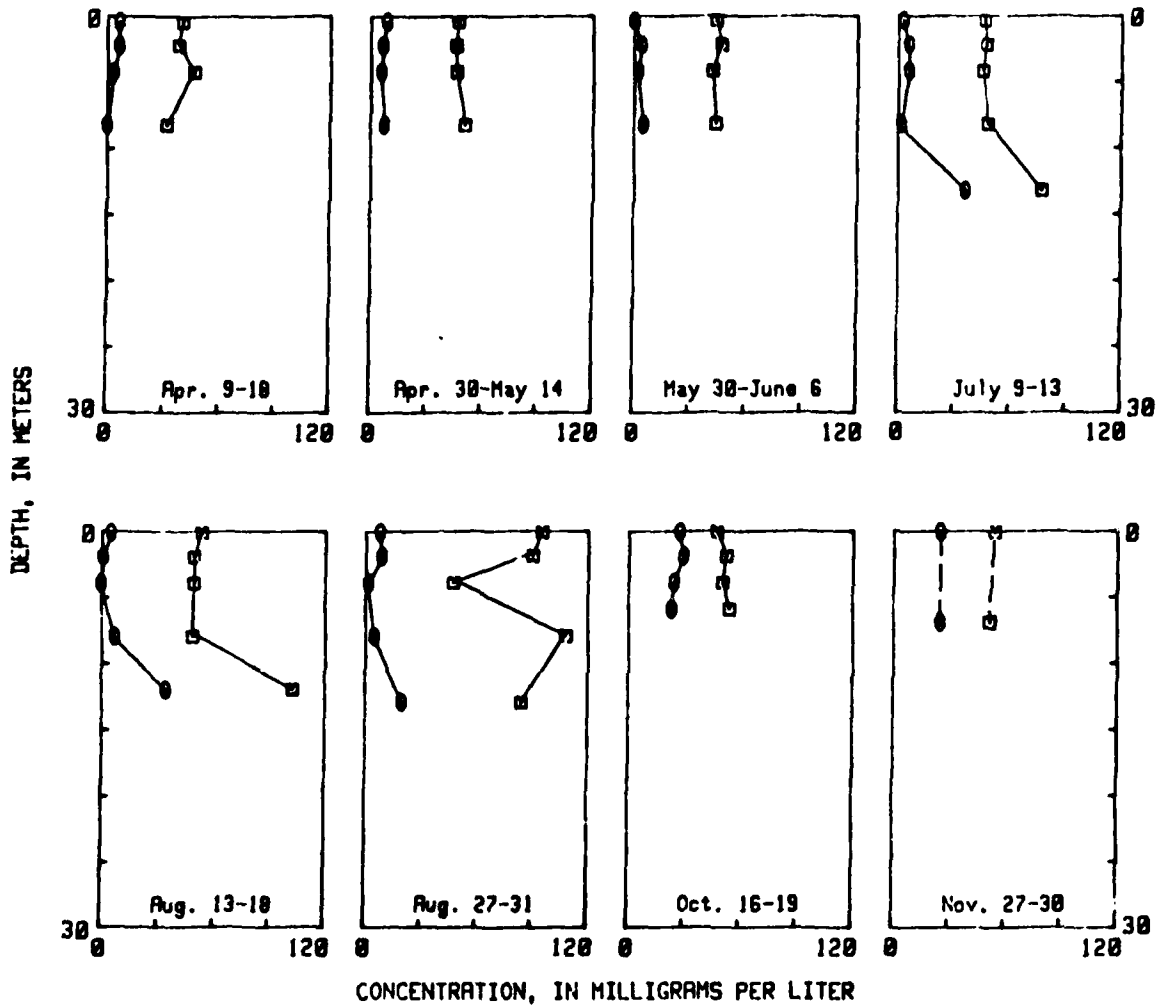


CONCENTRATION, IN MILLIGRAMS PER LITER

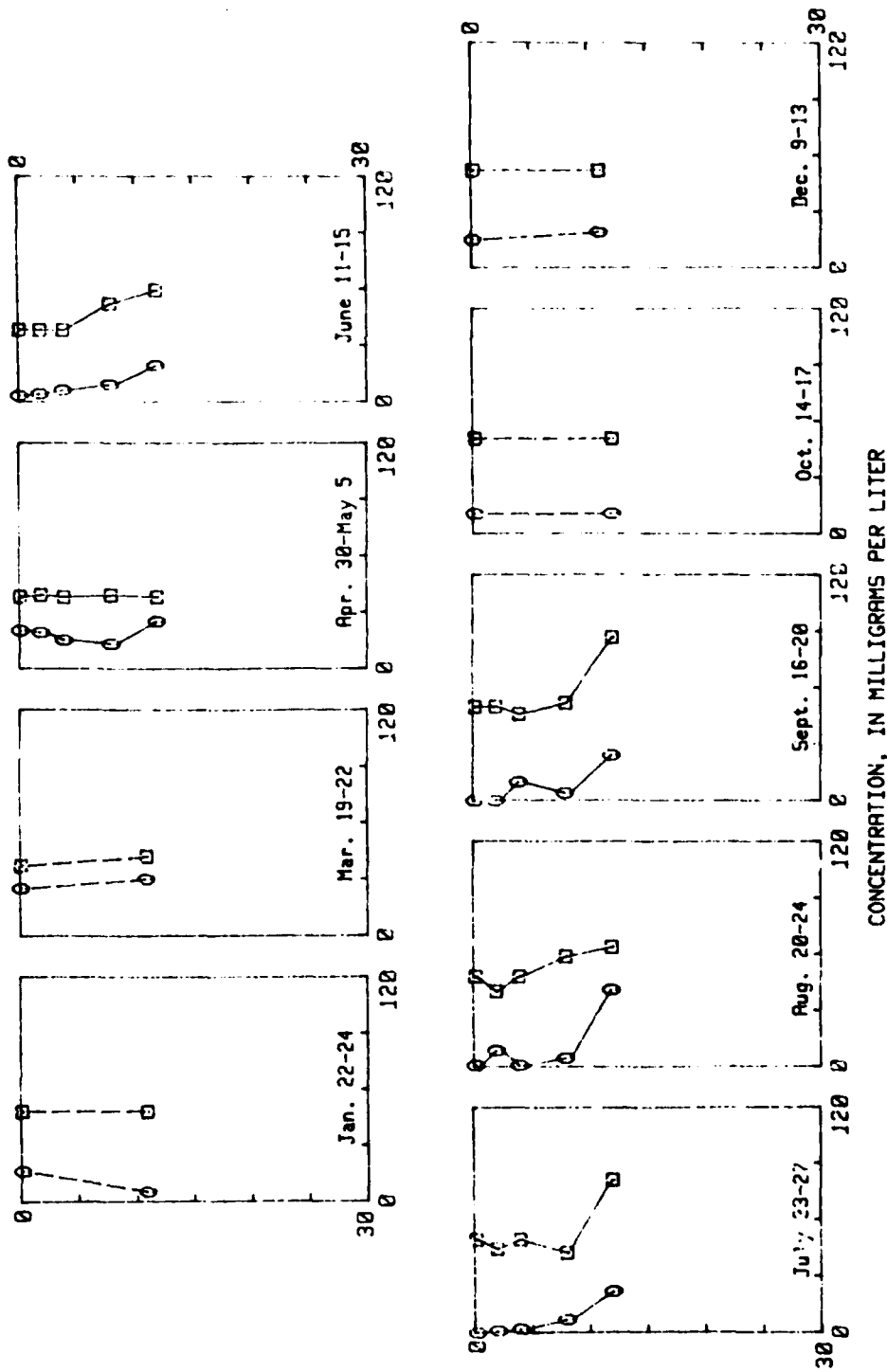
EXPLANATION

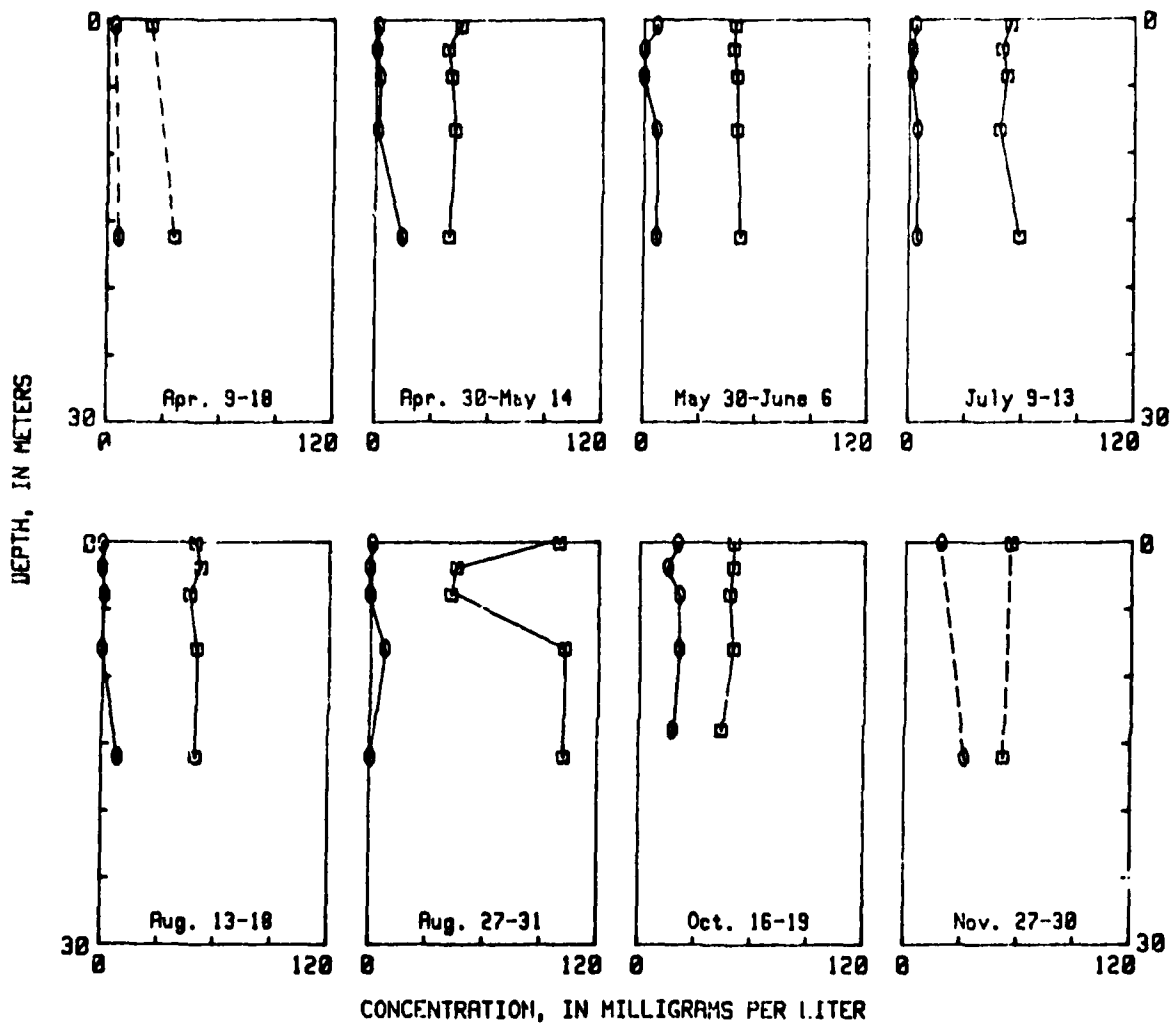
- non-filterable residue
- filterable residue

CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1979



DEPTH, IN METERS



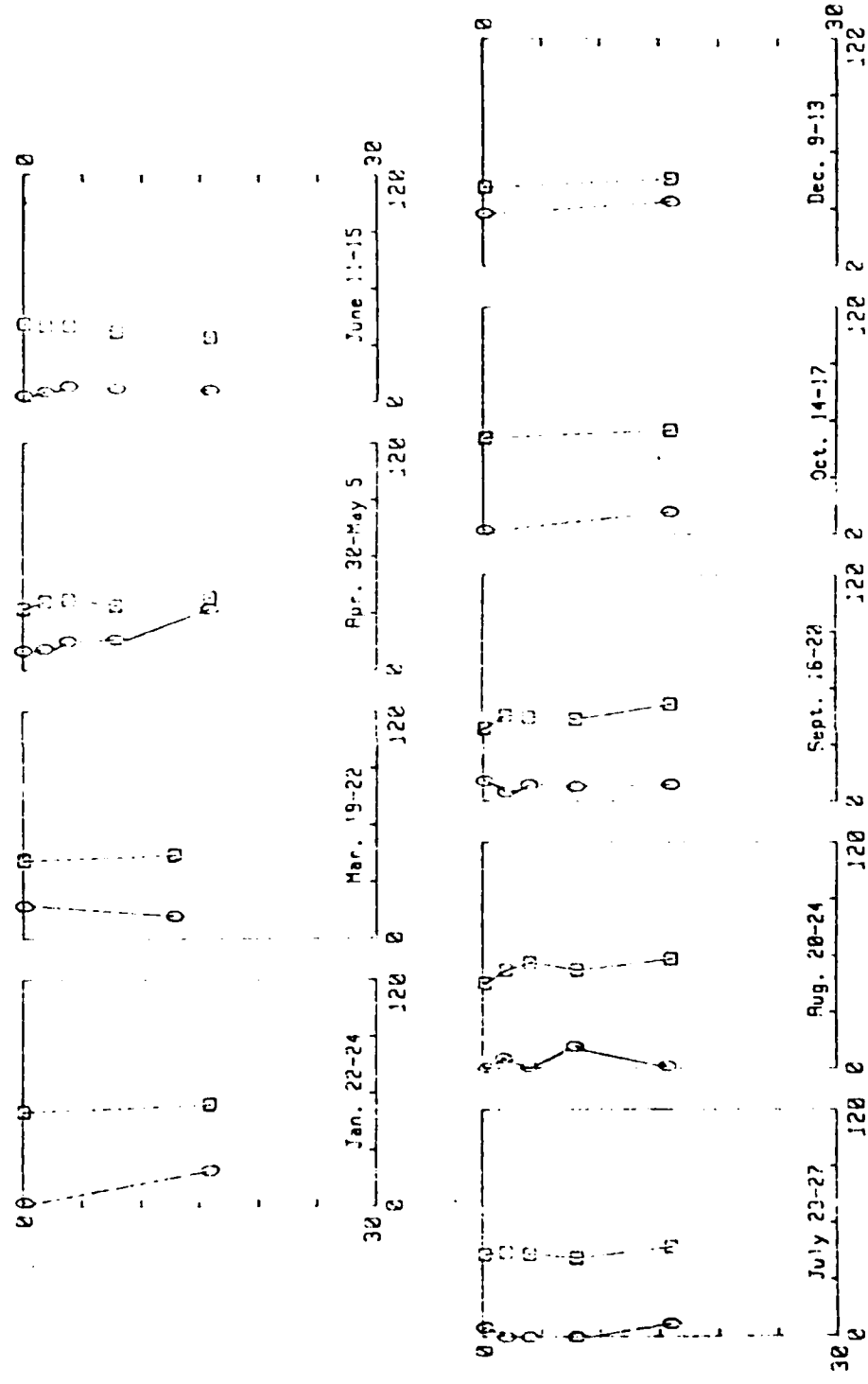


EXPLANATION

○-Nonfilterable residue
 □-Filterable residue

CH-13 (02339362) Wehadkee Creek at State Highway 238, near
 Abbottsford, Ga., 1978

DEPTH, IN METERS



EXPLANATION

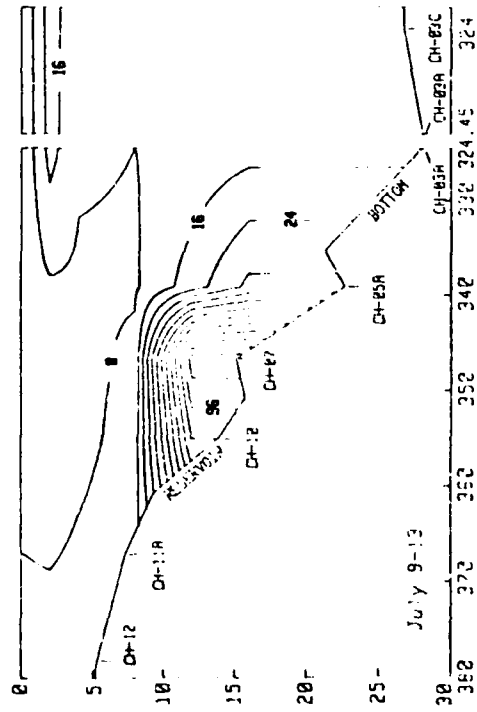
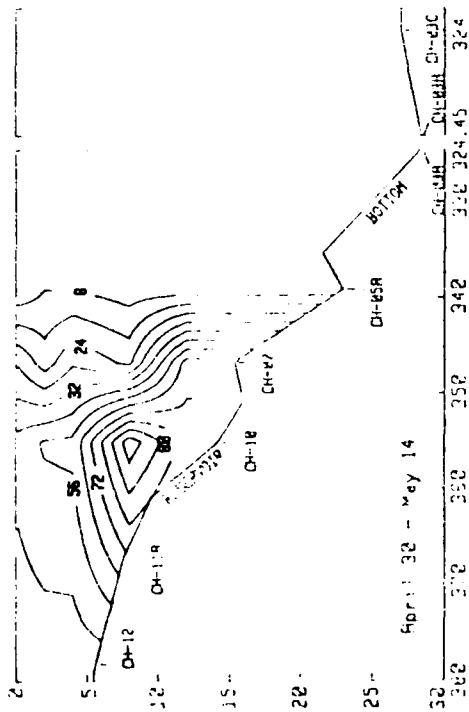
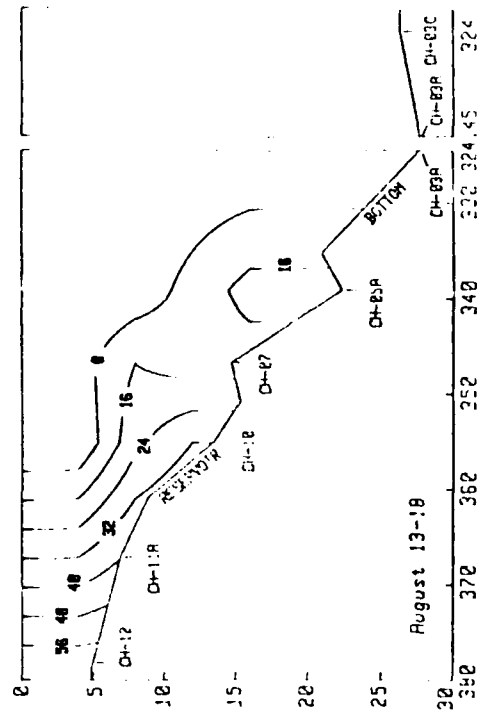
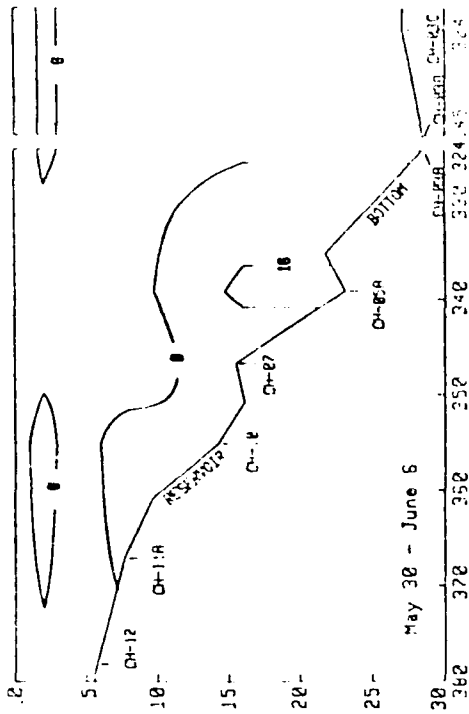
- Non-filterable residue
- Filterable residue

APPENDIX C-6

Isopleths showing longitudinal variations in residue concentrations in
West Point Reservoir, April 1978-December 1979

	Page
Residue, nonfilterable, total, April-August 1978.....	313
Residue, nonfilterable, total, August 1978-June 1979.....	314
Residue, nonfilterable, total, July-September 1979.....	315
Residue, filterable, total, April-August 1978.....	316
Residue, filterable, total, August 1978-June 1979.....	317
Residue, filterable, total, July-September 1979.....	318

DEPTH, IN METERS



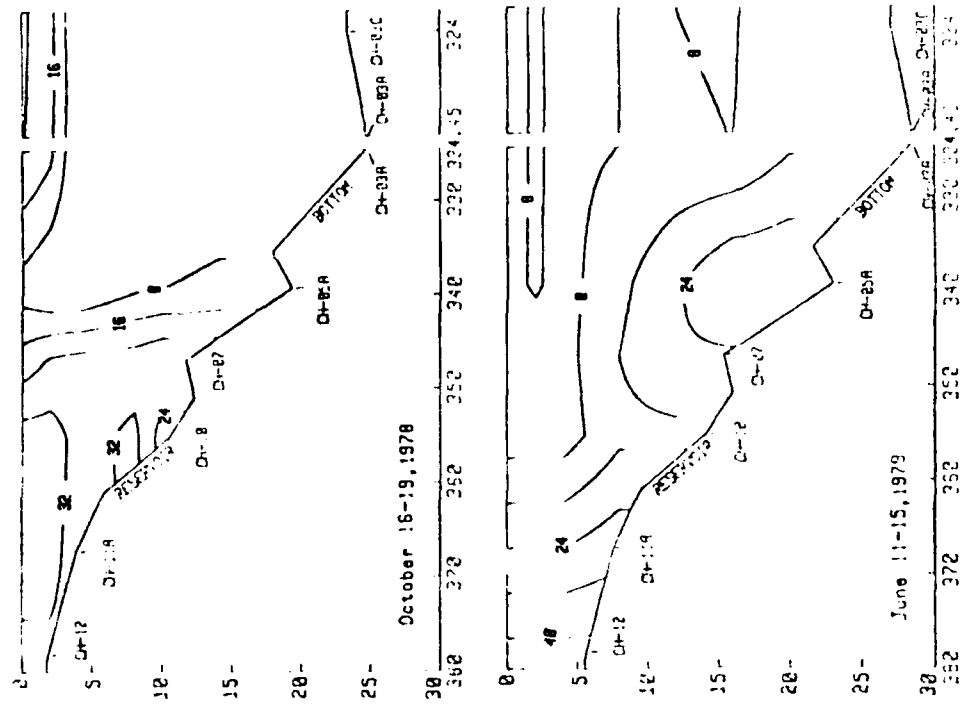
DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

--42-- LINE OF EQUAL NONFILTERABLE-RESIDUE CONCENTRATION - Interval 8 milligrams per liter

CH-25A WATER SAMPLING STATION

Nonfilterable residue concentration, April-August 1978



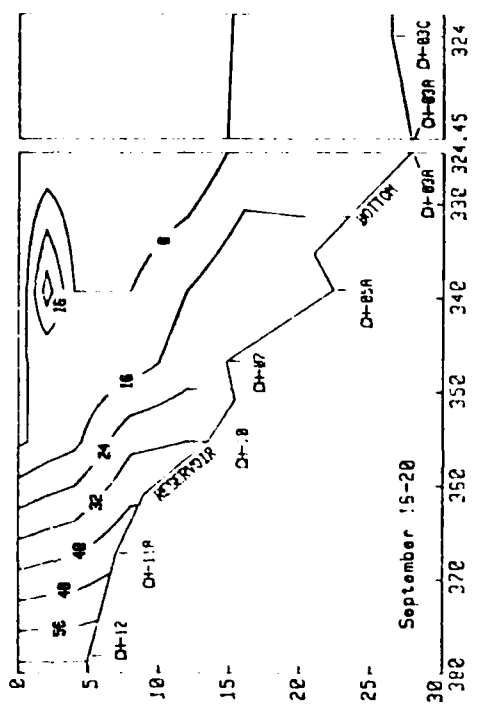
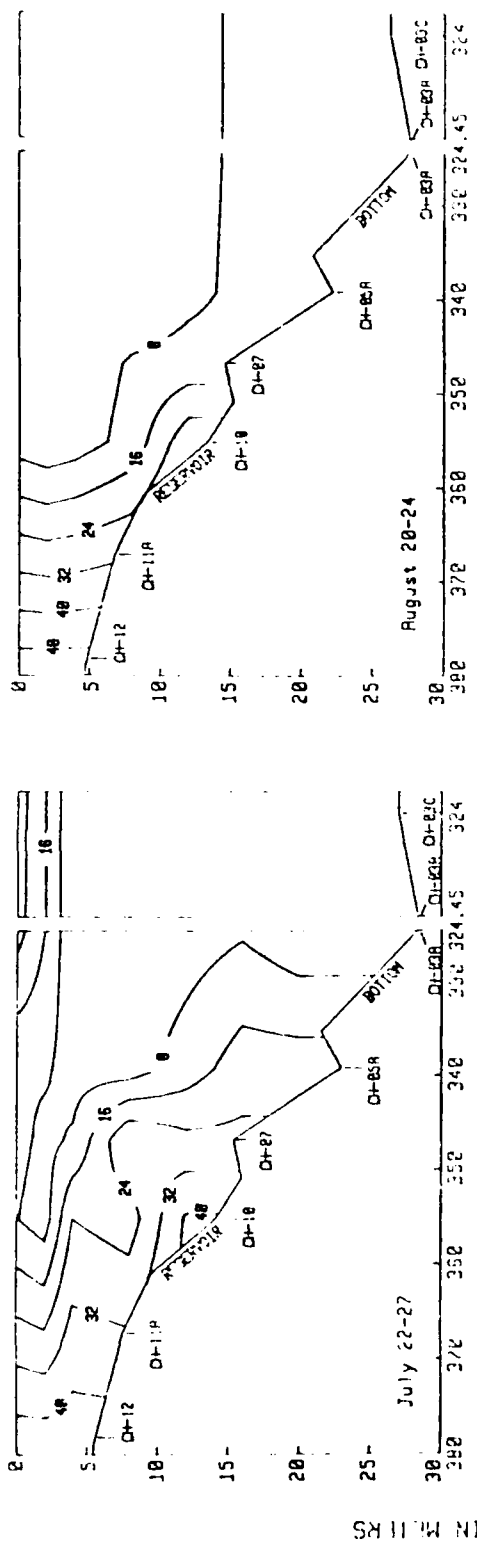
DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTOOGHEE RIVER, IN KILOMETERS

EXPLANATION

- 15-- LINE OF EQUAL NONFILTERABLE-RESIDUE CONCENTRATION - Interval 9 milligrams per liter
- CH-25A WATER SAMPLING STATION

Nonfilterable residue concentration, August 1978 - June 1979

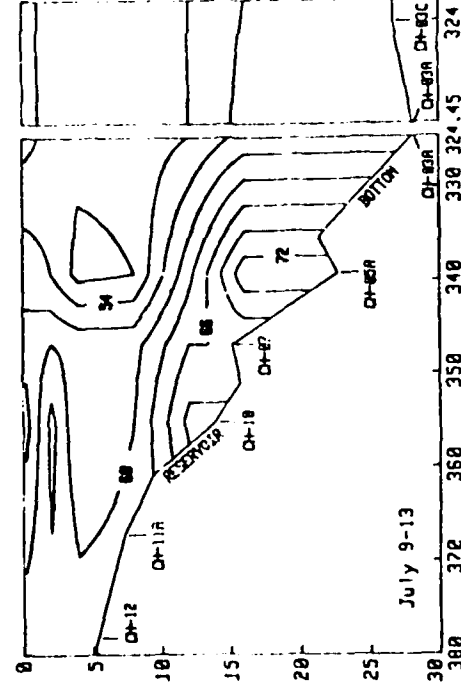
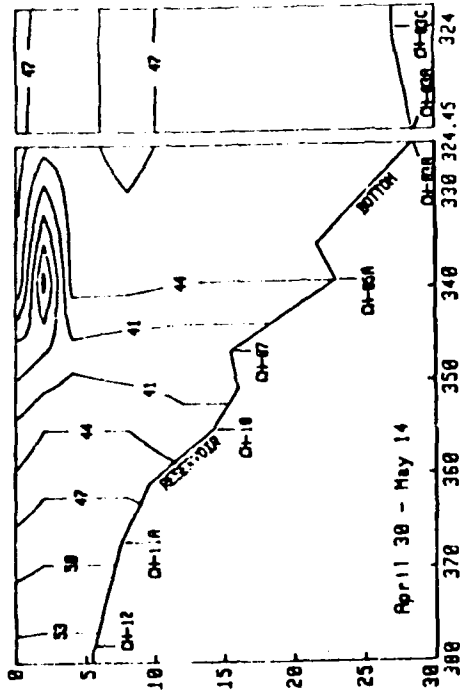
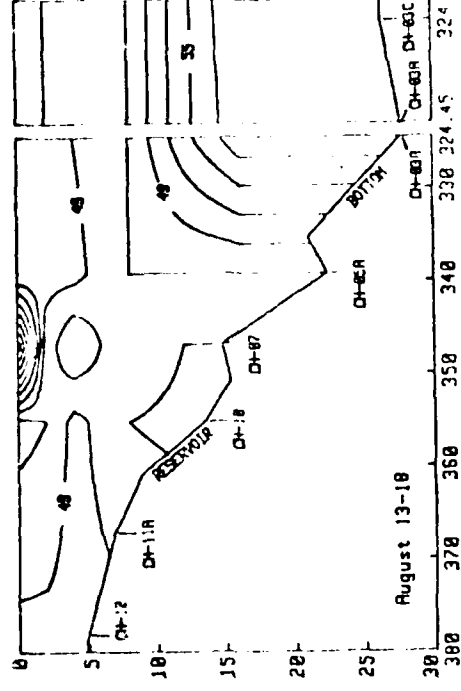
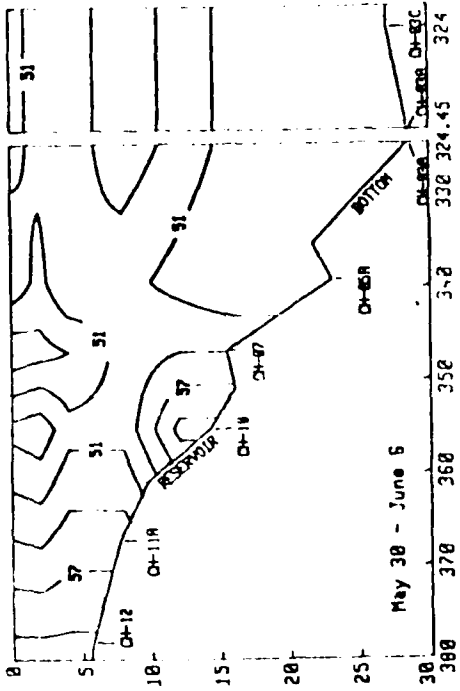


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

--32-- LINE OF EQUAL NONFILTERABLE-RESIDUE CONCENTRATION - Interval 8 milligrams per liter
 CH-8A WATER SAMPLING STATION

Nonfilterable residue concentration, July-September 1979



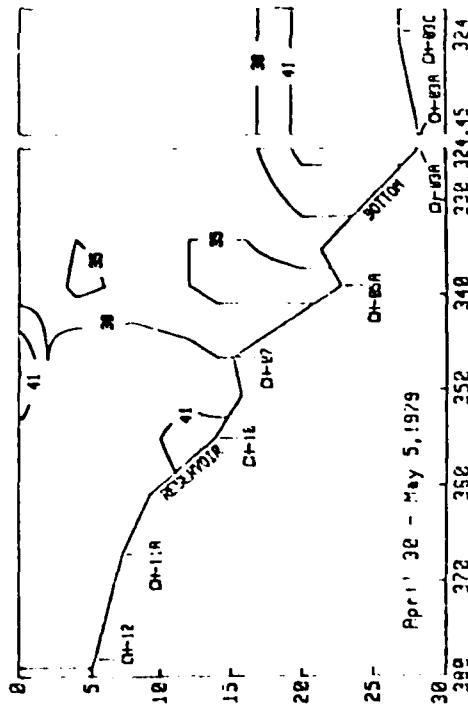
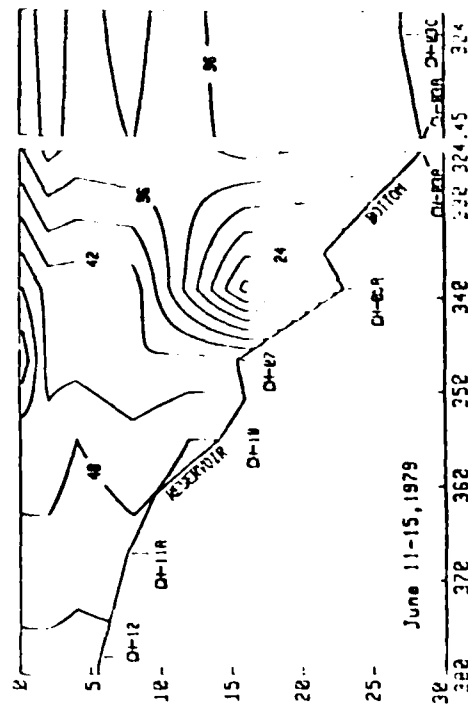
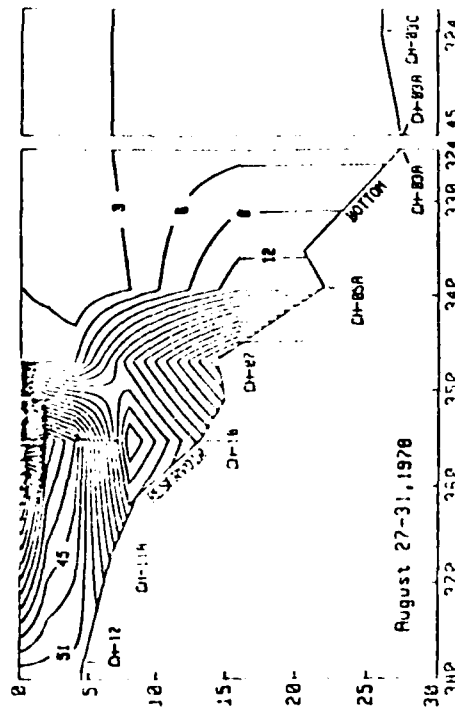
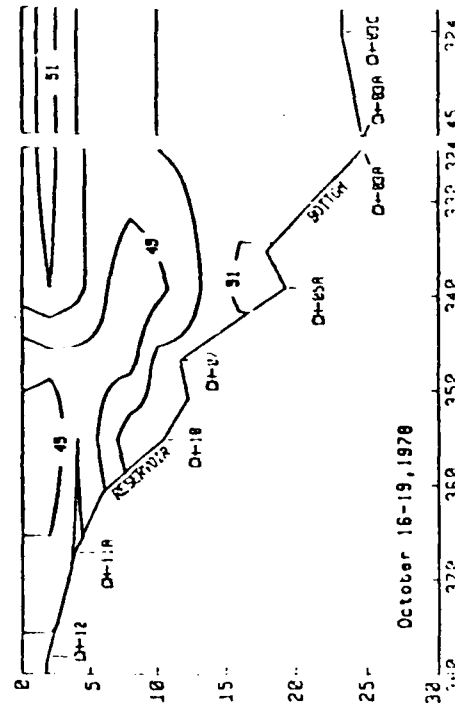
DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

--44-- LINE OF EQUAL FILTERABLE-RESIDUE CONCENTRATION - Interval 3 milligrams per liter
 CH-68A WATER SAMPLING STATION

Filterable residue concentration, April-August 1978



DEPTH, IN METERS

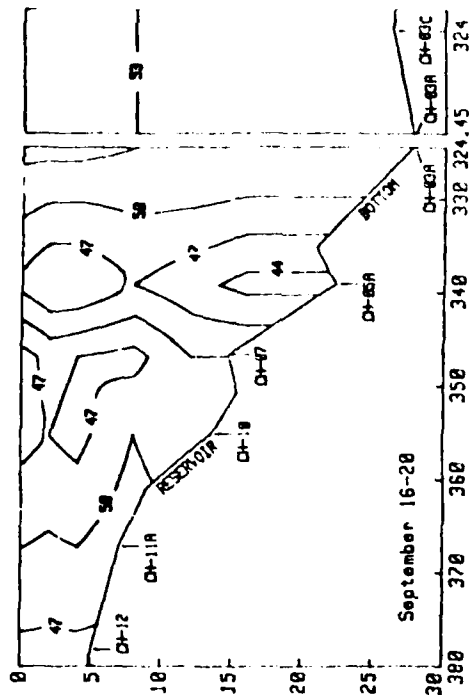
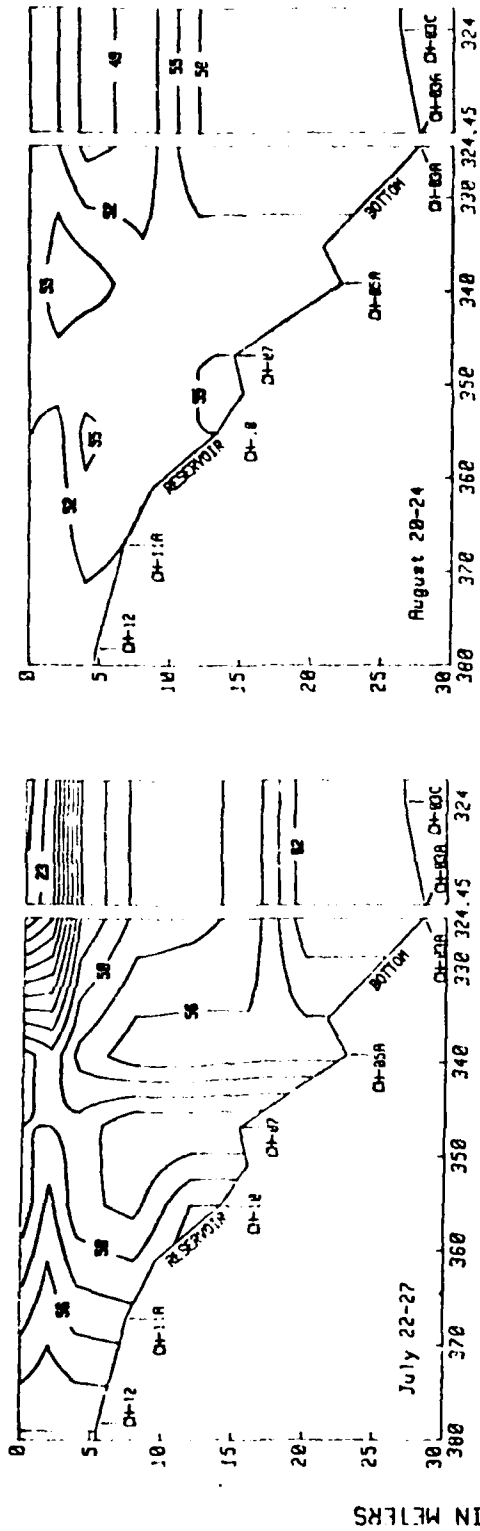
DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION:

—45— LINE OF EQUAL FILTERABLE-RESIDUE CONCENTRATION - Interval 3 milligrams per liter

CH-25A WATER SAMPLING STATION

Filterable residue concentration, August 1978 - June 1979



DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

--56-- LINE OF EQUAL FILTERABLE-RESIDUE CONCENTRATION - Interval 3 milligrams per liter
 CH-05A WATER SAMPLING STATION

Filterable residue concentration, July-September 1978

APPENDIX C-7

Nutrient concentrations in West Point Reservoir and the Chattahoochee River
below West Point Dam, April 1978-December 1979

[Phosphorus, total; phosphorus, orthophosphate, dissolved; nitrogen,
total; nitrogen, nitrite plus nitrate, total; nitrogen, ammonia;
nitrogen, organic, total; nitrogen, Kjeldahl, total; carbon,
organic, total; and carbon, organic, dissolved]

			Page
CH-12 (02338500)	Chattahoochee River at U.S. Highway 27, at Franklin, Ga., 1978 and 1979.....		320
CH-11A (02338570)	Chattahoochee River above New River, near Corinth, Ga., 1979.....		321
CH-10 (02338710)	Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978 and 1979.....		322
CH-07 (02338720)	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1978 and 1979.....		323
CH-05A (02339190)	Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978 and 1979.....		324
CH-03C (02339388)	Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979.....		325
CH-08 (02339020)	Yellowjacket Creek at Cameron Mill Road, near LaGrange, Ga., 1978 and 1979.....		326
CH-04 (02339350)	Wehadkee Creek at State Highway 244, near Abbots- ford, Ga., 1978 and 1979.....		327
CH-13 (02339362)	Wehadkee Creek at State Highway 238, near Abbots- ford, Ga., 1978 and 1979.....		328
CH-2.5B (02339402)	Chattahoochee River below West Point Dam, 1978 and 1979.....		329
CH-01A (02339500)	Chattahoochee River at West Point, Ga., 1978 and 1979.....		330
CH-01B (02339550)	Chattahoochee River (city of Lanett intake) at Lanett, Ala., 1978 and 1979.....		331
CH-01C (02339560)	Chattahoochee River above junction of Long Cane Creek, near West Point, Ga., 1978 and 1979.....		332
CH-01D (02339780)	Chattahoochee River at Langdale, Ala., 1978 and 1979.....		333

CH-12 (02338500) Chattahoochee River at J.S. Highway 27, at Franklin, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
APR , 1978										
18...	1.0	.160	.09	--	.20	.36	.56	--	4.3	2.1
MAY										
08...	1.0	.200	.08	--	.18	.34	.52	--	9.0	3.5
JUN										
06...	1.0	.240	.15	--	.46	.19	.65	--	4.6	4.0
JUL										
13...	1.0	.420	.28	1.5	.25	.65	.90	2.4	6.3	3.4
AUG										
17...	1.0	.260	.11	--	.20	.44	.64	--	17	4.7
31...	1.0	.270	.11	--	.09	.22	.31	--	7.3	2.6
OCT										
19...	1.0	.360	.18	.81	.20	.40	.60	1.4	2.7	2.7
NOV										
30...	1.0	.360	.25	.82	.25	.21	.46	1.3	2.8	2.8
MAY , 1979										
24...	1.0	.240	.06	.55	.21	.56	.77	1.3	10	4.2
MAY										
22...	1.0	.310	.16	.45	.27	.11	.38	1.3	3.6	3.6
MAY										
03...	1.0	.110	.06	.41	.05	.21	.26	.67	4.9	3.6
JUN										
13...	1.0	.270	.14	.42	.10	.30	.40	1.2	11	6.8
JUL										
26...	1.0	.300	.19	1.1	.29	.46	.75	1.9	5.6	3.6
AUG										
23...	1.0	.470	.15	1.0	.11	.00	.11	1.1	7.4	1.9
SEP										
20...	1.0	.250	.03	.64	.02	.50	.52	1.2	4.9	2.8
OCT										
17...	1.0	.250	.06	.74	.15	--	--	--	3.5	2.5
DEC										
13...	1.0	.390	.16	1.0	.32	.41	.73	1.7	4.2	3.5

CH-11A (0338570) Chattahoochee River above New River, near Corinth, Ga., 1979

DATE	SAMPLING DEPTH (M)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-ORPHO-DIS-SOLVED (MG/L AS P)	NITRO-GEN. NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN. AMMONIA TOTAL (MG/L AS N)	NITRO-GEN. ORGANIC TOTAL (MG/L AS N)	NITRO-GEN. AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN. TOTAL (MG/L AS N)	CARBON. ORGANIC TOTAL (MG/L AS C)	CARBON. ORGANIC DIS-SOLVED (MG/L AS C)
MAY 1979										
21...	.20	--	.07	.84	.23	--	--	--	1.9	1.9
21...	4.0	--	.05	.83	.24	--	--	--	3.3	1.5
MAY										
03...	.20	--	.08	.47	.08	--	--	--	6.6	4.4
03...	2.0	--	.09	.47	.08	--	--	--	2.8	2.0
04...	4.0	--	.11	.47	.07	--	--	--	3.0	1.6
03...	6.0	--	.08	.47	.07	--	--	--	5.4	3.5
JUN										
13...	.20	--	.08	1.0	.17	--	--	--	--	3.1
13...	2.0	--	.08	1.0	.21	--	--	--	2.8	2.8
13...	4.0	--	.07	.99	.20	--	--	--	3.2	3.1
JUL										
26...	.20	--	.09	.93	.10	.45	.55	1.5	4.9	3.1
26...	2.0	--	.10	.88	.14	.46	.60	1.5	6.1	3.4
26...	4.0	--	.09	.78	.14	.43	.57	1.3	4.3	2.5
26...	8.0	--	.06	.70	.19	.48	.67	1.4	4.3	2.9
AUG										
23...	.20	--	.06	1.2	.20	--	--	--	2.9	2.9
23...	2.0	--	.11	1.2	.35	--	--	--	2.2	2.2
23...	4.0	--	.09	1.2	.11	--	--	--	3.7	2.0
23...	8.0	--	.12	1.2	.07	--	--	--	2.2	2.2
SEP										
20...	.20	--	.06	.58	.05	--	--	--	4.0	3.1
20...	2.0	--	.05	.58	.06	--	--	--	3.6	3.5
20...	4.0	--	.06	.61	.10	--	--	--	4.2	2.8
20...	7.0	--	.06	.62	.10	--	--	--	3.1	3.1
OCT										
17...	.20	--	.06	.76	.14	--	--	--	2.5	2.5
17...	8.0	--	.06	.77	.14	--	--	--	2.1	2.1
DEC										
12...	.20	--	.05	1.0	.38	--	--	--	2.2	1.6
12...	4.0	--	.05	.97	.38	--	--	--	4.4	1.8

DATE	SAMPLING DEPTH (M)	PHOS-PHOSUS TOTAL (MG/L AS P)	PHOS-ORTHOSOLVED (MG/L AS P)	NITRO-GENE-NITROGEN TOTAL (MG/L AS N)	NITRO-GENE-AMMONIA (MG/L AS N)	NITRO-GENE-ORGANIC (MG/L AS N)	NITRO-GEN-AMMONIA + ORGANIC (MG/L AS N)	NITRO-GENE TOTAL (MG/L AS N)	CARBON-ORGANIC TOTAL (MG/L AS C)	CARBON-ORGANIC DIS-SOLVED (MG/L AS C)
APR 1978										
17...	.20	.070	.03	--	.02	.67	.69	--	8.2	5.5
17...	2.0	.080	.04	--	.15	.56	.71	--	--	6.3
17...	4.0	.090	.06	--	.27	.32	.59	--	4.0	3.7
17...	8.0	.120	.05	--	.30	1.0	1.3	--	7.6	6.3
17...	11.0	.160	.04	--	.37	.44	.81	--	--	7.0
MAY										
02...	.20	.130	.02	.42	.14	.74	.88	1.3	7.0	5.0
02...	2.0	.130	.02	.38	.13	.51	.64	1.0	5.6	5.4
02...	4.0	.130	.02	--	.11	.60	.71	--	10	5.8
02...	8.0	.150	.03	--	.09	.45	.54	--	5.6	4.6
02...	12.0	.150	.02	.31	.10	.46	.56	.87	7.9	6.0
JUN										
05...	.20	.030	.01	--	.00	.71	.71	--	6.3	5.7
05...	2.0	.010	.01	--	.02	.60	.62	--	7.4	5.9
05...	4.0	.040	.04	--	.29	.48	.75	--	5.8	4.6
05...	8.0	.040	.04	--	.52	.23	.75	--	4.0	2.8
05...	12.0	.050	.05	--	.60	.14	.74	--	2.7	2.3
JUL										
12...	.20	.050	.04	--	.10	.52	.62	--	7.2	6.0
12...	2.0	.050	.04	--	.10	.50	.60	--	4.3	2.9
12...	4.0	.030	.03	--	.12	.45	.57	--	8.2	2.4
12...	8.0	.120	.04	--	.65	.30	.95	--	3.5	3.5
12...	12.0	.360	.20	--	1.8	.40	2.2	--	6.3	1.0
AUG										
16...	.20	.050	.01	--	.00	.75	.75	--	14	7.1
16...	2.0	.050	.01	--	.01	.62	.63	--	9.3	8.0
16...	4.0	.070	.02	--	.06	.36	.42	--	8.4	--
16...	8.0	.120	.04	--	.15	.43	.59	--	11	5.2
16...	11.0	.140	.04	--	.15	.49	.64	--	7.3	4.4
20...	.20	.060	.01	--	.04	.59	.63	--	10	5.6
20...	2.0	.060	.01	--	.05	.60	.65	--	5.4	2.6
20...	4.0	.070	.03	--	.13	.18	.31	--	4.8	4.0
20...	8.0	.120	.05	--	.14	.16	.30	--	5.2	3.9
20...	11.0	.090	.05	--	.21	.04	.25	--	2.7	2.7
OCT										
17...	.20	.230	.14	.85	.18	.32	.50	1.3	3.1	3.1
17...	2.0	.240	.15	.84	.17	.18	.35	1.2	4.0	4.0
17...	4.0	.250	.19	.84	.18	.24	.42	1.3	3.6	3.6
17...	8.0	.250	.15	.83	.18	.17	.35	1.2	2.6	2.6
17...	10.0	.240	.23	.84	.18	.28	.46	1.3	3.2	3.2
NOV										
20...	.20	.130	.08	.85	.23	.24	.47	1.3	2.7	2.7
20...	9.0	.130	.07	.76	.21	.34	.55	1.3	1.4	1.4
JAN 1979										
24...	.20	.150	.05	.69	.19	.29	.48	.97	5.7	5.7
24...	11.0	.150	.04	.51	.19	.22	.41	.92	4.8	4.2
MAR										
21...	.20	.120	.02	.71	.88	.46	.54	1.3	5.0	1.8
21...	11.0	.130	.02	.63	.22	.35	.57	1.2	5.3	3.5
MAY										
03...	.20	.080	.07	.46	.13	.16	.29	.75	4.3	2.5
03...	2.0	.040	.06	.47	.13	.20	.33	.80	4.4	4.4
03...	4.0	.070	.07	.46	.14	.21	.35	.81	2.1	1.0
03...	8.0	.080	.05	.45	.13	.11	.24	.69	4.1	3.3
03...	12.0	.090	.04	.44	.15	.19	.34	.78	3.2	3.2
JUN										
13...	.20	.060	.00	.28	.88	.45	.45	.73	7.5	3.7
13...	2.0	.090	.00	.44	.82	.38	.40	.84	5.7	5.7
13...	4.0	.070	.00	.46	.83	.24	.27	.73	2.3	1.8
13...	8.0	.090	.02	.48	.15	.18	.33	.81	2.9	1.5
13...	12.0	.100	.02	.47	.21	.13	.34	.81	2.7	1.6
JUL										
24...	.20	.090	.02	.45	.82	.74	.74	1.2	3.9	2.7
24...	2.0	.090	.02	.58	.87	.63	.58	1.1	2.7	2.7
24...	4.0	.120	.05	.60	.20	.48	.68	1.2	3.1	3.1
24...	8.0	.130	.05	.58	.20	.38	.58	1.2	2.7	2.6
24...	12.0	.140	.04	.57	.23	.42	.65	1.2	3.6	3.1
AUG										
22...	.20	.070	.00	.12	.81	.19	.80	.52	4.9	4.9
22...	2.0	.070	.00	.16	.81	.55	.56	.72	4.5	3.6
22...	4.0	.100	.03	.79	.25	.20	.45	1.2	3.8	3.8
22...	8.0	.140	.04	.87	.36	.00	.36	1.2	2.3	2.3
22...	12.0	.200	.03	.45	.41	.25	.66	1.5	3.0	2.3
SEP										
14...	.20	.040	.00	.77	.10	.22	.32	1.1	4.8	3.4
14...	2.0	.100	.01	.78	.23	.10	.33	1.1	5.0	2.6
14...	4.0	.120	.02	.75	.16	.25	.41	1.2	3.7	2.8
14...	8.0	.140	.02	.71	.21	.14	.35	1.1	4.2	2.4
14...	12.0	.150	.02	.68	.18	.27	.45	1.1	7.0	3.2
OCT										
14...	.20	.110	.04	.74	.12	.22	.44	1.1	2.3	2.3
14...	12.0	.130	.06	.75	.13	.28	.41	1.2	3.7	3.7
NOV										
12...	.20	.170	.03	.80	.29	.17	.46	1.3	3.0	1.6
12...	4.0	.140	.03	.83	1.5	.88	.40	1.3	2.4	1.8

DATE	SAMPLING DEPTH (FT)	PHOS-PHOSPHATE TOTAL (MG/L AS P)	PHOS-ORTHOPHOSPHATE SOLUBLE (MG/L AS P)	NITRO-GEN-NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO-GEN-AMMONIA TOTAL (MG/L AS N)	NITRO-GEN-ORGANIC TOTAL (MG/L AS N)	NITRO-GEN-AMMONIA-ORGANIC TOTAL (MG/L AS N)	NITRO-GEN-ORGANIC TOTAL (MG/L AS N)	CARBON-ORGANIC TOTAL (MG/L AS C)	CARBON-ORGANIC-DISSOLVED (MG/L AS C)
APR 1978										
12...	.20	.050	.06	--	.09	.25	.34	--	3.1	2.7
12...	2.0	.040	.06	--	.14	.25	.39	--	8.6	2.9
12...	4.0	.080	.05	--	.17	.23	.40	--	6.1	5.0
12...	8.0	.070	.05	--	.34	.11	.45	--	6.6	6.4
12...	12.0	.070	.03	--	.27	.19	.46	--	9.9	8.1
MAY										
04...	.20	.120	.03	--	.12	.35	.47	--	8.6	6.8
04...	2.0	.110	.03	--	.12	.34	.44	--	9.4	7.5
04...	4.0	.120	.03	--	.12	.26	.38	--	9.2	8.5
04...	4.0	.110	.03	--	.12	.31	.43	--	7.2	6.1
04...	12.0	.140	.02	--	.12	.53	.65	--	12	8.7
JUN										
01...	.20	.060	.02	--	.02	.70	.72	--	11	10
01...	2.0	.060	.01	--	.01	.62	.63	--	7.7	6.9
01...	4.0	.060	.04	--	.20	.33	.53	--	6.0	5.0
01...	4.0	.060	.04	--	.27	.23	.50	--	11	6.9
01...	12.0	.080	.07	--	.41	.25	.66	--	7.7	2.3
JUL										
11...	.20	.030	.00	--	.02	.53	.55	--	9.0	1.4
11...	2.0	.030	.00	--	.01	.57	.58	--	4.4	1.6
11...	4.0	.030	.00	.62	.17	.35	.52	1.1	4.8	2.9
11...	8.0	.070	.01	--	.73	.13	.86	--	1.6	1.1
11...	12.0	.390	.17	--	1.6	.40	2.0	--	3.6	1.2
AUG										
17...	.20	.040	.00	--	.00	.56	.56	--	5.6	4.8
17...	2.0	.040	.00	--	.00	.52	.52	--	9.4	5.7
17...	4.0	.050	.01	--	.06	.41	.47	--	7.3	6.9
17...	4.0	.100	.03	--	.20	.23	.43	--	5.5	3.9
17...	12.0	.110	.05	--	.19	.25	.44	--	8.9	8.2
29...	.20	.050	.05	--	.01	.48	.49	--	5.8	4.9
29...	2.0	.040	.01	--	.02	.47	.49	--	6.2	4.8
29...	4.0	.060	.01	--	.18	.36	.54	--	7.6	6.3
29...	4.0	.080	.04	--	.29	--	.26	--	3.8	3.6
29...	12.0	.140	.03	--	.23	.17	.38	--	8.8	4.4
SEPT										
17...	.20	.140	.10	.89	.20	.18	.38	1.3	4.4	1.9
17...	2.0	.160	.11	.90	.20	.18	.38	1.3	1.7	1.5
17...	4.0	.170	.11	.90	.20	.22	.42	1.3	4.2	3.0
17...	8.0	.160	.13	.91	.18	.20	.38	1.3	5.7	1.4
17...	10.0	.170	.14	.91	.22	.33	.55	1.5	2.2	1.5
OCT										
29...	.20	.150	.10	.82	.28	.33	.61	1.4	1.7	1.7
29...	11.0	.150	.09	.81	.29	.31	.60	1.4	1.8	1.8
NOV 1978										
24...	.20	.200	.06	.57	.42	.27	.69	1.2	6.4	4.3
24...	11.0	.360	.04	.52	.35	.48	.83	1.3	5.7	4.6
MAY 1979										
21...	.20	.030	.02	.63	.01	.34	.35	.94	3.4	2.9
21...	12.0	.130	.03	.59	.32	.20	.52	1.1	--	2.0
MAY										
02...	.20	.070	.03	.35	.07	.32	.34	.74	3.1	1.9
02...	2.0	.070	.01	.34	.08	.27	.35	.69	3.6	4.9
02...	4.0	.060	.01	.36	.09	.29	.49	.65	3.8	3.8
02...	4.0	.070	.01	.34	.04	.18	.27	.63	2.1	2.1
02...	14.0	.090	.02	.34	.11	.30	.41	.77	3.6	3.6
JUN										
12...	.20	.070	.03	.43	.07	.57	.64	1.1	3.8	2.8
12...	2.0	.040	.02	.45	.07	.52	.59	1.0	4.7	2.5
12...	4.0	.070	.03	.44	.11	.35	.46	.90	6.5	6.5
12...	4.0	.030	.03	.48	.23	.27	.50	.98	4.4	4.4
12...	12.0	.070	.03	.41	.33	.29	.62	1.0	5.0	5.0
JUL										
26...	.20	.060	.02	.58	.03	.68	.71	1.3	3.4	3.4
26...	2.0	.070	.02	.62	.07	.48	.55	1.2	3.2	3.2
26...	4.0	.060	.02	.63	.08	1.0	1.1	1.7	3.3	3.2
26...	4.0	.110	.05	.73	.33	.47	.80	1.5	2.7	2.3
26...	12.0	.110	.04	.70	.37	.36	.69	1.4	3.0	3.0
AUG										
22...	.20	.040	.00	.12	.01	.38	.39	.51	4.6	4.6
22...	2.0	.040	.00	.14	.01	.43	.44	.73	4.8	2.3
22...	4.0	.030	.00	.43	.18	.48	.66	1.1	2.8	2.4
22...	4.0	.080	.02	.65	.32	.02	.34	.94	4.3	3.1
22...	12.0	.110	.02	.72	.47	.21	.68	1.4	3.9	2.3
SEP										
19...	.20	.040	.02	.83	.24	.16	.48	1.2	7.2	4.5
19...	2.0	.070	.06	.84	.14	.22	.40	1.3	4.2	2.0
19...	4.0	.070	.02	.40	.14	.58	.77	1.7	6.1	1.9
19...	4.0	.090	.02	.49	.14	.25	.43	1.3	7.3	2.3
19...	12.0	.080	.03	.47	.14	.44	.63	1.5	4.0	4.0
OCT										
14...	.20	.040	.02	.68	.11	.15	.26	.94	2.8	2.8
14...	12.0	.030	.03	.66	.14	.20	.34	1.0	2.2	2.2
DEC										
11...	.20	.180	.05	.60	.20	.46	.64	1.3	2.4	1.4
11...	12.0	.140	.05	.62	.25	.10	.55	1.2	2.5	1.7

DATE	SAM- PLING DEPTH (M)	PHOS- PHOSPH. TOTAL AS PI	PHOS- PHOSPH. DISS- SOLVED AS PI	NITRO- GEN- NO2+NO3 AS NI	NITRO- GEN- AMMONIA AS NI	NITRO- GEN- ORGANIC AS NI	NITRO- GEN-AM- MONIA + ORGANIC AS NI	NITRO- GEN- TOTAL AS NI	CARBON- ORGANIC TOTAL AS CI	CARBON- ORGANIC DIS- SOLVED AS CI
APR . 1978										
12...	.20	.040	.01	--	.12	.56	.64	--	8.9	7.1
12...	2.0	.040	.01	--	.12	.35	.47	--	4.7	3.3
12...	4.0	.050	.01	--	.12	.24	.36	--	7.4	6.3
12...	8.0	.070	.03	--	.21	.27	.48	--	6.4	4.8
12...	16.0	.070	.02	--	.24	.26	.50	--	2.8	2.4
MAY										
03...	.20	.090	.01	.51	.13	.33	.46	.97	6.9	1.6
03...	2.0	.040	.03	.52	.12	.31	.43	.95	5.1	1.4
03...	4.0	.040	.02	--	.15	.28	.43	--	5.7	4.1
03...	8.0	.090	.05	.54	.16	.29	.45	.99	9.2	4.3
03...	16.0	.110	.03	--	.18	.27	.45	--	7.1	3.8
JUN										
01...	.20	.040	.01	--	.03	.69	.52	--	4.6	4.2
01...	2.0	.040	.01	--	.02	.52	.54	--	5.4	5.2
01...	4.0	.070	.03	--	.15	.31	.46	--	4.7	3.6
01...	8.0	.050	.03	--	.23	.30	.53	--	9.2	6.8
01...	16.0	.060	.04	--	.49	.22	.71	--	3.8	2.5
JUL										
11...	.20	.020	.01	--	.02	.51	.53	--	6.0	4.8
11...	2.0	.030	.00	--	.02	.49	.51	--	1.6	1.3
11...	4.0	.020	.01	--	.07	.67	.54	--	1.7	1.5
11...	8.0	.030	.01	--	.45	.23	.64	--	2.9	2.0
11...	16.0	.290	.21	--	1.5	.20	1.7	--	2.0	1.9
AUG										
15...	.20	.040	.00	--	.01	1.1	1.1	--	5.0	5.0
15...	2.0	.030	.00	--	.11	.65	.66	--	6.1	2.5
15...	4.0	.030	.00	--	.04	.56	.60	--	8.4	5.1
15...	8.0	.050	.01	--	.20	.68	.68	--	7.4	4.6
15...	16.0	.120	.02	--	.24	.73	.97	--	6.9	4.8
30...	.20	.030	.00	--	.00	.54	.54	--	13	8.6
30...	2.0	.040	.04	--	.00	.35	.35	--	17	6.4
30...	4.0	.030	.02	--	.01	.33	.34	--	9.0	9.0
30...	8.0	.060	.03	--	.24	.33	.61	--	9.1	3.5
30...	16.0	.090	.01	--	.32	.34	.66	--	8.4	4.2
OCT										
14...	.20	.030	.03	.81	.08	.25	.33	1.1	3.8	--
16...	2.0	.030	.01	.78	.08	.29	.37	1.1	3.2	2.2
16...	4.0	.060	.04	.77	.08	.48	.56	1.3	4.2	2.1
16...	8.0	.040	.04	.78	.15	.27	.42	1.2	5.1	2.5
16...	16.0	.110	.06	.99	.25	.22	.47	1.5	3.7	2.3
NOV										
28...	.20	.110	.01	.79	.22	.29	.51	1.3	2.4	1.6
28...	16.0	.140	.09	.81	.26	.30	.56	1.4	3.1	2.7
JAN . 1979										
23...	.20	.140	.03	.70	.44	.14	.60	1.3	4.8	4.5
23...	16.0	.170	.11	.70	.44	.10	.56	1.3	3.9	3.4
MAR										
28...	.20	.090	.02	.53	.03	.39	.42	.95	4.3	3.4
28...	15.0	.130	.05	.46	.21	.24	.45	.91	3.4	3.1
MAY										
01...	.20	.040	.03	.29	.02	.29	.31	.60	8.0	4.0
01...	2.0	.040	.04	.31	.07	.22	.29	.60	5.8	3.2
01...	4.0	.030	.05	.34	.10	.10	.20	.56	4.6	4.4
01...	8.0	.040	.05	.34	.10	.14	.24	.78	4.8	2.4
01...	16.0	.100	.06	.35	.12	.06	.18	.53	7.9	4.0
JUN										
12...	.20	.050	.00	.37	.06	.48	.54	.84	8.9	3.7
12...	2.0	.050	.00	.32	.07	.51	.58	.90	3.4	3.8
12...	4.0	.050	.00	.33	.07	.48	.55	.88	6.5	6.5
12...	8.0	.040	.04	.53	.23	.28	.51	1.0	3.3	3.1
12...	16.0	.040	.00	.18	.27	.22	.49	.67	2.7	2.4
JUL										
25...	.20	.040	.00	.39	.03	.47	.60	.94	3.4	2.9
25...	2.0	.040	.00	.40	.02	.47	.64	.84	3.4	3.2
25...	4.0	.040	.00	.40	.04	.43	.49	.80	3.0	2.3
25...	8.0	.040	.02	.71	.34	.16	.55	1.3	2.5	2.2
25...	16.0	.130	.01	.20	.44	.34	1.02	1.4	4.2	2.8
AUG										
22...	.20	.040	.00	.12	.01	.23	.24	.36	3.5	2.5
22...	2.0	.030	.00	.16	.02	.25	.27	.43	5.8	2.6
22...	4.0	.020	.00	.24	.15	.23	.38	.64	3.4	3.3
22...	8.0	.030	.00	.27	.41	.17	.58	.85	3.5	3.5
22...	16.0	.070	.00	.32	.64	.25	.91	1.02	2.9	2.9
SEP										
14...	.20	.040	.00	.46	.14	.34	.52	.94	5.4	2.2
14...	2.0	.040	.00	.44	.14	.34	.50	.94	4.4	2.5
14...	4.0	.040	.00	.44	.14	.37	.55	1.0	5.1	4.5
14...	8.0	.040	.00	.44	.20	.31	.51	.94	4.5	2.9
14...	16.0	.070	.00	.44	.21	.40	.61	1.1	5.5	4.4
OCT										
14...	.20	.040	.01	.54	.04	.16	.60	.94	3.0	3.0
14...	16.0	.080	.01	.64	.14	.32	.64	1.1	2.7	2.7
DEC										
13...	.20	.130	.00	.53	.27	.37	.64	1.02	2.4	2.0
13...	16.0	.120	.02	.47	.28	.20	.44	1.1	2.2	2.2

DATE	SAM- PLING DEPTH (M)	PHOS- TOTAL (MG/L AS P)	PHOS- ORTHOS- DISE- SOLVED (MG/L AS P)	NITRO- GEN- NO2-NO3 TOTAL (MG/L AS N)	NITRO- GEN- AMMONIA TOTAL (MG/L AS N)	NITRO- GEN- ORGANIC TOTAL (MG/L AS N)	NITRO- GEN-AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN- TOTAL (MG/L AS N)	CARBON- ORGANIC TOTAL (MG/L AS C)	CARBON- ORGANIC DIS- SOLVED (MG/L AS C)
APR 1978										
10....	.20	.040	.00	--	.03	.52	.55	--	5.7	3.9
10....	2.0	.040	.01	.23	.05	.46	.51	.74	4.8	4.7
10....	4.0	.030	.01	.36	.10	.28	.38	.74	5.4	3.9
10....	8.0	.010	.01	.48	.11	.17	.28	.76	4.4	2.9
10....	16.0	.060	.02	.52	.12	.17	.29	.81	4.9	3.2
MAY										
14....	.20	.040	.04	--	.07	.29	.36	--	6.6	4.3
14....	2.0	.030	.03	--	.07	.38	.45	--	7.6	6.7
14....	4.0	.010	.01	--	.07	.40	.47	--	12	2.8
14....	8.0	.010	.01	--	.10	.14	.24	--	7.7	5.8
14....	16.0	.030	.03	--	.19	.14	.33	--	6.3	5.6
31....	.20	.020	.00	--	.01	.35	.36	--	7.8	5.6
31....	2.0	.020	.00	--	.00	.40	.40	--	5.1	5.0
31....	4.0	.020	.00	--	.04	.27	.31	--	5.6	1.8
31....	8.0	.020	.02	--	.10	.23	.33	--	3.5	2.7
31....	16.0	.040	.02	--	.08	.25	.33	--	10	5.3
JUL										
10....	.20	.010	.01	--	.04	--	--	--	2.7	2.4
10....	2.0	.010	.01	--	.00	.32	.32	--	3.6	3.2
10....	4.0	.010	.01	--	.03	--	--	--	1.8	1.7
10....	8.0	.010	.01	--	.20	--	--	--	2.7	2.6
10....	16.0	.090	.06	--	.59	--	--	--	2.5	1.7
AUG										
14....	.20	.010	.00	--	.05	.58	.63	--	16	6.1
14....	2.0	.050	.00	--	.05	.83	.88	--	9.4	9.4
14....	4.0	.010	.01	--	.05	1.0	1.1	--	7.4	7.3
14....	8.0	.010	.00	--	.17	.39	.56	--	6.2	6.2
14....	16.0	.040	.01	--	.75	.45	1.2	--	3.1	2.6
30....	.20	.010	.00	--	.00	.31	.31	--	9.4	3.1
30....	2.0	.010	.00	--	.00	.20	.20	--	5.6	5.0
30....	4.0	.010	.00	--	.00	.23	.23	--	7.5	2.9
30....	8.0	.020	.00	--	.12	.18	.30	--	17	3.8
30....	16.0	.050	.00	--	.24	.25	.49	--	7.1	6.9
OCT										
16....	.20	.030	.03	.37	.16	.22	.38	.75	4.5	4.5
16....	2.0	.020	.02	.37	.17	.32	.49	.86	3.5	3.2
16....	4.0	.030	.03	.37	.16	.34	.50	.87	7.5	7.5
16....	8.0	.020	.01	.37	.16	.27	.43	.80	4.9	3.4
16....	16.0	.020	.00	.75	.23	.31	.54	1.3	4.3	4.3
NOV										
28....	.20	.020	.02	.68	.16	.22	.38	1.1	3.5	3.5
28....	16.0	.030	.00	.68	.14	.24	.38	1.1	4.1	2.3
JAN 1979										
22....	.20	.060	.03	.84	.23	.05	.28	1.1	6.2	6.2
22....	15.0	.060	.03	.84	.23	.11	.33	1.2	2.7	2.6
MAR										
20....	.20	.090	.02	.74	.02	.36	.38	.74	6.1	6.3
20....	16.0	.060	.04	.74	.14	.22	.36	.82	6.2	6.2
MAY										
01....	.20	.040	.00	.21	.01	.44	.50	.71	6.6	6.6
01....	2.0	.040	.00	.20	.01	.45	.46	.64	6.5	5.0
01....	4.0	.040	.00	.24	.01	.50	.51	.79	4.4	3.6
01....	8.0	.050	.02	.29	.04	.22	.30	.54	4.8	4.2
01....	16.0	.040	.02	.30	.04	.16	.25	.55	6.4	4.4
01....	20.0	.040	.01	.31	.10	.27	.32	.63	5.6	3.6
JUN										
14....	.20	.030	.00	.11	.00	.87	.87	.98	3.8	3.8
14....	2.0	.030	.00	.11	.00	.81	.81	.62	4.0	2.3
14....	4.0	.030	.00	.11	.00	.82	.82	.63	3.3	2.4
14....	8.0	.020	.00	.11	.00	.82	.82	.63	4.7	4.7
14....	16.0	.020	.00	.42	.04	.15	.23	.65	2.1	2.0
14....	20.0	.040	.00	.33	.15	.11	.26	.59	4.2	2.1
JUL										
24....	.20	.010	.00	.17	.12	.54	.66	.83	3.5	2.6
24....	2.0	.020	.00	.04	.01	.42	.43	.64	4.3	2.8
24....	4.0	.010	.00	.04	.02	.38	.40	.46	4.5	3.0
24....	8.0	.010	.00	.24	.17	.16	.33	.57	3.3	2.3
24....	16.0	.070	.04	.01	.62	.19	.81	.82	4.2	2.5
24....	20.0	.130	.10	.02	.04	.16	1.2	1.2	3.5	2.6
AUG										
21....	.20	.010	.00	.00	.00	.17	.17	.17	5.7	2.4
21....	2.0	.020	.01	.00	.00	.14	.14	.14	3.2	3.0
21....	4.0	.010	.00	.01	.02	.28	.30	.31	4.1	4.1
21....	8.0	.010	.00	.00	.00	.18	.23	.23	4.5	4.5
21....	16.0	.040	.00	.05	.62	.04	1.1	1.2	5.6	4.2
21....	20.0	.030	.00	.00	.84	.32	1.2	1.2	3.4	2.1
SEP										
17....	.20	.020	.00	.04	.11	.45	.56	.62	--	6.8
17....	2.0	.010	.00	.06	.13	.52	.64	.71	2.4	2.5
17....	4.0	.010	.00	.06	.12	.44	.54	.62	2.5	2.5
17....	8.0	.020	.00	.06	.13	.41	.54	.60	6.2	5.2
17....	16.0	.040	.00	.04	.80	.30	1.1	1.2	2.3	2.2
17....	20.0	.060	.00	.04	.84	.14	1.2	1.3	3.3	2.5
OCT										
14....	.20	.020	.00	.52	.02	.22	.24	.76	3.1	3.1
14....	2.0	.020	.00	.52	.04	.30	.34	.86	2.7	2.0
14....	4.0	.020	.00	.54	.04	.29	.33	.87	2.2	2.2
14....	8.0	.020	.00	.52	.04	.27	.31	.83	1.6	1.6
14....	16.0	.010	.00	.54	.04	.27	.30	.84	2.0	1.7
14....	20.0	.040	.01	.64	.17	.46	.63	1.3	2.2	2.2
DEC										
10....	.20	.040	.03	.52	.04	.96	.75	1.1	4.5	2.6
10....	16.0	.040	.00	.49	.11	.41	.42	1.4	2.4	2.1

OH-08 (C2119020) Yellowjacket Creek at Cameron Mill Road, near LaGrange, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS DITHO. DISE- SOLVED (MG/L AS P)	NITRO- GEN- NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN- AMMONIA TOTAL (MG/L AS N)	NITRO- GEN- ORGANIC TOTAL (MG/L AS N)	NITRO- GEN-AM- MONIA ORGANIC TOTAL (MG/L AS N)	NITRO- GEN- TOTAL (MG/L AS N)	CARRON. ORGANIC TOTAL (MG/L AS C)	CARRON. ORGANIC DISE- SOLVED (MG/L AS C)
APR 1978										
17...	.20	.030	.03	--	.01	.56	.57	--	6.6	2.0
17...	2.0	.030	.02	--	.01	.64	.65	--	4.7	3.0
17...	4.0	.040	.01	--	.16	.34	.50	--	3.9	3.7
17...	8.0	.060	.05	--	.21	.23	.44	--	4.0	2.6
MAY										
02...	.20	.030	.01	.24	.02	.38	.60	.68	4.8	4.4
02...	2.0	.030	.01	.26	.02	.47	.49	.75	4.0	5.4
02...	4.0	.030	.00	.32	.13	.31	.44	.74	7.7	5.0
02...	8.0	.040	.02	.53	.24	.23	.47	1.0	5.4	3.2
JUN										
05...	.20	.020	.01	--	.01	.49	.50	--	6.3	5.7
05...	2.0	.010	.00	--	.00	.67	.67	--	6.6	5.4
05...	4.0	.010	.01	--	.17	.33	.50	--	4.1	3.0
05...	8.0	.010	.00	--	.16	.24	.40	--	4.3	3.6
JUL										
12...	.20	.020	.00	--	.01	.36	.37	--	8.1	6.6
12...	2.0	.020	.01	--	.01	.41	.42	--	6.0	4.3
12...	4.0	.020	.01	--	.02	.40	.42	--	4.8	3.1
12...	8.0	.010	.00	--	.35	.18	.53	--	3.6	3.0
12...	13.0	.150	.15	--	1.4	.30	1.7	--	6.2	5.9
AUG										
15...	.20	.030	.00	--	.00	1.0	1.0	--	5.1	4.2
15...	2.0	.040	--	--	.01	.36	.37	--	6.0	3.8
15...	4.0	.020	.00	--	.21	.43	.64	--	2.8	2.3
15...	8.0	.060	.05	--	.26	.25	.51	--	9.0	2.7
15...	12.0	.240	.20	--	2.6	.00	2.6	--	5.2	4.4
28...	.20	.030	.00	--	.01	.53	.54	--	11	9.7
28...	2.0	.030	.00	--	.01	.39	.40	--	7.7	7.7
28...	4.0	.020	.01	--	.01	.35	.36	--	5.3	3.4
28...	8.0	.010	.01	--	.47	.00	.47	--	11	5.9
28...	13.0	.270	.14	--	2.9	.10	--	--	20	11
OCT										
17...	.20	.030	.02	.68	.25	.19	.44	1.1	7.8	2.7
17...	2.0	.030	.01	.76	.22	.37	.59	1.3	6.4	6.4
17...	4.0	.040	.04	.77	.23	.18	.41	1.2	4.4	2.5
17...	8.0	.040	.01	.77	.23	.29	.52	1.3	6.2	4.1
NOV										
29...	.20	.030	.01	.61	.17	.26	.43	1.0	2.6	1.9
29...	7.0	.030	.03	.62	.15	.27	.42	1.0	6.1	4.1
JAN 1979										
23...	.20	.040	.00	.46	.15	.13	.28	.74	4.2	4.2
23...	11.0	.030	.01	.43	.12	.21	.33	.76	2.8	2.6
MAY										
2...	.20	.070	.00	.34	.01	.44	.47	.87	5.9	5.8
21...	11.0	.070	.00	.25	.25	.22	.47	.75	5.0	5.0
MAY										
01...	.20	.050	.00	.11	.01	.41	.42	.53	9.0	6.2
01...	2.0	.050	.00	.13	.03	.19	.22	.35	4.8	4.8
01...	4.0	.070	.02	.29	.10	.15	.25	.54	3.6	3.6
01...	8.0	.070	.03	.35	.12	.24	.36	.71	3.2	3.2
01...	12.0	.070	.01	.14	.33	.14	.47	.61	11	9.2
JUN										
12...	.20	.030	.02	.03	.00	.45	.45	.48	4.2	4.2
12...	2.0	.010	.00	.04	.00	.46	.46	.50	4.3	2.9
12...	4.0	.030	.00	.07	.01	.63	.64	.51	4.7	2.4
12...	8.0	.040	.03	.56	.20	.27	.47	1.0	2.7	2.4
12...	12.0	.110	.09	.00	.78	.22	1.0	1.0	3.8	2.9
JUL										
25...	.20	.040	.00	.14	.03	.41	.44	.58	4.2	3.2
25...	2.0	.030	.01	.16	.02	.44	.45	.62	4.4	2.4
25...	4.0	.020	.00	.51	.21	.38	.59	1.1	2.7	2.0
25...	8.0	.020	.01	.19	.28	.19	.47	.66	2.2	2.0
25...	12.0	.170	.12	.02	1.3	.40	1.9	1.9	4.8	3.2
AUG										
22...	.20	.020	.00	.01	.01	.18	.19	.20	3.6	2.8
22...	2.0	.030	.00	.01	.01	.08	.09	.10	4.6	4.0
22...	4.0	.020	.00	.05	.09	.22	.31	.36	4.3	4.3
22...	8.0	.050	.02	.00	.63	.01	.64	.64	3.3	3.2
22...	12.0	.220	.15	.00	2.0	.10	2.1	2.1	5.2	4.5
SEP										
19...	.20	.030	.00	.32	.11	.41	.52	.64	6.2	2.7
19...	2.0	.030	.00	.32	.13	.10	.23	.55	6.4	2.1
19...	4.0	.020	.00	.33	.14	.10	.24	.57	3.8	2.2
19...	8.0	.030	.00	.35	.14	.42	.50	.85	5.2	5.0
19...	12.0	.140	.10	.02	2.2	.40	3.1	3.1	16	6.9
OCT										
14...	.20	.040	.00	.42	.08	.35	.43	.85	3.3	3.1
14...	12.0	.070	.01	.16	.23	.23	.39	1.0	2.7	2.7
DEC										
12...	.20	.040	.00	.23	.26	.27	.53	.76	3.6	3.6
12...	11.0	.120	.00	.86	.27	.21	.48	1.3	2.3	2.3

LATF	SAM- PLING DEPTH (M)	PHOS- PHORUS TOTAL (MG/L AS P)	PHOS- PHORUS ORTHO DIS- SOLVED (MG/L AS P)	NITRO- GEN. NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN. AMMONIA TOTAL (MG/L AS N)	NITRO- GEN. ORGANIC TOTAL (MG/L AS N)	NITRO- GEN AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN. TOTAL (MG/L AS N)	CARBON ORGANIC TOTAL (MG/L AS C)	CARBON ORGANIC DIS- SOLVED (MG/L AS C)
OCT . 1978										
18...	.20	.040	.32	.00	.06	--	--	--	8.9	5.1
18...	2.0	.000	.00	.02	.08	--	--	--	6.8	3.6
18...	4.0	.050	.01	.00	.07	--	--	--	11	5.8
NOV										
28...	.20	.040	.04	.13	.30	.33	.63	.76	2.7	2.6
28...	4.0	.020	.01	.12	.30	.31	.61	.73	2.5	2.5
JAN . 1979										
23...	.20	--	.01	.24	.12	--	--	--	5.2	3.4
23...	4.0	--	.01	.24	.11	--	--	--	3.5	3.5
MAR										
20...	.20	--	.01	.14	.03	--	--	--	5.3	4.0
20...	4.0	--	.01	.15	.06	--	--	--	4.7	4.7
APR										
30...	.20	--	.01	.04	.01	--	--	--	5.4	4.4
30...	2.0	--	.02	.04	.02	--	--	--	4.6	--
30...	4.0	--	.02	.07	.05	--	--	--	--	--
30...	4.0	--	.03	.10	.10	--	--	--	4.4	8.2
JUN										
14...	.20	--	.00	.00	.01	--	--	--	3.3	3.3
14...	2.0	--	.00	.00	.01	--	--	--	4.2	4.2
14...	4.0	--	.00	.05	.03	--	--	--	2.5	2.5
14...	4.0	--	.00	.00	.17	--	--	--	3.0	2.7
JUL										
25...	.20	--	.01	.01	.00	.39	.39	.40	3.4	3.4
25...	2.0	--	.00	.01	.01	.42	.43	.44	3.9	3.9
25...	4.0	--	.00	.00	.18	.62	.40	.80	3.7	3.7
25...	4.0	--	.01	.0.	.02	.34	.36	.40	4.0	2.4
AUG										
21...	.20	--	.00	.01	.00	--	--	--	4.2	4.2
21...	2.0	--	.00	.00	.01	--	--	--	4.4	3.1
21...	4.0	--	.02	.00	.01	--	--	--	11	7.3
21...	4.0	--	.01	.00	.67	--	--	--	4.0	2.8
SEP										
18...	.20	--	.00	.01	.15	--	--	--	6.1	3.0
18...	2.0	--	.00	.01	.11	--	--	--	5.2	3.2
18...	4.0	--	.00	.02	.14	--	--	--	7.0	5.0
18...	4.0	--	.00	.00	.04	--	--	--	15	2.5
OCT										
16...	.20	--	.00	.06	.04	--	--	--	4.2	3.7
16...	4.0	--	.00	.06	.08	--	--	--	3.2	5.0
DEC										
11...	.20	--	.00	.04	.04	--	--	--	4.2	2.3
11...	4.0	--	.00	.07	.04	--	--	--	2.9	2.5

DATE	SAMPLING DEPTH (M)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO-DIS-SOLVED (MG/L AS P)	NITROGEN (NO ₃ -NO ₂ -NO) TOTAL (MG/L AS N)	NITROGEN AMMONIA (MG/L AS N)	NITROGEN ORGANIC TOTAL (MG/L AS N)	NITROGEN TOTAL (MG/L AS N)	CARBON ORGANIC TOTAL (MG/L AS C)	CARBON ORGANIC DIS-SOLVED (MG/L AS C)
APR 1978									
11...	1.0	.040	.00	--	.09	.47	.56	--	6.7
11...	16.0	.010	.00	.30	.09	.10	.23	.53	6.0
MAY									
04...	.20	.020	.00	--	.09	.19	.28	--	8.0
04...	2.0	.020	.00	--	.08	.27	.35	--	7.3
04...	4.0	.040	.04	--	.08	.21	.29	--	6.1
04...	8.0	.020	.02	--	.11	.23	.34	--	7.4
04...	16.0	.040	.02	--	.16	.16	.32	--	7.1
31...	.20	.020	.00	--	.01	.49	.50	--	6.7
31...	2.0	.020	.00	--	.00	.17	.17	--	7.0
31...	4.0	.030	.00	--	.04	.15	.19	--	12
31...	8.0	.040	.01	--	.14	.10	.24	--	7.1
31...	16.0	.030	.00	--	.17	.10	.27	--	3.6
JUL									
10...	.20	.020	.00	.21	.00	.41	.41	.67	5.0
10...	2.0	.010	.01	--	.04	.28	.32	--	5.2
10...	4.0	.020	.02	.34	.02	.10	.42	.61	2.9
10...	8.0	.010	.00	--	.33	--	--	--	10
10...	16.0	.020	.02	--	.38	--	--	--	3.6
AUG									
16...	.20	.020	.00	--	.08	.44	.52	--	8.6
16...	2.0	.020	.00	--	.03	.52	.55	--	7.7
16...	4.0	.010	.00	--	.01	.14	.15	--	4.6
16...	8.0	.020	.01	--	.18	.29	.47	--	6.9
16...	16.0	.050	.00	--	.95	.45	1.4	--	9.6
28...	.20	.020	.00	--	.00	.42	.42	--	4.4
28...	2.0	.020	.00	--	.00	.26	.26	--	11
28...	4.0	.020	.00	--	.01	.14	.15	--	17
28...	8.0	.010	.00	--	.11	.19	.30	--	8.4
28...	16.0	.040	.00	--	.29	.31	.60	--	14
OCT									
16...	.20	.020	.02	.33	.18	.17	.35	.68	4.1
16...	2.0	.020	.02	.35	.18	.22	.40	.75	5.7
16...	4.0	.020	.01	.34	.17	.14	.31	.65	8.8
16...	8.0	.020	.01	.39	.16	.45	.61	1.0	8.5
16...	16.0	.070	.03	.65	.24	.15	.39	1.2	6.5
NOV									
28...	.20	.030	.03	.61	.15	.25	.40	1.0	3.6
28...	16.0	.040	.07	.67	.22	.29	.51	1.2	1.7
JAN 1979									
23...	.20	.090	.04	.71	.20	.23	.43	1.1	1.4
23...	16.0	.100	.06	.85	.27	.20	.47	1.3	2.1
MAY									
20...	.20	.050	.01	.29	.01	.16	.37	.66	6.0
20...	13.0	.020	.01	.41	.06	.13	.44	.60	5.4
SEP									
30...	.20	.020	.02	.11	.01	.20	.21	.32	4.6
30...	2.0	.010	.00	.15	.02	.14	.31	.36	3.6
30...	4.0	.040	.02	.36	.11	.06	.47	.53	2.8
30...	8.0	.050	.05	.44	.26	.00	.60	--	3.6
30...	16.0	.020	.00	.21	.15	.12	.27	.48	3.4
JUN									
18...	.20	.040	.00	.16	.02	.46	.48	.64	5.5
18...	2.0	.040	.00	.18	.03	.34	.37	.55	5.5
18...	4.0	.040	.00	.23	.03	.44	.47	.70	4.4
18...	8.0	.020	.00	.26	.05	.16	.19	.45	3.4
18...	16.0	.040	.00	.13	.13	.12	.25	.38	2.9
JUL									
25...	.20	.020	.00	.16	.01	.46	.47	.63	5.4
25...	2.0	.020	.00	.21	.01	.11	.32	.53	3.5
25...	4.0	.020	.00	.21	.01	1.3	1.3	1.5	5.5
25...	8.0	.010	.00	.12	.13	.22	.35	.47	6.1
25...	16.0	.020	.11	.05	.68	.30	.98	.98	3.9
AUG									
21...	.20	.010	.00	.00	.01	.23	.24	.24	4.6
21...	2.0	.010	.00	.01	.03	.03	.06	.07	6.0
21...	4.0	.020	.00	.04	.03	.26	.29	.34	2.7
21...	8.0	.010	.00	.02	.19	.11	.30	.34	2.9
21...	16.0	.030	.00	.00	1.0	.00	.94	.94	4.0
SEP									
18...	.20	.030	.01	.26	.16	.26	.42	.68	6.0
18...	2.0	.020	.00	.27	.16	.40	.46	.81	5.0
18...	4.0	.030	.00	.27	.15	.30	.45	.72	5.1
18...	8.0	.020	.00	.27	.15	.34	.49	.81	5.7
18...	16.0	.040	.00	.02	.88	.42	1.3	1.3	3.2
OCT									
18...	.20	.020	.00	.42	.07	.20	.27	.64	2.6
18...	16.0	.090	.01	.59	.18	.24	.42	1.0	3.0
DEC									
11...	.20	.030	.01	.30	.04	.30	.34	.64	4.2
11...	16.0	.080	.01	.51	.14	.36	.50	1.0	2.5

CH-2.5B (02339402) Chattahoochee River below West Point Dam, 1978 and 1979

DATE	SAMPLING DEPTH (M)	PHOS-PHORUS TOTAL (MG/L AS P)	PHOS-PHORUS ORTHO-DISSOLVED (MG/L AS P)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)
APR . 1978										
09...	.70	.030	.02	.31	.06	.25	.31	.62	4.8	1.9
MAY										
01...	.70	.030	.01	--	.14	.40	.54	--	6.2	4.1
01...	1.0	.030	.03	--	.15	.22	.37	--	7.1	6.8
30...	.70	.030	.00	.31	.13	.23	.36	.67	3.1	2.6
30...	1.0	.020	.01	--	.10	.21	.31	--	4.5	4.4
JUL										
09...	.70	.020	.01	--	.17	.17	.34	--	3.8	1.6
10...	1.0	.070	.05	--	.48	.13	.61	--	2.3	1.4
AUG										
13...	.70	.040	.02	--	.16	.94	1.1	--	4.8	2.4
14...	1.0	.030	.01	--	.36	.74	1.1	--	8.2	8.2
27...	.70	.020	.01	--	.08	.34	.42	--	4.1	4.1
28...	1.0	.020	.00	--	.15	.27	.42	--	3.7	3.1
OCT										
18...	.70	.080	.08	.53	.13	.34	.47	1.0	3.5	2.2
19...	1.0	.020	.00	.55	.13	.19	.32	.87	2.9	2.9
NOV										
27...	.70	.040	.04	.64	.19	.31	.50	1.1	3.9	1.6
28...	1.0	--	.02	.63	.16	.70	.86	1.6	1.1	1.1
JAN . 1979										
22...	1.0	.060	.03	.84	.23	.10	.33	1.2	3.3	3.7
MAR										
19...	1.0	.060	.04	.40	.14	.23	.37	.77	5.0	3.0
19...	.70	.060	.03	.39	.14	.26	.40	.74	3.5	3.6
APR										
30...	1.0	.070	.07	.28	.10	.18	.28	.56	6.2	3.6
MAY										
02...	.70	.040	.01	.31	.09	.18	.27	.58	5.2	5.2
JUL										
11...	.70	.010	.00	.10	.06	.31	.37	.47	2.8	2.8
11...	1.0	.010	.00	.27	.06	.41	.47	.74	3.4	3.9
JUL										
23...	.70	.030	.00	.10	.13	.34	.47	.57	3.7	3.2
23...	1.0	.040	.01	.07	.35	.30	.65	.72	4.3	2.1
AUG										
20...	.70	.040	.01	.04	.50	.13	.63	.67	5.4	3.9
20...	1.0	.040	.01	.05	.47	.32	.79	.84	3.5	2.6
SEP										
16...	.70	.030	.00	.08	.15	.46	.61	.69	5.1	5.0
17...	1.0	.020	.00	.07	.21	.63	.84	.91	2.8	2.8
OCT										
14...	.70	.030	.00	.50	.09	.55	.64	1.1	4.6	4.6
14...	1.0	.030	.00	.54	.05	.26	.31	.85	2.2	2.1
DEC										
09...	.70	.040	.01	.55	.21	.16	.37	.92	3.0	2.7
10...	1.0	.040	.00	.51	.11	.55	.66	1.2	2.4	2.4

CH-01A (02339500) Chattahoochee River at West Point, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	PHOS- PHORUS, TOTAL (MG/L AS P)	PHOS- PHORUS, ORTHO, DIS- SOLVED (MG/L AS P)	NITRO- GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO- GEN, AMMONIA TOTAL (MG/L AS N)	NITRO- GEN, ORGANIC TOTAL (MG/L AS N)	NITRO- GEN,AM- MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO- GEN, TOTAL (MG/L AS N)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L AS C)
APR , 1978										
09...	.70	.030	.02	.23	.02	.22	.24	.47	2.4	2.0
13...	1.0	.030	.01	--	.10	.16	.26	--	6.6	3.6
MAY										
01...	1.0	.030	.02	.03	.13	.30	.43	.46	5.2	2.7
14...	.70	.070	.07	--	.11	.35	.46	--	6.1	4.6
30...	.70	.030	.00	--	.10	.24	.34	--	6.5	1.5
30...	1.0	.030	.01	--	.13	.23	.36	--	3.0	.6
JUL										
09...	.70	.020	.01	--	.13	.18	.31	--	2.7	2.4
10...	1.0	.060	.01	--	.36	.26	.62	--	2.6	2.1
AUG										
13...	.70	.030	.01	--	.11	.25	.36	--	3.2	2.7
14...	1.0	.030	.01	--	.41	.35	.76	--	8.0	1.6
27...	.70	.040	.02	--	.04	.37	--	--	5.0	4.8
28...	1.0	.040	.01	--	.16	.21	.37	--	4.6	4.6
OCT										
18...	.70	.020	.00	.76	.13	.32	.45	1.2	2.5	2.5
19...	1.0	.020	.01	.55	.13	.28	.41	.96	2.8	1.5
JAN , 1979										
22...	1.0	.060	.03	.82	.22	.10	.32	1.1	4.2	2.5
MAR										
19...	1.0	.070	.04	.40	.14	.21	.35	.75	4.1	4.1
19...	.70	.040	.03	.39	.13	.27	.40	.74	4.1	3.8
APR										
30...	1.0	.040	.00	.24	.09	.14	.23	.51	3.8	3.8
MAY										
02...	.70	.040	.00	.24	.06	.24	.30	.54	4.0	4.0
JUN										
11...	.70	.010	.00	.22	.07	.23	.30	.52	2.6	2.6
11...	1.0	.020	.00	.27	.04	.31	.37	.64	2.2	2.2
JUL										
23...	.70	.030	.00	.04	.10	.31	.41	.44	3.4	2.9
23...	1.0	.040	.01	.07	.34	.38	.72	.74	3.1	2.0
AUG										
20...	.70	.040	.01	.05	.46	.11	.57	.62	4.4	1.9
20...	1.0	.030	.00	.05	.40	.14	.54	.54	2.9	2.9
SEP										
16...	.70	.020	.00	.11	.17	.37	.52	.63	2.8	2.8
17...	1.0	.030	.01	.07	.21	.47	.68	.75	2.5	2.5
OCT										
14...	.70	.020	.00	.50	.05	.57	.62	1.1	2.7	2.7
15...	1.0	.030	.00	.55	.05	.24	.33	.88	3.2	3.2
DEC										
09...	.70	.030	.01	.53	.14	.42	.56	1.1	2.5	2.1
10...	1.0	.040	.00	.51	.11	1.1	1.2	1.7	2.9	1.9

DATE	SAMPLING DEPTH (M)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-ORTHO, DISSOLVED (MG/L AS P)	NITRO-GEN, NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	CARBON, ORGANIC TOTAL (MG/L AS C)	CARBON, ORGANIC DISSOLVED (MG/L AS C)
APR . 1978										
09...	.70	.050	.01	.29	.01	.03	.04	.33	2.7	2.5
13...	1.0	.030	.01	--	.09	.17	.26	--	5.2	2.7
MAY										
01...	1.0	.030	.01	--	.13	.22	.35	--	6.5	2.4
14...	.70	.030	.03	--	.08	.27	.35	--	9.6	4.9
30...	.70	.030	.00	--	.08	.18	.26	--	9.1	5.2
30...	1.0	.030	.01	--	.13	.27	.40	--	5.2	4.6
JUL										
09...	.70	.020	.00	--	.09	.23	.32	--	3.0	2.8
10...	1.0	.050	--	--	.40	.14	.54	--	2.9	2.3
AUG										
13...	.70	.030	.01	--	.14	.40	.54	--	4.5	2.2
14...	1.0	.040	.00	--	.46	.22	.68	--	13	1.6
27...	.70	.020	.01	--	.03	.32	.35	--	5.8	4.7
28...	1.0	.030	.00	--	.19	.16	.35	--	4.1	2.6
OCT										
18...	.70	.020	.01	.54	.13	.26	.49	.93	8.2	2.0
19...	1.0	.020	.02	.56	.13	.23	.36	.92	3.7	3.7
NOV										
27...	.70	.030	.01	.64	.15	.19	.34	.98	1.6	1.6
24...	1.0	.030	.03	.65	.14	.24	.38	1.1	1.6	1.6
JAN . 1979										
22...	1.0	.060	.03	.84	.22	.09	.30	1.1	3.9	3.9
MAY										
19...	1.0	.070	.04	.40	.14	.22	.36	.76	4.1	4.1
19...	.70	.060	.03	.39	.13	.31	.44	.83	4.0	4.0
APR										
30...	1.0	.050	.01	.28	.09	.10	.19	.47	4.6	4.6
MAY										
02...	.70	.050	.00	.28	.06	.37	.43	.71	4.3	--
JUN										
11...	.70	.010	.00	.25	.06	.22	.28	.53	2.3	2.2
11...	1.0	.010	.01	.28	.06	.25	.31	.54	2.4	2.4
JUL										
23...	.70	.030	.00	.08	.09	.30	.49	.47	3.9	2.4
23...	1.0	.030	.01	.06	.30	.30	.60	.66	3.2	2.9
AUG										
20...	.70	.040	.01	.06	.31	.17	.48	.54	10	10
20...	1.0	.030	.00	.05	.41	.12	.53	.58	4.4	2.0
SEP										
14...	.70	.020	.00	.12	.12	.35	.47	.54	4.3	4.3
17...	1.0	.020	.01	.07	.20	.67	.87	.94	2.1	2.1
OCT										
14...	.70	.020	.00	.50	.07	.43	.50	1.0	2.4	2.3
15...	1.0	.030	.00	.57	.05	.23	.28	.85	2.0	2.0
DEC										
09...	.70	.030	.01	.50	.09	.31	.40	.90	2.2	1.9
10...	1.0	.050	.00	.78	.30	.27	.57	1.4	2.4	2.3

OH-UIC (02339560) Chattahoochee River above junction of Long Creek, near West Point, Ga., 1978 and 1979

DATE	SAMPLING DEPTH (M)	PHOSPHORUS TOTAL (MG/L AS P)	PHOSPHORUS ORTHO-DISSOLVED (MG/L AS P)	NITROGEN: NO ₂ +NO ₃ TOTAL (MG/L AS N)	NITROGEN: AMMONIA TOTAL (MG/L AS N)	NITROGEN: ORGANIC TOTAL (MG/L AS N)	NITROGEN: AMMONIA + ORGANIC TOTAL (MG/L AS N)	NITROGEN: TOTAL (MG/L AS N)	CARBON: ORGANIC TOTAL (MG/L AS C)	CARBON: ORGANIC DISSOLVED (MG/L AS C)
APR . 1978										
09...	.70	.060	.02	.31	.00	.07	.07	.34	5.0	4.3
MAY										
01...	1.0	.030	.01	--	.13	--	--	--	4.4	3.2
14...	.70	.030	.03	--	.13	.23	.36	--	12	4.5
30...	.70	.070	.05	--	.09	.22	.31	--	4.5	3.4
30...	1.0	.040	.01	--	.13	.28	.41	--	7.0	5.4
JUL										
09...	.70	.040	.02	--	.07	.14	.21	--	3.0	2.8
18...	1.0	.040	.01	--	.19	.22	.41	--	3.8	2.0
AUG										
13...	.70	.050	.01	--	.14	.36	.50	--	5.3	3.8
14...	1.0	.040	.01	--	.44	.15	.59	--	26	14
27...	.70	.030	.02	--	.02	.29	.31	--	6.0	6.0
28...	1.0	.060	.03	--	.16	.15	.31	--	5.7	4.8
OCT										
18...	.70	.030	.01	.53	.12	.20	.32	.45	3.5	3.5
NOV										
27...	.70	.060	.02	.67	.16	.37	.53	1.2	2.1	2.3
28...	1.0	.040	.03	.67	.13	.28	.41	1.1	1.8	1.8
JAN . 1979										
22...	1.0	.070	.03	.82	.21	.08	.29	1.1	6.4	3.2
MAR										
19...	1.0	.060	.04	.40	.13	.30	.43	.83	4.4	3.4
19...	.70	.070	.04	.39	.13	.24	.37	.76	4.3	3.0
APR										
30...	1.0	.040	.01	.28	.06	.17	.23	.51	5.6	5.6
MAY										
02...	.70	.040	.02	.28	.06	.26	.32	.60	3.2	3.2
JUN										
11...	.70	.040	.01	.27	.02	.19	.21	.48	2.7	2.5
11...	1.0	.020	.01	.31	.06	.22	.28	.59	2.7	2.0
JUL										
23...	.70	.060	.02	.12	.18	.28	.46	.58	4.4	3.2
23...	1.0	.040	.01	.10	.25	.27	.52	.62	3.3	2.5
AUG										
20...	.70	.030	.00	.10	.17	.25	.42	.52	3.6	2.8
20...	1.0	.040	.00	.05	.40	.18	.58	.61	3.5	3.5
SEP										
16...	.70	.030	.00	.12	.12	.29	.41	.53	2.4	2.4
17...	1.0	.040	.01	.04	.26	.53	.79	.88	2.5	2.5
OCT										
14...	.70	.030	.00	.49	.05	.30	.35	.84	2.5	2.5
15...	1.0	.040	.00	.55	.05	.35	.40	.45	2.0	1.8
DEC										
09...	.70	.050	.02	.52	.10	.32	.42	.94	3.8	2.9
10...	1.0	.050	.00	.51	.09	.40	.49	1.5	2.4	2.4

CH-010 (02339780) Chattahoochee River at Langdale, Ala., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	PHOS- PHOSPH. TOTAL (MG/L) AS P)	PHOS- ORTHO, DIS- SOLVED (MG/L) AS P)	NITRO- GEN. NO2+NO3 TOTAL (MG/L) AS N)	NITRO- GEN. AMMONIA TOTAL (MG/L) AS N)	NITRO- GEN. ORGANIC TOTAL (MG/L) AS N)	NITRO- GEN. AM- MONIA + ORGANIC TOTAL (MG/L) AS N)	NITRO- GEN. TOTAL (MG/L) AS N)	CARBON, ORGANIC TOTAL (MG/L) AS C)	CARBON, ORGANIC DIS- SOLVED (MG/L) AS C)
APR . 1978										
09...	.70	.100	.04	.29	.00	.10	.10	.39	3.3	2.7
MAY										
01...	1.0	.040	.02	--	.11	.27	.38	--	6.8	4.2
14...	.70	.060	.05	--	.08	.16	.24	--	7.9	4.8
30...	.70	.100	.07	--	.10	.22	.32	--	6.0	4.3
30...	1.0	.050	.01	--	.10	.31	.41	--	5.4	5.2
JUL										
09...	.70	.060	.01	--	.09	.17	.26	--	5.6	1.7
10...	1.0	.090	.04	--	.32	.23	.55	--	2.7	1.4
AUG										
13...	.70	.120	.04	--	.25	.62	.87	--	8.2	2.5
14...	1.0	.050	.00	--	.46	.38	.84	--	8.4	8.0
27...	.70	.070	.01	--	.02	.34	.36	--	4.4	4.2
28...	1.0	.030	.02	--	.16	.20	.36	--	9.0	4.5
OCT										
18...	.70	.020	.01	.54	.12	--	--	--	3.9	3.9
19...	1.0	.040	.01	.56	.11	.14	.29	.85	2.4	2.4
NOV										
27...	.70	.040	.04	.64	.15	.31	.46	1.1	2.5	2.5
28...	1.0	.060	.04	.62	.10	.32	.42	1.0	2.4	2.4
JAN . 1979										
22...	1.0	.070	.03	.82	.19	.10	.24	1.1	3.6	1.8
MAR										
19...	1.0	.080	.04	.41	.13	.24	.42	.83	4.3	4.3
19...	.70	.070	.04	.41	.10	.32	.42	.83	4.3	3.5
APR										
30...	1.0	.070	.06	.29	.06	.22	.28	.57	2.9	2.9
MAY										
02...	.70	.060	.01	.29	.06	.25	.31	.60	6.4	6.4
JUN										
11...	.70	.060	.05	.26	.00	.25	.25	.51	2.8	2.8
11...	1.0	.020	.01	.32	.05	.14	.24	.56	2.1	2.0
JUL										
23...	.70	.100	.03	.14	.14	.35	.49	.63	5.9	4.7
23...	1.0	.070	.00	.10	.05	.40	.45	.55	4.0	3.2
AUG										
20...	1.0	.040	.00	.07	.38	.15	.53	.60	2.9	2.9
23...	.70	.050	.00	.10	.10	.13	.23	.33	3.1	3.1
SEPT										
16...	.70	.040	.00	.12	.12	.39	.51	.63	2.9	2.9
17...	1.0	.030	.00	.10	.24	.61	.85	.95	3.5	3.5
OCT										
14...	.70	.070	.03	.52	.06	.29	.35	.87	6.6	6.6
15...	1.0	.040	.00	.57	.04	.31	.35	.92	2.4	2.1
DEC										
09...	.70	.070	.03	.50	.11	.22	.33	.83	2.6	2.6
10...	1.0	.050	.00	.51	.08	.30	.38	.89	2.3	2.3

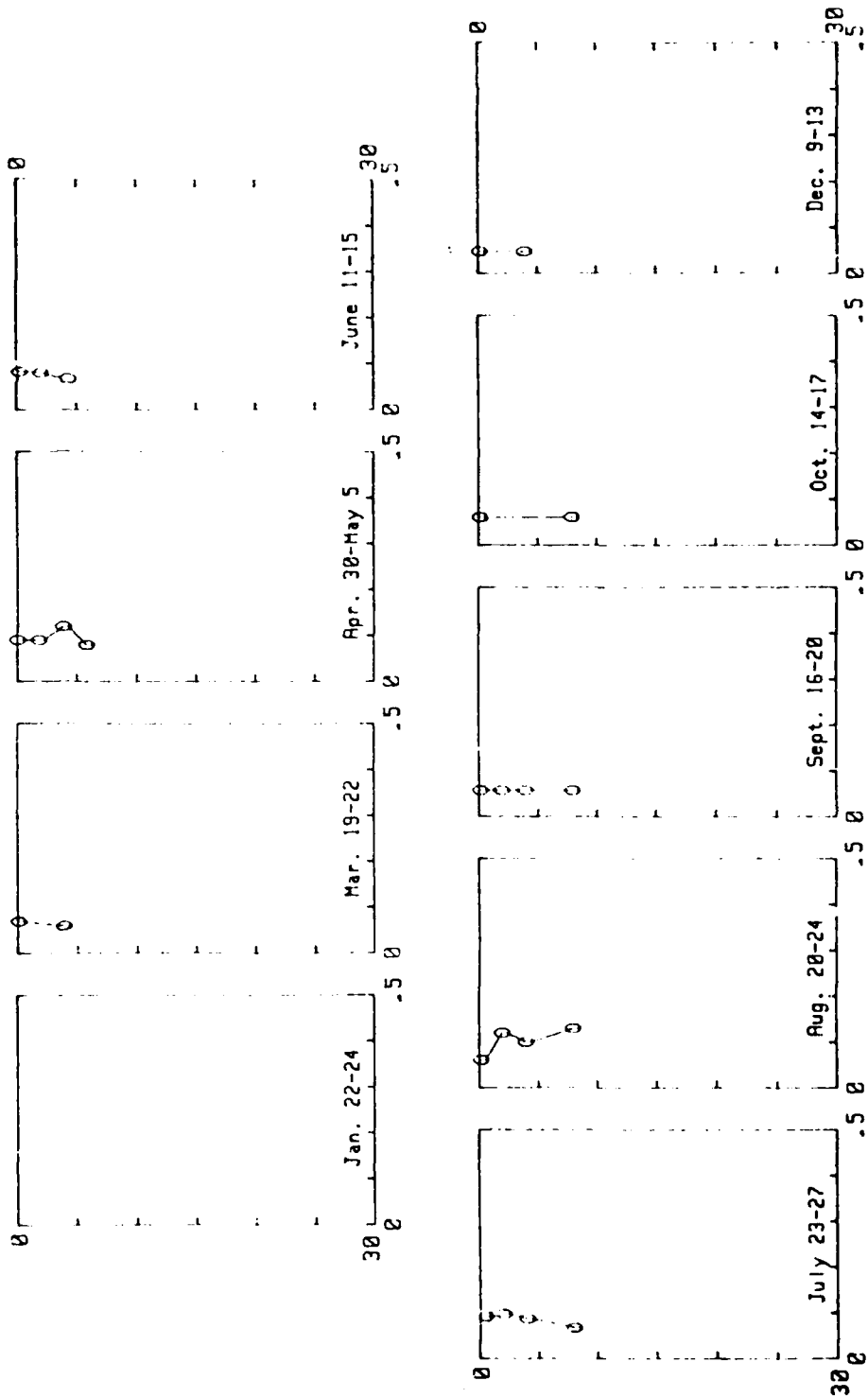
APPENDIX C-8

Graphs showing variations in nutrient concentrations with reservoir depth at stations in West Point Reservoir, April 1978-December 1979

[Phosphorus, orthophosphate, dissolved; phosphorus, total; nitrogen, nitrite plus nitrate, total; nitrogen, ammonia, total; carbon, organic, dissolved; and carbon, organic, total]

	Page
CH-11A (02338570) Chattahoochee River above New River, near Corinth, Ga., 1979.....	335
CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978 and 1979.....	338
CH-07 (02338720) Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1978 and 1979.....	344
CH-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978 and 1979.....	350
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DEPTH, IN METERS

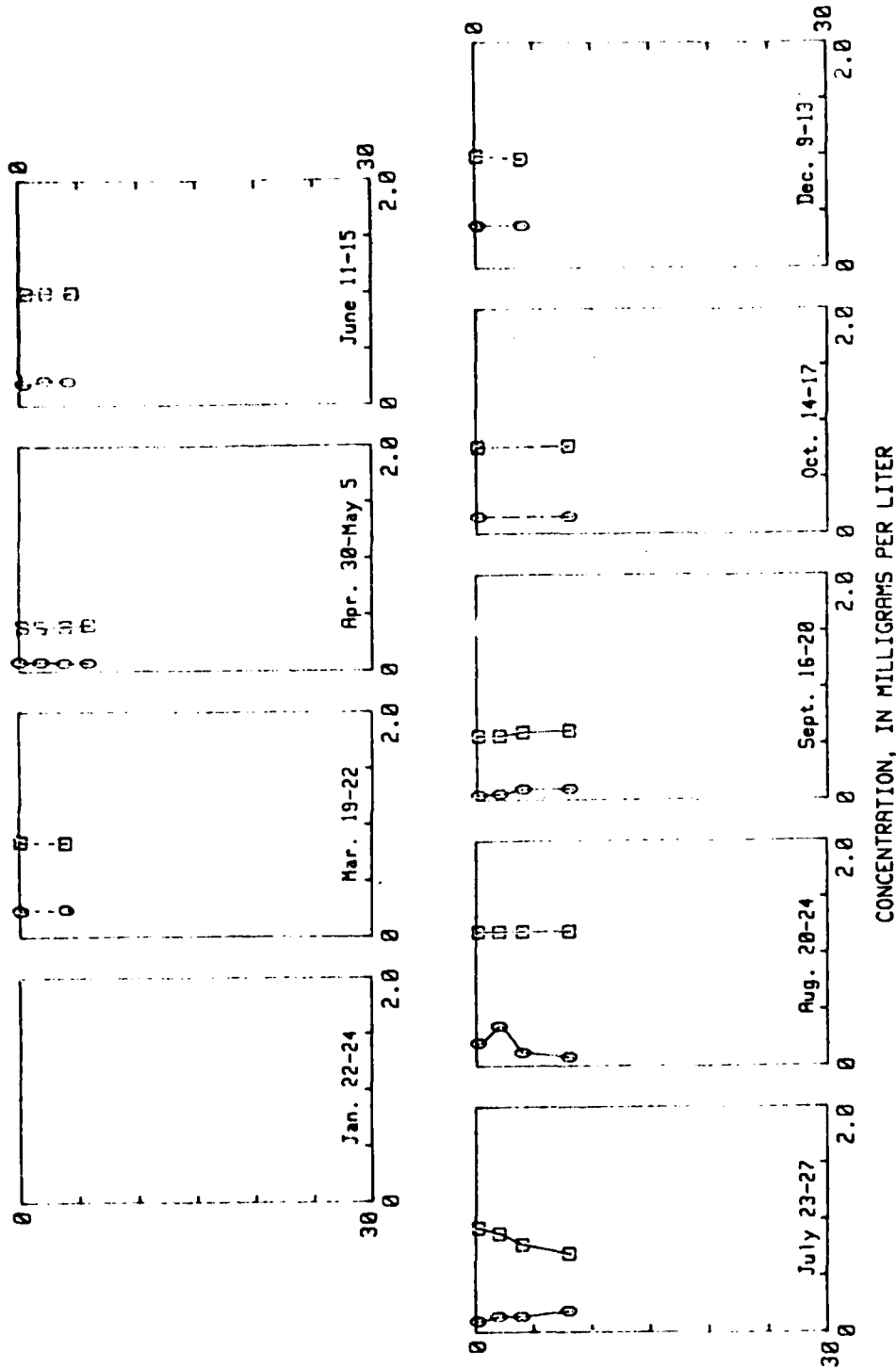


CONCENTRATION, IN MILLIGRAMS PER LITER

EXPLANATION

0-Dissolved orthophosphate (as phosphorus)

DEPTH, IN METERS

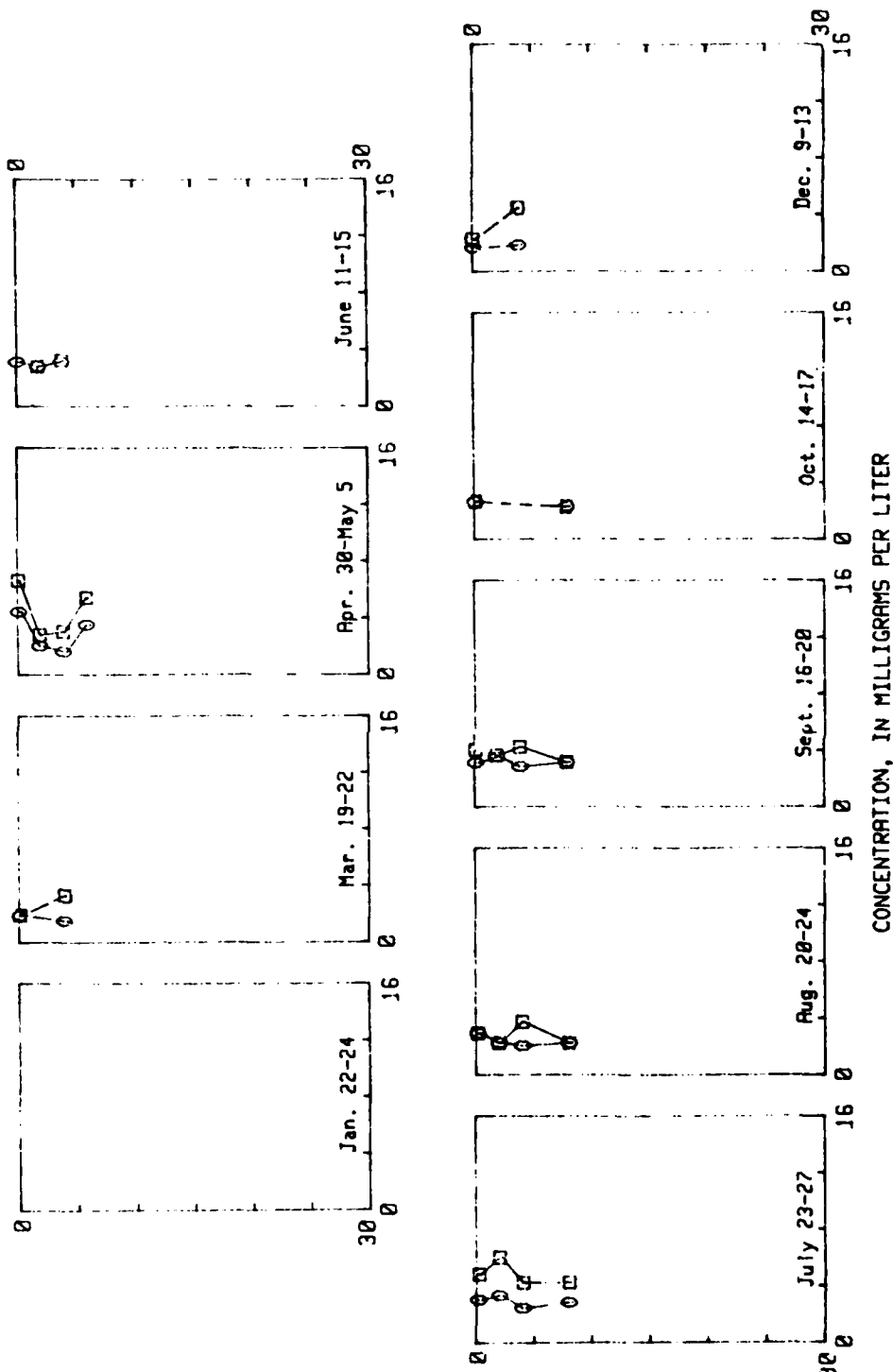


EXPLANATION

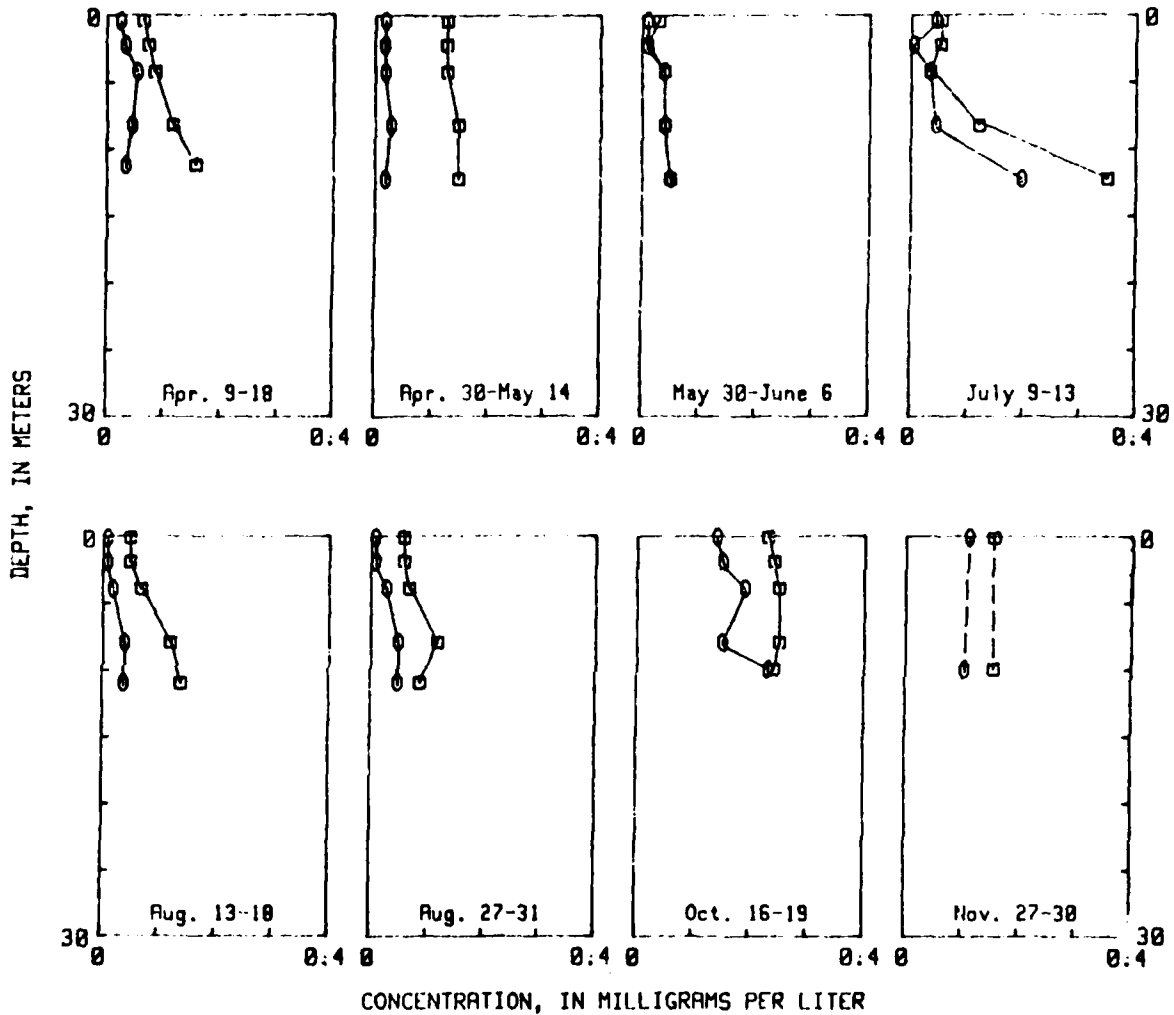
- Nitrate plus nitrite (as nitrogen)
- Ammonia (as nitrogen)

CH-11A (02330570) Chattahoochee River above New River, near Corinth, Ga., 1979

DEPTH, IN METERS



CH-11A (02338570) Chattahoochee River above New River, near Corinth, Ga., 1979

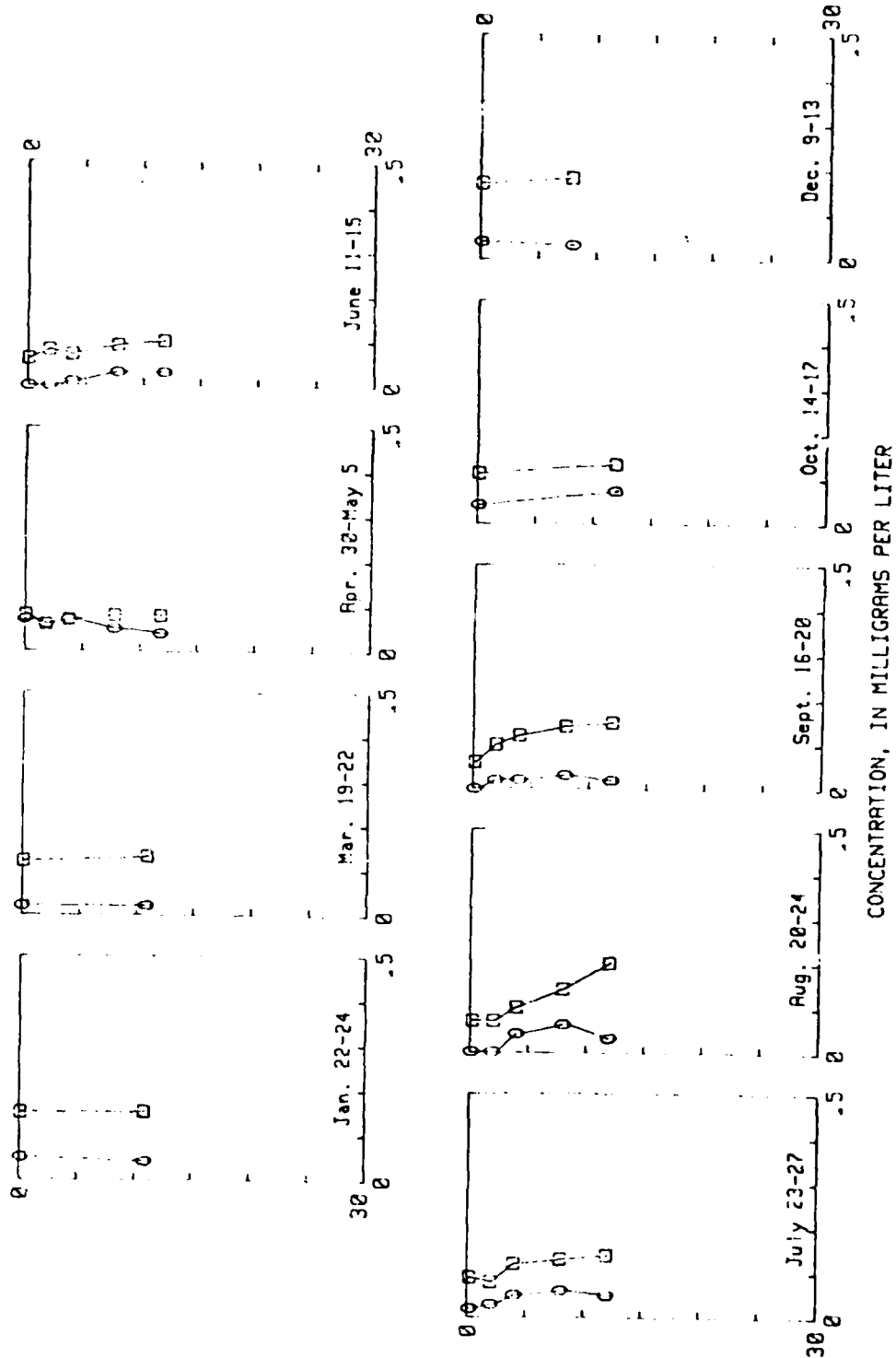


EXPLANATION

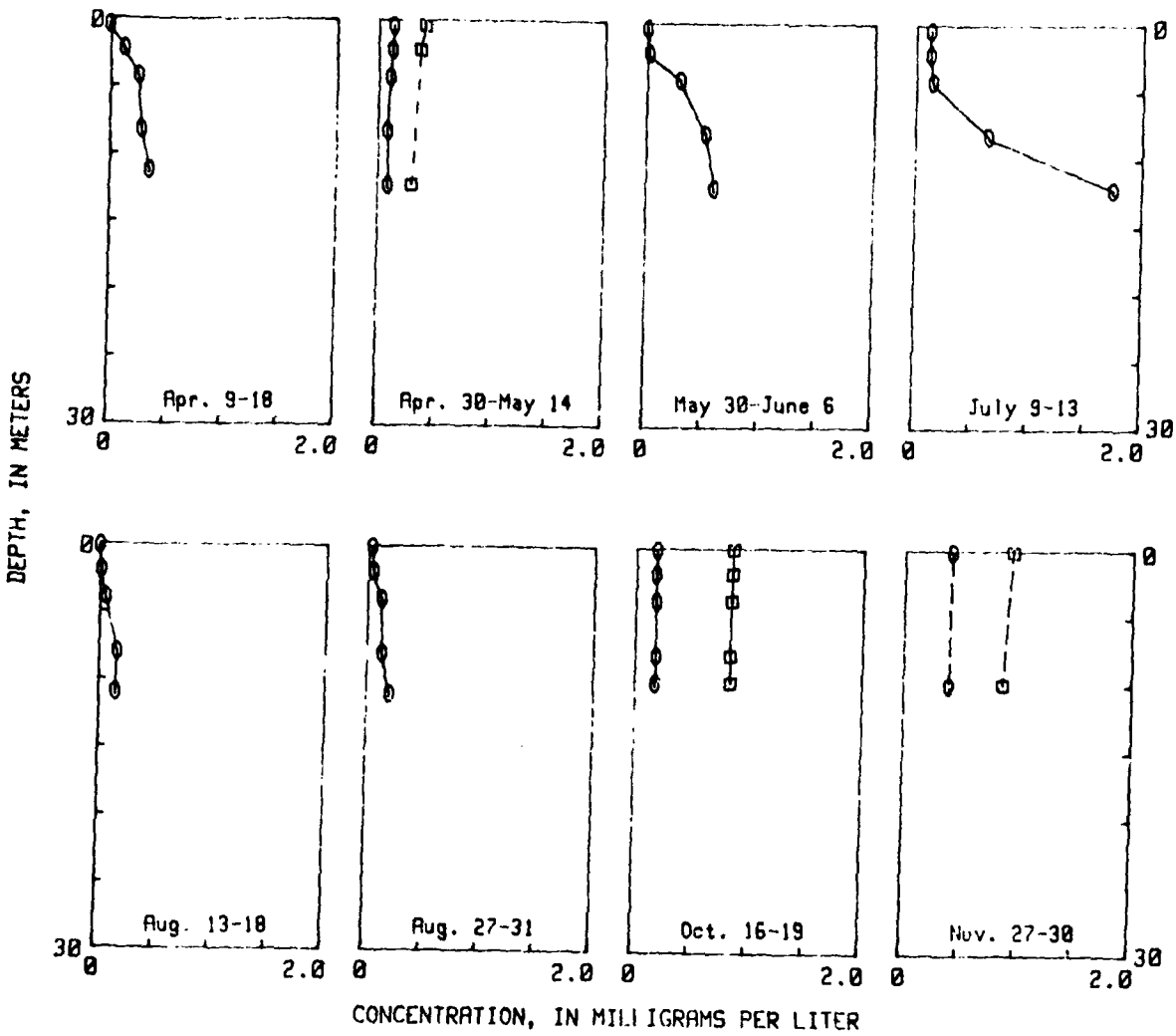
- Dissolved orthophosphate (as phosphorus)
- Total phosphorus (as phosphorus)

CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978

DEPTH, IN METERS



CH-10 (0233-710) Chattanooga River at State Highway 219, near LaGrange, Ga., 1979

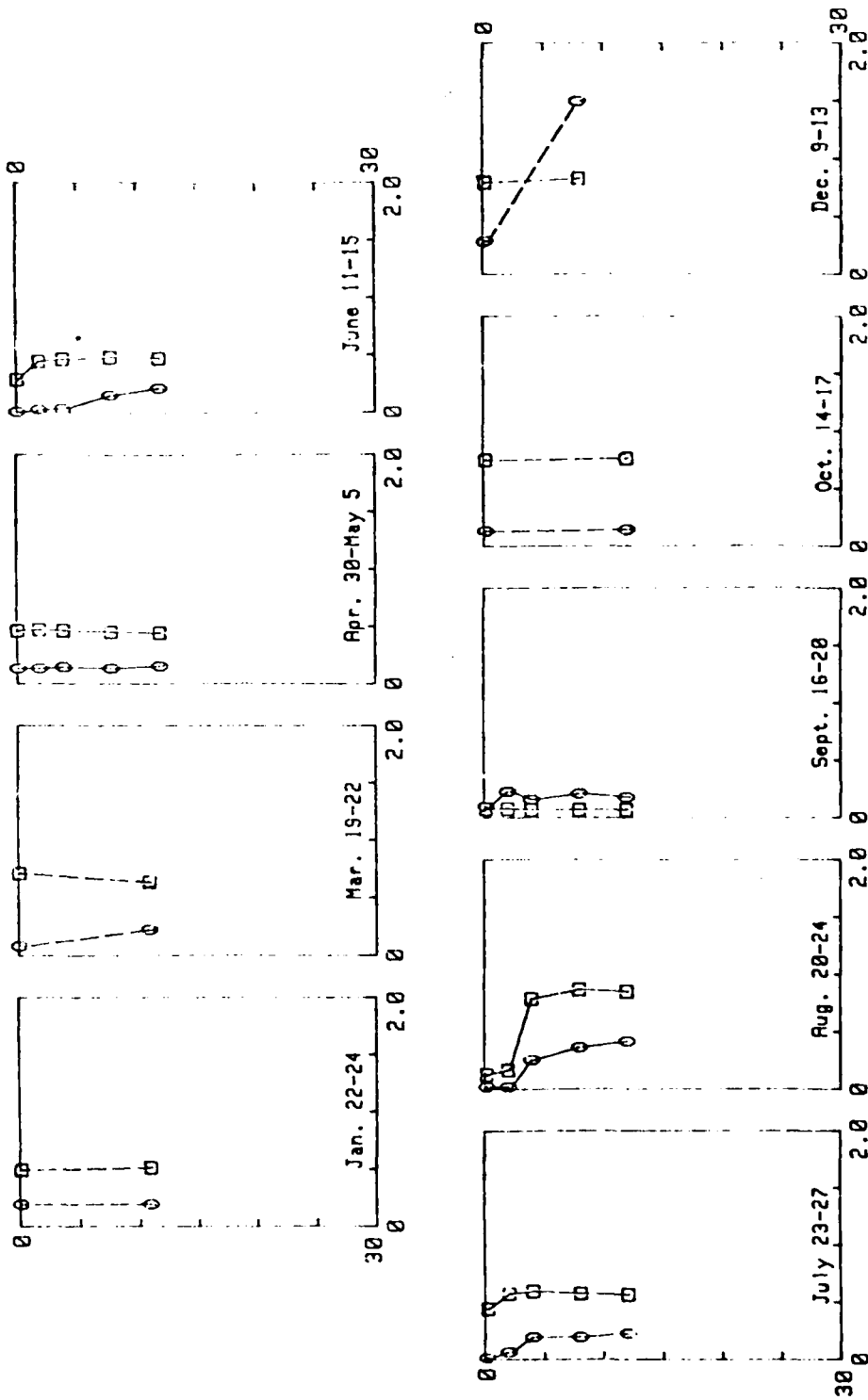


EXPLANATION

□-Nitrate plus nitrite (as nitrogen)
○-Ammonia (as nitrogen)

CH-10 (82338710) Chattahoochee River at State Highway 219, near
LaGrange, Ga., 1978

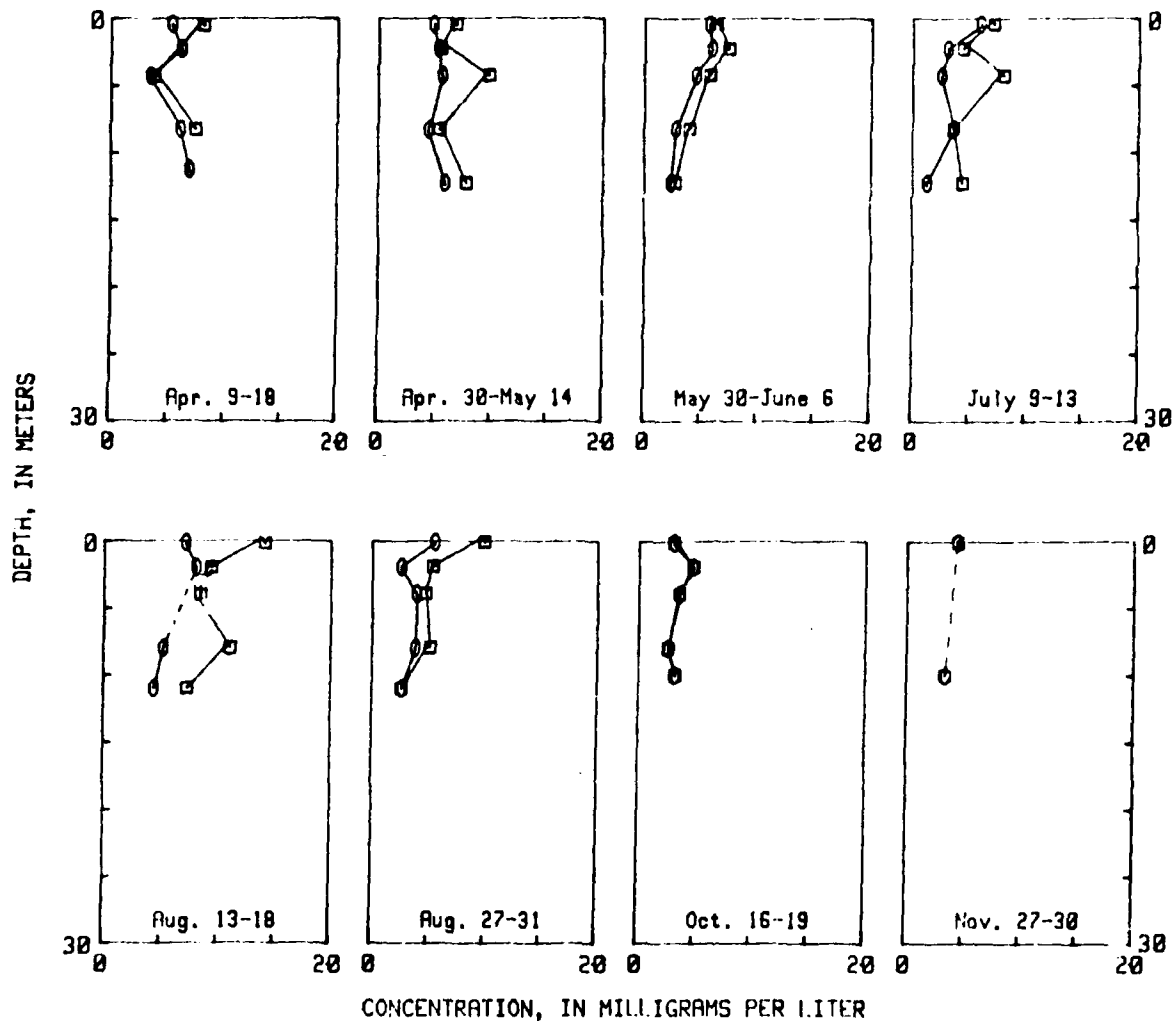
DEPTH, IN METERS



CONCENTRATION, IN MILLIGRAMS PER LITER

EXPLANATION
 □-Nitrate plus nitrite (as nitrogen)
 ○-Ammonia (as nitrogen)

CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1979

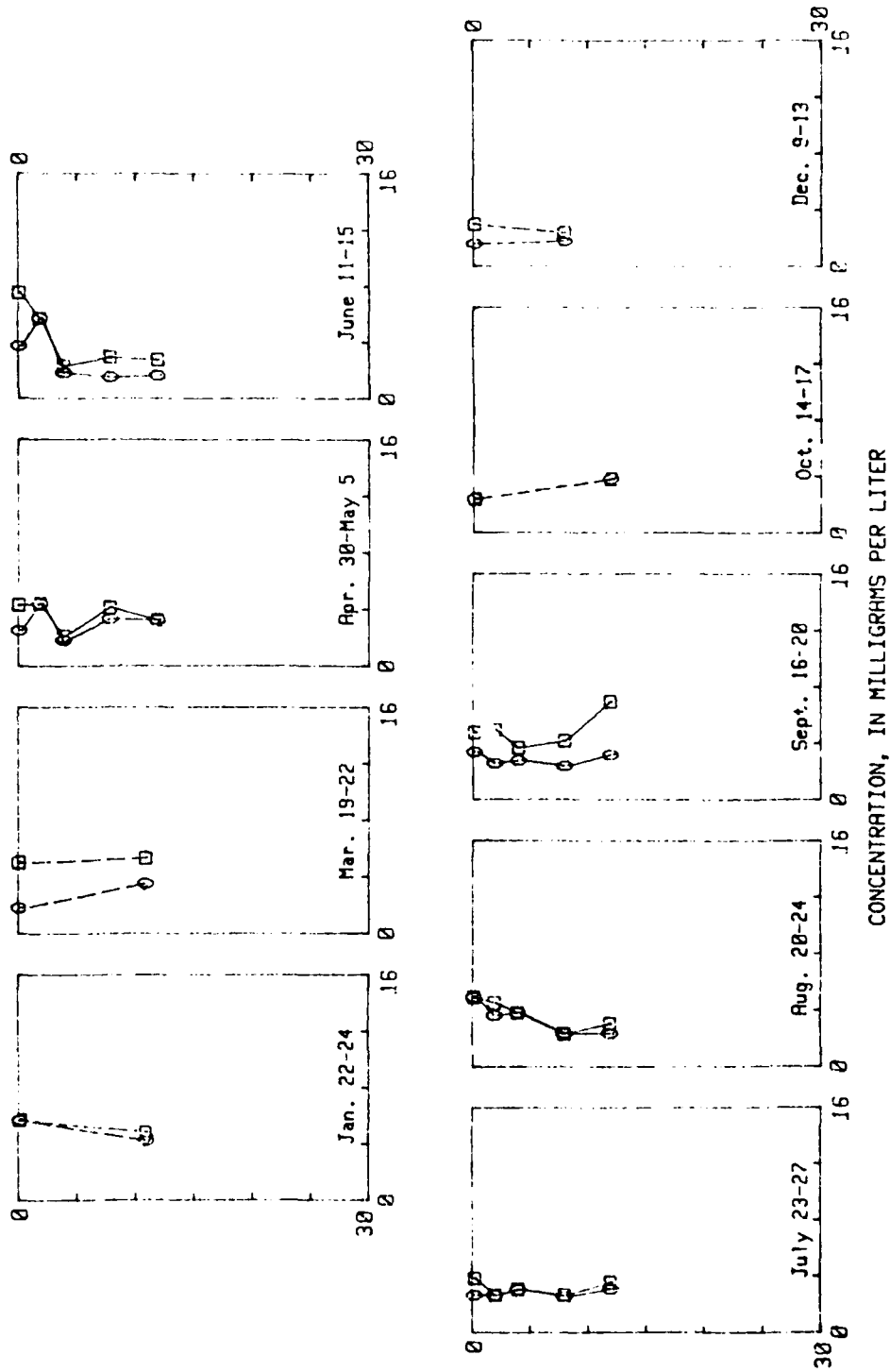


EXPLANATION

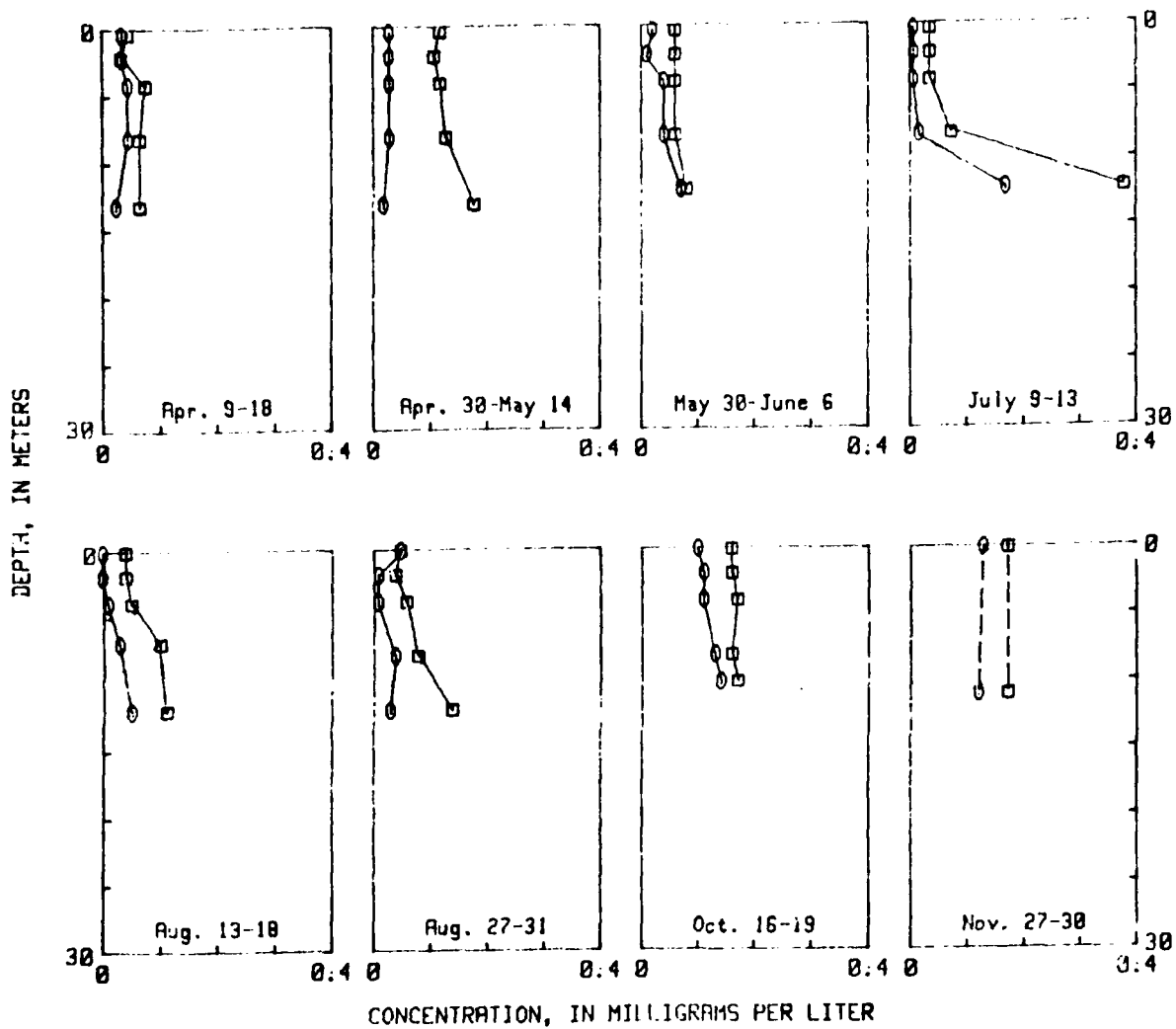
- Dissolved organic carbon
- Total organic carbon

CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978

DEPTH, IN METERS



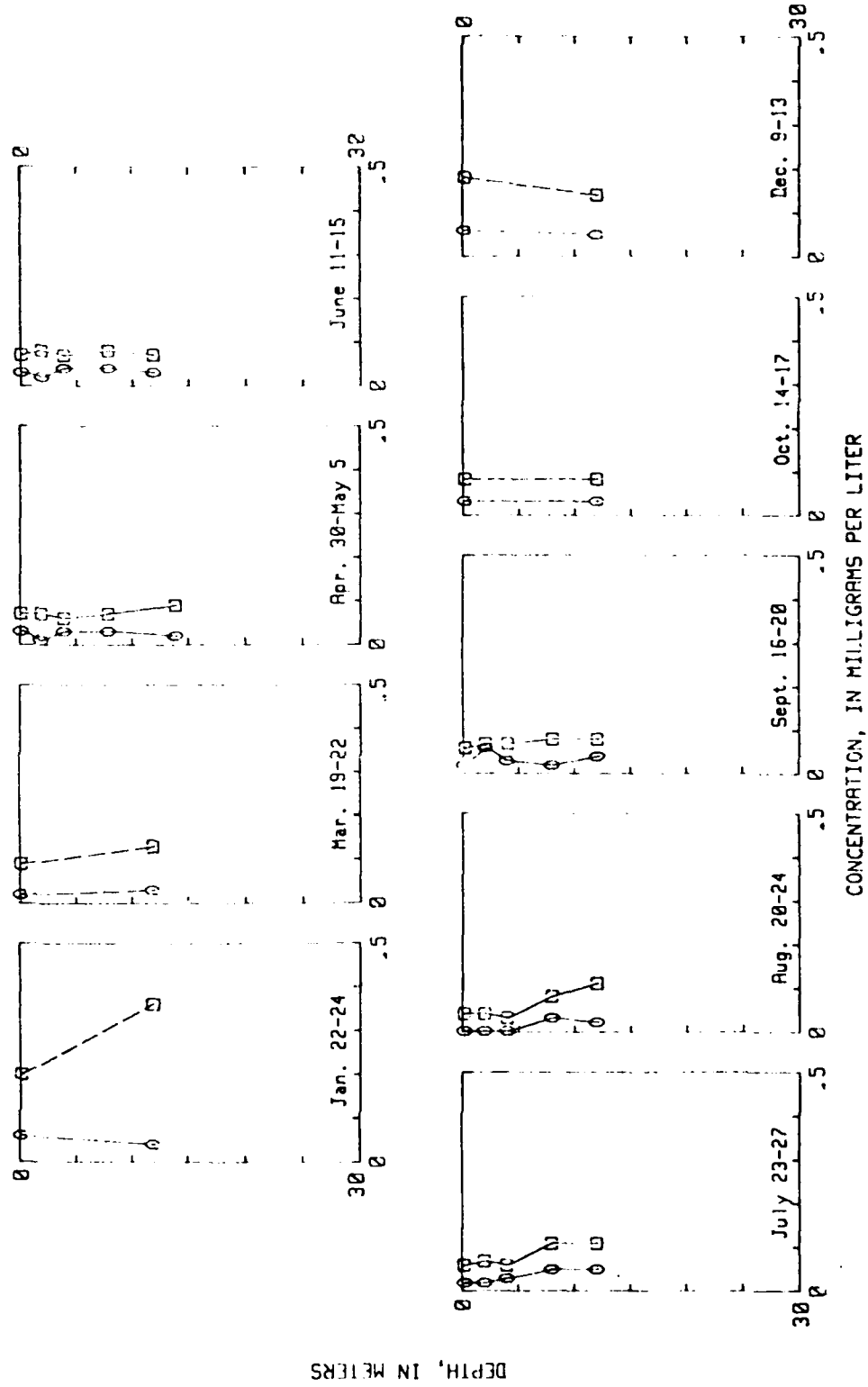
CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1979



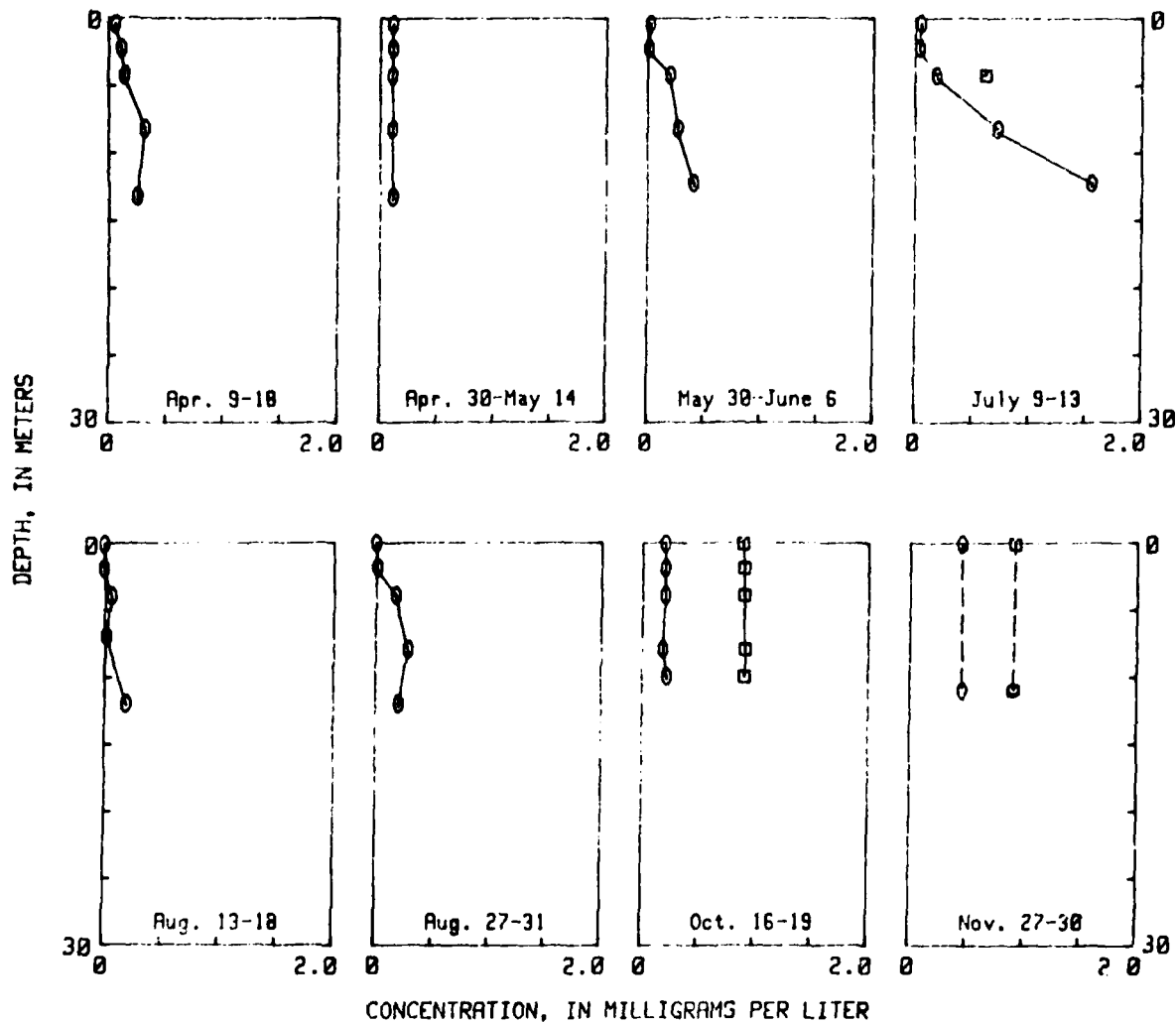
EXPLANATION

- - Dissolved orthophosphate (as phosphorus)
- - Total phosphorus (as phosphorus)

CH-07 (02338720) Chattahoochee River (city of LaGrange Intake)
near LaGrange, Ga., 1978

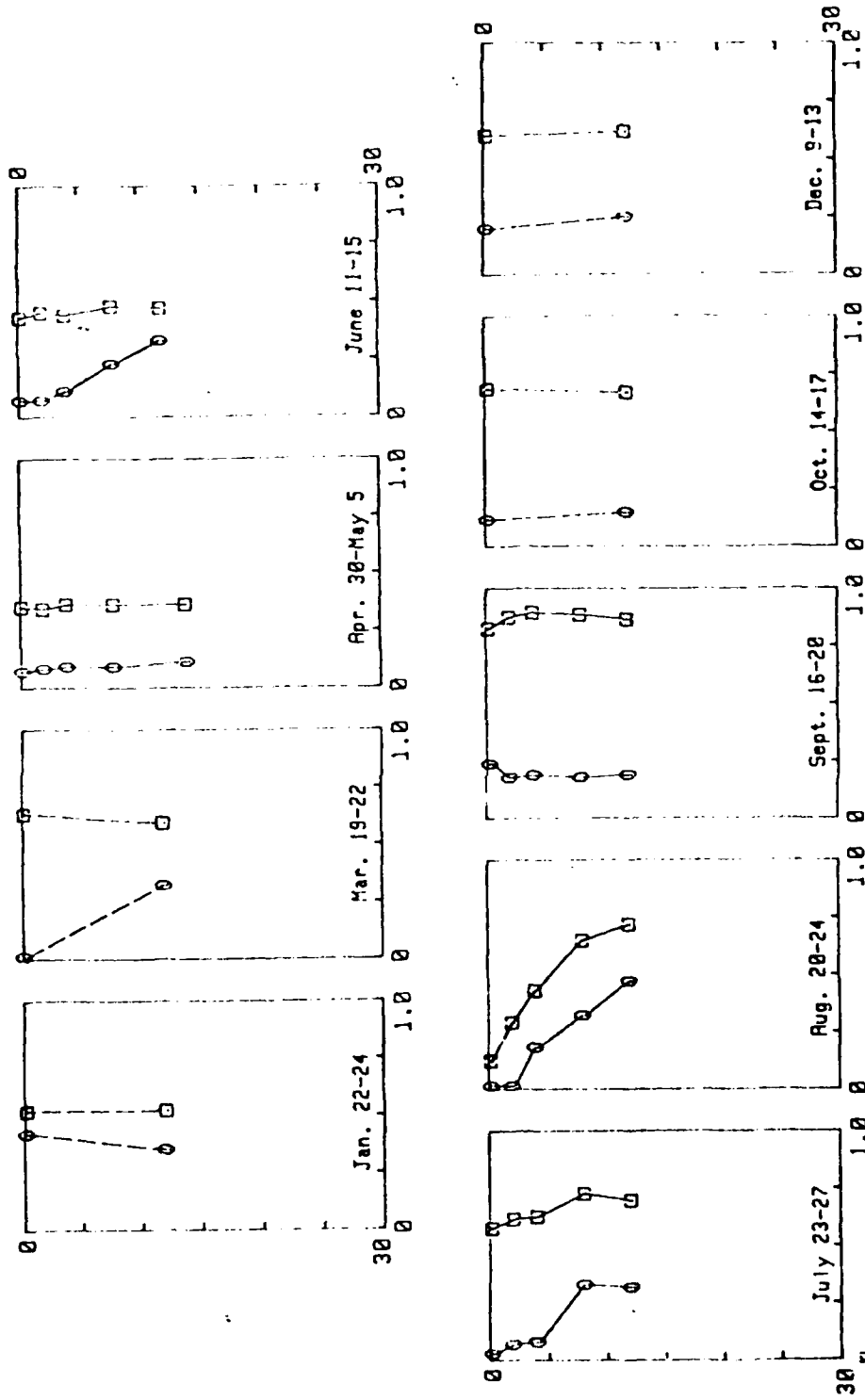


CH-07 (02338720) Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1979



CH-07 (02338720) Chattahoochee River (city of LaGrange Intake)
near LaGrange, Ga., 1978

DEPTH, IN METERS

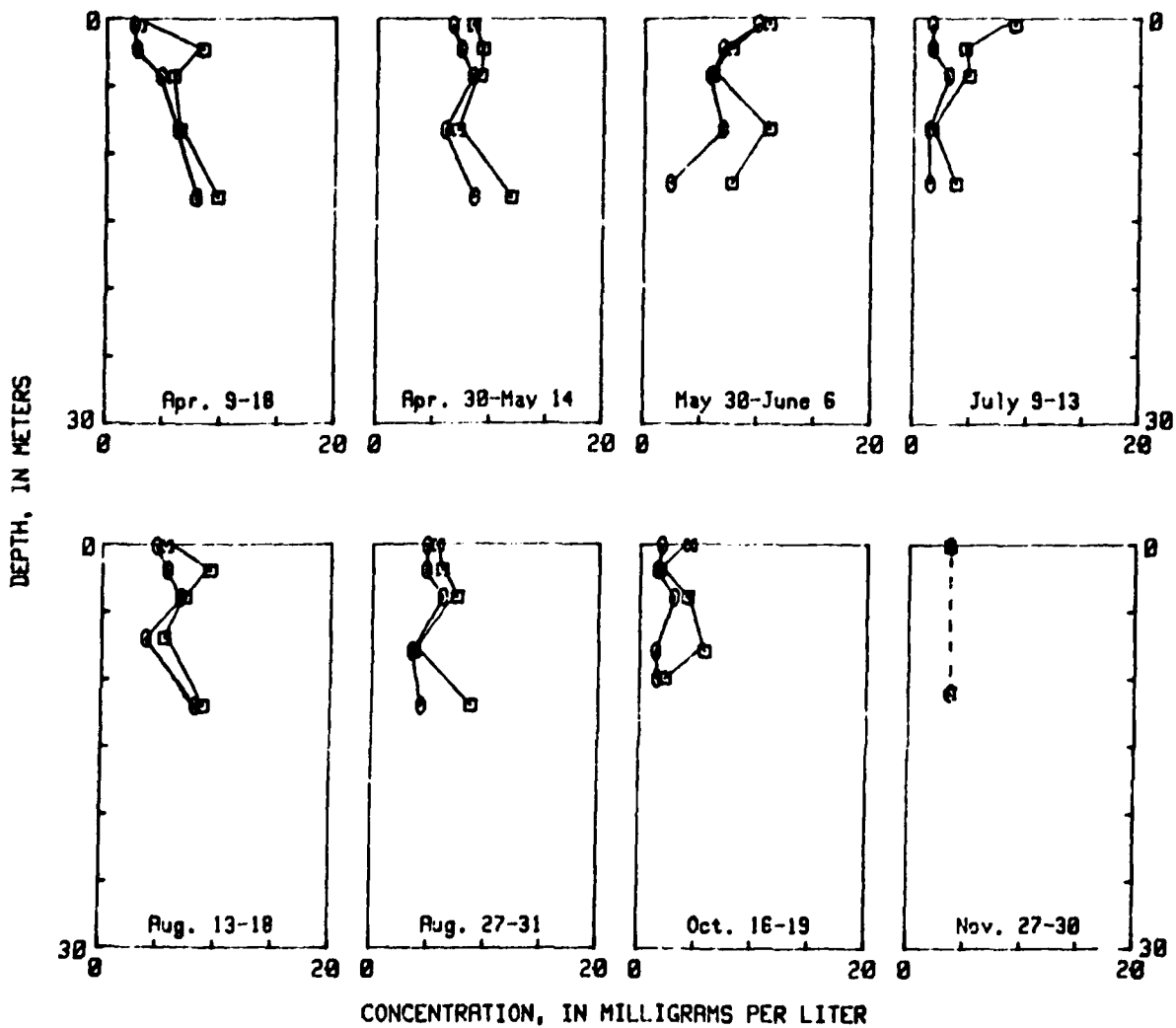


CONCENTRATION, IN MILLIGRAMS PER LITER

EXPLANATION

- - Nitrate plus nitrite (as nitrogen)
- - Ammonia (as nitrogen)

CH-07 (02330720) Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1979

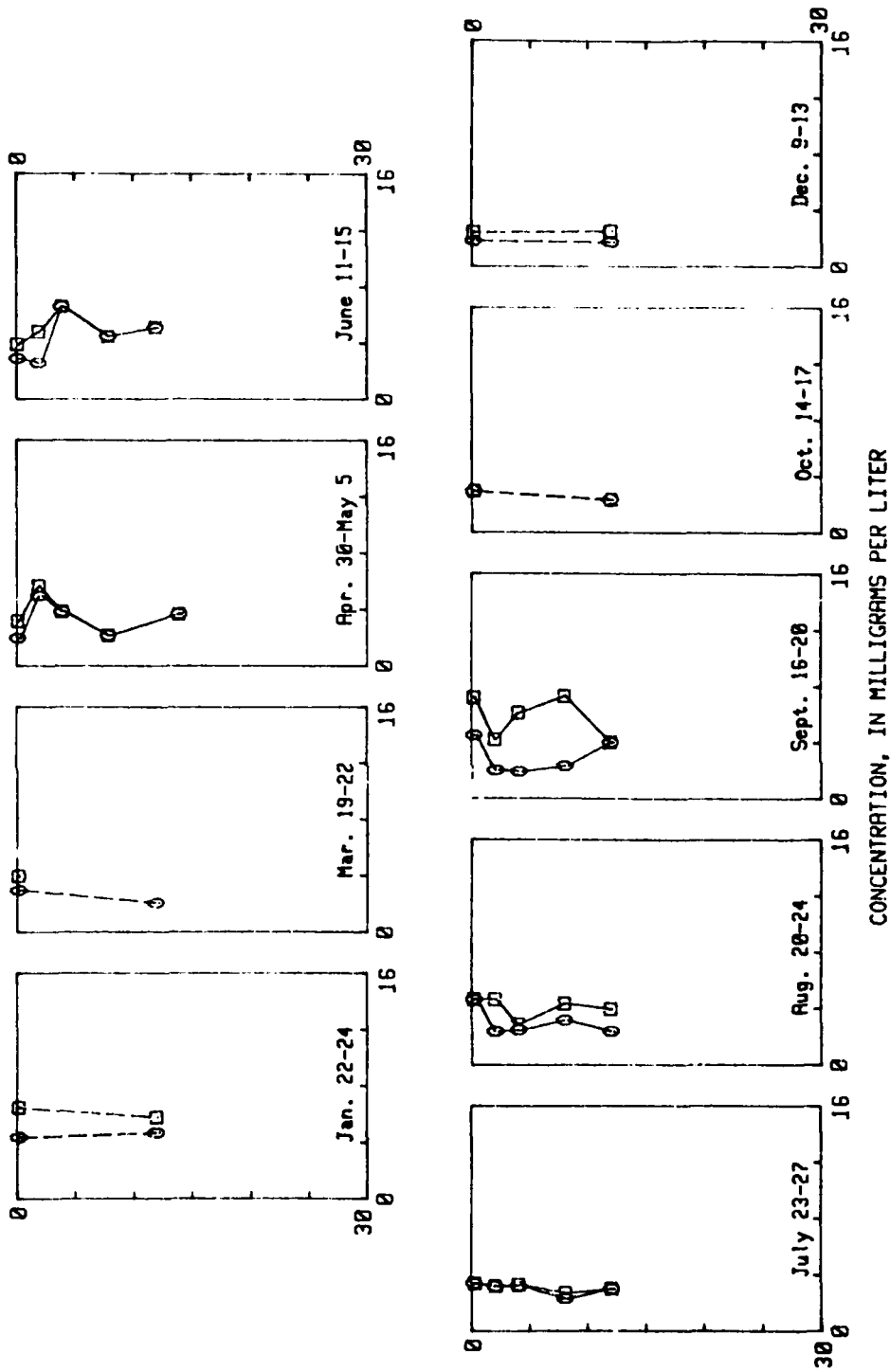


EXPLANATION

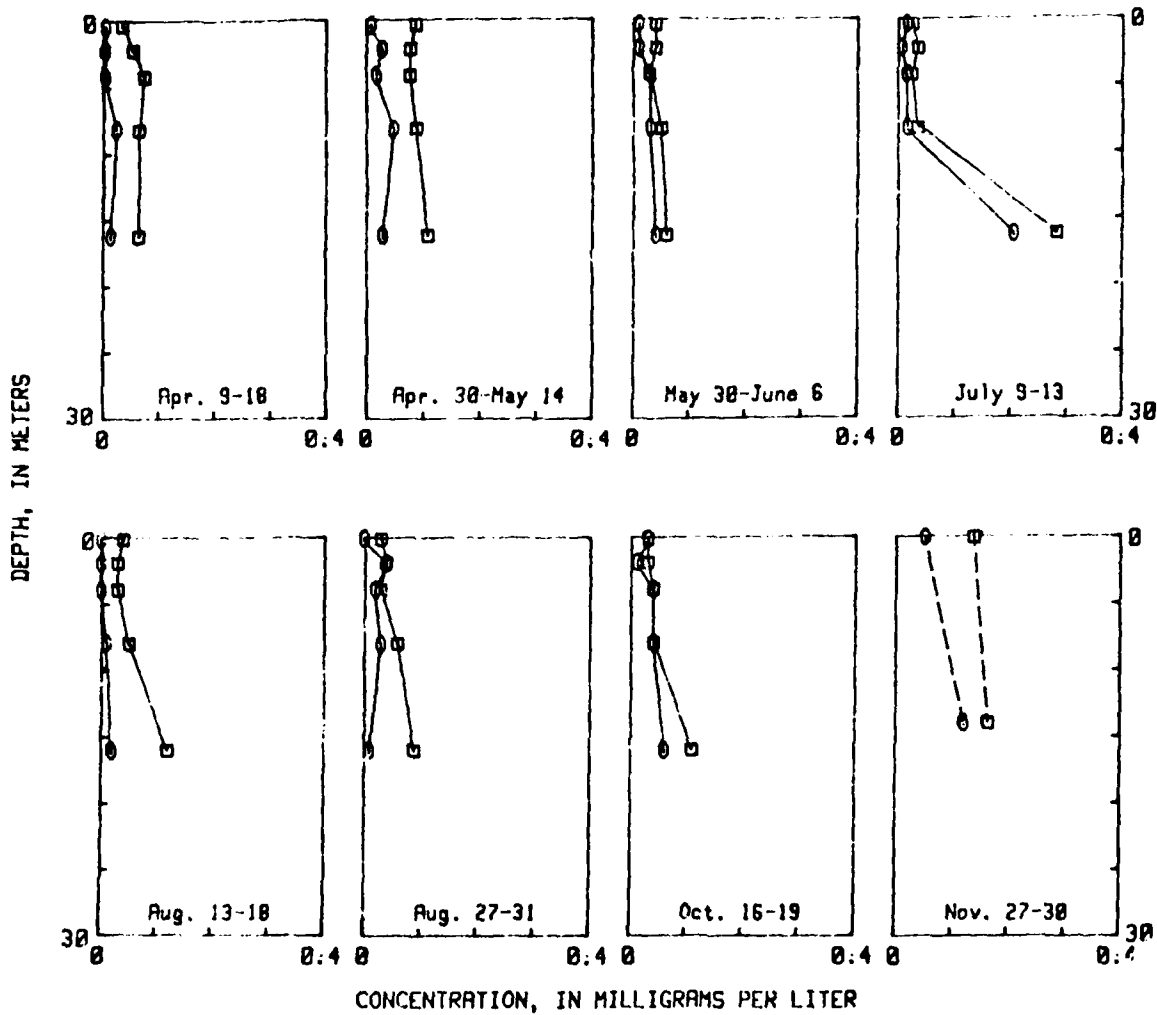
- Dissolved organic carbon
- Total organic carbon

CH-07 (02338720) Chattahoochee River (city of LaGrange intake)
near LaGrange, Ga., 1978

DEPTH, IN METERS



CH-07 (02338720) Chattanooga River (city of LaGrange intake) near LaGrange, Ga., 1979

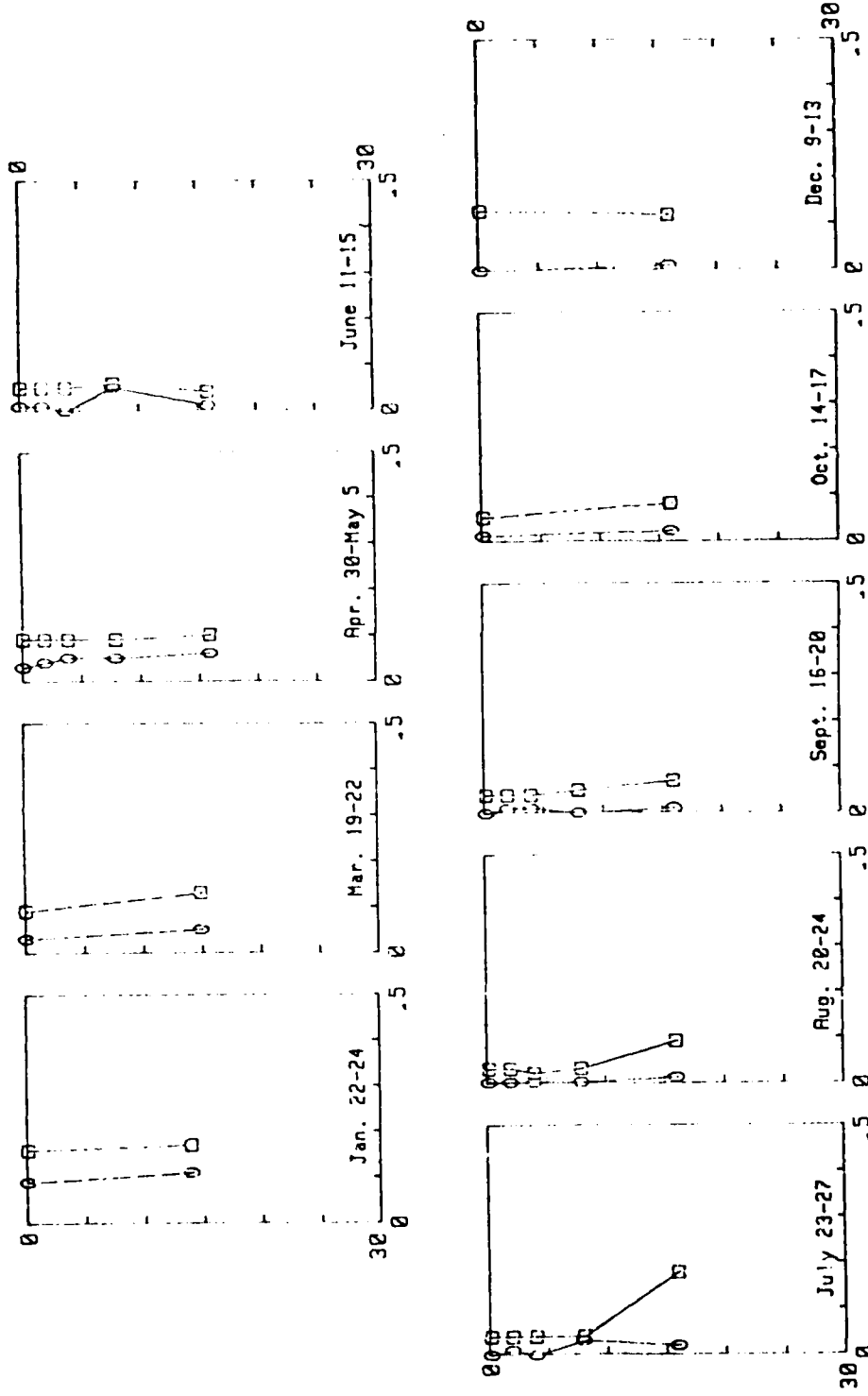


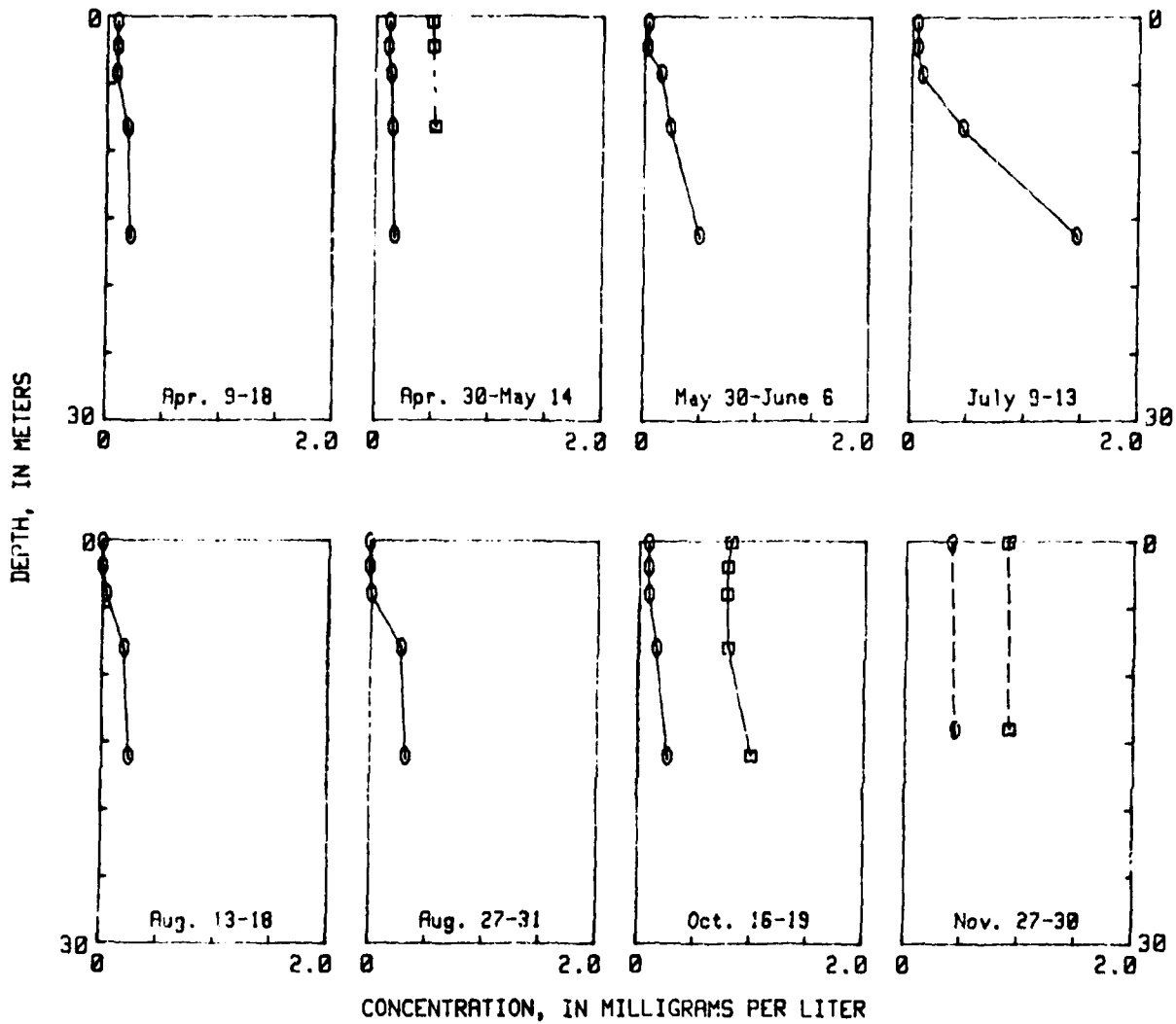
EXPLANATION

- Dissolved orthophosphate (as phosphorus)
- Total phosphorus (as phosphorus)

CH-05A (02339190) Chattahoochee River at State Highway 701, near
Abbottsford, Ga., 1978

DEPTH, IN METERS



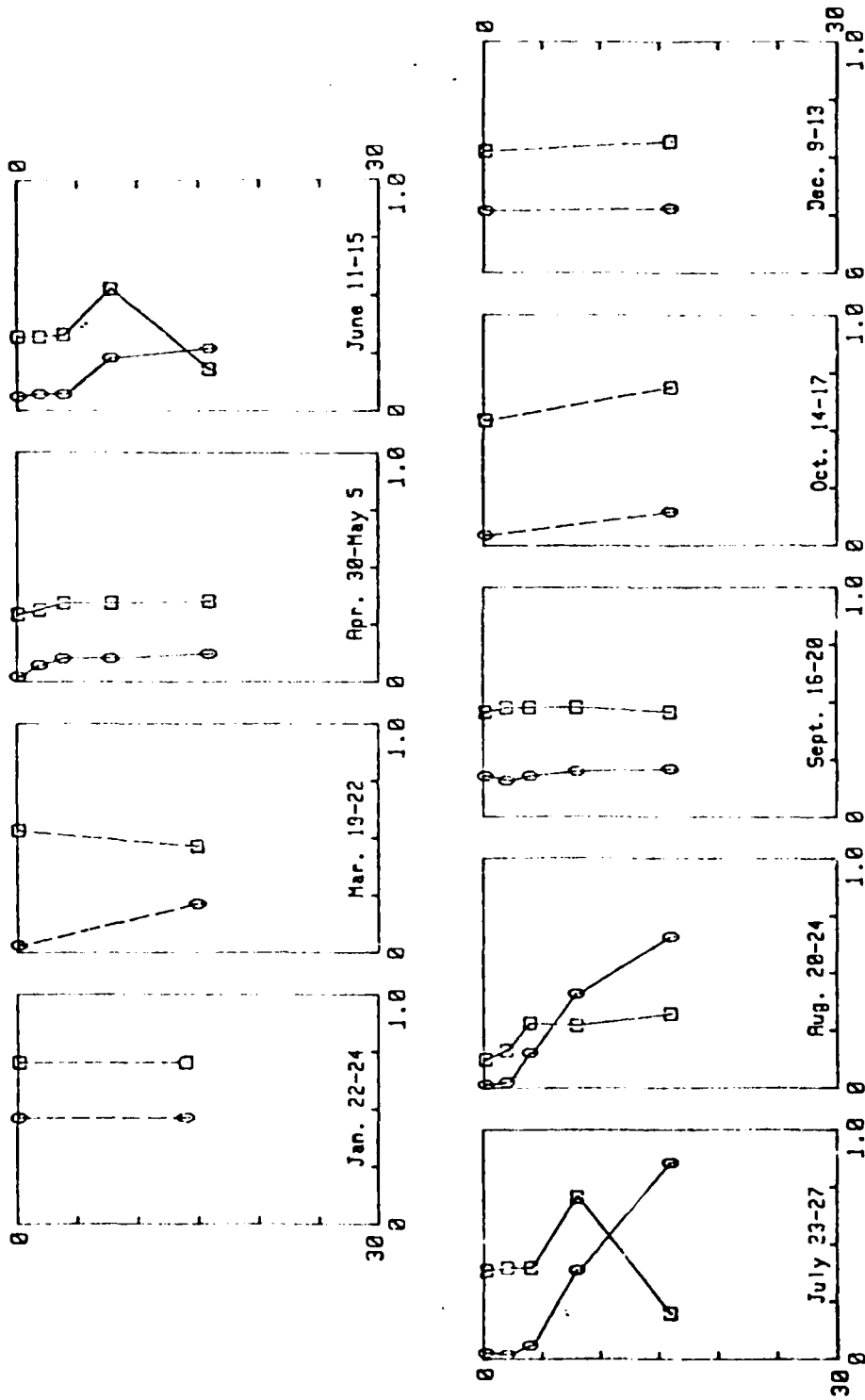


EXPLANATION

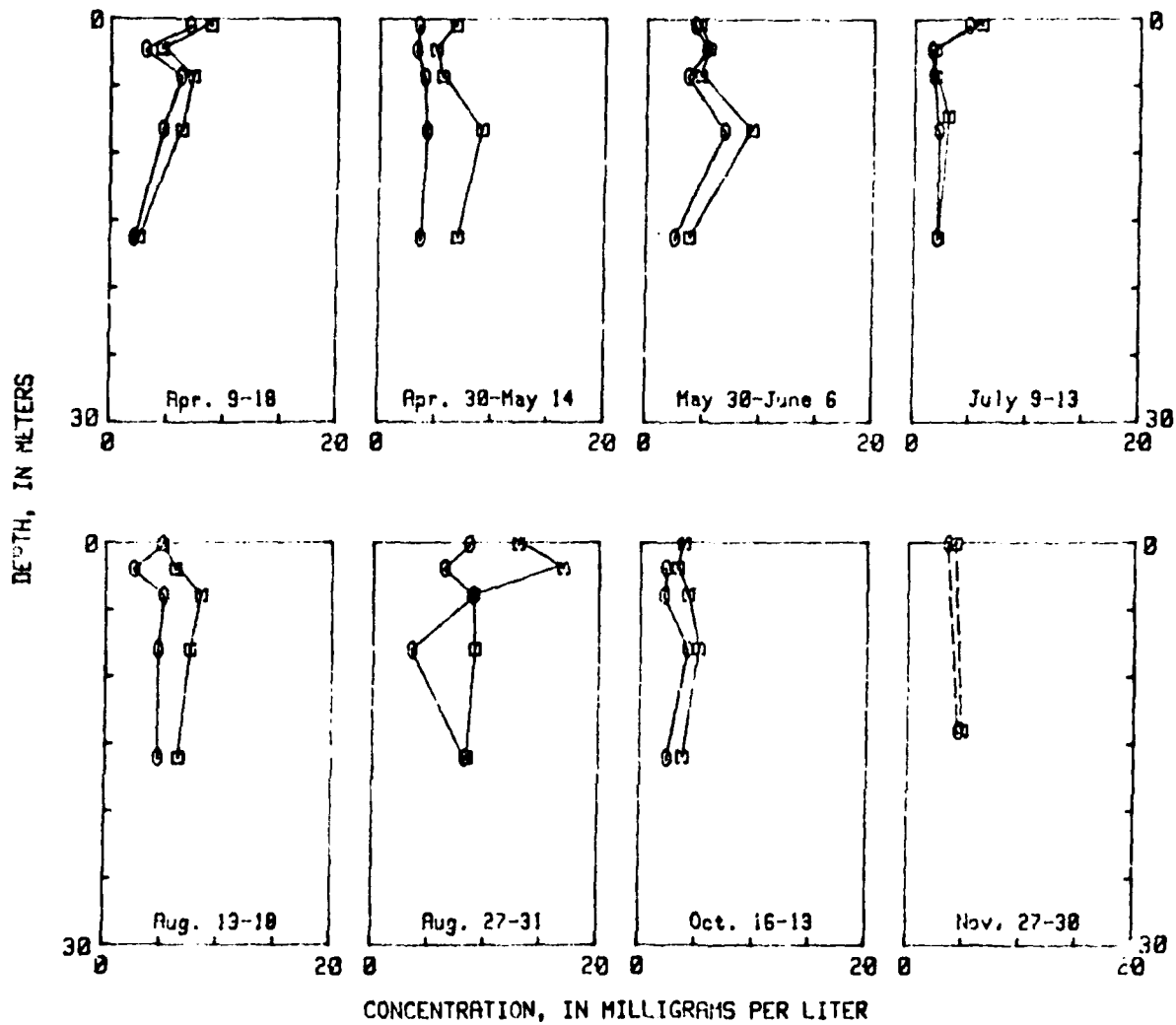
□-Nitrate plus nitrite (as nitrogen)
 O-Ammonia (as nitrogen)

CH-05A (02339190) Chattahoochee River at State Highway 701, near
 Abbottsford, Ga., 1978

DEPTH, IN METERS



CH-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1979

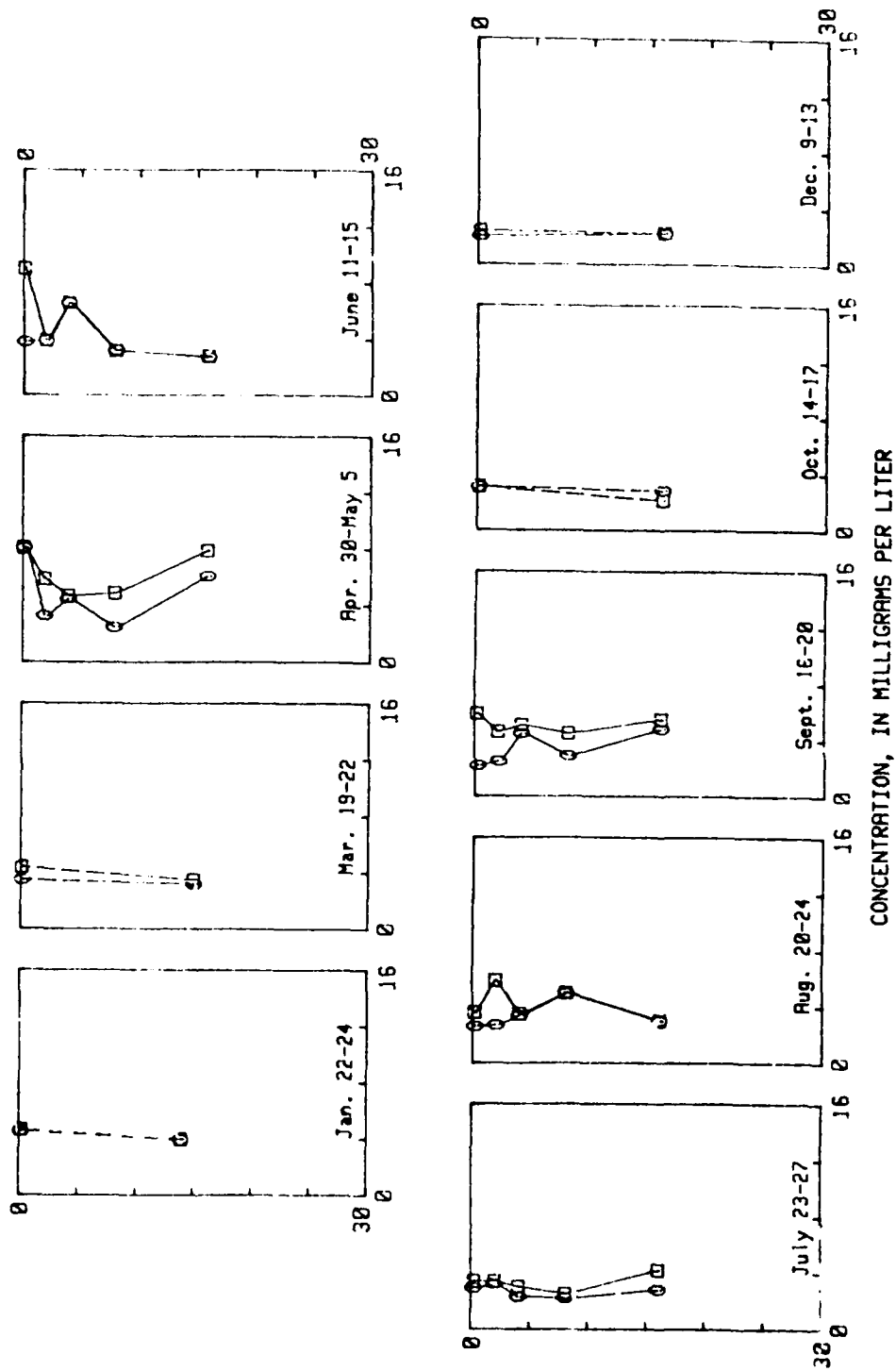


EXPLANATION

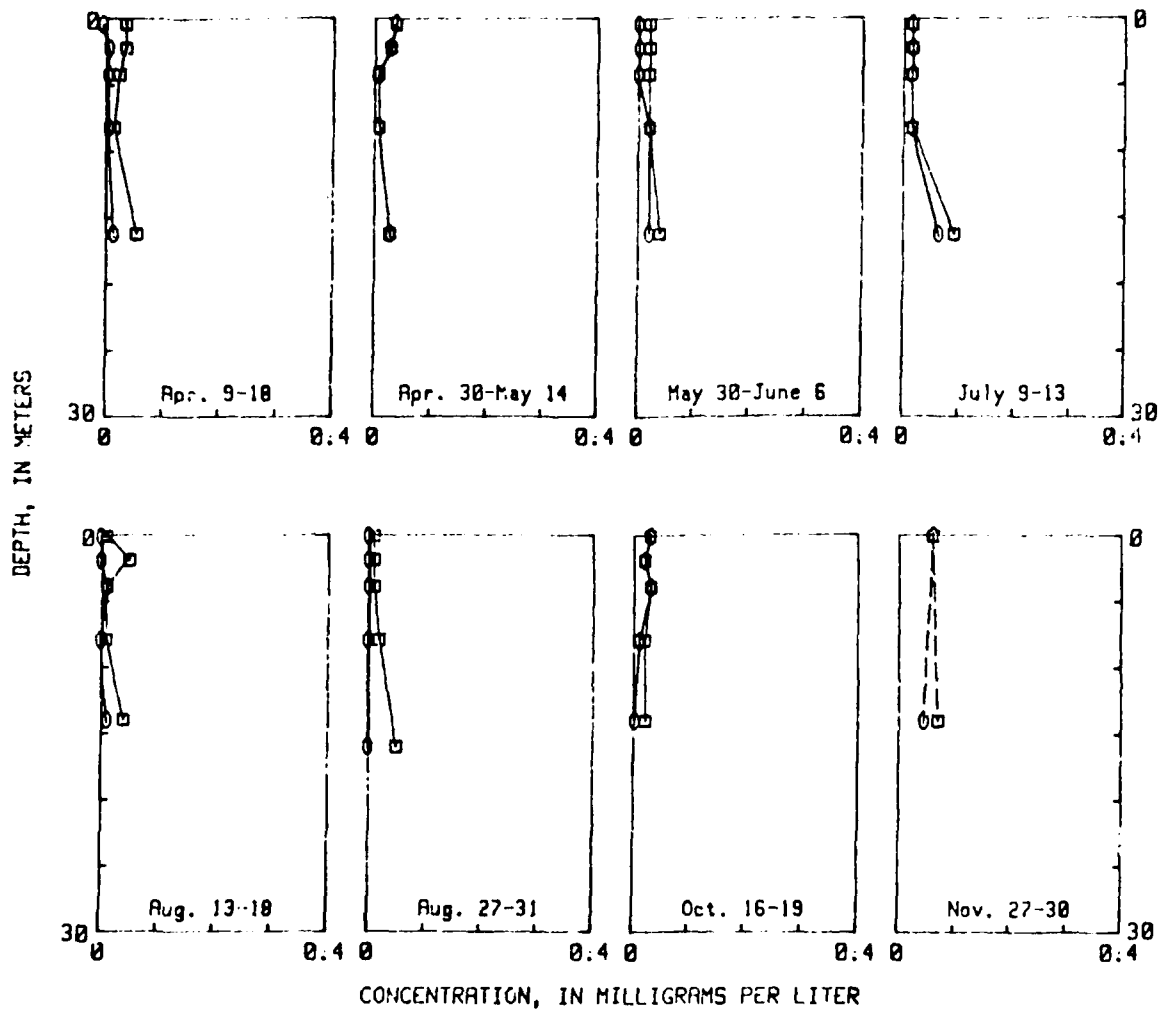
- Dissolved organic carbon
- Total organic carbon

CH-05A (02339190) Chattahoochee River at State Highway 701, near
 Robottsford, Ga., 1978

DEPTH, IN METERS



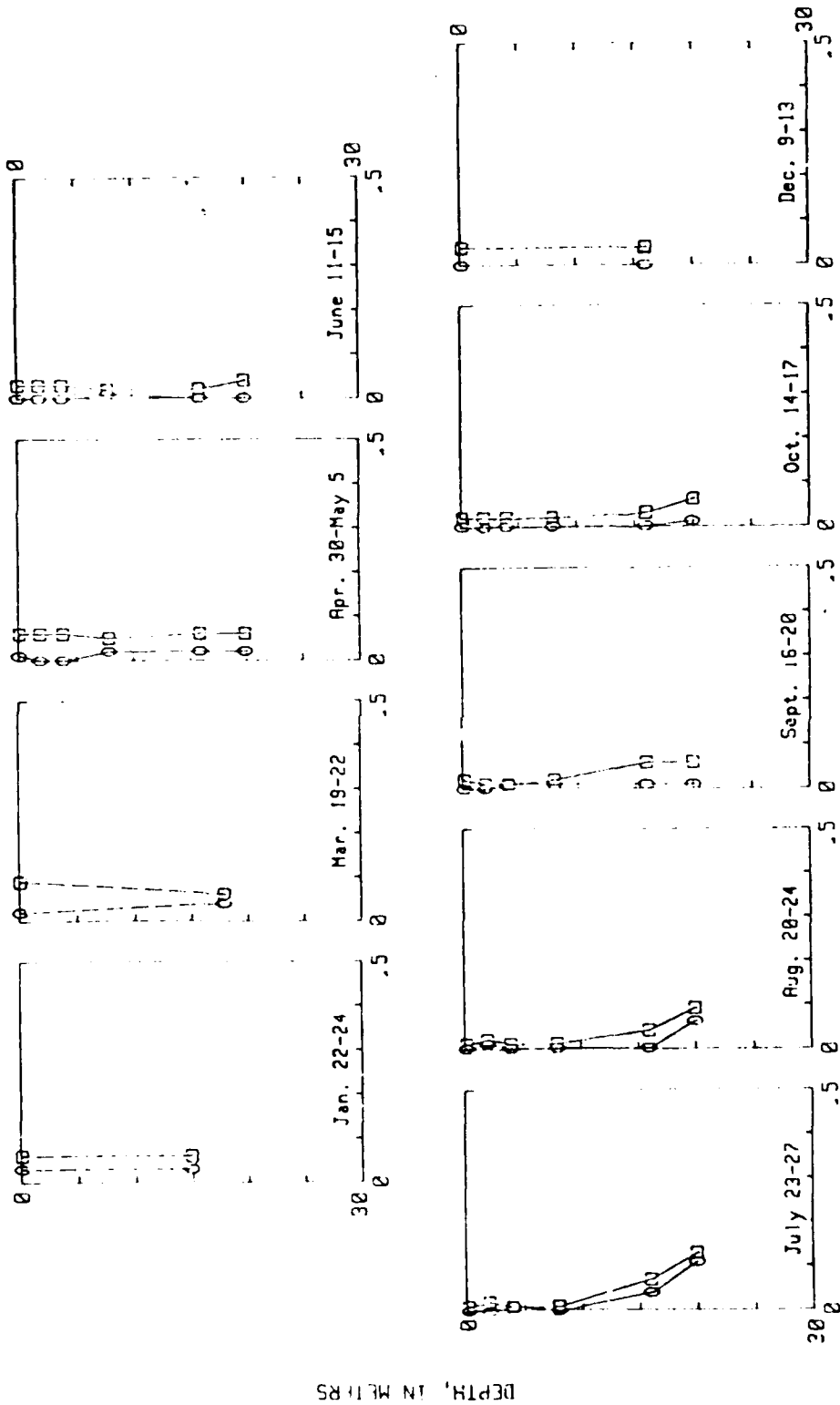
CH-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1979



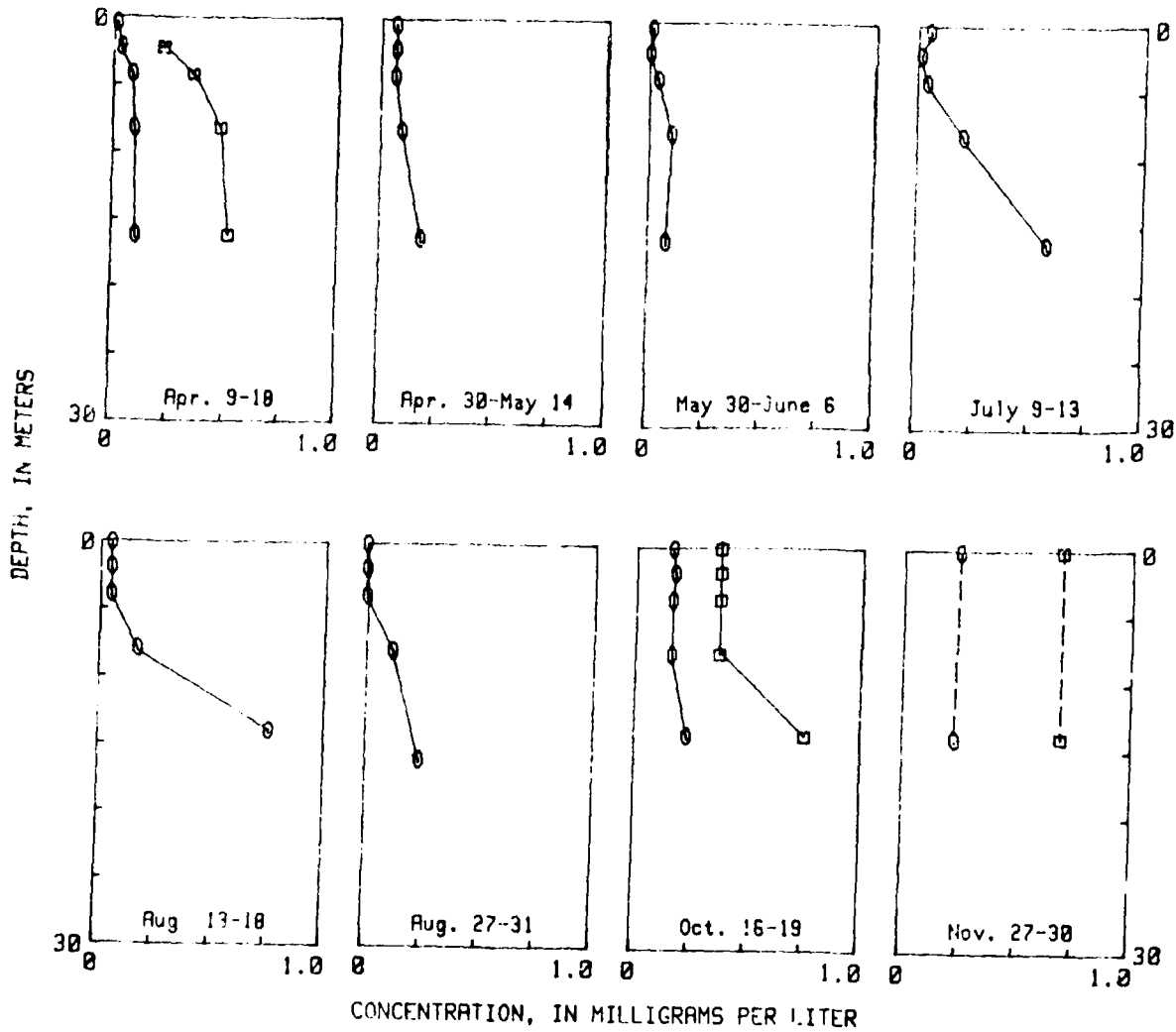
EXPLANATION

- Dissolved orthophosphate (as phosphorus)
- Total phosphorus (as phosphorus)

CH 03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1978



CH-03C (02333388) Chattahoochee River below coffer dam, above West Point Dam, 1979

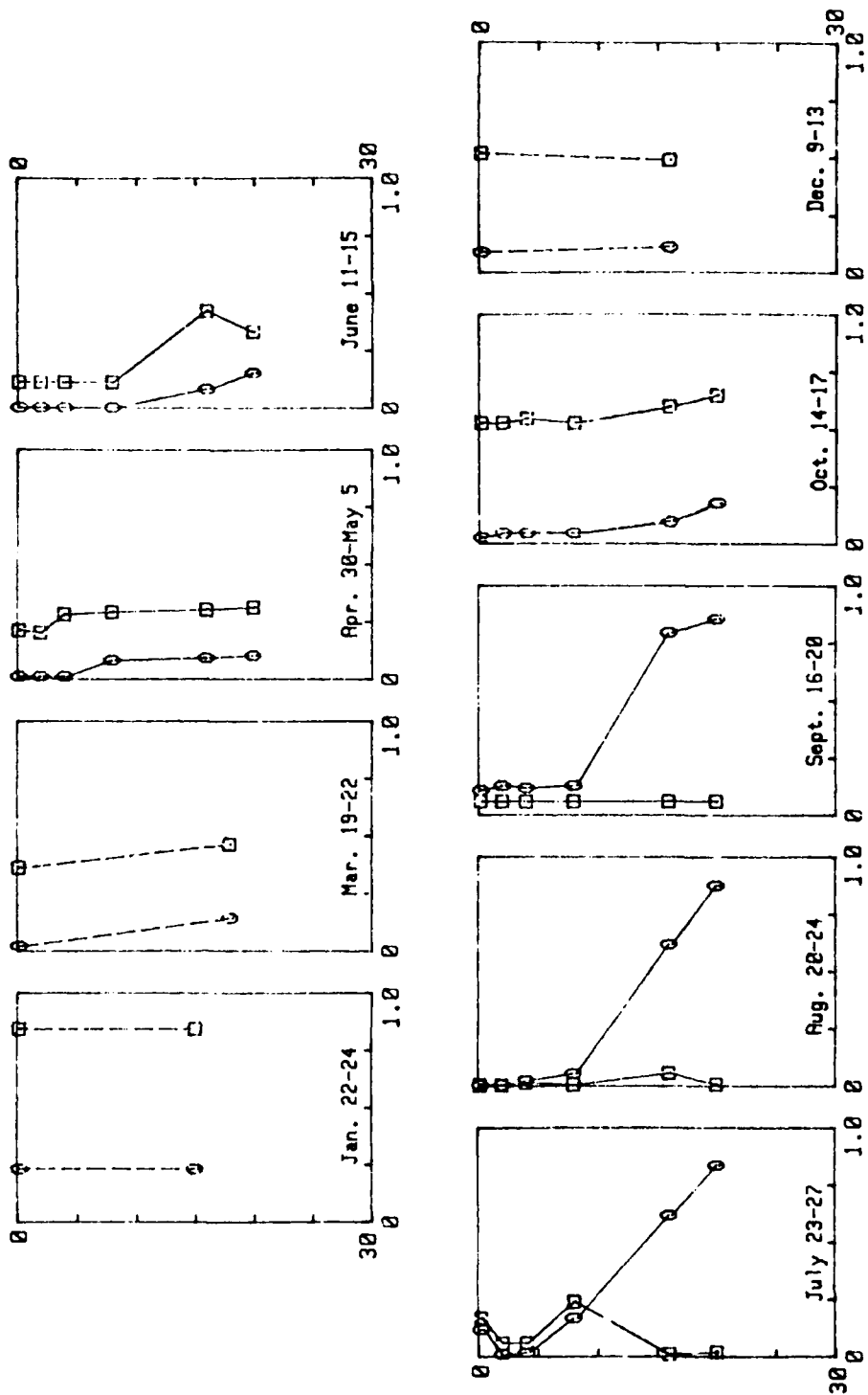


EXPLANATION

- - Nitrate plus nitrite (as nitrogen)
- - Ammonia (as nitrogen)

CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1978

DEPTH, IN METERS

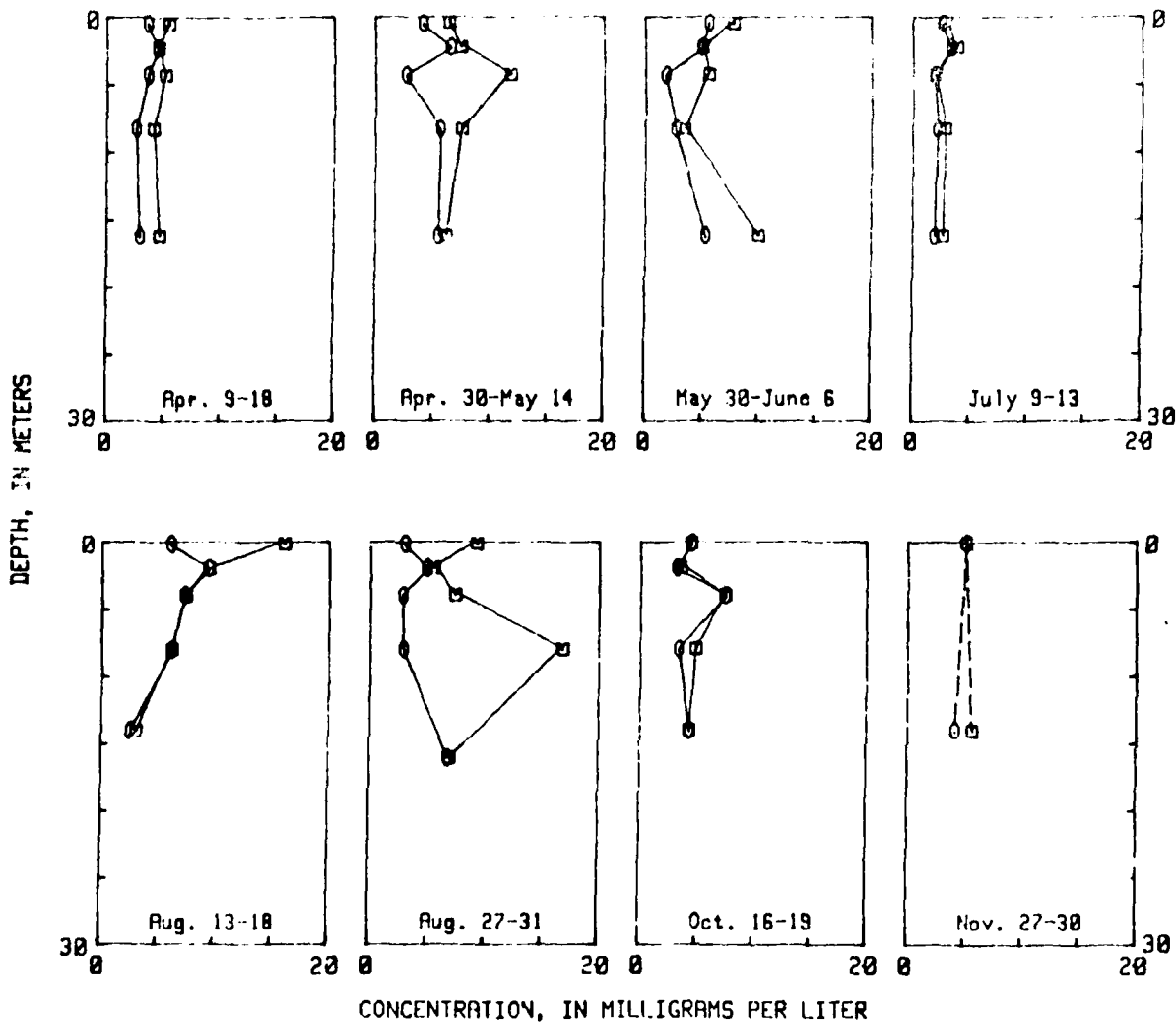


CONCENTRATION, IN MILLIGRAMS PER LITER

EXPLANATION

- Nitrate plus nitrite (as nitrogen)
- Ammonia (as nitrogen)

CH-03C (02339398) Chattahoochee River below coffer dam, above West Point Dam, 1979

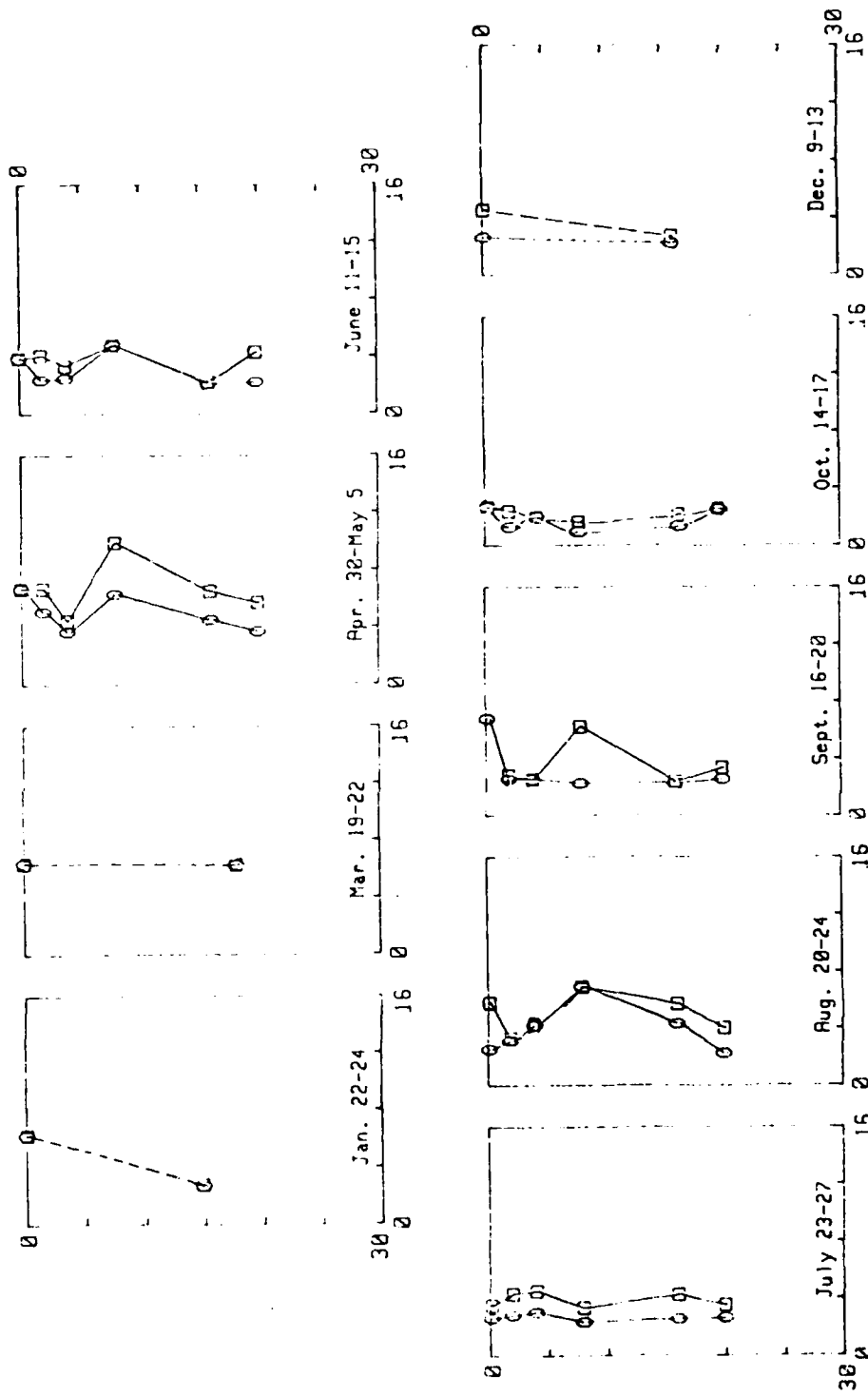


EXPLANATION

- Dissolved organic carbon
- Total organic carbon

CH 03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1978

DEPTH, IN METERS



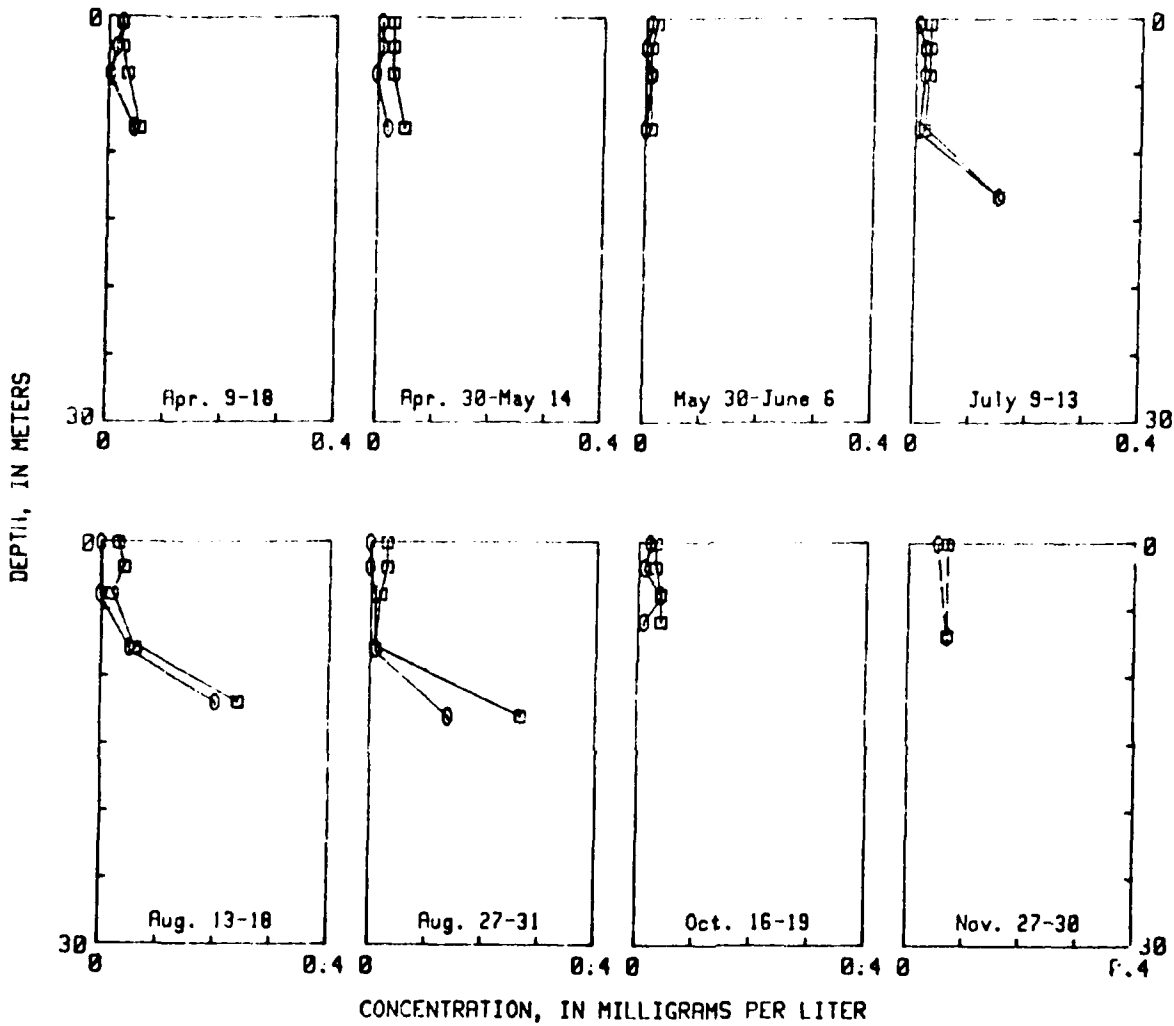
CONCENTRATION, IN MILLIGRAMS PER LITER

EXPLANATION

○-Dissolved organic carbon

□-Total organic carbon

CH-23C (02339368) Chattahoochee River below coffer dam, above West Point Dam, 1979

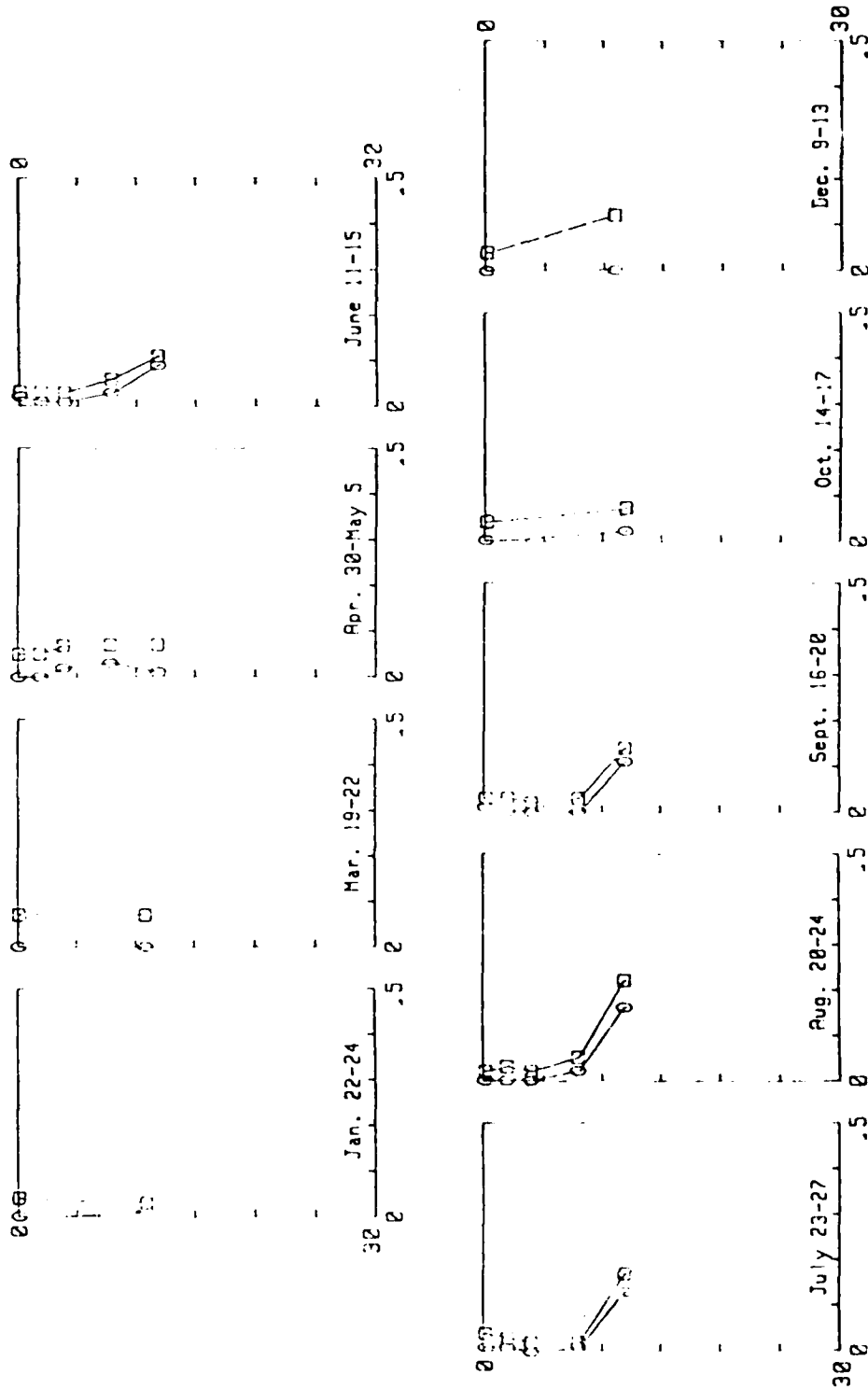


EXPLANATION

- Dissolved orthophosphate (as phosphorus)
- Total phosphorus (as phosphorus)

CH-08 (02335020) Chattahoochee River at Cameron Mill Road, near
LaGrange, Ga., 1978

DEPTH, IN METERS

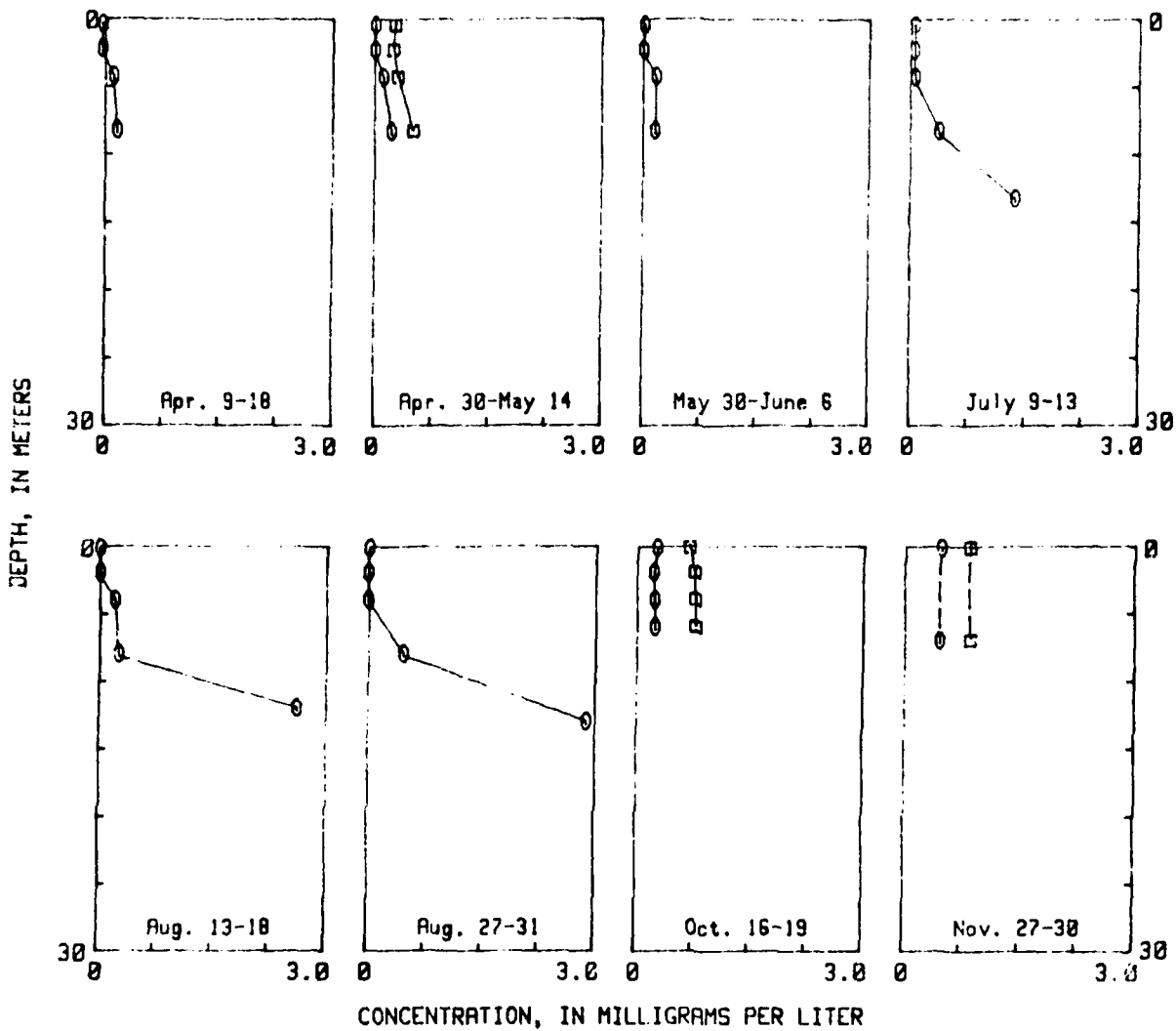


CONCENTRATION, IN MILLIGRAMS PER LITER

EXPLANATION

- Dissolved orthophosphate (as phosphorus)
- Total phosphorus (as phosphorus)

CH-08 (02339020) Chattahoochee River at Cameron Mill Road, near LaGrange, Ga., 1979

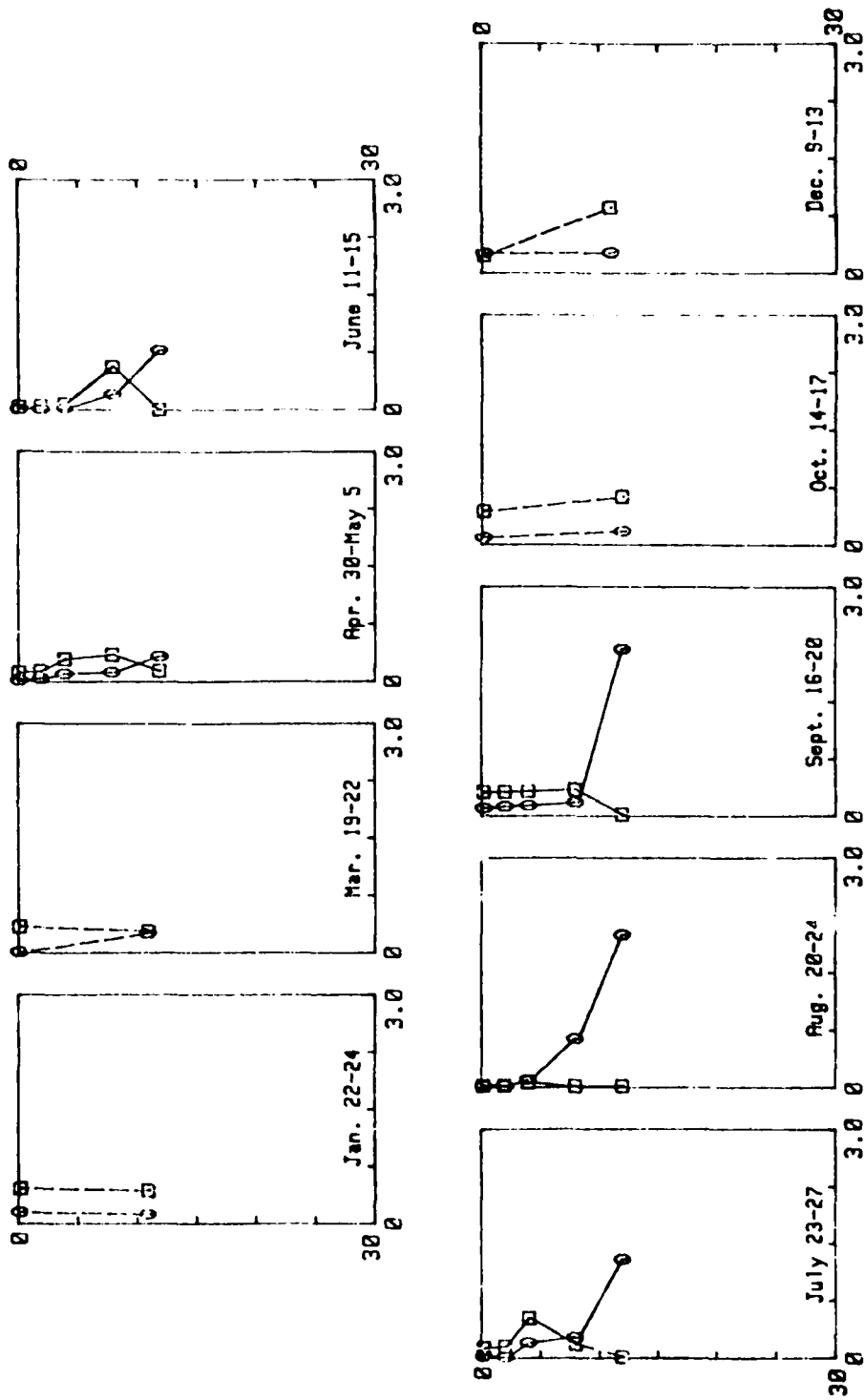


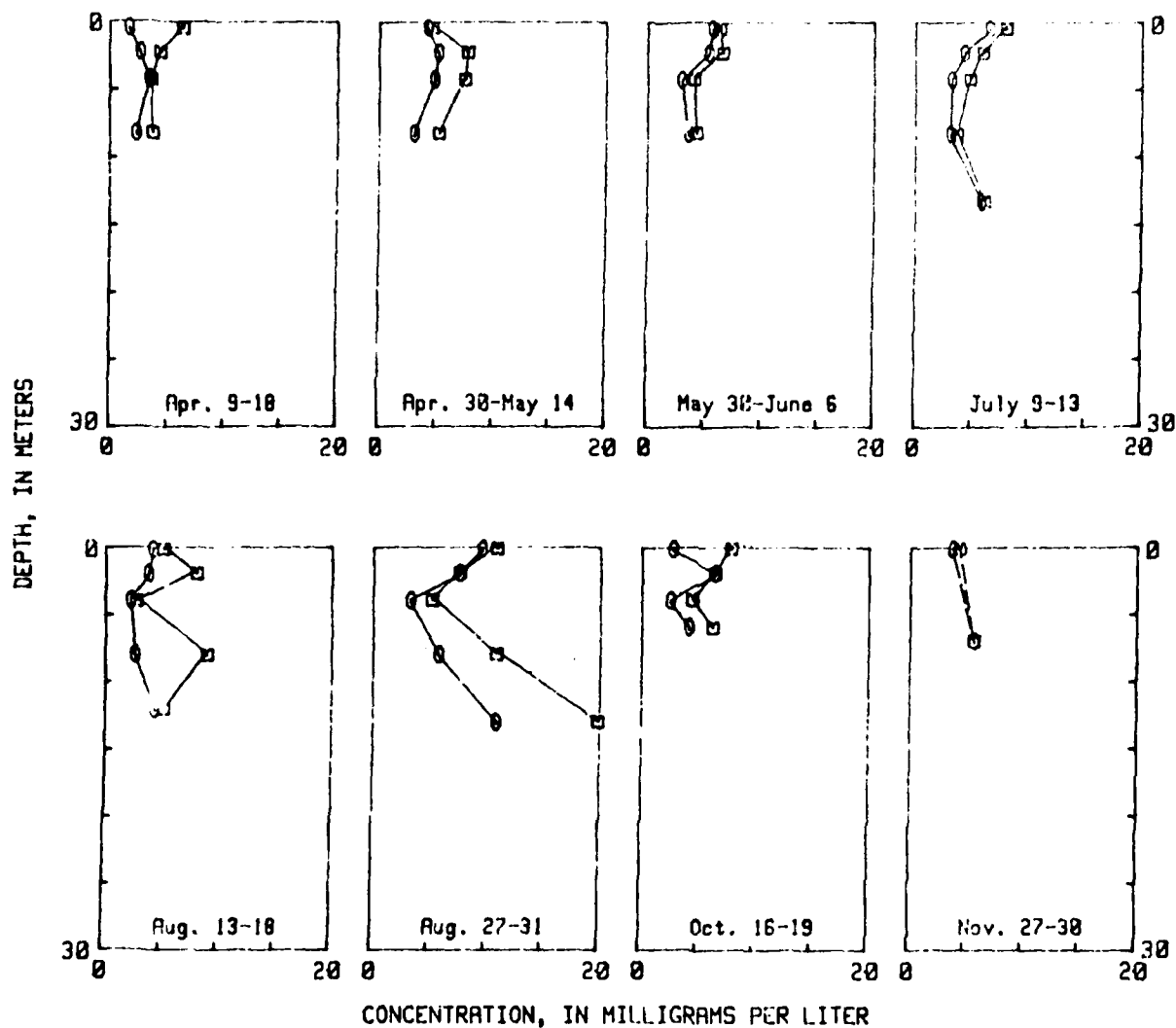
EXPLANATION

- - Nitrate plus nitrite (as nitrogen)
- - Ammonia (as nitrogen)

CII-08 (02339020) Chattahoochee River at Cameron Mill Road, near LaGrange, Ga., 1978

DEPTH, IN METERS



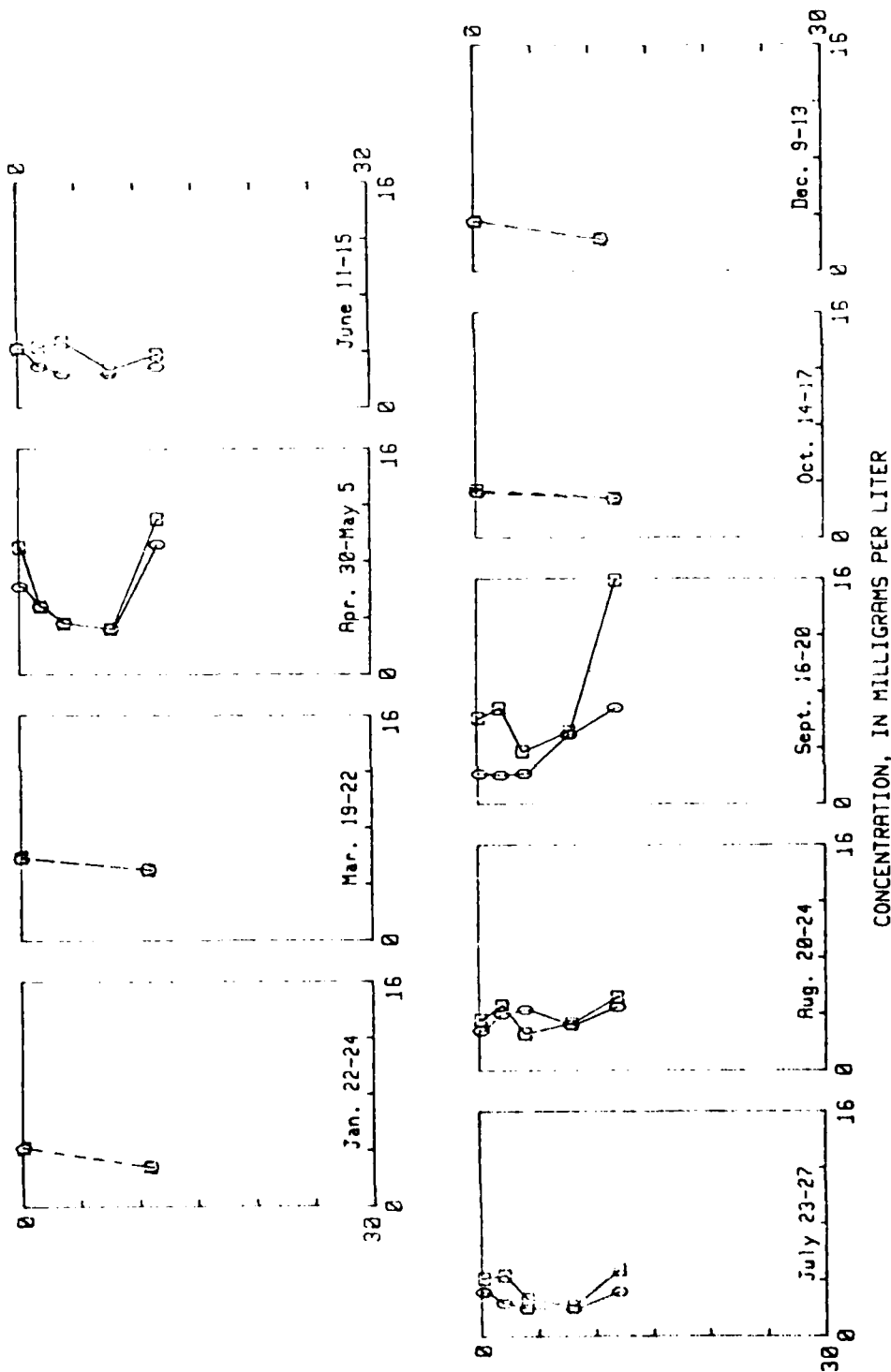


EXPLANATION

- Dissolved organic carbon
- Total organic carbon

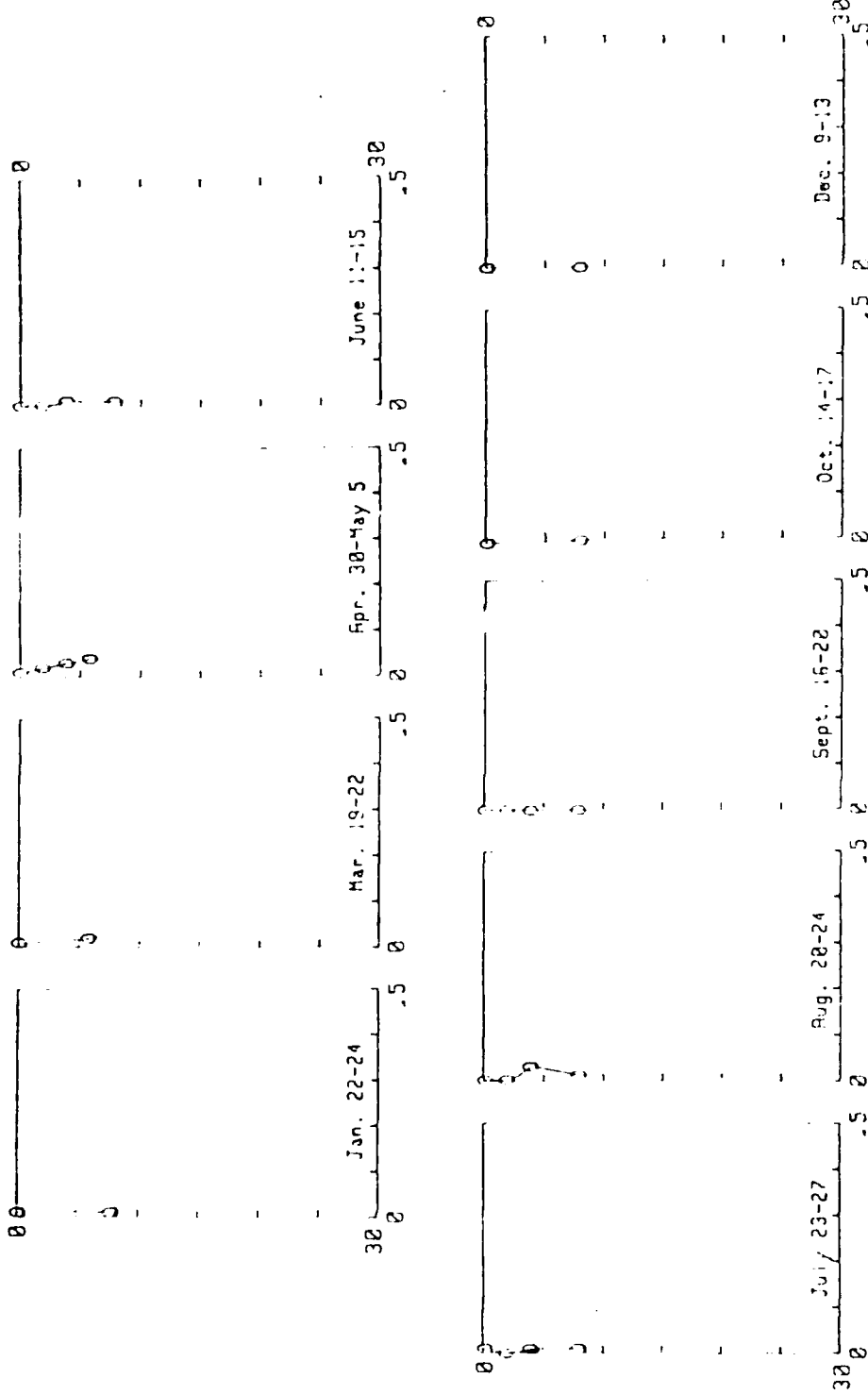
CH 38 (02339020) Chattahoochee River at Cameron Mill Road, near
LaGrange, Ga., 1978

DEPTH, IN METERS



CH-08 (02339020) Chattahoochee River at Cameron Mill Road, near LaGrange, Ga., 1979

DEPTH, IN METERS



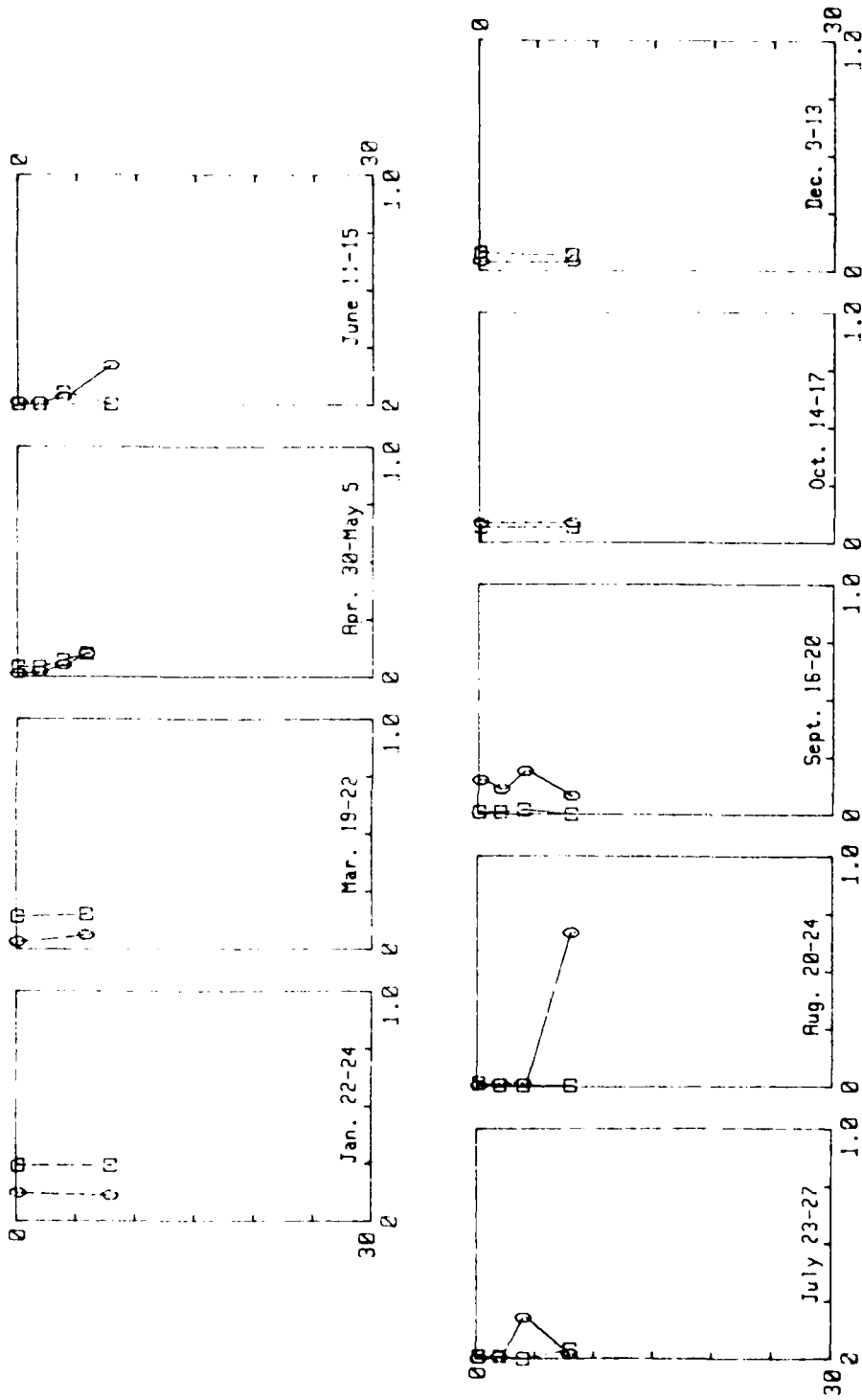
CONCENTRATION, IN MILLIGRAMS PER LITER

EXPLANATION

0-Dissolved orthophosphate (as phosphorus)

CH-04 (02339350) Mehadowe Creek at State Highway 244, near Hobottsford, Ga., 1979

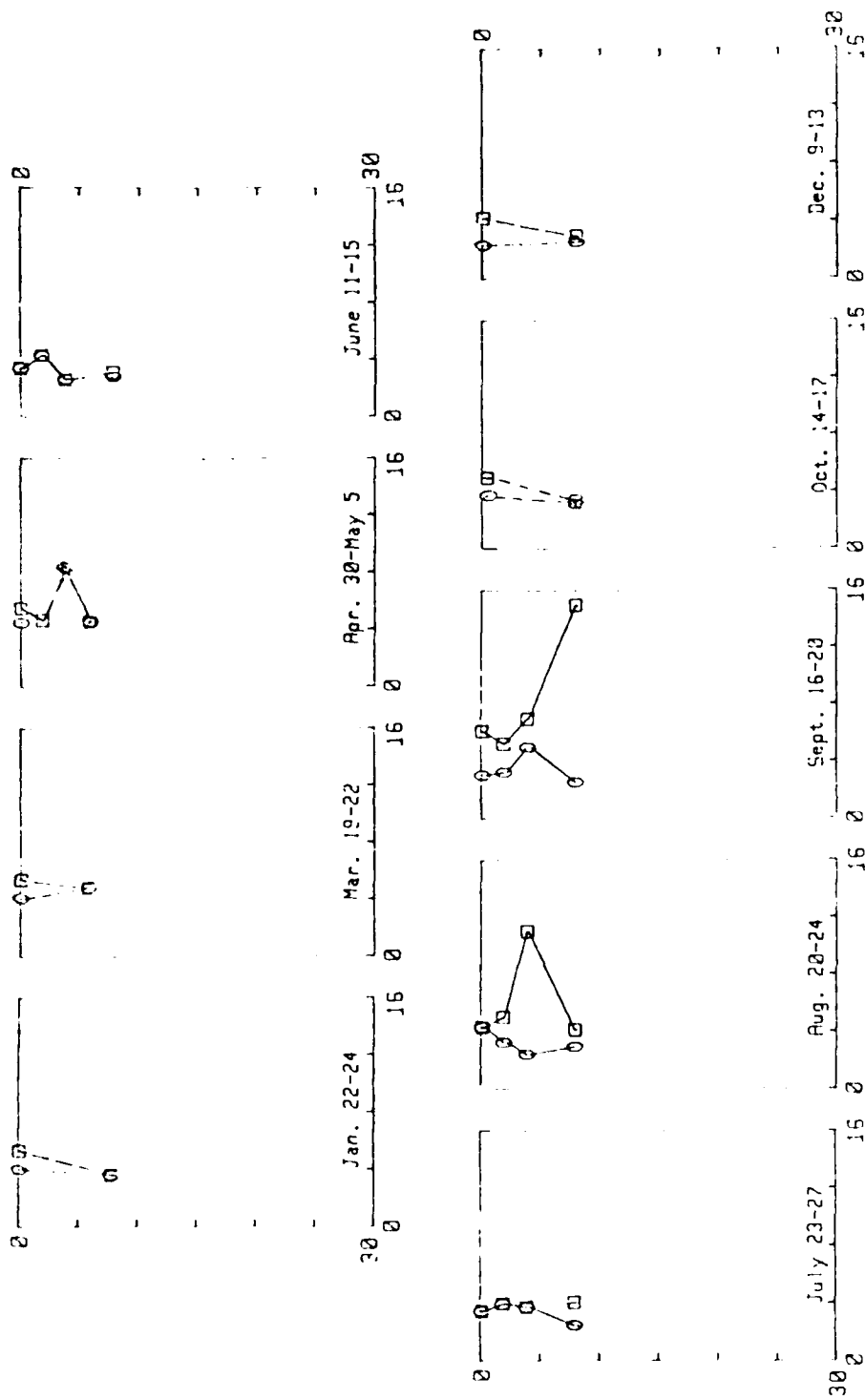
DEPTH, IN METERS



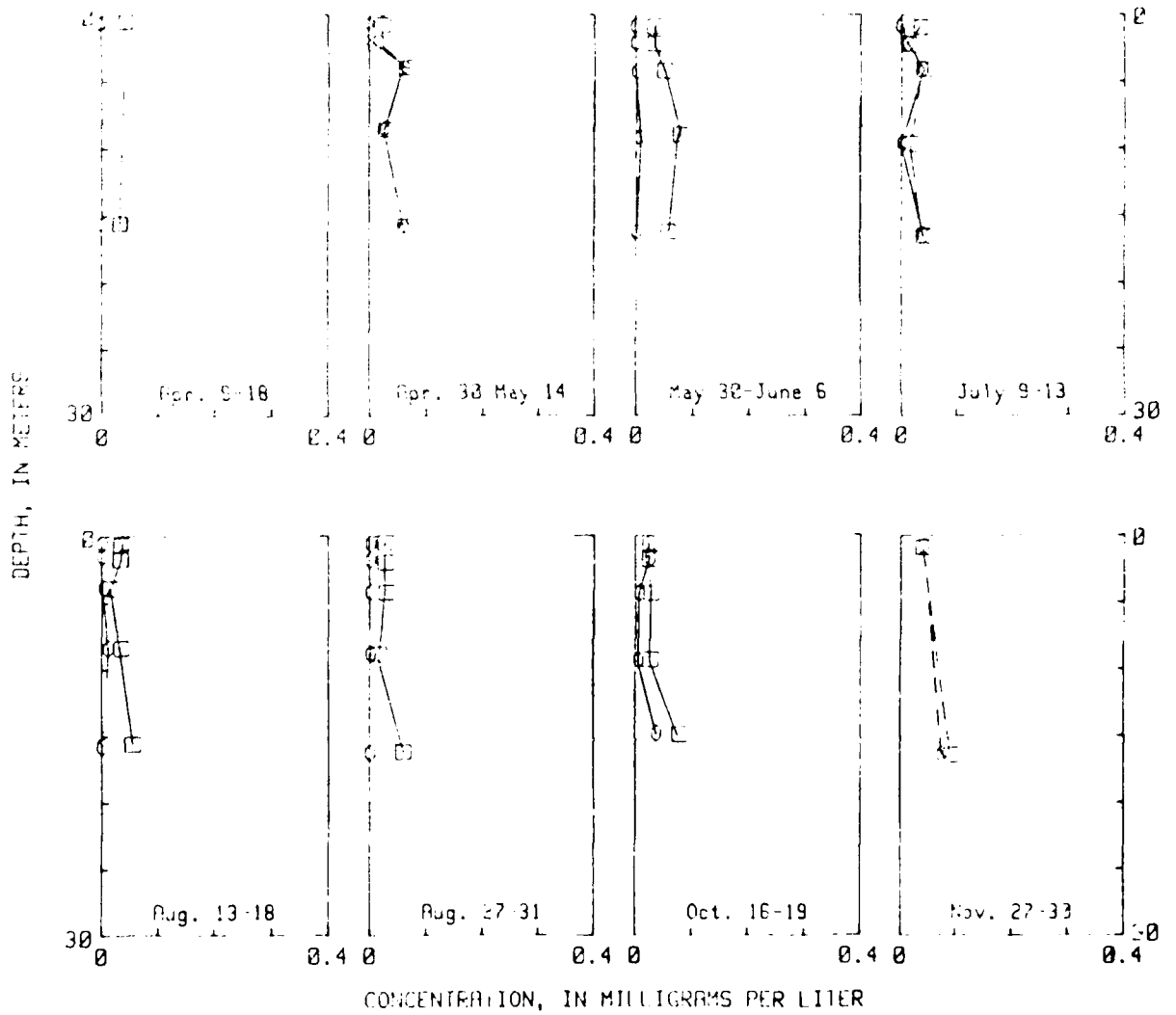
CH-04 (02335550) Mehadkee Creek at State Highway 241, near Abbottsford, Ga., 1979

DEPTH, IN METERS

370



CH-04 (02339350) Wehadze Creek at State Highway 244, near Abbottsford, Ga., 1979



EXPLANATION

- Dissolved orthophosphate (as phosphorus)
- Total phosphorus (as phosphorus)

CH-13 (02339362) Mahadkee Creek at State Highway 238, near
Abbottsford, Ga., 1978

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CHATTAHOOCHEE RIVER ALAB. (U) CORPS OF ENGINEERS MOBILE
AL MOBILE DISTRICT D B RADTKE ET AL. AUG 84

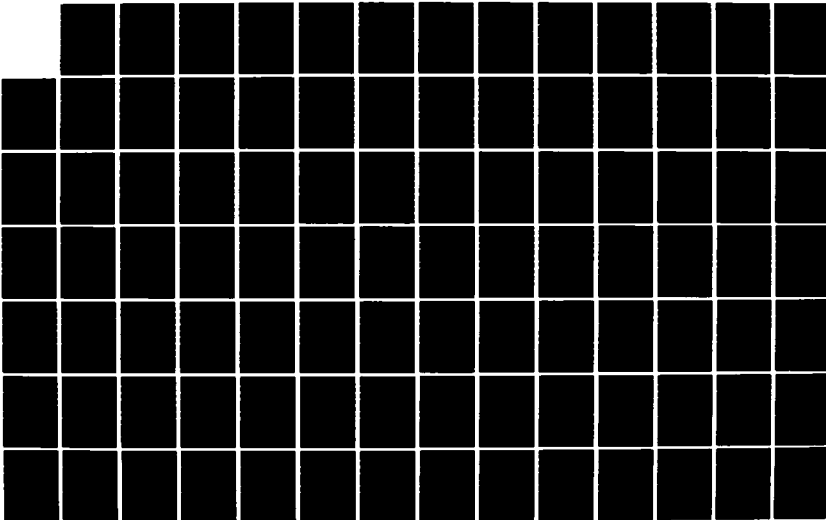
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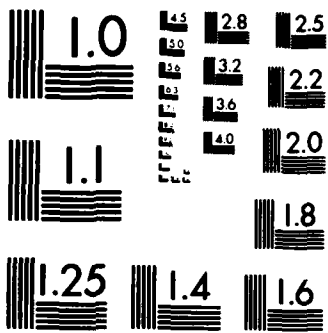
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COESAM/PDEE-84/004

F/G 8/8

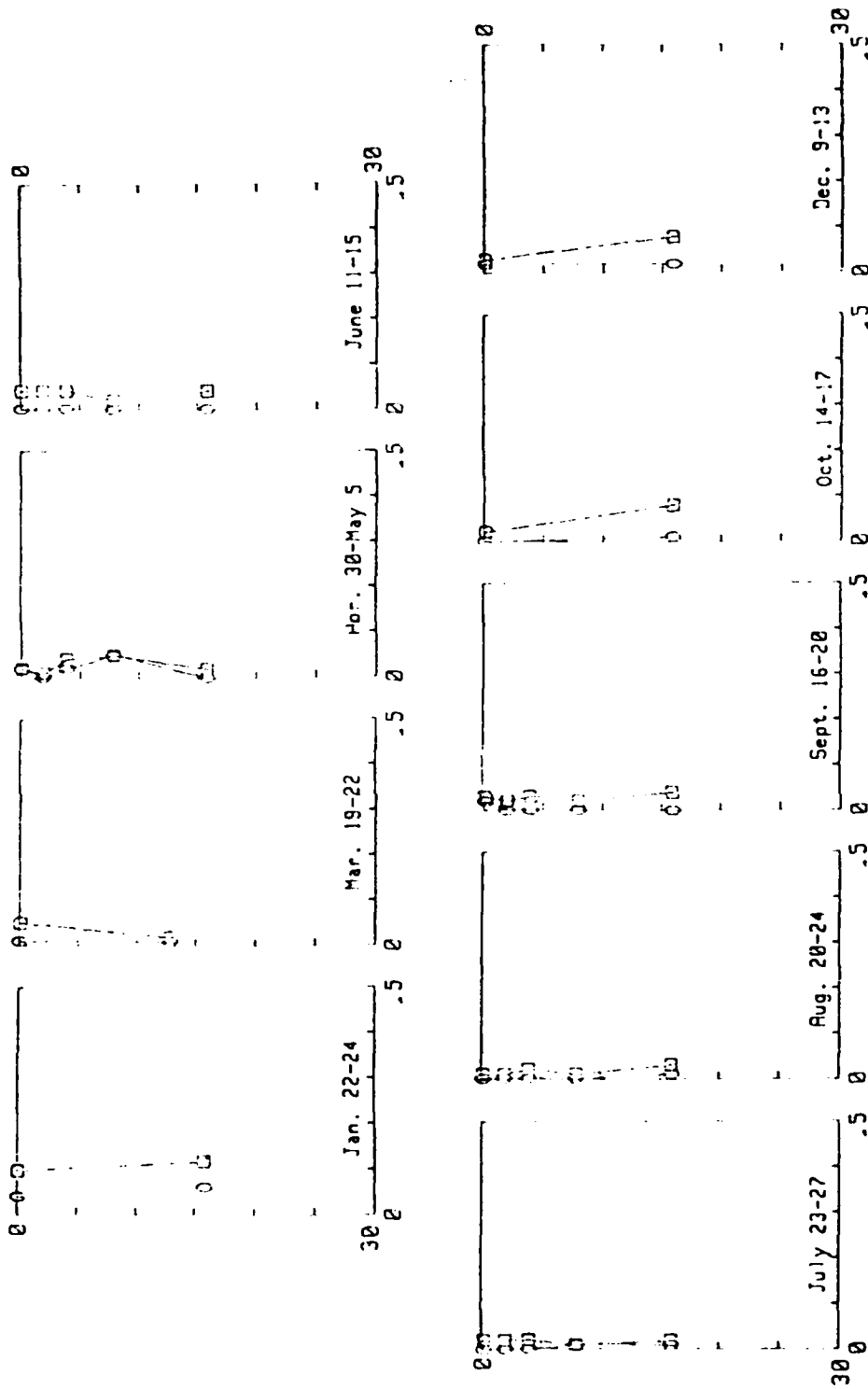
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NATIONAL BUREAU OF STANDARDS-1963-A

DEPTH, IN METERS

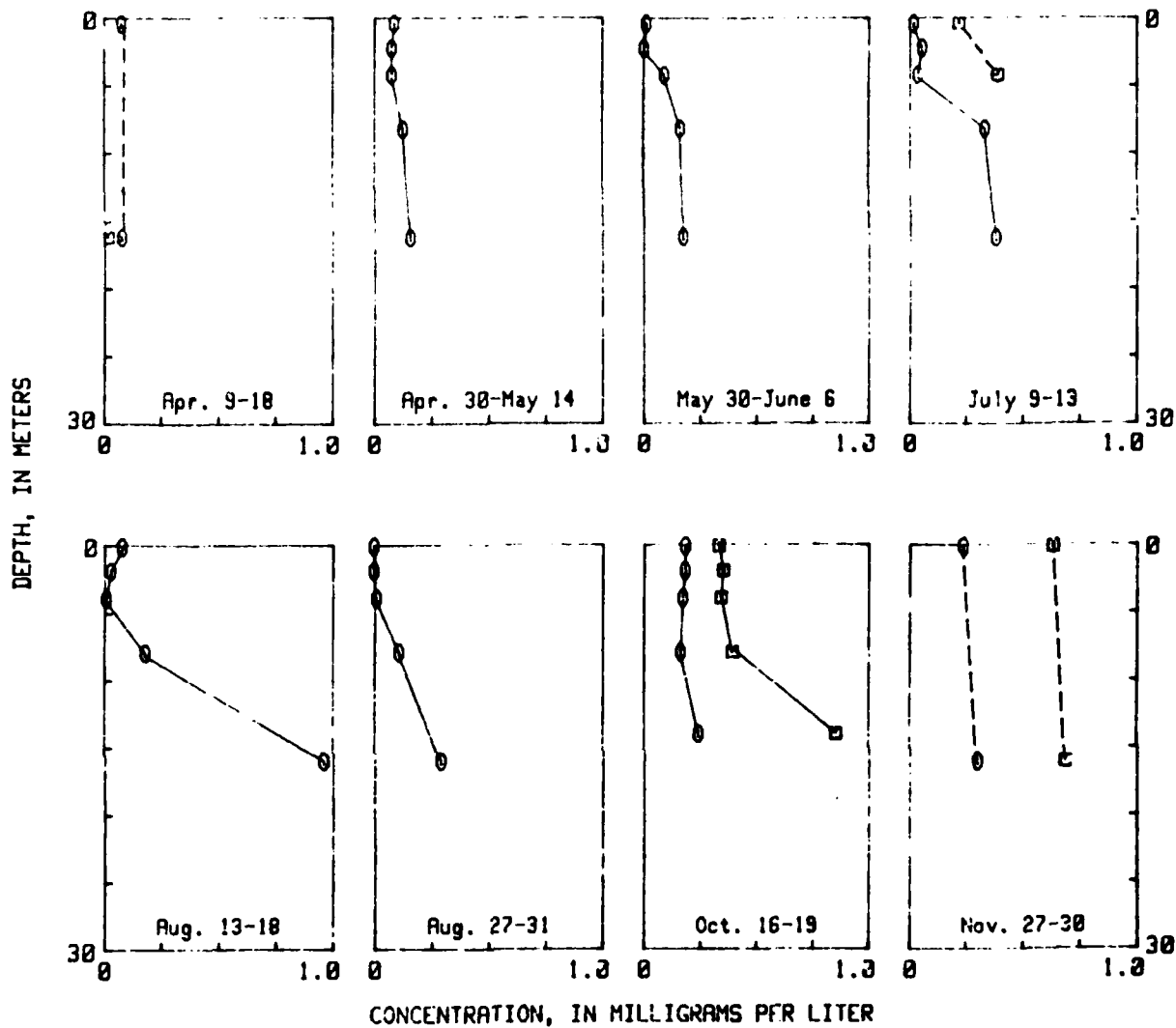


CONCENTRATION, IN MILLIGRAMS PER LITER

EXPLANATION

- Dissolved orthophosphate (as phosphorus)
- Total phosphorus (as phosphorus)

CH-13 (02339362) Mehadkee Creek at State Highway 238, near Abbottsford, Ga., 1979



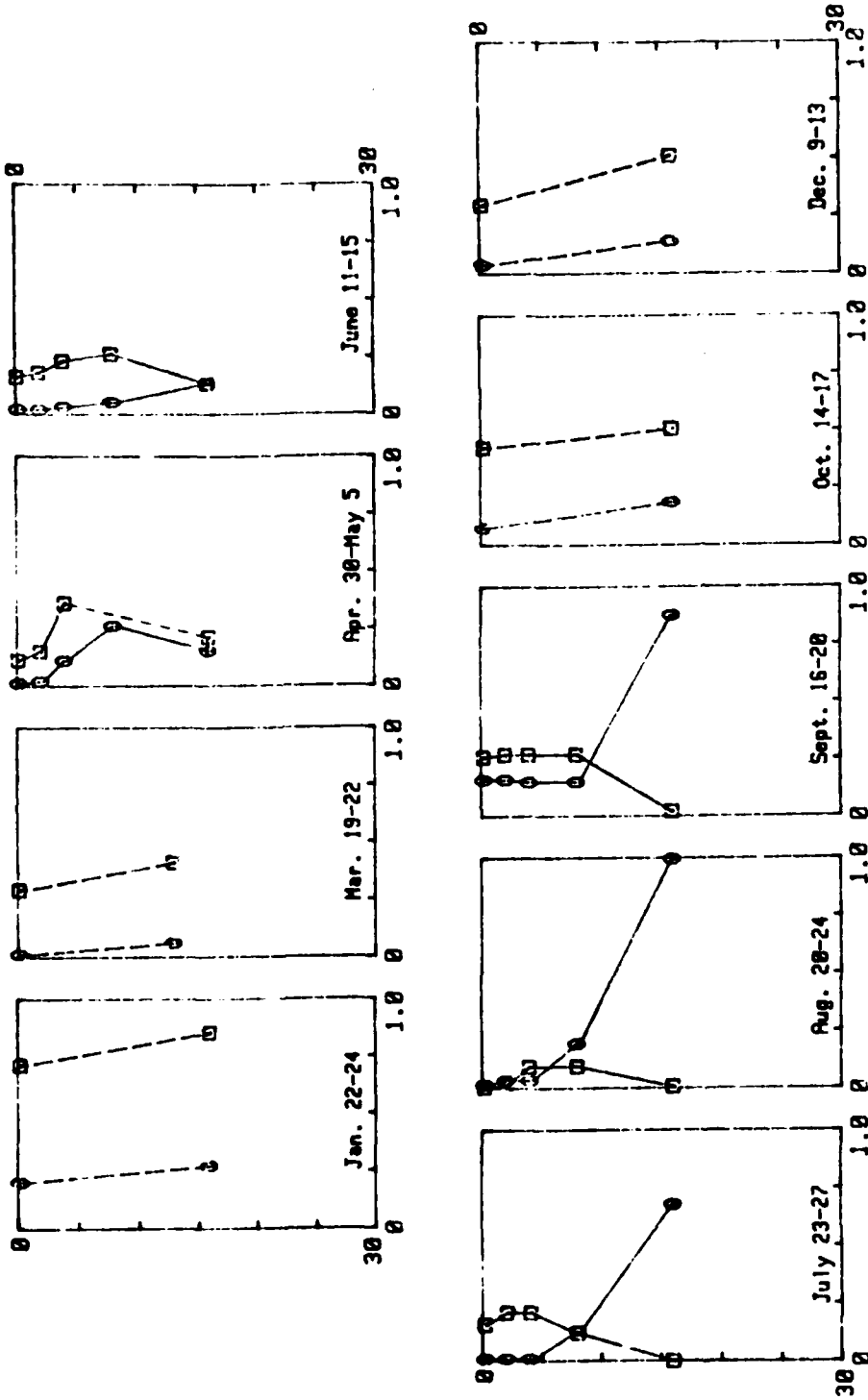
EXPLANATION

□-Nitrate plus nitrite (as nitrogen)
 ○-Ammonia (as nitrogen)

CH-13 (02339362) Mehadkee Creek at State Highway 226, near Abbottsford, Ga., 1978

DEPTH, IN METERS

374

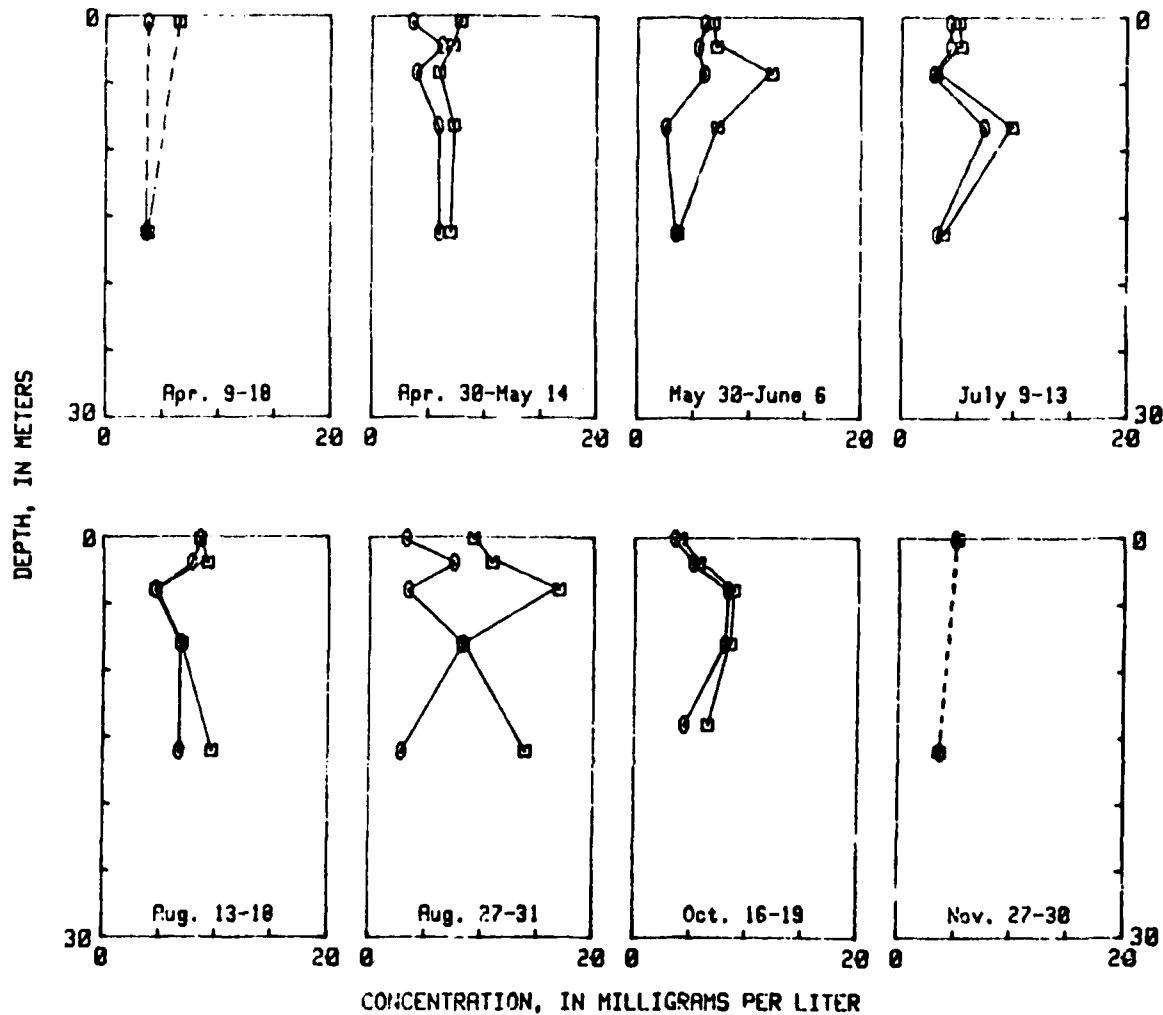


CONCENTRATION, IN MILLIGRAMS PER LITER

EXPLANATION

- Nitrate plus nitrite (as nitrogen)
- Ammonia (as nitrogen)

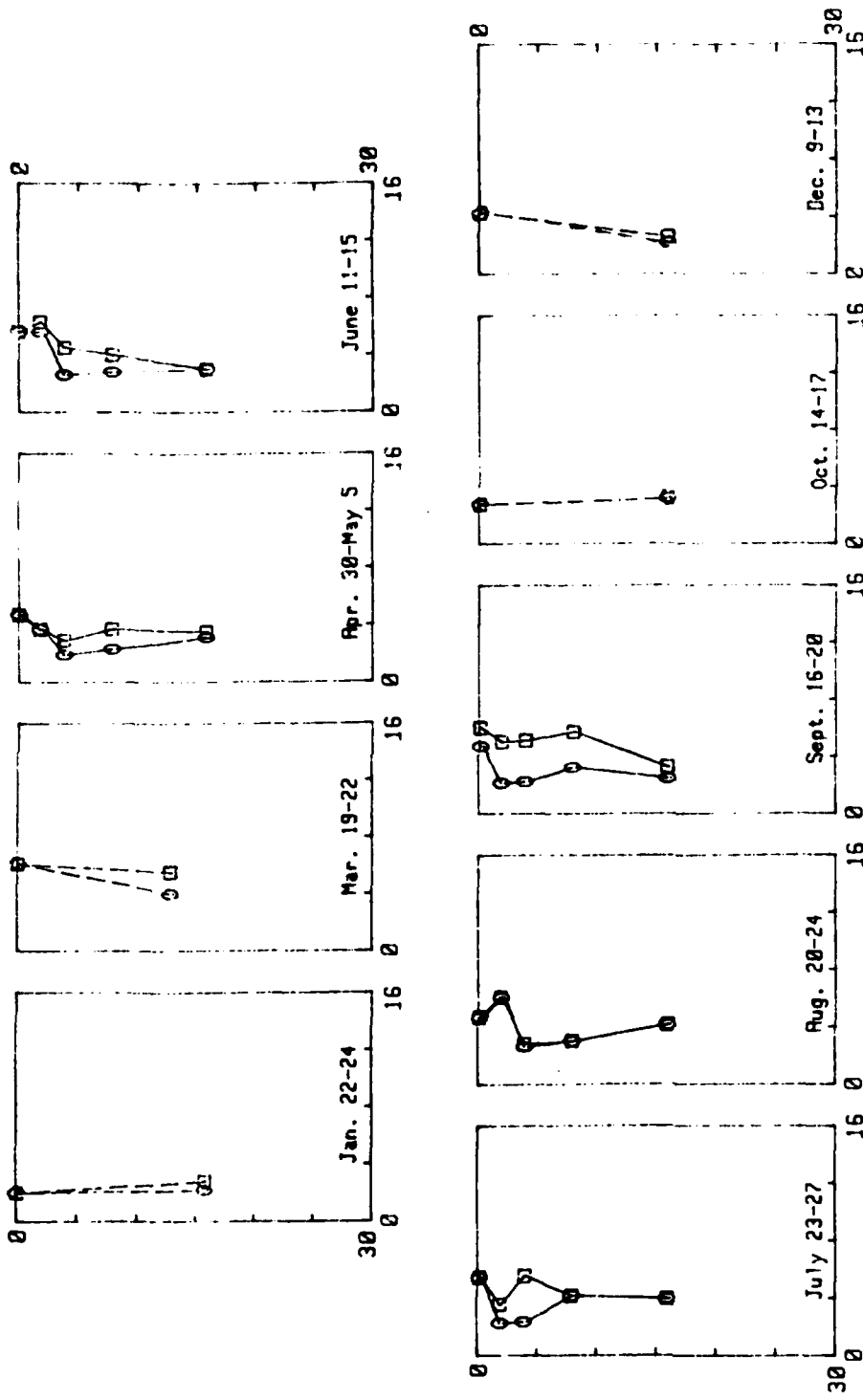
CH-13 (02339362) Mehadkee Creek at State Highway 238, near Abbottsford, Ga., 1979



EXPLANATION

- Dissolved organic carbon
- Total organic carbon

CH-13 (02339362) Wehadkee Creek at State Highway 238, near
 Abbotsford, Ca., 1978

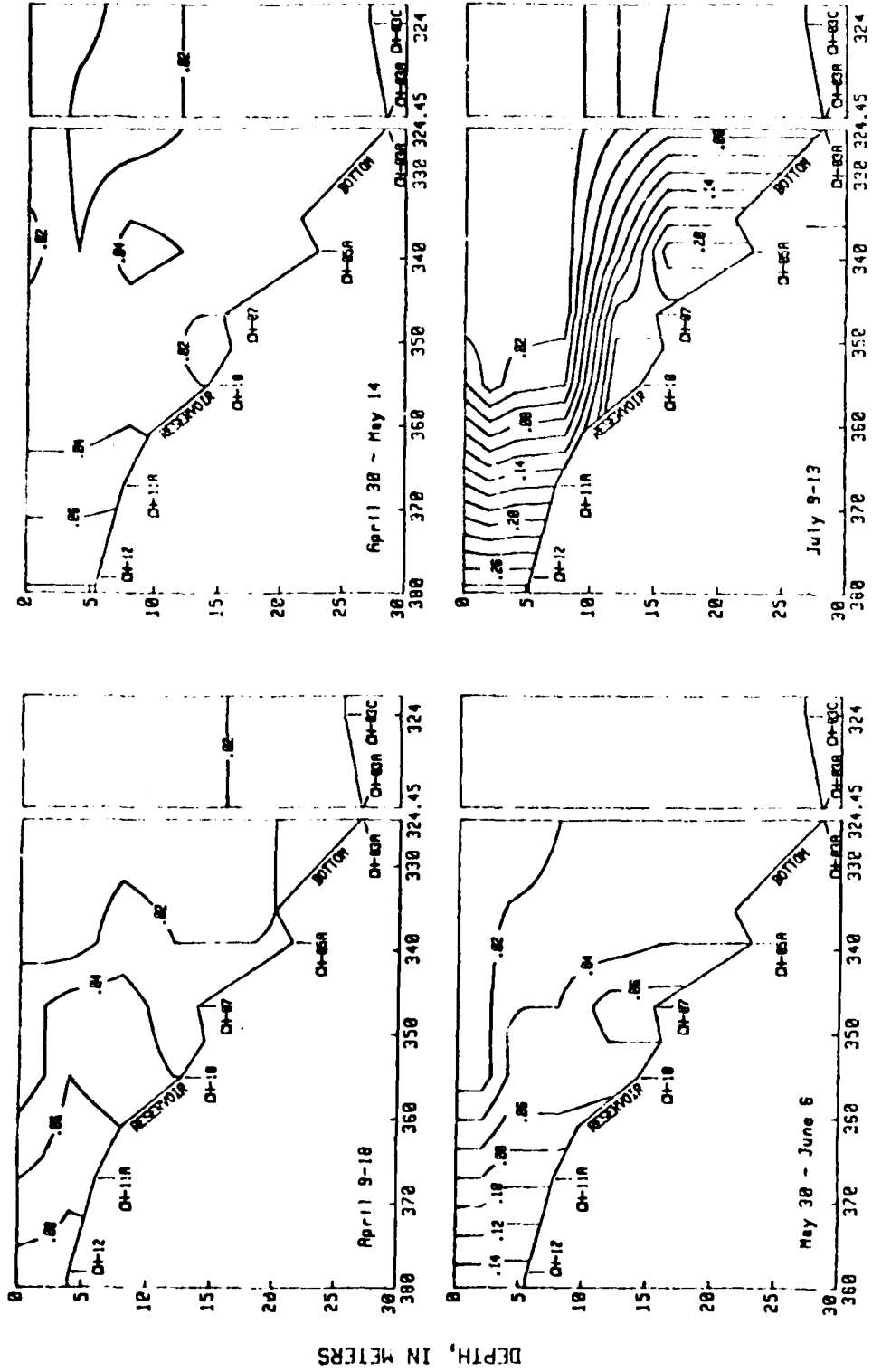


CH-13 (02339362) Wehadkee Creek at State Highway 238, near Abbottsford, Ga., 1979

APPENDIX C-9

Isopleths showing longitudinal variations in nutrient concentrations in
West Point Reservoir, April 1978-December 1979

	Page
Phosphorus, orthophosphate, dissolved, April-July 1978.....	378
Phosphorus, orthophosphate, dissolved, August 1978-May 1979.....	379
Phosphorus, orthophosphate, dissolved, June-September 1979.....	380
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Carbon, organic, total, August 1978-May 1979.....	393
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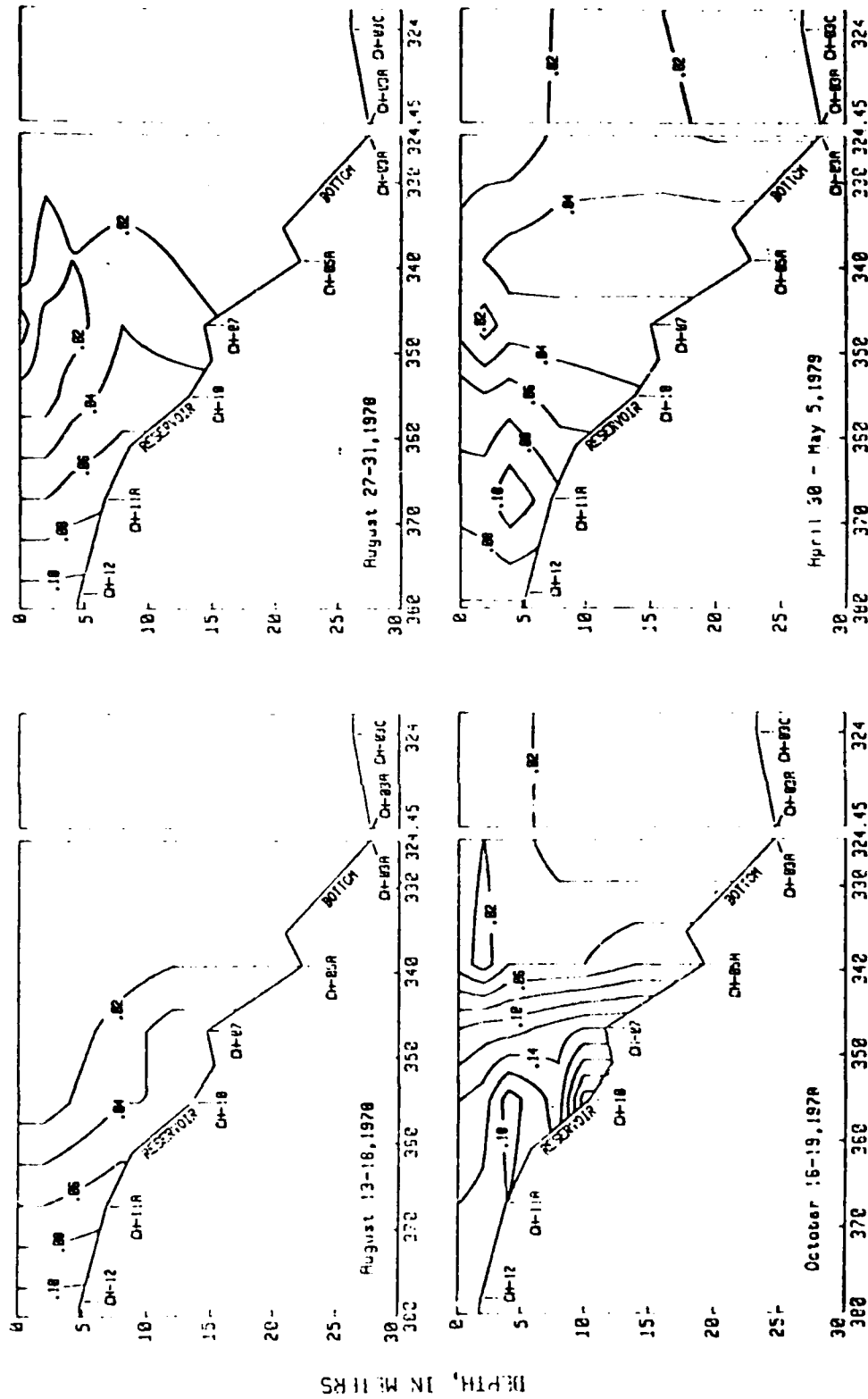


DISTANCE ABOVE THE MOUTH OF THE CHATTRAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

-0.08- LINE OF EQUAL DISSOLVED ORTHOPHOSPHATE CONCENTRATION - Interval 0.02 milligrams per liter
 CH-85A WATER SAMPLING STATION

Dissolved orthophosphate concentration, April-July 1978

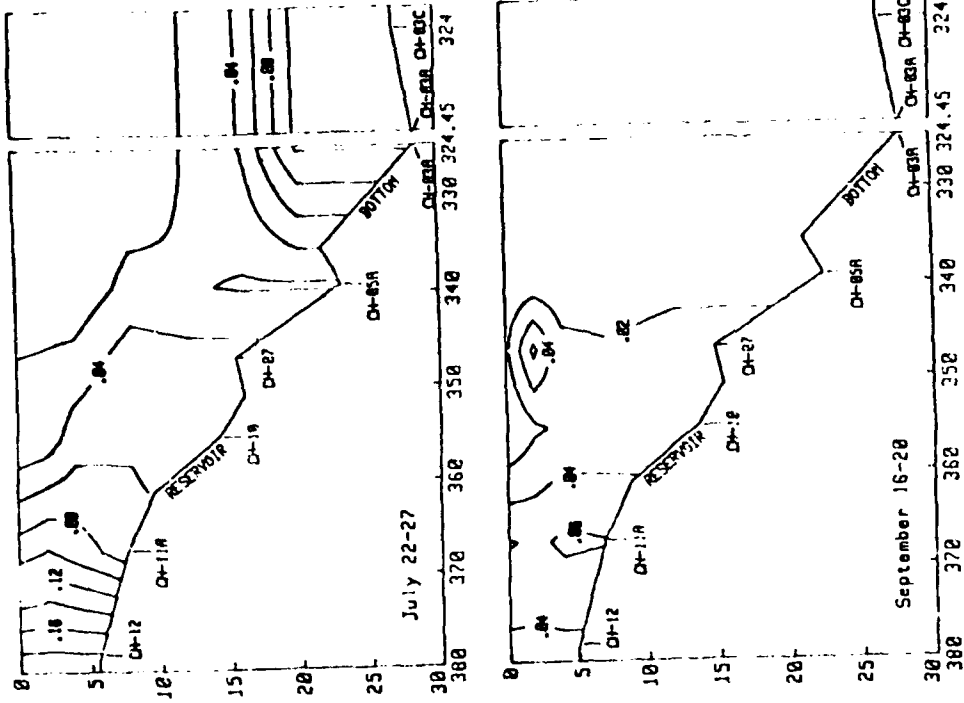


DISTANCE ABOVE THE MOUTH OF THE CHATTOOCHEE RIVER, IN KILOMETERS

EXPLANATION

-0.04- LINE OF EQUAL DISSOLVED ORTHOPHOSPHATE CONCENTRATION - Interval 0.02 milligrams per liter
 CH-050 WATER SAMPLING STATION

Dissolved orthophosphate concentration, August 1978 - May 1979



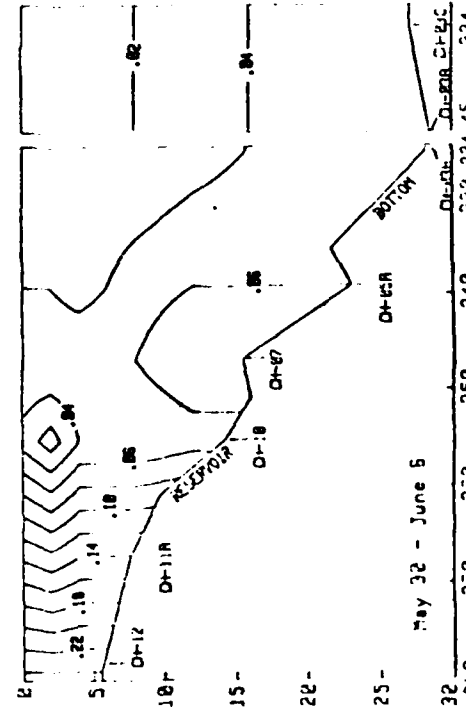
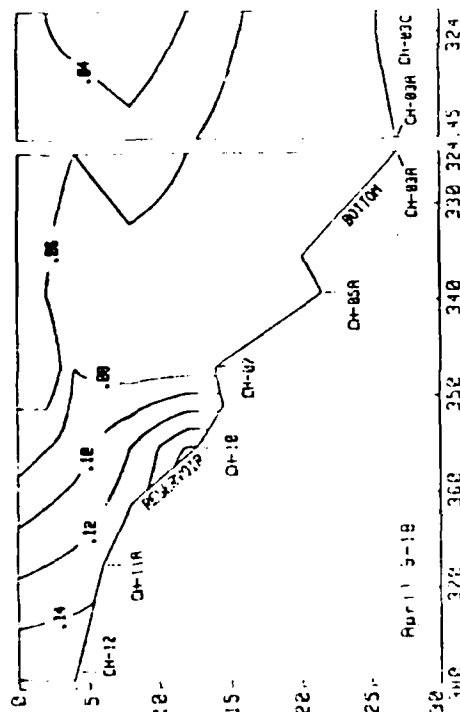
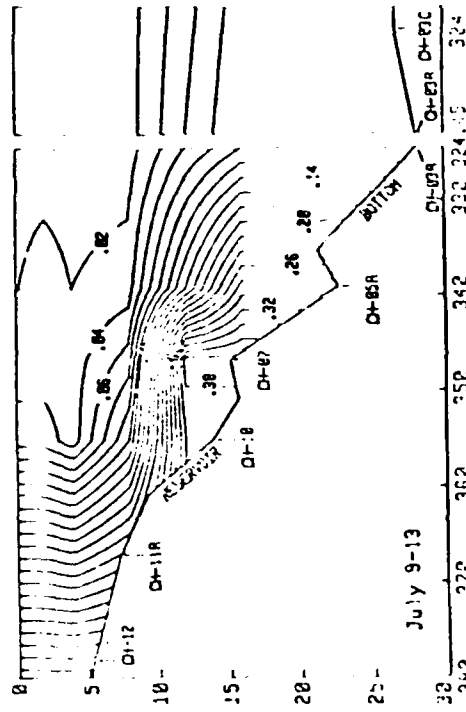
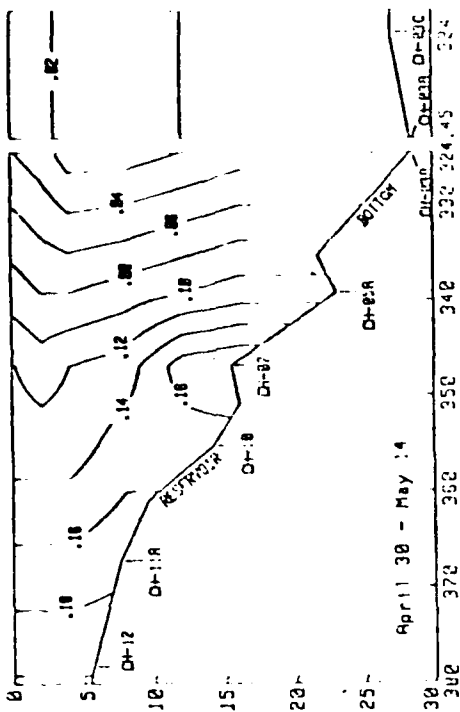
DISTANCE ABOVE THE MOUTH OF THE CHATTOOCHEE RIVER, IN KILOMETERS

EXPLANATION

-0.04- LINE OF EQUAL DISSOLVED ORTHOPHOSPHATE CONCENTRATION - Interval: 2.02 milligrams per liter
 CH-05A WATER SAMPLING STATION

Dissolved orthophosphate concentration, June-September 1979

DEPTH, IN METERS



DEPTH, IN METERS

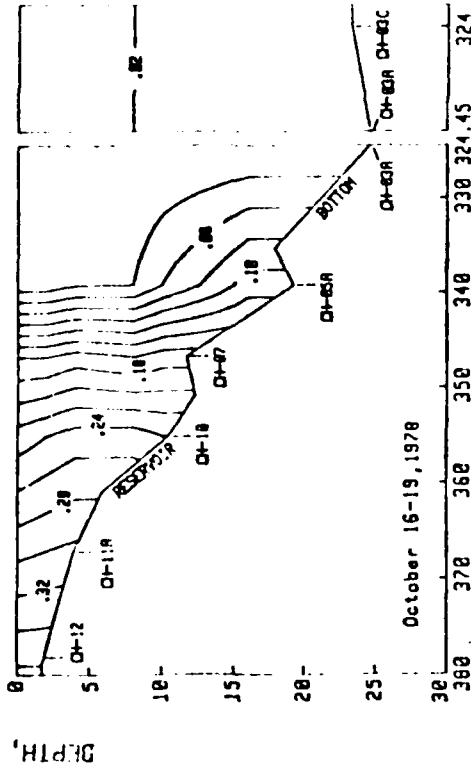
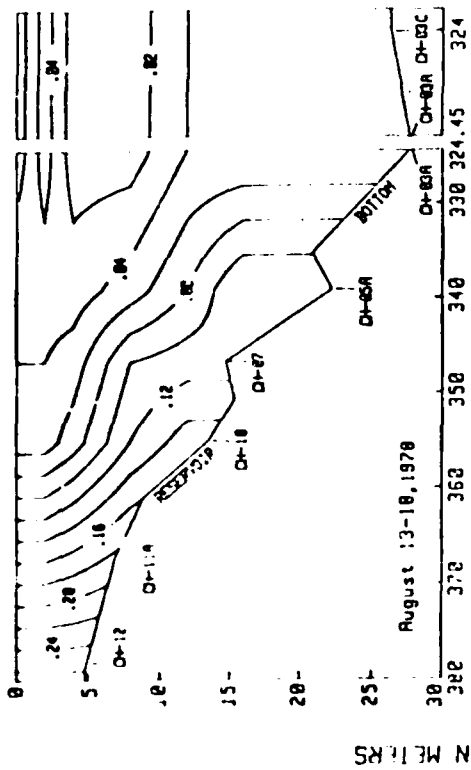
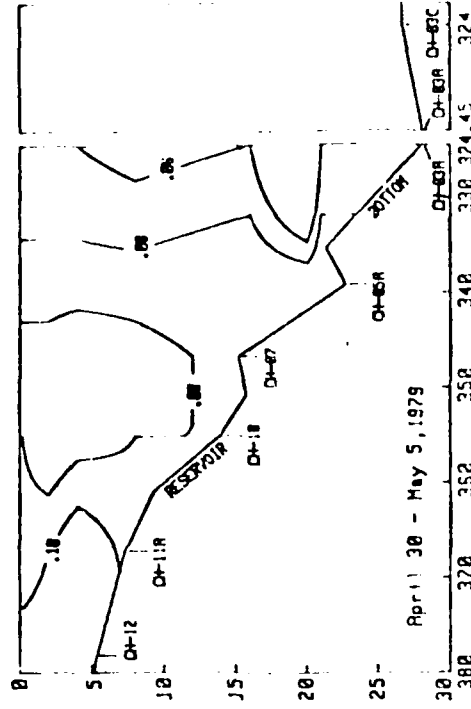
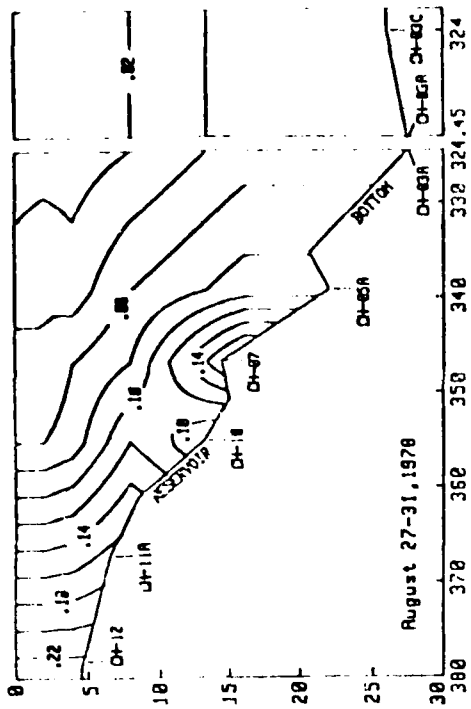
DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 0.02 - LINE OF EQUAL TOTAL PHOSPHORUS CONCENTRATION - Interval 0.02 milligrams per liter

CH-25A WATER SAMPLING STATION

Total phosphorus concentration, April-July 1978



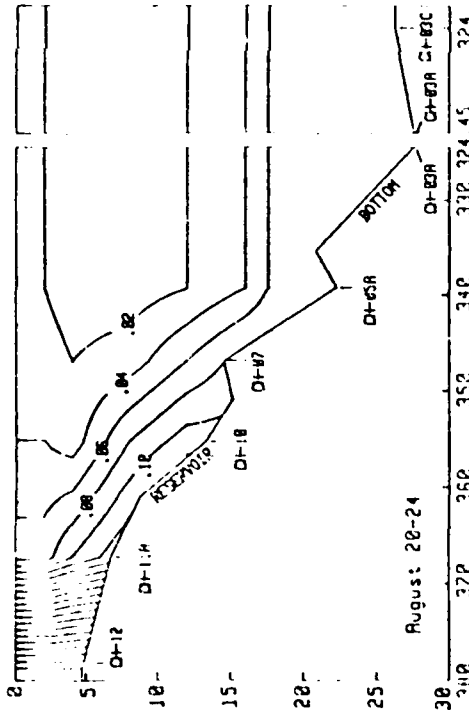
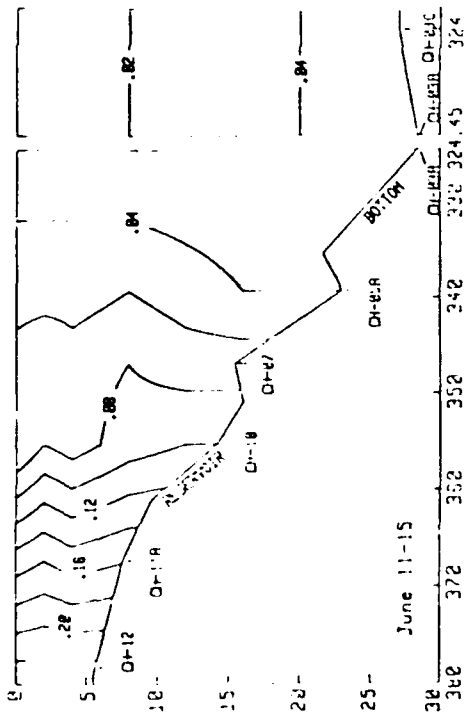
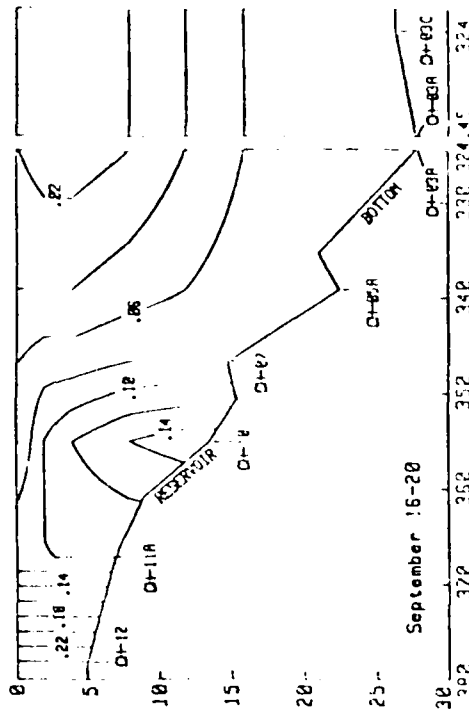
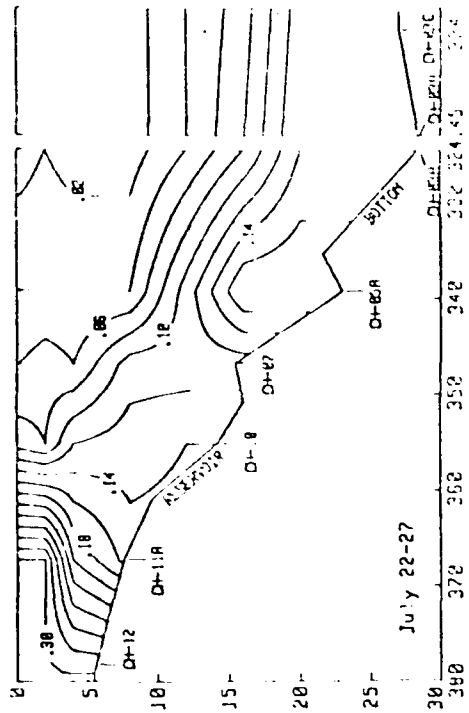
DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

-0.06- LINE OF EQUAL TOTAL PHOSPHORUS CONCENTRATION - Interval 0.02 milligrams per liter

CH-25A WATER SAMPLING STATION

Total phosphorus concentration, August 1978 - May 1979



DEPTH, IN METERS

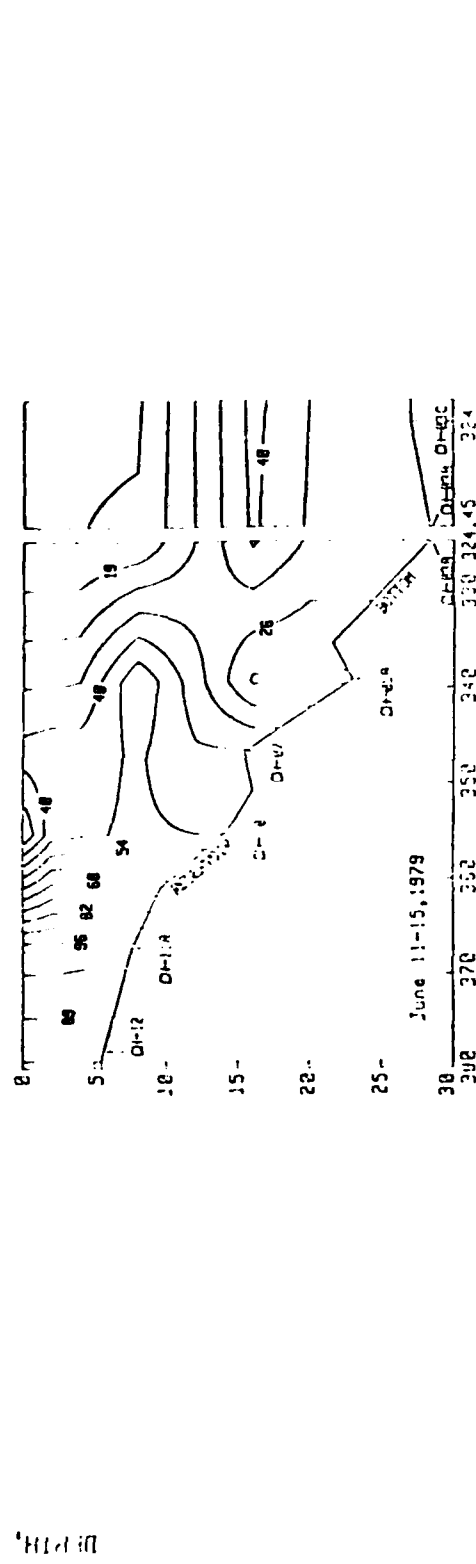
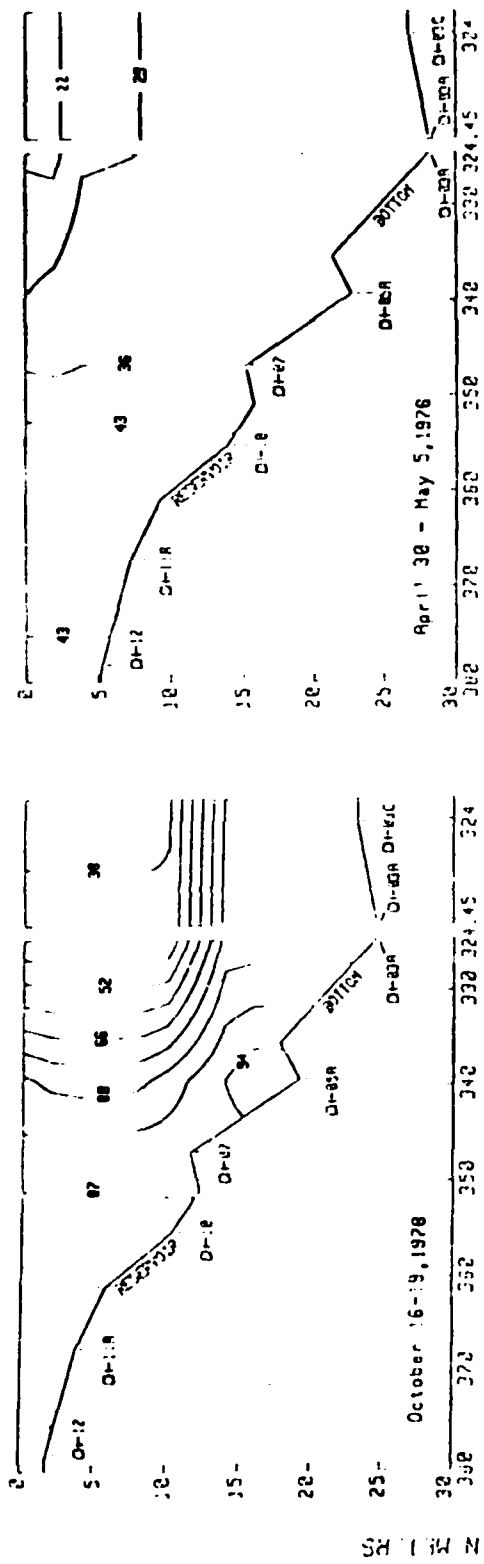
DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

-0.25- LINE OF EQUAL TOTAL PHOSPHORUS CONCENTRATION - Interval 0.22 milligrams per liter

CH-6B WATER SAMPLING STATION

Total phosphorus concentration, June-September 1979



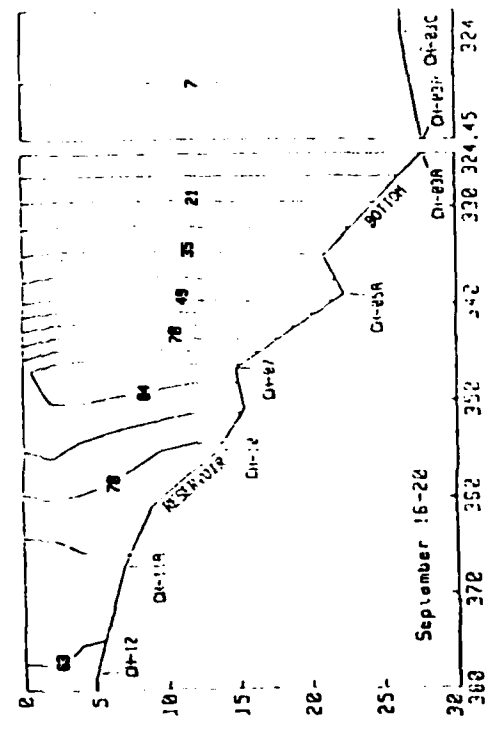
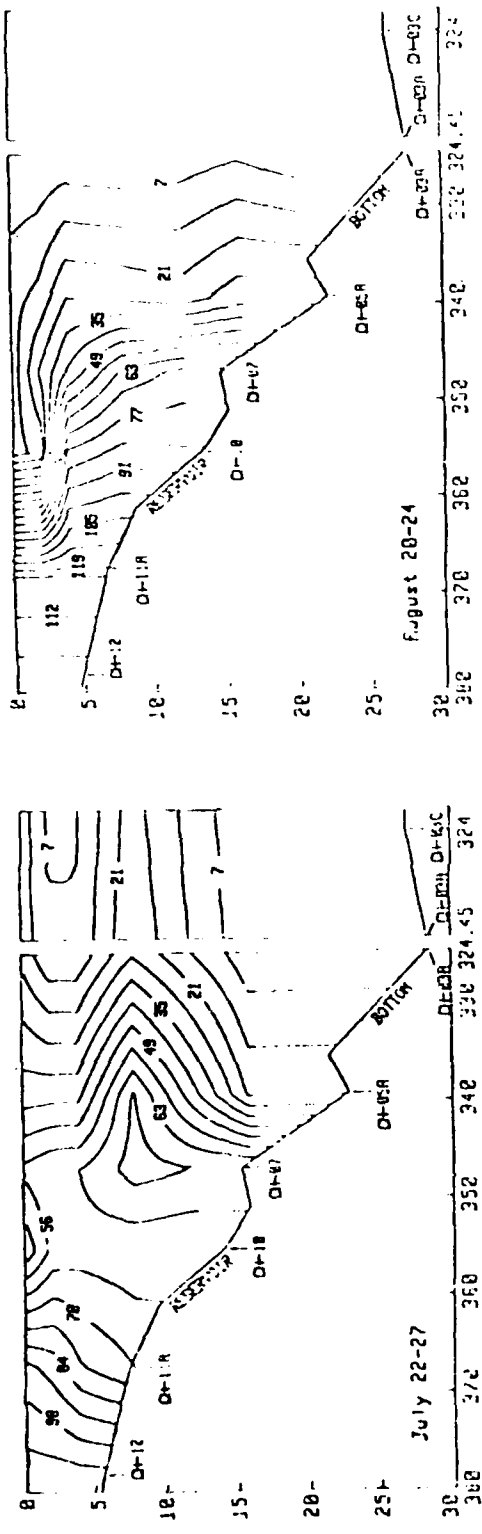
DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

-0.02- LINE OF EQUAL TOTAL NITRITE PLUS NITRATE CONCENTRATION - Interval 0.27 milligrams per liter
 CH-65A WATER SAMPLING STATION

Total nitrite plus nitrate concentration, October 1978 - June 1979

DEPTH, IN METERS

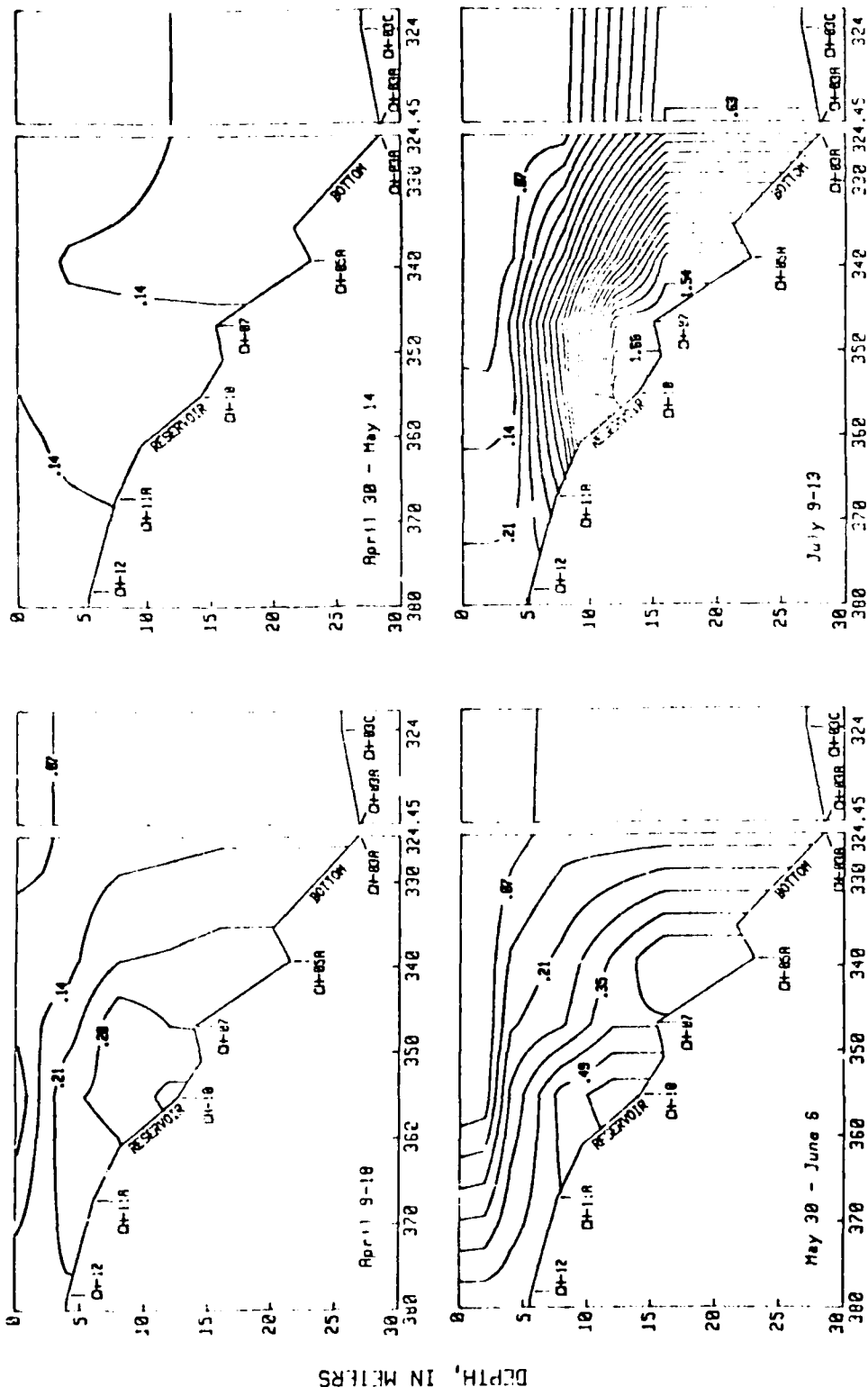


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

-0.70- LINE OF EQUAL TOTAL NITRITE PLUS NITRATE CONCENTRATION - Interval 0.27 milligrams per liter
 CH-05A WATER SAMPLING STATION

Total nitrite plus nitrate concentration, July-September 1979

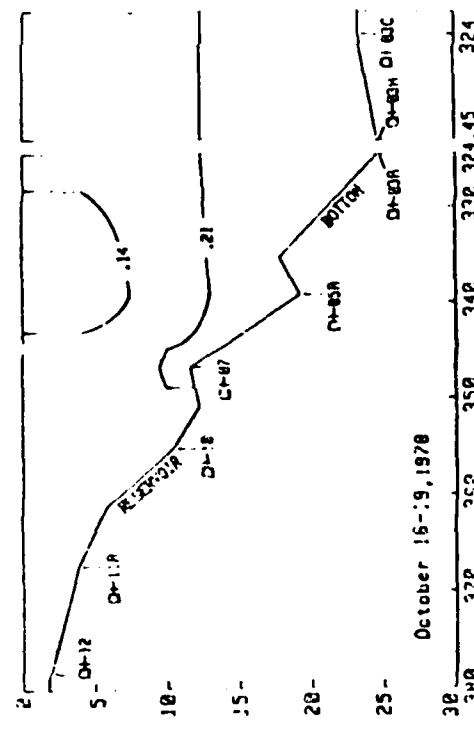
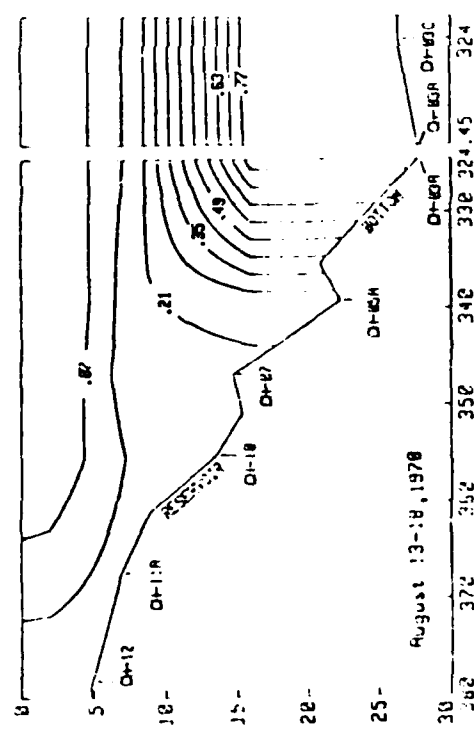
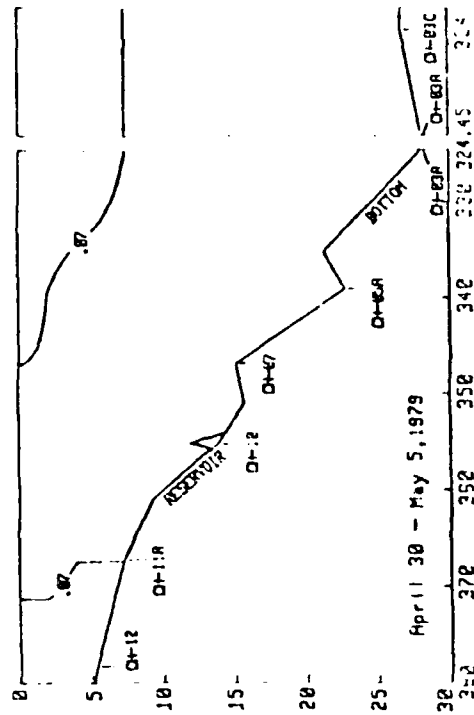
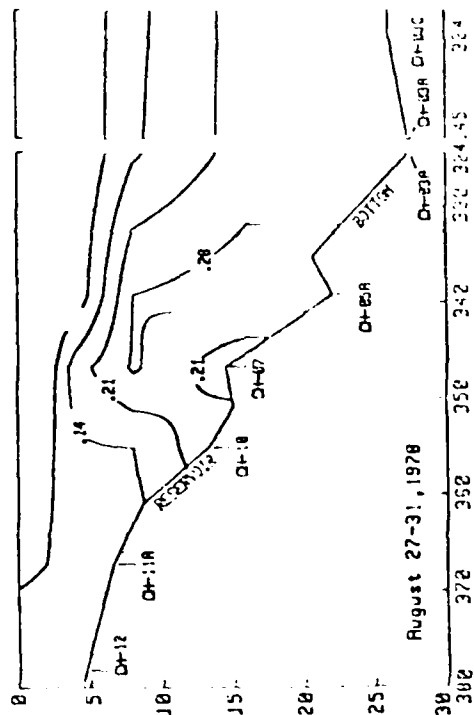


DISTANCE ABOVE THE MOUTH OF THE CHATTOOCHEE RIVER, IN KILOMETERS

EXPLANATION

--0.14-- LINE OF EQUAL TOTAL AMMONIA CONCENTRATION - Interval 2.07 milligrams per liter
 CH-65A WATER SAMPLING STATION

Total ammonia concentration, April-July 1978

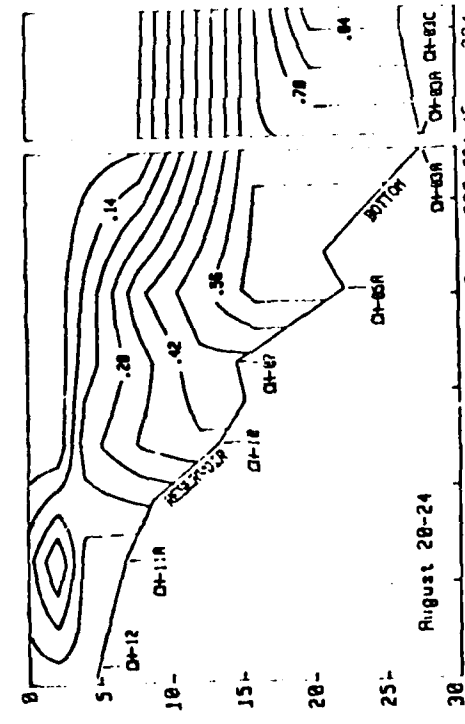
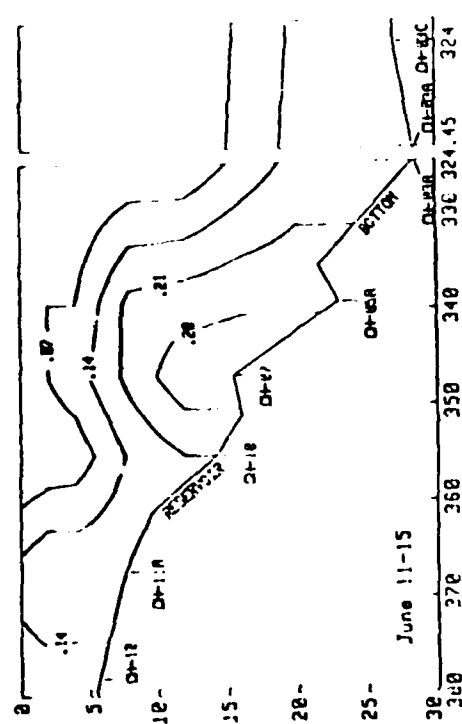
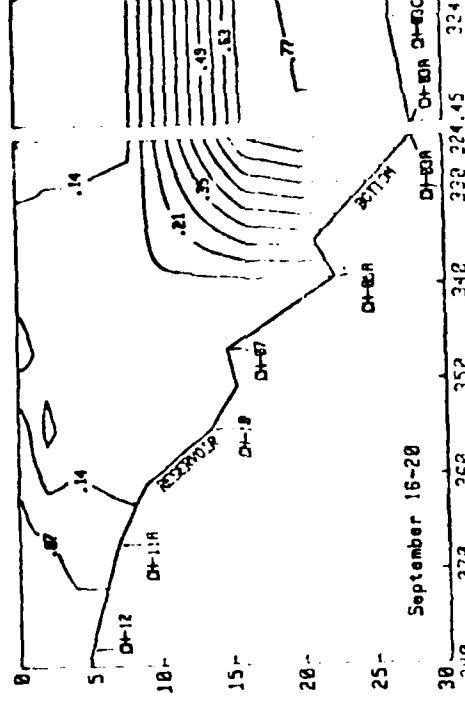
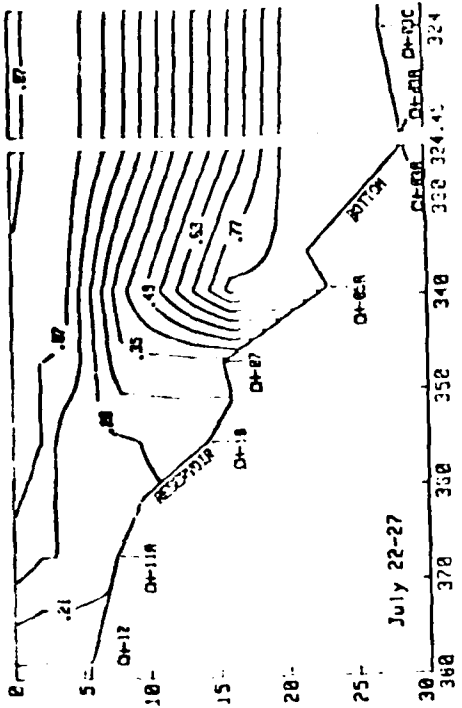


DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTOOHOOCHEE RIVER, IN KILOMETERS

EXPLANATION
 --0.14-- LINE OF EQUAL TOTAL AMMONIA CONCENTRATION - Interval 0.07 milligrams per liter
 D-12-D-16A WATER SAMPLING STATION

Total ammonia concentration, August 1978 - May 1979



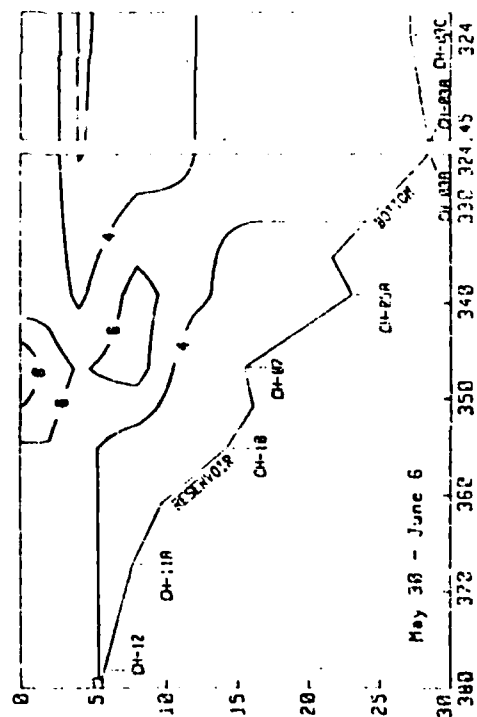
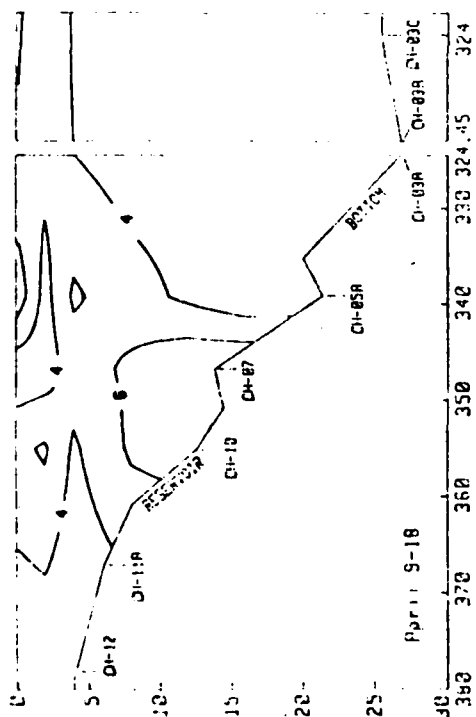
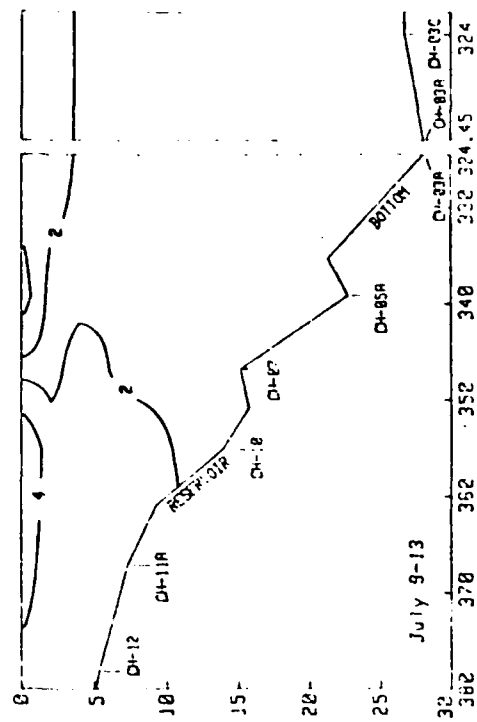
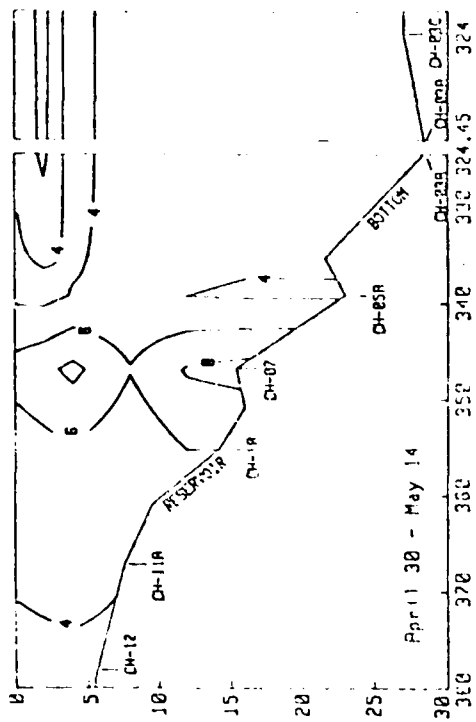
DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

--0.28-- LINE OF EQUAL TOTAL AMMONIA CONCENTRATION - Interval 2.27 milligrams per liter
 CH-05A WATER SAMPLING STATION

Total ammonia concentration, June-September : 1979



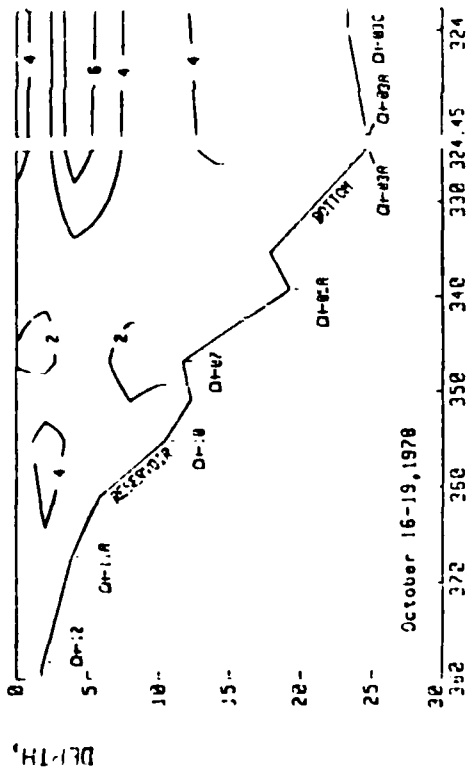
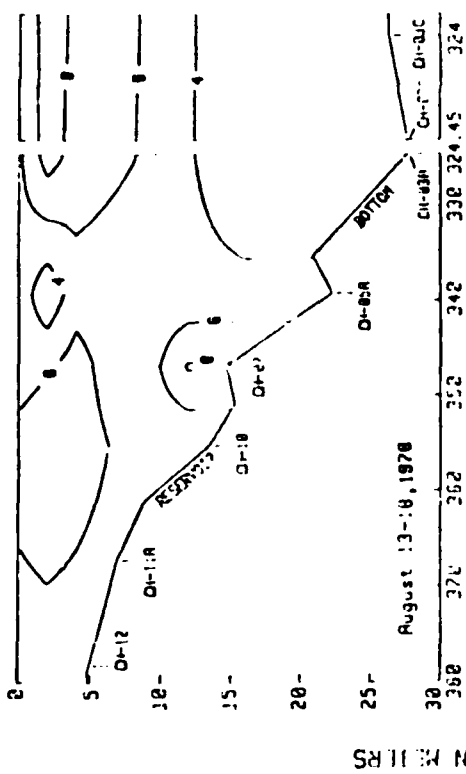
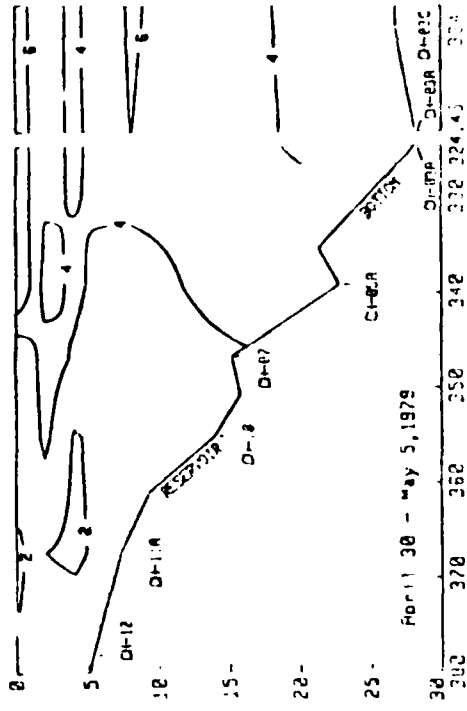
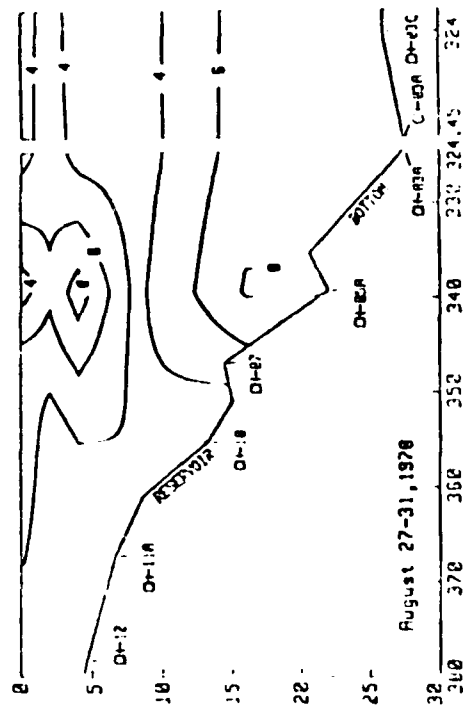
DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATHAMOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 6-- LINE OF EQUAL DISSOLVED ORGANIC CARBON CONCENTRATION - Interval 2 milligrams per liter
- CH-05A WATER SAMPLING STATION

Dissolved organic carbon concentration, April-July 1978

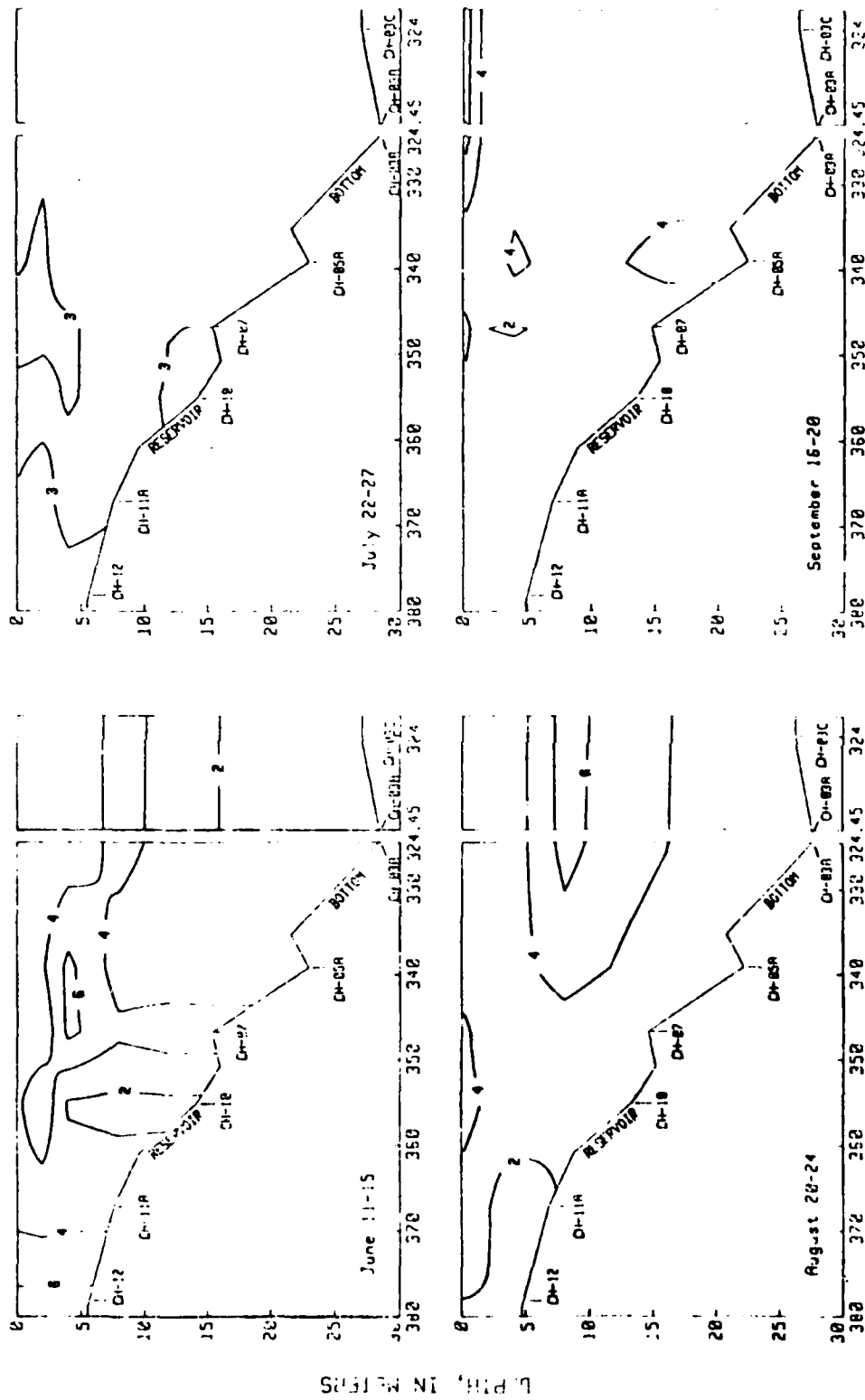


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

--6-- LINE OF EQUAL DISSOLVED ORGANIC CARBON CONCENTRATION - Interval 2 milligrams per liter
 CH-25A WATER SAMPLING STATION

Dissolved organic carbon concentration, August 1978 - May 1979

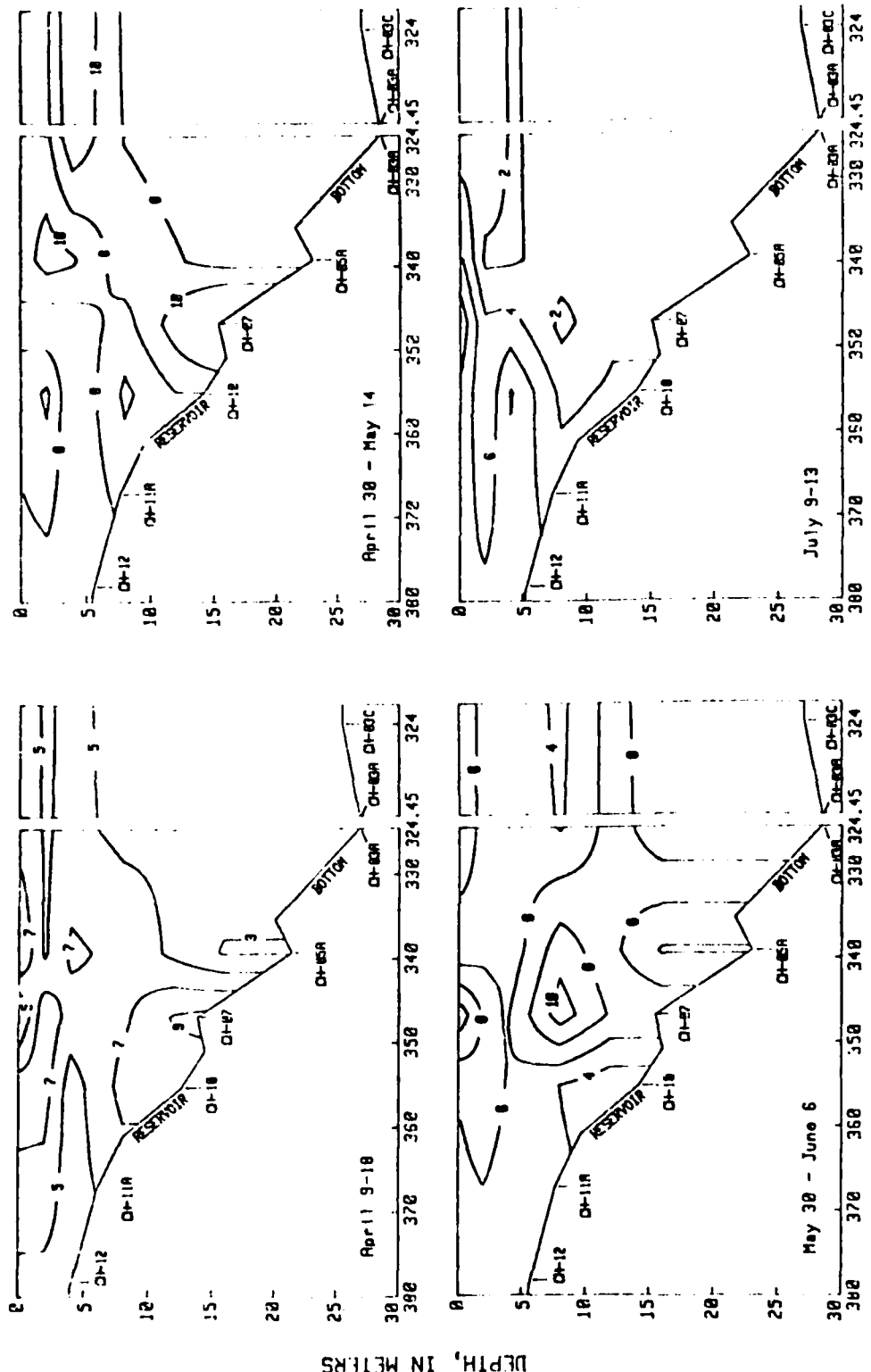


EXPLANATION

--4-- LINE OF EQUAL DISSOLVED ORGANIC CARBON CONCENTRATION - Interval 2 milligrams per liter

C-25A WATER SAMPLING STATION

Dissolved organic carbon concentration, June-September 1979

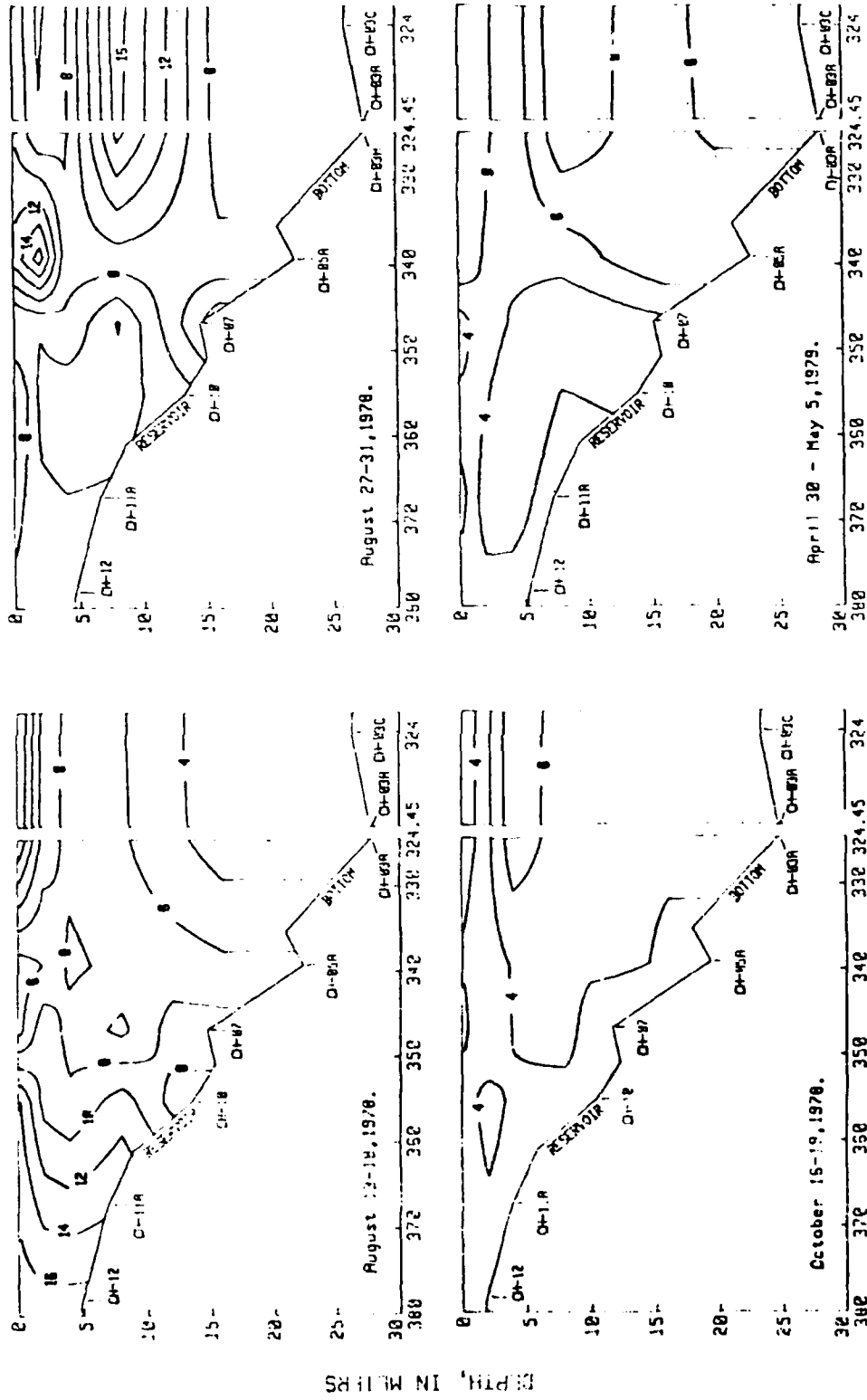


DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 5-- LINE OF EQUAL TOTAL ORGANIC CARBON CONCENTRATION - Interval 2 milligrams per liter
- CH-05A WATER SAMPLING STATION

Total organic carbon concentration, April-July 1978

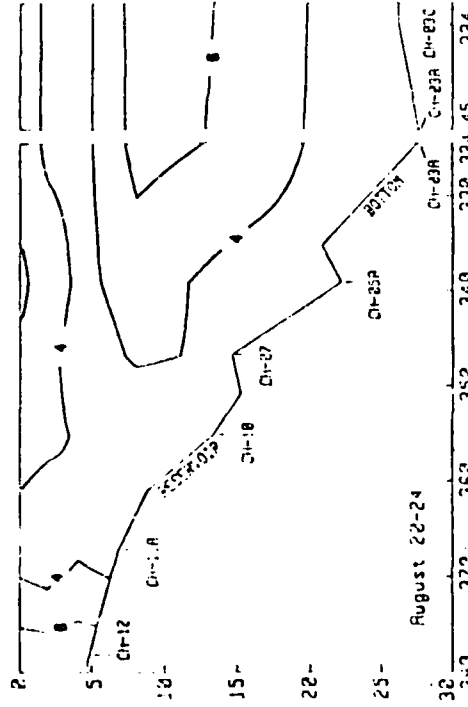
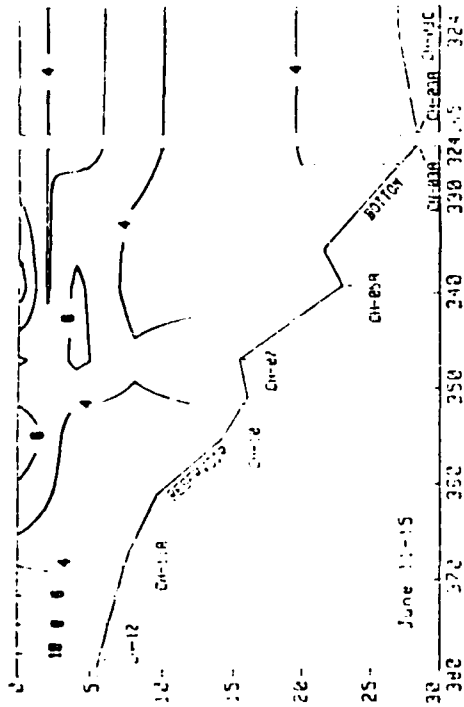
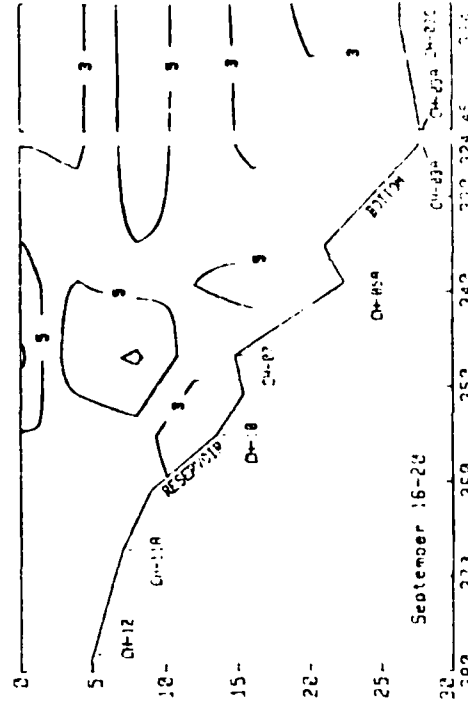
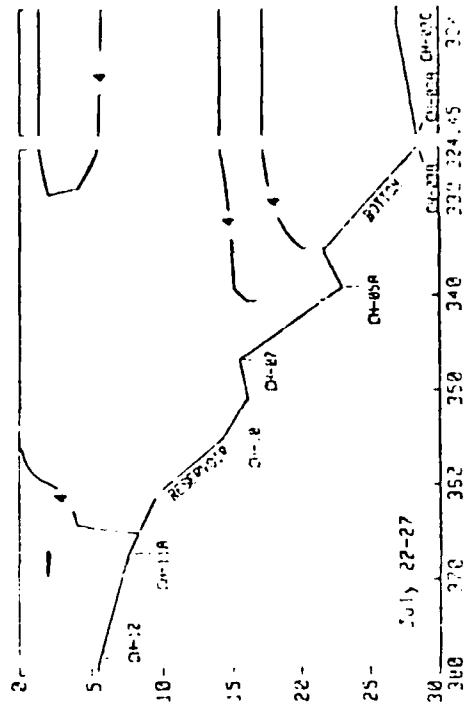


EXPLANATION

--S-- LINE OF EQUAL TOTAL ORGANIC CARBON CONCENTRATION - Interval 2 milligrams per liter

CH-63A WATER SAMPLING STATION

Total organic carbon concentration, August 1978 - May 1979



DEPTH, METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 4-- LINE OF EQUAL TOTAL ORGANIC CARBON CONCENTRATION - Interval 2 milligrams per liter
- CH-05A WATER SAMPLING STATION

Total organic carbon concentration, June-September 1979

APPENDIX C-10

Metal concentrations in West Point Reservoir and the Chattahoochee River
below West Point Dam, April 1978-December 1979

[Iron, total; iron, dissolved; manganese, total, and manganese, dissolved;
calcium, total; magnesium, total; potassium, total; sodium, total;
chloride, total; and zinc, total]

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CH-07	(02338720)	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1978 and 1979.....	398
CH-05A	(02339190)	Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978 and 1979.....	399
CH-03A	(02339382)	Chattahoochee River above coffer dam, above West Point Dam, 1978 and 1979.....	400
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CH-01D	(02339780)	Chattahoochee River at Langdale, Ala., 1978 and 1979.....	412

CH-12 (U2338500) Chattahoochee River at U.S. Highway 27, at Franklin, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
APR , 1978											
14...	1.0	3.3	1.1	1.6	5.4	4.9	1100	80	60	30	20
MAY											
08...	1.0	--	--	--	--	--	2400	50	100	30	50
JUN											
06...	1.0	--	--	--	--	--	1100	70	40	40	40
JUL											
13...	1.0	--	--	--	--	--	610	50	90	70	30
AUG											
17...	1.0	--	--	--	--	--	4800	20	130	20	40
31...	1.0	3.5	1.2	2.0	4.5	3.9	3700	30	80	20	30
OCT											
13...	1.0	--	--	--	--	--	1400	10	100	20	--
NOV											
30...	1.0	--	--	--	--	--	1300	90	80	30	--

DATE	SAM- PLING DEPTH (M)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN , 1979					
24...	1.0	5400	60	200	30
MAY					
22...	1.0	1500	30	110	20
MAY					
03...	1.0	2100	120	140	30
JUN					
13...	1.0	2600	50	40	10
JUL					
26...	1.0	2400	60	110	30
AUG					
23...	1.0	2000	20	120	60
SEP					
20...	1.0	4100	40	200	20
OCT					
17...	1.0	2700	10	130	20
DEC					
13...	1.0	1600	10	40	40

DATE	SAM- PLING DEPTH (FT)	CALCIUM TOTAL RECOV- ENABLE UG/L AS PT	MAGNE- SIUM TOTAL RECOV- ENABLE UG/L AS PT	POTAS- SIUM TOTAL RECOV- ENABLE UG/L AS PT	SODIUM TOTAL RECOV- ENABLE UG/L AS NAT	CHLO- RIDE DIS- SOLVED UG/L AS CL	IRON TOTAL RECOV- ENABLE UG/L AS FE	IRON DIS- SOLVED UG/L AS FE	MANGA- NESE TOTAL RECOV- ENABLE UG/L AS MN	MANGA- NESE DIS- SOLVED UG/L AS MN	ZINC TOTAL RECOV- ENABLE UG/L AS ZN
APR 1947											
17...	2.0	3.5	1.1	1.7	5.5	4.3	610	40	60	0	60
17...	2.0	3.5	1.1	1.7	5.5	4.3	760	50	70	10	20
17...	4.0	3.3	1.2	1.7	5.4	5.0	1190	70	110	30	40
17...	8.0	3.2	1.0	1.5	5.5	3.8	1200	60	110	40	20
17...	11.0	3.3	1.0	1.7	5.2	4.3	1800	70	200	160	30
MAY											
02...	2.0	--	--	--	--	--	2900	50	140	100	60
02...	2.0	--	--	--	--	--	3400	60	150	120	20
02...	4.0	--	--	--	--	--	4100	60	150	140	40
02...	4.0	--	--	--	--	--	4600	70	200	140	60
02...	12.0	--	--	--	--	--	4800	40	210	140	30
JUN											
05...	2.0	--	--	--	--	--	240	--	60	0	40
05...	2.0	--	--	--	--	--	240	70	60	0	20
05...	4.0	--	--	--	--	--	540	40	110	20	40
05...	4.0	--	--	--	--	--	1200	160	--	710	40
05...	12.0	--	--	--	--	--	1200	440	--	1100	30
JUL											
12...	2.0	--	--	--	--	--	250	40	40	0	10
12...	2.0	--	--	--	--	--	210	10	40	0	10
12...	4.0	--	--	--	--	--	320	20	70	0	10
12...	4.0	--	--	--	--	--	1200	30	700	700	10
12...	12.0	--	--	--	--	--	8700	6500	2500	2500	--
AUG											
10...	2.0	--	--	--	--	--	290	10	30	10	30
16...	2.0	--	--	--	--	--	410	0	30	0	30
16...	4.0	--	--	--	--	--	1200	0	70	20	10
16...	4.0	--	--	--	--	--	2400	0	140	80	40
16...	11.0	--	--	--	--	--	3300	0	140	100	30
29...	2.0	4.1	1.2	2.0	5.2	--	40	20	10	10	50
29...	2.0	4.1	1.2	2.0	5.1	4.4	140	10	20	0	70
29...	4.0	3.8	1.1	2.0	4.7	4.0	340	10	90	0	30
29...	4.0	3.6	1.1	2.0	4.6	3.5	1200	--	60	--	30
29...	11.0	3.6	1.2	2.0	4.3	3.5	2100	30	220	150	60
OCT											
17...	2.0	--	--	--	--	--	1000	30	150	70	--
17...	2.0	--	--	--	--	--	1000	30	150	70	--
17...	4.0	--	--	--	--	--	1200	130	150	90	--
17...	8.0	--	--	--	--	--	1200	30	140	80	--
17...	10.0	--	--	--	--	--	1400	40	160	90	--
NOV											
24...	2.0	--	--	--	--	--	1200	50	120	80	40
29...	9.0	--	--	--	--	--	410	40	120	40	--

DATE	SAM- PLING DEPTH (FT)	IRON TOTAL RECOV- ENABLE UG/L AS FE	IRON DIS- SOLVED UG/L AS FE	MANGA- NESE TOTAL RECOV- ENABLE UG/L AS MN	MANGA- NESE DIS- SOLVED UG/L AS MN
JAN 1947					
24...	2.0	2800	200	130	60
24...	11.0	3200	40	140	50
MAY					
21...	2.0	800	40	160	100
21...	11.0	3300	100	520	180
MAY					
03...	2.0	1000	40	100	40
03...	2.0	1000	40	100	40
03...	4.0	1100	90	110	40
03...	4.0	1300	100	120	40
03...	12.0	2000	160	150	100
JUN					
13...	2.0	500	20	60	40
13...	2.0	500	10	30	0
13...	4.0	650	20	100	0
13...	8.0	1200	120	140	10
13...	12.0	1000	30	140	130
JUL					
25...	2.0	210	20	30	0
26...	2.0	490	10	40	0
26...	4.0	1500	40	150	20
26...	8.0	2200	40	150	40
26...	12.0	2400	50	210	40
AUG					
22...	2.0	60	20	30	30
22...	2.0	200	20	30	0
22...	4.0	360	20	70	0
22...	8.0	700	30	280	40
22...	12.0	2300	20	440	410
SEP					
19...	2.0	420	10	20	20
19...	2.0	470	10	100	40
19...	4.0	1300	40	130	50
19...	8.0	2000	40	190	110
19...	12.0	2200	340	210	150
OCT					
4...	2.0	450	10	80	20
6...	12.0	1200	10	110	40
OCT					
12...	2.0	440	50	140	170
12...	8.0	1300	70	200	170

CH-17 (123372) Chattahoochee River (City of LaGrange Intake) near LaGrange, Ga., 1978 and 1979

DATE	SAM-PLING DEPTH (M)	CALCIUM TOTAL RECOV-ERABLE (MG/L AS CA)	MAGNE-SIUM TOTAL RECOV-ERABLE (MG/L AS MG)	POTAS-SIUM TOTAL RECOV-ERABLE (MG/L AS K)	SODIUM TOTAL RECOV-ERABLE (MG/L AS NA)	CHLO-RIDE DIS-SOLVED (MG/L AS CL)	IRON TOTAL RECOV-ERABLE (UG/L AS FE)	IRON DIS-SOLVED (UG/L AS FE)	MANGA-NESE TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE DIS-SOLVED (UG/L AS MN)	ZINC TOTAL RECOV-ERABLE (UG/L AS ZN)
APR 1978											
12...	.20	3.6	1.1	1.5	5.1	4.8	140	10	40	30	10
12...	2.0	3.5	1.1	1.6	5.0	4.9	260	10	50	10	20
12...	4.0	3.4	1.1	1.5	5.3	4.3	310	10	60	10	10
12...	8.0	3.6	1.1	1.5	4.8	4.1	450	10	190	90	20
12...	12.0	3.2	1.2	1.4	3.9	3.3	700	10	460	340	20
MAY											
06...	.20	--	--	--	--	--	2400	50	130	120	20
06...	2.0	--	--	--	--	--	2700	50	170	100	20
06...	4.0	--	--	--	--	--	2900	60	150	110	20
06...	8.0	--	--	--	--	--	3100	50	150	110	30
06...	12.0	--	--	--	--	--	5000	70	250	110	20
JUN											
01...	.20	--	--	--	--	--	140	10	30	0	30
01...	2.0	--	--	--	--	--	160	10	30	0	20
01...	4.0	--	--	--	--	--	200	10	50	0	20
01...	8.0	--	--	--	--	--	300	20	40	10	30
01...	12.0	--	--	--	--	--	1000	50	410	270	50
JUL											
11...	.20	--	--	--	--	--	170	20	20	0	20
11...	2.0	--	--	--	--	--	190	20	20	10	10
11...	4.0	--	--	--	--	--	180	60	30	10	20
11...	8.0	--	--	--	--	--	1100	50	1200	1100	20
11...	12.0	--	--	--	--	--	10000	5600	1900	1900	20
AUG											
17...	.20	--	--	--	--	--	90	10	20	0	50
17...	2.0	--	--	--	--	--	150	0	150	110	70
17...	4.0	--	--	--	--	--	250	10	30	10	300
17...	8.0	--	--	--	--	--	1700	30	120	40	110
17...	12.0	--	--	--	--	--	1100	30	120	70	30
20...	.20	3.9	1.2	2.1	5.0	4.5	110	0	10	0	20
20...	2.0	4.1	1.3	2.1	5.1	4.1	100	0	20	0	40
20...	4.0	4.1	1.1	2.1	5.6	4.5	170	0	40	0	70
20...	8.0	3.9	1.0	2.0	5.1	4.0	570	10	140	70	60
20...	12.0	3.7	1.2	2.0	4.7	3.8	2400	10	290	130	70
OCT											
17...	.20	--	--	--	--	--	600	20	110	40	--
17...	2.0	--	--	--	--	--	700	40	110	40	--
17...	4.0	--	--	--	--	--	1400	30	130	30	--
17...	8.0	--	--	--	--	--	670	30	120	40	--
17...	10.0	--	--	--	--	--	770	30	140	30	--
NOV											
20...	.20	--	--	--	--	--	740	80	100	60	--
20...	11.0	--	--	--	--	--	890	110	100	90	--

DATE	SAM-PLING DEPTH (M)	IRON TOTAL RECOV-ERABLE (UG/L AS FE)	IRON DIS-SOLVED (UG/L AS FE)	MANGA-NESE TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE DIS-SOLVED (UG/L AS MN)
JAN 1979					
20...	.20	4200	40	190	110
20...	11.0	6300	250	350	140
MAR					
21...	.20	570	30	140	70
21...	12.0	1700	110	200	200
MAY					
02...	.20	1100	60	100	60
02...	2.0	1400	80	100	70
02...	4.0	1300	40	110	80
02...	8.0	1500	50	120	70
02...	14.0	2500	70	140	110
JUN					
12...	.20	470	50	70	20
12...	2.0	400	100	70	20
12...	4.0	770	50	80	0
12...	8.0	1300	80	180	90
12...	12.0	1100	60	760	720
JUL					
26...	.20	140	20	30	10
26...	2.0	230	10	30	0
26...	4.0	100	10	30	0
26...	8.0	1300	30	250	140
26...	12.0	1500	40	270	140
AUG					
22...	.20	140	20	20	0
22...	2.0	120	20	20	10
22...	4.0	190	20	20	0
22...	8.0	550	20	170	60
22...	12.0	960	50	410	120
SEP					
10...	.20	400	40	60	30
10...	2.0	360	0	40	0
10...	4.0	440	10	60	0
10...	8.0	640	10	70	0
10...	12.0	1100	20	100	50
OCT					
16...	.20	570	40	60	0
16...	12.0	860	40	90	20
OCT					
11...	.20	970	81	200	180
11...	12.0	1100	90	250	240

DATE	SAM- PLING DEPTH (M)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)	MAGNE- SIUM TOTAL RECOV- ERABLE (MG/L AS MG)	POTAS- SIUM TOTAL RECOV- ERABLE (MG/L AS K)	SODIUM TOTAL RECOV- ERABLE (MG/L AS NA)	CHLO- RIDE DIS- SOLVED (MG/L AS CL)	IRON TOTAL RECOV- ERABLE (UG/L AS FE)	IRON DIS- SOLVED (UG/L AS FE)	MANGA- NESE TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE DIS- SOLVED (UG/L AS MN)	ZINC TOTAL RECOV- ERABLE (UG/L AS ZN)
APR 1978											
12...	.20	3.2	1.0	1.5	4.8	4.3	120	0	10	10	10
12...	4.0	3.2	1.0	1.4	4.5	3.8	120	0	20	10	10
12...	4.0	3.2	1.1	1.4	4.4	4.3	100	0	90	40	20
12...	16.0	3.1	1.1	1.6	3.6	3.0	1300	20	490	440	10
MAY											
03...	.20	--	--	--	--	--	440	30	50	0	30
03...	2.0	--	--	--	--	--	550	40	60	0	20
03...	4.0	--	--	--	--	--	610	30	60	10	20
03...	8.0	--	--	--	--	--	610	30	60	10	30
03...	16.0	--	--	--	--	--	740	10	120	70	20
JUN											
01...	.20	--	--	--	--	--	170	10	20	0	30
01...	2.0	--	--	--	--	--	110	20	30	0	20
01...	4.0	--	--	--	--	--	150	10	30	0	50
01...	8.0	--	--	--	--	--	320	30	90	20	50
01...	16.0	--	--	--	--	--	1600	60	1800	1700	30
JUL											
11...	.20	--	--	--	--	--	155	0	20	0	50
11...	2.0	--	--	--	--	--	150	10	20	0	10
11...	4.0	--	--	--	--	--	210	50	20	10	10
11...	8.0	--	--	--	--	--	410	10	500	500	10
11...	16.0	--	--	--	--	--	10000	2900	3500	3500	20
AUG											
15...	.20	--	--	--	--	--	110	30	20	20	50
15...	2.0	--	--	--	--	--	120	20	20	20	--
15...	4.0	--	--	--	--	--	140	0	20	20	80
15...	8.0	--	--	--	--	--	570	120	50	10	60
15...	16.0	--	--	--	--	--	2600	30	190	130	90
10...	.20	3.9	1.2	1.9	5.4	4.2	50	10	10	0	30
30...	2.0	3.9	1.2	1.9	5.3	4.1	70	10	10	0	40
30...	4.0	3.7	1.2	1.8	5.0	4.1	50	10	10	0	30
30...	8.0	3.7	1.1	1.8	5.0	3.9	400	10	120	70	30
30...	16.0	3.6	1.1	1.7	4.8	3.8	1400	630	400	400	30
OCT											
16...	.20	--	--	--	--	--	80	20	50	10	--
16...	2.0	--	--	--	--	--	60	10	50	0	--
16...	4.0	--	--	--	--	--	80	10	50	0	--
16...	8.0	--	--	--	--	--	490	10	150	50	--
16...	16.0	--	--	--	--	--	1100	10	190	90	--
NOV											
28...	.20	--	--	--	--	--	330	40	90	30	--
28...	16.0	--	--	--	--	--	1200	50	140	90	--

DATE	SAM- PLING DEPTH (M)	IRON TOTAL RECOV- ERABLE (UG/L AS FE)	IRON DIS- SOLVED (UG/L AS FE)	MANGA- NESE TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE DIS- SOLVED (UG/L AS MN)
JAN 1979					
23...	.20	1100	30	100	90
23...	16.0	960	30	100	80
MAR					
20...	.20	1100	110	130	80
20...	15.0	2300	140	240	210
MAY					
01...	.20	1700	50	90	90
01...	2.0	1600	50	80	40
01...	4.0	1600	60	90	30
01...	8.0	1700	40	80	30
01...	16.0	2400	30	120	70
JUN					
12...	.20	500	20	20	20
12...	2.0	490	30	0	0
12...	4.0	550	70	10	10
12...	8.0	780	30	110	50
12...	16.0	1300	320	1300	1300
JUL					
25...	.20	150	10	0	0
25...	2.0	130	10	0	0
25...	4.0	140	10	0	0
25...	8.0	340	20	90	10
25...	16.0	3300	1600	1700	1600
AUG					
22...	.20	150	30	20	10
22...	2.0	110	20	20	0
22...	4.0	130	20	40	10
22...	8.0	300	20	310	150
22...	16.0	1900	140	1100	1100
SEP					
18...	.20	440	60	40	20
18...	2.0	510	50	70	10
18...	4.0	600	50	60	10
18...	8.0	500	70	40	20
18...	16.0	1300	40	170	70
OCT					
16...	.20	290	20	30	0
16...	16.0	1100	50	120	30
DEC					
13...	.20	680	40	200	170
13...	16.0	1100	40	210	200

DATE	SAM- PLING DEPTH (M)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
APR , 1978			
11...	.20	110	10
11...	2.0	90	10
11...	8.0	1200	40
11...	16.0	2100	30
MAY			
14...	.20	280	10
14...	2.0	230	10
14...	4.0	300	10
14...	8.0	290	10
14...	16.0	530	30
31...	.20	100	50
31...	2.0	130	10
31...	4.0	100	10
31...	8.0	150	30
31...	16.0	470	90
JUL			
10...	.20	550	40
10...	2.0	50	0
10...	4.0	100	10
10...	8.0	100	0
10...	16.0	1800	1200
AUG			
14...	.20	80	0
14...	2.0	80	10
14...	4.0	10	0
14...	8.0	80	10
14...	16.0	2500	200
30...	.20	50	50
30...	2.0	60	60
30...	4.0	70	10
30...	8.0	80	40
30...	16.0	710	80
OCT			
16...	.20	80	0
16...	2.0	100	10
16...	4.0	150	10
16...	8.0	140	10
16...	14.0	250	10
NOV			
28...	.20	290	50
28...	12.0	420	100

CH-03A (02339382) Chattahoochee River above coffer dam, above West Point Dam, 1978 and 1979

DATE	SAM- PLING DEPTH (M)	IRON. TOTAL RECOV- ENABLE (UG/L AS FE)	IRON. DIS- SOLVED (UG/L AS FE)
JAN . 1979			
22...	.20	310	30
22...	6.0	1100	30
MAR			
20...	.20	1200	10
20...	21.0	1300	0
MAY			
01...	.20	1.30	80
01...	2.0	1100	80
01...	4.0	930	120
01...	8.0	1100	70
01...	16.0	2100	60
01...	20.0	2200	110
JUN			
14...	.20	200	0
14...	2.0	100	0
14...	4.0	100	10
14...	8.0	120	10
14...	16.0	540	20
14...	20.0	2600	210
JUL			
24...	.20	170	40
24...	2.0	150	10
24...	4.0	120	10
24...	8.0	130	20
24...	16.0	2800	2600
24...	20.0	5400	5100
AUG			
21...	.20	60	60
21...	2.0	40	20
21...	4.0	70	20
21...	8.0	80	20
21...	16.0	4300	4000
21...	20.0	6600	6300
21...	24.0	8100	7700
SEP			
17...	.20	140	40
17...	2.0	140	40
17...	4.0	170	10
17...	8.0	180	10
17...	16.0	1800	40
17...	20.0	2700	280
OCT			
15...	.20	160	30
15...	2.0	170	0
15...	4.0	150	10
15...	8.0	140	10
15...	16.0	340	20
15...	20.0	920	30
DEC			
10...	.20	450	10
10...	20.0	620	0

DATE	SAM- PLING DEPTH (M)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
APR , 1978			
11...	.20	130	20
11...	2.0	100	10
11...	4.0	160	10
11...	8.0	190	10
11...	16.0	1900	30
MAY			
14...	.20	350	40
14...	2.0	210	10
14...	4.0	230	10
14...	8.0	1300	10
14...	16.0	650	30
31...	.20	110	10
31...	2.0	430	50
31...	4.0	130	50
31...	8.0	200	20
JUL			
10...	.20	80	0
10...	2.0	50	10
10...	4.0	80	20
10...	8.0	140	0
10...	16.0	1800	1500
AUG			
14...	.20	90	10
14...	2.0	120	10
14...	4.0	80	10
14...	8.0	80	10
14...	16.0	1400	190
30...	.20	80	20
30...	2.0	30	10
30...	4.0	60	10
30...	8.0	80	30
30...	16.0	1400	70
OCT			
16...	.20	140	10
16...	2.0	110	10
16...	4.0	80	10
16...	8.0	140	10
16...	16.0	470	30
16...	20.0	580	10
NOV			
28...	.20	330	30
28...	14.0	350	40

DATE	SAM- PLING DEPTH (M)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)
JAN • 1979			
22...	.20	320	30
22...	19.0	360	0
MAR			
20...	.20	1400	0
20...	20.0	1500	10
MAY			
01...	.20	1200	70
01...	2.0	1200	40
01...	4.0	1500	40
01...	8.0	1100	40
01...	16.0	1800	60
01...	20.0	2700	50
JUN			
14...	.20	110	20
14...	2.0	100	10
14...	4.0	100	10
14...	9.0	170	10
14...	16.0	530	20
14...	20.0	1900	120
JUL			
24...	.20	100	20
24...	2.0	140	10
24...	4.0	130	10
24...	8.0	120	10
24...	16.0	2400	1900
24...	20.0	5600	5400
AUG			
21...	.20	80	30
21...	2.0	70	10
21...	4.0	80	20
21...	8.0	60	10
21...	16.0	4200	3200
21...	20.0	6600	6000
SEP			
17...	.20	190	100
17...	2.0	220	10
17...	4.0	180	20
17...	8.0	180	10
17...	16.0	1700	40
17...	20.0	2300	180
OCT			
15...	.20	190	80
15...	2.0	220	20
15...	4.0	180	20
15...	8.0	200	0
15...	16.0	400	20
15...	20.0	740	40
DEC			
10...	.20	330	10
10...	20.0	620	0

CH-UJC (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979

DATE	SAMPLING DEPTH (M)	CALCIUM	MAGNESIUM	POTASSIUM	SODIUM	CHLORIDE	IRON	IRON	MANGANESE	MANGANESE	ZINC
		TOTAL RECOVERABLE (MG/L AS CA)	TOTAL RECOVERABLE (MG/L AS MG)	TOTAL RECOVERABLE (MG/L AS K)	TOTAL RECOVERABLE (MG/L AS NA)	DISELVED (MG/L AS CL)	TOTAL RECOVERABLE (UG/L AS FE)	DISELVED (UG/L AS FE)	TOTAL RECOVERABLE (UG/L AS MN)	DISELVED (UG/L AS MN)	TOTAL RECOVERABLE (UG/L AS ZN)
APR 1978											
10...	2.0	3.0	.9	1.2	3.6	4.1	150	10	0	0	30
10...	2.0	3.1	1.0	1.2	3.7	3.8	70	10	10	10	20
10...	4.0	3.0	.9	1.2	3.6	3.4	70	0	10	0	30
10...	8.0	3.0	.9	1.3	3.8	3.6	240	0	30	10	70
10...	16.0	2.4	.9	1.2	3.5	3.8	770	10	130	60	40
MAY											
14...	2.0	--	--	--	--	--	230	20	20	10	30
14...	2.0	--	--	--	--	--	250	10	20	0	40
14...	4.0	--	--	--	--	--	250	10	20	0	30
14...	8.0	--	--	--	--	--	240	10	210	10	10
14...	16.0	--	--	--	--	--	770	30	170	170	--
31...	2.0	--	--	--	--	--	100	20	20	20	50
31...	2.0	--	--	--	--	--	80	10	20	10	50
31...	4.0	--	--	--	--	--	90	10	20	10	20
31...	8.0	--	--	--	--	--	150	30	20	10	40
31...	16.0	--	--	--	--	--	450	40	340	340	40
JUL											
10...	2.0	--	--	--	--	--	60	20	20	10	30
10...	2.0	--	--	--	--	--	40	40	10	0	20
10...	4.0	--	--	--	--	--	210	20	20	0	60
10...	4.0	--	--	--	--	--	90	50	160	160	50
10...	16.0	--	--	--	--	--	1800	1800	1300	1300	40
AUG											
14...	2.0	--	--	--	--	--	80	10	40	20	160
14...	2.0	--	--	--	--	--	120	10	40	0	60
14...	4.0	--	--	--	--	--	120	10	30	10	110
14...	4.0	--	--	--	--	--	130	10	120	0	30
14...	16.0	--	--	--	--	--	1300	0	1200	1200	60
30...	2.0	4.0	1.3	1.8	5.5	4.5	60	10	20	20	30
30...	2.0	3.8	1.3	1.8	5.4	4.6	40	0	30	0	10
30...	4.0	4.0	1.2	1.8	5.4	4.5	50	10	20	0	0
30...	8.0	3.7	1.1	1.8	5.1	4.2	250	10	180	180	0
30...	16.0	3.6	1.1	1.8	4.4	3.4	850	50	370	370	--
OCT											
16...	2.0	--	--	--	--	--	100	50	80	0	--
16...	2.0	--	--	--	--	--	100	10	80	0	--
16...	4.0	--	--	--	--	--	40	10	80	0	--
16...	4.0	--	--	--	--	--	80	10	90	0	--
16...	14.0	--	--	--	--	--	220	10	300	300	--
NOV											
24...	2.0	--	--	--	--	--	310	30	110	30	--
24...	14.0	--	--	--	--	--	420	50	130	60	--

CII-UJC (02339308) Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979

DATE	SAM- PLING DEPTH (M)	IRON. TOTAL RECOV- ERABLE (UG/L AS FE)	IRON. DIS- SOLVED (UG/L AS FE)	MANGA- NESE. TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE. DIS- SOLVED (UG/L AS MN)
JAN . 1979					
22...	.20	340	20	40	50
22...	15.0	260	0	40	50
MAR					
20...	.20	1300	80	70	40
20...	14.0	1400	60	50	20
MAY					
01...	.20	1100	80	40	40
01...	2.0	1300	40	30	0
01...	4.0	1300	40	30	0
01...	8.0	1100	30	50	0
01...	16.0	--	60	70	10
01...	20.0	1100	40	70	50
JUN					
14...	.20	160	0	0	0
14...	2.0	100	0	0	0
14...	4.0	250	0	0	0
14...	8.0	150	0	0	0
14...	16.0	340	0	170	30
14...	20.0	660	0	600	550
JUL					
24...	.20	110	10	10	10
24...	2.0	90	10	10	10
24...	4.0	100	20	0	0
24...	8.0	120	20	10	10
24...	16.0	2200	1800	1400	1400
24...	20.0	4600	4400	2000	2000
AUG					
21...	.20	100	20	20	0
21...	2.0	80	10	10	10
21...	4.0	100	30	20	0
21...	8.0	80	20	30	0
21...	16.0	1600	620	1000	870
21...	20.0	3100	3000	1500	1500
SEP					
17...	.20	150	20	80	0
17...	2.0	160	40	80	0
17...	4.0	200	20	70	10
17...	8.0	200	10	80	0
17...	16.0	1900	70	1100	1000
17...	20.0	2400	210	1200	1100
OCT					
15...	.20	320	50	50	30
15...	2.0	140	20	40	10
15...	4.0	230	50	50	0
15...	8.0	170	30	50	0
15...	16.0	440	50	110	80
15...	20.0	990	50	230	150
DEC					
10...	.20	250	20	60	10
10...	16.0	480	0	40	20

DATE	SAMPLING DEPTH (FT)	CALCIUM		MAGNE- SIUM		MAGNE- SIUM		SODIUM		CHLO- RIDE		TOTAL		MANGA- NESE		ZINC	
		TOTAL RECOV- ERABLE (MG/L AS Ca)	TOTAL RECOV- ERABLE (MG/L AS Mg)	TOTAL RECOV- ERABLE (MG/L AS Mg)	TOTAL RECOV- ERABLE (MG/L AS Mg)	TOTAL RECOV- ERABLE (MG/L AS Na)	TOTAL DIS- SOLVED (MG/L AS Cl)	TOTAL RECOV- ERABLE (MG/L AS Fe)	TOTAL DIS- SOLVED (MG/L AS Fe)	TOTAL RECOV- ERABLE (MG/L AS Mn)	TOTAL DIS- SOLVED (MG/L AS Mn)	TOTAL RECOV- ERABLE (MG/L AS Zn)	TOTAL RECOV- ERABLE (MG/L AS Zn)				
APR 1978																	
17...	.20	1.6	1.9	1.3	3.8	3.4	2.0	10	20	0	0	0	0	0	0	0	0
17...	2.0	1.5	1.9	1.4	4.2	3.4	2.0	10	20	0	0	0	0	0	0	0	0
17...	4.0	3.0	1.9	1.5	4.7	3.2	2.0	10	30	0	0	0	0	0	0	0	0
17...	4.0	1.0	.9	1.4	3.5	2.0	2.0	30	40	10	10	0	0	0	0	0	0
MAY																	
02...	.20	--	--	--	--	--	200	10	40	10	20	0	0	0	0	0	0
02...	2.0	--	--	--	--	--	160	10	40	10	30	0	0	0	0	0	0
02...	4.0	--	--	--	--	--	240	10	50	0	40	0	0	0	0	0	0
02...	4.0	--	--	--	--	--	620	20	160	40	10	0	0	0	0	0	0
JUN																	
05...	.20	--	--	--	--	--	130	50	20	10	30	0	0	0	0	0	0
05...	2.0	--	--	--	--	--	150	10	20	0	10	0	0	0	0	0	0
05...	4.0	--	--	--	--	--	150	10	30	0	30	0	0	0	0	0	0
05...	4.0	--	--	--	--	--	540	50	430	330	30	0	0	0	0	0	0
JUL																	
12...	.20	--	--	--	--	--	170	10	20	10	40	0	0	0	0	0	0
12...	2.0	--	--	--	--	--	220	50	20	0	30	0	0	0	0	0	0
12...	4.0	--	--	--	--	--	270	70	30	0	10	0	0	0	0	0	0
12...	4.0	--	--	--	--	--	900	190	1500	1100	50	0	0	0	0	0	0
12...	13.0	--	--	--	--	--	4800	3900	5700	5700	10	0	0	0	0	0	0
AUG																	
15...	.20	--	--	--	--	--	310	10	40	10	50	0	0	0	0	0	0
15...	2.0	--	--	--	--	--	160	0	40	20	40	0	0	0	0	0	0
15...	4.0	--	--	--	--	--	110	10	90	10	30	0	0	0	0	0	0
15...	4.0	--	--	--	--	--	1000	10	140	50	100	0	0	0	0	0	0
15...	12.0	--	--	--	--	--	10000	15000	5200	5200	60	0	0	0	0	0	0
24...	.20	4.4	1.4	2.1	5.3	3.6	100	20	30	0	40	0	0	0	0	0	0
24...	2.0	4.4	1.4	2.1	5.1	3.4	100	0	30	0	50	0	0	0	0	0	0
24...	4.0	4.4	1.5	2.1	5.0	3.4	160	70	40	0	60	0	0	0	0	0	0
24...	4.0	4.4	1.3	2.1	5.0	3.8	350	80	1500	1300	50	0	0	0	0	0	0
24...	13.0	4.5	2.0	2.1	4.2	4.2	17000	16000	5100	5100	60	0	0	0	0	0	0
OCT																	
17...	.20	--	--	--	--	--	350	10	310	150	--	--	--	--	--	--	--
17...	2.0	--	--	--	--	--	420	10	270	100	--	--	--	--	--	--	--
17...	4.0	--	--	--	--	--	530	20	250	90	--	--	--	--	--	--	--
17...	4.0	--	--	--	--	--	540	10	260	70	--	--	--	--	--	--	--
NOV																	
24...	.20	--	--	--	--	--	410	40	170	50	--	--	--	--	--	--	--
24...	2.0	--	--	--	--	--	400	40	160	30	--	--	--	--	--	--	--
APR 1979																	
23...	.20	--	--	--	640	20	130	60	--	--	--	--	--	--	--	--	--
23...	11.0	--	--	--	870	40	140	40	--	--	--	--	--	--	--	--	--
MAY																	
21...	.20	--	--	--	1400	70	110	40	--	--	--	--	--	--	--	--	--
21...	11.0	--	--	--	2700	40	1100	460	--	--	--	--	--	--	--	--	--
MAY																	
01...	.20	--	--	--	1400	40	40	10	--	--	--	--	--	--	--	--	--
01...	2.0	--	--	--	1400	50	40	0	--	--	--	--	--	--	--	--	--
01...	4.0	--	--	--	1000	40	40	10	--	--	--	--	--	--	--	--	--
01...	4.0	--	--	--	1300	50	100	40	--	--	--	--	--	--	--	--	--
01...	12.0	--	--	--	2200	40	2300	2200	--	--	--	--	--	--	--	--	--
JUN																	
12...	.20	--	--	--	200	30	440	10	--	--	--	--	--	--	--	--	--
12...	2.0	--	--	--	260	20	40	10	--	--	--	--	--	--	--	--	--
12...	4.0	--	--	--	240	20	30	0	--	--	--	--	--	--	--	--	--
12...	4.0	--	--	--	430	10	50	0	--	--	--	--	--	--	--	--	--
12...	12.0	--	--	--	3500	3200	5100	700	--	--	--	--	--	--	--	--	--
JUL																	
25...	.20	--	--	--	170	20	10	0	--	--	--	--	--	--	--	--	--
25...	2.0	--	--	--	170	20	10	0	--	--	--	--	--	--	--	--	--
25...	4.0	--	--	--	160	10	20	0	--	--	--	--	--	--	--	--	--
25...	4.0	--	--	--	310	40	340	360	--	--	--	--	--	--	--	--	--
25...	12.0	--	--	--	4500	7500	4300	4100	--	--	--	--	--	--	--	--	--
AUG																	
22...	.20	--	--	--	140	10	30	0	--	--	--	--	--	--	--	--	--
22...	2.0	--	--	--	190	20	30	10	--	--	--	--	--	--	--	--	--
22...	4.0	--	--	--	240	30	40	0	--	--	--	--	--	--	--	--	--
22...	4.0	--	--	--	1400	1300	2200	2000	--	--	--	--	--	--	--	--	--
22...	12.0	--	--	--	12000	11000	4400	4400	--	--	--	--	--	--	--	--	--
SEP																	
19...	.20	--	--	--	260	10	40	10	--	--	--	--	--	--	--	--	--
19...	2.0	--	--	--	290	20	40	0	--	--	--	--	--	--	--	--	--
19...	4.0	--	--	--	290	10	100	0	--	--	--	--	--	--	--	--	--
19...	4.0	--	--	--	520	10	230	100	--	--	--	--	--	--	--	--	--
19...	12.0	--	--	--	13000	12000	2200	5200	--	--	--	--	--	--	--	--	--
OCT																	
14...	.20	--	--	--	300	10	60	0	--	--	--	--	--	--	--	--	--
14...	12.0	--	--	--	410	30	140	70	--	--	--	--	--	--	--	--	--
DEC																	
12...	.20	--	--	--	330	0	310	210	--	--	--	--	--	--	--	--	--
12...	11.0	--	--	--	420	40	240	230	--	--	--	--	--	--	--	--	--

UNITED STATES Geological Survey, Water Resources Division, Salt Lake City, Utah

DATE	SAM- PLING DEPTH (FT)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS Ca)	MAGNE- SIUM TOTAL RECOV- ERABLE (MG/L AS Mg)	POTAS- SIUM TOTAL RECOV- ERABLE (MG/L AS K)	SODIUM TOTAL RECOV- ERABLE (MG/L AS Na)	CHLOR- IDE TOTAL RECOV- ERABLE (MG/L AS Cl)	IRON TOTAL RECOV- ERABLE (UG/L AS Fe)	IRON DIS- SOLVED (UG/L AS Fe)	MANGA- NESE TOTAL RECOV- ERABLE (UG/L AS Mn)	MANGA- NESE DIS- SOLVED (UG/L AS Mn)	ZINC TOTAL RECOV- ERABLE (UG/L AS Zn)
APR . 1970											
11...	1.0	3.3	1.0	1.2	4.3	4.2	140	10	30	10	20
11...	10.0	2.4	.0	1.2	2.9	2.7	1200	40	330	320	20
MAY											
04...	.20	--	--	--	--	--	210	10	30	0	40
04...	2.0	--	--	--	--	--	140	100	30	0	40
04...	4.0	--	--	--	--	--	260	50	30	0	40
04...	8.0	--	--	--	--	--	140	10	20	0	30
04...	10.0	--	--	--	--	--	1400	50	1400	1200	30
11...	.20	--	--	--	--	--	10	10	30	0	60
11...	2.0	--	--	--	--	--	110	10	20	0	70
11...	4.0	--	--	--	--	--	150	10	30	0	20
11...	8.0	--	--	--	--	--	400	40	40	10	30
11...	10.0	--	--	--	--	--	1000	740	1300	1300	50
JUL											
10...	.20	--	--	--	--	--	90	10	20	10	30
10...	2.0	--	--	--	--	--	40	10	20	0	40
10...	4.0	--	--	--	--	--	120	10	20	0	20
10...	8.0	--	--	--	--	--	250	20	400	240	40
10...	10.0	--	--	--	--	--	1400	1400	2500	2500	50
AUG											
10...	.20	--	--	--	--	--	140	0	20	10	60
10...	2.0	--	--	--	--	--	100	20	20	0	20
10...	4.0	--	--	--	--	--	100	20	30	0	20
10...	8.0	--	--	--	--	--	110	0	40	0	10
10...	10.0	--	--	--	--	--	7000	2500	2100	1300	30
20...	.20	4.1	2.0	5.2	4.0	60	20	--	50	90	
20...	2.0	4.2	1.3	2.0	5.4	100	10	10	0	50	
20...	4.0	4.2	1.3	2.1	5.3	100	10	20	0	40	
20...	8.0	4.3	1.2	2.1	5.2	4.4	130	10	270	10	
20...	10.0	3.0	1.0	2.0	4.2	4.3	1400	20	400	240	80
OCT											
10...	.20	--	--	--	--	--	120	10	170	0	--
10...	2.0	--	--	--	--	--	150	0	170	0	--
10...	4.0	--	--	--	--	--	150	20	140	0	--
10...	8.0	--	--	--	--	--	180	10	150	0	--
10...	10.0	--	--	--	--	--	1100	20	250	170	--
NOV											
20...	.20	--	--	--	--	--	240	50	80	10	--
20...	10.0	--	--	--	--	--	1200	50	100	110	--

DATE	SAM- PLING DEPTH (FT)	IRON TOTAL RECOV- ERABLE (UG/L AS Fe)	IRON DIS- SOLVED (UG/L AS Fe)	MANGA- NESE TOTAL RECOV- ERABLE (UG/L AS Mn)	MANGA- NESE DIS- SOLVED (UG/L AS Mn)
JAN . 1970					
23...	.20	540	110	70	60
23...	10.0	670	60	100	70
MAR					
20...	.20	1000	90	40	10
20...	13.0	1000	140	80	60
APR					
30...	.20	560	90	40	20
30...	2.0	650	70	40	10
10...	4.0	910	60	90	40
10...	8.0	900	90	100	40
30...	10.0	1500	80	900	400
MAY					
10...	.20	230	0	10	0
10...	2.0	240	0	0	0
10...	4.0	170	0	0	0
10...	8.0	200	0	10	0
10...	10.0	1500	0	1200	1100
JUL					
25...	.20	130	10	0	0
25...	2.0	140	10	0	0
25...	4.0	110	10	0	0
25...	8.0	130	10	20	0
25...	10.0	3500	3500	1500	1500
AUG					
21...	.20	90	40	30	30
21...	2.0	100	40	30	0
21...	4.0	110	40	20	0
21...	8.0	140	30	90	20
21...	10.0	5100	5000	2100	2100
SEP					
10...	.20	270	10	70	20
10...	2.0	270	10	50	0
10...	4.0	240	60	50	10
10...	8.0	240	10	50	10
10...	10.0	4800	4200	2300	2300
OCT					
10...	.20	230	0	50	0
10...	10.0	1200	50	200	130
DEC					
11...	.20	260	20	90	30
11...	10.0	880	70	700	140

CH-2.5B (02339402) Chattahoochee River below West Point Dam, 1978 and 1979

DATE	SAM- PLING DEPTH (M)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FF)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
APR . 1978											
09...	.70	3.0	1.0	1.2	4.0	2.9	200	10	30	10	10
MAY											
01...	.70	--	--	--	--	--	1100	10	120	60	20
01...	1.0	--	--	--	--	--	370	50	140	110	20
30...	.70	--	--	--	--	--	480	40	260	280	50
30...	1.0	--	--	--	--	--	450	30	140	120	40
JUL											
09...	.70	--	--	--	--	--	620	240	310	310	50
10...	1.0	--	--	--	--	--	1900	1900	1200	1200	10
AUG											
13...	.70	--	--	--	--	--	840	20	310	310	30
14...	1.0	--	--	--	--	--	570	130	440	440	240
27...	.70	4.2	1.3	2.0	5.6	4.5	240	150	110	100	20
28...	1.0	4.1	1.2	2.1	5.2	4.0	340	50	240	240	80
OCT											
18...	.70	--	--	--	--	--	140	0	110	20	--
19...	1.0	--	--	--	--	--	170	10	140	40	--
NOV											
27...	.70	--	--	--	--	--	700	0	310	220	--
28...	1.0	--	--	--	--	--	300	80	110	10	--

DATE	SAM- PLING DEPTH (M)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FF)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN . 1979					
22...	1.0	340	0	40	50
MAR					
19...	1.0	1400	40	90	30
19...	.70	1400	80	80	20
APR					
30...	1.0	1500	40	110	60
MAY					
02...	.70	700	120	120	80
JUN					
11...	.70	350	10	130	120
11...	1.0	300	10	130	120
JUL					
23...	.70	740	310	240	290
23...	1.0	1200	810	750	750
AUG					
20...	.70	1700	1700	760	760
20...	1.0	1300	1100	640	640
SEP					
16...	.70	440	40	200	150
17...	1.0	500	10	220	150
OCT					
14...	.70	210	30	60	10
15...	1.0	260	20	50	10
DEC					
09...	.70	360	0	60	10
10...	1.0	330	0	70	10

CH-01A (02339500) Chattahoochee River at West Point, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
APR . 1978											
09...	.70	3.3	1.2	1.1	3.8	2.8	428	--	78	50	0
13...	1.0	3.0	1.0	1.4	3.8	2.9	490	10	80	70	20
MAY											
01...	1.0	--	--	--	--	--	1200	0	230	170	10
14...	.70	--	--	--	--	--	520	10	130	130	20
30...	.70	--	--	--	--	--	540	30	230	230	40
30...	1.0	--	--	--	--	--	740	20	260	260	60
JUL											
09...	.70	--	--	--	--	--	560	80	280	280	40
10...	1.0	--	--	--	--	--	1860	260	1000	510	30
AUG											
13...	.70	--	--	--	--	--	1300	100	210	210	40
14...	1.0	--	--	--	--	--	880	190	560	560	90
27...	.70	--	--	--	--	--	320	20	70	30	40
28...	1.0	4.3	1.2	2.1	5.6	4.0	540	100	260	260	50
OCT											
18...	.70	--	--	--	--	--	150	10	100	20	--
19...	1.0	--	--	--	--	--	340	10	140	30	--
NOV											
27...	.70	--	--	--	--	--	--	--	--	--	--
28...	1.0	--	--	--	--	--	680	40	140	50	--

DATE	SAM- PLING DEPTH (M)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
MAY . 1979					
22...	1.0	630	10	110	50
MAR					
13...	1.0	1700	40	90	50
19...	.70	1400	30	80	20
APR					
30...	1.0	1500	110	110	50
MAY					
02...	.70	1100	130	130	80
JUN					
11...	.70	370	10	110	110
11...	1.0	290	20	140	130
JUL					
23...	.70	870	100	270	270
23...	1.0	1200	600	730	730
AUG					
20...	.70	1500	850	710	710
20...	1.0	1200	810	580	570
SEP					
16...	.70	420	50	130	80
17...	1.0	510	30	220	150
OCT					
14...	.70	210	10	40	10
15...	1.0	380	10	90	10
DEC					
03...	.70	320	20	60	20
10...	1.0	360	0	70	10

CH-018 (02339550) Chattahoochee River (city of Lanett Intake) at Lanett, Ala., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
APR . 1978											
09...	.70	3.1	1.0	1.2	4.0	3.3	280	20	40	20	20
13...	1.0	2.8	1.0	1.3	3.8	2.9	610	20	90	50	30
MAY											
01...	1.0	--	--	--	--	--	740	--	200	200	10
14...	.70	--	--	--	--	--	740	50	130	130	40
30...	.70	--	--	--	--	--	530	30	210	200	60
30...	1.0	--	--	--	--	--	740	30	280	280	50
JUL											
09...	.70	--	--	--	--	--	550	350	240	220	50
10...	1.0	--	--	--	--	--	1900	1100	1100	1100	20
AUG											
13...	.70	--	--	--	--	--	930	40	230	230	50
14...	1.0	--	--	--	--	--	1000	300	640	640	30
27...	.70	4.4	1.3	2.0	5.6	4.4	260	0	50	20	120
28...	1.0	4.4	1.2	2.1	5.3	4.1	450	20	250	240	40
OCT											
18...	.70	--	--	--	--	--	130	10	90	20	--
19...	1.0	--	--	--	--	--	240	10	150	30	--
NOV											
27...	.70	--	--	--	--	--	440	20	210	150	--
28...	1.0	--	--	--	--	--	740	20	140	40	--

DATE	SAM- PLING DEPTH (M)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN . 1979					
22...	1.0	530	30	110	40
MAR					
19...	1.0	1700	410	90	80
19...	.70	1500	120	80	30
APR					
30...	1.0	1600	100	110	50
MAY					
02...	.70	1100	100	110	60
JUN					
11...	.70	290	0	70	70
11...	1.0	400	30	110	110
JUL					
23...	.70	920	140	270	220
23...	1.0	1100	660	750	750
AUG					
20...	.70	1200	330	500	500
20...	1.0	1200	800	640	637
SEP					
16...	.70	320	30	80	40
17...	1.0	550	20	210	120
OCT					
14...	.70	300	20	50	20
15...	1.0	510	20	100	20
DEC					
09...	.70	360	0	60	30
10...	1.0	440	0	70	10

CH-010 (02139560) Chattahoochee River above junction of Long Cane Creek, near West Point, Ga., 1978 and 1979

DATE	SAM- PLING DEPTH (M)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
APR . 1978											
09...	.70	3.2	1.1	1.3	4.8	3.3	270	10	40	20	20
MAY											
01...	1.0	--	--	--	--	--	550	20	190	150	20
14...	.70	--	--	--	--	--	490	30	100	40	20
30...	.70	--	--	--	--	--	500	30	220	220	50
30...	1.0	--	--	--	--	--	640	30	260	260	40
JUL											
09...	.70	--	--	--	--	--	560	50	180	40	20
10...	1.0	--	--	--	--	--	1890	190	710	540	30
AUG											
13...	.70	--	--	--	--	--	1600	80	230	140	40
14...	1.0	--	--	--	--	--	1200	190	680	680	140
27...	.70	4.4	1.4	2.0	6.6	4.5	210	0	40	10	30
28...	1.0	4.1	1.2	2.1	5.1	3.9	630	30	280	280	30
OCT											
18...	.70	--	--	--	--	--	170	10	100	20	--
19...	1.0	--	--	--	--	--	330	0	150	20	--
NOV											
27...	.70	--	--	--	--	--	630	0	220	130	--
28...	1.0	--	--	--	--	--	1300	40	210	50	--

DATE	SAM- PLING DEPTH (M)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN . 1979					
22...	1.0	730	40	110	40
MAR					
19...	1.0	1700	90	100	20
19...	.70	1500	70	70	30
APR					
30...	1.0	--	80	--	70
MAY					
02...	.70	1100	80	110	50
JUN					
11...	.70	340	10	40	30
11...	1.0	320	20	110	100
JUL					
23...	.70	1100	120	430	430
23...	1.0	1200	330	640	630
AUG					
20...	.70	820	110	340	240
20...	1.0	1300	570	740	740
SEP					
16...	.70	280	30	70	10
17...	1.0	1900	310	440	220
OCT					
14...	.70	190	40	30	20
15...	1.0	390	40	80	20
DEC					
09...	.70	380	0	60	20
10...	1.0	500	0	80	10

CH-01D (02339780) Chattahoochee River at Langdale, Ala., 1978 and 1979

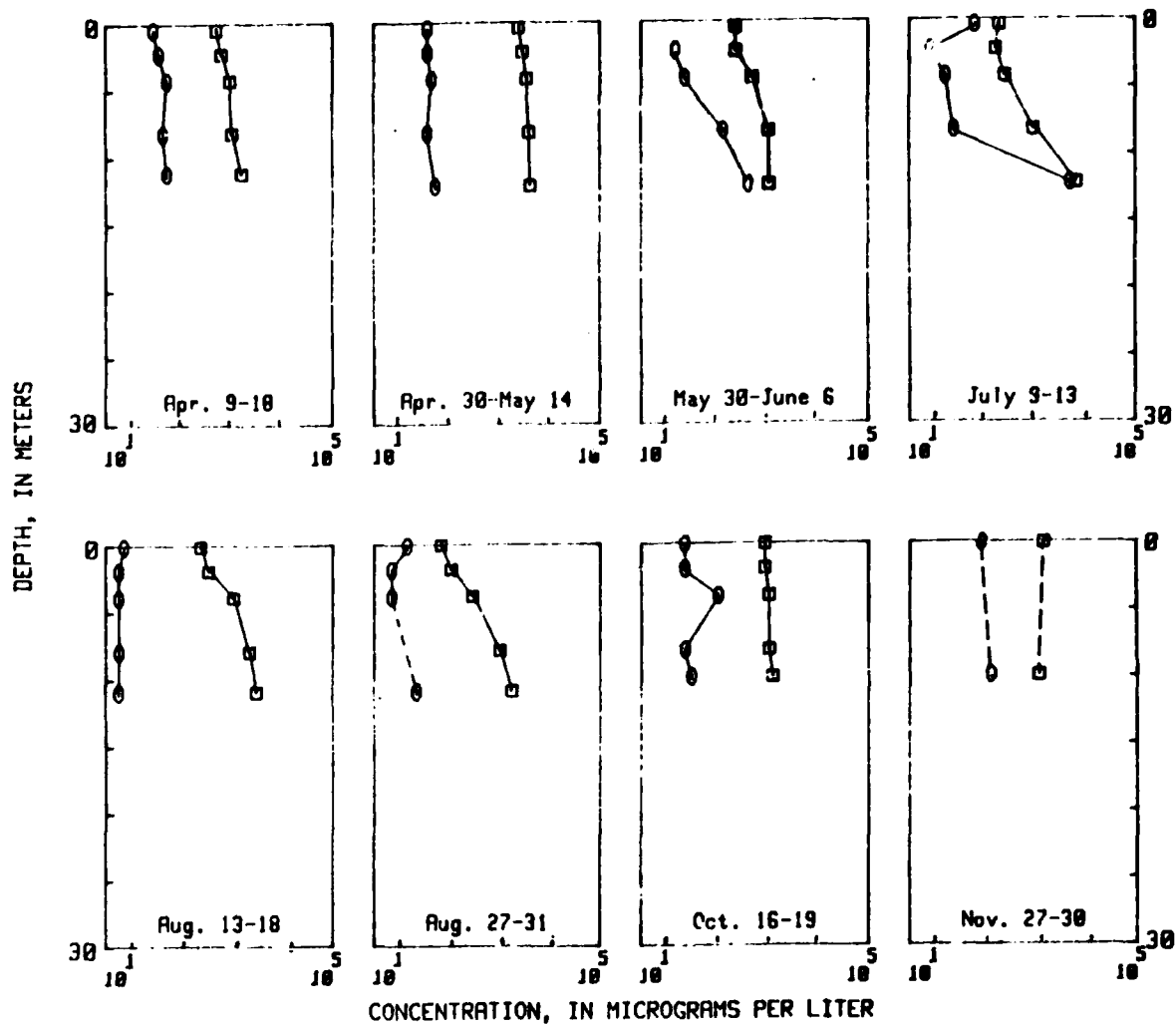
DATE	SAM- PLING DEPTH (M)	CALCIUM TOTAL RECOV- ERABLE (MG/L AS CA)	MAGNE- SIUM, TOTAL RECOV- ERABLE (MG/L AS MG)	POTAS- SIUM, TOTAL RECOV- ERABLE (MG/L AS K)	SODIUM, TOTAL RECOV- ERABLE (MG/L AS NA)	CHLO- RIDE, DIS- SOLVED (MG/L AS CL)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)	ZINC, TOTAL RECOV- ERABLE (UG/L AS ZN)
APR • 1978											
09...	.70	3.2	1.1	1.2	5.0	3.7	340	10	60	40	10
MAY											
01...	1.0	--	--	--	--	--	1100	20	210	130	10
14...	.70	--	--	--	--	--	400	40	120	110	10
30...	.70	--	--	--	--	--	570	30	240	240	40
30...	1.0	--	--	--	--	--	750	30	250	230	50
JUL											
09...	.70	--	--	--	--	--	590	80	100	50	20
10...	1.0	--	--	--	--	--	1550	250	960	840	20
AUG											
13...	.70	--	--	--	--	--	1300	90	180	150	30
16...	1.0	--	--	--	--	--	1100	130	730	730	50
27...	.70	4.4	1.4	2.0	7.3	6.0	320	0	70	20	30
29...	1.0	4.3	1.2	2.1	5.3	4.4	490	10	290	280	30
OCT											
18...	.70	--	--	--	--	--	150	130	90	20	--
19...	1.0	--	--	--	--	--	560	10	200	20	--
NOV											
27...	.70	--	--	--	--	--	580	10	180	110	--
29...	1.0	--	--	--	--	--	2100	40	240	30	--

DATE	SAM- PLING DEPTH (M)	IRON, TOTAL RECOV- ERABLE (UG/L AS FE)	IRON, DIS- SOLVED (UG/L AS FE)	MANGA- NESE, TOTAL RECOV- ERABLE (UG/L AS MN)	MANGA- NESE, DIS- SOLVED (UG/L AS MN)
JAN • 1979					
22...	1.0	1000	10	140	40
MAR					
19...	1.0	1700	40	100	10
19...	.70	1600	70	80	20
APR					
30...	1.0	1800	70	110	30
MAY					
02...	.70	1300	90	110	40
JUN					
11...	.70	380	10	30	30
11...	1.0	640	20	40	90
JUL					
21...	.70	1500	130	410	390
23...	1.0	2500	210	430	140
AUG					
20...	1.0	1400	410	700	690
23...	.70	940	180	640	640
SEPT					
16...	.70	340	30	90	10
17...	1.0	410	30	240	110
OCT					
14...	.70	320	20	60	30
15...	1.0	410	20	170	10
DEC					
19...	.70	420	20	70	40
19...	1.0	640	0	90	10

APPENDIX C-11

Graphs showing variations in iron concentrations with reservoir depth at stations in West Point Reservoir, April 1978-December 1979

			Page
CH-10	(02338710)	Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978 and 1979.....	414
CH-07	(02338720)	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1978 and 1979.....	416
CH-05A	(02339190)	Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978 and 1979.....	418
CH-03A	(02339382)	Chattahoochee River above coffer dam, above West Point Dam, 1978 and 1979.....	420
CH-03B	(02339387)	Chattahoochee River east of coffer dam, above West Point Dam, 1978 and 1979.....	422
CH-03C	(02339388)	Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979.....	424
CH-08	(02339020)	Yellowjacket Creek at Cameron Mill Road, near LaGrange, Ga., 1978 and 1979.....	426
CH-13	(02339362)	Wehadkee Creek at State Highway 238, near Abbottsford, Ga., 1978 and 1979.....	428

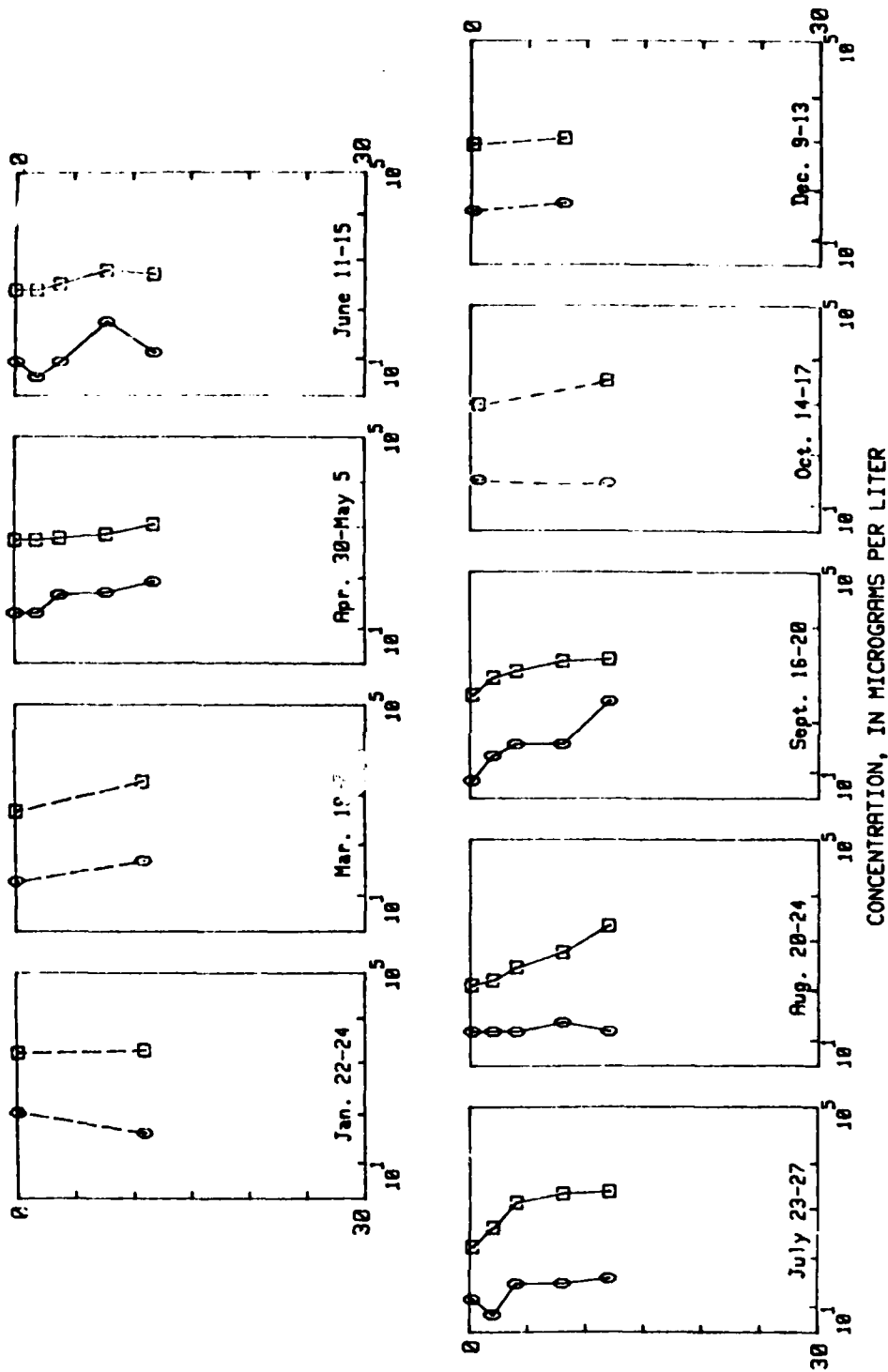


EXPLANATION

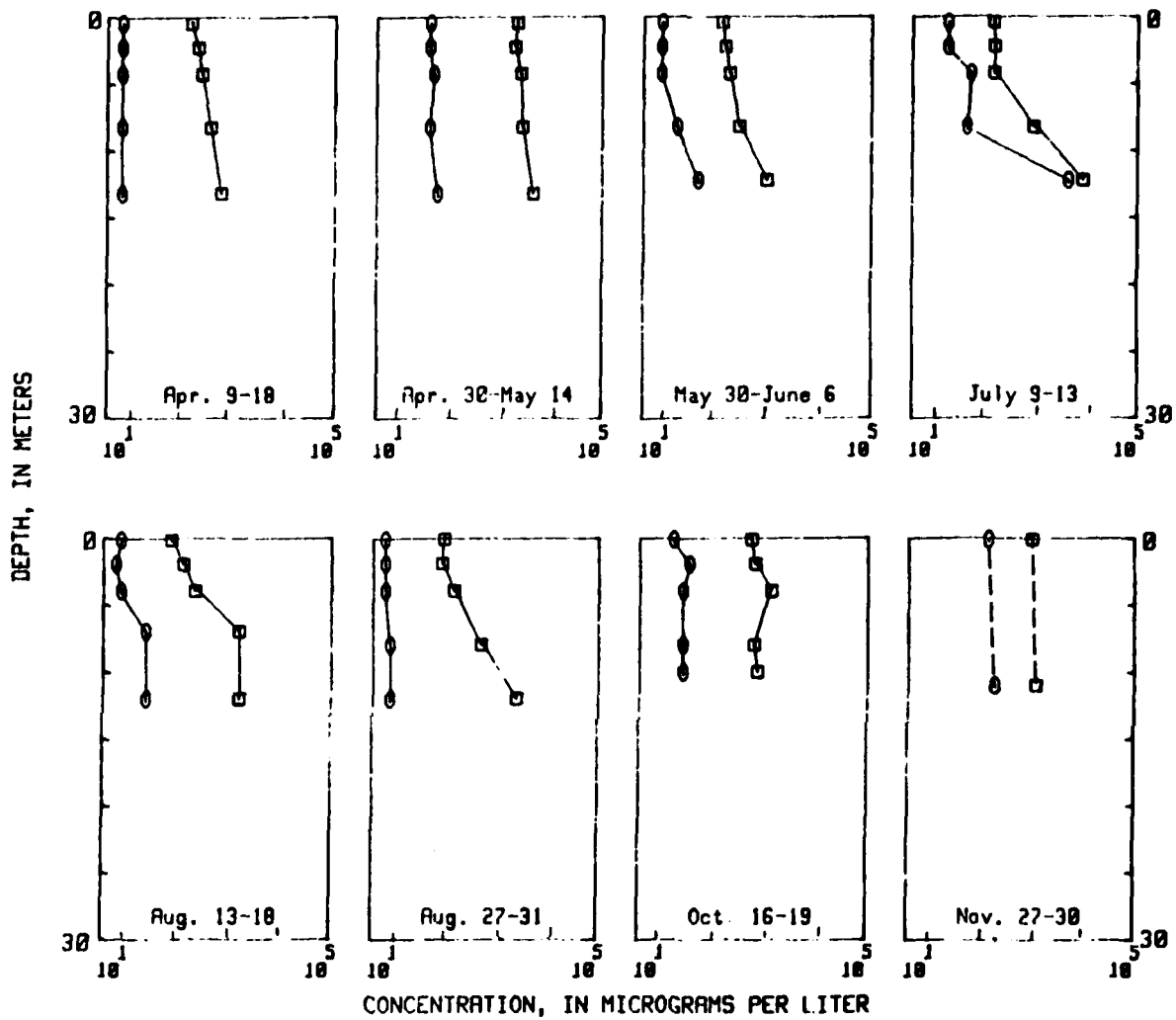
○-Dissolved iron
 □-Total iron

CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978

DEPTH, IN METERS



CH-10 (02338710) Chattahoochee River at State Highway 219, near LaGrange, Ga., 1979

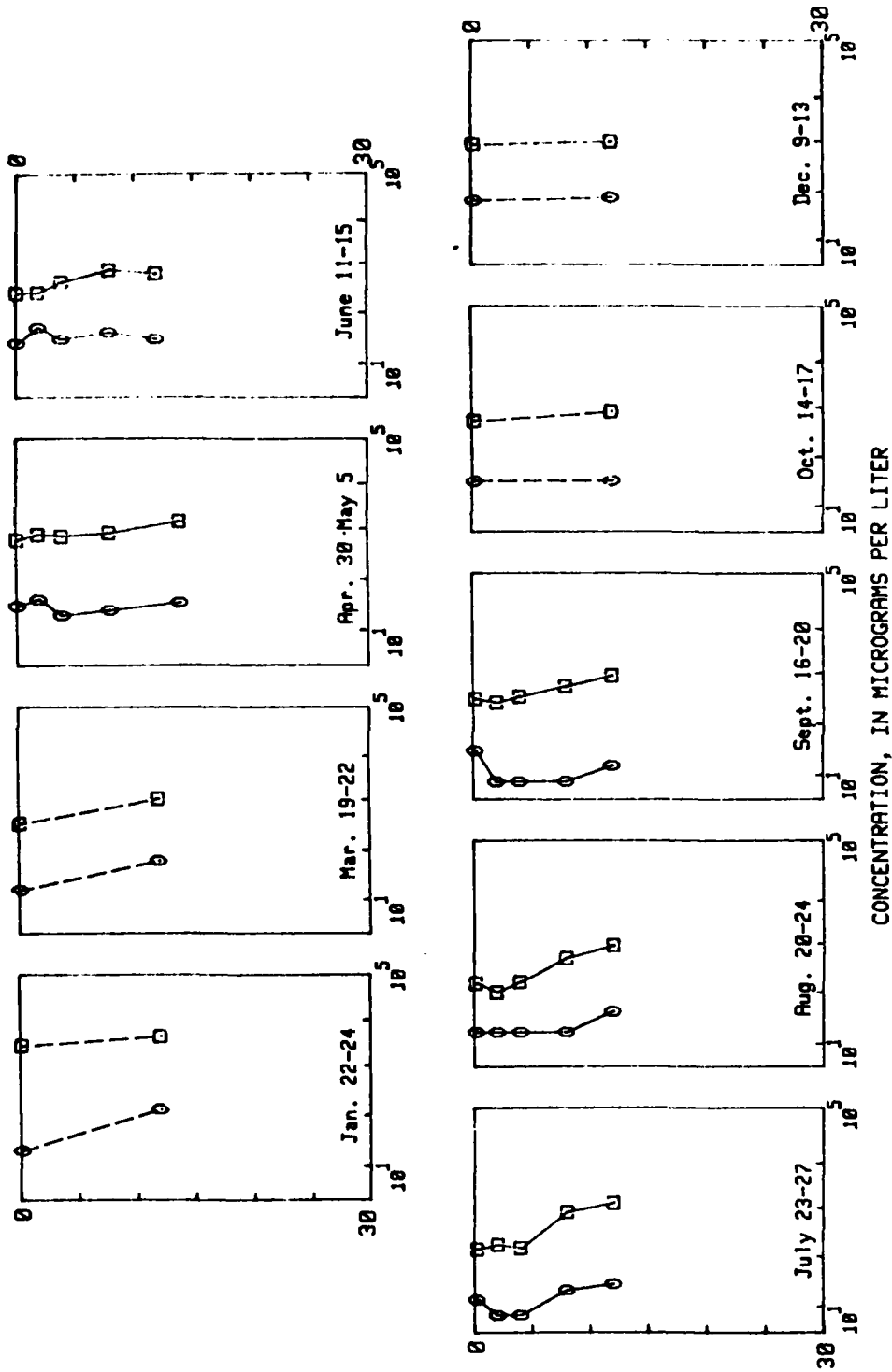


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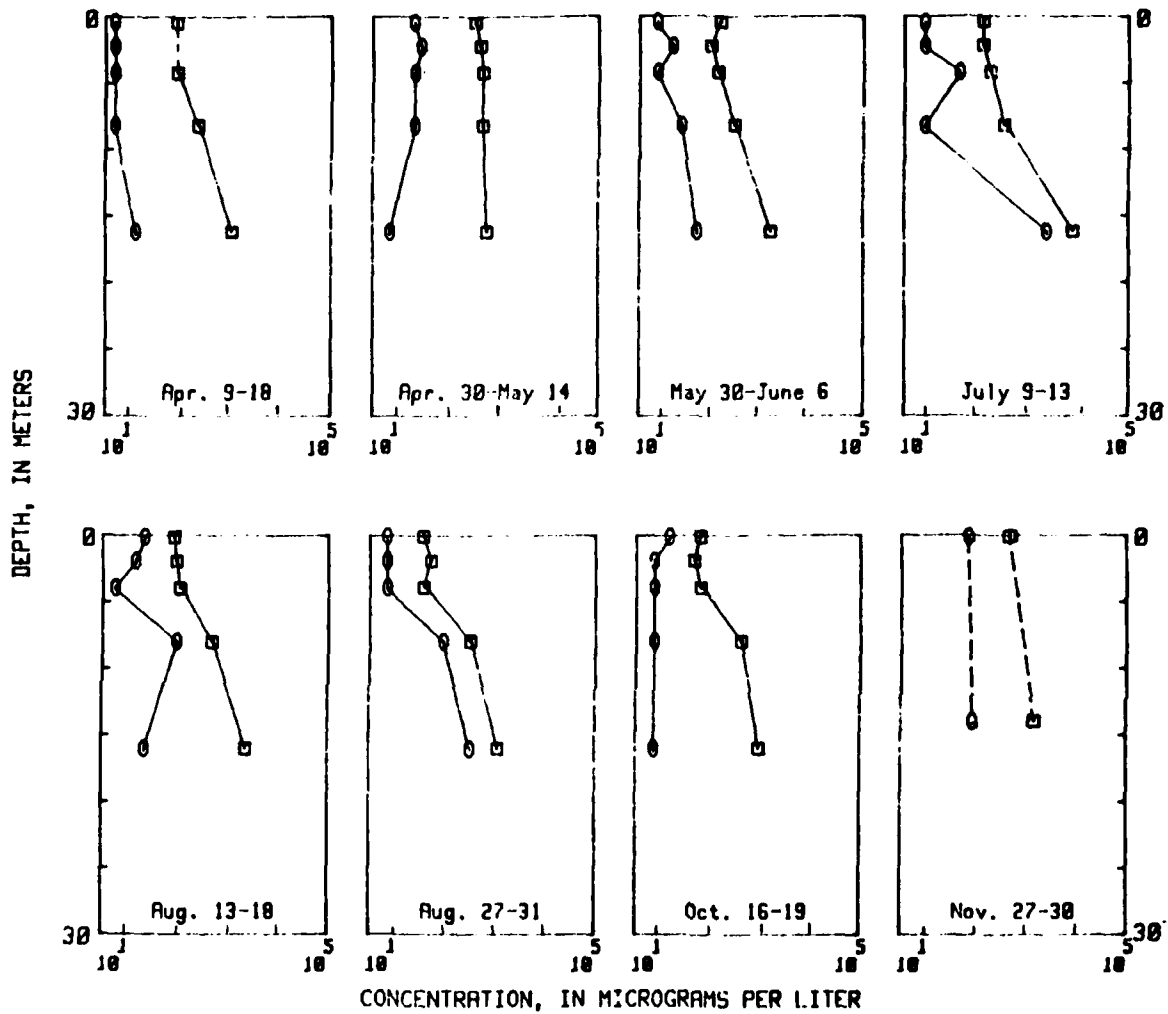
- Dissolved iron
- Total iron

CH-07 (02338720) Chattahoochee River (city of LaGrange intake)
near LaGrange, Ga., 1978

DEPTH, IN METERS



CH-07 (02338720) Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1979

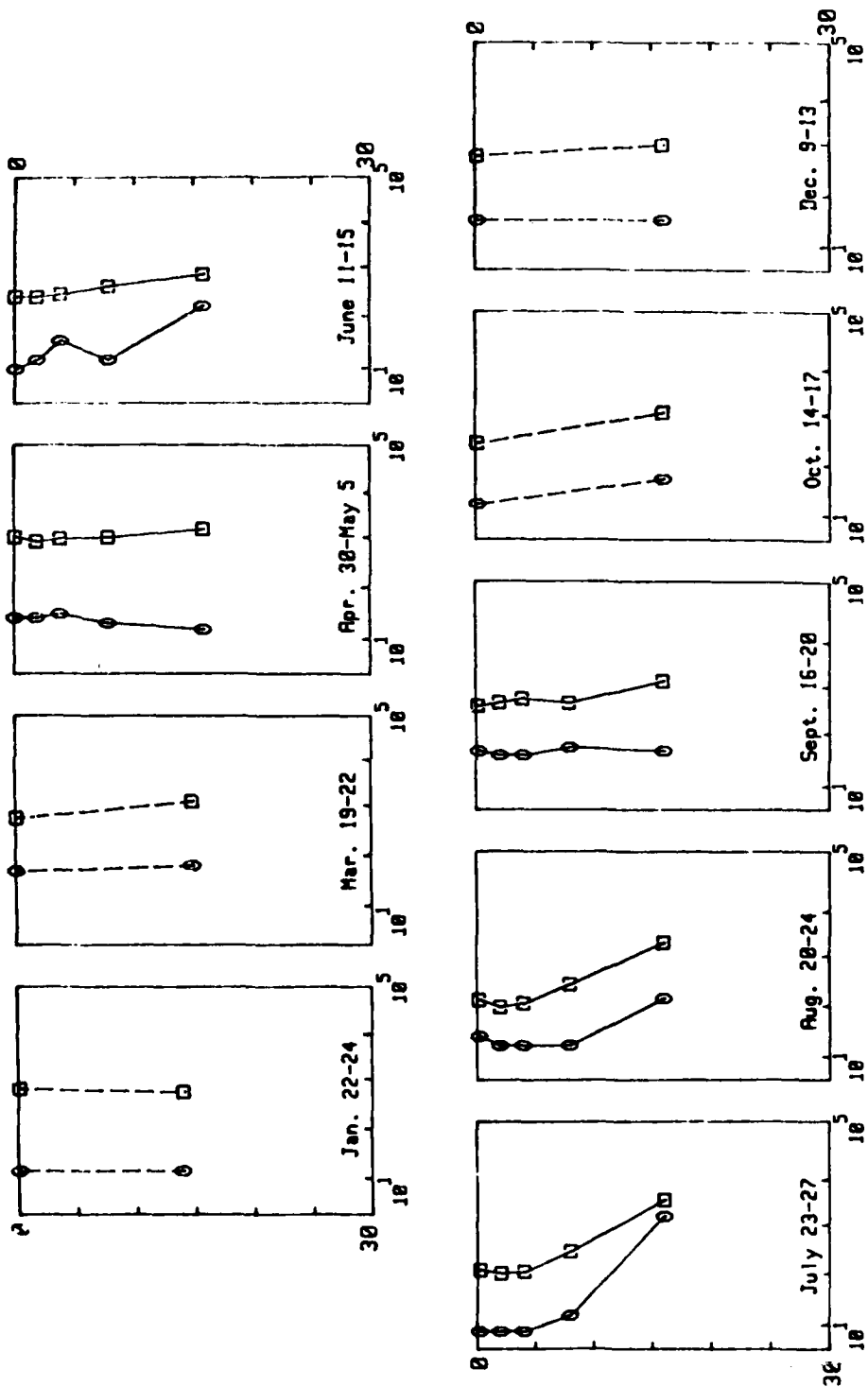


EXPLANATION

○-Dissolved iron
 □-Total iron

CH-05A (02339190) Chattahoochee River at State Highway 701, near
 Abbottsford, Ga., 1978

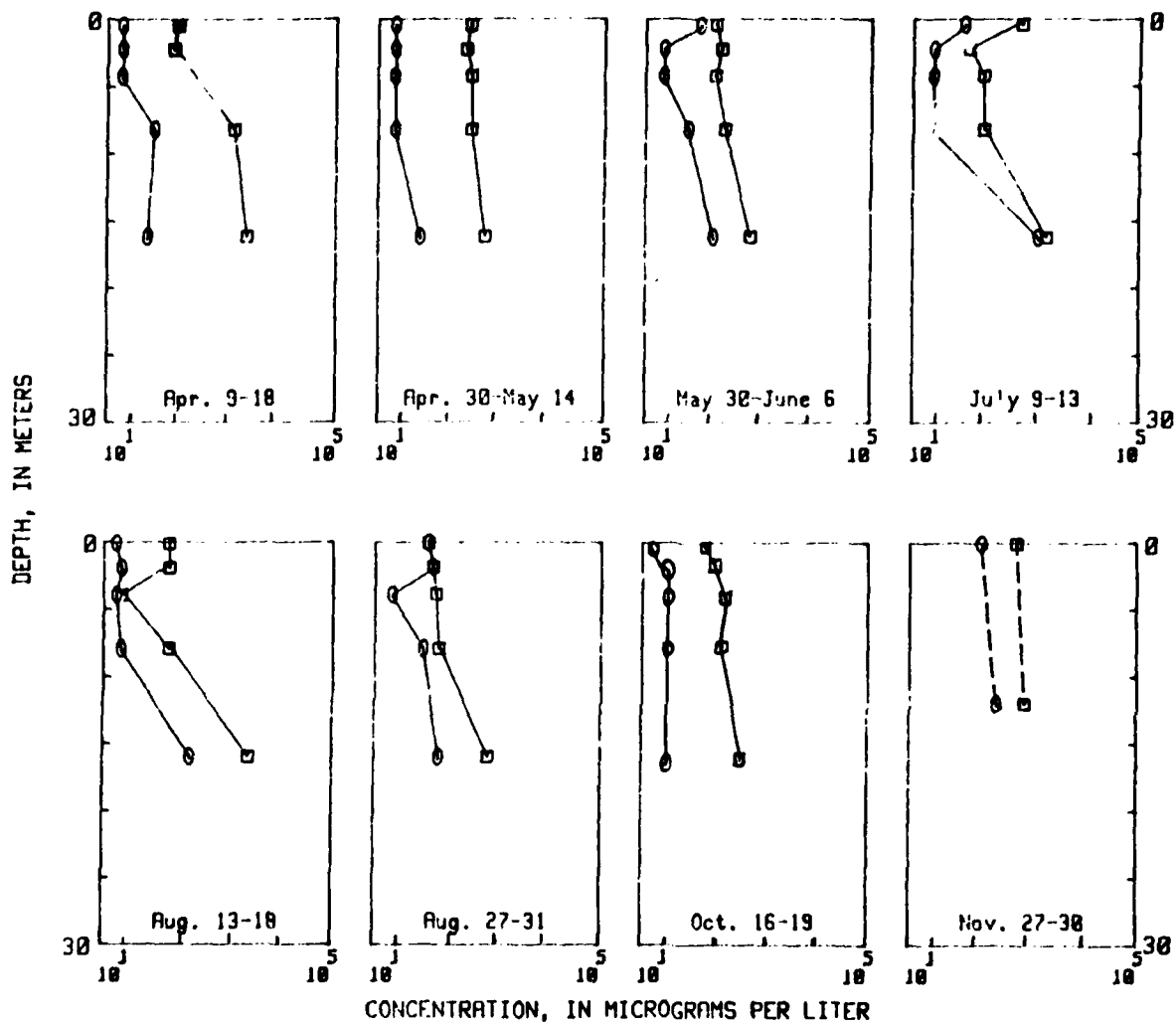
DEPTH, IN METERS



CONCENTRATION, IN MICROGRAMS PER LITER

EXPLANATION
 ○-Dissolved iron
 □-Total iron

CH-05A (02339190) Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1979

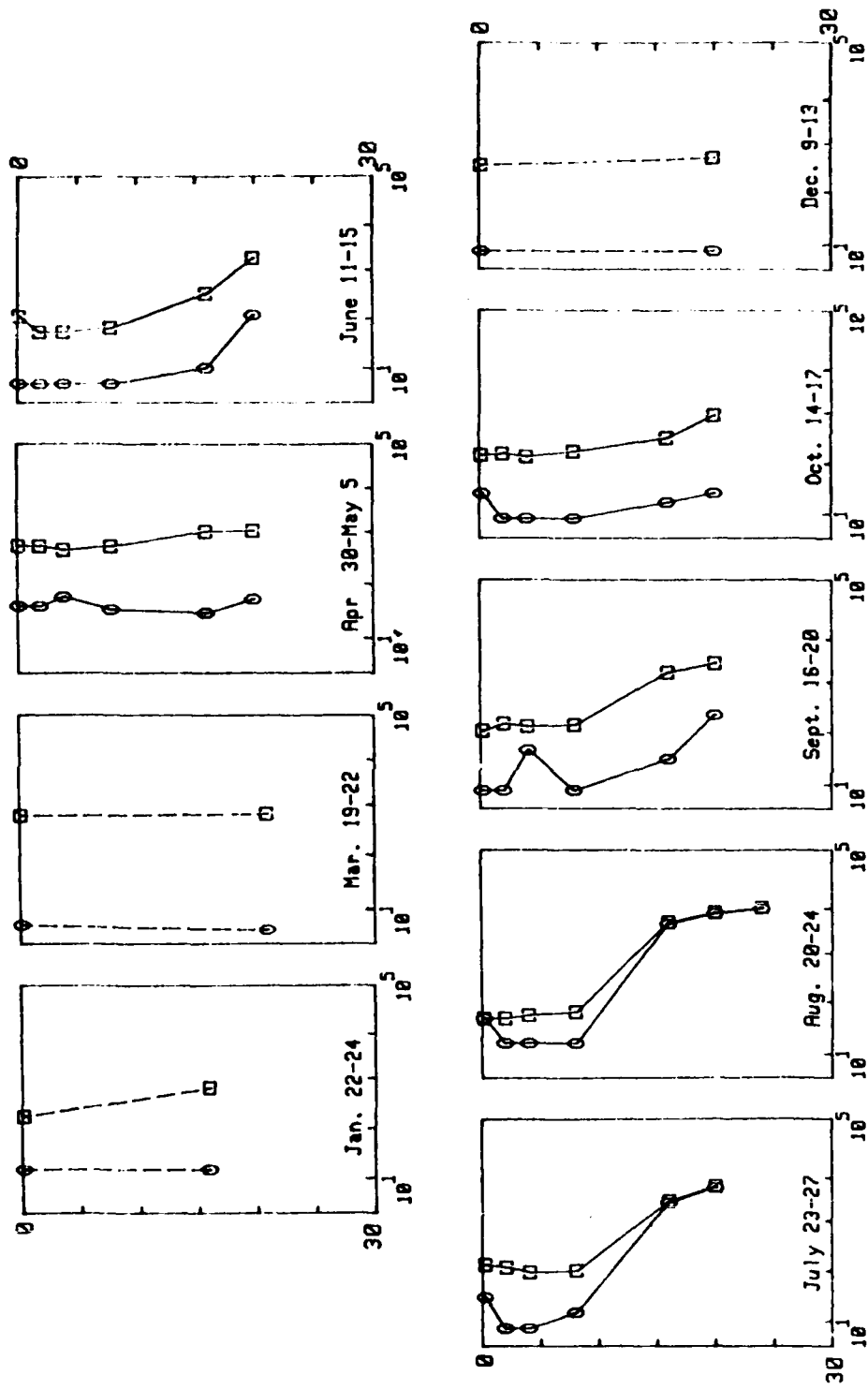


EXPLANATION

- Dissolved iron
- Total iron

CH-03A (02339382) Chattahoochee River above coffer dam, above West Point Dam, 1978

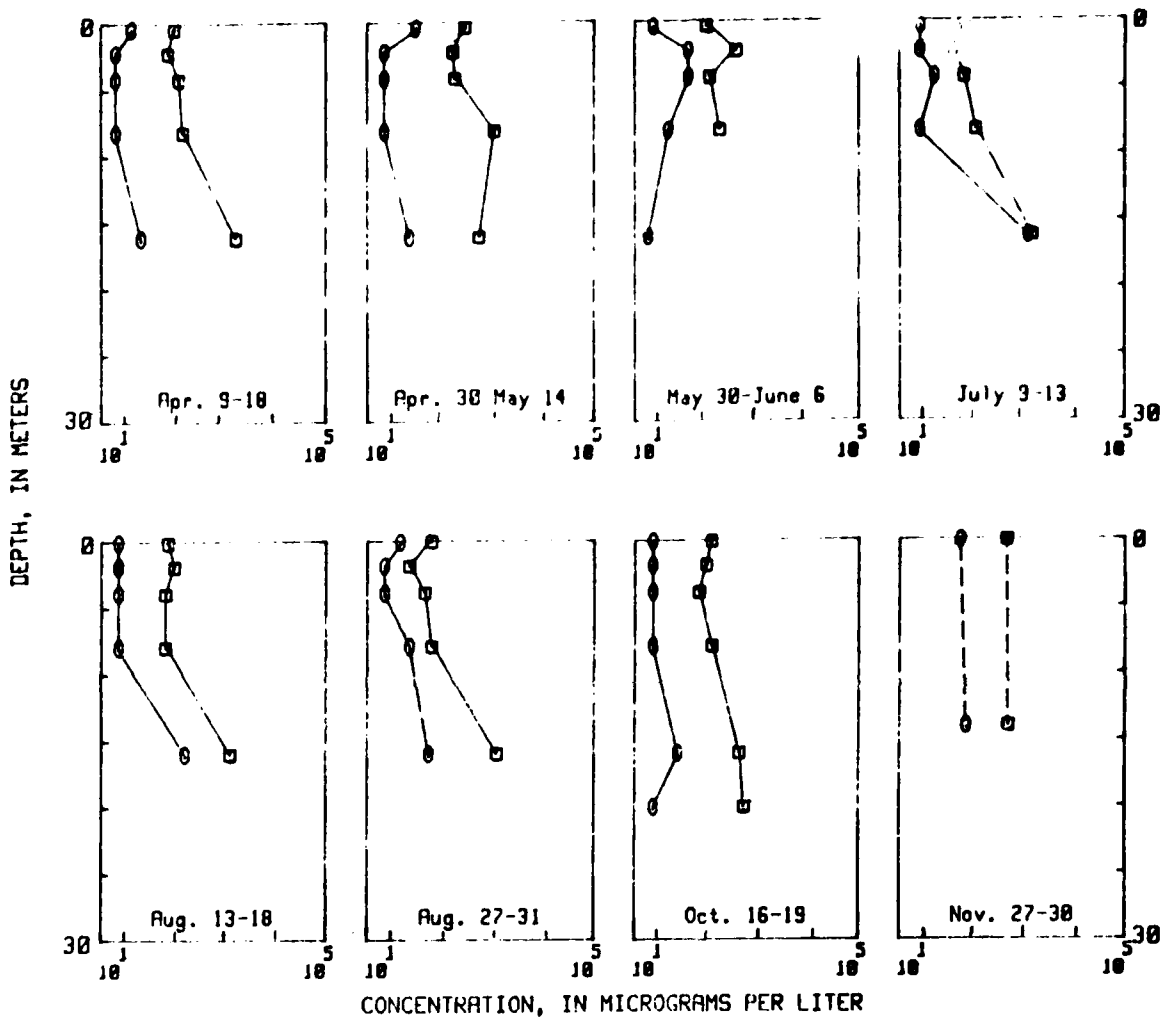
DEPTH, IN METERS



CONCENTRATION, IN MICROGRAMS PER LITER

EXPLANATION
 ○-Dissolved iron
 □-Total iron

CH-03A (02339382) Chattahoochee River above coffer dam, above West Point Dam, 1979

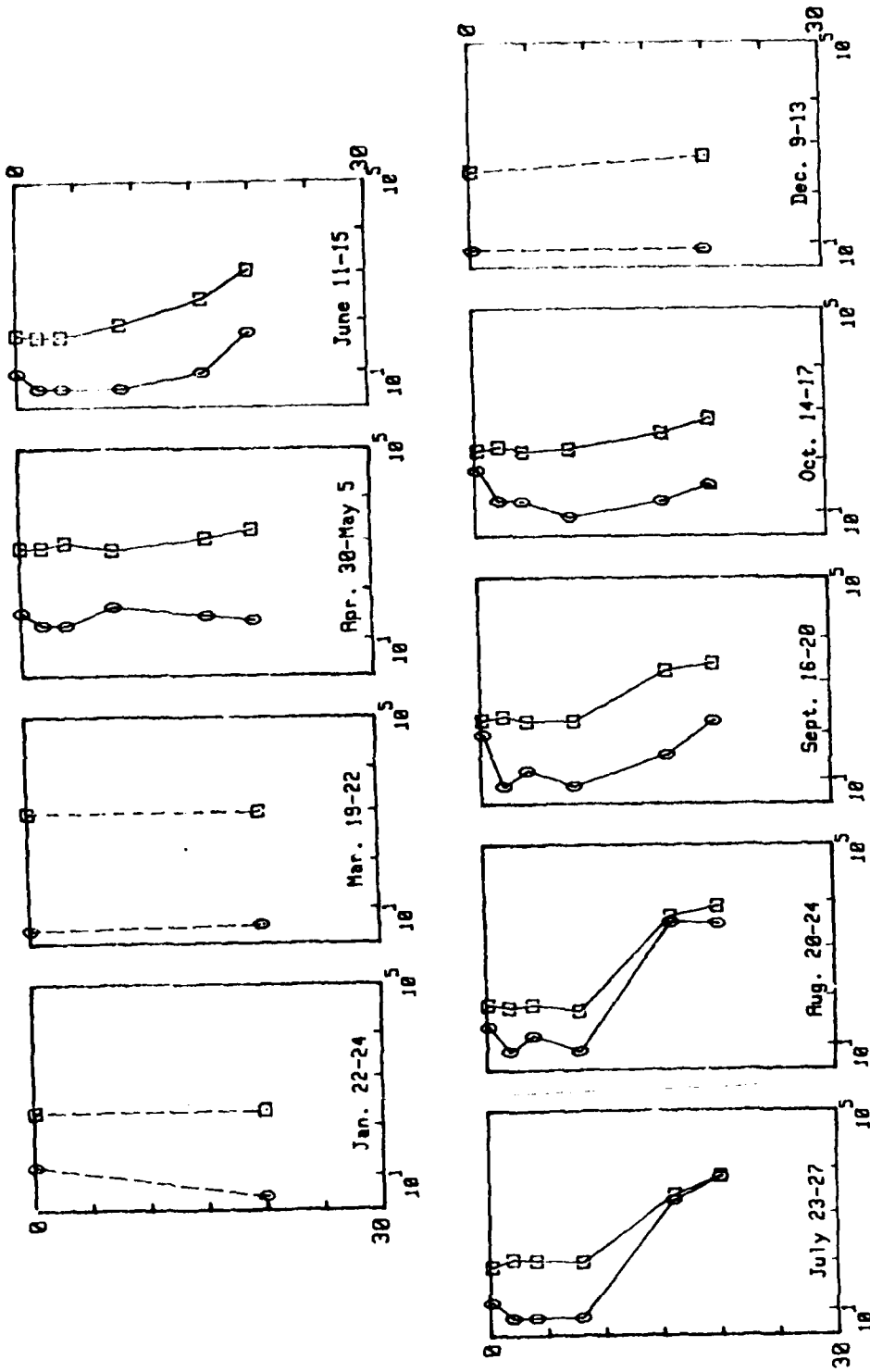


EXPLANATION

- Dissolved iron
- Total iron

CH-03B (02339387) Chattahoochee River east of coffer dam, above West Point Dam, 1978

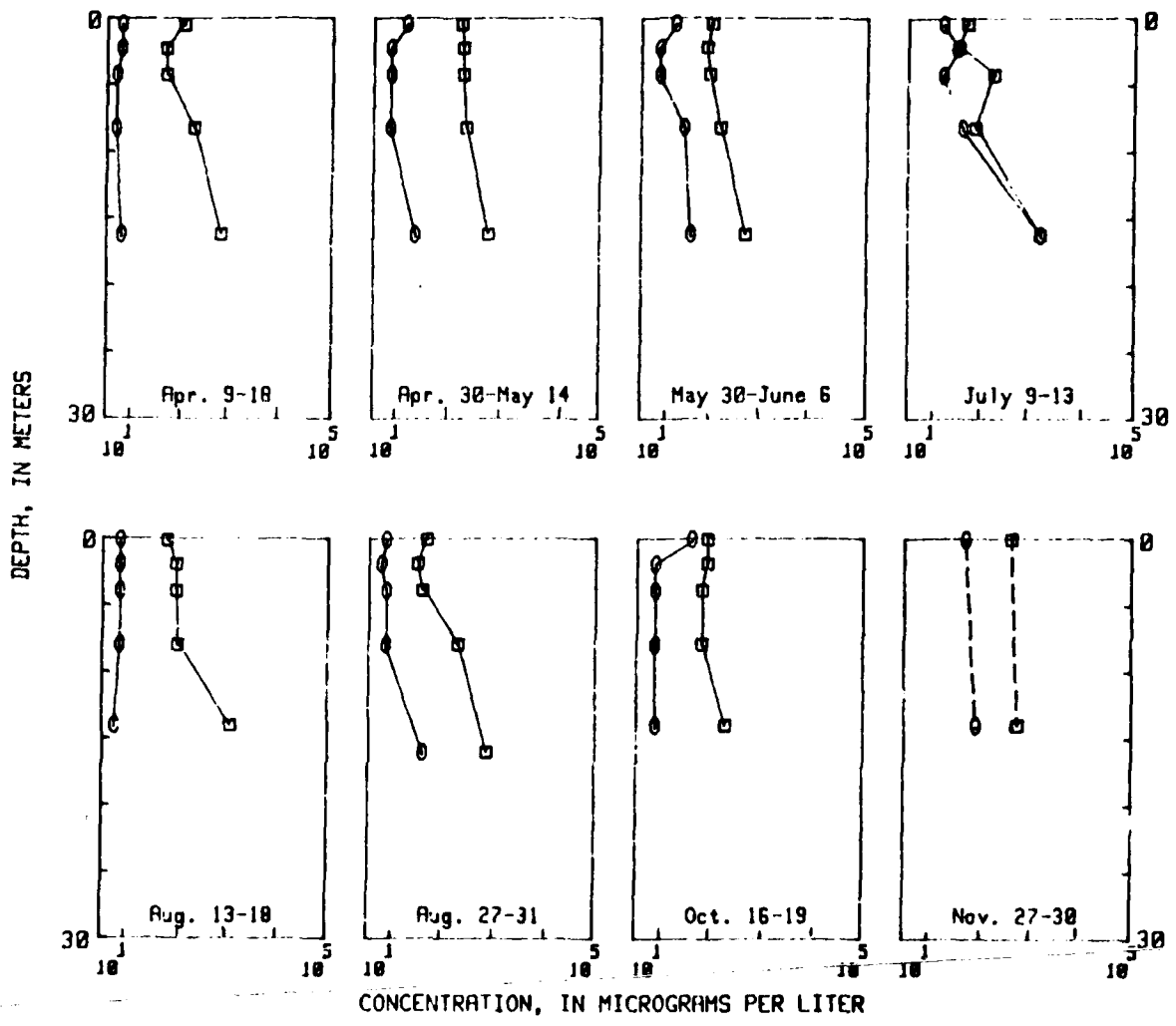
DEPTH, IN METERS



CONCENTRATION, IN MICROGRAMS PER LITER

EXPLANATION
 ○-Dissolved iron
 □-Total iron

CH-03B (02339387) Chattahoochee River east of coffer dam, above West Point Dam, 1979

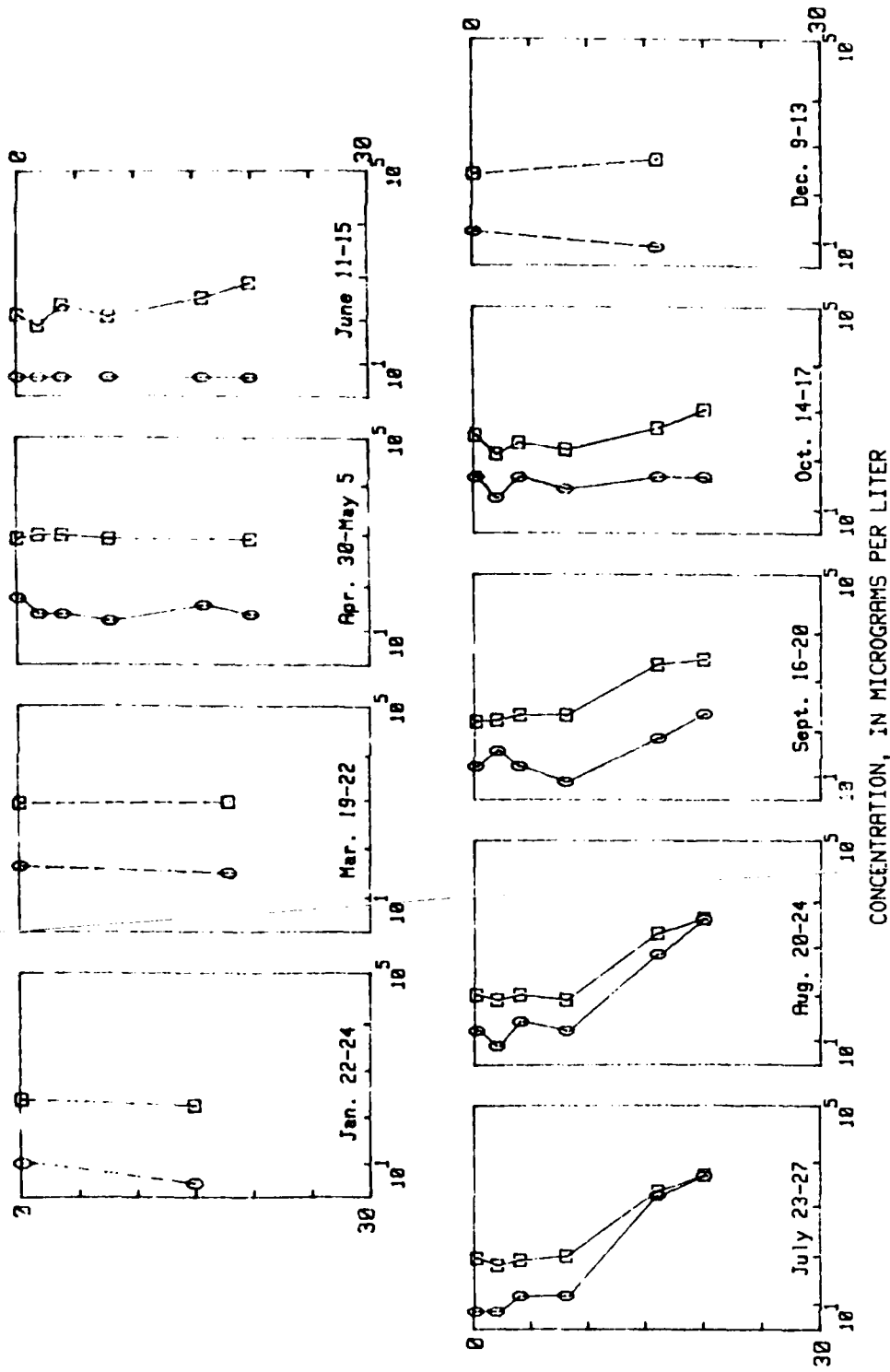


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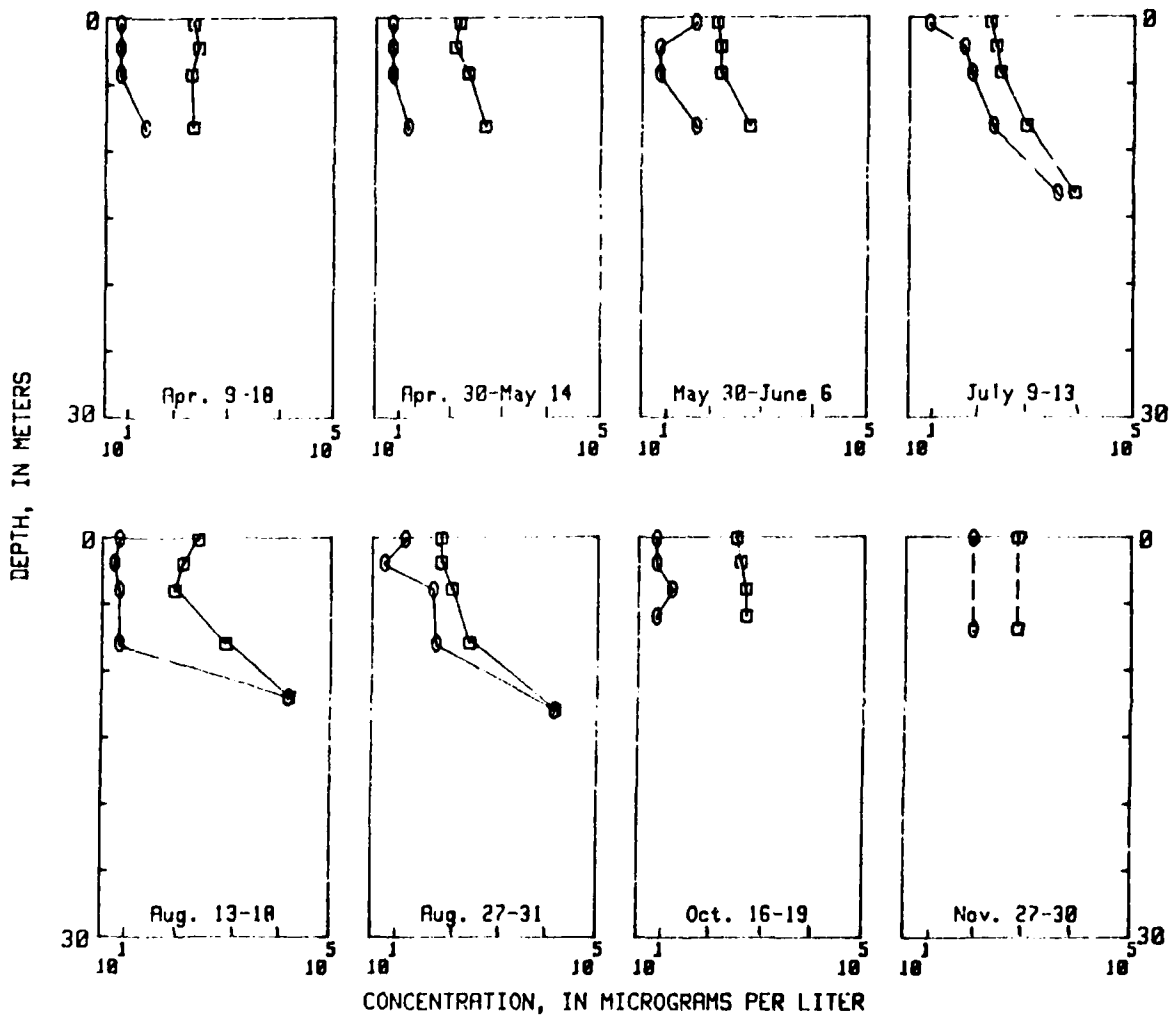
- Dissolved iron
- Total iron

CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1978

DEPTH, IN METERS



CH-03C (02339388) Chattahoochee River below coffer dam, above West Point Dam, 1979

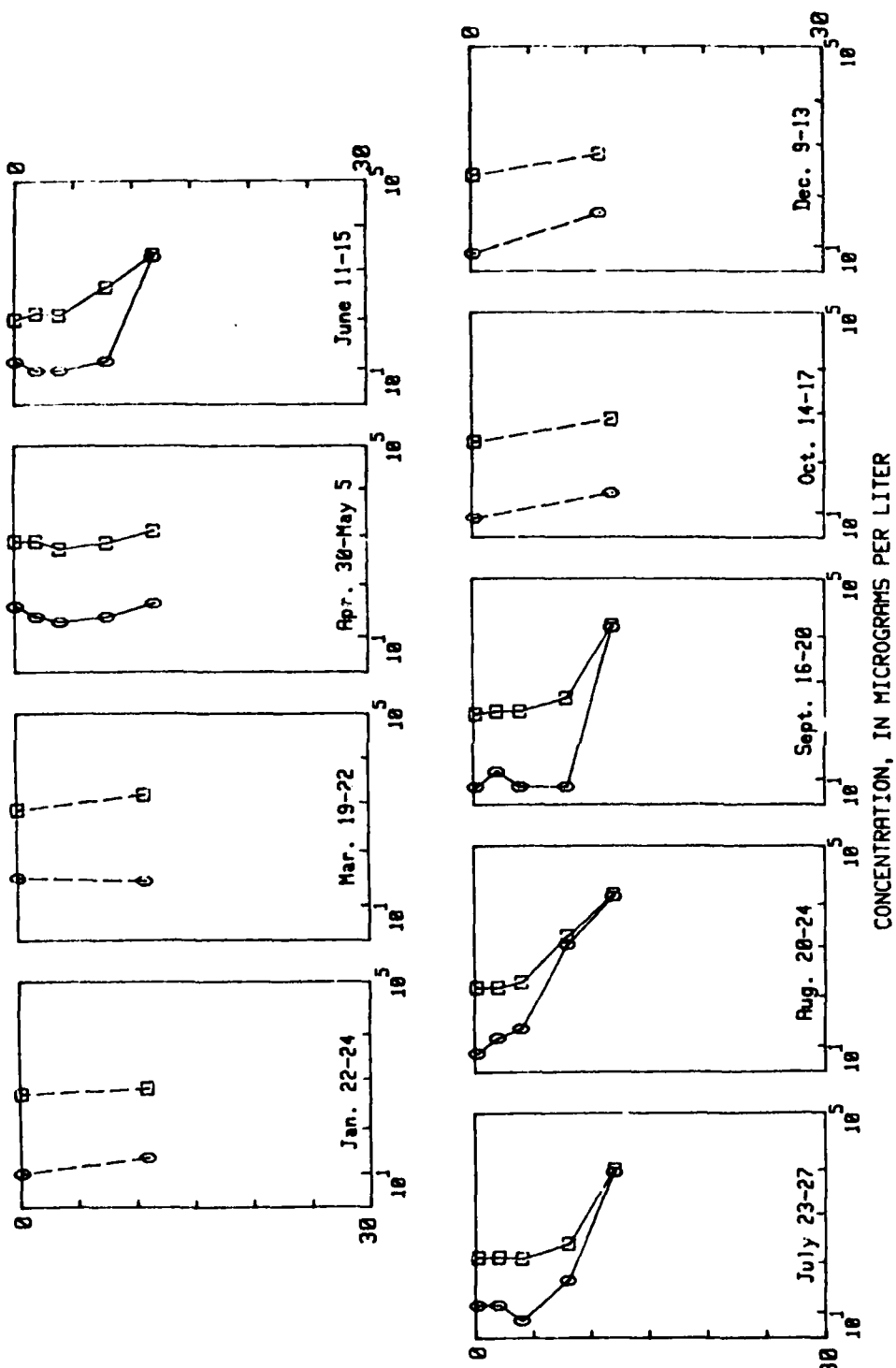


EXPLANATION

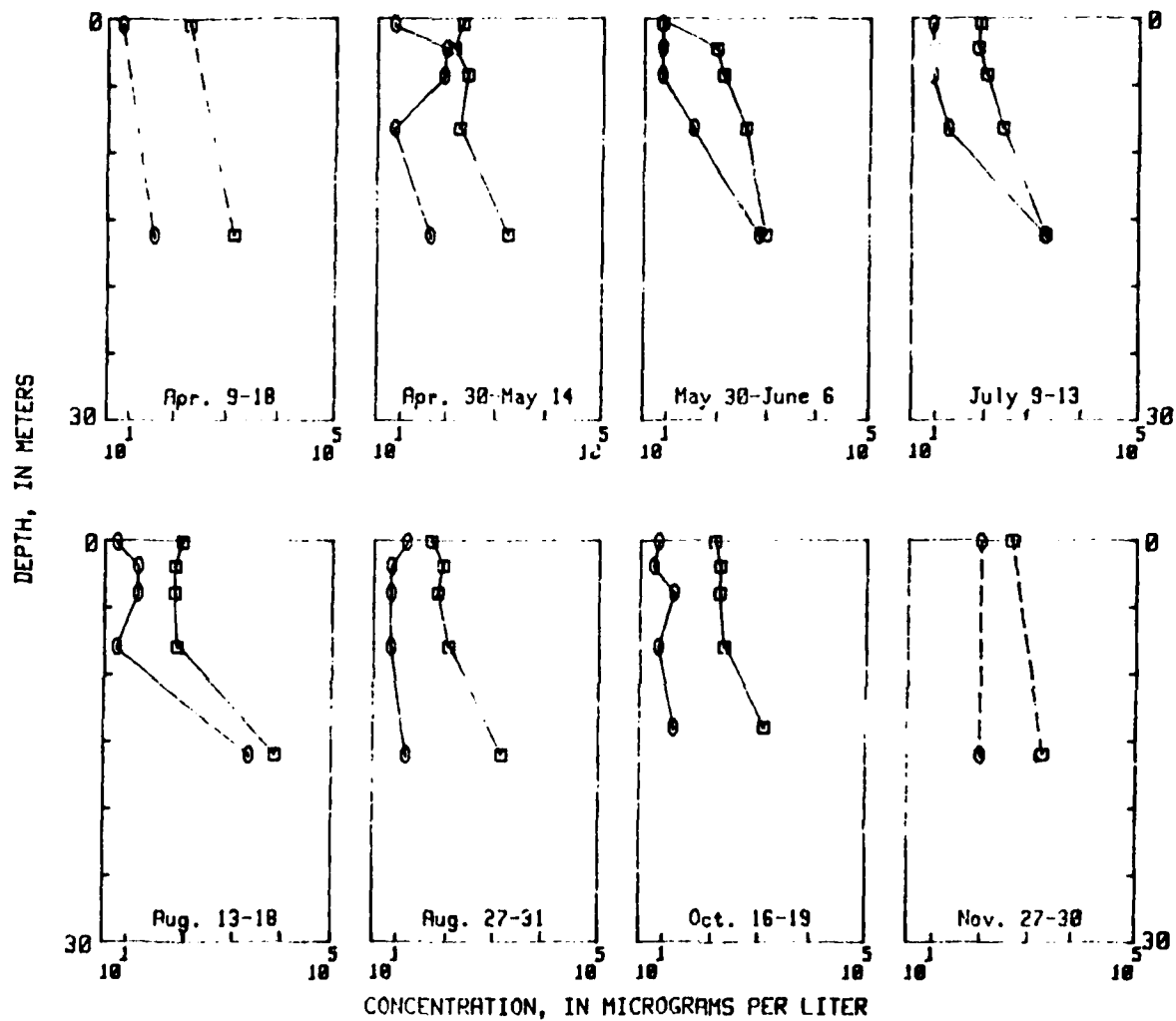
- Dissolved iron
- Total Iron

CH 08 (02339020) Chattahoochee River at Cameron Mill Road, near
LaGrange, Ga., 1978

DEPTH, IN METERS



CH-08 (02339020) Chattahoochee River at Cameron Mill Road, near LaGrange, Ga., 1979

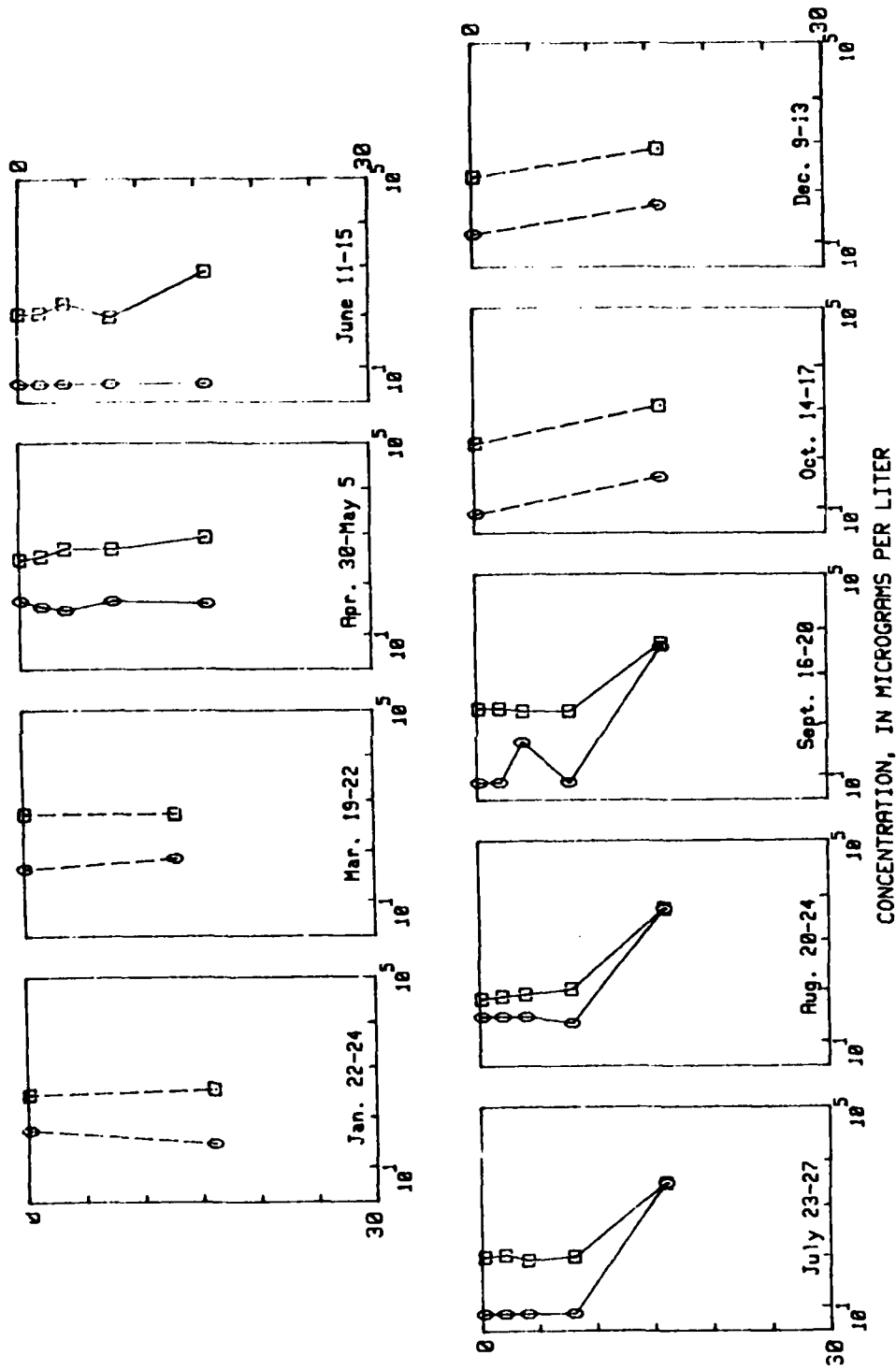


EXPLANATION

- Dissolved iron
- Total iron

CH-13 (02339362) Wehndkee Creek at State Highway 238, near
Abbotsford, Ga., 1978

DEPTH, IN METERS

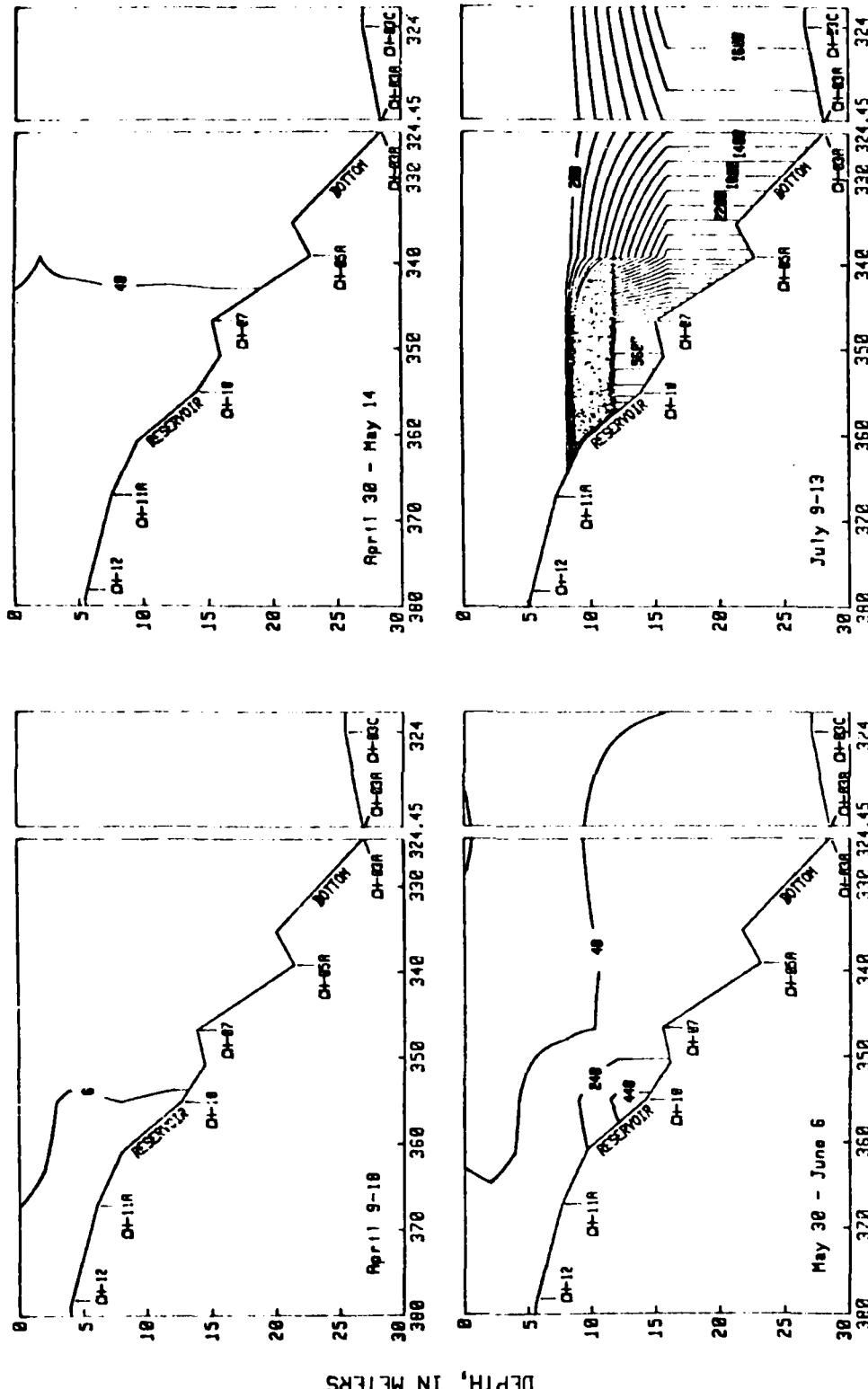


CH-13 (02339362) Wehadkee Creek at State Highway 238, near Abbottsford, Ga., 1979

APPENDIX C-12

Isopleths showing longitudinal variations in iron concentrations in
West Point Reservoir, April 1978-December 1979

	Page
Iron, dissolved, April-July 1978.....	431
Iron, dissolved, August 1978-May 1979.....	432
Iron, dissolved, June-September 1979.....	433
Iron, total, April-July 1978.....	434
Iron, total, August 1978-May 1979.....	435
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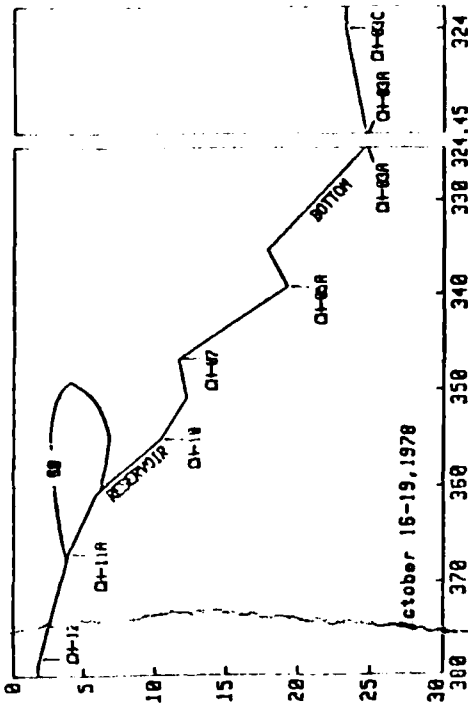
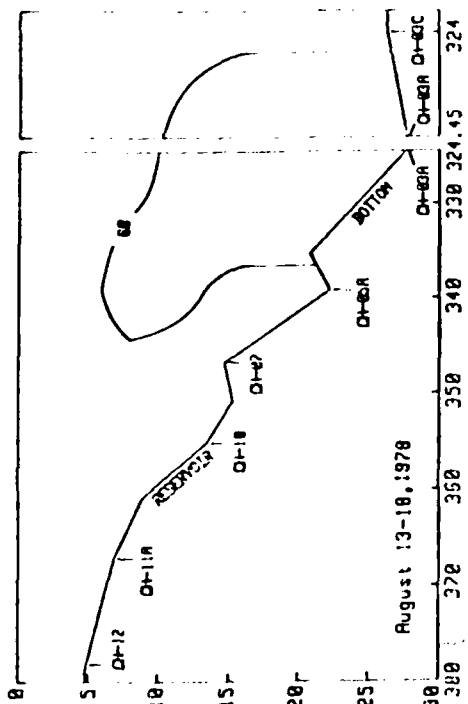
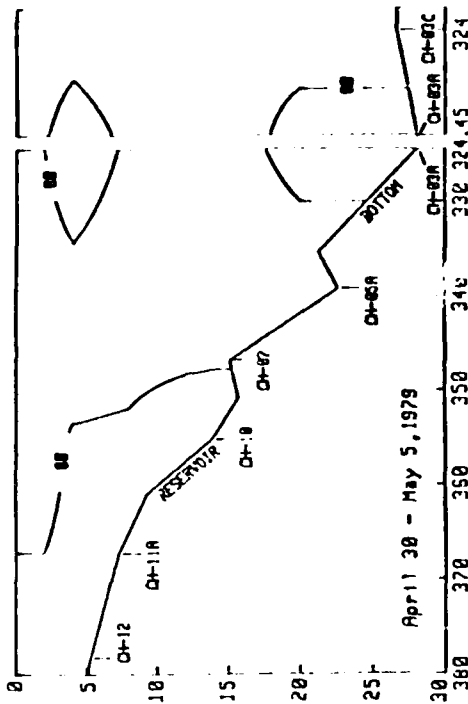
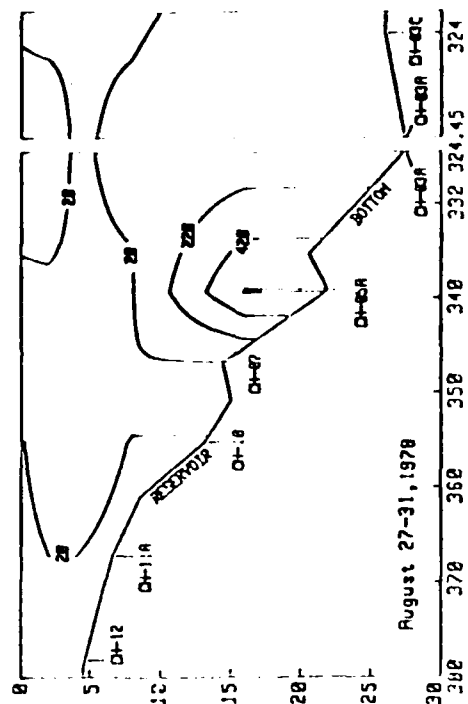
DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

-200- LINE OF EQUAL DISSOLVED IRON CONCENTRATION - Interval 200 micrograms per liter
 CH-05A WATER SAMPLING STATION

Dissolved iron concentration, April-July 1978



DEPTH, IN METERS

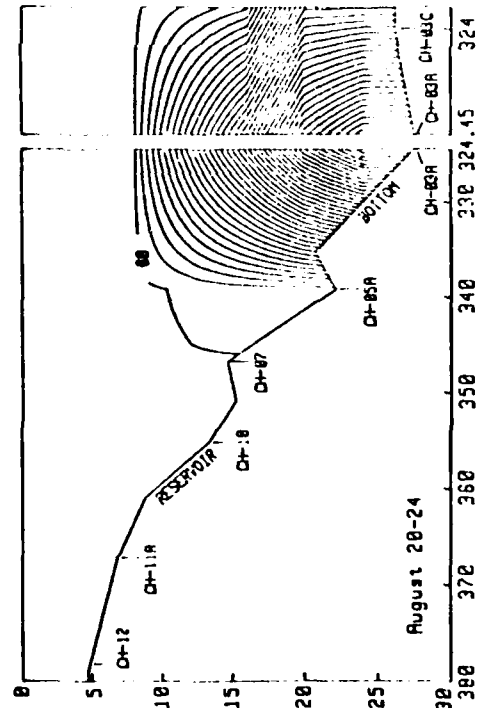
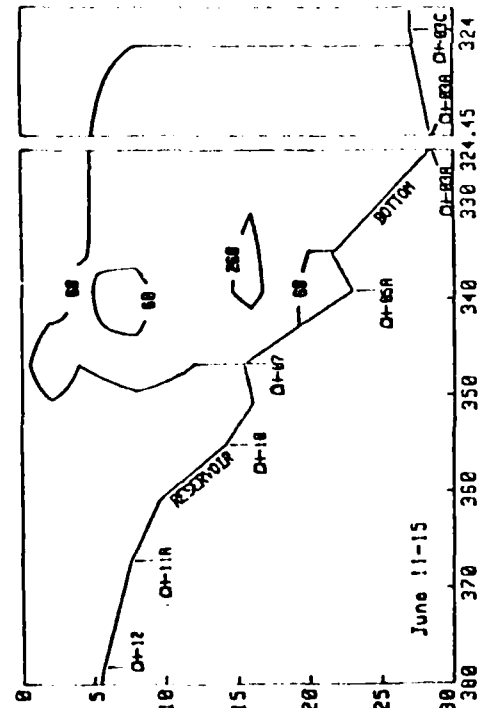
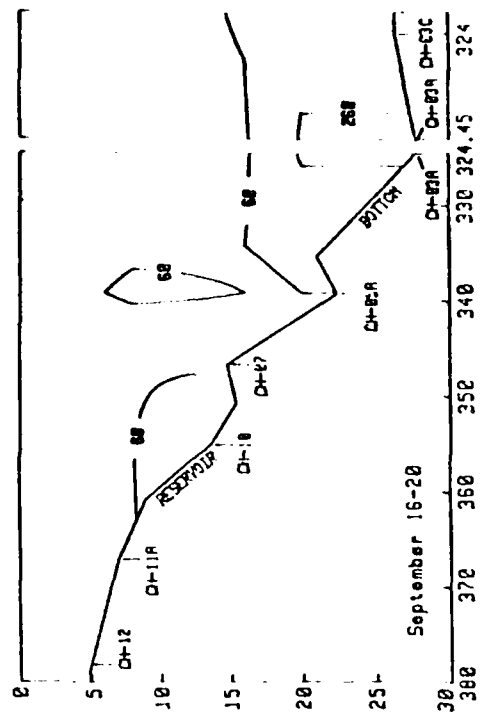
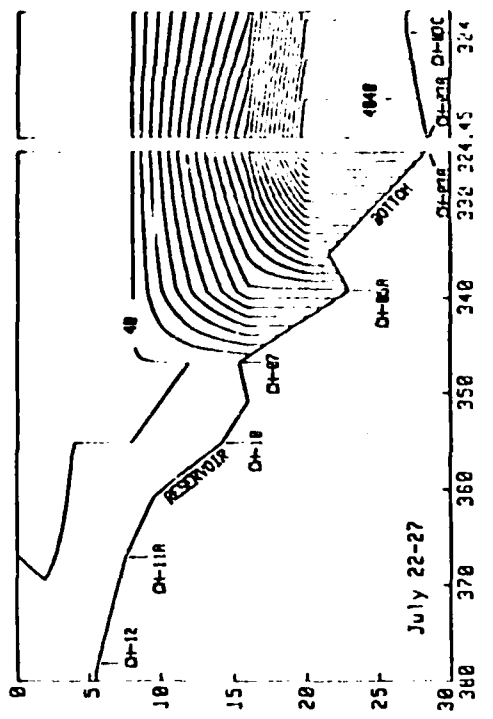
DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

-220- LINE OF EQUAL DISSOLVED IRON CONCENTRATION - Interval 200 micrograms per liter
 CH-05A WATER SAMPLING STATION

Dissolved iron concentration, August 1978 - May 1979

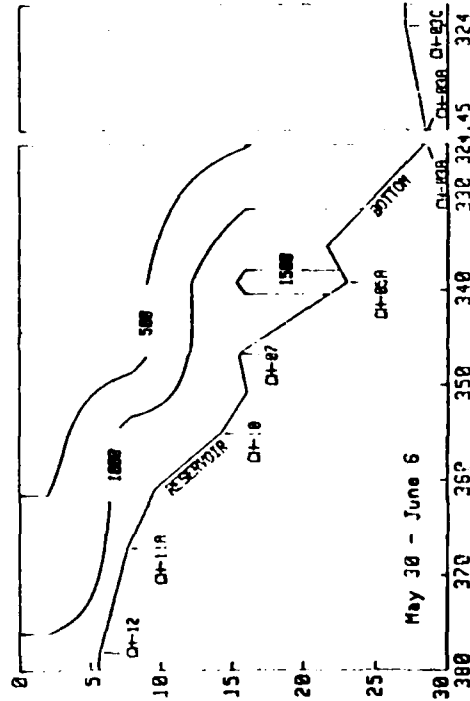
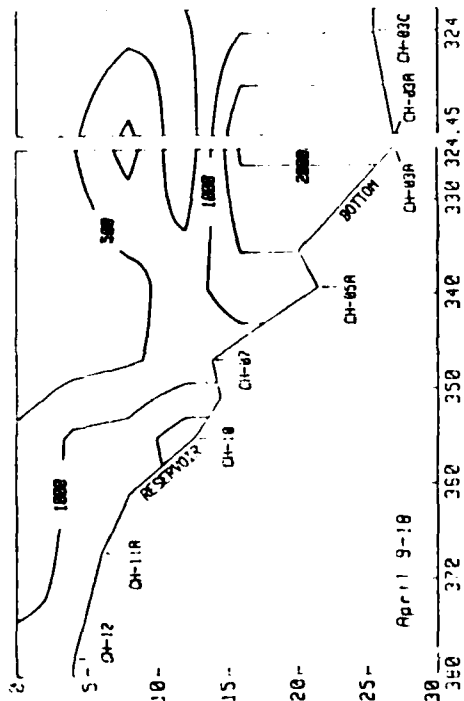
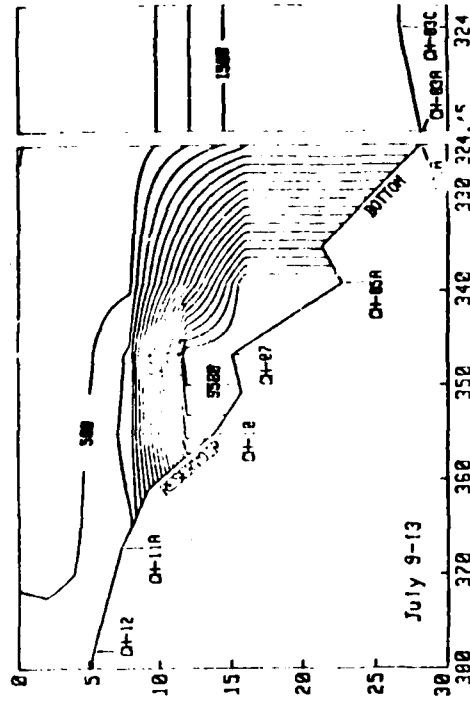
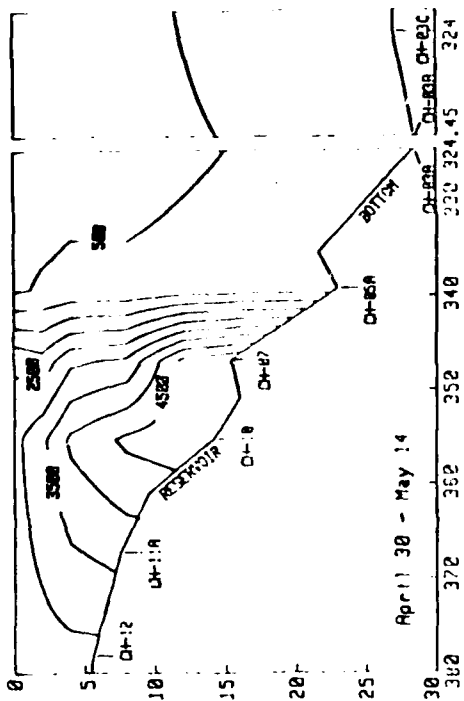
DEPTH, IN METERS



DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION
 -260- LINE OF EQUAL DISSOLVED IPON CONCENTRATION - Interval 200 micrograms.per liter
 CH-05A WATER SAMPLING STATION

Dissolved iron concentration, June-September 1979



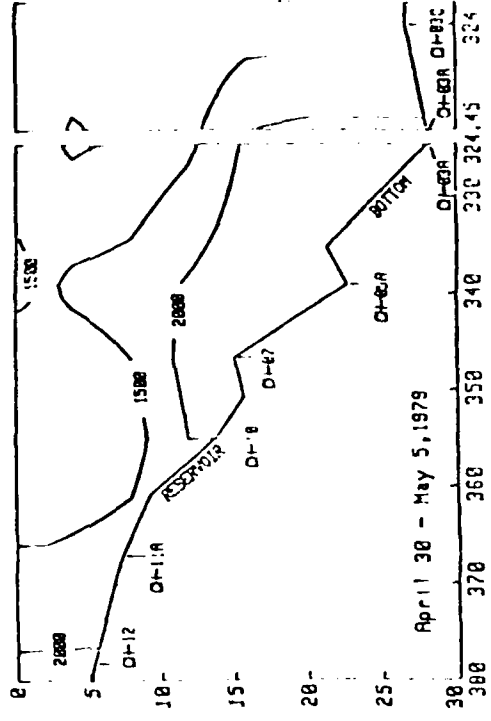
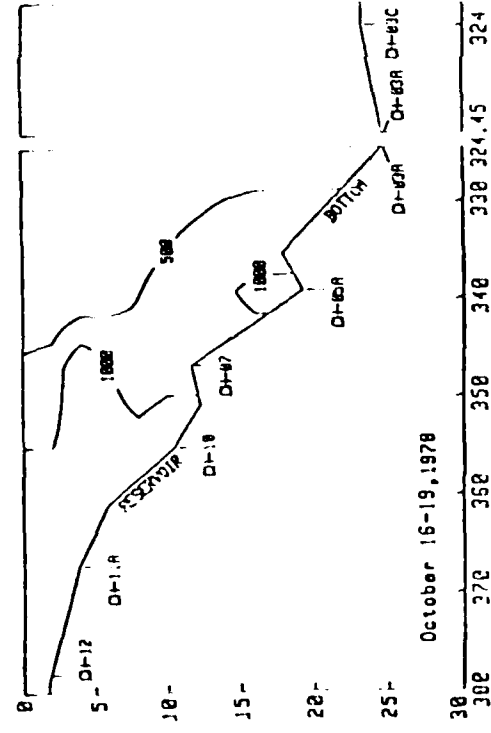
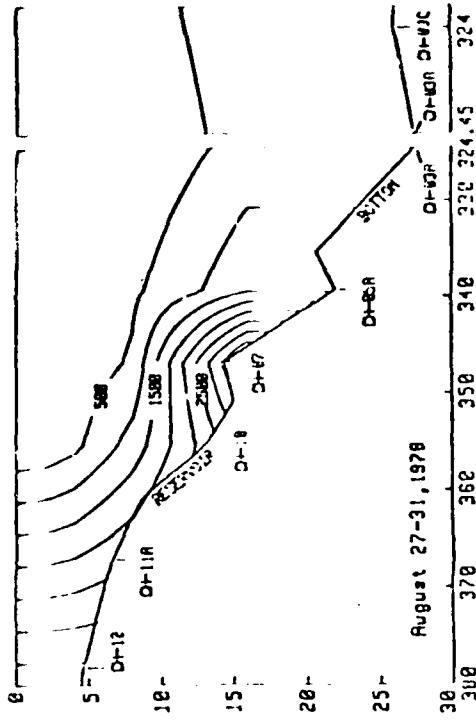
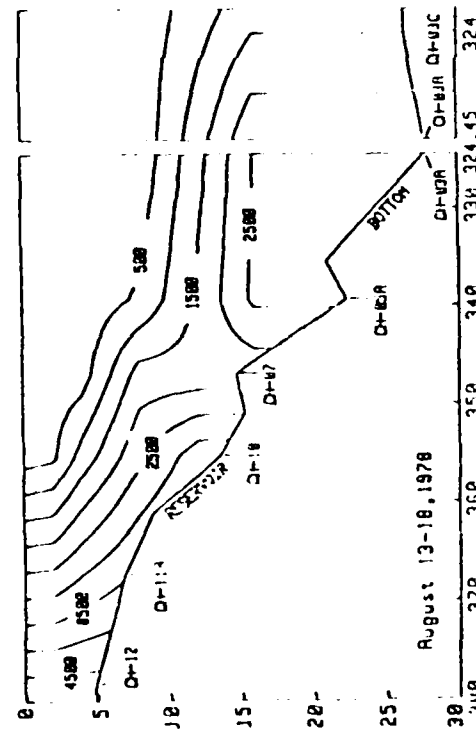
DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

- 1000- LINE OF EQUAL TOTAL IRON CONCENTRATION - Interval 500 micrograms per liter
- CH-85A WATER SAMPLING STATION

Total iron concentration, April-July 1978



DEPTH, IN METERS

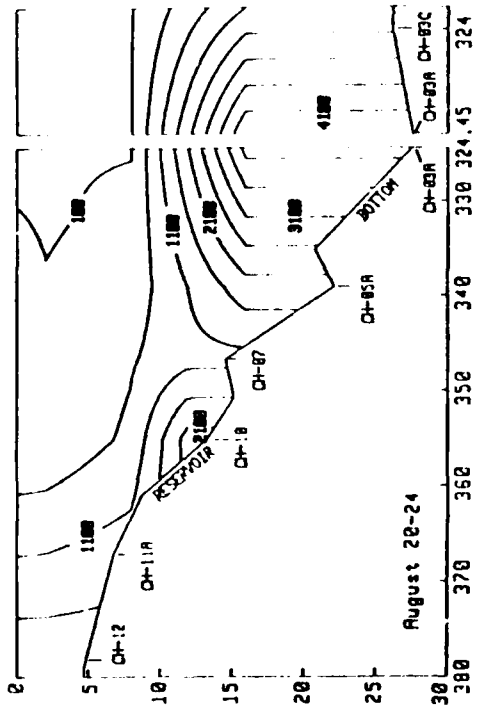
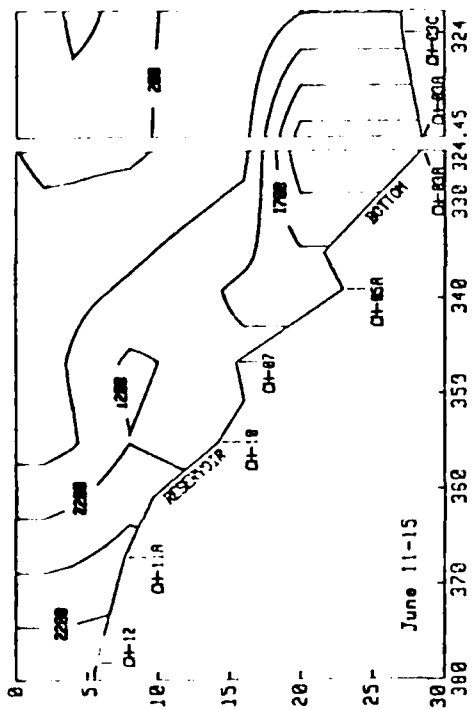
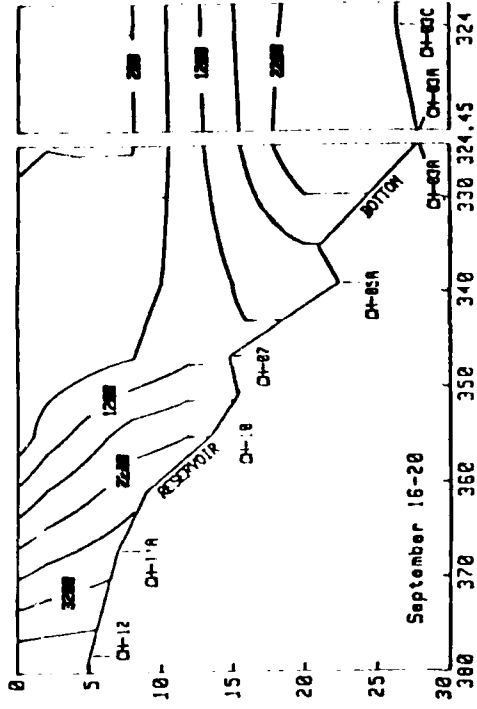
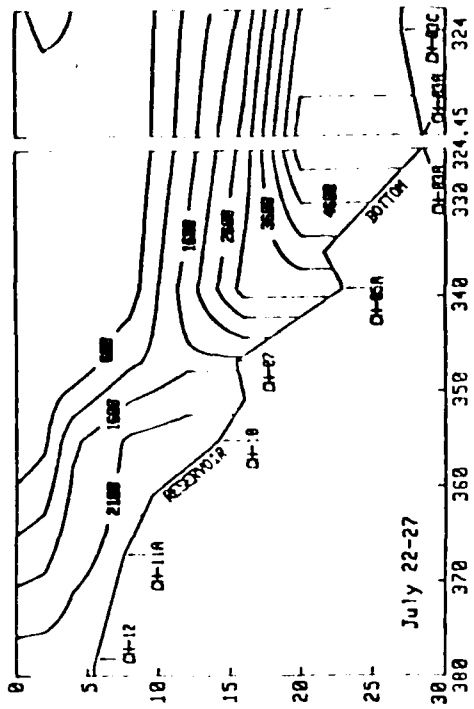
DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION

-1000- LINE OF EQUAL TOTAL IRON CONCENTRATION - Interval 500 micrograms per liter

CH-25A WATER SAMPLING STATION

Total iron concentration, August 1978 - May 1979



DEPTH, IN METERS

DISTANCE ABOVE THE MOUTH OF THE CHATTAHOOCHEE RIVER, IN KILOMETERS

EXPLANATION
 -2200- LINE OF EQUAL TOTAL IRON CONCENTRATION - Interval 500 micrograms per liter
 CH-85A WATER SAMPLING STATION

Total iron concentration, June-September 1979

APPENDIX D

Biological data

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APPENDIX D-1

Summary of biological data collected at stations in
West Point Reservoir, 1978 and 1979

[Euphotic depth; Secchi disc visibility; seston, dry weight; seston, ash weight;
seston, volatile weight; phytoplankton, standing stock; chlorophyll a;
chlorophyll b; zooplankton, standing stock; adenosine triphosphate;
algal growth potential]

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CH-12 (02338500), Chattahoochee River at U.S. Highway 27, at Franklin, Ga., 1978 and 1979

[#, No euphotic depth determined at this station. All sampling restricted to 1 m below the surface.
 +, not required for this data-collection trip; D, deleted because of questionable results;
 *, present in insufficient densities to establish an accurate count]

Date	Euphotic depth (m)	Secchi-disc visibility (m)	Seston			Phytoplankton			Zoo-plankton standing stock (organisms/m ³)	ATP (ug/L)	AGP (mg/L)
			Dry weight (mg/L)	Ash weight (mg/L)	Volatile weight (mg/L)	Standing stock (cells/mL)	Chlorophyll a (ug/L)	Chlorophyll b (ug/L)			
1978											
April 18	#	+	20.0	15.0	5.0	510	3.06	<0.01	D	0.44	39.0
May 8	#	+	30.0	20.0	10.0	1,240	1.50	<.01	*	.21	27.0
June 6	#	+	14.0	12.0	2.0	5,840	3.51	<.01	1,000	D	46.7
July 13	#	+	8.0	D	D	2,430	4.81	<.01	1,000	.10	48.0
August 17	#	+	60.0	50.0	10.0	3,810	2.17	<.01	*	.14	40.0
August 31	#	+	60.0	50.0	10.0	720	1.12	<.01	*	.24	28.0
October 19	#	+	+	+	+	+	2.00	<.01	+	+	33.0
1979											
March 22	#	0.65	+	+	+	+	2.72	<0.01	+	+	+
May 5	#	.30	51.3	41.7	9.6	15,120	D	<.01	7,850	.11	+
June 13	#	.40	54.5	45.5	9.0	14,000	D	<.01	3,120	.30	+
July 26	#	.40	46.0	35.5	10.5	10,160	D	<.01	1,530	.70	+
August 23	#	.45	67.0	57.5	9.5	11,530	2.02	<.01	1,190	1.10	+
September 20	#	.20	99.0	86.5	12.5	14,720	D	<.01	5,690	+	+
October 17	#	+	57.0	48.5	8.5	22,280	D	<.01	7,100	+	+
December 13	#	+	28.0	22.0	6.0	9,930	D	<.01	1,010	.20	+

CH-11A (02338570), Chattahoochee River above New River, near Corinth, Ga., 1979

[Euphotic zone: that column of water absorbing ninety-nine percent of the incident surface light. All sampling, with the exception of zooplankton, restricted to the euphotic zone. Zooplankton were analyzed from samples composited over the entire water column. +, not required for this data-collection trip; D, deleted because of questionable results]

Date	Euphotic depth (m)	Secchi-disc visibility (m)	Seston			Phytoplankton			Zoo-plankton standing stock (organsisms/m ³)	ATP (ug/L)	AGP (mg/L)
			Dry weight (mg/L)	Ash weight (mg/L)	Volatile weight (mg/L)	Standing stock (cells/mL)	Chlorophyll a (ug/L)	Chlorophyll b (ug/L)			
1979											
March 21	2.0	0.65	+	+	+	+	3.54	<0.01	+	+	+
May 4	2.0	.65	17.3	13.7	3.6	14,060	L	<.01	2,080	0.20	+
June 13	1.5	.45	18.0	15.3	2.7	5,400	6.61	<.01	6,410	.40	+
July 26	1.0	.30	24.5	19.0	5.5	11,830	9.36	<.01	6,560	.50	+
August 23	2.0	.40	28.5	22.5	6.0	18,800	6.43	<.01	1,310	1.00	+
September 20	1.0	.30	39.5	35.0	4.5	9,620	D	<.01	8,800	+	+
October 17	1.5	.50	20.3	16.7	3.6	2,030	D	<.01	6,600	+	+
December 12	2.0	.60	19.6	16.8	2.8	3,880	D	<.01	1,360	.20	+

CH-10 (02338710), Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978 and 1979

[Euphotic zone: that column of water absorbing ninety-nine percent of the incident surface light. All sampling, with the exception of zooplankton, restricted to the euphotic zone. Zooplankton were analyzed from samples composited over the entire water column. x, malfunctioning photometer; +, not required for this data-collection trip; D, deleted because of questionable results]

Date	Euphotic depth (m)	Secchi-visibility (m)	Seston				Phytoplankton				Zoo-plankton standing stock (organisms/m ³)	ATP (ug/L)	AGP (mg/L)	
			Dry weight (mg/L)	Ash weight (mg/L)	Volatile weight (mg/L)	Standing stock (cells/mL)	Chlorophyll a (ug/L)	Chlorophyll b (ug/L)						
1978														
April 17	1.5	0.60	13.0	7.0	6.0	151,700	34.7	<0.01	20,000	0.45	4.1			
May 2	1.0	.20	50.0	27.0	23.0	5,540	2.99	<0.01	1,000	.18	5.2			
June 5	2.5	.85	4.0	<.1	4.0	172,250	29.0	3.43	31,000	D	1.90			
July 12	3.0	1.00	3.0	<.1	3.0	146,420	24.0	<.01	71,000	2.21	1.00			
August 16	2.0	.70	13.0	3.0	10.0	458,600	27.1	2.85	26,000	2.34	D			
August 29	3.0	1.10	D	D	D	164,280	28.0	1.91	58,000	1.01	D			
October 17	2.0	.50	+	+	+	+	5.74	<.01	+	+	D			
1979														
March 21	2.5	0.70	+	+	+	+	24.9	0.79	+	+	+			
May 4	2.0	.55	13.0	10.3	2.7	1,830	4.52	<.01	7,170	.45	+			
June 15	2.5	.70	13.7	10.0	3.7	11,350	8.88	<.01	69,640	.90	+			
July 27	2.5	.80	11.0	3.5	7.5	295,480	26.8	<.01	77,840	4.4	+			
August 24	3.0	.80	21.5	15.5	6.0	220,080	9.98	<.01	98,170	2.0	+			
September 20	x	.80	22.0	18.3	1.7	40,870	3.80	<.01	21,490	+	+			
October 17	1.5	.70	9.3	6.7	2.6	26,850	5.25	<.01	5,560	+	+			
December 12	2.0	.60	13.3	9.7	3.6	9,510	4.95	<.01	1,160	.70	+			

CH-07 (02338720), Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1978 and 1979

[Euphotic zone: that column of water absorbing ninety-nine percent of the incident surface light. All sampling, with the exception of zooplankton, restricted to the euphotic zone. Zooplankton were analyzed from samples composited over the entire water column. x, malfunctioning photometer; +, not required for this data-collection trip; D, deleted because of questionable results]

Date	Seston				Phytoplankton				Zoo-plankton standing stock (organisms/m ³)	ATP (ug/L)	AGP (mg/L)
	Euphotic depth (m)	Secchi-visibility (m)	Dry weight (mg/L)	Ash weight (mg/L)	Volatile weight (mg/L)	Standing stock (cells/mL)	Chlorophyll a (ug/L)	Chlorophyll b (ug/L)			
1978											
April 12	2.5	1.00	10.5	3.0	7.0	62,500	9.67	<0.01	29,000	2.67	D
May 4	1.0	.20	27.0	13.0	14.0	22,190	8.55	<.01	2,000	.44	D
June 1	3.0	1.40	13.0	3.0	10.0	666,280	34.3	<.01	36,000	1.35	1.50
July 11	4.0	1.10	10.0	2.0	8.0	146,060	34.0	2.76	65,000	2.10	1.30
August 17	2.5	1.60	6.0	3.0	3.0	294,290	32.3	<.01	43,000	D	D
August 29	3.0	1.00	10.0	3.0	7.0	183,240	23.3	<.01	52,000	D	D
4 1979											
March 21	2.0	0.75	+	+	+	+	D	D	+	+	+
May 5	2.0	.45	10.3	6.7	3.6	12,780	3.46	<.01	17,200	1.10	+
June 15	3.0	.70	7.0	3.7	3.3	39,310	9.26	<.01	190,990	1.90	+
July 27	3.0	1.00	6.3	2.7	3.6	393,690	20.0	<.01	126,950	1.40	+
August 24	4.0	1.00	8.7	2.3	6.4	257,190	6.94	<.01	133,980	3.10	+
September 20	x	.90	6.0	4.8	1.2	56,450	5.79	<.01	67,860	+	+
October 17	2.2	.85	16.7	9.0	7.7	11,050	3.86	<.01	64,680	+	+
December 11	1.5	.57	11.7	6.7	5.0	8,450	6.16	<.01	1,270	.50	+

CH-05A (02339190), Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978 and 1979

[Euphotic zone: that column of water absorbing ninety-nine percent of the incident surface light. All sampling, with the exception of zooplankton, restricted to the euphotic zone. Zooplankton were analyzed from samples composited over the entire water column. x, malfunctioning photometer; +, not required for this data-collection trip; D, deleted because of questionable results]

Date	Euphotic depth (m)	Secchi-disc visibility (m)	Seston				Phytoplankton				Zoo-plankton standing stock (organsisms/m ³)	ATP (ug/L)	AGP (mg/L)		
			Dry weight (mg/l)	Ash weight (mg/L)	Volatile weight (mg/L)	Standing stock (cells/mL)	Chlorophyll a (ug/L)	Chlorophyll b (ug/L)	Chlorophyll a (ug/L)	Chlorophyll b (ug/L)					
1978															
April 12	3.6	1.30	8.0	4.0	4.0	18,810	D	D	D	<0.01	D	36,000	1.94	4.00	
May 3	2.0	.80	13.0	D	D	53,300	18.7	<0.01	<0.01	<0.01	<0.01	23,000	.06	3.40	
June 1	4.0	1.30	6.0	2.0	4.0	126,280	7.85	7.85	126,280	<0.01	<0.01	45,000	1.60	1.42	
July 11	4.0	1.30	10.0	2.0	8.0	129,910	29.5	29.5	129,910	<0.01	<0.01	6,000	.33	1.30	
August 15	3.0	1.00	8.0	<.1	8.0	276,110	31.5	31.5	276,110	<.01	<.01	102,000	D	1.80	
August 30	3.0	1.00	8.0	4.0	4.0	164,260	26.8	26.8	164,260	<.01	<.01	39,000	D	1.00	
October 16	4.0	1.00	+	+	+	+	8.64	8.64	+	<.01	<.01	+	+	.60	
1979															
March 20	1.5	0.60	+	+	+	+	19.4	0.94	+	0.94	+	+	+	+	+
May 4	1.5	.40	11.3	6.7	4.6	22,700	17.7	<.01	22,700	<.01	<.01	13,580	1.39	3.40	
June 15	3.5	1.00	7.7	4.0	3.7	114,170	9.43	<.01	114,170	<.01	<.01	283,740	1.40	1.42	
July 27	4.0	1.20	4.0	.7	3.3	216,900	15.8	<.01	216,900	<.01	<.01	80,550	1.20	1.30	
August 24	4.0	1.10	6.0	4.0	2.0	170,110	8.20	<.01	170,110	<.01	<.01	81,340	.20	1.80	
September 20	x	-	6.2	4.8	1.4	65,460	8.60	<.01	65,460	<.01	<.01	64,410	+	1.00	
October 17	3.0	1.10	6.8	3.5	3.3	38,570	14.1	<.01	38,570	<.01	<.01	176,750	+	1.00	
December 13	2.5	.80	8.2	4.8	3.4	7,790	5.70	<.01	7,790	<.01	<.01	3,880	.60	.60	

CH-03C (02339388), Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979

[Euphotic zone: that column of water absorbing ninety-nine percent of the incident surface light. All sampling, with the exception of zooplankton, restricted to the euphotic zone. Zooplankton were analyzed from samples composited over the entire water column. x, malfunctioning photometer; +, not required for this data-collection trip; D, deleted because of questionable results]

Date	Euphotic depth (m)	Secchi-disc visibility (m)	Seston				Phytoplankton			Zoo-plankton standing stock (organisms/m ³)	ATP (ug/L)	AGP (mg/L)
			Dry weight (mg/L)	Ash weight (mg/L)	Volatile weight (mg/L)	Standing stock (cells/mL)	Chlorophyll a (ug/L)	Chlorophyll b (ug/L)				
1978												
April 10	2.0	1.00	2.0	1.0	1.0	59,060	19.8	<0.01	4,000	3.12	1.75	
May 14	3.0	1.25	7.0	<.1	7.0	5,870	12.5	<.01	21,000	.22	2.40	
May 31	5.0	1.90	8.0	2.0	6.0	123,530	9.22	<.01	D	1.09	.66	
July 10	6.0	1.70	7.0	3.0	4.0	76,290	13.7	2.93	1,000	.51	1.30	
August 14	5.0	1.70	8.0	2.0	6.0	50,210	12.2	<.01	19,000	D	.60	
August 30	4.0	1.10	6.0	.0	6.0	84,400	21.3	<.01	14,000	D	.40	
October 16	3.0	+	+	+	+	+	10.4	<.01	+	+	.40	
1979												
March 20	1.5	0.40	+	+	+	+	35.0	<0.01	+	+	+	
May 4	2.0	.50	10.3	7.7	2.6	20,720	3.80	<.01	45,930	1.66	+	
June 15	4.0	1.50	4.5	1.0	3.5	68,840	8.75	<.01	62,810	1.20	+	
July 27	5.0	1.40	6.7	4.0	2.7	41,490	7.70	<.01	64,170	.30	+	
August 24	5.5	1.70	4.7	1.3	3.4	117,620	7.93	<.01	33,760	.10	+	
September 20	x	-	2.0	2.0	<.1	144,410	12.0	<.01	38,810	+	+	
October 17	5.0	1.50	4.2	3.8	.4	38,550	7.92	<.01	149,580	+	+	
December 10	3.0	1.00	3.8	.5	3.3	7,460	5.17	<.01	42,890	.60	+	

APPENDIX D-2

Temporal variation in phytoplankton standing stock at stations in
West Point Reservoir, 1978 and 1979

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(Standing crop in cells per milliliter; *, present in insufficient densities to establish accurate count)

Date Time	4/18/78 1100	5/8/78 1230	6/6/78 0800	7/13/78 1445	8/17/78 1415	8/31/78 0800
Taxa						
Bacillariophyta						
<i>Achnanthes</i> Bory	14	-	-	-	20	10
<i>Asterionella</i> Hassall	14	-	-	-	-	-
<i>Cyclotella</i> Brebisson	-	76	77	-	20	10
<i>Cymbella</i> Agardh	-	-	15	10	-	-
<i>Eunotia</i> Ehrenberg	-	-	-	-	10	-
<i>Fragilaria</i> Lyngbye	200	30	15	-	250	20
<i>Gomphonema</i> Hustedt	54	-	15	-	30	-
<i>Melosira</i> Kutzing	-	-	-	-	-	-
<i>Meridion</i> Agardh	14	-	-	-	-	-
<i>Navicula</i> Bory	54	15	15	30	10	30
<i>Nitzschia</i> Hassall	95	91	46	180	60	60
<i>Rhizosolenia</i> Brightwell	-	-	15	-	-	-
<i>emend</i> Ehrenberg	-	-	-	-	-	-
<i>Synedra</i> Ehrenberg	27	15	-	-	-	20
<i>Tabellaria</i> Ehrenberg	-	-	-	-	-	-
Chlorophyta						
<i>Actinastrum</i> Lagerheim	-	-	250	-	-	-
<i>Ankistrodesmus</i> Corda	-	30	250	-	-	-
<i>Carteria</i> Diesing	-	-	15	130	-	-
<i>Characium</i> A. Braun	-	-	-	10	-	-
<i>Chlamydomonas</i> Ehrenberg	-	460	460	20	30	-
<i>Chlorogonium</i> Ehrenberg	-	-	15	-	10	-
<i>Chodatella</i> Lemmermann	-	-	-	-	20	-
<i>Closteriopsis</i> Lemmermann	-	-	-	-	-	-
<i>Coccomonas</i> Stein	-	-	250	-	80	-
<i>Coelastrum</i> Nageli	-	-	-	10	10	-
<i>Cosmarium</i> Corda	-	-	-	-	-	-
<i>Crucigenia</i> Morren	-	61	120	40	-	-
<i>Dichotomococcus</i> Korshikov	-	-	-	-	-	-
<i>Dictyosphaerium</i> Nageli	-	15	110	-	-	-
<i>Dysmorphococcus</i> Takeda	-	-	-	-	-	-
<i>Elakatothrix</i> Wille	-	-	150	-	-	-
<i>Euastrum</i> Ehrenberg	-	-	-	-	-	-
<i>Francia</i> Lemmermann	-	-	-	-	-	-
<i>Gloeosactinium</i> G. M. Smith	-	-	-	-	-	-
<i>Gloeocystis</i> Nageli	-	-	-	-	-	-
<i>Golenkinia</i> Chodat	-	-	-	-	-	-
<i>Gonium</i> Muller	-	-	250	80	-	-
<i>Kirchneriella</i> Schmidle	-	-	230	80	-	-
<i>Micractinium</i> Presenius	-	-	-	-	-	-
<i>Mougeotia</i> Agardh	-	-	92	-	-	-
<i>Oocystis</i> Nageli	-	-	-	-	-	-
<i>Pandorina</i> Bory	-	-	-	-	-	-
<i>Pediastrum</i> Meyer	-	-	-	-	-	-
<i>Pteromonas</i> Seligo	-	-	320	750	70	20
<i>Scenedesmus</i> Meyen	27	-	170	50	-	-
<i>Selenastrum</i> Reinach	-	-	31	320	10	210
<i>Schroederia</i> Lemmermann	-	-	-	-	-	-
<i>Spermatozoopsis</i> Korshikov	-	-	-	-	-	-
<i>Sphaerocystis</i> Chodat	-	-	-	-	-	-
<i>Staurostrum</i> Meyen	-	-	-	-	-	-

Date Time	4/18/78 1100	5/8/78 1230	6/6/78 0800	7/13/78 1445	8/17/78 1415	8/31/78 0800
Taxa						
Chlorophyta--Continued						
<u>Tetraedron</u> Kutzing	-	-	-	-	-	-
<u>Tetrastrum</u> Choisy	-	-	-	-	-	-
<u>Treubaria</u> Bernard	-	-	15	-	-	-
<u>Westella</u> de Wildermann	-	-	250	-	-	-
<u>Wielouchiella</u> Skvortzov	-	-	-	-	-	-
<u>Volvox</u> Linnaeus	-	110	-	-	-	-
Chrysophyta						
<u>Centritractus</u> Lemmermann	-	-	-	-	-	-
<u>Chrysococcus</u> Klebs	-	-	-	-	-	-
<u>Chrysosphaerella</u> Lauterborn	-	-	-	-	-	-
<u>Dinobryon</u> Ehrenberg	-	-	-	-	-	-
<u>Mallomonas</u> Perty	-	-	-	-	-	-
<u>Ochromonas</u> Wyszowski	-	-	-	-	-	-
<u>Synura</u> Ehrenberg	-	-	-	-	-	-
Cryptophyta						
<u>Chroomonas</u> Hansgirg	-	-	46	-	-	-
<u>Cryptomonas</u> Ehrenberg	-	110	92	-	-	-
Cyanophyta						
<u>Agmenellum quadruplicatum</u> (Meneghini) Brebisson	-	-	740	-	80	-
<u>Agmenellum</u> Brebisson	-	-	-	320	-	80
<u>Anabaena</u> Bory	-	91	-	40	-	-
<u>Anacystis cyanea</u> Drouet and Daily	-	-	1,700	-	-	-
<u>A. incerta</u> (Lemmermann) Drouet and Daily	-	-	77	-	-	-
<u>Anacystis</u> Meneghini	-	91	-	140	99	-
<u>Aphanizomenon</u> Morren	-	-	-	-	-	-
<u>Coccochloris</u> Sprengel	-	30	-	-	-	-
<u>Hormogonales</u>	-	-	-	-	-	250
<u>Lyngbya</u> Agardh	-	-	-	99	3,000	-
<u>Oscillatoria</u> Vaucher	-	-	61	30	-	-
<u>Phormidium</u> Kutzing	-	-	-	-	-	-
<u>Raphidiopsis</u> Fritsch and Rich	-	-	-	-	-	-
Euglenophyta						
<u>Euglena</u> Ehrenberg	14	-	-	50	-	-
<u>Lepocynclis</u> Perty	-	-	-	40	-	10
<u>Tachelomonas</u> Ehrenberg	-	15	-	-	-	-
Pyrrophyta						
<u>Glenodinium</u> Stein	-	-	-	-	-	-
<u>Gymnodinium</u> Kofoid and Swezy	-	-	-	-	-	-
<u>Peridinium</u> Ehrenberg	-	-	-	-	-	-
Total number of taxa observed	10	15	30	20	17	11
Total number of cells per milliliter	513	1,240	5,842	2,429	3,809	720

Taxa	Date Time	5/5/79 1200	6/13/79 1700	7/26/79 1500	8/23/79 1430	9/20/79 1130	10/17/79 1030	12/13/79 1630
Bacillariophyta								
<i>Achnanthes lanceolata</i>		-	11	-	-	-	-	17
Breb. ex Kutz.								
<i>A. minutissima</i> Kutz.	16		33	45	43	60	-	35
<i>Asterionella formosa</i> Hass.	21		-	-	-	-	8	105
<i>Cocconeis diminuta</i> Pant.			-	-	-	-	-	35
<i>C. placentula</i> Ehr.	3		-	-	21	-	-	-
<i>C. placentula</i> v. <i>euglypta</i> (Ehr.) Cl.			-	-	-	-	-	-
<i>Cyclotella atomus</i> Hust.			22	-	21	5	25	52
<i>C. glomerata</i> Bach.	21		87	15R	64	36	41	122
<i>C. Meneghiniana</i> Kutz.			-	-	-	-	-	17
<i>C. stelligera</i> Cl. and Grun.	3		33	-	-	-	R	-
<i>Gybellia ventricosa</i> Kutz.			-	-	-	24	-	-
<i>Funotia curvata</i> (Kutz.) Lozerat			-	-	-	-	R	-
<i>E. pectinalis</i> (O.P. Mull.) Rabh.			-	-	21	-	-	-
Fragilaria bicapitata								
A. Mayer			-	-	-	-	-	-
<i>F. brevistriata</i> Grun.			-	-	-	-	8	-
<i>F. crotonensis</i> Kitton			-	-	-	-	-	-
<i>F. intermedia</i> Grun.	16		-	23	-	-	50	70
<i>F. vaucheriae</i> (Kutz.) Peters			-	-	43	-	R	-
<i>Fragilaria</i> sp. 1 Lyngh.			-	-	-	-	-	-
<i>Frustulia rhomboidea</i> (Ehr.) Det.			-	-	-	-	R	-
Gomphonema angistatum v.								
<i>productum</i> Grun.	5		-	-	-	-	-	17
<i>G. gracile</i> Ehr. emend V.H.	3		-	-	-	-	-	-
<i>G. parvulum</i> (Kutz.)			2	45	64	72	17	35
Melosira distans (Ehr.) Kutz.								
			22	-	-	-	-	-
<i>M. granulata</i> (Ehr.) Ralfe			11	-	-	-	-	-
<i>M. granulata</i> v. <i>angustissima</i> Mull.			-	-	-	-	-	-
<i>M. islandica</i> Mull.			-	-	-	-	33	70
<i>M. italica</i> (Ehr.) Kutz.			-	-	-	-	-	-
<i>M. varians</i> C.A. Ag.	3		-	-	-	36	-	-
Navicula bicapitellata Hust.								
			-	-	-	24	-	-
N. confervaceae (Kutz.) Grun.								
			-	-	86	-	-	-
<i>N. cryptocephala</i> Kutz.			33	-	107	-	-	-
<i>N. exigua</i> Greg. ex Grun.			22	-	-	-	-	-
<i>N. hungarica</i> Grun.			11	-	-	-	-	-
<i>N. pupula</i> Kutz.	3		22	-	-	-	-	17
<i>N. rhynchocephala</i> Kutz.			-	-	-	-	8	-
<i>N. trinunctata</i> (Mull.) Bory.			-	-	-	24	-	-
N. viridula v. <i>rostellata</i> (Kutz.) Cl.								
			-	-	-	-	-	-
<i>Nitzschia acicularis</i> W. Sm.			11	-	-	12	8	-
<i>N. filiformis</i> (W. Sm.) Hust.			-	-	21	12	-	-
<i>N. hololepta</i> Hust.			54	-	-	-	-	-
<i>N. palea</i> (Kutz) W. Sm.	3		11	23	81	83	-	17
<i>Opephora?</i> sp. Petit			-	-	-	-	-	-
Pinnularia brebissonii v. <i>diminuta</i> (Grun.) Cl.								
			-	-	-	-	8	-
<i>Pinnularia</i> sp. 1 Ehr.	3		-	-	-	-	-	-
Rhizosolenia eriensis H. L. Sm.								
			-	-	-	-	-	-
<i>Suriella angustata</i> Kutz.			11	-	-	-	-	-
<i>S. ovata</i> Kutz.			-	23	-	-	-	-
<i>S. ovata</i> v. <i>pinnata</i> (W. Sm.)			-	-	-	-	-	-
Synedra actinastroides Lemm.								
			-	-	-	-	-	-

Taxa	Date Time	5/5/79 1200	6/13/79 1700	7/26/79 1500	8/23/79 1430	9/20/79 1130	10/17/79 1030	12/13/79 1630
Bacillariophyta--Continued								
<i>S. acus</i> Kutz.	-	-	-	-	-	-	33	-
<i>S. delicatissima</i> W. Sm.	-	-	-	-	-	-	8	-
<i>S. rumpens</i> Kutz.	-	-	-	-	-	-	-	-
<i>S. ulna</i> (Nitz.) Ehr.	3	11	23	-	-	-	-	-
<i>Synedra</i> sp. Ehr.	-	-	-	64	-	-	-	-
<i>Synedra</i> sp. 1 Ehr.	-	-	-	-	-	-	-	-
<i>Tabellaria fenestrata</i> (Lyngh.) Kutz.	3	-	-	-	-	-	66	52
Chrysophyta								
<i>Dinobryon sociale</i> Ehr.	-	-	-	-	-	-	-	-
Cryptophyta								
<i>Chroomonas</i> sp. 1 Hans.	-	43	270	129	250	75	349	-
<i>Cryptomonas ovata</i> Ehr.	3	-	-	21	24	-	-	-
<i>Cryptomonas</i> sp. 1 Ehr.	-	11	45	-	-	-	-	52
<i>Cryptomonas</i> sp. 2 Ehr.	-	-	-	-	-	-	-	-
Chlorophyta								
<i>Actinastrum Hantzschii</i> v. <i>elongatum</i> G.M. Sm.	-	-	-	-	-	-	-	-
<i>A. Hantzschii</i> v. <i>fluviatile</i> Schroed.	-	-	-	-	-	-	-	-
<i>Ankistrodesmus convolutus</i> Corda.	-	-	-	21	-	-	-	-
<i>A. falcatus</i> (Corda.) Ralfs	-	43	158	21	-	25	-	-
<i>A. falcatus</i> v. <i>mirabilis</i> (West & West) G.S. West	-	-	-	-	-	8	-	-
<i>Arthrodesmus incus</i> (Breb.) Hass.	-	-	-	-	-	-	-	-
<i>Carteria multifilis</i> (Pres.) Dill.	10	11	45	-	-	-	-	-
<i>Cephalomonas granulata</i> Hagenb.	-	-	-	-	-	-	-	-
<i>Characium ambiguum</i> Hermann	-	-	-	-	-	-	-	-
<i>Characium</i> sp. 1 A. Braun	5	-	23	-	-	-	-	-
<i>Chlamydomonas epiphytica</i> G. M. Sm.	-	-	-	-	-	-	-	-
<i>C. globosa</i> Snow	8	-	-	258	24	-	-	-
<i>Chlamydomonas</i> sp. 1 Ehr.	-	33	-	-	-	8	-	-
<i>Chlamydomonas</i> sp. 2 Ehr.	-	-	-	-	-	29	17	-
<i>Chlorogonium elongatum</i> Dang. Lemm.	-	-	-	-	-	12	-	-
<i>Closterium gracile</i> Breb.	-	-	-	-	-	-	-	-
<i>Coelastrum microporum</i> Naeg.	-	-	-	-	-	-	-	-
<i>C. proboscideum</i> Rohlin.	-	-	-	-	-	-	-	-
<i>C. reticulatum</i> (Dang.) Senn.	-	-	-	-	-	-	-	-
<i>C. sphaericum</i> Naeg.	-	-	90	-	-	-	-	-
<i>Cosmarium geometricum</i> W. & G.S. West	-	-	-	-	-	-	-	-
<i>Cosmarium</i> sp. 1 Corda	-	-	23	-	-	-	-	-
<i>Crucigenia fenestrata</i> Schmid.	-	-	-	-	-	-	-	-
<i>C. rectangularis</i> (A. Br.) Gay	-	-	-	-	-	-	-	-
<i>C. tetrapedia</i> (Kirch.) West & West	-	-	-	-	-	-	-	-
<i>Dictyosphaerium</i> Ehrenbergianum Naeg.	-	65	-	-	-	24	-	-
<i>D. pulchellum</i> Wood	-	-	180	-	-	119	-	-
<i>Golenkinia radiata</i> (Chod.) Wille	-	-	-	-	-	-	-	-
<i>Kirchneriella contorta</i> (Schmid.) Bohl.	-	-	-	-	-	-	-	-
<i>K. elongata</i> G. M. Sm.	-	-	-	21	-	-	-	-

Taxa	Date Time	5/5/79 1200	6/13/79 1700	7/26/79 1500	8/23/79 1430	9/20/79 1130	10/17/79 1030	12/13/79 1630
Chlorophyta--Continued								
<i>K. lunaris</i> v. <i>Dianae</i> Rohl.	-	-	-	45	21	12	-	-
<i>K. lunaris</i> v. <i>irregularis</i> (G. M. Schmid.)	-	-	-	-	-	-	-	-
<i>K. obesa</i> (W. West) Schmid.	-	-	-	23	-	-	-	-
<i>K. subsolitaria</i> G. S. West	10	65	-	-	-	-	8	17
<i>Lagerheimia quadriseer</i> (Lemm.) G. M. Sm.	-	-	-	-	-	-	-	-
<i>Microactinium pusillum</i> Pres.	-	-	-	-	-	-	8	-
<i>Nephrocystium limneticum</i> (G. M. Sm.)	-	-	-	190	-	-	-	-
<i>Oocystis Borgel</i> Snow	-	-	-	-	-	-	-	17
<i>O. lacustris</i> Chod.	-	-	-	-	-	-	-	-
<i>O. pusilla</i> Hans.	-	-	-	-	-	-	-	-
<i>O. pyriformis</i> Prescott	-	-	-	-	-	-	-	-
<i>Oocystis</i> sp. Nagell	-	-	-	-	-	-	-	17
<i>Pandorina morum</i> (Muell.) Kory	-	-	-	-	344	-	-	-
<i>Pediastrum biradiatum</i> Meyen.	-	-	-	-	-	-	-	-
<i>P. duplex</i> v. <i>gracillimum</i> West & West	-	-	-	-	-	-	-	-
<i>P. tetras</i> v. <i>tetraodon</i> (Corda) Rabb.	-	-	-	-	-	-	66	-
<i>Polyedriopsis spinulosa</i> Schmid.	-	-	-	-	-	-	-	-
<i>Radloffium irregulare</i> (Wille) Brunn.								
<i>Scenedesmus aundans</i> (Kirch.) Chod.	-	-	-	45	-	-	-	-
<i>S. bifuga</i> (Turp.) Lagerh.	-	-	-	-	-	-	33	-
<i>S. denticulatus</i> Lagerh.	-	-	-	90	-	-	66	-
<i>S. dimorphus</i> (Turp.) Kuetz	-	-	-	-	-	-	-	-
<i>S. incrassatus</i> Rohl.	10	-	-	-	-	-	-	-
<i>S. obliquus</i> (Turp.) Kuetz	-	-	-	-	-	-	33	838
<i>S. opoliensis</i> v. <i>contacta</i> Prescott	-	-	-	-	-	-	-	-
<i>S. quadricauda</i> (Turp.) De Breb.	-	65	315	43	95	17	70	-
<i>Scenedesmus</i> sp. 1 Meyen	-	-	-	-	-	-	-	-
<i>Schroederia setigera</i> (Schroed.) Lemm.	-	22	-	-	-	36	-	-
<i>Selenastrum gracile</i> Reinsch.	-	-	-	-	-	-	-	-
<i>S. minutum</i> (Naeg.) Collins	-	-	-	-	-	-	-	-
<i>Spondylosium planum</i> (Wolle) W. & G. S. West	-	-	-	-	-	-	-	-
<i>Staurastrum apiculatum</i> Breb.	-	-	-	-	-	-	-	-
<i>S. chaetoceros</i> (Schroed.) G. M. Sm.	-	-	-	-	-	-	-	-
<i>S. dilatatum</i> Ehr.	-	-	-	-	-	-	-	-
<i>S. gracile</i> Ralfs	-	-	-	-	-	12	-	-
<i>S. granulosum</i> (Ehr.) Ralfs	-	-	-	-	-	-	-	-
<i>S. paradoxum</i> Meyen.	-	-	23	-	-	-	-	-
<i>Tetraedron caudatum</i> (Corda) Hans.	-	-	-	-	-	-	-	-
<i>T. minimum</i> (A. Braun) Hans.	-	-	23	-	-	-	-	-
<i>T. regulare</i> v. <i>incus</i> Teil.	-	-	-	-	-	-	-	-
<i>T. trigonum</i> (Naeg.) Hans.	-	-	-	-	-	-	-	-
<i>T. trigonum</i> v. <i>gracile</i> (Rein.) Det.	-	-	-	-	-	-	-	-
<i>Tetrastrum glabrum</i> (Roll) Ahl. and Tiff.	-	-	-	-	-	48	-	-
<i>T. staurogenaeforme</i> (Schroed.) Lemm.	-	-	-	-	-	-	-	-
<i>T. triacanthum</i> Kors.	-	-	-	-	-	-	-	-
<i>Thoracomonas phacotoidea</i> G. M. Sm.	-	-	-	-	-	-	-	-
<i>Trubaria setigerum</i> G. M. Sm.	-	-	-	-	-	-	-	-
<i>T. varia</i> Ahl. and Tiff.	-	-	-	-	-	-	-	-
<i>Westella botryoides</i> (W. West) De Bilt.	-	-	-	-	-	215	-	-
unidentified coccoid sp.	-	-	113	21	-	-	-	-

Taxa	Date Time	5/5/79 1200	6/13/79 1700	7/26/79 1500	8/23/79 1430	9/20/79 1130	10/17/79 1030	12/13/79 1630
Cyanophyta								
<u>Agmenellum quadruplicatum</u>								
Breh.	-	-	-	360	-	382	-	-
<u>Anabaena sp. 1 Bory</u>	-	-	-	-	-	-	-	-
<u>Anabaena sp. 1 Bory</u>	-	-	43	113	-	346	-	-
<u>Anabaena sp. 2 Bory</u>	-	-	-	-	-	-	-	-
<u>Anacyctis cyanea</u>								
Dr. and Daily	-	-	-	1,935	-	-	-	4,173
<u>A. incerta</u> Dr. and Daily	12,865	8,334	1,643	5,779	8,827	20,189	-	-
<u>A. montana f. minor</u>								
Dr. and Daily	-	-	-	-	-	-	-	-
<u>A. thermalis</u> Dr. and Daily	-	-	-	-	-	-	-	-
<u>A. thermalis f. major</u>								
(Laverh.)	-	-	-	-	-	-	-	-
<u>Anacyctis sp. 1 Meneghini</u>	-	434	23	-	-	24	-	262
<u>Anacyctis sp. 2 Meneghini</u>	-	-	-	-	-	-	-	-
<u>Aphanothece clathrata</u>								
G. S. West	-	-	-	-	-	-	-	-
<u>Aphanothece sp. 1 Nag.</u>	-	-	1,958	-	-	-	-	-
<u>Coccochloris peniocystis</u>								
Dr. and Daily	-	-	-	-	43	-	-	-
<u>Chroococcus sp. Nageli</u>	-	-	-	-	-	-	-	-
<u>Dactylococcopsis</u>								
fascicularis Lemm.	-	-	-	-	-	-	-	-
<u>Gomphosphaeria lacustris</u>								
Chod.	-	-	-	-	21	-	-	-
<u>Lynghya contorta</u> Lemm.	-	-	-	-	-	-	-	-
<u>L. Digueii</u> Gomont	-	-	-	-	-	-	75	-
<u>L. limnetica</u> Lemm.	-	-	-	-	-	2,517	745	-
<u>Lynghya sp. 1 Agardh</u>	-	-	405	-	-	-	-	-
<u>Nostoc sp. Vaucher</u>	-	-	-	-	-	-	-	-
<u>Oscillatoria angustissima</u>								
West & West	2,100	4,075	518	473	620	331	2,707	
<u>O. limnetica</u> Lemm.	-	260	495	3,094	561	99	559	
<u>Palmogloea protuberans</u>								
(Sm. & Sow.) Kuetz	-	-	-	-	-	-	-	-
<u>Spirulina major</u> Kuetz.	-	-	-	43	-	17	35	
Euglenophyta								
<u>Euglena sp. Ehr.</u>	-	-	-	-	-	12	-	-
<u>Trachelomonas varians</u>								
(Lemm.) Defl.	-	-	-	-	-	-	-	-
<u>T. volvocina</u> Ehr.	-	-	-	-	-	12	-	-
<u>Trachelomonas sp. Ehr.</u>	-	-	-	-	-	12	-	-
<u>Trachelomonas sp. 1 Ehr.</u>	-	43	-	-	-	-	-	-
unidentified	-	-	-	-	-	-	-	-
euglenoid sp. 1	-	-	-	-	-	-	-	-
Pyrrhophyta								
<u>Glenodinium sp. Stein</u>	-	-	-	-	-	-	-	-
<u>Peridinium sp. Ehr.</u>	-	-	-	-	-	-	-	-
Others								
unidentified								
phytoflagellates (<10u)	-	33	675	537	119	108	157	
<hr/>								
Total number of taxa observed		22	33	34	29	34	36	28
Total number of individuals per milliliter		15,117	14,007	10,156	11,526	14,722	22,285	9,931

[Standing crop in cells per milliliter]

Date Time	5/4/79 1600	6/13/79 1400	7/26/79 1800	8/23/79 1330	9/20/79 0830	10/16/79 0945	12/12/79 1300
Bacillariophyta							
<i>Achnanthes lanceolata</i> Breb. ex Kutz.	-	-	-	-	-	-	13
<i>A. minutissima</i> Kutz.	4	-	85	114	-	7	13
<i>Asterionella formosa</i> Haas.	42	-	-	-	-	-	75
<i>Cocconeis diminuta</i> Pant.	-	-	43	-	-	-	-
<i>C. placentula</i> Ehr.	4	-	-	-	-	-	-
<i>C. placentula</i> v. <i>euglypta</i> (Ehr.) CL.	-	-	-	-	-	-	-
<i>Cyclotella atomus</i> Hust.	-	22	-	170	26	102	13
<i>C. glomerata</i> Bach.	31	133	213	170	78	110	-
<i>C. Meneghiniana</i> Kutz.	-	-	-	170	-	7	13
<i>C. stelligera</i> CL. and Grun.	-	-	-	-	-	-	-
<i>Cymbella ventricosa</i> Kutz.	-	-	-	-	-	-	-
<i>Funotia curvata</i> (Kutz.) Lozerat	-	-	-	-	-	-	-
<i>F. pectinalis</i> (O.F. Mull.) Rabh.	4	-	-	-	-	7	-
Fragilaria bicapitata							
<i>A. Mayer</i>	-	-	-	-	-	-	-
<i>F. brevistriata</i> Grun.	8	-	-	-	-	-	-
<i>F. crotonensis</i> Kitton	-	-	-	-	-	-	-
<i>F. intermedia</i> Grun.	31	-	-	-	-	29	38
<i>F. vaucheriae</i> (Kutz.) Peters	-	-	128	170	52	7	-
<i>Fragilaria</i> sp. 1 Lyngh.	-	-	-	-	-	-	-
Frustulia rhomboides							
(Ehr.) Det.	4	-	-	-	-	-	-
Gomphonema angustatum v. productum Grun.							
<i>G. gracile</i> Ehr. emend V.H.	-	-	-	-	-	-	-
<i>G. parvulum</i> (Kutz.)	-	-	-	-	52	15	-
Melosira distans (Ehr.) Kutz.							
	15	-	-	-	-	51	63
<i>M. granulata</i> (Ehr.) Ralfs	19	-	-	-	-	51	-
<i>M. granulata</i> v. <i>angustissima</i> Mull.	-	-	-	-	-	-	-
<i>M. islandica</i> Mull.	-	-	-	-	-	37	-
<i>M. italica</i> (Ehr.) Kutz.	-	-	-	-	-	-	-
<i>M. varians</i> C.A. Ag.	-	-	-	-	-	-	-
Navicula bicapitellata Hust.							
	-	22	-	57	-	7	-
N. confervaceae (Kutz.) Grun.							
<i>N. cryptocephala</i> Kutz.	-	-	-	-	-	7	38
<i>N. exigua</i> Greg. ex Grun.	-	-	-	-	-	-	-
<i>N. hungarica</i> Grun.	-	44	-	-	-	-	-
<i>N. pupula</i> Kutz.	4	-	-	-	26	-	13
<i>N. rhyncocephala</i> Kutz.	-	-	-	-	-	-	-
<i>N. tripunctata</i> (Mull.) Bory.	-	-	-	-	-	-	-
<i>N. viridula</i> v. <i>rostellata</i> (Kutz.) CL.	-	-	-	-	26	-	-
Nitzschia acicularis W. Sm.							
	4	-	-	-	-	15	-
<i>N. filiformis</i> (W. Sm.) Hust.	8	-	-	-	26	-	-
<i>N. holstiana</i> Hust.	-	-	-	-	-	-	-
<i>N. palea</i> (Kutz.) W. Sm.	12	-	128	-	157	29	13
<i>Onephora?</i> sp. Petit	-	-	-	-	-	7	-
Pinnularia brebissonii v. <i>diminuta</i> (Grun.) CL.							
	-	-	-	-	-	7	-
<i>Pinnularia</i> sp. 1 Ehr.	-	-	-	-	-	-	-
Rhizosolenia eriensis W.L. Sm.							
	-	-	-	-	-	-	-
Suriella angustata Kutz.							
<i>S. ovata</i> Kutz.	-	-	-	-	-	-	-
<i>S. ovata</i> v. <i>pinnata</i> (W. Sm.)	-	-	43	-	-	-	-
Synedra actinastroides Lemm.							
	-	-	-	-	-	-	-

[Standing crop in cells per milliliter]

Date Time	5/4/79 1600	6/13/79 1400	7/26/79 1800	8/23/79 1330	9/20/79 0830	10/16/79 0945	12/12/79 1300
Faciliariophyta--Continued							
<i>S. acus</i> Kutz.	-	-	43	-	-	-	-
<i>S. delicatissima</i> W. Sm.	-	-	-	-	-	-	-
<i>S. rumpens</i> Kutz.	-	-	128	-	-	-	-
<i>S. ulna</i> (Nitz.) Ehr.	-	-	-	-	-	-	-
<i>Synedra</i> sp. Ehr.	-	-	-	-	-	-	-
<i>Synedra</i> sp. 1 Ehr.	-	-	-	-	-	-	-
<i>Tabellaria fenestrata</i> (Lyngb.) Kutz.	-	-	-	-	-	110	75
Chrysoophyta							
<i>Dinobryon sociale</i> Ehr.	-	-	-	-	78	-	-
Cryptophyta							
<i>Chroomonas</i> sp. 1 Hans.	8	22	468	341	889	95	276
<i>Cryptomonas ovata</i> Ehr.	4	-	43	-	-	-	-
<i>Cryptomonas</i> sp. 1 Ehr.	-	66	298	57	165	-	50
<i>Cryptomonas</i> sp. 2 Ehr.	-	-	-	-	-	-	-
Chlorophyta							
<i>Actinastrum Hantzschii</i> v. <i>elongatum</i> G.M. Sm.	-	-	-	-	-	-	-
<i>A. Hantzschii</i> v. <i>fluviale</i> Schroed.	-	-	-	-	-	-	-
<i>Ankistrodesmus convolutus</i> Corda.	-	-	-	-	131	7	-
<i>A. falcatus</i> (Corda.) Ralfs	19	155	43	738	-	-	25
<i>A. falcatus</i> v. <i>mirabilis</i> (West & West) G.S. West	-	-	-	-	-	-	-
<i>Arthrodesmus incus</i> (Hreb.) Hass.	4	-	-	-	-	-	-
<i>Carteria multifilis</i> (Pres.) Dill.	58	842	340	511	-	15	-
<i>Cephalomonas granulata</i> Hignb.	-	-	-	-	-	-	-
<i>Characium ambiguum</i> Hermann	-	-	-	-	-	-	-
<i>Characium</i> sp. 1 A. Braun	-	-	-	-	-	-	-
<i>Chlamydomonas epiphytica</i> G. M. Sm.	-	-	-	-	-	-	-
<i>C. globosa</i> Snow	23	177	85	568	-	-	-
<i>Chlamydomonas</i> sp. 1 Ehr.	-	332	85	57	-	-	12
<i>Chlorogonium elongatum</i> Dang.	-	-	43	-	-	-	-
<i>Closteriopsis longissima</i> Leem.	-	-	-	-	26	-	-
<i>Closterium gracile</i> Breb.	-	-	-	-	-	7	-
<i>Coelastrum microporum</i> Naeg.	-	-	-	454	-	-	-
<i>C. proboscideum</i> Bohlin.	-	-	-	-	-	-	-
<i>C. reticulatum</i> (Dang.) Senn.	-	-	-	-	419	-	-
<i>C. sphaericum</i> Naeg.	-	-	340	-	-	-	-
<i>Cosmarium geometricum</i> W. & G.S. West	-	-	-	-	-	-	-
<i>Cosmarium</i> sp. 1 Corda	-	-	43	-	-	7	-
<i>Crucigenia fenestrata</i> Schmid.	-	-	-	-	-	-	-
<i>C. rectangularis</i> (A. Br.) Gay	-	-	-	-	-	-	-
<i>C. tetrapedia</i> (Kirch.) West & West	15	-	-	-	-	-	-
<i>Dictyosphaerium</i> <i>Ehrenbergianum</i> Naeg.	-	22	170	-	-	15	-
<i>D. pulchellum</i> Wood	-	-	-	454	-	-	-
<i>Golenkinia radiata</i> (Chod.) Wille	4	22	-	-	-	-	-
<i>Kirchneriella contorta</i> (Schmid.) Bohl.	-	-	-	284	-	-	-
<i>K. elongata</i> G. M. Sm.	-	-	-	-	-	-	-

[Standing crop in cells per milliliter]

Date Time	5/4/79 1600	6/13/79 1400	7/26/79 1800	9/23/79 1330	9/20/79 0830	10/16/79 0945	12/12/79 1300
Chlorophyta--Continued							
<i>K. lunaris</i> v. <i>Dianae</i> Rohl.	-	-	-	227	-	-	13
<i>K. lunaris</i> v. <i>irregularis</i> G. M. Schmid.	-	-	-	-	-	-	-
<i>K. obesa</i> (W. West) Schmid.	-	22	43	57	-	-	-
<i>K. subsolitaria</i> G. S. West	-	66	85	-	-	-	13
<i>Lagerheimia quadriseta</i> (Lemm.) G. M. Sm.	-	22	-	-	-	-	-
<i>Micractinium pusillum</i> Fres.	-	-	-	-	-	29	-
<i>Nephroclytium limneticum</i> (G. M. Sm.)	-	-	-	-	-	-	-
<i>Oocystis Borgei</i> Snow	-	-	-	-	26	-	-
<i>O. lacustris</i> Chod.	-	-	-	-	-	-	-
<i>O. pusilla</i> Hans.	-	-	-	-	-	-	-
<i>O. pyriformis</i> Prescott	-	-	-	-	-	-	-
<i>Oocystis</i> sp. Nagell	-	-	-	-	-	-	-
<i>Pandorina morum</i> (Muell.) Bory	-	-	-	-	-	-	-
<i>Pediastrum biradiatum</i> Meyen.	-	-	-	-	-	-	-
<i>P. duplex</i> v. <i>gracillimum</i> West & West	-	-	-	-	-	-	-
<i>P. tetras</i> v. <i>tetraodon</i> (Corda) Rabh.	-	-	-	-	-	-	-
<i>Polyedriopsis spinulosa</i> Schmid.	-	-	-	-	-	-	-
<i>Radiofillum irregulare</i> (Wille) Brunn.	-	-	-	-	-	-	-
<i>Scenedesmus abundans</i> (Kirch.) Chod.	-	-	-	227	-	-	-
<i>S. biuga</i> (Turp.) Lagerh.	-	-	-	-	-	-	-
<i>S. denticulatus</i> Lagerh.	-	-	-	-	-	29	-
<i>S. dimorphus</i> (Turp.) Kuetz	-	44	340	-	-	-	-
<i>S. incrassatus</i> Rohl.	-	-	-	-	-	-	-
<i>S. obliquus</i> (Turp.) Kuetz	-	-	-	-	-	-	664
<i>S. opoliensis</i> v. <i>contacta</i> Prescott	-	-	-	341	-	-	-
<i>S. quadricauda</i> (Turp.) De Breh.	8	89	85	454	209	-	38
<i>Scenedesmus</i> sp. 1 Meyen	-	44	255	-	-	-	-
<i>Schroederia setigera</i> (Schroed.) Lemm.	-	22	-	-	26	7	-
<i>Selenastrum gracile</i> Reinsch.	-	-	-	-	-	-	-
<i>S. minutum</i> (Naeg.) Collins	-	-	-	-	-	-	-
<i>Spondylium planum</i> (Wolle) W. & G. S. West	-	-	85	-	-	-	-
<i>Staurastrum apiculatum</i> Breh.	-	-	-	-	-	-	-
<i>S. chaetoceros</i> (Schroed.) G. M. Sm.	-	-	-	-	-	-	-
<i>S. dilutatum</i> Ehr.	-	-	-	-	-	-	-
<i>S. gracile</i> Ralfs	-	-	-	-	-	-	-
<i>S. granulatum</i> (Ehr.) Ralfs	-	-	-	-	-	7	-
<i>S. paradoxum</i> Meyen.	-	-	-	-	-	-	-
<i>Tetraedron caudatum</i> (Corda) Hans.	-	-	43	-	-	-	-
<i>T. minimum</i> (A. Braun) Hans.	-	-	-	-	-	-	13
<i>T. regulare</i> v. <i>incus</i> Teil.	-	-	-	-	-	-	-
<i>T. trigonum</i> (Naeg.) Hans.	-	-	-	-	-	-	-
<i>T. trigonum</i> v. <i>gracile</i> (Rein.) Det.	-	-	-	-	-	-	-
<i>Tetrastrum glabrum</i> (Roll) Ahl. and Tiff.	-	-	-	-	-	-	-
<i>T. staurogeniaeforme</i> (Schroed.) Lemm.	-	-	-	-	-	-	-
<i>T. triacanthum</i> Kors.	-	-	-	-	-	-	-
<i>Thoracomonas phacotoidea</i> G. M. Sm.	-	22	-	-	-	-	-
<i>Treubaria setigerum</i> G. M. Sm.	-	-	-	-	-	-	-
<i>T. varia</i> Ahl. and Tiff.	-	-	43	-	-	-	-
<i>Westella botryoides</i> (W. West) De Wild.	-	598	170	-	-	-	-
unidentified coccoid sp.	-	-	-	568	-	-	-

[Standing crop in cells per milliliter]

Date Time	5/4/79 600	6/13/79 1400	7/26/79 1800	8/23/79 1330	9/20/79 0830	10/16/79 0945	12/12/79 1300
Cyanophyta							
<u>Azmenellum quadruplicatum</u> Breb.	-	-	1,362	5,907	-	-	-
<u>Anabaena</u> sp. Bory	-	-	-	-	26	-	-
<u>Anabaena</u> sp. 1 Bory	-	-	-	-	-	-	-
<u>Anabaena</u> sp. 2 Bory	-	-	-	-	-	-	-
<u>Anacystis cyanea</u> Dr. and Daily	-	-	-	-	-	-	927
<u>A. incerta</u> Dr. and Daily	13,234	332	4,553	2,670	4,839	710	-
<u>A. montana</u> f. minor Dr. and Daily	-	-	-	-	-	-	-
<u>A. thermalis</u> Dr. and Daily	-	-	-	-	-	-	-
<u>A. thermalis</u> f. major (Lagerh.)	-	-	-	-	-	-	-
<u>Anacystis</u> sp. 1 Meneghini	62	-	170	-	-	-	-
<u>Anacystis</u> sp. 2 Meneghini	-	-	-	-	-	22	-
<u>Aphanothece clathrata</u> G. S. West	-	-	-	-	-	-	-
<u>Aphanothece</u> sp. 1 Nag.	-	-	-	-	-	-	-
<u>Coccochloris pentocystis</u> Dr. and Daily	-	-	85	-	-	-	-
<u>Chroococcus</u> sp. Nagell	-	-	-	-	-	-	-
<u>Dactylococcopsis</u> fascicularis Lemm.	-	-	-	-	-	-	-
<u>Gomphosphaeria lacustris</u> Chod.	-	-	-	-	-	-	-
<u>Lyngbya contorta</u> Lemm.	-	-	-	-	-	-	-
<u>L. Diguei</u> Gomont	-	-	-	-	-	-	-
<u>L. limnetica</u> Lemm.	-	-	-	-	785	-	-
<u>Lyngbya</u> sp. 1 Agardh	-	-	-	-	-	-	-
<u>Nostoc</u> sp. Vaucher	-	-	-	-	-	-	-
<u>Oscillatoria angustissima</u> West & West	308	2,126	-	966	1,046	73	1,153
<u>O. limnetica</u> Lemm.	96	-	596	1,704	-	358	-
<u>Palmogloea protuberans</u> (Sm. & Sow.) Kuetz	-	-	-	-	-	-	-
<u>Spirulina major</u> Kuetz.	-	-	-	284	-	-	-
Muglenophyta							
<u>Euglena</u> sp. Ehr.	-	-	85	-	-	7	-
<u>Trachelomonas varians</u> (Lemm.) Defl.	-	-	-	-	-	-	-
<u>T. volvocina</u> Ehr.	-	-	-	-	26	-	-
<u>Trachelomonas</u> sp. Ehr.	-	-	-	57	-	7	13
<u>Trachelomonas</u> sp. 1 Ehr.	-	-	-	-	-	-	-
unidentified euglenoid sp. 1	-	-	-	-	-	-	-
Pyrrhophyta							
<u>Glenodinium</u> sp. Stein	-	-	-	-	-	-	-
<u>Peridinium</u> sp. Ehr.	-	-	-	-	-	-	-
Others							
unidentified phytoflagellates (<10x)	27	155	1,064	1,022	549	29	313
Total number of taxa observed	29	24	35	28	23	35	24
Total number of individuals per milliliter	14,064	5,401	11,833	18,799	9,623	2,029	3,877

[Standing crop in cells per milliliter: *, present in insufficient densities to establish accurate count]

Date Time	4/17/7A 1530	5/2/7A 1400	5/5/7A 100	7/12/7A 0945	8/16/7A 1330	8/29/7A 1000
Taxa						
Bacillariophyta						
<i>Achnanthes</i> Bory	-	-	-	-	-	-
<i>Asterionella</i> Hassall	-	-	-	-	-	-
<i>Cyclotella</i> Brethson	2,200	910	3,600	430	-	-
<i>Cymbella</i> Agardh	-	-	-	-	-	-
<i>Funotia</i> Ehrenberg	-	-	-	-	-	-
<i>Fragilaria</i> Lyngbye	-	80	320	-	-	180
<i>Gomphonema</i> Hustedt	-	9	-	-	-	-
<i>Melosira</i> Kutzing	-	430	-	-	-	-
<i>Meridion</i> Agardh	-	-	-	-	-	-
<i>Navicula</i> Bory	-	27	-	-	-	-
<i>Nitzschia</i> Hassall	-	88	1400	290	-	180
<i>Rhizosolenia</i> Brightwell	-	18	-	-	-	-
<i>Semend</i> Ehrenberg	-	-	-	-	-	-
<i>Synedra</i> Ehrenberg	-	-	-	140	-	-
<i>Tabellaria</i> Ehrenberg	-	-	-	-	-	-
Chlorophyta						
<i>Actinastrum</i> Lagerheim	1,200	-	*	-	-	-
<i>Ankistrodesmus</i> Corda	600	160	-	430	400	360
<i>Carteria</i> Diesing	-	-	160	-	-	540
<i>Characium</i> A. Braun	-	-	-	-	-	-
<i>Chlamydomonas</i> Ehrenberg	2,100	410	950	580	1,600	900
<i>Chlorogonium</i> Ehrenberg	-	62	630	290	400	360
<i>Chodatella</i> Lemmermann	-	27	-	-	-	-
<i>Closteriopsis</i> Lemmermann	-	9	-	-	-	-
<i>Coccomonas</i> Stein	-	9	-	-	-	-
<i>Coelastrum</i> Nageli	-	160	-	-	-	-
<i>Cosmarium</i> Corda	-	9	-	-	-	-
<i>Crucigenia</i> Morren	-	35	-	580	-	-
<i>Dichotomococcus</i> Korshikov	-	-	-	-	-	-
<i>Dictyosphaerium</i> Nageli	-	27	4,300	-	-	-
<i>Dysmorphococcus</i> Takeida	-	-	-	-	-	180
<i>Elakatothrix</i> Wille	-	-	-	-	-	-
<i>Euastrum</i> Ehrenberg	-	-	-	140	-	-
<i>Francina</i> Lemmermann	-	-	-	-	-	180
<i>Gloeoactinium</i> G. M. Smith	900	-	-	-	-	-
<i>Gloeoecystis</i> Nageli	-	-	-	-	-	-
<i>Colankinia</i> Chodat	-	-	-	-	-	360
<i>Gonium</i> Muller	-	-	-	-	-	-
<i>Kirchneriella</i> Schmidle	200	27	1,700	580	-	-
<i>Micractinium</i> Freenius	-	280	1,300	1,200	400	-
<i>Mougeotia</i> Agardh	-	-	-	-	-	-
<i>Oocystis</i> Nageli	-	71	-	140	-	-
<i>Pandorina</i> Bory	800	-	-	-	-	-
<i>Pediastrum</i> Meyer	-	-	-	-	-	-
<i>Pteromonas</i> Seligo	-	-	-	-	-	-
<i>Scenedesmus</i> Meyen	-	53	2,100	15,000	2,400	360
<i>Selenastrum</i> Reinsch	400	-	160	870	-	1,600
<i>Schroederia</i> Lemmermann	100	9	*	140	-	-
<i>Spermatozoopsis</i> Korshikov	-	-	-	-	*	-
<i>Sphaerocystis</i> Chodat	-	-	-	-	-	-
<i>Staurastrum</i> Meyen	-	9	-	-	-	-

Date Time	4/17/78 1530	5/2/78 1400	6/5/78 1300	7/12/78 0945	8/16/78 1330	8/29/78 1000
Taxa						
Chlorophyta--Continued						
<u>Tetraedron</u> Kutzing	-	-	*	140	400	-
<u>Tetrastrum</u> Chodat	-	-	*	-	-	-
<u>Treubaria</u> Bernard	-	-	-	-	-	-
<u>Wetzelia</u> de Wildermann	-	-	-	-	-	-
<u>Wislouchiella</u> Skvortzow	-	-	-	-	-	-
<u>Volvox</u> Linnaeus	-	-	-	-	-	-
Chrysophyta						
<u>Centrifractus</u> Lemmermann	-	-	470	-	-	-
<u>Chrysococcus</u> Klebs	-	44	-	-	-	-
<u>Chrysphaerella</u> Lauterborn	-	-	-	-	-	-
<u>Dinobryon</u> Ehrenberg	-	190	-	-	-	-
<u>Mallomonas</u> Perty	-	-	*	-	-	-
<u>Ochromonas</u> Wyszoteki	-	-	-	-	-	-
<u>Synura</u> Ehrenberg	-	35	*	-	-	-
Cryptophyta						
<u>Chroomonas</u> Vanaxing	-	9	160	-	1,200	-
<u>Cryptomonas</u> Ehrenberg	200	190	2,700	290	1,600	-
Cyanophyta						
<u>Azmenellum quadruplicatum</u> (Meneghini) Brebisson	-	1,600	130,000	-	160,000	98,000
<u>Azmenellum</u> Brebisson	120,000	-	-	62,000	-	-
<u>Anabaena</u> Bory	-	110	-	-	-	-
<u>Anacystis cyanea</u> Drouet and Dally	-	-	-	-	-	-
<u>A. incerta</u> (Lemmermann) Drouet and Dally	-	-	21,000	60,000	200,000	26,000
<u>Anacystis</u> Meneghini	3,500	220	-	-	-	-
<u>Aphanizomenon</u> Murren	-	-	-	-	2,800	-
<u>Coccochloris</u> Sprengel	-	27	-	-	-	-
<u>Hormogonales</u>	-	-	-	-	18,000	7,600
<u>Lyngbya</u> Agardh	-	-	-	580	24,000	12,000
<u>Oscillatoria</u> Vaucher	19,000	150	1,300	2,600	4,800	3,300
<u>Phormidium</u> Kutzing	-	-	-	-	-	-
<u>Raphidiopsis</u> Fritsch and Rich	-	-	-	-	43,000	12,000
Euglenophyta						
<u>Euglena</u> Ehrenberg	-	9	-	-	-	-
<u>Lepocynclis</u> Perty	-	9	*	-	-	-
<u>Trachelomonas</u> Ehrenberg	500	18	*	-	-	180
Pyrophyta						
<u>Glenodinium</u> Stein	-	-	-	-	-	-
<u>Gyamodinium</u> Kofoid and Swezy	-	9	-	-	-	-
<u>Peridinium</u> Ehrenberg	-	-	-	-	-	-
Total number of taxa observed						
	14	37	25	20	16	13
Total number of cells per milliliter						
	151,700	5,540	172,250	146,420	458,600	164,280

[Standing crop in cells per milliliter]

Date Time	5/4/79 1800	6/15/79 1615	7/27/79 1700	8/24/79 1500	9/20/79 1300	10/17/79 0800	12/12/79 1600
Bacillariophyta							
<i>Achnanthes lanceolata</i> Breb. ex Kutz.	-	-	-	-	-	-	-
<i>A. minutissima</i> Kutz.	12	-	-	-	-	-	-
<i>Asterionella formosa</i> Hass.	40	-	-	-	-	-	-
<i>Cocconeis diminuta</i> Pant.	-	-	-	-	-	-	-
<i>C. placertula</i> Ehr.	-	-	-	-	-	-	-
<i>C. placertula</i> v. <i>euglypta</i> (Ehr.) Cl.	-	-	-	-	-	-	-
<i>Cyclotella atomus</i> Hust.	-	372	-	966	67	546	190
<i>C. glomerata</i> Bach.	29	558	562	552	401	425	48
<i>C. Meneghiniana</i> Kutz.	12	-	-	552	-	61	-
<i>C. stelligera</i> Cl. and Grun.	-	93	-	-	-	-	-
<i>Cymbella ventricosa</i> Kutz.	-	-	-	-	-	-	-
<i>Funotia curvata</i> (Kutz.) Lagerst.	-	-	-	-	-	-	-
<i>F. pectinalis</i> (O.F. Mull.) Rabh.	-	-	-	138	-	-	-
Fragilaria bicapitata							
<i>A. Mayer</i>	-	-	-	-	-	-	-
<i>F. brevistriata</i> Grun.	-	-	-	-	-	-	-
<i>F. crotonensis</i> Kitton	-	-	-	-	-	-	-
<i>F. intermedia</i> Grun.	17	-	141	138	-	-	-
<i>F. vaucheriae</i> (Kutz.) Peters	-	-	281	276	67	-	-
<i>Fragilaria</i> sp. 1 Lyngb.	-	-	-	-	-	-	-
<i>Frustulia rhomboidea</i> (Ehr.) Det.	-	-	-	-	-	-	-
Gomphonema angustatum v. productum Grun.							
<i>G. gracile</i> Ehr. emend V.H.	6	-	-	-	-	-	-
<i>G. parvulum</i> (Kutz.)	-	-	-	-	-	61	-
Melosira distans (Ehr.) Kutz.							
<i>M. granulata</i> (Ehr.) Ralfs	-	-	-	276	67	-	286
<i>M. granulata</i> v. <i>angustissima</i> Mull.	-	-	-	-	-	-	-
<i>M. islandica</i> Mull.	-	-	-	-	-	-	-
<i>M. italica</i> (Ehr.) Kutz.	12	-	-	-	-	-	-
<i>M. varians</i> C.A. Ag.	-	-	-	-	-	-	-
Navicula bicapitellata Hust.							
<i>N. confervaceae</i> (Kutz.) Grun.	-	-	-	-	-	-	-
<i>N. cryptocephala</i> Kutz.	-	-	-	-	-	121	-
<i>N. exigua</i> Greg. ex Grun.	-	-	-	-	-	-	-
<i>N. hungarica</i> Grun.	-	-	-	-	-	-	-
<i>N. pupula</i> Kutz.	-	-	-	-	-	-	-
<i>N. rhyncocephala</i> Kutz.	-	-	-	-	-	-	-
<i>N. tripunctata</i> (Mull.) Bory.	-	-	-	-	-	-	-
<i>N. viridula</i> v. <i>rostellata</i> (Kutz.) Cl.	-	-	-	-	-	-	-
<i>Nitzschia acicularia</i> W. Sm.	12	47	141	-	134	-	-
<i>N. filiformis</i> (W. Sm.) Hust.	-	-	-	-	-	-	-
<i>N. holsatica</i> Hust.	-	140	281	-	-	-	-
<i>N. palea</i> (Kutz) W. Sm.	23	-	-	-	67	-	-
<i>Ophephora?</i> sp. Petit	-	-	-	-	-	-	-
Pinnularia brebissonii v. diminuta (Grun.) Cl.							
<i>Pinnularia</i> sp. 1 Ehr.	-	-	-	-	-	-	-
Rhizosolenia ertensis H.L. Sm.							
<i>Scribrella angustata</i> Ki. <i>ovata</i> Kutz.	-	-	-	-	-	-	-
<i>S. ovata</i> v. <i>pinnata</i> (W. Sm.)	-	-	-	-	-	-	-
Synedra actinastroidea Lemm.							
	-	-	-	276	-	-	-

Date Time	5/4/79 1800	6/15/79 1615	7/27/79 1700	8/24/79 1500	9/20/79 1300	10/17/79 0800	12/12/79 1600
Bacillariophyta--Continued							
<i>S. acus</i> Kutz.	-	-	-	-	67	61	-
<i>S. delicatissima</i> W. Sm.	6	-	-	-	-	-	-
<i>S. rumpens</i> Kutz.	-	-	-	-	-	-	-
<i>S. ulna</i> (Nitz.) Ehr.	-	-	-	-	-	-	-
<i>Synedra</i> sp. Ehr.	-	-	-	-	-	-	-
<i>Synedra</i> sp. 1 Ehr.	-	-	-	-	-	-	-
<i>Tabellaria fenestrata</i> (Lyngb.) Kutz.	6	-	-	-	-	-	143
Chrysophyta							
<i>Dinobryon sociale</i> Ehr.	-	-	-	-	-	-	-
Chytridophyta							
<i>Chroomonas</i> sp. 1 Hans.	-	98	884	-	138	1,605	2,062
<i>Cryptomonas ovata</i> Ehr.	-	69	-	-	-	-	-
<i>Cryptomonas</i> sp. 1 Ehr.	-	6	465	984	276	535	485
<i>Cryptomonas</i> sp. 2 Ehr.	-	-	-	-	-	-	303
Chlorophyta							
<i>Actinastrum Hantzschii</i> v. <i>elongatum</i> G.M. Sm.	-	-	-	-	-	-	-
<i>A. Hantzschii</i> v. <i>fluviale</i> Schroed.	-	-	-	-	-	-	-
<i>Ankistrodesmus convolutus</i> Corda.	-	-	-	276	154	-	143
<i>A. falcatus</i> (Corda.) Ralfs	29	93	-	1,104	-	-	48
<i>A. falcatus</i> v. <i>mirabilis</i> (West & West) G.S. West	-	-	-	-	-	-	-
<i>Arthrodesmus incus</i> (Breb.) Hass.	-	-	-	-	-	-	-
<i>Carteria multifilis</i> (Fres.) Dill.	462	791	-	552	-	-	143
<i>Cephalomonas granulata</i> Higenb.	12	-	-	-	-	-	-
<i>Characium ambiguum</i> Hermann	-	-	-	-	-	-	-
<i>Characium</i> sp. 1 A. Braun	-	-	-	-	-	-	-
<i>Chlamydomonas epiphytica</i> G. M. Sm.	-	-	-	138	-	-	-
<i>C. globosa</i> Snow	87	93	-	552	67	-	381
<i>Chlamydomonas</i> sp. 1 Ehr.	-	512	-	-	267	425	48
<i>Chlorogonium elongatum</i> Dang.	6	47	-	-	-	-	-
<i>Closteriopsis longissima</i> Lemm.	-	-	-	-	-	-	-
<i>Closterium gracile</i> Breb.	-	-	-	-	-	-	-
<i>Coelastrum microporum</i> Naeg.	-	-	-	-	-	-	-
<i>C. proboacideum</i> Bohlin.	-	-	-	-	-	-	-
<i>C. reticulatum</i> (Dang.) Senn.	-	-	-	-	-	-	-
<i>C. sphaericum</i> Naeg.	-	-	-	-	-	-	-
<i>Cosmarium geometricum</i> W. & G.S. West	-	-	-	552	-	-	-
<i>Cosmarium</i> sp. 1 Corda	-	-	-	-	-	-	-
<i>Crucigenia fenestrata</i> Schm. l.	-	-	-	-	-	-	-
<i>C. rectangularis</i> (A. Br.) Gay	-	-	2,248	-	-	-	-
<i>C. tetrapedia</i> (Kirch.) West & West	-	-	-	-	-	-	-
<i>Dictyosphaerium</i> Ehrenbergianum Naeg.	-	791	-	-	267	243	-
<i>D. pulchellum</i> Wood	46	-	-	1,104	-	-	-
<i>Golenkinia radfata</i> (Chod.) Wille	-	93	141	-	-	61	-
<i>Kirchneriella contorta</i> (Schmid.) Rohlf.	-	-	-	-	67	-	-
<i>K. elongata</i> G. M. Sm.	-	-	-	-	-	-	-

Date Time	5/4/79 1800	6/15/79 1615	7/27/79 1700	8/24/79 1500	9/20/79 1300	10/17/79 0800	12/12/79 1600
Chlorophyta--Continued							
<i>K. lunaris</i> v. <i>Dianae</i> Bohl.	-	47	141	414	-	182	-
<i>K. lunaris</i> v. <i>irregularis</i> G. M. Schmid.	-	-	-	-	-	-	-
<i>K. obesa</i> (W. West) Schmid.	-	47	-	138	134	-	-
<i>K. subsolitaria</i> G. S. West	-	-	-	-	-	-	-
<i>Lagerheimia quadrifeta</i> (Lemm.) G. M. Sm.	-	-	-	-	-	-	-
<i>Microactinium pusillum</i> Presc.	-	-	-	-	-	-	-
<i>Nephrocystium limneticum</i> (G. M. Sm.)	-	-	-	-	-	-	-
<i>Oocystis Borkei</i> Snow	-	-	562	-	-	-	-
<i>O. lacustris</i> Chod.	23	-	-	138	-	-	-
<i>O. pusilla</i> Hans.	-	-	-	-	-	-	-
<i>O. pyriformis</i> Prescott	-	-	-	-	-	-	-
<i>Oocystis</i> sp. Nageli	-	-	-	-	-	-	-
<i>Pandorina morum</i> (Muell.) Bory	-	-	-	-	-	-	-
<i>Pediastrum biradiatum</i> Meyen.	-	-	-	-	-	-	-
<i>P. dunlex</i> v. <i>gracillimum</i> West & West	-	-	-	-	-	-	-
<i>P. tetras</i> v. <i>tetraodon</i> (Corda) Rabb.	-	-	-	-	-	-	190
<i>Polyedriopsis spinulosa</i> Schmid.	-	47	-	-	-	-	-
<i>Radtollum irregulare</i> (Wille) Brunn.	-	-	-	-	-	-	-
<i>Scenedesmus abundans</i> (Kirch.) Chod.	-	-	-	276	-	-	-
<i>S. biuga</i> (Turp.) Lagerh	-	-	-	-	-	-	-
<i>S. denticulatus</i> Lagerh.	-	-	562	552	134	-	-
<i>S. dimorphus</i> (Turp.) Kuetz	-	-	-	-	-	-	-
<i>S. incrassatus</i> Bohl.	-	-	-	-	-	-	-
<i>S. obliquus</i> (Turp.) Kuetz	-	-	-	-	-	-	999
<i>S. opifensis</i> v. <i>contacta</i> Prescott	-	-	-	-	-	-	-
<i>S. quadricauda</i> (Turp.) De Breb.	23	279	281	7,173	134	121	-
<i>Scenedesmus</i> sp. 1 Meyen	-	186	-	552	-	-	-
<i>Schroederia setigera</i> (Schroed.) Lemm.	-	-	281	-	67	-	-
<i>Selenastrum gracile</i> Reinach.	-	-	-	-	-	-	-
<i>S. minutum</i> (Naeg.) Collins	12	-	-	-	-	-	-
<i>Spondylosium planum</i> (Wolle) W. & G. S. West	-	-	-	-	-	-	-
<i>Staurostrum apiculatum</i> Breb.	-	-	-	-	-	-	-
<i>S. chaetoceros</i> (Schroed.) G. M. Sm.	-	-	141	268	-	-	-
<i>S. dilatum</i> Ehr.	-	-	-	-	-	-	-
<i>S. gracile</i> Ralfs	-	-	-	-	-	-	-
<i>S. granulatum</i> (Ehr.) Ralfs	-	-	-	-	-	-	-
<i>S. paradoxum</i> Meyen.	-	-	-	-	-	-	-
<i>Tetraedron caudatum</i> (Corda) Hans.	-	-	-	-	-	-	-
<i>T. minimum</i> (A. Braun) Hans.	-	-	-	-	-	-	-
<i>T. regulare</i> v. <i>incus</i> Teil.	-	-	-	-	-	-	-
<i>T. trigonum</i> (Naeg.) Hans.	-	-	-	-	-	-	-
<i>T. trigonum</i> v. <i>gracile</i> (Rein.) Det.	-	-	-	-	-	-	-
<i>Tetrastrum glabrum</i> (Roll) Ahl. and Tiff.	-	-	-	-	-	-	-
<i>T. staurogeniaeforme</i> (Schroed.) Lemm.	-	-	-	-	-	-	-
<i>T. triacanthum</i> Kors.	-	-	-	-	-	-	48
<i>Thoracomonas phacotoides</i> G. M. Sm.	-	-	-	-	67	-	-
<i>Treubaria setigerum</i> G. M. Sm.	-	-	-	-	-	61	-
<i>T. varia</i> Ahl. and Tiff.	-	-	-	-	-	-	-
<i>Westella botryoidea</i> (W. West) De Wild.	-	-	-	-	-	-	-
unidentified coccoid sp.	-	-	-	-	-	-	-

Date Time	5/4/79 1800	6/15/79 1615	7/27/79 1700	8/24/79 1500	9/20/79 1300	10/17/79 0800	12/12/79 1600
Cyanophyta							
<u>Agmenellum quadruplicatum</u>							
Breb.	-	3,360	225,830	144,976	17,720	12,373	-
<u>Anabaena</u> sp. Rory	-	-	-	-	-	788	-
<u>Anabaena</u> sp. 1 Rory	-	-	-	-	-	-	-
<u>Anabaena</u> sp. 2 Rory	-	-	-	-	-	-	-
<u>Anacystis cyanea</u>							
Dr. and Daily	-	-	-	-	-	-	428
<u>A. incerta</u> Dr. and Daily	647	1,024	60,287	41,382	10,498	3,336	-
<u>A. montana</u> f. minor							
Dr. and Daily	-	-	-	-	-	-	-
<u>A. thermalis</u> Dr. and Daily	-	-	-	-	-	-	-
<u>A. thermalis</u> f. major							
(Lagerh.)	-	-	-	-	-	-	-
<u>Anacystis</u> sp. 1 Meneghini	-	-	-	1,241	-	-	48
<u>Anacystis</u> sp. 2 Meneghini	-	-	-	-	-	-	-
<u>Aphanothece clathrata</u>							
G. S. West	-	-	-	-	-	4,280	-
<u>Aphanothece</u> sp. 1 Nagl.	-	-	141	-	-	-	-
<u>Coccochloris penicocystis</u>							
Dr. and Daily	-	-	-	-	-	-	-
<u>Chroococcus</u> sp. Nageli	-	-	-	-	-	-	-
<u>Dactylococcopsis</u>							
fascicularis Lemm.	-	-	-	-	-	243	-
<u>D. raphidioides</u> Hanag.	-	-	-	-	-	-	95
<u>Gomphosphaeria lacustris</u>							
Chod.	-	-	-	-	-	535	1,759
<u>Lyngbya contorta</u> Lemm.	-	-	1,827	1,379	-	-	-
<u>L. Diguettii</u> Gomont	-	-	-	-	-	-	-
<u>L. linnetica</u> Lemm.	-	-	-	-	2,340	-	-
<u>Lyngbya</u> sp. 1 Agardh	-	-	-	-	-	-	-
<u>Noctoc</u> sp. Vaucher	-	-	-	-	-	-	-
<u>Oscillatoria angustissima</u>							
West & West	173	-	-	4,414	6,687	-	1,153
<u>O. linnetica</u> Lemm.	-	2,373	-	5,656	-	-	-
<u>Palmogloea protuberans</u>							
(Sm. & Sow.) Kuetz	-	-	-	-	-	-	-
<u>Spirulina major</u> Kuetz.	-	-	-	-	-	-	-
Euglenophyta							
<u>Euglena</u> sp. Ehr.	-	-	-	-	-	-	-
<u>Trachelomonas varians</u>							
(Lemm.) Defl.	-	-	-	-	-	-	-
<u>T. volvocina</u> Ehr.	-	-	-	-	67	61	-
<u>Trachelomonas</u> sp. Ehr.	-	-	-	-	-	-	-
<u>Trachelomonas</u> sp. 1 Ehr.	-	-	-	-	-	-	-
unidentified euglenoid sp. 1	-	-	141	-	-	-	-
Pyrrhophyta							
<u>Glenodinium</u> sp. Stein	-	-	-	-	-	-	-
<u>Peridinium</u> sp. Ehr.	-	-	-	-	-	-	-
Others							
unidentified phytoflagellates (<10u)	133	186	141	3,085	936	606	511
<hr/>							
Total number of taxa observed	23	25	21	32	25	23	21
Total number of individuals per milliliter	1,828	11,352	295,479	220,080	40,870	26,851	9,511

[Standing crop in cells per milliliter; *, present in insufficient densities
to establish accurate count]

Date Time	4/12/78 1400	5/4/78 1245	6/1/78 1315	7/11/78 1345	8/17/78 0915	8/29/78 1415
Taxa						
Bacillariophyta						
<i>Achnanthes</i> Bory	-	-	-	-	2,300	*
<i>Asterionella</i> Hassall	-	-	-	-	-	-
<i>Cyclotella</i> Brebisson	13,000	1,700	1,200	130	470	-
<i>Cymbella</i> Agardh	-	-	-	-	-	-
<i>Eunotia</i> Ehrenberg	-	-	-	-	-	-
<i>Fragilaria</i> Lyngbye	-	64	-	-	-	-
<i>Gomphonema</i> Husted	-	-	-	-	-	-
<i>Melosira</i> Kutzing	960	1,400	-	-	470	-
<i>Meridion</i> Agardh	-	-	-	-	-	-
<i>Navicula</i> Bory	-	-	-	-	-	-
<i>Nitzschia</i> Hassall	240	210	1,400	-	-	-
<i>Rhizosolenia</i> Brightwell <i>lemond</i> Ehrenberg	-	-	-	530	-	-
<i>Synedra</i> Ehrenberg	-	-	-	130	-	-
<i>Tabellaria</i> Ehrenberg	-	-	-	*	-	-
Chlorophyta						
<i>Actinastrum</i> Lagerheim	-	340	-	-	-	280
<i>Ankistrodesmus</i> Corda	1,200	710	700	-	-	-
<i>Carteria</i> Diesing	-	-	-	130	*	-
<i>Characium</i> A. Braun	-	-	-	-	-	-
<i>Chlamydomonas</i> Ehrenberg	2,200	1,100	460	-	-	-
<i>Chlorogonium</i> Lemmermann	-	-	460	130	470	-
<i>Chodatella</i> Lemmermann	240	43	-	-	-	-
<i>Closteriopsis</i> Lemmermann	-	-	-	-	-	-
<i>Coccomonas</i> Stein	-	64	-	-	-	-
<i>Coelastrum</i> Nagell	-	-	-	-	-	-
<i>Cosmarium</i> Corda	-	-	-	130	-	-
<i>Crucigenia</i> Morren	-	-	-	1,600	-	-
<i>Dicruciomococcus</i> Korshikov	-	-	-	-	-	-
<i>Dictyosphaerium</i> Nagell	-	340	-	-	2,300	-
<i>Dysmorphococcus</i> Takeda	-	-	-	-	-	-
<i>Elakatothrix</i> Wille	-	-	-	-	-	-
<i>Euastrum</i> Ehrenberg	-	-	-	-	-	-
<i>Francia</i> Lemmermann	-	-	-	-	-	-
<i>Gloeoactinia</i> J. M. Smith	-	340	-	-	-	-
<i>Gloeoactinia</i> Nagell	-	-	-	-	-	-
<i>Golenkinia</i> Chodat	-	21	230	-	-	570
<i>Gonium</i> Muller	-	-	-	-	-	-
<i>Kirchneriella</i> Schmidle	-	-	1,600	-	-	-
<i>Microactinium</i> Presentis	2,600	810	930	400	-	-
<i>Mougeotia</i> Agardh	-	-	-	-	-	-
<i>Nocystis</i> Nagell	-	64	-	-	-	-
<i>Pandorina</i> Bory	-	-	-	-	-	-
<i>Pediastrum</i> Meyer	-	-	*	-	-	-
<i>Pteromonas</i> Seligo	-	110	-	-	-	-
<i>Scenedesmus</i> Meyen	960	340	3,200	2,900	6,600	570
<i>Selenastrum</i> Reinsch	1,400	85	1,400	130	-	570
<i>Schroederia</i> Lemmermann	-	-	*	-	-	2,000
<i>Spermatozoopsis</i> Korshikov	-	-	-	-	-	-
<i>Sphaerocystis</i> Chodat	-	-	-	-	-	-
<i>Staurastrum</i> Meyen	-	-	-	130	-	-

Taxa	Date Time	4/12/78 1400	5/4/78 1245	6/1/78 1315	7/11/78 1345	8/17/78 0915	8/29/78 1415
Chlorophyta--Continued							
<u>Tetraedron</u> Kutzing	-	-	-	-	130	470	-
<u>Tetrastrum</u> Chodat	3,800	-	-	-	-	-	-
<u>Treubaria</u> Bernard	-	21	-	-	270	-	-
<u>Westella de Wildermann</u>	-	-	-	-	-	470	570
<u>Wislouchiella</u> Skvortzow	-	21	-	-	-	-	-
<u>Volvox</u> Linnaeus	-	-	-	-	-	-	-
Chrysophyta							
<u>Centritractus</u> Lemmermann	-	-	-	-	-	-	-
<u>Chrysococcus</u> Klebs	-	-	-	-	-	-	-
<u>Chrysophaerella</u> Lauterborn	-	-	-	-	-	-	-
<u>Dinobryon</u> Ehrenberg	-	21	-	-	-	-	-
<u>Mallomonas</u> Perty	-	-	-	-	-	-	-
<u>Ochromonas</u> Hysotaki	480	-	-	-	-	-	-
<u>Synura</u> Ehrenberg	-	-	-	-	-	-	-
Cryptophyta							
<u>Chroomonas</u> Hanagirk	-	150	-	-	130	470	-
<u>Cryptomonas</u> Ehrenberg	720	510	700	130	470	280	-
Cyanophyta							
<u>Armenellum quadruplicatum</u> (Meneghini) Brebisson	-	12,000	430,000	48,000	77,000	-	-
<u>Armenellum</u> Brebisson	22,000	-	-	-	-	-	51,000
<u>Anabaena</u> Rory	-	-	-	-	-	-	-
<u>Anacyctis cyanea</u> Drouet and Daily	-	-	-	-	-	-	-
<u>A. incerta</u> (Lemmermann) Drouet and Daily	-	-	210,000	70,000	71,000	-	-
<u>Anacyctis</u> Meneghini	8,600	600	-	400	-	-	50,000
<u>Aphanizomenon</u> Morren	-	-	-	-	-	-	-
<u>Coccochloris</u> Sprengel	-	210	-	-	-	-	-
<u>Hormogonales</u>	-	190	-	-	-	-	-
<u>Lyngbya</u> Agardh	-	-	-	20,000	25,000	19,000	-
<u>Oscillatoria</u> Vaucher	4,100	660	14,000	130	9,800	3,100	-
<u>Phormidium</u> Kutzing	-	-	-	-	-	2,300	-
<u>Raphidiopsis</u> Fritsch and Rich	-	-	-	530	97,000	53,000	-
Euglenophyta							
<u>Euglena</u> Ehrenberg	-	21	-	-	-	-	-
<u>Lepocynclis</u> Perty	-	-	-	-	-	-	-
<u>Trachelomonas</u> Ehrenberg	-	43	-	-	-	-	-
Pyrrophyta							
<u>Glenodinium</u> Stein	-	-	-	-	-	-	-
<u>Gymnodinium</u> Kofoid and Swezy	-	-	-	-	-	-	-
<u>Peridinium</u> Ehrenberg	-	-	-	-	-	-	-
Total number of taxa observed		15	29	15	22	16	14
Total number of cells per milliliter		62,500	22,188	666,280	146,060	294,290	183,240

[Standing crop in cells per milliliter]

Date Time	5/5/79 0900	6/15/79 1430	7/27/79 1430	8/24/79 1230	9/20/79 1330	10/17/79 1300	12/12/79 1700
Bacillariophyta							
<i>Achnanthes lanceolata</i>	-	-	-	-	-	-	-
Breb. ex Kutz.	-	-	-	-	-	-	-
<i>A. minutissima</i> Kutz.	111	-	-	-	-	-	58
<i>Asterionella formosa</i> Hass.	55	-	-	-	-	-	-
<i>Cocconeis diminuta</i> Pant.	-	-	-	-	-	-	-
<i>C. placentula</i> Ehr.	-	-	-	-	-	-	-
<i>C. placentula</i> v. <i>euglypta</i> (Ehr.) Cl.	-	-	-	-	-	-	-
<i>Cyclotella atomus</i> Hust.	-	907	283	1,878	5	176	233
<i>C. glomerata</i> Bach.	111	453	989	-	614	396	117
<i>C. Meneghiniana</i> Kutz.	-	-	141	134	-	264	-
<i>C. stelligera</i> Cl. and Grun.	55	91	-	-	-	-	-
<i>Cymbella ventricosa</i> Kutz.	-	-	-	-	-	-	-
<i>Eunotia curvata</i> (Kutz.) Loverst	-	-	-	-	-	-	-
<i>E. pectinalis</i> (O.F. Mull.) Rabh.	-	-	-	-	-	-	-
<i>Fragilaria bicapitata</i> A. Mavor	-	-	-	-	-	-	-
<i>F. brevistriata</i> Grun.	-	-	-	-	-	-	-
<i>F. crotonensis</i> Kitton	-	-	-	-	-	-	-
<i>F. intermedia</i> Grun.	-	-	-	-	-	-	-
<i>F. vaucheriae</i> (Kutz.) Peters	-	136	283	268	103	-	-
<i>Fragilaria</i> sp. 1 Lyngb.	-	-	-	-	-	-	-
<i>Frustulia rhomboidea</i> (Ehr.) Det.	-	-	-	-	-	-	-
<i>Gomphonema angustatum</i> v. <i>productum</i> Grun.	-	-	-	-	-	-	-
<i>G. gracile</i> Ehr. emend V.H.	-	-	-	-	-	-	-
<i>G. parvulum</i> (Kutz.)	-	-	-	-	-	-	-
<i>Melosira dilatans</i> (Ehr.) Kutz.	111	363	283	-	103	264	350
<i>M. granulata</i> (Ehr.) Ralfs	387	-	-	-	-	-	-
<i>M. granulata</i> v. <i>angustissima</i> Mull.	-	-	-	-	-	-	-
<i>M. islandica</i> Mull.	-	-	-	-	-	-	-
<i>M. italica</i> (Ehr.) Kutz.	-	-	-	-	-	-	-
<i>M. varians</i> C.A. Ag.	-	-	-	-	-	-	-
<i>Navicula bicapitellata</i> Hust.	-	-	-	-	-	-	-
<i>N. confervaceae</i> (Kutz.) Grun.	-	-	-	-	-	-	-
<i>N. cryptocephala</i> Kutz.	-	-	-	-	-	-	58
<i>N. exigua</i> Greg. ex Grun.	-	-	-	-	-	-	-
<i>N. hungarica</i> Grun.	-	-	-	-	-	-	-
<i>N. pupula</i> Kutz.	-	-	-	-	-	-	-
<i>N. rhynchocephala</i> Kutz.	-	-	-	-	-	-	-
<i>N. tripunctata</i> (Mull.) Bory.	-	-	-	-	-	-	-
<i>N. viridula</i> v. <i>rostellata</i> (Kutz.) Cl.	-	-	-	-	-	-	-
<i>Nitzschia acicularis</i> W. Sm.	55	-	141	134	413	-	58
<i>N. filiformis</i> (W. Sm.) Hust.	-	-	-	-	-	-	-
<i>N. holastica</i> Hust.	-	408	-	-	-	-	-
<i>N. palea</i> (Kutz) W. Sm.	-	-	-	-	-	44	-
<i>Oenophora?</i> sp. Petit	-	-	-	-	-	-	-
<i>Pinnularia brebissonii</i> v. <i>diminuta</i> (Grun.) Cl.	-	-	-	-	-	-	-
<i>Pinnularia</i> sp. 1 Ehr.	-	-	-	-	-	-	-
<i>Rhizosolenia eriensis</i> H.L. Sm.	-	-	-	-	-	-	-
<i>Surirella angustata</i> Kutz.	-	-	-	-	-	-	-
<i>S. ovata</i> Kutz.	-	-	-	-	-	-	-
<i>S. ovata</i> v. <i>pinnata</i> (W. Sm.)	-	-	-	-	-	-	-
<i>Syedra actinastroides</i> L. mm.	-	-	-	-	-	-	-

Date Time	5/5/79 0900	6/15/79 1430	7/27/79 1430	8/24/79 1230	9/20/79 1330	10/17/79 1300	12/12/79 1700
Racillariophyta--Continued							
<i>S. acus</i> Kutz.	-	-	-	268	-	-	-
<i>S. delicatissima</i> W. Sm.	-	-	-	-	-	-	-
<i>S. rumpens</i> Kutz.	-	-	-	-	-	-	-
<i>S. ulna</i> (Nitz.) Phr.	-	-	-	-	-	-	-
<i>Synedra</i> sp. Phr.	-	-	-	-	-	-	-
<i>Synedra</i> sp. 1 Phr.	-	-	-	-	-	-	-
<i>Tabellaria fenestrata</i> (Lyngb.) Kutz.	-	-	-	-	-	44	-
Chrysophyta							
<i>Binobryon sociale</i> Phr.	-	-	-	-	-	-	-
Cryptophyta							
<i>Chroomonas</i> sp. 1 Haas.	996	1,179	989	805	1,858	704	2,099
<i>Cryptomonas ovata</i> Phr.	277	-	-	-	103	-	58
<i>Cryptomonas</i> sp. 1 Phr.	-	363	424	537	1,651	220	233
<i>Cryptomonas</i> sp. 2 Phr.	-	-	-	-	-	352	-
Chlorophyta							
<i>Actinastrum Hantzschii</i> v. <i>elongatum</i> G.M. Sm.	-	-	-	-	-	-	-
<i>A. Hantzschii</i> v. <i>fluviatile</i> Schroed.	-	-	-	-	1,651	-	-
<i>Ankistrodesmus convolutus</i> Corda.	-	-	-	939	206	176	58
<i>A. falcatus</i> (Corda.) Ralfs	111	181	-	537	-	-	233
<i>A. falcatus</i> v. <i>mirabilis</i> (West & West) G.S. West	-	45	-	-	-	88	58
<i>Arthrodesmus incus</i> (Breb.) Haas.	-	-	-	-	-	-	-
<i>Carteria multifilla</i> (Fres.) Bill.	2,655	408	141	-	-	132	-
<i>Cephalomonas granulata</i> Hizenb.	55	-	-	-	-	-	-
<i>Characium ambiguum</i> Hermann	-	-	-	-	-	-	-
<i>Characium</i> sp. 1 A. Braun	-	-	-	-	-	-	-
<i>Chlamydomonas epiphytica</i> G. M. Sm.	-	-	-	-	-	-	-
<i>C. globosa</i> Snow	553	272	-	402	-	-	641
<i>Chlamydomonas</i> sp. 1 Phr.	-	272	-	402	206	44	291
<i>Chlorogonium elongatum</i> Dang.	55	-	-	268	-	-	-
<i>Closteriopsis longissima</i> Lemm.	-	-	-	-	-	-	-
<i>Closterium gracile</i> Breb.	-	-	-	-	-	-	-
<i>Coelastrum microporum</i> Naeg.	-	-	-	-	-	-	-
<i>C. proboscideum</i> Bohlin.	-	-	-	-	-	-	-
<i>C. reticulatum</i> (Dang.) Seim.	-	-	-	-	-	-	-
<i>C. sphaericum</i> Naeg.	-	-	-	-	-	-	-
<i>Cosmarium geometricum</i> W. & G.S. West	-	-	-	-	-	-	-
<i>Cosmarium</i> sp. 1 Corda	-	-	-	-	-	-	-
<i>Crucigenia fenestrata</i> Schmid.	443	725	-	-	-	-	-
<i>C. rectangularis</i> (A. Br.) Gay	-	1,451	565	-	-	-	-
<i>C. tetrapedia</i> (Kirch.) West & West	-	-	-	-	-	-	-
<i>Dictyosphaerium</i> <i>Fhrenbergianum</i> Naeg.	-	635	-	-	-	132	-
<i>D. pulchellum</i> Wood	-	1,088	565	-	-	-	-
<i>Colankinia radiata</i> (Chod.) Wille	-	181	-	268	-	-	-
<i>Kirchneriella contorta</i> (Schmid.) Rohl.	-	-	-	-	-	-	-
<i>K. elongata</i> G. M. Sm.	-	-	-	-	-	-	-

Date Time	5/5/79 0900	6/15/79 1430	7/27/79 1430	8/24/79 1230	9/20/79 1330	10/17/79 1300	12/12/79 1700
Chlorophyta--Continued							
<i>K. lunaria</i> v. <i>Dianae</i> Rohl.	-	771	707	402	-	-	58
<i>K. lunaria</i> v. <i>irregularis</i> (G. M. Schmid.)	-	-	-	-	-	220	-
<i>K. obesa</i> (W. West) Schmid.	-	-	-	-	-	-	-
<i>K. subolitaria</i> G. S. West	55	-	565	134	-	-	-
<i>Lagerheimia quadriseta</i> (Lemm.) G. M. Sm.	-	-	-	-	-	-	-
<i>Micractinium pusillum</i> Pres.	-	-	141	-	-	-	-
<i>Nephrocystium limneticum</i> (G. M. Sm.)	-	-	-	-	-	-	-
<i>Oocystis</i> <i>Borget</i> Snow	-	-	-	-	-	-	-
<i>O. lacustris</i> Chod.	-	-	-	-	-	-	-
<i>O. pusilla</i> Hans.	-	-	-	-	-	-	-
<i>O. pyriformis</i> Prescott	-	-	-	-	-	-	-
<i>Oocystis</i> sp. Nagell	-	-	-	-	-	-	-
<i>Pantlorina morum</i> (Muell.) Meyen	1,100	408	-	-	-	-	-
<i>Pediastrum biradiatum</i> Meyen.	-	-	-	-	-	-	-
<i>P. duplex</i> v. <i>gracillimum</i> West & West	-	-	-	5,098	-	-	-
<i>P. tetras</i> v. <i>tetraodon</i> (Corda) Rabb.	-	-	-	-	-	-	-
<i>Polyedriopsis spinulosa</i> Schmid.	-	-	-	-	-	-	-
<i>Radiofilum irregulare</i> (Wille) Brunn.	-	725	-	-	-	-	-
<i>Scenedesmus abundans</i> (Kirch.) Chod.	-	-	-	-	-	-	-
<i>S. hujaga</i> (Turp.) Lagerh.	-	18	848	1,610	-	528	-
<i>S. denticulatus</i> Lagerh.	-	181	-	-	-	-	-
<i>S. dimorphus</i> (Turp.) Kuetz	-	-	-	-	-	-	-
<i>S. incrassatus</i> Rohl.	-	-	-	-	-	-	1,049
<i>S. obliquus</i> (Turp.) Kuetz	-	-	-	-	-	-	-
<i>S. opoliensis</i> v. <i>contacta</i> Prescott	-	-	-	-	-	-	-
<i>S. quadricauda</i> (Turp.) De Breb.	-	363	1,413	3,220	826	88	233
<i>Scenedesmus</i> sp. 1 Meyen	-	181	283	537	-	-	-
<i>Schroederia setigera</i> (Schroed.) Lemm.	-	-	141	-	-	-	-
<i>Selenastrum gracile</i> Reinsch.	-	-	-	-	-	-	-
<i>S. minutum</i> (Naeg.) Collins	-	-	-	-	-	-	-
<i>Spondyliosium planum</i> (Wolle) W. & G. S. West	-	136	-	-	-	-	-
<i>Staurastrum apiculatum</i> Breb.	-	-	-	-	-	-	-
<i>S. chaetoceros</i> (Schroed.) G. M. Sm.	-	-	-	-	-	-	-
<i>S. dilatatum</i> Ehr.	-	-	-	-	-	-	-
<i>S. gracile</i> Ralfs	-	-	-	-	-	-	-
<i>S. granulosum</i> (Ehr.) Ralfs	-	-	-	-	-	-	-
<i>S. paradoxum</i> Meyen.	-	-	-	-	-	-	-
<i>Tetraedron caudatum</i> (Corda) Hans.	-	-	-	-	-	-	-
<i>T. minimum</i> (A. Braun) Hans.	-	-	-	-	-	-	-
<i>T. regulare</i> v. <i>incus</i> Teil.	-	-	-	-	-	-	-
<i>T. trigonum</i> (Naeg.) Hans.	-	-	-	-	-	-	-
<i>T. trigonum</i> v. <i>gracile</i> (Rein.) Det.	-	-	-	-	-	-	-
<i>Tetrastrum glabrum</i> (Roll) Ahl. and Tiff.	-	-	-	-	-	-	-
<i>T. staurogeniaeforme</i> (Schroed.) Lemm.	-	-	-	-	-	-	-
<i>T. triacanthum</i> Kors.	-	-	-	-	-	-	-
<i>Thraconomas phacotoides</i> G. M. Sm.	-	-	-	-	-	-	-
<i>Treubaria setigerum</i> G. M. Sm.	-	-	-	-	-	-	-
<i>T. varia</i> Ahl. and Tiff.	-	-	-	-	-	-	-
<i>Westella botryoides</i> (W. West) De Wild.	-	1,851	-	-	-	-	-
unidentified coccoid sp.	-	-	-	-	-	-	-

Date Time	5/5/79 0900	6/15/79 1430	7/27/79 1430	8/24/79 1230	9/20/79 1330	10/17/79 1300	12/12/79 1700
Cyanophyta							
<i>Amenellum quadruplicatum</i>							
Breb.	-	5,085	330,804	110,281	24,768	3,346	-
<i>Anabaena</i> sp. Bory	-	-	-	-	-	-	-
<i>Anabaena</i> sp. 1 Bory	-	-	-	-	-	-	-
<i>Anabaena</i> sp. 2 Bory	-	-	-	-	-	-	-
<i>Anacyclis cyanea</i>							
Dr. and Daily	-	-	-	-	-	-	233
<i>A. incerta</i> Fr. and Daily	4,425	8,978	28,262	64,129	20,537	2,465	-
<i>A. montana</i> f. minor	-	-	-	-	-	-	-
Dr. and Daily	-	-	-	-	-	-	-
<i>A. thermalis</i> Dr. and Daily	-	-	-	-	-	-	-
<i>A. thermalis</i> f. maior	-	-	-	-	-	-	-
(Lagerh.)	-	-	-	-	-	-	-
<i>Anacyclis</i> sp. 1 Meneghini	608	-	283	4,025	-	-	-
<i>Anacyclis</i> sp. 2 Meneghini	-	-	-	-	-	-	700
<i>Aphanothece clathrata</i>							
G. S. West	-	-	-	-	-	-	-
<i>Aphanothece</i> sp. 1 Nag.	-	-	3,109	-	-	-	291
<i>Coccochloris penfocystis</i>							
Dr. and Daily	-	-	-	-	-	-	-
<i>Chroococcus</i> sp. Nageli	-	-	-	-	-	-	-
<i>Dactylococcopsis</i>							
<i>fascicularis</i> Lemm.	-	-	-	671	-	176	-
<i>Gomphosphaeria lacustris</i>							
Chod.	-	272	-	268	413	176	350
<i>Lynghya contorta</i> Lemm.	-	-	707	45,481	-	-	-
<i>L. Digueii</i> Gomont	-	-	-	-	-	-	-
<i>L. limnetica</i> Lemm.	-	-	-	-	1,032	-	-
<i>Lynghya</i> sp. 1 Avarth	-	-	-	7,916	-	-	-
<i>Nostoc</i> sp. Vaucher	-	-	-	-	-	-	-
<i>Oscillatoria anagnostisma</i>							
West & West	-	1,451	7,913	3,891	-	-	-
<i>O. limnetica</i> Lemm.	-	8,615	12,294	-	-	-	-
<i>Palmogloea protuberans</i>							
(Sm. & Sow.) Kuetz	-	-	-	-	-	-	-
<i>Spirulina major</i> Kuetz.	-	-	-	-	-	-	-
Euglenophyta							
<i>Euglena</i> sp. Ehr.	-	-	141	-	-	-	-
<i>Trachelomonas varians</i>							
(Lemm.) Defl.	-	-	-	-	-	-	-
<i>T. volvocina</i> Ehr.	-	-	-	134	-	44	-
<i>Trachelomonas</i> sp. Ehr.	-	-	-	-	-	-	-
<i>Trachelomonas</i> sp. 1 Ehr.	-	45	-	-	-	-	-
unidentified	-	-	-	-	-	-	-
euglenoid sp. 1	-	-	141	-	-	-	-
Pyrrhophyta							
<i>Glenodinium</i> sp. Stein	-	-	-	268	-	-	-
<i>Peridinium</i> sp. Ehr.	-	-	-	-	103	-	-
Others							
unidentified							
phytoflagellates (<10u)	553	-	1,130	2,281	1,342	969	991
<hr/>							
Total number of taxa observed	20	33	28	30	18	23	22
Total number of individuals per milliliter	12,777	39,309	393,686	257,186	56,450	11,048	8,450

AD-A149 942

WATER QUALITY MANAGEMENT STUDIES WEST POINT LAKE
CHATTAHOOCHEE RIVER ALAB. (U) CORPS OF ENGINEERS MOBILE
AL MOBILE DISTRICT D B RADTKE ET AL. AUG 84
COESAM/PDEE-84/004

6/6

UNCLASSIFIED

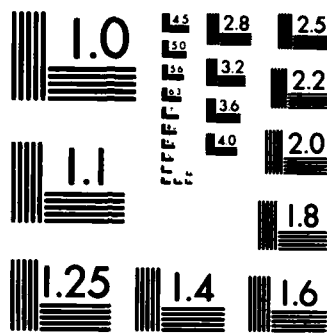
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NL

END

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DIC



MICROCOPY RESOLUTION TEST CHART
NATIONAL BUREAU OF STANDARDS-1963-A

[Standing crop in cells per milliliter: *, present in insufficient densities to establish accurate count]

Taxa	Date Time	4/12/78 1200	5/3/78 1030	6/1/78 1015	7/11/78 0945	8/15/78 1015	8/30/78 1500
Phaeocystophyta							
Achnanthes Bory	-	-	-	-	220	570	1,500
Asterionella Hassall	-	250	-	-	-	-	-
Cyclotella Brebisson	120	3,600	850	670	1,100	610	-
Cymbella Agardh	-	-	-	-	-	-	-
Eunotia Ehrenberg	-	-	-	-	-	-	-
Fragilaria Lyngbye	-	42	70	2,200	*	-	-
Gomphonema Hustedt	-	-	-	-	-	-	-
Melosira Kutzing	220	1,200	-	-	-	-	-
Meridion Agardh	-	-	-	-	-	-	-
Navicula Bory	-	-	-	-	-	-	-
Nitzschia Hassall	-	550	70	-	-	-	-
Rhizosolenia Brightwell emend Ehrenberg	-	42	-	-	220	*	-
Synedra Ehrenberg	560	-	-	-	-	-	-
Tabellaria Ehrenberg	120	-	-	-	-	-	-
Chlorophyta							
Actinastrum Lagerheim	-	-	-	-	-	-	-
Ankistrodesmus Corda	770	1,200	210	-	-	-	-
Carteria Diesing	-	-	70	-	-	1,100	-
Characium A. Braun	-	-	-	-	-	-	-
Chlamydomonas Ehrenberg	120	1,700	140	670	-	-	610
Chlorogonium Ehrenberg	-	130	-	-	-	-	-
Chodatella Lemmermann	31	42	-	-	-	-	-
Closteriopsis Lemmermann	-	-	-	-	-	-	-
Coccomonas Stein	-	-	-	-	-	-	-
Coelastrum Nageli	250	-	-	-	-	-	-
Cosmarium Corda	-	-	-	-	*	-	-
Crucigenia Marren	-	-	-	1,800	-	-	-
Dichotomococcus Korshikov	-	-	920	-	-	-	-
Dictyosphaerium Nageli	-	250	-	670	-	-	-
Dysmorphococcus Takeda	-	-	-	-	-	-	310
Flakatothrix Wille	-	-	-	-	-	-	-
Fusarium Ehrenberg	-	-	-	-	-	-	-
Franceia Lemmermann	-	-	-	-	-	-	-
Gloeactinium G. M. Smith	1,100	-	-	-	-	-	-
Gloeocystis Nageli	-	-	-	-	-	-	-
Golenkinia Chodat	-	-	-	-	-	-	-
Gonium Muller	-	-	1,100	-	-	-	-
Kirchneriella Schmidle	-	420	280	-	-	-	-
Micractinium Presentus	-	-	-	-	-	570	-
Mougeotia Agardh	-	-	-	-	-	-	-
Oocystis Nageli	-	84	-	-	-	570	310
Pandorina Bory	-	800	-	-	-	-	-
Pediastrum Meyer	-	-	-	-	-	-	-
Pteromonas Seligo	-	84	-	-	-	-	-
Scenedesmus Meyen	710	340	210	2,200	3,400	-	310
Selenastrum Reinsch	-	-	1,200	450	-	-	-
Schroederia Lemmermann	-	-	210	220	-	-	-
Spermatozoopsis Korshikov	-	-	-	-	-	-	-
Sphaerocystis Chodat	-	-	-	-	-	*	-
Staurastrum Meyen	-	-	-	-	-	-	-

	Date Time	4/12/78 1200	5/3/78 1030	6/1/78 1015	7/11/78 0945	8/15/78 1015	8/30/78 1500
Taxa							
Chlorophyta--Continued							
<u>Tetraedron</u> Kutzing		31	84	-	-	-	-
<u>Tetrastrum</u> Chodat		-	-	-	-	-	-
<u>Treuharia</u> Bernard		-	84	-	-	-	-
<u>Westella</u> de Wildermann		-	-	-	-	-	-
<u>Wislouchiella</u> Skvortzow		-	-	-	-	-	-
<u>Volvox</u> Linnaeus		-	-	-	-	-	-
Chrysophyta							
<u>Centritractus</u> Lemmermann		-	-	-	220	-	-
<u>Chrysococcus</u> Klebs		-	-	-	-	-	-
<u>Chrysophaerella</u> Lauterborn		-	-	-	-	-	-
<u>Dinorhyn</u> Ehrenberg		-	-	-	-	-	-
<u>Mallomonas</u> Perty		-	-	-	-	-	-
<u>Ochromonas</u> Mysotaki		-	-	-	-	-	-
<u>Synura</u> Ehrenberg		-	130	-	-	-	-
Cryptophyta							
<u>Chroomonas</u> Hanagirtz		-	500	210	-	-	-
<u>Cryptomonas</u> Ehrenberg		530	630	140	450	1,100	-
<u>Cryptomonidales</u>		-	-	-	-	-	610
Cyanophyta							
<u>Amenellum quadruplicatum</u> (Meneghini) Brebisson		-	32,000	40,000	-	59,000	-
<u>Amenellum</u> Brebisson		9,600	-	-	900	-	-
<u>Anabaena</u> Bory		-	-	-	-	16,000	-
<u>Anacystis cyanea</u> Drouet and Dally		-	-	-	-	-	-
<u>A. incerta</u> (Lemmermann) Drouet and Dally		-	-	75,000	37,000	41,000	52,000
<u>Anacystis</u> Meneghini		-	3,400	-	3,600	48,000	-
<u>Aphanizomenon</u> Morren		-	-	-	-	5,700	-
<u>Coccochloris</u> Sprengel		-	1,100	-	-	-	-
<u>Hormogonales</u>		-	840	-	-	-	-
<u>Lyngbya</u> Agardh		-	-	-	24,000	23,000	29,000
<u>Oscillatoria</u> Vaucher		4,500	3,800	5,600	9,200	11,000	-
<u>Phormidium</u> Kutzing		-	-	-	-	-	-
<u>Raphidiopsis</u> Pritsch and Rich		-	-	-	45,000	64,000	79,000
Euglenophyta							
<u>Euglena</u> Ehrenberg		-	-	-	-	-	-
<u>Lepocynclis</u> Perty		-	-	-	-	-	-
<u>Trachelomonas</u> Ehrenberg		120	-	-	-	-	-
Pyrrophyta							
<u>Glenodinium</u> Stein		-	-	-	220	-	-
<u>Gymnodinium</u> Kofoid and Swezy		-	-	-	-	-	-
<u>Peridinium</u> Ehrenberg		31	-	-	-	-	-
Total number of taxa observed							
		16	26	17	20	17	10
Total number of cells per milliliter							
		18,813	53,302	126,280	129,910	276,110	164,260

[Standing crop in cells per milliliter]

Date Time	5/4/79 1230	6/15/79 1200	7/27/79 1245	8/24/79 1030	9/20/79 1630	10/17/79 1500	12/13/79 1000
Macillariophyta							
Achnanthes lanceolata							
Areb. ex Kutz.	-	-	-	-	-	-	-
A. minutissima Kutz.	-	-	-	-	-	-	-
Asterionella formosa Haas.	375	-	-	-	-	-	-
Cocconeis diminuta Pant.	-	-	-	-	-	-	-
C. placentula Ehr.	-	-	-	-	-	-	-
C. placentula v. euglypta (Ehr.) Cl.	-	-	-	-	-	-	-
Cyclotella atomus Hust.	1,178	270	188	533	-	921	719
C. glomerata Bach.	-	1,080	941	267	9	276	276
C. Meneghiniana Kutz.	54	-	-	-	-	92	-
C. stelligera Cl. and Grun.	268	270	-	-	-	-	-
Cymbella ventricosa Kutz.	-	-	-	-	-	-	-
Fenestrata curvata (Kutz.) Loewst	-	-	-	-	-	-	-
F. pectinalis (O.F. Mull.) Rabh.	-	-	-	-	-	-	-
Fragilaria bicapitata							
A. Mayer	-	-	-	-	110	-	-
F. brevistriata Grun.	-	-	-	-	-	-	-
F. crotonensis Kitton	-	-	-	-	-	-	-
F. intermedia Grun.	-	-	-	-	-	-	-
F. vaucheriae (Kutz.) Peters	-	90	282	133	330	368	111
Fragilaria sp. 1 Lyngb.	214	-	-	-	-	-	-
Frustulia rhomboides (Ehr.) Det.							
Gomphonema angustatum v. productum Grun.	-	-	-	-	-	-	-
G. gracile Ehr. emend V.H.	-	-	-	-	-	-	-
G. parvulum (Kutz.)	-	-	-	-	-	-	-
Melosira distans (Ehr.) Kutz.							
M. granulata (Ehr.) Ralfs	8,117	180	-	-	-	-	-
M. granulata v. angustissima Mull.	268	-	753	-	220	-	-
M. islandica Mull.	-	270	-	-	-	460	-
M. italica (Ehr.) Kutz.	-	-	-	-	-	-	-
M. varians C.A. Ag.	-	-	-	-	-	-	-
Navicula bicapitellata Hust.							
N. confervaceae (Kutz.) Grun.							
N. cryptocephala Kutz.	-	-	-	-	-	-	-
N. exigua Grun. ex Grun.	-	-	-	-	-	-	-
N. hungarica Grun.	-	-	-	-	-	-	-
N. pupula Kutz.	-	-	-	-	-	-	-
N. rhyncocephala Kutz.	-	-	-	-	-	-	-
N. tripunctata (Mull.) Bory.	-	-	-	-	-	-	-
N. viridula v. rostellata (Kutz.) Cl.	-	-	-	-	-	-	-
Nitzschia acicularis W. Sm.	214	90	188	-	-	184	-
N. filiformis (W. Sm.) Hust.	-	-	-	-	-	-	-
N. holastica Hust.	-	-	-	-	-	-	-
N. palea (Kutz.) W. Sm.	107	-	-	-	110	-	-
Opephora? sp. Petit	-	-	-	-	-	-	-
Pinnularia brebissonii v. diminuta (Grun.) Cl.							
Pinnularia sp. 1 Ehr.	-	-	-	-	-	-	-
Rhizosolenia eriensis H.L. Sm.							
Rhizosolenia angustata Kutz.	-	-	188	-	-	-	-
S. ovata Kutz.	-	-	-	-	-	-	-
S. ovata v. pinnata (W. Sm.)	-	-	-	-	-	-	-
Synedra actinastroides Lemm.							

[Standing crop in cells per milliliter]

Date Time	5/4/79 1230	6/15/79 1200	7/27/79 1245	8/24/79 1030	9/20/79 1630	10/17/79 1500	12/13/79 1000
Basidiomycota--Continued							
<i>S. acue</i> Kutz.	-	-	-	133	-	92	-
<i>S. delicatissima</i> W. Sm.	-	-	282	-	-	-	-
<i>S. rumpens</i> Kutz.	-	-	-	-	-	-	-
<i>S. ulna</i> (Nitz.) Ehr.	-	-	-	-	-	-	-
<i>Synedra</i> sp. Ehr.	107	-	-	-	-	-	-
<i>Synedra</i> sp. 1 Ehr.	-	-	-	-	-	-	-
<i>Tabellaria fenestrata</i> (Lyngh.) Kutz.	-	-	-	-	-	-	-
Chrysophyta							
<i>Dinobryon sociale</i> Ehr.	-	-	-	-	-	-	-
Cryptophyta							
<i>Chroomonas</i> sp. 1 Hans.	1,713	1,440	188	2,666	2,636	4,05	2,487
<i>Cryptomonas ovata</i> Ehr.	642	-	-	-	-	184	55
<i>Cryptomonas</i> sp. 1 Ehr.	-	810	94	533	1,538	1,749	111
<i>Cryptomonas</i> sp. 2 Ehr.	-	-	-	-	-	-	-
Chlorophyta							
<i>Actinastrum Hantzschii</i> v. <i>elongatum</i> G.M. Sm.	-	-	376	-	-	-	-
<i>A. Hantzschii</i> v. <i>fluviatile</i> Schroed.	-	-	-	-	-	-	-
<i>Ankistrodesmia convolutus</i> Corda.	54	-	-	-	-	736	-
<i>A. falcatus</i> (Corda.) Ralfs	749	90	188	-	-	184	221
<i>A. falcatus</i> v. <i>mirabilis</i> (West & West) G.S. West	-	90	-	-	-	92	-
<i>Arthrodesmus incus</i> (Breb.) Wass.	-	-	-	-	-	-	-
<i>Carteria multifilia</i> (Fres.) Dill.	642	540	-	133	-	-	608
<i>Cephalomonas granulata</i> Hagenb.	-	-	-	-	-	-	-
<i>Characium ambiguum</i> Hermann	-	-	-	-	-	-	-
<i>Characium</i> sp. 1 A. Braun	-	-	-	-	-	-	-
<i>Chlamydomonas epiphytica</i> G. M. Sm.	-	-	-	-	-	-	-
<i>C. globosa</i> Snow	428	270	-	-	-	276	55
<i>Chlamydomonas</i> sp. 1 Ehr.	-	540	188	133	110	184	55
<i>Chlorogonium elongatum</i> Dang.	-	-	-	-	-	-	-
<i>Closteropsis longissima</i> Lemm.	-	-	-	-	-	-	-
<i>Closterium gracile</i> Breb.	-	-	-	-	-	-	-
<i>Coelastrum microporum</i> Naeg.	-	-	-	-	-	-	-
<i>C. proboscideum</i> Rollin.	-	-	-	-	-	-	-
<i>C. reticulatum</i> (Dang.) Senn.	-	-	-	-	-	-	-
<i>C. sphaericum</i> Naeg.	-	360	-	-	-	-	-
<i>Cosmarium geometricum</i> W. & G.S. West	-	-	94	-	-	-	-
<i>Cosmarium</i> sp. 1 Corda	-	-	-	-	-	-	-
<i>Crucigenia fenestrata</i> Schmid.	-	-	-	-	-	-	221
<i>C. rectangularis</i> (A. Br.) Gay	214	540	-	-	-	-	-
<i>C. tetrapedia</i> (Kirch.) West & West	-	-	-	-	-	368	-
<i>Cryptosphaerium</i> Ehrenbergianum Naeg.	-	630	-	-	439	-	-
<i>D. pulchellum</i> Wood	214	-	-	2,932	-	-	-
<i>Golenkinia radiata</i> (Chod.) Wille	-	180	94	133	-	-	-
<i>Kirchneriella contorta</i> (Schmid.) Rohl.	-	-	-	-	-	-	-
<i>K. elongata</i> G. M. Sm.	-	-	-	-	-	-	-

Date Time	5/4/79 1230	6/15/79 1200	7/27/79 1245	8/24/79 1030	9/20/79 1630	10/17/79 1500	12/13/79 1000
Chlorophyta--Continued							
<i>K. lunaris</i> v. <i>Dianae</i> Bohl.	-	810	471	133	110	-	-
<i>K. lunaris</i> v. <i>irregularis</i> G. M. Schmid.	-	-	-	-	439	92	-
<i>K. obovata</i> (W. West) Schmid.	-	-	-	-	-	-	-
<i>K. subsolitaria</i> G. S. West	-	-	-	267	-	-	-
<i>Lagerheimia quadriseta</i> (Lemm.) G. M. Sm.	-	-	-	-	-	-	-
<i>Microactinium pusillum</i> Fres.	-	-	-	-	-	-	221
<i>Nephrocytium limneticum</i> (G. M. Sm.)	-	-	-	-	-	-	-
<i>Oocystis Borgesi</i> Snow	-	-	-	-	-	-	-
<i>O. lacustris</i> Chod.	-	-	-	-	-	-	-
<i>O. pusilla</i> Hans.	-	-	-	-	-	-	-
<i>O. pyriformis</i> Prescott	-	-	-	-	-	92	-
<i>Oocystis</i> sp. Nagell	-	-	-	-	-	-	-
<i>Pandorina morum</i> (Muell.) Rory	2,784	1,080	-	-	-	-	-
<i>Pediastrum biradiatum</i> Meyen.	-	-	-	-	-	-	-
<i>P. duplex</i> v. <i>gracilimum</i> West & West	-	-	-	-	-	-	-
<i>P. tetras</i> v. <i>tetraodon</i> (Corda) Rabb.	-	-	-	-	-	368	-
<i>Polyedriopsis spinulosa</i> Schmid.	-	-	-	-	-	-	-
<i>Radiofilum irregulare</i> (Wille) Brunn.	-	-	-	-	-	-	-
<i>Scenedesmus abundans</i> (Kirch.) Chod.	-	-	-	-	-	368	-
<i>S. bifuge</i> (Turp.) Lagerh.	-	-	-	-	-	-	-
<i>S. denticulatus</i> Lagerh.	-	90	376	533	439	-	111
<i>S. dimorphus</i> (Turp.) Kuetz	-	-	-	-	-	-	-
<i>S. incrassatus</i> Bohl.	-	-	-	-	-	-	-
<i>S. obliquus</i> (Turp.) Kuetz	-	-	-	-	-	-	111
<i>S. opoliensis</i> v. <i>contacta</i> Prescott	-	-	-	-	-	-	-
<i>S. quadricauda</i> (Turp.) De Reb.	-	1,620	753	1,866	879	1,841	-
<i>Scenedesmus</i> sp. 1 Meyen	482	-	-	-	-	-	-
<i>Schroederia setigera</i> (Schroed.) Lemm.	-	-	-	133	-	-	-
<i>Selenastrum gracile</i> Reinsch.	-	90	-	-	-	-	-
<i>Staurastrum spiculatum</i> Reb. <i>S. chaetoceros</i> (Schroed.) G. M. Sm.	-	-	-	-	-	-	-
<i>S. dilatatum</i> Ehr.	-	-	-	-	-	-	-
<i>S. gracile</i> Ralfs	-	-	-	-	-	-	-
<i>S. granulatum</i> (Ehr.) Ralfs	-	-	-	-	-	-	-
<i>S. parvum</i> Meyen.	-	-	-	-	-	-	-
<i>Tetraedron caudatum</i> (Corda) Hans.	-	-	-	-	-	-	-
<i>T. minimum</i> (A. Braun) Hans.	-	-	-	-	-	-	-
<i>T. regulare</i> v. <i>incus</i> Teil.	-	-	-	-	-	92	-
<i>T. trigonum</i> (Naeg.) Hans.	-	-	94	-	-	-	-
<i>T. trigonum</i> v. <i>gracile</i> (Rein.) Det.	-	-	-	-	-	-	-
<i>Tetrastrum glabrum</i> (Roll) Ahl. and Tiff.	-	-	-	-	-	-	-
<i>T. staurogenaeforme</i> (Schroed.) Lemm.	-	-	-	-	-	368	-
<i>T. triacanthum</i> Kors.	-	-	-	-	-	-	-
<i>Thoracomonas dhacotoides</i> G. M. Sm.	321	-	-	-	-	-	-
<i>Treubaria setigerum</i> G. M. Sm.	-	-	-	133	-	184	-
<i>T. varia</i> Ahl. and Tiff.	-	-	-	-	-	-	-
<i>Westella hotryoides</i> (W. West) De Wild.	-	2,970	-	-	-	368	-
unidentified coccoid sp.	-	-	-	-	-	-	-

Date Time	5/4/79 1230	6/15/79 1200	7/27/79 1245	8/24/79 1030	9/20/79 1630	10/17/79 1500	12/13/79 1000
Cyanophyta							
<u>Agmenellum quadruplicatum</u> Kreb.	642	47,525	87,797	59,727	16,365	3,682	-
<u>Anabaena</u> sp. Bory	-	-	-	-	-	-	-
<u>Anabaena</u> sp. 1 Bory	-	4,951	-	667	-	-	-
<u>Anabaena</u> sp. 2 Bory	-	-	-	-	-	-	-
<u>Anacyctis cyanea</u> Dr. and Daily	-	-	-	-	-	-	995
<u>A. incerta</u> Dr. and Daily	-	32,674	95,042	73,725	18,562	18,320	-
<u>A. montana</u> f. minor Dr. and Daily	-	-	-	-	-	-	-
<u>A. thermalis</u> Dr. and Daily	-	-	-	-	-	-	-
<u>A. thermalis</u> f. major (Laxerh.)	-	-	-	-	-	-	-
<u>Anacyctis</u> sp. 1 Meneghini	-	1,710	4,611	-	-	-	-
<u>Anacyctis</u> sp. 2 Meneghini	-	-	-	-	-	-	-
<u>Aphanothece clathrata</u> G. S. West	-	-	-	-	-	-	-
<u>Aphanothece</u> sp. 1 Nag.	-	-	-	-	-	-	-
<u>Coccochloris peniocystis</u> Dr. and Daily	-	-	-	-	-	-	-
<u>Chroococcus</u> sp. Nagell	-	-	-	-	-	-	-
<u>Dactylococcopsis</u> <u>fascicularis</u> Lemm. Chod.	-	2,340	-	-	-	-	-
<u>Lynghya contorta</u> Lemm.	-	-	1,506	-	-	-	-
<u>L. Diguetti</u> Gomont	-	-	-	-	-	-	-
<u>L. limnetica</u> Lemm.	-	-	-	3,066	3,954	1,565	-
<u>Lynghya</u> sp. 1 Asardh	-	-	1,506	-	-	-	-
<u>Nostoc</u> sp. Vaucher	-	-	-	-	-	-	-
<u>Oscillatoria angustissima</u> West & West	-	6,841	10,351	11,732	17,573	-	553
<u>O. limnetica</u> Lemm.	535	3,600	9,598	9,199	-	-	-
<u>Palmogloea protuberans</u> (Sm. & Sow.) Kuetz	-	-	-	-	-	-	-
<u>Spirulina major</u> Kuetz.	-	-	-	-	-	-	-
Euglenophyta							
<u>Euglena</u> sp. Ehr.	-	-	-	-	-	-	-
<u>Trachelomonas varians</u> (Lemm.) Defl.	-	-	-	-	-	92	-
<u>T. volvocina</u> Ehr.	-	-	-	-	-	184	-
<u>Trachelomonas</u> sp. Ehr.	-	-	-	-	-	-	-
<u>Trachelomonas</u> sp. 1 Ehr.	-	-	-	-	-	-	-
unidentified euglenoid sp. 1	-	-	-	-	-	-	-
Pyrrhophyta							
<u>Glenodinium</u> sp. Stein	-	-	-	-	-	92	-
<u>Peridinium</u> sp. Ehr.	-	-	-	-	-	-	-
Others							
unidentified phytoflagellates (<10 μ)	2,355	130	753	1,333	1,098	644	884
<hr/>							
Total number of taxa observed	24	31	26	23	18	32	14
Total number of individuals per milliliter	22,697	114,171	216,902	170,111	65,461	38,569	7,794

[Standing crop in cells per milliliter; *, present in insufficient densities to establish accurate count]

Date Time	4/10/78 1645	5/14/78 1115	5/31/78 1015	7/10/78 1315	8/14/78 0930	8/30/78 1145
Taxa						
Bacillariophyta						
<i>Achnanthes</i> Bory	-	-	-	-	1,600	5,900
<i>Asterionella</i> Hassall	-	-	-	-	-	-
<i>Cyclotella</i> Brethson	340	620	97	1,700	92	840
<i>Cymbella</i> Agardh	-	-	-	-	-	-
<i>Eunotia</i> Ehrenberg	-	-	-	-	-	-
<i>Fragilaria</i> Lyngbye	-	15	97	2,000	370	*
<i>Gomphonema</i> Hustedt	-	-	-	-	-	-
<i>Melosira</i> Kutzing	-	300	*	-	-	-
<i>Meridion</i> Agardh	-	-	-	-	-	-
<i>Navicula</i> Bory	-	-	-	-	-	-
<i>Nitzschia</i> Hassall	-	140	-	-	92	-
<i>Rhizosolenia</i> Brightwell	-	-	97	400	92	-
<i>Ehrenbergii</i> emend	-	-	-	-	-	-
<i>Synedra</i> Ehrenberg	6,400	-	-	-	-	-
<i>Tabellaria</i> Ehrenberg	1,400	-	-	-	-	-
Chlorophyta						
<i>Actinastrum</i> Lagerheim	-	-	-	-	-	-
<i>Ankistrodesmus</i> Corda	5,400	440	630	99	-	-
<i>Arteria</i> Diesing	-	-	-	-	270	*
<i>Characium</i> A. Braun	-	-	-	-	-	-
<i>Chlamydomonas</i> Ehrenberg	1,200	-	97	92	-	-
<i>Chlorogonium</i> Ehrenberg	-	-	-	-	-	-
<i>Chodatella</i> Lemmermann	340	15	-	-	-	-
<i>Closteriopsis</i> Lemmermann	-	-	-	-	-	-
<i>Coccomonas</i> Stein	-	-	-	-	-	-
<i>Coelastrum</i> Nageli	-	75	780	400	-	-
<i>Cosmarium</i> Corda	-	-	48	2,900	180	420
<i>Crucigenia</i> Morren	680	-	680	*	-	-
<i>Dichotomococcus</i> Korshikov	-	120	-	-	-	-
<i>Dictyosphaerium</i> Nageli	-	-	-	-	-	420
<i>Dysmorphococcus</i> Takeki	-	-	-	-	-	-
<i>Elakatothrix</i> Wille	-	-	-	-	-	-
<i>Euastrum</i> Ehrenberg	-	-	-	-	-	-
<i>Francia</i> Lemmermann	-	-	-	99	92	-
<i>Gloeactinium</i> G. M. Smith	-	-	-	-	-	-
<i>Gloeocystis</i> Nageli	6,600	-	-	-	-	-
<i>Golenkinia</i> Chodat	-	-	-	99	-	*
<i>Gonium</i> Muller	-	-	-	-	-	-
<i>Kirchneriella</i> Schmidle	2,500	45	97	99	-	-
<i>Micractinium</i> Presentus	-	-	*	-	180	-
<i>Mougeotia</i> Agardh	-	-	-	-	-	-
<i>Oocystis</i> Nageli	-	91	150	-	-	-
<i>Pandorina</i> Bory	-	-	-	-	1,500	-
<i>Pediastrum</i> Meyer	-	-	97	-	-	-
<i>Pteromonas</i> Seligo	-	-	-	-	-	-
<i>Scenedesmus</i> Meyen	1,700	230	680	200	*	-
<i>Selenastrum</i> Reinisch	-	-	970	700	-	-
<i>Schroeteria</i> Lemmermann	-	-	-	-	-	-
<i>Spermatozopsis</i> Korshikov	-	-	-	-	-	-
<i>Sphaerocystis</i> Chodat	-	-	-	-	-	-
<i>Staurastrum</i> Meyen	-	-	-	99	92	420

Taxa	Date Time	4/10/78 1645	5/14/78 1115	5/31/78 1015	7/10/78 1315	8/14/78 0930	8/30/78 1145
Chlorophyta--Continued							
<i>Tetraedron</i> Kutzing	-	-	30	-	-	-	-
<i>Tetrastrum</i> Chodat	-	-	-	-	-	-	-
<i>Trebouhia</i> Bernard	510	-	30	48	-	-	-
<i>Westella</i> de Wildermann	-	-	-	-	-	-	-
<i>Wislouciella</i> Skvortzov	-	-	-	-	-	-	-
<i>Volvox</i> Linnaeus	-	-	-	-	-	-	-
Chrysophyta							
<i>Centritractus</i> Lemmermann	-	-	-	-	-	-	-
<i>Chrysoococcus</i> Klebs	-	-	-	-	-	-	-
<i>Chrysophaerella</i> Lauterborn	-	-	-	480	-	-	-
<i>Dinobryon</i> Ehrenberg	-	-	-	-	-	-	-
<i>Mallomonas</i> Perty	-	-	-	-	-	-	-
<i>Ochromonas</i> Wysocki	680	-	-	-	-	-	-
<i>Synura</i> Ehrenberg	-	-	-	-	-	-	-
Cryptophyta							
<i>Chroomonas</i> Meneghin	-	-	840	150	-	-	-
<i>Cryptomonas</i> Ehrenberg	340	-	1,900	48	200	270	-
Cyanophyta							
<i>Agmenellum quadruplicatum</i> (Meneghini) Brebisson	-	-	330	-	-	-	-
<i>Agmenellum</i> Brebisson	-	-	-	390	-	-	-
<i>Anabaena</i> Bory	-	-	-	-	-	1,400	*
<i>Anacystis cyanea</i> Drouet and Daily	-	-	-	24,000	-	-	-
<i>A. incerta</i> (Lemmermann) Drouet and Daily	-	-	-	91,000	33,000	15,000	-
<i>Anacystis</i> Meneghini	6,800	-	630	-	2,400	1,800	4,200
<i>Aphanizomenon</i> Morren	-	-	-	-	-	1,600	-
<i>Coccochloris</i> Sprengel	-	-	-	-	-	-	-
<i>Lyngbya</i> Agardh	-	-	-	-	6,600	180	4,200
<i>Oscillatoria</i> Vaucher	24,000	-	-	2,600	-	4,400	-
<i>Phormidium</i> Kutzing	-	-	-	-	-	-	-
<i>Raphidiopsis</i> Fritsch and Rich	-	-	-	-	25,000	21,000	68,000
Euglenophyta							
<i>Euglena</i> Ehrenberg	170	-	-	-	-	-	-
<i>Lepocynclis</i> Perty	-	-	-	-	-	-	*
<i>Trachelomonas</i> Ehrenberg	-	-	15	97	-	-	-
Pyrophyta							
<i>Glenodinium</i> Stein	-	-	-	150	-	-	-
<i>Gymnodinium</i> Kofoid and Swezy	-	-	-	-	-	-	-
<i>Peridinium</i> Ehrenberg	-	-	-	48	200	-	-
Total number of taxa observed							
		16	18	26	20	19	13
Total number of cells per milliliter							
		59,060	5,866	123,531	76,287	50,210	84,400

[Standing crop in cells per milliliter]

Date Time	5/4/79 1030	6/15/79 0915	7/27/79 1030	8/24/79 0900	9/20/79 1530	10/17/79 1600	12/11/79 1330
Macillariophyta							
Achnanthes lanceolata							
<i>A. minutissima</i> Kutz.	-	-	-	-	-	-	-
<i>Asterionella formosa</i> Hass.	414	-	-	-	-	-	-
<i>Cocconeis diminuta</i> Pant.	-	-	-	-	-	-	-
<i>C. placentula</i> Ehr.	-	-	-	-	-	-	-
<i>C. placentula</i> v. <i>euglypta</i> (Ehr.) Cl.	-	-	-	125	-	-	-
<i>Cyclotella atomus</i> Hust.	446	389	73	375	306	350	1,195
<i>C. glomerata</i> Rabh.	161	194	-	-	32	350	1,309
<i>C. Meneghiniana</i> Kutz.	-	-	-	125	-	-	57
<i>C. stelligera</i> Cl. and Grun.	223	194	220	-	-	-	-
<i>Cymbella ventricosa</i> Kutz.	-	-	-	-	-	-	-
<i>Eunotia curvata</i> (Kutz.) Looserst	-	-	-	-	-	-	-
<i>E. pectinalis</i> (O.P. Mull.) Rabh.	-	-	-	-	-	-	-
Fragilaria bicapitata							
<i>F. A. Mavor</i>	-	-	-	-	396	-	-
<i>F. brevistriata</i> Grun.	-	-	-	-	-	-	-
<i>F. crotonensis</i> Kitton	-	259	146	-	-	-	-
<i>F. intermedia</i> Grun.	-	-	-	-	-	-	-
<i>F. vaucheriae</i> (Kutz.) Peters	-	-	-	-	-	350	-
<i>Fragilaria</i> sp. 1 Lyngh.	126	-	-	-	-	-	-
<i>Frustulia rhomboides</i> (Ehr.) Det.	-	-	-	-	-	-	-
Gomphonema angustatum v. productum Grun.							
<i>G. gracile</i> Ehr. emend V.H.	-	-	-	-	-	-	-
<i>G. parvulum</i> (Kutz.)	-	-	-	-	-	-	-
Melosira distans (Ehr.) Kutz.							
<i>M. granulata</i> (Ehr.) Ralfs	16,106	194	73	-	-	175	57
<i>M. granulata</i> v. <i>angustissima</i> Mull.	-	-	293	-	-	-	-
<i>M. islandica</i> Mull.	-	-	-	-	-	-	-
<i>M. italica</i> (Ehr.) Kutz.	-	-	-	-	-	-	-
<i>M. varians</i> C.A. Ar.	-	-	-	-	-	-	-
Navicula bicapitellata Hust.							
N. confervaceae (Kutz.) Grun.							
<i>N. cryptocephala</i> Kutz.	-	-	-	-	-	-	-
<i>N. exigua</i> Grun. ex Grun.	-	-	-	-	-	-	-
<i>N. hungarica</i> Grun.	-	-	-	-	-	-	-
<i>N. pupula</i> Kutz.	-	-	-	-	-	-	-
<i>N. rhynchocephala</i> Kutz.	-	-	-	-	-	-	-
<i>N. tripunctata</i> (Mull.) Bory.	-	-	-	-	-	-	-
N. viridula v. rostellata (Kutz.) Cl.							
<i>Nitzschia acicularis</i> W. Sm.	32	-	146	-	-	262	-
<i>N. filiformis</i> (W. Sm.) Hust.	-	-	-	-	-	-	-
<i>N. holmantica</i> Hust.	-	-	-	-	-	-	-
<i>N. palea</i> (Kutz) W. Sm.	-	-	-	-	-	-	-
<i>Onephora?</i> sp. Petit	-	-	-	-	-	-	-
Pinnularia brehssonii v. diminuta (Grun.) Cl.							
<i>Pinnularia</i> sp. 1 Ehr.	-	-	-	-	-	-	-
Rhizosolenia eriensis H.L. Sm.							
<i>Sarirella angustata</i> Kutz.	-	-	-	-	-	-	-
<i>S. ovata</i> Kutz.	-	-	-	-	-	-	-
<i>S. ovata</i> v. <i>pinnata</i> (W. Sm.)	-	-	-	-	-	-	-
Synedra actinastroides Lemm.							
	-	-	-	-	528	-	-

Date Time	5/4/79 1030	6/15/79 0915	7/27/79 1030	8/24/79 0900	9/20/79 1530	10/17/79 1600	12/11/79 1330
Bacillariophyta--Continued							
<i>S. acua</i> Kutz.	-	-	-	626	-	87	-
<i>S. delicatissima</i> W. Sm.	-	-	-	-	-	-	-
<i>S. rumpens</i> Kutz.	-	-	1,171	-	-	-	-
<i>S. ulna</i> (Nitz.) Ehr.	-	-	-	-	-	-	-
<i>Synedra</i> sp. Ehr.	-	-	-	-	-	-	-
<i>Synedra</i> sp. 1 Ehr.	-	-	-	-	-	-	-
<i>Tabellaria fenestrata</i> (Lyngb.) Kutz.	-	324	293	-	-	-	-
unidentified centric diatom	-	-	293	-	-	-	-
Chrysophyta							
<i>Dinobryon sociale</i> Ehr.	-	-	-	-	-	-	-
Cryptophyta							
<i>Chroomonas</i> sp. 1 Hans.	382	1,166	1,683	1,126	1,057	2,797	1,423
<i>Cryptomonas ovata</i> Ehr.	159	130	73	-	-	350	-
<i>Cryptomonas</i> sp. 1 Ehr.	-	842	146	1,125	132	262	-
<i>Cryptomonas</i> sp. 2 Ehr.	-	-	-	-	-	-	-
Chlorophyta							
<i>Actinastrum Hantzschii</i> v. <i>elongatum</i> G.M. Sm.	127	-	-	-	-	-	-
<i>A. Hantzschii</i> v. <i>fluviatile</i> Schroed.	-	-	-	-	-	-	-
<i>Ankistrodesmus convolutus</i> Corda.	32	-	-	-	-	437	-
<i>A. falcatus</i> (Corda.) Ralfs	286	-	-	-	-	-	-
<i>A. falcatus</i> v. <i>mirabilis</i> (West & West) G.S. West	32	-	-	-	-	-	-
<i>Arthrodesmus incus</i> (Breb.) Hass.	-	-	-	-	-	-	-
<i>Carteria multifilis</i> (Pres.) Hill.	286	-	-	-	-	262	-
<i>Cephalomonas granulata</i> Hignh.	-	-	-	-	-	-	-
<i>Characium ambiguum</i> Hermann	-	-	-	-	-	-	-
<i>Characium</i> sp. 1 A. Braun	-	-	-	-	-	-	-
<i>Chlamydomonas epiphytica</i> G. M. Sm.	-	-	-	-	-	-	-
<i>C. globosa</i> Snow	32	65	-	-	-	-	114
<i>Chlamydomonas</i> sp. 1 Ehr.	-	-	566	125	396	-	57
<i>Chlorogonium elongatum</i> Dang.	-	-	-	-	-	87	-
<i>Closteriopsis longissima</i> Lemm.	-	-	-	-	-	-	-
<i>Closterium gracile</i> Breb.	-	-	-	-	-	-	-
<i>Coelastrum microporum</i> Naeg.	-	-	-	-	-	-	-
<i>C. proboscideum</i> Rohlf.	-	-	-	501	-	-	-
<i>C. reticulatum</i> (Dang.) Senn.	-	-	-	-	-	-	-
<i>C. sphaericum</i> Naeg.	-	4,663	-	-	-	-	-
<i>Cosmarium geometricum</i> W. & G.S. West	-	-	-	-	-	-	-
<i>Cosmarium</i> sp. 1 Corda	-	-	-	125	132	-	-
<i>Crucigenia fenestrata</i> Schmid.	-	-	-	-	-	-	-
<i>C. rectangularis</i> (A. Br.) Gay	-	-	-	-	-	-	-
<i>C. tetrapedia</i> (Kirch.) West & West	127	-	-	-	-	-	-
<i>Dictyosphaerium</i> Ehrenbergianum Naeg.	-	-	-	-	-	-	-
<i>D. pulchellum</i> Wood	-	-	-	1,001	528	-	-
<i>Golenkinia radiata</i> (Chod.) Wille	-	259	73	125	-	87	-
<i>Kirchneriella contorta</i> (Schmid.) Rohlf.	159	-	-	125	-	-	-
<i>K. elongata</i> G. M. Sm.	-	-	-	-	-	-	-

Date Time	5/4/79 1030	6/15/79 0915	7/27/79 1030	8/24/79 0900	9/20/79 1530	10/17/79 1600	12/11/79 1330
Chlorophyta--Continued							
<i>K. lunaris</i> v. <i>Dianae</i> Bohl.	-	194	73	-	-	-	-
<i>K. lunaris</i> v. <i>irregularis</i> G. M. Schmid.	-	-	-	-	-	350	-
<i>K. obesa</i> (W. West) Schmid.	-	-	-	-	132	-	-
<i>K. subaeolitaria</i> G. S. West	-	-	366	-	660	-	-
<i>Lagerheimia quadrisetata</i> (Lemm.) G. M. Sm.	-	-	-	-	-	-	-
<i>Microactinium pusillum</i> Fres.	-	-	-	125	60	350	569
<i>Nephroclytium limneticum</i> (G. M. Sm.)	-	-	-	-	-	-	-
<i>Oocystis Borgei</i> Snow	-	-	-	-	-	-	-
<i>O. lacustris</i> Chod.	-	-	-	-	-	-	-
<i>O. pusilla</i> Hans.	-	-	-	-	-	-	-
<i>O. pyriformis</i> Prescott	-	-	-	-	-	-	-
<i>Oocystis</i> sp. Nagell	-	-	-	-	-	-	-
<i>Pantlorina morum</i> (Muell.) Bory	-	-	-	2,002	-	-	-
<i>Pediastrum biradiatum</i> Meyen.	-	-	-	-	-	-	-
<i>P. duplex</i> v. <i>gracillimum</i> West & West	-	-	-	-	-	-	-
<i>P. tetras</i> v. <i>tetraodon</i> (Corda) Rabh.	-	-	-	-	-	-	-
<i>Polyedriopsis spinulosa</i> Schmid.	-	-	-	-	-	-	-
<i>Radiofilum irregulare</i> (Wille) Brun.	-	-	-	-	-	-	-
<i>Scenedesmus abundans</i> (Kirch.) Chod.	-	-	-	-	-	262	-
<i>S. bifluga</i> (Turp.) Lagerh.	-	-	-	-	-	-	-
<i>S. denticulatus</i> Lagerh.	-	259	-	250	792	-	-
<i>S. dimorphus</i> (Turn.) Kuetz	-	-	-	-	-	-	-
<i>S. incrassatulus</i> Bohl.	-	-	-	-	-	-	-
<i>S. obliquus</i> (Turp.) Kuetz	-	-	-	-	-	-	-
<i>S. opolfensis</i> v. <i>contacta</i> Prescott	-	-	-	-	-	-	-
<i>S. quadricauda</i> (Turp.) De Breb.	-	842	-	501	528	350	57
<i>Scenedesmus</i> sp. 1 Meyen	255	-	-	-	-	-	114
<i>Schroederia setigera</i> (Schroed.) Lemm.	-	-	-	-	-	87	-
<i>Selenastrum gracile</i> Reinsch.	-	-	-	-	-	-	-
<i>S. minutum</i> (Naeg.) Collins	-	-	-	-	-	-	-
<i>Spondylosetum planum</i> (Wolle) W. & G. S. West	-	-	-	-	-	-	-
<i>Staurastrum apiculatum</i> Breb.	-	-	146	-	-	-	-
<i>S. chaetoceros</i> (Schroed.) G. M. Sm.	-	-	-	-	132	-	-
<i>S. dilatatum</i> Ehr.	-	-	220	-	-	-	-
<i>S. gracile</i> Ralfs	-	-	-	-	-	-	-
<i>S. granulatum</i> (Ehr.) Ralfs	-	-	-	-	-	-	-
<i>S. paradoxum</i> Meyen.	-	65	-	-	-	-	-
<i>Tetraedron caudatum</i> (Corda) Hans.	-	-	-	-	-	-	-
<i>T. minus</i> (A. Braun) Hans.	-	-	73	125	132	-	-
<i>T. regulare</i> v. <i>incus</i> Teil.	-	-	-	-	-	87	-
<i>T. trigonum</i> (Naeg.) Hans.	-	-	-	-	-	-	-
<i>T. trigonum</i> v. <i>gracile</i> (Rein.) Det.	-	-	-	-	132	-	-
<i>Tetrastrum glabrum</i> (Roll) Ahl. and Tiff.	-	-	-	-	-	350	-
<i>T. staurogeniaeforme</i> (Schroed.) Lemm.	127	-	-	-	-	-	-
<i>T. trifacanthum</i> Kors.	-	-	-	-	-	-	-
<i>Thracomonas phacotoides</i> G. M. Sm.	-	-	-	-	-	-	-
<i>Treubaria setigerum</i> G. M. Sm.	-	-	-	-	-	-	-
<i>T. varia</i> Ahl. and Tiff.	-	-	-	-	-	-	-
<i>Westella botryoides</i> (W. West) De Wild.	-	518	-	-	-	350	-
unidentified coccoid sp.	-	-	-	-	-	-	-

Date Time	5/4/79 1030	6/15/79 0915	7/27/79 1030	8/24/79 0900	9/20/79 1530	10/17/79 1600	12/11/79 1330
Cyanophyta							
<u>Agmenellum quadruplicatum</u> Breb.	-	-	-	2,127	5,283	5,595	-
<u>Anabaena</u> sp. Bory	-	-	-	-	-	-	-
<u>Anabaena</u> sp. 1 Bory	-	1,813	7,537	-	-	-	-
<u>Anabaena</u> sp. 2 Bory	-	2,785	-	-	-	-	-
<u>Anacyctis cyanea</u> Dr. and Daily	350	-	-	-	-	-	-
<u>A. incerta</u> Dr. and Daily	255	53,557	18,586	41,293	4,018	19,319	1,366
<u>A. montana</u> f. minor Dr. and Daily	-	-	-	5,255	-	-	-
<u>A. thermalis</u> Dr. and Daily	-	-	-	-	-	-	-
<u>A. thermalis</u> f. major (Lagerh.)	-	-	-	-	-	-	-
<u>Anacyctis</u> sp. 1 Meneghini	-	-	-	1,502	528	437	-
<u>Anacyctis</u> sp. 2 Meneghini	-	-	-	-	-	-	-
<u>Aphanothece clathrata</u> G. S. West	-	-	-	-	-	-	-
<u>Aphanothece</u> sp. 1 Nag.	-	-	-	-	-	-	-
<u>Coccochloris pentocostata</u> Dr. and Daily	-	-	-	-	-	-	-
<u>Chroococcus</u> sp. Nageli	-	-	-	-	-	-	-
<u>Dactylococcopsis</u> <u>fascicularis</u> Lemm.	-	-	-	626	-	-	-
<u>Gomphosphaeria lacustris</u> Chod.	-	-	-	-	-	-	228
<u>Lynghya contorta</u> Lemm.	-	-	2,122	41,918	107,772	-	-
<u>L. Digueffii</u> Gomont	-	-	-	-	-	-	-
<u>L. limnetica</u> Lemm.	-	-	-	8,509	6,604	1,923	-
<u>Lynghya</u> sp. 1 Agardh	-	-	1,756	-	-	-	-
<u>Nostoc</u> sp. Vaucher	-	-	-	-	-	2,448	-
<u>Oscillatoria angustissima</u> West & West	-	-	2,634	6,507	-	-	-
<u>O. limnetica</u> Lemm.	509	-	366	-	-	-	-
<u>Palmogloea protuberans</u> (Sm. & Sov.) Kuetz	-	-	-	-	12,283	-	-
<u>Spirulina major</u> Kuetz.	-	-	-	-	-	-	-
Euglenophyta							
<u>Euglena</u> sp. Ehr.	-	-	-	-	-	-	-
<u>Trachelomonas varians</u> (Lemm.) Defl.	-	-	-	-	-	-	-
<u>T. volvocina</u> Ehr.	-	-	-	-	132	-	-
<u>Trachelomonas</u> sp. Ehr.	-	-	-	-	-	-	-
<u>Trachelomonas</u> sp. 1 Ehr.	-	-	-	-	-	-	-
unidentified euglenoid sp. 1	-	-	-	-	-	-	-
Pyrrhophyta							
<u>Glennodinium</u> sp. Stein	-	-	-	-	-	-	-
<u>Peridinium</u> sp. Ehr.	-	-	-	125	-	262	-
Others							
unidentified phytoplankton (<10u)	95	130	2,561	1,251	925	524	911
Total number of taxa observed	23	21	26	27	25	28	13
Total number of individuals per milliliter	20,721	68,842	41,489	117,620	144,410	38,550	7,457

APPENDIX D-3

Temporal variation in zooplankton standing stock at stations in
West Point Reservoir, 1978 and 1979

			Page
CH-12	(02338500)	Chattahoochee River at U.S. Highway 27, at Franklin, Ga., 1978 and 1979.....	481
CH-11A	(02338570)	Chattahoochee River above New River, near Corinth, Ga., 1979.....	485
CH-10	(02338710)	Chattahoochee River at State Highway 219, near LaGrange, Ga., 1978 and 1979.....	487
CH-07	(02338720)	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga., 1978 and 1979.....	491
CH-05A	(02339190)	Chattahoochee River at State Highway 701, near Abbottsford, Ga., 1978 and 1979.....	495
CH-03C	(02339388)	Chattahoochee River below coffer dam, above West Point Dam, 1978 and 1979.....	499

[Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count]

Taxa	Date Time	4/18/78 1100	5/8/78 1230	6/6/78 0800	7/13/78 1445	8/17/78 1430	8/31/78 0815
Cladocera							
<u>Alonella hamulata</u> (Birge)		-	-	-	-	-	-
<u>Rosammina longirostris</u> (O. F. Muller)		11,000	*	-	-	*	-
<u>Rosammina defteroi</u> Richard		-	-	-	-	-	-
<u>Ceriodaphnia lacustris</u> Birge		-	-	-	-	-	-
<u>Ceriodaphnia</u> spp. Dana		-	-	-	-	-	-
<u>Chydorus sphaericus</u> (O. F. Muller)		-	-	-	-	-	-
<u>Chydorus</u> spp. Teach		7,000	-	-	-	*	-
<u>Daphnia ambigua</u> Scourfield		-	-	-	-	-	-
<u>D. laevis</u> Birge		-	-	-	-	-	-
<u>D. parvula</u> Fordyce		-	*	-	-	-	-
<u>Daphnia</u> (immature) O. F. Muller		-	*	-	-	-	-
<u>Daphnansoma brachyurum</u> (Lieven)		-	-	-	-	-	-
<u>D. leuchtenbergianum</u> Fischer		-	-	-	-	-	-
<u>Eubosmina tubicen</u> (Brehm)		-	-	-	-	-	-
<u>Holopedium gibberum</u> Zaddach		-	-	-	-	-	-
<u>Ilyocryptus sordidus</u> (Lieven)		-	-	-	*	-	-
<u>Leydigia</u> spp. Kurz		-	-	-	-	-	-
<u>Moina micrura</u> Kurz		-	-	-	*	-	-
<u>Sida crystallina</u> (O. F. Muller)		-	-	-	-	-	-
<u>Simocephalus serrulatus</u> (Koch)		-	-	-	-	-	-
<u>Simocephalus</u> spp. Schodler		-	-	-	-	-	-
Copepoda							
<u>Cyclops bicuspidatus thomasi</u> S. A. Forbes		-	-	-	-	-	-
<u>C. varicans rubellus</u> Lillieborg		-	-	-	-	-	-
<u>C. vernalis</u> Fischer		-	-	-	-	*	-
<u>Diaptomus bogalusiensis</u> M. S. Wilson and Moore		-	-	-	-	-	-
<u>D. floridanus</u> Marsh		-	-	-	-	-	-
<u>D. mississippiensis</u> Marsh		-	-	-	-	-	-
<u>D. pallidus</u> Herrick		-	-	-	-	-	-
<u>Eucyclops</u> spp. Claus		-	-	-	*	-	-
<u>Mesocyclops edax</u> (S. A. Forbes)		-	-	-	*	-	-
<u>Tropocyclops prasinus</u> (Fischer)		-	-	-	-	-	-
Nauplii		28,000	*	1,000	*	*	-
Calanoid Copepodids		-	-	-	-	-	-
Cyclopoid Copepodids		4,000	-	*	*	*	-
Parasitic Copepoda							
<u>Ergasilus chautauquensis</u> Fellows		-	-	-	-	-	-
<u>Ergasilus</u> spp. Smith		-	-	-	-	-	-

Date Time	4/18/78 1100	5/8/78 1230	6/6/78 0800	7/13/78 1445	8/17/78 1430	8/31/78 0815
Taxa						
Rotifera						
<i>Asplanchna</i> spp. Gosse	7,000	-	-	-	-	-
<i>Brachionus angularis</i> Gosse	-	-	-	-	-	-
<i>B. bidentata</i> Anderson	-	-	-	-	-	-
<i>B. calyciflorus</i> Pallas	4,000	-	-	-	-	-
<i>B. caudatus</i> Barrois and Naday	-	-	-	-	-	-
<i>B. havanensis</i> Rousselet	-	-	-	-	-	-
<i>B. quadridentatus</i> Hermann	4,000	-	-	-	-	-
<i>B. urceolaris</i> Muller	4,000	-	-	-	-	-
<i>Collotheca</i> spp. Harring	-	-	-	-	-	-
<i>Conochiloides natans</i> (Seligo)	-	-	-	-	-	-
<i>Conochiloides</i> sp. Wava	-	-	-	-	-	-
<i>Conochilus unicornis</i> Rousselet	4,000	-	-	-	-	-
<i>Dipleuchlania pronotula</i> (Gosse)	-	-	-	-	-	*
<i>Euchlania</i> spp. Ehrenberg	4,000	-	-	-	-	-
<i>Etilinia</i> spp. Bory de St. Vincent	-	-	-	-	-	-
<i>Hexarthra</i> spp. Schmarda	-	-	-	*	-	-
<i>Kellicottia bostoniensis</i> (Rousselet)	-	-	-	-	-	-
<i>Keratella cochlearis</i> (Gosse)	-	-	-	-	-	-
<i>K. crassa</i> Ahlstrom	4,000	*	-	-	-	-
<i>K. earlinae</i> Ahlstrom	-	-	*	-	-	-
<i>Lecane</i> spp. Mitzsch	-	-	-	-	-	-
<i>Monostyla</i> spp. Ehrenberg	-	*	-	-	-	-
<i>Notozoma</i> spp. Ehrenberg	-	-	-	-	-	-
<i>Platyias patulus</i> (Muller)	-	-	-	-	-	-
<i>P. quadricornis</i> (Ehrenberg)	-	-	-	-	-	-
<i>Ploesoma hudsoni</i> (Imhof)	-	-	-	-	-	-
<i>P. truncatum</i> (Levander)	-	-	-	-	-	-
<i>Polyarthra</i> spp. Ehrenberg	-	-	-	-	-	-
<i>Sinantherina</i> spp. Bory de St. Vincent	-	-	-	*	-	-
<i>Synchaeta</i> spp. Ehrenberg	4,000	*	-	-	-	-
<i>Trichocerca</i> spp. Lamarck	-	-	-	-	-	-
<i>Trichotria</i> spp. Bory de St. Vincent	-	-	-	-	-	-
Adeltoïd rotifers	39,000	*	*	1,000	*	*
Miscellaneous groups						
<i>Chaoborus</i> spp. Lichtenstein	-	-	-	-	-	-
Chironomids	-	-	-	-	-	-
Ostracods	-	-	*	*	-	-
Tardigrada	-	-	-	-	-	-
Total number of taxa observed	13	8	5	10	6	2
Total number of cells per cubic meter	0	*	1,000	1,000	*	*

[Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count]

Taxa	Date Time	5/5/79 1200	6/13/79 1700	7/27/79 1500	8/23/79 1515	9/20/79 1130	10/17/79 1030	12/13/79 1630
Cladocera								
<u>Alona</u> spp. Baird	-	-	-	-	-	130	-	-
<u>Alonella hamulata</u> (Birge)	-	-	-	-	-	-	-	-
<u>Bosmina longirostris</u> (O. F. Muller)	370	-	-	-	-	520	260	100
<u>Bosminopsis deiterei</u> Richard	-	-	-	-	-	-	-	-
<u>Ceriodaphnia lacustris</u> Birge	-	-	-	-	-	-	-	-
<u>Ceriodaphnia</u> spp. Dana	-	-	-	-	-	-	-	-
<u>Chydorus sphaericus</u> (O. F. Muller)	-	-	-	-	-	-	-	-
<u>Chydorus</u> spp. Leach	-	-	-	-	-	-	-	-
<u>Daphnia ambigua</u> Scourfield	-	-	-	-	-	-	-	-
<u>D. laevis</u> Birge	-	-	-	-	-	-	-	-
<u>D. parvula</u> Fordyce	-	-	-	-	-	-	-	-
<u>Daphnia</u> spp. O. F. Muller	-	-	-	-	-	-	-	-
<u>Diaphanosoma</u> <u>brachyurum</u> (Lieven)	-	-	-	-	-	-	-	-
<u>D. leuchtenbergianum</u> Fischer	-	-	-	-	-	-	-	-
<u>Eubosmina tubicen</u> (Rehm)	-	-	-	-	-	-	-	-
<u>Holopedium gibberum</u> Zaddach	-	-	-	-	-	-	-	-
<u>Ilyocryptus sordidus</u> (Lieven)	-	-	-	-	-	-	-	-
<u>Leptodora kindtii</u> (Focke)	-	-	-	-	-	-	-	-
<u>Leydigia leydigi</u> (Schodler)	-	-	-	-	-	-	-	-
<u>Leydigia</u> spp. Kurz	-	-	-	-	-	-	-	-
<u>Moina micrura</u> Kurz	-	-	-	-	-	-	-	-
<u>Pleuroxus denticulatus</u> Birge	-	-	-	-	-	-	-	-
<u>Scapholeberis kingi</u> Sara	-	-	-	-	-	-	-	-
<u>Sida crystallina</u> (O. F. Muller)	-	-	-	-	-	-	-	-
<u>Simocephalus serrulatus</u> (Koch)	-	-	-	-	-	-	-	-
<u>Simocephalus</u> spp. Schodler	-	-	-	-	-	-	-	-
Copepoda								
<u>Cyclops bicuspidatus</u> <u>thomasi</u> S. A. Forbes	190	-	-	-	-	-	-	-
<u>C. varicans rubellus</u> Lillieborg	-	-	-	-	-	-	-	-
<u>C. vernalis</u> Fischer	*	-	-	-	170	*	-	-
<u>Diaptomus bogalusiensis</u> W. S. Wilson and Moore	-	-	-	-	-	-	-	-
<u>D. floridanus</u> Marsh	-	-	-	-	-	-	-	-
<u>D. mississippiensis</u> Marsh	-	-	-	-	-	130	-	-
<u>D. pallidus</u> Herrick	-	-	-	-	-	-	-	-
<u>Eucyclops</u> spp. Claus	-	-	-	-	-	-	-	-
<u>Menocyclops edax</u> (S. A. Forbes)	-	-	-	-	-	-	-	-
<u>Tropocyclops prasinus</u> (Fischer)	-	-	-	-	-	-	-	*
Nauplii	2,430	*	430	170	1,810	1,050	100	100
Calanoid copepodids	-	-	-	-	-	-	30	30
Cyclopoid copepodids	1,310	*	140	170	390	260	100	100
Harpacticoida	-	-	-	-	-	260	-	-
Parasitic copepoda								
<u>Ergasilus chautauquaensis</u> Fellows	-	-	-	-	-	-	-	-
<u>Ergasilus</u> spp. Smith	-	-	-	-	-	-	-	-

Taxa	Date Time	5/5/79 1200	6/13/79 1700	7/27/79 1500	8/23/79 1515	9/20/79 1130	10/17/79 1030	12/13/79 1630
Rotifera								
<u>Asplanchna</u> spp. Gosse	-	-	-	-	-	-	-	-
<u>Brachionus angularis</u> Gosse	-	520	190	-	-	-	-	-
<u>B. bidentata</u> Anderson	-	-	-	-	-	-	-	-
<u>B. budapestinensis</u> Daday	-	-	-	-	-	130	-	-
<u>B. calyciflorus</u> Pallas	-	-	-	-	-	-	-	-
<u>B. caudatus</u> Barrios and Daday	-	-	-	-	-	-	-	-
<u>B. havansensis</u> Rousselet	-	-	-	-	-	-	-	-
<u>B. quadridentatus</u> Hermann	-	-	-	-	-	-	-	-
<u>B. urceolaris</u> Muller	750	-	-	-	-	-	3,160	30
<u>Collotheca</u> spp. Hanning	-	-	-	-	-	-	-	-
<u>Conochiloides natans</u> (Seligo)	-	-	-	-	-	-	-	-
<u>Conochiloides</u> spp. Hlava	-	-	-	-	-	-	-	-
<u>Conochilus unicornis</u> Rousselet	-	-	-	-	-	-	-	-
<u>Dipleuchlanis propatula</u> (Gosse)	-	-	-	-	340	1,030	790	-
<u>Dipleuchlanis</u> spp. de Neuchamp	-	1,040	140	-	-	-	-	-
<u>Euchlanis</u> spp. Ehrenberg	190	-	-	-	-	260	-	-
<u>Filinia</u> spp. Bory de St. Vincent	-	-	-	-	-	-	-	-
<u>Gastropus stylifer</u> Imhof	-	-	-	-	-	-	-	-
<u>Hexarthra</u> spp. Schmarlia	-	-	-	-	-	-	-	-
<u>Kellicottia hostoniensis</u> (Rousselet)	-	-	-	-	-	170	-	70
<u>Keratella cochlearis</u> (Gosse)	-	-	-	-	-	-	-	-
<u>K. crassa</u> Ahlstrom	370	-	-	-	-	-	-	-
<u>K. earlinae</u> Ahlstrom	-	-	-	-	-	-	-	-
<u>K. valga</u> (Ehrenberg)	-	-	-	-	-	-	-	-
<u>Lecane</u> spp. Nitzsch	-	-	-	-	-	-	-	-
<u>Monostyla</u> spp. Ehrenberg	-	-	50	-	-	-	-	30
<u>Notomata</u> spp. Ehrenberg	-	-	-	-	-	-	-	-
<u>Platyus patulus</u> (Muller)	-	-	-	-	-	-	-	-
<u>P. quadricornis</u> (Ehrenberg)	-	-	-	-	-	-	-	-
<u>Ploesoma hudsoni</u> (Imhof)	-	-	-	-	-	-	-	-
<u>P. truncatum</u> (Evander)	-	-	-	-	-	-	-	-
<u>Polyarthra</u> spp. Ehrenberg	560	-	-	-	-	-	-	-
<u>Pompholyx sulcata</u> Hudson	-	-	-	-	-	260	-	-
<u>Ptygura</u> spp. Ehrenberg	-	-	-	-	-	-	-	-
Sinantherina								
Bory de St. Vincent	-	-	-	-	-	-	-	-
<u>Synchaeta</u> spp. Ehrenberg	-	520	-	-	-	-	-	130
<u>Trichocerca cylindrica</u> (Imhof)	-	-	-	-	-	-	-	-
<u>Trichocerca</u> spp. Lamarck	1,310	520	50	-	-	-	-	-
<u>Trichotria</u> spp. Bory de St. Vincent	-	-	-	-	-	-	-	-
Adeloid rotifers	370	520	530	340	640	1,580	420	
Miscellaneous groups								
<u>Chaoborus</u> spp. Lichtenstein	-	-	-	-	-	-	-	-
Chironomids	-	-	-	-	-	-	-	-
Ostracoda	-	-	-	-	-	-	-	-
Tardigrada	-	-	-	-	-	-	-	-
<hr/>								
Total number of taxa observed		11	8	7	5	13	6	10
Total number of individuals per cubic meter		7,450	3,120	1,530	1,190	5,690	7,100	1,010

[Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count]

Taxa	Date Time	5/4/79 1600	6/13/79 1600	7/27/79 1800	8/23/79 1330	9/20/79 0830	10/17/79 0945	12/12/79 1300
Cladocera								
<u>Alona</u> spp. Baird	-	-	-	-	-	-	-	-
<u>Alonella hamulata</u> (Birge)	-	-	-	-	-	-	-	-
<u>Boesmina longirostris</u> (O. F. Muller)	230	-	320	-	430	*	160	
<u>Boesminopsis deitersi</u> Richard	-	-	-	-	-	-	-	
<u>Ceriodaphnia lacustris</u> Birge	-	-	-	-	110	-	-	
<u>Ceriodaphnia</u> spp. Dana	-	-	-	-	-	-	-	
<u>Chydorus sphaericus</u> (O. F. Muller)	-	-	-	-	-	*	-	
<u>Chydorus</u> spp. Leach	-	-	-	-	-	-	-	
<u>Daphnia ambigua</u> McCurfield	-	-	-	-	-	-	-	
<u>D. laevis</u> Birge	-	-	-	-	-	-	-	
<u>D. parvula</u> Fordyce	60	-	-	-	-	-	-	
<u>Daphnia</u> spp. O. F. Muller	-	*	-	-	-	-	40	
<u>Diaphanosoma</u> <u>brachyurum</u> (Lieven)	-	*	-	-	-	-	-	
<u>D. leuchtenbergianum</u> Fischer	-	-	-	-	-	-	-	
<u>Eubosmina tubicen</u> (Rehm)	-	-	-	-	-	-	-	
<u>Holopedium gibberum</u> Zaddach	-	-	-	-	-	-	-	
<u>Ilyocryptus sordidus</u> (Lieven)	-	-	*	80	-	*	-	
<u>Leptodora kindtii</u> (Focke)	-	-	-	-	-	-	-	
<u>Leydigia leydigi</u> (Schodler)	-	-	-	-	-	-	-	
<u>Leydigia</u> spp. Kurz	-	-	-	-	-	-	-	
<u>Moina micrura</u> Kurz	-	-	-	-	*	-	-	
<u>Pleuroxus denticulatus</u> Birge	-	-	-	40	-	-	-	
<u>Scapholeberis kingi</u> Sars	-	-	-	-	-	-	-	
<u>Sida crystallina</u> (O. F. Muller)	-	-	-	-	-	-	-	
<u>Simocephalus serrulatus</u> (Koch)	-	-	-	-	-	-	-	
<u>Simocephalus</u> spp. Schodler	-	-	-	-	-	-	80	
Copepoda								
<u>Cyclops bicuspidatus</u> thomasi S. A. Forbes	*	-	-	-	-	90	-	
<u>C. varicans rubellus</u> Lilleborg	-	-	*	-	-	-	-	
<u>C. vernalis</u> Fischer	-	-	-	40	-	*	-	
<u>Diaptomus bogalusiensis</u> M. S. Wilson and Moore	-	-	-	-	-	-	-	
<u>D. floridanus</u> Marsh	-	-	-	-	*	-	-	
<u>D. mississippiensis</u> Marsh	*	130	-	-	-	-	-	
<u>D. pallidus</u> Herrick	-	-	-	-	-	-	-	
<u>Eucyclops</u> spp. Claus	-	-	80	*	-	-	-	
<u>Mesocyclops edax</u> (S. A. Forbes)	-	-	*	-	-	-	40	
<u>Tropocyclops prasinus</u> (Fischer)	-	-	80	*	*	-	80	
Nauplii	570	750	1,260	510	750	510	280	
Calanoid copepodids	-	*	-	-	110	90	-	
Cyclopoid copepodids	110	130	1,020	120	320	*	360	
Harpacticoida	-	-	-	-	-	-	40	
Parasitic copepoda								
<u>Ergasilus chauteauguensis</u> Fellows	-	-	-	-	-	-	-	
<u>Ergasilus</u> spp. Smith	-	-	-	-	-	-	-	

Taxa	Date Time	5/4/79 1600	6/13/79 1600	7/27/79 1800	8/23/79 1330	9/20/79 0830	10/17/79 0945	12/12/79 1300
Rotifera								
<i>Aplanchna</i> spp. Gosse		60	250	-	-	210	-	-
<i>Trachionus angularis</i> Gosse		-	-	240	-	110	-	-
<i>A. bidentata</i> Anderson		-	-	-	40	-	-	-
<i>A. budapestinensis</i> Daday		-	-	-	-	-	-	-
<i>A. calyciflorus</i> Pallas		-	-	-	-	430	-	-
<i>A. caudatus</i> Barrios and Daday		-	-	80	120	-	-	-
<i>A. havanensis</i> Rousseelet		-	-	*	-	-	-	-
<i>A. quadridentatus</i> Hermann		-	-	80	-	-	-	-
<i>A. urceolaris</i> Muller	510	-	-	-	-	110	4,170	-
<i>Collotheca</i> spp. Herring		-	-	80	-	-	-	-
<i>Conochiloides natans</i> (Seligo)		-	-	-	-	-	-	-
<i>Conochiloides</i> spp. Hiava		-	-	*	40	110	-	-
<i>Conochilus unicornis</i> Rousseelet		-	2,630	2,760	80	4,920	1,190	-
<i>Dipleuchlania propatula</i> (Gosse)		-	-	-	-	-	-	-
<i>Dipleuchlania</i> spp. de Beauchamp		-	-	-	-	-	-	-
<i>Fuchianis</i> spp. Ehrenberg		-	-	*	40	-	260	40
<i>Filinia</i> spp. Rory de St. Vincent		-	130	80	-	-	-	-
<i>Gastropus stylifer</i> Imhof		-	-	-	-	-	-	-
<i>Hexarthra</i> spp. Schmarda		-	-	-	-	540	-	-
<i>Kellicottia hostoniensis</i> (Rousseelet)		-	130	-	-	430	-	80
<i>Keratella cochlearis</i> (Gosse)		-	500	*	-	-	-	-
<i>K. crassa</i> Ahlstrom	110	-	-	240	-	-	-	-
<i>K. earlinae</i> Ahlstrom		-	-	-	-	110	-	-
<i>K. valga</i> (Ehrenberg)		-	-	-	-	-	-	-
<i>Lecane</i> spp. Nitzsch		-	-	-	-	-	90	-
<i>Monostyla</i> spp. Ehrenberg	*	-	-	-	-	-	-	-
<i>Notommata</i> spp. Ehrenberg		-	-	-	-	-	-	-
<i>Platylus patulus</i> (Muller)		-	-	-	-	*	-	-
<i>P. quadricornis</i> (Ehrenberg)		-	-	-	-	-	-	-
<i>Ploesoma hudsoni</i> (Imhof)		-	-	-	-	-	-	-
<i>P. truncatum</i> (Levander)		-	-	-	-	-	*	-
<i>Polyarthra</i> spp. Ehrenberg	290	-	250	-	-	-	90	80
<i>Pompholyx sulcata</i> Hudson		-	-	-	-	-	-	-
<i>Ptygura</i> spp. Ehrenberg		-	-	-	-	-	-	-
Sinantherina								
<i>Rory de St. Vincent</i>		-	-	*	120	-	-	-
<i>Synchaeta</i> spp. Ehrenberg		-	750	-	-	-	170	-
<i>Trichocerca cylindrica</i> (Imhof)		-	-	-	-	-	-	-
<i>Trichocerca</i> spp. Lamarck		-	130	-	-	110	*	-
<i>Trichotria</i> spp. Rory de St. Vincent		-	-	-	-	-	-	-
<i>Edeloid rotifers</i>	140	630	240	80	*	*	*	80
Miscellaneous groups								
<i>Chaoborus</i> spp. Tschternstein		-	*	*	*	*	-	-
<i>Chironomids</i>		-	-	-	-	-	-	-
<i>Ostracoda</i>		-	-	-	-	-	-	-
<i>Tardigrada</i>		-	-	-	-	-	-	-
Total number of taxa observed								
		12	16	22	15	22	16	12
Total number of individuals per cubic meter								
		2,080	6,410	6,560	1,110	8,800	6,600	1,160

[Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count]

Date Time	4/17/78 1530	5/2/78 1400	6/5/78 1300	7/12/78 0945	8/16/78 1315	8/29/78 1015
Taxa						
Cladocera						
<u>Alonella hamulata</u> (Birge)	-	-	-	-	*	-
<u>Boesmina longirostris</u> (O. F. Muller)	*	*	*	-	*	*
<u>Boesminopsis deitersi</u> Richard	-	-	-	-	-	-
<u>Ceriodaphnia lacustris</u> Birge	*	*	*	*	*	-
<u>Ceriodaphnia</u> spp. Dana	-	-	-	*	-	-
<u>Chydorus sphaericus</u> (O. F. Muller)	-	-	-	-	-	-
<u>Chydorus</u> spp. Leach	*	*	-	-	-	-
<u>Daphnia ambigua</u> Scurfield	-	*	-	-	-	-
<u>D. laevis</u> Birge	-	-	-	-	-	-
<u>D. parvula</u> Fordyce	1,000	*	*	-	-	-
<u>Daphnia</u> (immature) O. F. Muller	*	*	-	*	-	-
<u>Diaphanosoma brachyurum</u> (Lievén)	-	-	-	-	-	-
<u>D. leuchtensbergianum</u> Fischer	-	-	*	*	-	1,000
<u>Eubosmina tubicen</u> (Brehm)	-	-	-	-	*	*
<u>Holopedium gibberum</u> Zaddach	-	-	-	-	-	-
<u>Ilyocryptus sordidus</u> (Lievén)	-	-	-	-	*	-
<u>Levdigia</u> spp. Kurz	-	-	-	-	-	-
<u>Moina micrura</u> Kurz	-	-	*	2,000	*	1,000
<u>Sida crystallina</u> (O. F. Muller)	-	-	-	-	-	-
<u>Simocephalus serrulatus</u> (Koch)	-	-	-	-	*	-
<u>Simocephalus</u> spp. Schodler	-	-	-	-	-	-
Copepoda						
<u>Cyclops bicuspidatus thomasi</u> S. A. Forbes	-	-	*	-	*	-
<u>C. varicans rubellus</u> Lilljeborg	-	-	-	-	*	-
<u>C. vernalis</u> Fischer	*	-	*	*	-	*
<u>Diaptomus bogalensis</u> M. S. Wilson and Moore	-	-	-	-	-	-
<u>D. floridanus</u> Marsh	-	-	-	-	-	-
<u>D. mississippiensis</u> Marsh	-	-	-	*	-	-
<u>D. pallidus</u> Herrick	-	-	-	-	-	-
<u>Eucyclops</u> spp. Claus	*	-	-	-	*	-
<u>Mesocyclops edax</u> (S. A. Forbes)	*	-	*	*	*	*
<u>Tropocyclops prasinus</u> (Fischer)	-	-	-	*	*	*
Nauplii	10,000	1,000	1,000	*	4,000	2,000
Calanoid Copepodids	*	-	*	*	*	-
Cyclopoid copepodids	1,000	*	1,000	*	1,000	*
Parasitic copepoda						
<u>Ergasilus chautauquaensis</u> Fellows	-	-	-	-	-	*
<u>Ergasilus</u> spp. Smith	-	-	-	*	-	-

Taxa	Date	4/17/78	5/2/78	6/5/78	7/12/78	8/16/78	8/29/78
	Time	1530	1400	1300	0945	1315	1015
Rotifers							
<i>Asplanchna</i> spp. Gosse		2,000	*	2,000	2,000	*	*
<i>Brachionus angularis</i> Gosse		-	-	-	*	*	-
<i>B. bidentata</i> Anderson		-	-	-	-	*	-
<i>B. calyciflorus</i> Pallas		1,000	*	4,000	*	-	-
<i>B. caudatus</i> Barrois and Daday		-	-	*	19,000	5,000	17,000
<i>B. havanaensis</i> Rouselet		-	-	-	-	*	-
<i>B. quadridentatus</i> Hermann		*	*	-	-	-	-
<i>B. urceolaris</i> Müller		*	*	-	-	-	-
<i>Collotheca</i> spp. Harring		*	*	-	-	*	-
<i>Conochiloides natans</i> (Seligo)		-	-	-	5,000	*	-
<i>Conochiloides</i> spp. Hlava		1,000	*	1,000	-	-	2,000
<i>Conochilus unicornis</i> Rouselet		2,000	*	19,000	35,000	10,000	25,000
<i>Dipleuchlanis propatula</i> (Gosse)		-	-	-	-	-	-
<i>Euchlanis</i> spp. Ehrenberg		-	*	*	-	-	-
<i>Ellinia</i> spp. Bory de St. Vincent		*	*	*	*	-	*
<i>Hexarthra</i> spp. Schmarda		-	*	-	3,000	*	1,000
<i>Kellicottia hostonensis</i> (Rouselet)		1,000	*	*	-	*	-
<i>Keratella cochlearis</i> (Gosse)		*	*	*	-	-	-
<i>K. crassa</i> Ahlstrom		*	*	*	-	2,000	-
<i>K. earlinae</i> Ahlstrom		-	*	-	-	*	-
<i>Lecane</i> spp. Nitzsch		-	*	-	-	-	-
<i>Monostyla</i> spp. Ehrenberg		-	*	-	-	-	-
<i>Notommata</i> spp. Ehrenberg		-	-	-	-	-	-
<i>Platyias patulus</i> (Müller)		-	-	*	-	-	-
<i>P. quadricornis</i> (Ehrenberg)		-	-	-	-	-	-
<i>Ploesoma hudsoni</i> (Imhof)		-	-	-	-	-	-
<i>P. truncatum</i> (Levander)		-	*	-	-	-	-
<i>Polyarthra</i> spp. Ehrenberg		*	*	1,000	2,000	1,000	3,000
<i>Sinantherina</i> spp. Bory de St. Vincent		-	-	*	-	*	5,000
<i>Synchaeta</i> spp. Ehrenberg		1,000	*	2,000	1,000	2,000	-
<i>Trichocerca</i> spp. Lamarck		-	*	*	2,000	1,000	1,000
<i>Trichotria</i> spp. Bory de St. Vincent		-	*	-	-	-	-
Bdelloid rotifers		*	*	*	-	*	-
Miscellaneous groups							
<i>Chaoborus</i> spp. Lichtenstein		*	-	*	*	-	*
Chironomids		-	-	-	-	-	-
Ostracoda		-	-	-	*	-	-
Tardigrada		-	-	-	-	-	-
Total number of taxa observed		26	30	27	26	33	20
Total number of cells per cubic meter		20,000	1,000	31,000	71,000	26,000	58,000

[Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count]

Taxa	Date Time	5/4/79 1800	6/15/79 1615	7/27/79 1700	8/24/79 1500	9/20/79 1300	10/17/79 0800	12/12/79 1600
Cladocera								
<u>Alona</u> spp. Baird		-	-	-	-	-	-	-
<u>Alonella hamulata</u> (Birge)		-	-	-	-	-	-	-
<u>Bosmina longirostris</u> (O. F. Muller)		510	260	210	*	140	450	60
<u>Bosminopsis deitersi</u> Richard		-	-	-	-	-	-	-
<u>Ceriodaphnia lacustris</u> Birge		-	260	-	-	-	-	-
<u>Ceriodaphnia</u> spp. Dana		-	-	-	*	-	-	-
<u>Chydorus sphaericus</u> (O. F. Muller)		*	-	-	-	-	-	*
<u>Chydorus</u> spp. Leach		-	-	-	-	-	-	-
<u>Daphnia ambigua</u> Scourfield		*	-	-	-	-	-	-
<u>D. laevis</u> Birge		-	-	-	-	-	-	-
<u>D. parvula</u> Fordyce		-	-	-	-	-	-	-
<u>Daphnia</u> spp. O. F. Muller		-	260	-	-	-	-	-
<u>Diaphanosoma</u> brachyurum (Lleven)		-	790	210	1,560	-	-	-
<u>D. leuchtenbergianum</u> Fischer		-	-	-	-	-	-	-
<u>Eubosmina tubicen</u> (Rehm)		-	-	-	-	-	-	-
<u>Holopedium gibberum</u> Zaddach		-	-	-	-	-	-	-
<u>Ilyocryptus sordidus</u> (Lleven)		-	-	-	-	-	-	-
<u>Leptodora kindtii</u> (Focke)		-	-	-	-	-	-	-
<u>Leydigia leydigi</u> (Schodler)		-	-	-	-	-	-	-
<u>Leydigia</u> spp. Kurz		-	-	620	1,560	-	-	-
<u>Moina micrura</u> Kurz		-	-	-	-	-	-	-
<u>Pleuroxus denticulatus</u> Birge		-	-	-	-	-	-	-
<u>Scapholeberis kingi</u> Sara		-	*	-	-	-	-	-
<u>Sida crystallina</u> (O. F. Muller)		-	-	-	-	-	-	-
<u>Simocephalus serrulatus</u> (Koch)		-	-	-	-	-	-	-
<u>Simocephalus</u> spp. Schodler		-	-	-	-	-	-	-
Copepoda								
<u>Cyclops bicuspidatus</u> thomasi S. A. Forbes		610	-	-	-	-	-	*
<u>C. varicans rubellus</u> Lilljehorg		-	-	-	-	-	-	30
<u>C. vernalis</u> Fischer		*	*	-	*	-	-	-
<u>Diaptomus bogalusiensis</u>		-	-	-	-	-	-	-
<u>D. floridanus</u> Marsh		-	-	-	-	-	-	-
<u>D. mississippiensis</u> Marsh		-	*	-	-	-	-	-
<u>D. pallidus</u> Herrick		-	-	-	-	-	-	-
<u>Eucyclops</u> spp. Claus		-	-	-	-	-	-	-
<u>Mesocyclops edax</u> (S. A. Forbes)		-	-	-	*	-	*	-
<u>Tropocyclops prasinus</u> (Fischer)		*	-	-	*	410	-	30
Nauplii		2,320	6,040	3,530	3,120	410	90	170
Calanoid copepodids		-	-	-	-	280	-	*
Cyclopoid copepodids		1,210	2,370	1,870	1,560	830	450	250
Harpacticoida		-	-	-	-	-	-	-
Parasitic copepoda								
<u>Ergasilus chautauguensis</u> Fellows		-	-	-	-	-	-	-
<u>Ergasilus</u> spp. Smith		-	-	-	*	-	-	-

Taxa	Date Time	5/4/79 1800	6/15/79 1615	7/27/79 1700	8/14/79 1500	9/20/79 1300	10/17/79 0800	12/12/79 1600
Rotifera								
<i>Asplanchna</i> spp. Gosse	-	-	1,840	2,490	-	140	-	30
<i>Brachionus angularis</i>	-	-	-	-	-	-	-	-
Gosse	-	-	530	1,040	6,030	140	-	-
<i>B. bidentata</i> Anderson	-	-	-	-	-	-	-	-
<i>B. budapestinensis</i> Daday	-	-	-	-	-	-	-	-
<i>B. calyciflorus</i> Pallas	-	-	-	1,040	-	280	-	-
<i>B. caudatus</i>	-	-	-	-	-	-	-	-
<i>Barrisia</i> sp. Daday	-	-	14,720	28,430	43,290	140	90	-
<i>B. havanaensis</i> Rousselet	-	-	-	210	-	-	-	-
<i>B. quadridentatus</i> Hermann	-	-	-	-	220	-	-	-
<i>B. urceolaris</i> Muller	300	-	-	-	-	*	540	-
<i>Collotheca</i> spp. Harring	100	-	-	420	*	140	90	-
<i>Conochiloides natans</i>	-	-	-	-	-	-	-	-
(Sellgo)	-	-	-	-	-	-	-	-
<i>Conochiloides</i> spp. Hlava	100	-	-	2,280	1,340	280	*	-
<i>Conochilus unicornis</i>	-	-	-	-	-	-	-	-
Rousselet	100	10,780	24,690	32,130	16,240	16,240	1,430	-
<i>Dipleuchlanis propatula</i>	-	-	-	-	-	-	-	-
(Gosse)	-	-	-	-	-	-	-	-
<i>Dipleuchlanis</i>	-	-	-	-	-	-	-	-
spp. de Beauchamp	-	-	-	-	-	-	-	-
<i>Euchlanis</i> spp. Ehrenberg	-	-	-	-	*	140	-	30
<i>Filinia</i> spp.	-	-	-	-	-	-	-	-
Bory de St. Vincent	-	2,630	1,660	*	410	180	60	-
<i>Gastropus stylifer</i> Imhof	-	-	1,450	-	-	-	-	-
<i>Hexarthra</i> spp. Schmarda	-	-	-	-	4,020	960	-	-
<i>Kellicottia hostontensis</i>	-	-	-	-	-	-	-	-
(Rousselet)	100	260	210	*	-	180	90	-
<i>Keratella cochlearis</i>	-	-	-	-	-	-	-	-
(Gosse)	-	1,050	-	-	-	-	-	-
<i>K. crassa</i> Ahlstrom	610	3,940	830	-	*	90	60	-
<i>K. earlinae</i> Ahlstrom	-	260	-	-	-	-	-	60
<i>K. valga</i> (Ehrenberg)	-	-	210	-	-	280	-	-
<i>Lecane</i> spp. Nitzsch	-	-	-	-	-	-	-	-
<i>Monostyla</i> spp. Ehrenberg	-	-	-	-	-	-	-	30
<i>Notomata</i> spp. Ehrenberg	-	-	-	-	-	-	-	-
<i>Platyus patulus</i> (Muller)	-	-	-	-	-	-	-	-
<i>P. quadricornis</i>	-	-	-	-	-	-	-	-
(Ehrenberg)	-	-	-	-	-	-	-	-
<i>Ploesoma hudsoni</i> (Imhof)	-	-	-	-	-	-	-	-
<i>P. truncatum</i> (Levander)	-	-	-	-	-	-	-	-
<i>Polyarthra</i> spp. Ehrenberg	200	5,520	1,250	220	-	-	270	-
<i>Pompholyx sulcata</i> Hudson	-	-	-	-	-	-	-	-
<i>Ptygusa</i> spp. Ehrenberg	-	-	-	-	-	-	-	-
Sinantherina								
Bory de St. Vincent	-	-	620	670	-	-	-	-
<i>Synchaeta</i> spp. Ehrenberg	710	16,290	1,870	220	140	1,610	30	-
<i>Trichocerca cylindrica</i>	-	-	-	-	-	-	*	-
(Imhof)	-	-	-	-	-	-	-	-
<i>Trichocerca</i> spp. Lamarck	100	1,840	2,700	2,230	140	-	-	-
<i>Trichotria</i> spp.	-	-	-	-	-	-	-	-
Bory de St. Vincent	-	-	-	-	-	-	-	-
<i>Adeloid rotifers</i>	200	-	-	-	*	*	90	230
Miscellaneous groups								
<i>Chaoborus</i> spp.	-	-	-	-	-	-	-	-
Lichtenstein	-	*	*	*	-	-	-	-
<i>Chironomids</i>	-	-	-	-	-	-	-	-
<i>Ostracoda</i>	-	-	-	-	-	-	-	-
<i>Tardigrada</i>	-	-	-	-	-	-	-	-
<hr/>								
Total number of taxa observed		18	22	23	26	21	17	17
Total number of individuals per cubic meter		7,170	69,640	77,840	98,170	21,490	5,560	1,160

(Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count)

Taxa	Date Time	4/12/78 1400	5/4/78 1245	6/1/78 1315	7/11/78 1345	8/17/78 0930	8/29/78 1415
Cladocera							
<i>Alonella hamulata</i> (Birge)		-	-	-	-	-	-
<i>Bosmina longirostris</i> (O. F. Muller)		*	*	*	-	*	*
<i>Bosminopsis deitersi</i> Richard		-	-	-	-	-	-
<i>Ceriodaphnia lacustris</i> Birge		-	-	-	*	*	*
<i>Ceriodaphnia</i> spp. Dana		-	-	-	*	-	-
<i>Chydorus sphaericus</i> (O. F. Muller)		*	-	-	-	-	-
<i>Chydorus</i> spp. Leach		-	-	-	-	-	-
<i>Daphnia ambigua</i> Scurfield		*	*	*	-	-	-
<i>D. laevis</i> Birge		-	-	-	-	-	-
<i>D. parvula</i> Fordyce		*	-	*	-	-	-
<i>Daphnia</i> (immature) O. F. Muller		-	-	-	*	-	-
<i>Diaphanosoma brachyurum</i> (Lieven)		-	-	-	-	*	-
<i>D. leuchtenbergianum</i> Fischer		*	-	*	*	*	*
<i>Eubosmina tubicen</i> (Rehm)		-	-	-	-	*	*
<i>Golopedium gibberum</i> Zaddach		-	-	-	-	-	-
<i>Glyocryptus sordidus</i> (Lieven)		-	-	-	*	*	-
<i>Leydigia</i> spp. Kurz		*	-	-	-	-	-
<i>Moina micrura</i> Kurz		-	-	*	1,000	*	1,000
<i>Sida crystallina</i> (O. F. Muller)		-	-	-	-	*	*
<i>Simocephalus serrulatus</i> (Koch)		-	-	-	-	*	-
<i>Simocephalus</i> spp. Schodler		-	-	-	-	-	-
Copepoda							
<i>Cyclops bicuspidatus thomasi</i> S. A. Forbes		*	-	*	-	*	-
<i>C. varicans rubellus</i> Lilljeborg		-	-	-	-	-	-
<i>C. vernalis</i> Fischer		*	-	*	-	*	-
<i>Diaptomus bogalensis</i> M. S. Wilson and Moore		-	-	-	-	-	-
<i>D. floridanus</i> Marsh		-	-	-	-	*	-
<i>D. mississippiensis</i> Marsh		-	-	*	-	*	*
<i>D. pallidus</i> Herrick		-	-	-	-	-	-
<i>Eucyclops</i> spp. Claus		-	-	-	-	-	-
<i>Mesocyclops edax</i> (S. A. Forbes)		*	-	*	*	*	-
<i>Tropocyclops praeinus</i> (Fischer)		*	-	*	*	*	*
Nauplii		1,000	1,000	1,000	2,000	4,000	2,000
Calanoid Copepodids		*	-	*	*	*	*
Cyclopoid copepodids		1,000	*	*	1,000	1,000	*
Parasitic copepoda							
<i>Ergasilus chautauquaensis</i> Fellows		-	-	-	-	*	*
<i>Ergasilus</i> spp. Smith		-	-	*	*	-	-

	Date Time	4/12/78 1400	5/4/78 1245	6/1/78 1315	7/11/78 1345	8/17/78 0930	8/29/78 1415
Taxa							
Rotifera							
<i>Asplanchna</i> spp. Gosse		2,000	1,000	3,000	1,000	*	*
<i>Brachionus angularis</i> Gosse		-	-	-	-	*	-
<i>B. bidentata</i> Anderson		-	*	-	-	-	-
<i>B. calyciflorus</i> Pallas		14,000	*	4,000	-	-	-
<i>B. caudatus</i> Barrois and Daday		-	-	*	4,000	13,000	15,000
<i>B. havanaensis</i> Rousseelet		-	-	-	-	*	-
<i>B. quadridentatus</i> Hermann		*	*	-	-	-	-
<i>B. urceolaris</i> Muller		*	*	-	-	-	-
<i>Collotheca</i> spp. Hanning		-	-	*	-	1,000	-
<i>Conochiloides natans</i> (Seligo)		-	-	-	4,000	1,000	2,000
<i>Conochiloides</i> spp. Hlava		*	*	*	-	-	2,000
<i>Conochilus unicornis</i> Rousseelet		5,000	*	24,000	43,000	17,000	20,000
<i>Dipleuchlanis propatula</i> (Gosse)		-	-	-	-	-	-
<i>Euchlania</i> spp. Ehrenberg		-	*	-	-	-	-
<i>Ellinia</i> spp. Bory de St. Vincent		-	-	*	*	*	-
<i>Hexarthra</i> spp. Schmarda		-	-	-	3,000	1,000	*
<i>Kellicottia hostoniensis</i> (Rousseelet)		1,000	*	1,000	*	*	-
<i>Keratella cochlearis</i> (Gosse)		*	-	*	-	*	-
<i>K. crassa</i> Ahlstrom		*	*	1,000	*	*	*
<i>K. earlinae</i> Ahlstrom		-	-	-	-	*	-
<i>Lecane</i> spp. Nitzsch		-	-	-	-	-	-
<i>Monostyla</i> spp. Ehrenberg		-	-	-	-	-	-
<i>Notommata</i> spp. Ehrenberg		*	-	-	-	-	*
<i>Platyias patulus</i> (Muller)		-	-	-	-	-	-
<i>P. quadricornis</i> (Ehrenberg)		-	-	-	-	*	-
<i>Ploesoma hudsoni</i> (Imhof)		-	-	-	-	-	-
<i>P. truncatum</i> Levander		-	*	1,000	-	*	-
<i>Polyarthra</i> spp. Ehrenberg		1,000	*	-	4,000	1,000	*
<i>Sinantherina</i> spp. Bory de St. Vincent		-	-	1,000	-	-	*
<i>Synchaeta</i> spp. Ehrenberg		4,000	*	-	1,000	2,000	*
<i>Trichocerca</i> spp. Lamarck		-	-	*	1,000	2,000	-
<i>Trichotria</i> spp. Bory de St. Vincent		-	*	-	-	-	1,000
Retroid rotifers		-	*	*	-	*	-
Miscellaneous groups							
<i>Chaoborus</i> spp. Lichtenstein		*	-	*	*	*	-
Chironomids		-	*	-	-	-	-
Ostracoda		-	-	-	*	*	-
Tardigrada		-	-	-	-	-	-
Total number of taxa observed		26	20	29	25	39	24
Total number of cells per cubic meter		29,000	2,000	36,000	65,000	43,000	52,000

[Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count]

Taxa	Date Time	5/5/79 0900	6/15/79 1400	7/27/79 1430	8/24/79 1300	9/20/79 1330	10/17/79 1300	12/12/79 1700
Cladocera								
<u>Alona</u> spp. Baird		-	-	-	-	-	-	-
<u>Alonella hamulata</u> (Birge)		-	30	-	-	-	-	-
<u>Boesmina longirostris</u> (O. F. Muller)	1,000	1,020	560	430	*	*		460
<u>Boesminopsis detterati</u> Richard	-	-	-	-	-	-	-	-
<u>Ceriodaphnia lacustris</u> Birge	-	680	*	*	-	*	-	-
<u>Ceriodaphnia</u> spp. Dana	-	-	-	-	-	-	-	-
<u>Chydorus sphaericus</u> (O. F. Muller)	130	-	-	-	-	-	-	-
<u>Chydorus</u> spp. Leach	-	-	-	-	-	-	-	-
<u>Daphnia ambigua</u> Scourfield	-	-	-	-	-	-	-	-
<u>D. laevis</u> Birge	-	-	-	-	-	-	-	-
<u>D. parvula</u> Fordyce	-	-	-	-	-	-	-	-
<u>Daphnia</u> spp. O. F. Muller	250	1,030	-	-	-	-	*	-
<u>Diaphanosoma</u> brachyurum (Lieven)	-	1,370	840	1,290	*	*	-	-
<u>D. leuchtenbergianum</u> Fischer	-	-	-	-	-	-	-	-
<u>Eubosmina tubicen</u> (Rehm)	-	-	-	-	-	-	-	-
<u>Holopedium gibberum</u> Zaddach	-	-	-	-	-	-	-	-
<u>Ilyocryptus sordidus</u> (Lieven)	-	-	-	-	-	-	-	-
<u>Leptodora kindtii</u> (Focke)	-	-	-	-	-	-	-	-
<u>Leydigia leydigi</u> (Schodler)	-	-	-	-	-	-	-	*
<u>Leydigia</u> spp. Kurz	-	-	-	-	-	-	-	-
<u>Moina micrura</u> Kurz	-	-	2,240	2,370	*	-	-	-
<u>Pleuroxus denticulatus</u> Birge	-	-	-	-	-	-	-	-
<u>Scapholeberis kingi</u> Sara	-	-	-	-	-	-	-	-
<u>Sida crystallina</u> (O. F. Muller)	-	-	-	-	-	-	-	-
<u>Simocephalus serrulatus</u> (Koch)	-	-	-	-	-	-	-	-
<u>Simocephalus</u> spp. Schodler	-	-	-	-	-	-	-	-
Copepoda								
<u>Cyclops vicuspidatus</u> thomasi S. A. Forbes	750	-	-	-	*	-	*	40
<u>C. varicans rubellus</u> Lilljeborg	-	-	-	-	-	-	-	-
<u>C. vernalis</u> Fischer	-	340	*	*	*	*	*	-
<u>Diaptomus bogalensis</u> W. S. Wilson and Moore	-	-	-	-	-	-	-	-
<u>D. floridanus</u> Marsh	-	-	-	-	*	-	-	-
<u>D. mississippiensis</u> Marsh	-	*	-	-	-	-	-	-
<u>D. pallidus</u> Herrick	-	-	-	-	-	-	-	-
<u>Eucyclops</u> spp. Claus	130	-	-	-	-	-	-	-
<u>Mesocyclops edax</u> (S. A. Forbes)	-	340	560	220	-	-	-	-
<u>Tropocyclops prasinus</u> (Fischer)	-	*	*	*	*	*	*	-
Nauplii	7,130	15,370	8,680	5,180	2,680	3,470		320
Calanoid copepodids	-	*	*	*	*	*	-	-
Cyclopoid copepodids	1,000	6,150	5,040	3,020	1,340	1,730		140
Harpacticoids	-	-	-	-	-	-	-	-
Parasitic copepoda								
<u>Ergasilus chautauguensis</u> Fellows	-	-	-	-	-	-	-	-
<u>Ergasilus</u> spp. Smith	-	-	-	*	-	-	-	-

Taxa	Date Time	5/5/79 0900	6/15/79 1400	7/27/79 1430	8/24/79 1300	9/20/79 1330	10/17/79 1300	12/12/79 1700
Rotifera								
<i>Aepilachna</i> spp. Gosse	-	-	7,860	1,960	-	*	-	-
<i>Brachionus angularis</i> Gosse	-	-	-	2,240	860	-	-	-
<i>B. bidentata</i> Anderson	*	-	-	-	-	-	-	-
<i>B. budapestinensis</i> Daday	-	-	-	-	-	-	-	-
<i>B. calyciflorus</i> Pallas	-	-	1,030	3,360	-	-	-	-
<i>B. caudatus</i> Barrios and Daday	-	-	45,770	23,520	22,870	890	-	-
<i>B. havanaensis</i> Rousselet	-	-	-	280	-	-	-	-
<i>B. quadridentatus</i> Hermann	130	-	-	-	-	-	-	-
<i>B. urceolaris</i> Muller	250	-	-	-	-	*	-	40
<i>Collotheca</i> spp. Harring	380	-	-	840	1,080	450	4,040	-
<i>Conochiloides natans</i> (Seligo)	-	-	-	-	2,160	-	-	-
<i>Conochiloides</i> spp. Hlava	380	1,030	-	392	75,940	1,790	870	-
<i>Conochilus unicornis</i> Rousselet	750	48,850	-	62,440	-	55,340	19,920	*
<i>Dipleuchlanis propatula</i> (Gosse)	-	-	-	-	-	-	-	-
<i>Dipleuchlanis</i> spp. de Beauchamp	-	-	-	-	-	-	-	-
<i>Euchlanis</i> spp. Ehrenberg	*	-	-	-	-	-	-	40
<i>Filinia</i> spp. Bory de St. Vincent	-	4,100	-	840	*	*	-	40
<i>Gastropus stylifer</i> Imhof	-	-	-	840	-	-	-	-
<i>Hexarthra</i> spp. Schmarida	-	-	-	-	9,490	2,460	1,160	-
<i>Kellicottia bastonensis</i> (Rousselet)	130	2,390	-	1,120	1,510	450	7,220	70
<i>Keratella cochlearis</i> (Gosse)	-	4,100	-	-	*	-	1,730	-
<i>K. crassa</i> Ahlstrom	2,250	13,660	-	*	*	-	3,750	*
<i>K. earlinae</i> Ahlstrom	-	1,030	-	-	-	-	*	-
<i>K. valga</i> (Ehrenberg)	-	-	-	2,240	-	*	-	-
<i>Lecane</i> spp. Nitzsch	-	-	-	-	-	-	-	-
<i>Monostyla</i> spp. Ehrenberg	*	-	-	-	-	-	-	-
<i>Notommata</i> spp. Ehrenberg	-	-	-	-	-	-	-	-
<i>Platyus patulus</i> (Muller)	-	-	-	-	*	-	-	-
<i>P. quadricornis</i> (Ehrenberg)	-	-	-	*	-	-	-	-
<i>Ploesoma hudsoni</i> (Imhof)	-	-	-	-	-	-	-	-
<i>P. truncatum</i> (Levander)	-	-	-	280	220	-	290	-
<i>Polyarthra</i> spp. Ehrenberg	250	10,250	-	1,680	220	*	4,330	40
<i>Pompholyx sulcata</i> Hudson	130	-	-	-	-	-	-	-
<i>Ptygura</i> spp. Ehrenberg	-	-	-	-	-	-	-	-
<i>Sinantherina</i> Bory de St. Vincent	-	-	-	-	-	450	-	-
<i>Synchaeta</i> spp. Ehrenberg	2,000	22,200	-	1,680	1,080	2,010	15,880	-
<i>Trichocerca cylindrica</i> (Imhof)	-	-	-	-	-	*	-	-
<i>Trichocerca</i> spp. Lamarck	130	2,050	-	5,320	5,610	-	-	-
<i>Trichotria</i> spp. Bory de St. Vincent	*	-	-	-	-	-	-	-
<i>Adeloid rotifers</i>	130	340	-	-	*	*	290	80
Miscellaneous groups								
<i>Chaoborus</i> spp. Lichtenstein	-	-	-	-	*	*	*	-
<i>Chironomids</i>	-	-	-	-	-	-	-	-
<i>Ostracoda</i>	-	-	-	-	-	-	-	-
<i>Tardigrada</i>	-	-	-	-	-	-	-	-
<hr/>								
Total number of taxa observed		23	26	28	30	23	22	13
Total number of individuals per cubic meter		17,200	190,490	126,952	133,980	67,860	64,680	1,270

[Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count]

Taxa	Date Time	4/12/78 1700	5/3/78 1030	6/1/78 1015	7/11/78 0945	8/15/78 1020	8/30/78 1515
Cladocera							
<i>Alonella hamulata</i> (Birge)		-	-	-	-	-	-
<i>Alonina longirostris</i> (O. F. Muller)		*	1,000	1,000	-	1,000	*
<i>Aloninopsis deitersi</i> Richard		-	-	-	*	*	-
<i>Ceriodaphnia lacustris</i> Birge		-	*	*	*	-	-
<i>Ceriodaphnia</i> spp. Dana		-	-	-	*	-	-
<i>Chydorus sphaericus</i> (O. F. Muller)		-	-	-	-	-	-
<i>Chydorus</i> spp. Leach		-	-	-	-	-	-
<i>Daphnia ambigua</i> Scourfield		*	-	*	-	-	-
<i>D. laevis</i> Birge		-	-	*	-	-	-
<i>D. parvula</i> Fordyce		-	*	*	-	-	*
<i>Daphnia</i> (immature) O. F. Muller		-	*	1,000	-	-	-
<i>Diaphanosoma brachyurum</i> (Lieven)		-	-	-	-	-	-
<i>G. leuchtenbergianum</i> Fischer		-	*	1,000	*	3,000	1,000
<i>Eubosmina tubicen</i> (Brehm)		-	-	-	-	-	-
<i>Holopedium pihnerum</i> Zaddach		-	-	*	*	-	-
<i>Ilyocryptus sordidus</i> (Lieven)		-	-	-	-	-	-
<i>Leydigia</i> spp. Kurz		-	-	-	-	-	-
<i>Moina micrura</i> Kurz		-	-	-	*	2,000	1,000
<i>Sida crystallina</i> (O. F. Muller)		-	-	-	-	-	-
<i>Simocephalus serrulatus</i> (Koch)		-	*	-	-	-	-
<i>Simocephalus</i> spp. Schodler		-	-	*	-	-	-
Copepoda							
<i>Cyclops bicuspidatus thomasi</i> S. A. Forbes		-	-	*	-	-	-
<i>C. varicans tubellus</i> Lilljeborg		-	-	-	-	-	-
<i>C. vernalis</i> Fischer		*	*	*	-	*	-
<i>Diaptomus bogalensis</i> M. S. Wilson and Moore		-	-	*	-	-	-
<i>D. floridanus</i> Marsh		-	-	-	-	*	-
<i>D. mississippiensis</i> Marsh		*	*	*	-	*	*
<i>D. pallidus</i> Werrick		-	-	-	-	-	-
<i>Eucyclops</i> spp. Claus		-	-	-	-	-	-
<i>Mesocyclops edax</i> (S. A. Forbes)		*	-	1,000	*	*	*
<i>Tropocyclops prasinus</i> (Fischer)		*	-	-	*	*	*
Nauplii		1,000	1,000	2,000	*	10,000	3,000
Calanoid Copepodids		-	*	*	*	*	-
Cyclopoid copepodids		1,000	*	1,000	*	2,000	1,000
Parasitic copepoda							
<i>Ergasilus chautauqueensis</i> Fellows		-	-	-	-	*	-
<i>Ergasilus</i> spp. Smith		-	-	*	-	-	-

Date Time	4/12/78 1200	5/3/78 1030	6/1/78 1015	7/11/78 0945	8/15/78 1020	8/30/78 1515
Taxa						
Rotifera						
<i>Asplanchna</i> spp. Gosse	6,000	5,000	2,000	*	1,000	*
<i>Brachionus angularis</i> Gosse	-	*	*	-	1,000	2,000
<i>B. bidentata</i> Anderson	-	*	-	-	-	-
<i>B. calyciflorus</i> Pallas	15,000	5,000	1,000	-	-	-
<i>B. caudatus</i> Barrois and Daday	-	*	7,000	1,000	3,000	1,000
<i>B. havanaensis</i> Rousselet	-	-	-	-	*	-
<i>B. quadridentatus</i> Hermann	*	*	-	-	-	-
<i>B. urceolaris</i> Muller	*	*	-	-	-	-
<i>Collotheca</i> spp. Harring	-	*	*	*	*	*
<i>Conochiloides natans</i> (Seligo)	-	-	-	1,000	8,000	-
<i>Conochiloides</i> spp. Hlava	*	*	3,000	-	-	3,000
<i>Conochilus unicornis</i> Rousselet	8,000	5,000	23,000	4,000	60,000	26,000
<i>Diploecyathia propatula</i> (Gosse)	-	-	-	-	-	-
<i>Euchlania</i> spp. Ehrenberg	-	-	-	-	-	-
<i>Elinia</i> spp. Bory de St. Vincent	*	*	1,000	-	*	-
<i>Hexarthra</i> spp. Schmarda	-	-	*	*	*	*
<i>Kellicottia hostontensis</i> (Rousselet)	1,000	*	*	-	*	*
<i>Keratella cochlearis</i> (Gosse)	*	*	*	*	*	*
<i>K. crassa</i> Ahlstrom	*	*	*	*	1,000	*
<i>K. earlinae</i> Ahlstrom	-	-	*	-	-	-
<i>Lecane</i> spp. Nitzsch	-	-	-	-	-	-
<i>Monostyla</i> spp. Ehrenberg	-	-	-	-	-	-
<i>Notommata</i> spp. Ehrenberg	-	*	-	-	-	-
<i>Platyisa patulus</i> (Muller)	-	-	-	-	-	-
<i>P. quadricornis</i> (Ehrenberg)	-	-	-	-	*	-
<i>Ploesoma hudsoni</i> (Imhof)	-	-	-	-	-	-
<i>P. truncatum</i> (Levander)	-	-	*	*	4,000	*
<i>Polyarthra</i> spp. Ehrenberg	2,000	3,000	1,000	*	1,000	*
<i>Sinantherina</i> spp. Bory de St. Vincent	-	-	-	-	*	-
<i>Synchaeta</i> spp. Ehrenberg	2,000	3,000	*	*	1,000	1,000
<i>Trichocerca</i> spp. Lamarck	-	*	*	*	1,000	*
<i>Trichotria</i> spp. Bory de St. Vincent	-	-	-	-	-	-
Adeloid rotifers	-	*	-	-	-	-
Miscellaneous groups						
<i>Chaoborus</i> spp. Lichtenstein	-	-	*	*	*	*
Chironomids	-	-	-	-	-	-
Ostracoda	-	-	-	-	-	*
Tardigrada	-	-	-	-	-	-
Total number of taxa observed	20	31	36	24	32	25
Total number of cells per cubic meter	36,000	23,000	45,000	6,000	102,000	39,000

Taxa	Date Time	5/4/79 1230	6/15/79 1200	7/27/79 1245	8/24/79 1030	9/20/79 1630	10/17/79 1500	12/13/79 1030
Rotifera								
<i>Asplanchna</i> spp. Gosse		3,360	6,490	820	-	200	1,670	-
<i>Brachionus angularis</i> Gosse		-	2,160	10,250	2,240	400	*	-
<i>B. bidentata</i> Anderson		-	-	-	-	-	-	-
<i>B. budapestinensis</i> Daday		-	-	-	-	-	-	-
<i>B. calyciflorus</i> Pallas		-	*	*	-	-	-	-
<i>B. caudatus</i> Barrios and Daday		-	43,680	15,580	2,470	2,300	1,120	-
<i>B. havanensis</i> Rousselet		-	430	-	-	-	-	-
<i>B. quadridentatus</i> Hermann		-	-	-	-	-	-	20
<i>B. urceolaris</i> Muller		-	-	-	-	-	-	60
<i>Collotheca</i> spp. Harring		420	870	410	670	1,470	-	80
<i>Conochiloides natans</i> (Seligo)		-	-	-	-	-	-	-
<i>Conochiloides</i> spp. Hiava		-	870	4,720	2,470	1,670	2,230	-
<i>Conochilus unicornis</i> Rousselet		280	116,340	21,320	36,520	38,710	132,130	60
<i>Dipleuchlania propatula</i> (Gosse)		-	-	-	-	-	-	-
<i>Dipleuchlania</i> spp. de Remichamp		-	-	-	-	-	-	-
<i>Euchlania</i> spp. Ehrenberg		-	-	-	-	-	-	20
<i>Filinia</i> spp. Bory de St. Vincent		-	13,840	-	-	*	*	150
<i>Gastropus stylifer</i> Imhof		140	-	6,360	-	-	-	-
<i>Hexarthra</i> spp. Schmarda		-	2,160	-	5,600	2,460	1,670	-
<i>Kellicottia hostoniensis</i> (Rousselet)		280	430	850	-	450	2,230	170
<i>Keratella cochlearis</i> (Gosse)		-	5,190	620	-	-	560	40
<i>K. crassa</i> Ahlstrom		840	22,060	-	-	-	8,920	*
<i>K. earlinae</i> Ahlstrom		-	870	-	-	-	1,670	20
<i>K. valga</i> (Ehrenberg)		-	-	620	-	*	560	-
<i>Lecane</i> spp. Nitzsch		-	-	-	-	-	-	-
<i>Monostyla</i> spp. Ehrenberg		-	-	-	-	-	-	-
<i>Notommata</i> spp. Ehrenberg		-	-	-	-	-	-	-
<i>Platyus patulus</i> (Muller)		-	-	-	-	-	-	-
<i>P. quadricornis</i> (Ehrenberg)		-	-	-	-	-	-	-
<i>Pleesoma hudsoni</i> (Imhof)		-	-	-	-	-	-	-
<i>P. truncatum</i> (Levander)		-	*	820	-	-	3,900	-
<i>Polyarthra</i> spp. Ehrenberg		560	15,140	410	2,470	*	1,120	60
<i>Pompholyx sulcata</i> Hudson		-	-	-	-	-	-	-
<i>Ptygura</i> spp. Ehrenberg		-	-	-	-	-	-	-
<i>Sinantherina</i> Bory de St. Vincent		*	-	410	-	-	-	20
<i>Synchaeta</i> spp. Ehrenberg		840	7,350	820	1,120	2,090	8,920	440
<i>Trichocerca cylindrica</i> (Imhof)		-	-	-	5,380	420	560	-
<i>Trichocerca</i> spp. Lamarck		140	9,520	4,720	2,020	210	1,120	20
<i>Trichotria</i> spp. Bory de St. Vincent		140	-	-	-	-	-	-
Adeloid rotifers		560	-	-	220	-	560	230
Miscellaneous groups								
<i>Chaoborus</i> spp. Lichtenelein		-	-	*	*	*	*	-
Chironomids		-	-	-	-	-	-	-
Ostracoda		-	-	-	-	-	-	-
Tardigrada		-	-	-	-	-	-	-
Total number of taxa observed		22	30	28	21	22	28	24
Total number of individuals per cubic meter		13,580	283,740	80,550	81,340	64,410	176,750	3,880

[Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count]

Taxa	Date Time	5/4/79 1230	6/15/79 1200	7/27/79 1245	8/24/79 30	9/20/79 1630	10/17/79 1500	12/13/79 1000
Cladocera								
<u>Alona</u> spp. Baird	-	-	-	-	-	-	-	-
<u>Alonella hamulata</u> (Birge)	-	-	-	-	-	-	-	-
<u>Rosmina longirostris</u> (O. F. Muller)	1,120	6,490	1,030	1,790	1,050	670	600	
<u>Rosminopsis deitersi</u> Richard	-	410	820	670	-	-	-	
<u>Ceriodaphnia lacustris</u> Birge	-	430	*	-	-	-	-	
<u>Ceriodaphnia</u> spp. Dana	-	-	-	-	-	-	-	
<u>Chydorus sphaericus</u> (O. F. Muller)	-	-	-	-	-	-	-	
<u>Chydorus</u> spp. Leach	-	-	-	-	-	-	-	
<u>Daphnia ambigua</u> Scourfield	-	*	-	-	-	-	-	
<u>D. laevis</u> Birge	-	-	-	-	-	-	-	
<u>D. parvula</u> Forlyce	*	*	210	-	-	*	400	
<u>Daphnia</u> spp. O. F. Muller	280	870	820	-	*	*	-	
<u>Diaphanosoma</u> brachyurum (Lleven)	-	430	1,030	220	1,260	*	-	
<u>D. leuchtenbergianum</u> Fischer	-	-	-	-	-	-	-	
<u>Eubosmina tubicen</u> (Rehm)	-	-	-	-	-	-	-	
<u>Holopedium gibberum</u> Zaddach	-	-	-	-	-	-	-	
<u>Ilvocypris sordidus</u> (Lleven)	-	-	-	*	-	-	-	
<u>Leptodora kindtii</u> (Focke)	-	-	-	-	-	-	-	
<u>Leydigia leydigi</u> (Schodler)	-	-	-	-	-	-	40	
<u>Leydigia</u> spp. Kurz	-	-	-	-	-	-	-	
<u>Moina micrura</u> Kurz	-	-	1,030	2,470	840	-	-	
<u>Pleuroxus denticulatus</u> Birge	-	-	-	-	-	-	-	
<u>Scapholeberis kingi</u> Sars	-	-	-	-	-	-	-	
<u>Sida crystallina</u> (O. F. Muller)	-	-	-	-	-	-	-	
<u>Simocephalus serrulatus</u> (Koch)	-	-	-	-	-	-	-	
<u>Simocephalus</u> spp. Schodler	-	-	-	-	-	-	-	
Copepoda								
<u>Cyclops bicuspidatus</u> thomasi S. A. Forbes	280	-	-	-	-	-	20	
<u>C. varicans rubellus</u> Milleborg	-	-	-	-	-	-	-	
<u>C. vernalis</u> Fischer	140	-	-	-	210	-	40	
<u>Diaptomus bogalusiensis</u> M. S. Wilson and Moore	-	-	-	-	-	-	-	
<u>D. floridanus</u> Marsh	-	-	-	-	-	-	-	
<u>D. mississippiensis</u> Marsh	*	*	-	-	-	-	-	
<u>D. pallidus</u> Herrick	-	-	-	-	-	-	-	
<u>Eucyclops</u> spp. Claus	-	-	-	-	-	-	-	
<u>Mesocyclops edax</u> (S. A. Forbes)	140	-	210	*	-	560	60	
<u>Tropocyclops prasinus</u> (Fischer)	-	*	210	220	-	560	40	
Nauplii	2,520	23,360	5,330	12,770	9,000	3,900	810	
Calanoid copepodids	420	*	-	-	-	*	-	
Cyclopoid copepodids	1,120	4,330	1,230	2,020	1,670	1,120	480	
Harpacticoida	-	-	-	-	-	-	-	
Parasitic copepoda								
<u>Ergasilus chautauquensis</u> Fellows	-	-	-	-	-	-	-	
<u>Ergasilus</u> spp. Smith	-	-	-	-	-	-	-	

(Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count)

Date Time	4/10/78 1645	5/14/78 1115	7/10/78 1315	8/14/78 0930	8/30/78 1200
Taxa					
Cladocera					
<i>Aionella hamulata</i> (Birge)	-	-	-	-	-
<i>Bosmina longirostris</i> (O. F. Muller)	*	6,000	-	3,000	1,000
<i>Bosminopsis delterral</i> Richard	-	-	*	2,000	-
<i>Ceriodaphnia lacustris</i> Birge	-	*	-	*	-
<i>Ceriodaphnia</i> spp. Dana	-	-	-	-	-
<i>Chydorus sphaericus</i> (O. F. Muller)	-	-	-	-	-
<i>Chydorus</i> spp. Leach	-	-	-	-	-
<i>Daphnia ambigua</i> Scourfield	-	*	-	-	-
<i>D. laevis</i> Birge	-	-	-	-	-
<i>D. parvula</i> Fordyce	-	1,000	-	-	-
<i>Daphnia</i> (immature) O. F. Muller	-	*	-	-	-
<i>Diaphanosoma brachyurum</i> (Lieven)	-	-	-	-	-
<i>D. leuchtenherzianum</i> Fischer	-	*	*	*	*
<i>Eubosmina tubicen</i> (Rehm)	-	-	-	-	-
<i>Holopedium gibberum</i> Zaddach	-	*	-	-	-
<i>Hyocryptus sordidus</i> (Lieven)	-	-	-	-	-
<i>Leydigia</i> spp. Kurz	-	-	-	-	-
<i>Moina micrura</i> Kurz	-	-	-	*	-
<i>Sida crystallina</i> (O. F. Muller)	-	-	-	-	-
<i>Simocephalus serrulatus</i> (Koch)	-	-	-	-	-
<i>Simocephalus</i> spp. Schodler	*	-	-	-	-
Copepoda					
<i>Cyclops bicuspidatus thomasi</i> S. A. Forbes	*	*	-	-	-
<i>C. varicans rubellus</i> Lillieborg	-	-	-	-	-
<i>C. vernalis</i> Fischer	*	*	-	-	-
<i>Diaptomus bogalusiensis</i> M. S. Wilson and Moore	-	-	-	-	-
<i>D. floridanus</i> Marsh	-	-	-	-	-
<i>D. mississippiensis</i> Marsh	-	*	-	-	-
<i>D. pallidus</i> Herrick	-	*	-	-	-
<i>Eucyclops</i> spp. Claus	-	-	-	-	-
<i>Mesocyclops edax</i> (S. A. Forbes)	-	1,000	*	1,000	*
<i>Tropocyclops prasinus</i> (Fischer)	-	-	-	*	*
Nauplii	*	4,000	*	4,000	4,000
Calanoid Copepodids	*	1,000	-	-	-
Cyclopoid copepodids	*	2,000	*	2,000	2,000
Parasitic copepoda					
<i>Ergasilus chautauquaensis</i> Fellows	-	-	-	-	-
<i>Ergasilus</i> spp. Smith	-	-	-	-	-

Date Time	4/10/78 1645	5/14/78 1115	7/10/78 1315	8/14/78 0930	8/30/78 1200
Taxa					
Rotifera					
<i>Asplanchna</i> spp. Gosse	1,000	*	*	1,000	1,000
<i>Brachionus angularis</i> Gosse	-	-	-	*	*
<i>B. bidentata</i> Anderson	-	-	-	-	-
<i>B. calyciflorus</i> Pallas	2,000	-	-	-	-
<i>B. caudatus</i> Barralis and Daday	-	-	-	-	-
<i>B. havanensis</i> Rousselet	-	-	-	-	-
<i>B. quadridentatus</i> Hermann	-	-	-	-	-
<i>B. urceolaris</i> Muller	-	-	-	-	-
<i>Collotheca</i> spp. Harring	1,000	*	*	2,000	-
<i>Conochiloides natans</i> (Sellgo)	-	-	*	1,000	-
<i>Conochiloides</i> spp. Plava	*	*	-	-	*
<i>Conochilus unicornis</i> Rousselet	*	5,000	*	-	*
<i>Dipleuchlania propatula</i> (Gosse)	-	-	-	-	-
<i>Euchlania</i> spp. Ehrenberg	-	-	-	-	-
<i>Ellinia</i> spp. Bory de St. Vincent	-	-	-	-	-
<i>Hexarthra</i> spp. Schmarda	-	-	*	*	*
<i>Kellicottia houstonensis</i> (Rousselet)	-	*	-	-	-
<i>Keratella cochlearis</i> (Gosse)	-	*	*	*	*
<i>K. crassa</i> Ahlstrom	*	*	*	-	*
<i>K. earlinae</i> Ahlstrom	-	*	-	-	-
<i>Lecane</i> spp. Nitzsch	-	-	-	-	-
<i>Monostyla</i> spp. Ehrenberg	-	-	-	-	-
<i>Notozomma</i> spp. Ehrenberg	-	-	-	*	-
<i>Platylabus patulus</i> (Muller)	-	-	-	-	-
<i>P. quadricornis</i> (Ehrenberg)	-	-	-	-	-
<i>Ploesoma hudsoni</i> (Imhof)	-	-	-	-	-
<i>P. truncatum</i> (Levander)	-	-	1,000	*	4,000
<i>Polyarthra</i> spp. Ehrenberg	-	1,000	*	2,000	2,000
<i>Sinantherina</i> spp. Bory de St. Vincent	-	-	-	-	-
<i>Synchaeta</i> spp. Ehrenberg	*	*	-	*	-
<i>Trichocerca</i> spp. Lamarck	-	*	*	1,000	*
<i>Trichotria</i> spp. Bory de St. Vincent	-	-	-	-	-
Retroid rotifers	*	-	-	-	-
Miscellaneous groups					
<i>Chaoborus</i> spp. Lichtenstein	-	*	*	*	*
Chironomids	-	-	-	-	-
Ostracoda	-	-	-	-	*
Tardigrada	-	-	-	-	-
Total number of taxa observed	15	27	16	21	18
Total number of cells per cubic meter	4,000	21,000	1,000	19,000	14,000

[Standing crop in organisms per cubic meter. *, present in insufficient densities to establish accurate count]

Taxa	Date Time	5/4/79 1030	6/14/79 1545	7/27/79 1030	8/24/79 0900	9/20/79 1530	10/17/79 1600	12/11/79 1330
Cladocera								
<i>Alona</i> spp. Baird	-	-	-	-	-	-	-	-
<i>Alonella hamulata</i> (Birge)	-	-	-	-	-	-	-	-
<i>Roosmina longirostris</i> (O. F. Muller)	6,300	3,080	3,300	2,440	1,260	15,620	1,600	
<i>Roosminopsis deitersi</i> Richard	-	-	1,440	2,560	420	-	-	
<i>Ceriodaphnia lacustris</i> Birge	360	820	-	*	140	*	-	
<i>Ceriodaphnia</i> app. Dana	-	-	-	-	-	-	-	110
<i>Chydorus sphaericus</i> (O. F. Muller)	-	-	-	-	-	-	-	-
<i>Chydorus</i> spp. Leach	-	-	-	-	-	-	-	-
<i>Daphnia ambigua</i> Scourfield	*	-	-	-	-	-	-	-
<i>D. laevis</i> Birge	-	-	-	-	-	-	-	-
<i>D. parvula</i> Fordyce	3,960	*	-	-	-	*	*	
<i>Daphnia</i> spp. O. F. Muller	900	*	-	-	-	1,070	*	
<i>Diaphanosoma</i> <i>brachyurum</i> (Lieven)	180	410	-	110	140	360	-	
<i>D. leuchtenbergianum</i> Fischer	-	-	-	-	-	-	-	-
<i>Eubosmina tubicen</i> (Rehms)	-	-	-	-	-	-	-	-
<i>Holopedium gibberum</i> Zaidach	540	-	-	-	-	-	-	-
<i>Ilyocryptus sordidus</i> (Lieven)	-	-	-	-	-	-	-	-
<i>Leptodora kindtii</i> (Focke)	-	*	-	-	-	-	-	-
<i>Leydigia leydigi</i> (Schodler)	-	-	-	-	-	-	-	-
<i>Leydigia</i> spp. Kurz	-	-	-	-	-	-	-	-
<i>Moina micrura</i> Kurz	-	-	210	110	-	-	-	-
<i>Pleuroxus denticulatus</i> Birge	-	-	-	-	-	-	-	-
<i>Scapholeberis kingi</i> Sars	-	-	-	-	-	-	-	-
<i>Sida crystallina</i> (O. F. Muller)	-	-	-	-	-	360	-	-
<i>Simocephalus serrulatus</i> (Koch)	-	-	-	-	-	-	-	-
<i>Simocephalus</i> spp. Schodler	180	-	-	-	-	-	-	-
Copepoda								
<i>Cyclops bicuspidatus</i> thomasi S. A. Forbes	360	-	-	-	-	-	-	110
<i>C. varicans rubellus</i> Lilljeborg	-	-	-	-	-	-	-	-
<i>C. vernalis</i> Fischer	-	*	-	-	-	360	*	
<i>Diaptomus bogalusiensis</i> M. S. Wilson and Moore	-	-	-	-	-	-	-	*
<i>D. floridanus</i> Marsh	-	-	-	-	-	-	-	*
<i>D. mississippiensis</i> Marsh	360	-	-	-	-	-	-	*
<i>D. pallidus</i> Herrick	-	-	-	-	-	-	-	-
<i>Eucyclops</i> spp. Claus	-	-	-	-	-	-	-	-
<i>Mesocyclops edax</i> (S. A. Forbes)	1,080	1,030	210	330	280	1,780	230	
<i>Tropocyclops prasinus</i> (Fischer)	-	*	210	-	140	*	230	
Nauplii	9,900	17,640	3,090	3,440	19,620	24,850	5,820	
Calanoid copepodids	180	410	-	-	-	-	-	-
Cyclopoid copepodids	2,520	4,720	1,650	890	5,190	9,590	3,420	
Harpacticoida	-	-	-	-	-	-	-	-
Parasitic copepoda								
<i>Ergasilus chautaugusensis</i> Fellows	-	-	-	110	-	-	-	-
<i>Ergasilus</i> spp. Smith	-	-	-	-	-	-	-	-

Taxa	Date Time	5/4/79 1030	6/14/79 1545	7/27/79 1030	8/24/79 0900	9/20/79 1530	10/17/79 1600	12/11/79 1330
Rotifera								
<i>Aplanchna</i> spp. Gosse		3,360	2,260	410	110	*	3,200	230
<i>Breclionus angularis</i> Gosse		-	2,260	-	*	*	360	-
<i>B. bidentata</i> Anderson		-	-	-	-	-	-	-
<i>B. hudepstinensis</i> Daday		-	-	-	-	-	-	-
<i>B. calyciflorus</i> Pallas		-	-	-	-	-	-	-
<i>B. caudatus</i> Barrios and Daday		-	1,440	-	-	-	-	-
<i>B. havaraensis</i> Rousselet		-	-	-	-	140	-	-
<i>B. quadridentatus</i> Hermann		-	-	-	-	-	-	-
<i>B. urceolaris</i> Muller		-	-	-	-	-	-	-
<i>Collotheca</i> spp. Harring		720	2,050	210	330	420	2,840	460
<i>Conochiloides natans</i> (Seligo)		-	-	-	-	-	-	-
<i>Conochiloides</i> sp. Hlava		180	410	10,520	2,000	840	710	110
<i>Conochilus unicornis</i> Rousselet		8,280	5,540	2,230	3,890	3,780	44,080	10,840
<i>Dipleuchlania pronatula</i> (Gosse)		-	-	-	-	-	-	-
<i>Dipleuchlania</i> spp. de Beauchamp		-	-	-	-	-	-	-
<i>Euchlania</i> spp. Ehrenberg		-	-	-	-	-	-	-
<i>Filinia</i> spp. Hory de St. Vincent		-	3,490	-	-	-	-	-
<i>Gastropus stylifer</i> Imhof		-	-	3,710	-	-	-	-
<i>Hexarthra</i> spp. Schmarida		-	210	-	1,780	840	360	-
<i>Kellicottia bostoniensis</i> (Rousselet)		1,980	*	-	-	-	1,420	4,450
<i>Keratella cochlearia</i> (Gosse)		180	9,020	4,130	220	140	360	2,850
<i>K. crassa</i> Ahlstrom		2,520	210	620	220	140	12,780	5,700
<i>K. earlinae</i> Ahlstrom		-	1,640	-	-	-	*	-
<i>K. valga</i> (Ehrenberg)		-	-	-	-	-	*	-
<i>Lecane</i> spp. Nitzsch		-	-	-	-	-	-	-
<i>Monostyla</i> spp. Ehrenberg		-	-	-	-	-	-	-
<i>Notommata</i> spp. Ehrenberg		-	-	-	-	-	-	-
<i>Platyus patulus</i> (Muller)		-	-	-	-	-	-	-
<i>P. quadricornis</i> (Ehrenberg)		-	-	-	-	-	-	-
<i>Ploesoma hudsoni</i> (Imhof)		-	-	-	-	-	-	-
<i>P. truncatum</i> (Levander)		-	210	830	220	-	5,330	-
<i>Polyarthra</i> spp. Ehrenberg		990	3,490	620	560	-	4,970	4,220
<i>Pompholyx sulcata</i> Hudson		-	-	-	-	-	-	-
<i>Ptygura</i> spp. Ehrenberg		-	-	-	-	-	-	-
<i>Sinantherina</i> Hory de St. Vincent		-	-	-	-	-	-	-
<i>Synchaeta</i> spp. Ehrenberg		900	1,030	620	-	-	3,910	2,400
<i>Trichocerca cylindrica</i> (Imhof)		-	-	-	14,000	4,900	13,850	-
<i>Trichocerca</i> spp. Lamarck		-	1,440	5,160	330	280	1,420	110
<i>Trichotria</i> spp. Hory de St. Vincent		-	-	-	-	-	-	-
Adeloid rotifers		-	-	-	110	140	-	-
Miscellaneous groups								
<i>Chaoborus</i> spp. Lichtenstein		-	-	*	*	*	-	-
<i>Chironomids</i>		-	-	-	-	-	-	-
<i>Ostracoda</i>		-	-	-	-	-	-	-
<i>Tardigrada</i>		-	-	-	-	-	-	-
<hr/>								
Total number of taxa observed		23	28	19	23	21	27	22
Total number of individuals per synchmeta		45,930	62,810	64,170	33,760	38,810	149,580	42,890

APPENDIX D-4

Temporal variation in benthic invertebrate standing stock at stations in
and downstream from West Point Reservoir, 1978

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[*, Organisms per square meter of bottom material; †, organisms per square meter of artificial substrate]

Date Time	7/13/78 0800*	8/17/78 1440†	9/15/78 10†
Arthropoda			
Insecta			
Diptera			
<u>Ablabesmyia</u> Johanneen	517	-	-
<u>Brillia</u> Kieffer	-	-	-
<u>Cricotopus</u> Van der Wulp	1250	-	192
<u>Endochironomus</u> Kieffer	-	-	-
<u>Eukiefferiella</u> Thienemann	86	-	-
<u>Glyptotendipes</u> Kieffer	-	-	-
<u>Hemerodromia</u> Meigen	86	-	36
<u>Limnochironomus</u> Kieffer	-	12	-
<u>Parachironomus</u> Lenz	-	-	-
<u>Phaenopsectra</u> Kieffer	43	-	-
<u>Polypedilum</u> Kieffer	215	-	42
<u>Psectrocladius</u> Kieffer	-	-	-
<u>Rheotanytarsus</u> (Rause)	344	-	1164
<u>Simulium</u> Latreille	517	-	456
<u>Stenochironomus</u> Kieffer	172	-	-
<u>Tanytarsus</u> Van der Wulp	-	-	-
Ephemeroptera			
<u>Stenacron</u> Jensen	473	-	-
<u>Stenonema</u> Traver	-	-	186
<u>Tricorythodes</u> Ulmer	3096	-	312
Trichoptera			
<u>Cheumatopsyche</u> Wallengren	-	-	-
<u>Cyrnellus fraternus</u> Banks	-	366	-
<u>Hydropsyche</u> Ross	688	-	624
<u>Hydroptilla</u> Dalman	-	-	-
Coleoptera			
<u>Ancyronyx variegata</u> Erichson	-	-	-
<u>Stenelmis</u> Difour	-	-	-
Annelida			
Oligochaeta			
<u>Naididae, unknown genus</u>	86	-	6
<u>Unknown family, unknown genus</u>	-	-	-
Aschelminthes			
Nematoda			
<u>Unknown family, unknown genus</u>	-	-	-
Bryozoa			
Ectoprocta			
Phylactolaemata			
<u>Plumatella</u> Linnaeus	-	-	-
Mollusca			
Gastropoda			
Basommatophora			
<u>Anacylidae, unknown genus</u>	-	-	-
Pelecypoda			
Retrodonta			
<u>Corbicula manilensis</u> Philipp	-	-	-
<u>Eulamellibranchia</u>	-	-	-
<u>Unionidae, unknown genus</u>	-	-	-
Platyhelminthes			
Turbellaria			
Tricladida			
<u>Planariidae, unknown genus</u>	-	-	-
<hr/>			
Total number of taxa observed	13	?	9
Total number of individuals per square meter	7573	378	3018

[Organisms per square meter of artificial substrate]

Date Time	7/12/78 1400	8/16/78 1350	9/13/78 1300
Arthropoda			
Insecta			
Diptera			
<i>Ablabesmyia</i> Johannsen	-	-	6
<i>Prillia</i> Kieffer	-	-	-
<i>Cricotopus</i> Van der Wulp	-	-	-
<i>Endochironomus</i> Kieffer	-	-	-
<i>Eukiefferiella</i> Thienemann	-	-	-
<i>Glyptotendipes</i> Kieffer	6	6	-
<i>Wemerodromia</i> Weigen	-	-	-
<i>Limnochironomus</i> Kieffer	-	12	-
<i>Parachironomus</i> Lenz	-	-	-
<i>Phaenopspectra</i> Kieffer	-	-	-
<i>Polypedilum</i> Kieffer	-	-	6
<i>Psectrocladius</i> Kieffer	-	-	-
<i>Pheotanytarsus</i> (Rause)	-	-	-
<i>Simulium</i> Latreille	-	-	-
<i>Stenochironomus</i> Kieffer	-	-	-
<i>Tanytarsus</i> Van der Wulp	-	-	-
Ephemeroptera			
<i>Stenacron</i> Jensen	-	-	-
<i>Stenonema</i> Traver	-	-	-
<i>Tricorythodes</i> Ulmer	-	-	-
Trichoptera			
<i>Cheumatopsyche</i> Wallengren	-	-	-
<i>Cyrnellus fraternus</i> Banks	372	-	234
<i>Hydropsyche</i> Ross	-	-	-
<i>Hydroptilla</i> Dalman	-	-	-
Coleoptera			
<i>Ancyronyx variegata</i> Erichson	-	-	-
<i>Stenelmis</i> Dufour	-	-	-
Annelida			
Oligochaeta			
Naididae, unknown genus	-	-	-
Unknown family, unknown genus	-	-	-
Aschelminthes			
Nematoda			
Unknown family, unknown genus	-	-	-
Bryozoa			
Ectoprocta			
Phylactolaemata			
<i>Plumatella</i> Linnaeus	27,000	-	-
Mollusca			
Gastropoda			
Basommatophora			
Anacylidae, unknown genus	-	-	-
Pelecypoda			
Heterodonta			
<i>Corbicula manilensis</i> Philipp	-	-	-
Eulamelibranchia			
Unionidae, unknown genus	-	-	-
Platyhelminthes			
Turbellaria			
Triclaeids			
Planariidae, unknown genus	-	-	-
<hr/>			
Total number of taxa observed	3	2	3
Total number of individuals per square meter	27,378	18	246

[Organisms per square meter of artificial substrate]

Date Time	7/12/78 1500	8/17/78 0940	9/13/78 1530
Arthropoda			
Insecta			
Diptera			
<u>Ablabesmyia</u> Johannsen	12	-	-
<u>Brillia</u> Kieffer	-	-	-
<u>Cricotopus</u> Van der Wulp	6	-	-
<u>Endochironomus</u> Kieffer	-	-	-
<u>Eukiefferiella</u> Thienemann	-	-	-
<u>Glyptotendipes</u> Kieffer	30	-	-
<u>Heimerodromia</u> Meigen	-	-	-
<u>Limnochironomus</u> Kieffer	120	252	-
<u>Parachironomus</u> Lenz	-	6	-
<u>Phaenopsectra</u> Kieffer	-	-	-
<u>Polypedilum</u> Kieffer	6	-	-
<u>Psectrocladius</u> Kieffer	-	-	-
<u>Rheotanytarsus</u> (Bause)	-	-	-
<u>Stimulium</u> Latreille	-	-	-
<u>Stenochironomus</u> Kieffer	-	-	-
<u>Tanytarsus</u> Van der Wulp	-	-	-
Ephemeroptera			
<u>Stenacron</u> Jensen	-	-	-
<u>Stenonema</u> Traver	-	-	-
<u>Tricorythodes</u> Ulmer	-	-	-
Trichoptera			
<u>Cheumatopsyche</u> Wallengren	-	-	-
<u>Cyrnellus fraternus</u> Banks	246	438	-
<u>Hydropsyche</u> Ross	-	-	-
<u>Hydroptilla</u> Dalman	-	-	-
Coleoptera			
<u>Ancyronyx variegata</u> Erichson	-	-	-
<u>Stenelmis</u> Dufour	-	-	-
Annelida			
Oligochaeta			
Naididae, unknown genus	-	6	-
Unknown family, unknown genus	-	-	-
Aschelminthes			
Nematoda			
Unknown family, unknown genus	-	-	-
Bryozoa			
Ectoprocta			
Phylactolaemata			
<u>Plumatella</u> Linnaeus	180,000	126,000	-
Mollusca			
Gastropoda			
Basommatophora			
Anacylidae, unknown genus	-	-	-
Pelecypoda			
Heterodonta			
<u>Corbicula manilensis</u> Philipp	-	-	-
<u>Eulamellibranchia</u>	-	-	-
Unionidae, unknown genus	-	-	-
Platyhelminthes			
Turbellaria			
Tricladida			
Planariidae, unknown genus	-	-	-
<hr/>			
Total number of taxa observed	7	5	0
Total number of individuals per square meter	180,420	126,702	0

[Organisms per square meter of artificial substrate]

Date Time	5/14/78 1200	7/10/78 1215	8/14/78 0950	9/13/78 1200
Arthropoda				
Insecta				
Diptera				
<i>Ablabesmyia</i> Johannaen	-	-	-	-
<i>Brillia</i> Kieffer	-	-	-	-
<i>Cricotopus</i> Van der Wulp	-	-	-	-
<i>Endochironomus</i> Kieffer	-	-	-	-
<i>Eukiefferiella</i> Thienemann	-	-	-	-
<i>Glyptotendipes</i> Kieffer	-	-	-	-
<i>Hemerodromia</i> Meigen	-	-	-	-
<i>Limnochironomus</i> Kieffer	2322	36	-	60
<i>Parachironomus</i> Lenz	-	18	-	-
<i>Phaenopsectra</i> Kieffer	-	-	-	-
<i>Polypedilum</i> Kieffer	-	6	-	6
<i>Psectrocladius</i> Kieffer	-	-	-	-
<i>Rheoranytarsus</i> (Hause)	6	-	-	-
<i>Simulium</i> Latreille	-	-	-	-
<i>Stenochironomus</i> Kieffer	-	-	-	-
<i>Tanytarsus</i> Van der Wulp	12	-	-	-
Ephemeroptera				
<i>Stenacron</i> Jensen	-	-	-	-
<i>Stenonema</i> Traver	-	-	-	-
<i>Tricorythodes</i> Ulmer	-	-	-	-
Trichoptera				
<i>Cheumatopsyche</i> Wallengren	-	-	-	-
<i>Cynellus fraternus</i> Banks	-	186	-	54
<i>Hydropsyche</i> Ross	-	-	-	-
<i>Hydroptilla</i> Dalman	-	-	-	-
Coleoptera				
<i>Lucyronyx variegata</i> Eribeon	-	-	-	-
<i>Stenelmis</i> Dufour	-	-	-	-
Annelida				
Oligochaeta				
<i>Naididae</i> , unknown genus	-	-	-	-
Unknown family, unknown genus	144	-	-	-
Aschelminthes				
Nematoda				
Unknown family, unknown genus	-	-	-	-
Bryozoa				
Ectoprocta				
Phylactolaemata				
<i>Plumatella</i> Linnaeus	-	24,000	-	-
Mollusca				
Gastropoda				
Basommatophora				
<i>Anacylidae</i> , unknown genus	-	-	-	-
Pelecypoda				
Heterodonta				
<i>Corbicula manilensis</i> Philipp	-	-	-	-
Pulamellibranchia				
<i>Unionidae</i> , unknown genus	-	-	-	-
Platyhelminthes				
Turbellaria				
Tricladida				
<i>Planariidae</i> , unknown genus	-	-	-	-
<hr/>				
Total number of taxa observed	4	5	0	3
Total number of individuals per square meter	2,484	24,246	0	120

[*, Organisms per square meter sample of bottom material;
†, organisms per square meter of artificial substrate;
#, data are mean (n=3) of cross-sectional sampling]

Date Time	4/09/78 1530†	5/14/78 1645*	6/09/78 1415*#	7/09/78 1500†	8/13/78 1400*	9/14/78 1200*
Arthropoda						
Insecta						
Diptera						
<i>Ablabeomyia</i> Johannsen	-	-	-	-	-	-
<i>Brillia</i> Kieffer	-	-	-	6	-	-
<i>Cricotopus</i> Van der Wulp	176	-	-	210	-	-
<i>Endochironomus</i> Kieffer	11	-	43	-	-	-
<i>Eukiefferiella</i> Thienemann	-	-	-	-	-	-
<i>Glyptotendipes</i> Kieffer	-	-	-	6	-	989
<i>Hemerodromia</i> Meigen	44	-	-	6	-	989
<i>Limnochironomus</i> Kieffer	-	-	-	18	-	215
<i>Parachironomus</i> Lenz	-	-	-	6	-	-
<i>Phaenopsectra</i> Kieffer	-	-	-	-	-	-
<i>Polypedilum</i> Kieffer	44	43	-	1,524	-	7,267
<i>Psectrocladius</i> Kieffer	-	-	-	-	-	-
<i>Rheotanytarsus</i> (Rause)	-	-	-	324	-	129
<i>Simulium</i> Latreille	-	-	-	66	-	-
<i>Stenochironomus</i> Kieffer	-	-	-	-	-	-
<i>Tanytarsus</i> Van der Wulp	-	-	-	-	-	-
Ephemeroptera						
<i>Stenacron</i> Jensen	-	-	-	-	-	-
<i>Stenonema</i> Traver	-	-	-	12	-	4
<i>Tricorythodes</i> Ulmer	-	-	-	-	-	-
Trichoptera						
<i>Cheumatopsyche</i> Wallengren	-	-	-	4,002	-	989
<i>Cyrnellus fraternus</i> Banks	-	-	-	-	-	387
<i>Hydropsyche</i> Ross	-	-	-	-	-	-
<i>Hydroptilla</i> Dalman	-	-	-	-	-	-
Coleoptera						
<i>Ancyronyx variegata</i> Fritchson	-	-	-	6	-	-
<i>Stenelmis</i> Dufour	-	-	-	-	-	-
Annelida						
Stigochæta						
Naididae, unknown genus	11	-	43	708	-	344
Unknown family, unknown genus	-	-	-	-	-	-
Aschelminthes						
Nematoda						
Unknown family, unknown genus	-	-	-	-	-	-
Bryozoa						
Ectoprocta						
Phylactolaemata						
<i>Plumatella</i> Linnaeus	-	-	-	-	-	-
Mollusca						
Gastropoda						
Rasommatophora						
Anacylidae, unknown genus	-	-	-	-	-	-
Pelecypoda						
Heterodonta						
<i>Corbicula manilensis</i> Philipp	-	86	-	-	-	-
Eulamellibranchia						
Unionidae, unknown genus	-	-	-	-	-	-
Platyhelminthes						
Turbellaria						
Tricladida						
Planariidae, unknown genus	77	-	43	6	-	43
<hr/>						
Total number of taxa observed	6	2	3	14	0	10
Total number of individuals per square meter	363	129	129	6,900	0	11,395

[*, Organisms per square meter sample of bottom material;
#, data are mean (n=3) of cross-sectional sampling]

Date Time	4/09/78 1730†	5/14/78 1735*#	5/30/78 1130*#	7/09/78 1615*#	8/13/78 1530*	9/14/78 0930*
Arthropoda						
Insecta						
Diptera						
<i>Ablabesmyia</i> Johannaen	-	-	-	-	-	-
<i>Britilia</i> Kieffer	-	-	-	-	-	-
<i>Cricotopus</i> Van der Wulp	-	-	-	301	-	-
<i>Endochironomus</i> Kieffer	-	-	-	-	-	-
<i>Eukiefferiella</i> Thienemann	-	-	-	-	-	-
<i>Glyptotendipes</i> Kieffer	-	-	-	13	344	201
<i>Hemerodromia</i> Meigen	-	-	-	13	-	-
<i>Limnochironomus</i> Kieffer	-	-	-	56	-	43
<i>Parachironomus</i> Lenz	-	-	-	13	-	-
<i>Phaenopsectra</i> Kieffer	-	-	-	-	-	-
<i>Polypediium</i> Kieffer	-	-	-	4,313	-	15,265
<i>Psectrocladius</i> Kieffer	-	-	-	-	-	-
<i>Rheotanytarsus</i> (Rause)	-	-	-	228	-	129
<i>Simulium</i> Latreille	-	-	-	288	-	-
<i>Stenochironomus</i> Kieffer	-	-	-	-	-	-
<i>Tanytarsus</i> Van der Wulp	-	-	-	-	-	-
Ephemeroptera						
<i>Stenacron</i> Jensen	-	-	-	-	-	-
<i>Stenonema</i> Traver	-	-	-	-	-	-
<i>Tricorythodes</i> Ulmer	-	-	-	-	-	-
Trichoptera						
<i>Cheumatopsyche</i> Wallengren	-	-	-	1,979	-	-
<i>Cynellus fraternus</i> Banks	-	-	-	-	-	-
<i>Hydropsyche</i> Ross	-	-	-	-	-	-
<i>Hydroptilla</i> Dalman	-	-	-	-	-	-
Coleoptera						
<i>Ancyronyx variegata</i> Fritchson	-	-	-	-	-	-
<i>Stenelmis</i> Dufour	-	-	-	13	-	43
Annelida						
Oligochaeta						
<i>Naididae, unknown genus</i>	-	-	-	-	-	-
Unknown family, unknown genus	-	-	-	873	-	516
Achelminthes						
Nematoda						
Unknown family, unknown genus	-	-	13	-	-	-
Bryozoa						
Ectoprocta						
Phylactolaemata						
<i>Plumatella</i> Linnaeus	-	-	-	-	-	-
Mollusca						
Gastropoda						
Basommatophora						
<i>Anacylidae, unknown genus</i>	-	-	-	-	-	-
Pelecypoda						
Heterodonta						
<i>Corbicula manilensis</i> Philipp	77	430	159	13	-	-
<i>Eulamellibranchia</i>	-	-	-	-	-	-
<i>Unionidae, unknown genus</i>	11	-	-	-	-	-
Platyhelminthes						
Turbellaria						
Tricladida						
<i>Planariidae, unknown genus</i>	-	-	-	-	-	-
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Total number of taxa observed	2	1	2	12	1	6
Total number of individuals per square meter	88	430	172	8,003	344	16,297

[*, Organisms per square meter sample of bottom material;
†, organisms per square meter of artificial substrate;
#, data are mean (n=3) of cross-sectional sampling]

Date Time	4/09/78 1840†	5/14/78 1805*#	30/78 15*#	7/09/78 1720*#	7/09/78 1730†
Arthropoda					
Insecta					
Diptera					
<i>Ablabesmyia</i> Johannsen	-	-	-	-	-
<i>Brillia</i> Kieffer	-	-	-	-	-
<i>Cricotopus</i> Van der Wulp	-	-	-	-	24
<i>Endochironomus</i> Kieffer	-	-	-	-	-
<i>Eukiefferiella</i> Thienemann	-	-	-	-	-
<i>Glyptotendipes</i> Kieffer	-	-	-	-	18
<i>Hemerodromia</i> Meigen	-	-	-	-	-
<i>Limnochironomus</i> Kieffer	-	-	-	-	54
<i>Parachironomus</i> Lenz	-	-	-	-	-
<i>Phaenopsectra</i> Kieffer	-	-	-	-	-
<i>Polypedilum</i> Kieffer	-	-	-	-	1,776
<i>Psectrocladius</i> Kieffer	-	-	-	-	-
<i>Rheotanytarsus</i> (Rause)	-	-	-	-	48
<i>Simulium</i> Latreille	-	-	-	-	-
<i>Stenochironomus</i> Kieffer	-	-	-	-	-
<i>Tanytarsus</i> Van der Wulp	-	-	-	-	-
Ephemeroptera					
<i>Stenacron</i> Jensen	-	-	-	-	-
<i>Stenonema</i> Traver	-	-	-	-	-
<i>Tricorythodes</i> Illmer	-	-	-	-	-
Trichoptera					
<i>Cheumatopsyche</i> Wallengren	-	-	-	-	1,266
<i>Cyrnellus fraternus</i> Banks	-	-	-	-	18
<i>Hydropsyche</i> Ross	-	-	-	-	-
<i>Hydroptilla</i> Dalman	-	-	-	-	42
Coleoptera					
<i>Ancyronyx variegata</i> Erichson	-	-	-	-	-
<i>Stenelmis</i> Dufour	-	-	-	-	-
Annelida					
Oligochaeta					
Naididae, unknown genus	-	-	-	-	54
Unknown family, unknown genus	-	-	-	-	-
Aschelminthes					
Nematoda					
Unknown family, unknown genus	-	-	13	-	-
Bryozoa					
Ectoprocta					
Phylactolaemata					
<i>Plumatella</i> Linnaeus	-	-	-	-	-
Mollusca					
Gastropoda					
Rasommatophora					
Anacylidae, unknown genus	-	-	-	-	-
Pelecypoda					
Heterodonta					
<i>Corbicula manilensis</i> Philipp	121	258	56	13	-
<i>Eulamellibranchia</i>	-	-	-	-	-
Unionidae, unknown genus	11	-	-	-	-
Platyhelminthes					
Turbellaria					
Tricladida					
Planariidae, unknown genus	-	-	-	-	-
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Total number of taxa observed	2	1	2	1	9
Total number of individuals per square meter	132	258	69	13	3,300

APPENDIX D-5

Temporal variation in benthic algae standing stock collected from artificial substrates at a station downstream from West Point Reservoir, 1978

	Page
CH-01A (02339500) Chattahoochee River at West Point, Ga., 1978.....	512

[standing crop in cells per centimeters squared. *, present in insufficient densities to establish accurate count]

TAXA	9/15/78	9/27/78	10/13/78
Chlorophyta			
<i>Characium pringsheimii</i> A. Braun	129	-	-
<i>Cosmarium</i> sp.	-	25	-
<i>Monoraphidium arcuatum</i> (Korshikov) Hindak	-	-	100
<i>M. contortum</i> (Thuret) Komarkova-Legnerova	-	37	-
<i>M. griffithii</i> (Berkeley) Komarkova-Legnerova	129	-	-
<i>M. saxatile</i> Komarkova-Legnerova	*	25	-
<i>Oedogonium</i> sp.	*	*	-
<i>Protoderma viride</i> Kuetzing	151	-	-
<i>Scenedesmus opoliensis</i> Richter	-	-	*
<i>S. quadricauda</i> (Turpin) Brebisson	-	62	200
<i>Schroederia setigera</i> (Schroeder) Lemmermann	-	12	-
<i>Staurastrum cf. chaetocerus</i> (Schroeder) G. M. Smith	*	37	-
Unidentified Filaments	194	-	-
Bacillariophyta			
<i>Achnanthes minutissima</i> Kuetzing	2,049	4,695	41,500
<i>Achnanthes</i> sp.	22	-	-
<i>Cocconeis diminuta</i> Pantocsek	*	*	-
<i>Cyclotella kuetzingiana</i> Thwaites	*	-	-
<i>C. Meneghiniana</i> Kuetzing	*	-	-
<i>C. pseudostelligera</i> Hustedt	*	*	*
<i>C. stelligera</i> Cleve and Grunow	*	*	*
<i>Cymbella tumida</i> (Brebisson) Van Heurck	15	*	-
<i>Cymbella</i> sp.	-	-	-
<i>Eunotia pectinalis</i> (O. F. Mueller?) Rabenhorst	15	*	-
<i>Fragilaria cf. capucina</i> Desmazieres	-	-	*
<i>Frustulia rhomboidea</i> (Ehrenberg) DeToni	-	*	-
<i>Gomphonema angustatum</i> (Kuetzing) Rabenhorst	4,163	6,999	-
<i>G. angustatum</i> var. <i>citera</i> (Hohn and Hellerman) Patrick	-	1,055	-
<i>G. gracile</i> Ehrenberg	108	192	15,500
<i>G. grunowii</i> Patrick	173	1,246	-
<i>G. parvulum</i> (Kuetzing)	-	96	45,300
<i>Gomphonema</i> sp.	-	-	800
<i>Melosira granulata</i> (Ehrenberg) Raife	43	50	-
<i>M. italica</i> (Ehrenberg) Kuetzing	-	62	300
<i>Navicula capitata</i> var. <i>hungarica</i> (Grunow) Ross	15	-	-
<i>N. exigua</i> Gregory	15	12	-
<i>N. symmetrica</i> Patrick	15	-	-
<i>Nitzschia linearis</i> (Agardh) W. Smith	15	-	-
<i>Pinnularia</i> sp. Ehrenberg	15	-	-
<i>Synedra radians</i> Kuetzing	-	-	3,900
<i>S. rumpens</i> var. <i>familiaris</i> (Kuetzing) Hustedt	216	1,602	43,700
Chrysophyta			
cf. <i>Heterococcus arcticus</i> Prescott	65	-	-
<i>Ophiocytium mucronatum</i> (A. Braun) Rabenhorst	431	-	-
Pyrrhophyta			
<i>Glenodinium</i> sp.	-	25	-
Euglenophyta			
<i>Trachelomonas volvocina</i> Ehrenberg	-	25	-
Cyanophyta			
<i>Anabaena cf. spiroides</i> Klebahn	129	335	200
<i>Anabaena</i> sp.	-	12	-
<i>Coccochloris elabens</i> (Brebisson) Drouet and Daily	-	-	200
<i>Oscillatoria</i> sp.	-	12	-
<i>Raphidiopsis curvata</i> Fritsch and Rich	-	25	-
<i>Schizothrix calcicola</i> (Agardh) Gomont	2071	-	*
Total number of taxa	28	28	16
Total number of cells cm^2	10,178	16,641	151,700

Fecal coliform and fecal streptococci data collected at stations in
and downstream from West Point Reservoir, 1978 and 1979..... 514

Fecal coliform and fecal streptococci data collected at stations in and downstream from West Point Reservoir, 1978 and 1979

[Data expressed as number of colonies per 100 mL. NI, estimated data based on a "non-ideal" number of colonies per membrane filter; for coliform (FC), less than 20 or greater than 60 colonies per filter; for fecal streptococci (FS), less than 20 or greater than 100 colonies per filter; +, not required for this sampling trip; U, deleted because of questionable results]

1978

Station	Type	April 9-18	April 30-May 14	May 30-June 6	July 9-13	August 13-18	August 27-31	Remarks
Chattahoochee River at U.S. Hwy. 27 at Franklin (02338500)	FC	300	5,100	40NI	57	480NI	48	CH-12
	FS	180	1,328	64NI	22	190NI	19	
	FC/FS	1.67	3.84	.63	2.59	2.53	2.47	
Chattahoochee River (LaGrange intake) nr LaGrange (02338720)	FS	36NI	21	7NI	0	0	0	CH-07
Yellowjacket Creek nr Warea Crossroads (02338919)	FS	4NI	5NI	17NI	2NI	3NI	0	Reservoir station CH-08A
Maple Creek near Gabbettville (02339385)	FS	46NI	2NI	1NI	2NI	0	5NI	Reservoir station (S-1)
Chattahoochee River below Wehadkee Creek above West Point (02339367)	FS	180	12NI	9NI	20NI	0	2NI	Reservoir station (S-2)
Wilson Creek near Pyne (02339199)	FS	96	17NI	13NI	8NI	0	2NI	Reservoir station (S-3)
Chattahoochee River near Pyne (02339050)	FS	88	6NI	17NI	0	0	15NI	Reservoir station (S-4)
Chattahoochee River at Birdsong Bridge Road, nr LaGrange (02339060)	FS	160	38	7NI	0	0	74NI	Reservoir station (S-5)
Chattahoochee River below coffer dam above West Point Dam (02339388)	FS	+	+	+	+	+	+	CH-03C
Chattahoochee River below West Point Dam (02339402)	FC							CH-2.5B
	FS	+	+	+	+	+	+	high flow
	FC/FS							
	FC							CH-2.5B
Chattahoochee River at West Point (02339500)	FS	+	+	+	+	+	+	low flow
	FC/FS							
	FC							CH-01A
	FS	+	+	+	+	+	+	high flow
Chattahoochee River at Lanett, Ala. (02339550)	FC/FS							
	FC							CH-01A
	FS	+	+	+	+	+	+	low flow
	FC/FS							
Chattahoochee River above Long Cane Ck. Junction nr West Point (01229560)	FC	88	D	260	56NI	890NI	160	CH-01C
	FS	380	D	294	60NI	430	1,600	high flow
	FC/FS	.23		.88	.93	2.10	.10	
	FC	270	116	80	72NI	84	236	CH-01C
Chattahoochee River at Langdale, Ala. (02339780)	FS	310	200	84	30NI	368	202	low flow
	FC/FS	.87	.58	.95	2.4	.23	1.17	
	FC							CH-01D
	FS	+	+	+	+	+	+	high flow
Chattahoochee River at Langdale, Ala. (02339780)	FC/FS							
	FC							CH-01D
	FS	+	+	+	+	+	+	low flow
	FC/FS							

Fecal coliform and fecal streptococci data collected at stations in and downstream from West Point Reservoir, 1978 and 1979--Continued

[Data expressed as number of colonies per 100 mL. NI, estimated data based on a "non-ideal" number of colonies per membrane filter; for coliform (FC), less than 20 or greater than 60 colonies per filter; for fecal streptococci (FS), less than 20 or greater than 100 colonies per filter; +, not required for this sampling trip; D, deleted because of questionable results]

1979									
Station	Type	April 30- May 5	June 11-15	July 23-27	August 20-24	September 16-20	October 14-17	December 9-13	Remarks
Chattahoochee River at U.S. Hwy. 27 at Franklin (02338500)	FC	260	120NI	1,600	1,975		350	2001	
	FS	3,000NI	30NI	70NI	1,071	+	20NI	7NI	CH-12
	FC/FS	.09	4.00	22.86	1.84		19.00	2.66	
Chattahoochee River (LaGrange intake) nr LaGrange (02338720)	FS	9NI	2NI	3NI	3NI	+	0	+	CH-07
Yellowjacket Creek nr Ware Crossroads (02338919)	FS	+	+	+	+	+	+	+	Reservoir station CH-6A
Maple Creek near Gabbettville (02339385)	FS	+	+	+	+	+	+	+	Reservoir station (S-1)
Chattahoochee River below Wehadkee Creek above West Point (02339367)	FS	+	+	+	+	+	+	+	Reservoir station (S-2)
Wilson Creek near Pyne (02339199)	FS	+	+	+	+	+	+	+	Reservoir station (S-3)
Chattahoochee River near Pyne (02339050)	FS	+	+	+	+	+	+	+	Reservoir station (S-4)
Chattahoochee River at Birdsong Bridge Road, nr LaGrange (02339060)	FS	+	+	+	+	+	+	+	Reservoir station (S-5)
Chattahoochee River below coffer dam above West Point Dam (02339388)	FS	INI	INI	5NI	INI	+	0	+	CH-03C
Chattahoochee River below West Point Dam (02339402)	FC	8NI	2NI	22	2NI	15NI	77	2NI	CH-2,55
	FS	30	2NI	80NI	3NI	11NI	5-	15NI	high flow
	FC/FS	.27	1.00	.28	.67	1.36	1.43	.13	
	FC						3NI	1NI	CH-2,56
Chattahoochee River at West Point (02339500)	FS	+	+	+	+	+	2NI	3NI	low flow
	FC/FS						1.50	.33	
	FC	20	3NI	2NI	2NI	20	2NI	3NI	CH-01A
	FS	56	10NI	11NI	20	25	23	14NI	high flow
Chattahoochee River at Lanett, Ala. (02339550)	FC/FS	.36	.30	.18	.10	.80	.09	.21	
	FC						37	16NI	CH-01A
	FS	+	+	+	+	+	49	14NI	low flow
	FC/FS						.76	1.29	
Chattahoochee River at Langdale, Ala. (02339780)	FC	41	7NI	10	23NI	41	61	10NI	CH-01B
	FS	79	13NI	140	21	225	25	23NI	high flow
	FC/FS	.52	.54	.67	1.10	.18	2.44	.43	
	FC						216	120	CH-01B
Chattahoochee River above Long Cane Ck. Junction nr West Point (01229560)	FS	+	+	+	+	+	53	15	low flow
	FC/FS						4.08	8.00	
	FC	37	14NI	58	19	370	390	17NI	CH-01C
	FS	115	6NI	76	100NI	500	193	93	high flow
Chattahoochee River at Langdale, Ala. (02339780)	FC/FS	.32	2.33	.76	.19	.74	2.02	.18	
	FC						65	21	CH-01C
	FS	+	+	+	+	+	22	6NI	low flow
	FC/FS						3.00	3.50	
Chattahoochee River at Langdale, Ala. (02339780)	FC	18	23	480	28	870NI	3NI	107	CH-01D
	FS	80	24	109	43NI	930	27NI	50NI	high flow
	FC/FS	.23	.96	4.40	.65	.09	.11	2.14	
	FC						21	47	CH-01D
Chattahoochee River at Langdale, Ala. (02339780)	FS	+	+	+	+	+	32	6NI	low flow
	FC/FS						.66	7.83	

APPENDIX E

Bottom material data

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APPENDIX E-1

Particle-size distribution of bottom material from stations in
and downstream from West Point Reservoir, 1978 and 1979

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CH-12	(02338500)	Chattahoochee River at U.S. Highway 27, at Franklin, Ga.	518
CH-10	(02338710)	Chattahoochee River at State Highway 219, near LaGrange, Ga.	518
CH-07	(02338720)	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga.	518
CH-08	(02339020)	Yellowjacket Creek at Cameron Mill Road, near LaGrange, Ga.	518
CH-05A	(02339190)	Chattahoochee River at State Highway 701, near Abbottsford, Ga.	518
CH-13	(02339362)	Wehadkee Creek at State Highway 238, near Abbottsford, Ga.	518
CH-03C	(02339388)	Chattahoochee River below coffer dam structure, above West Point Dam.....	518
CH-01A	(02339500)	Chattahoochee River at West Point Ga.	518
CH-01B	(02339550)	Chattahoochee River (city of Lanett intake) at Lanett, Ala.	518
CH-01C	(02339560)	Chattahoochee River above junction of Long Cane Creek, near West Point, Ga.	518

Particle-size distribution of bottom material from stations in
and downstream from West Point Reservoir, 1978 and 1979

Particle-size distribution, in percent

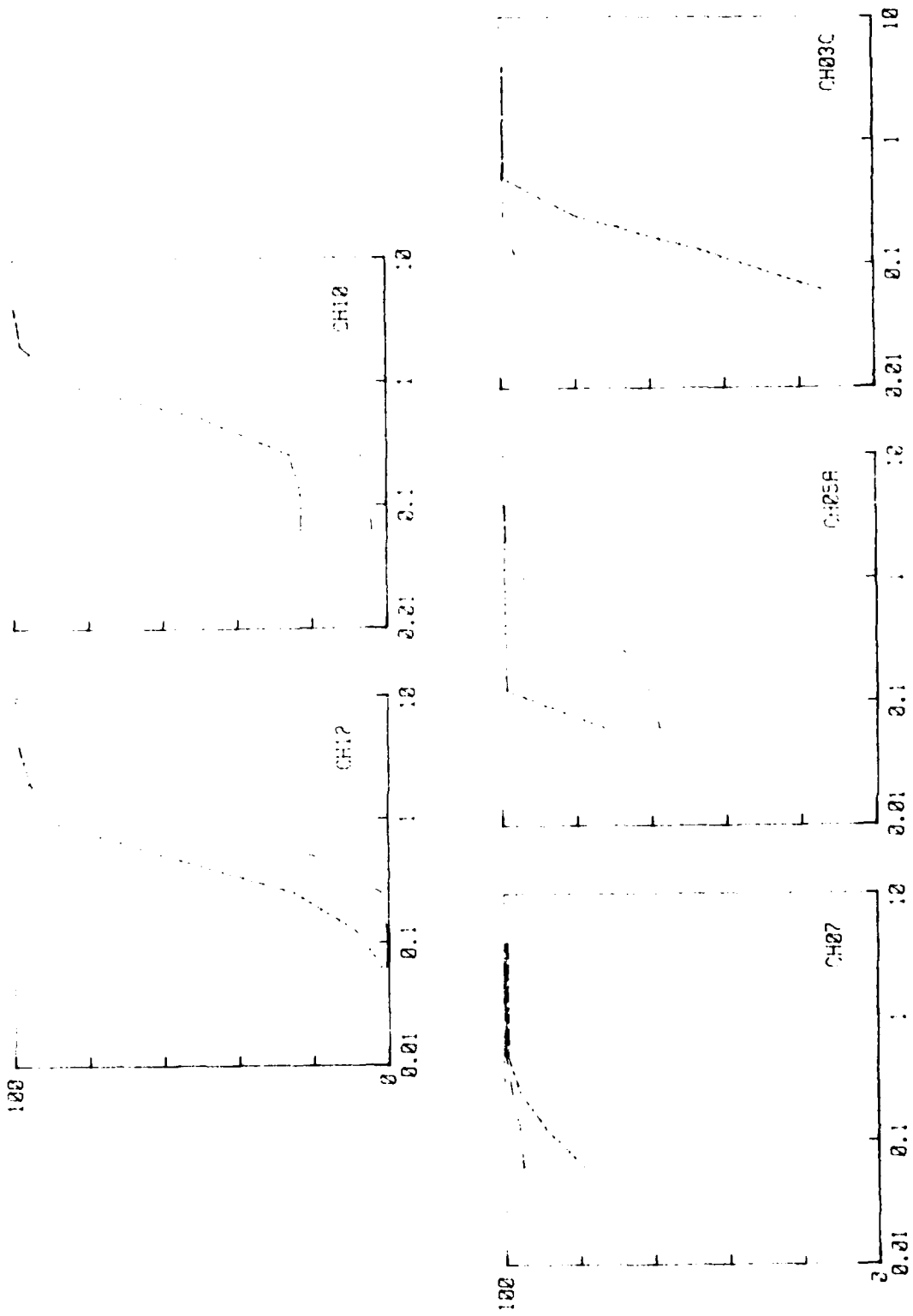
Range of particle size (mm)	<u>Reservoir stations</u>										<u>River stations</u>					
	CH-12	CH-10	CH-07	CH-08	CH-05A	CH-13	CH-03C	CH-01A	CH-01B	CH-01C						
Very fine gravel fraction																
2.00 - 4.00	1978 2	2	0	0	1	9	0	5	0	8						
	1979 2	3	1	1	0	1	0	0	7	6						
Sand fraction																
1.00 - 1.99	1978 18	13	0	0	4	16	0	13	38	28						
	1979 4	10	0	7	0	1	0	2	30	27						
.50 - .99	1978 59	53	0	0	15	17	0	28	54	48						
	1979 33	38	0	20	0	1	1	6	50	52						
.25 - .49	1978 18	24	2	1	12	16	1	10	6	12						
	1979 34	23	4	8	1	6	19	13	10	11						
.125 - .24	1978 2	2	2	6	6	15	3	6	0	0						
	1979 16	3	7	2	8	12	36	36	0	0						
.062 - .124	1978 0	1	1	4	3	4	2	0	0	0						
	1979 7	0	10	2	18	11	30	22	0	0						
Silt-clay fraction																
.000 - .061	1978 0	5	95	89	59	22	95	0	0	0						
	1979 2	23	79	60	73	68	14	20	0	0						

APPENDIX E-2

Graphs showing particle-size gradation curves of bottom material from stations in and downstream from West Point Reservoir, 1978 and 1979

			Page
CH-12	(02338500)	Chattahoochee River at U.S. Highway 27, at Franklin, Ga.	520
CH-10	(02338710)	Chattahoochee River at State Highway 219, near LaGrange, Ga.	520
CH-07	(02338720)	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga.	520
CH-05A	(02339190)	Chattahoochee River at State Highway 701, near Abbotsford, Ga.	520
CH-03C	(02339388)	Chattahoochee River below coffer dam structure, above West Point Dam.....	520
CH-08	(02339020)	Yellowjacket Creek at Cameron Mill Road, near LaGrange, Ga.	521
CH-13	(02339362)	Wehadkee Creek at State Highway 238, near Abbotsford, Ga.	521
CH-01A	(02339500)	Chattahoochee River at West Point Ga.	521
CH-01B	(02339550)	Chattahoochee River (city of Lanett intake) at Lanett, Ala.	521
CH-01C	(02339560)	Chattahoochee River above junction of Long Cane Creek, near West Point, Ga.	521

CUMULATIVE PERCENTAGE OF PARTICLES FINER THAN 4.00
MILLIMETERS IN DIAMETER



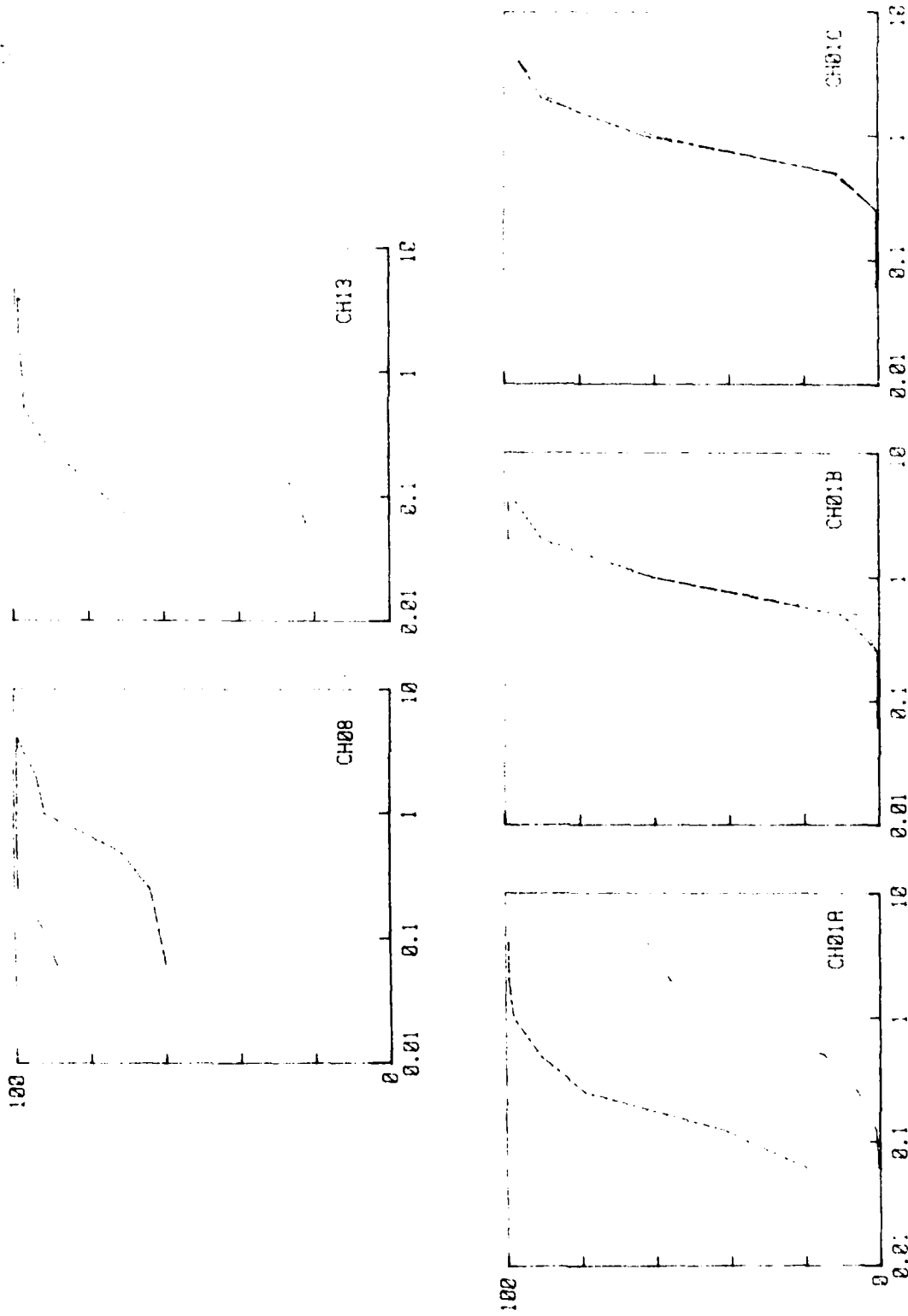
PARTICLE SIZE, IN MILLIMETERS

EXPLANATION

— August 1978 - - - August 1979

Particle-size distribution of bottom material at maximum reservoir stations in west Point Reservoir.

CUMULATIVE PERCENTAGE OF PARTICLES FINER THAN 4.00
MILLIMETERS IN DIAMETER



PARTICLE SIZE, IN MILLIMETERS

EXPLANATION

— August 1978 - - - August 1979

Particle-size distribution of bottom material at tributary and river stations in West Point Reservoir.

APPENDIX E-3

Nutrients, metals, oil and grease, and volatile solids concentrations
on bottom material from stations in and downstream from
West Point Reservoir, 1978 and 1979

			Page
CH-12	(02338500)	Chattahoochee River at U.S. Highway 27, a. Franklin, Ga.	523
CH-10	(02338710)	Chattahoochee River at State Highway 219, near LaGrange, Ga.	523
CH-07	(02338720)	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga.	523
CH-08	(02339020)	Yellowjacket Creek at Cameron Mill Road, near LaGrange, Ga.	523
CH-05A	(02339190)	Chattahoochee River at State Highway 701, near Abbotsford, Ga.	523
CH-13	(02339362)	Wehadkee Creek at State Highway 238, near Abbotsford, Ga.	523
CH-03C	(02339388)	Chattahoochee River below coffer dam structure, above West Point Dam.....	523
CH-01A	(02339500)	Chattahoochee River at West Point Ga.	523
CH-01B	(02339550)	Chattahoochee River (city of Lanett intake) at Lanett, Ala.	523
CH-01C	(02339560)	Chattahoochee River above junction of Long Cane Creek, near West Point, Ga.	523

Nutrients, metals, oil and grease, and volatile solids concentrations on bottom material from stations in and downstream from West Point Reservoir, 1978 and 1979

[Total organic carbon, total Kjeldahl nitrogen, total phosphorus, oil and grease, and volatile solids concentrations in milligrams per kilogram; metal concentrations in micrograms per gram. +, sample ruined during analysis; <, less than]

		Constituent concentrations									
		Reservoir stations						River stations			
		CH-12	CH-10	CH-07	CH-08	CH-05A	CH-13	CH-03C	CH-01A	CH-01B	CH-01C
Nutrients											
Carbon, organic, total-----	1978	+	3,400	21,000	49,000	+	20,000	30,000	800	400	1,600
	1979	3,300	10,000	22,000	22,000	24,000	29,000	10,000	6,600	1,000	1,200
Nitrogen, Kjeldahl, total-----	1978	270	1,000	5,800	6,100	4,000	1,300	4,300	260	290	140
	1979	830	2,800	9,000	7,000	8,200	7,500	1,700	1,500	400	400
Phosphorus, total-----	1978	140	940	1,200	1,300	1,900	520	1,200	65	44	43
	1979	240	1,500	2,000	1,000	2,200	1,200	250	320	150	190
Metals											
Arsenic, total----	1978	1	1	1	1	2	<1	1	<1	1	1
	1979	1	<1	4	2	7	4	<1	1	<1	<1
Cadmium, total----	1978	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
	1979	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
Chromium, total----	1978	20	10	30	20	30	10	20	10	10	10
	1979	10	20	40	20	50	20	10	10	<10	<10
Copper, total-----	1978	<10	<10	40	20	30	10	20	<10	<10	<10
	1979	<10	20	40	30	60	20	10	10	<10	<10
Iron, total-----	1978	11,000	8,100	31,000	22,000	29,000	14,000	21,000	5,800	5,200	5,600
	1979	5,400	8,700	24,000	3,700	25,000	20,000	7,500	10,000	1,800	2,900
Lead, total-----	1978	10	20	10	30	80	20	40	10	<10	<10
	1979	30	60	120	50	30	50	30	30	20	<10
Manganese, total--	1978	270	190	710	790	780	590	550	480	480	470
	1979	230	700	1,500	1,600	300	1,000	240	510	300	490
Mercury, total----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
Nickel, total-----	1978	<10	10	20	10	10	<10	<10	10	<10	<10
	1979	10	<10	30	<10	370	<10	<10	20	<10	<10
Zinc, total-----	1978	60	50	140	40	100	30	70	20	20	20
	1979	70	80	100	30	70	70	60	40	20	60
Other											
Oil and grease----	1978	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
	1979	<20	<20	<20	<20	<20	<20	<20	<20	<20	<20
Volatile solids---	1978	4,580	63,400	107,000	169,000	111,000	69,900	126,000	3,890	4,730	5,000
	1979	106,000	103,000	111,000	114,000	97,200	121,000	31,200	33,200	8,600	10,000

APPENDIX E-4

Chlorinated hydrocarbon concentrations on bottom material from stations
in and downstream from West Point Reservoir, 1978 and 1979

			Page
CH-12	(02338500)	Chattahoochee River at U.S. Highway 27, at Franklin, Ga.	525
CH-10	(02338710)	Chattahoochee River at State Highway 219, near LaGrange, Ga.	525
CH-07	(02338720)	Chattahoochee River (city of LaGrange intake) near LaGrange, Ga.	525
CH-08	(02339020)	Yellowjacket Creek at Cameron Mill Road, near LaGrange, Ga.	525
CH-05A	(02339190)	Chattahoochee River at State Highway 701, near Abbottsford, Ga.	525
CH-13	(02339362)	Wehadkee Creek at State Highway 238, near Abbottsford, Ga.	525
CH-03C	(02339388)	Chattahoochee River below coffer dam structure, above West Point Dam.....	525
CH-01A	(02339500)	Chattahoochee River at West Point Ga.	525
CH-01B	(02339550)	Chattahoochee River (city of Lanett intake) at Lanett, Ala.	525
CH-01C	(02339560)	Chattahoochee River above junction of Long Cane Creek, near West Point, Ga.	525

Chlorinated hydrocarbon concentrations on bottom material from stations
in and downstream from West Point Reservoir, 1978 and 1979

[Results in micrograms per kilogram. <, less than the detection limit]

		Reservoir stations						River stations			
		CH-12	CH-10	CH-07	CH-08	CH-05A	CH-13	CH-03C	CH-01A	CH-01B	CH-01C
Aldrin-----	1978	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
BHC, total-----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
Chlordane-----	1978	<1	13	210	56	140	10	130	<1	<1	<1
	1979	7	31	110	18	72	43	120	18	1	<1
DDD-----	1978	<.1	.8	<.1	5.7	<.1	1.8	12	<.1	<.1	<.1
	1979	1.2	3.0	11	1.9	7.0	5.1	15	8.4	<.1	<.1
DDE-----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	.6	2.1	11	2.5	<.1	7.1	2.6	3.5	<.1	<.1
DDT-----	1978	<.1	<.1	32	<.1	<.1	.8	<.1	<.1	<.1	<.1
	1979	<.1	<.1	13	<.1	<.1	.7	4.5	2.8	<.1	<.1
Dieldrin-----	1978	<.1	.2	3.2	1.0	1.7	.7	1.5	<.1	<.1	<.1
	1979	.2	.4	1.5	.2	1.0	.4	2.3	.7	<.1	<.1
Endo-sulfur sulfate-----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
Endrin-----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
Heptachlor-----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	.1	<.1
Heptachlor epoxide-----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
Mirex-----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
Methoxychlor-----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
Polychlorinated biphenyls (PCB)-----	1978	2	34	740	190	530	84	430	<1	<1	<1
	1979	10	42	140	34	85	54	150	59	<1	<1
Polychlorinated naphthalenes (PCN)-----	1978	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
	1979	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1
Perthane-----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
Toxaphene-----	1978	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1
	1979	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1

APPENDIX F

Fish tissue data

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Chlorinated hydrocarbon and metals concentrations in fish tissues
from tributaries in West Point Reservoir, 1978 and 1979

[Chlorinated hydrocarbon concentrations in micrograms per kilogram; metal concentrations in micrograms per gram.
+, insufficient sample for analysis; *, no recommended maximum concentration]

	Wehadkee Creek					Yellowjacket Creek					Recommended maximum concentration ¹
	Whole bass 1979	Whole catfish 1978	Whole catfish 1979	Bass fillet 1979	Catfish fillet 1979	Whole bass 1979	Whole catfish 1978	Whole catfish 1979	Bass fillet 1979	Catfish fillet 1979	
Chlorinated hydrocarbons											
Aldrin-----	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	100
BHC, total-----	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	100
Chlordane-----	7.0	15	220	<.1	6.0	21	210	280	26	220	100
DDD-----	<.1	8.5	20	<.1	1.7	3.4	34	21	.5	18	1,000
DDE-----	6.5	8.5	20	<.1	5.7	8.9	15	49	.8	3	1,000
DDT-----	<.1	<.1	<.1	<.1	<.1	1.0	<.1	8.3	.4	1.5	1,000
Dieldrin-----	<.1	.4	3.6	<.1	<.1	.8	2.9	13	1.0	5.8	100
Endosulfan-----	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	100
Endrin-----	<.1	<.1	<.1	<.1	<.1	<.1	<.1	1.0	<.1	.7	100
Heptachlor-----	<.1	<.1	<.1	<.1	<.1	<.1	<.1	1.6	<.1	1.7	100
Heptachlor epoxide--	<.1	.5	1.3	<.1	<.1	<.1	<.1	<.1	<.1	<.1	100
Polychlorinated biphenyls (PCB)---	37	2,600	290	<.1	19	46	3,800	340	39	170	500
Polychlorinated naphthalenes (PCN)---	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	*
Pertthane-----	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	100
Toxaphene-----	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	<.1	100
Metals											
Arsenic, total-----	+	.2	<.1	+	+	<.1	<.1	<.1	<.1	<.1	*
Cadmium, total-----	+	.05	<.01	+	+	<.01	.05	<.01	<.01	<.01	200
Chromium, total-----	+	.5	.3	+	+	.8	.5	.4	<.1	.3	*
Lead, total-----	+	.38	.20	+	+	.20	.35	.20	10	.10	*
Mercury, total-----	+	<.1	<.1	+	+	<.1	<.1	<.1	<.1	<.1	*
Selenium, total-----	+	<1	<1	+	+	<1	<1	<1	<1	<1	*
Zinc, total-----	+	12	22	+	+	16	15	180	2	10	*

¹ National Academy of Sciences (1974)

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