WATER QUALITY OF SOMERVILLE LAKE SOUTH-CENTRAL TEXAS

By Emma McPherson and H. B. Mendieta

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CONTENTS

ILLUSTRATIONS

TABLES

METRIC CONVERSIONS

Factors for converting inch-pound units to metric equivalents are given in the following table:

From	Multiply by	To obtain
acre	4,047	square meter
acre-foot	1,233	cubic meter
cubic foot per second (ft^3/s)	.02832	cubic meter per second
foot	.3048	meter (m)
mile	1.609	kilometer
square mile	2.590	square kilometer
ton	.9072	tonne

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."

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ABSTRACT

Somerville Lake in south-central Texas is a shallow lake, with a mean depth of 14 feet. The maximum depth of the submerged channel of Yegua Creek is usually less than 35 feet and in most areas of the lake the depth is less than 10 feet.

Several factors including thermal circulation resulting from the cooling of surface water, wind action, and the large inflow volume in realtion to the lake volume combine to keep the lake well mixed throughout the year. The oxygen concentrations remain high areally and at depth because of good circulation of lake waters during most of the year. Even in summer most bottom oxygen concentrations were in excess of 50 percent of saturation.

Due to year-round high percent oxygen saturation from surface to bottom in most parts of the lake, caused by the frequent periods of circulation that occur during all seasons, concentrations of dissolved iron, and manganese reamin low. Dissovled iron concentrations were less than 50 micrograms per liter and dissolved manganese concentrations were less than 40 micrograms per liter. The total inorganic nitrogen concentrations varied little throughout the lake. During the summer, concentrations were 0.01 milligram per liter at the surface to 0.02 milligram per liter at the bottom; and during the winter 0.11 milligram per liter at the surface and 0.10 milligram per liter at the bottom. Concentrations in the headwaters were about double those in the lake. Surface and bottom total phosphorus concentrations, during summer and winter averaged about the same, 0.04 and 0.06 milligram per liter throughout the lake, except in the headwaters where the concentrations were about double those in the lake.

Homogeneous or near homogeneous concentrations of total phosphorus and inorganic nitrogen can occur at any time of the year throughout the lake. Total phosphorus concentrations did not increase during the year or during the study period. On the other hand total inorganic nitrogen concentrations did show an annual cycle and were highest in the spring and lowest in late summer or fall. During periods of large releases of water, the more soluble total inorganic nitrogen was flushed from the lake.

The concentration of dissolved solids ranged from 139 to 292 milligrams per liter and averaged about 220 milligrams per liter. Dissolved chloride concentrations ranged from 20 to 68 milligrams per liter and averaged 43 milligrams per liter. Dissolved sulfate concentrations ranged from 30 to 130 milligrams per liter and averaged 63 milligrams per liter. The total hardness of

the water ranged from 75 to 140 milligrams per liter, expressed as calcium carbonate, placing it in the moderately hard to hard (61 to 180 milligrams per liter) classification. The concentrations of principal dissolved constituents indicate that Somerville Lake is an excellent source of water for municipal, industrial, or agricultural use.

INTRODUCTION

The U.S. Geological Survey periodically has made comprehensive water-quality surveys of selected lakes and reservoirs in Texas since October 1961 as part of a continuing cooperative program with State, Federal and local agencies to inventory the surface-water resources of the State. During the 1975 water year, the program was expanded in cooperation with the U.S. Army Corps of Engineers to include more lakes for the number of years required to define a range of hydrologic conditions. Water-quality surveys during the spring, summer, and winter on Somerville Lake included onsite measurements of dissolved oxygen, specific conductance, pH, and temperature. Water samples also were collected and analyzed for dissolved chemical constituents and nutrients.

Purpose of This Report

This report summarizes the variations of selected water-quality constituents and properties for Somerville Lake based on water-quality records collected from August 1975 to August 1980. The report also contains information on the watershed environment in relation to the quality of water in the impoundment.

Description of Somerville Lake and Its Environment

Somerville Dam, at the southwest edge of the city limits of Somerville in south-central Texas, is on Yegua Creek 20.0 miles upstream from its junction with the Brazos River. The impoundment formed by the dam is Somerville Lake, which is located in the south-central part of Burleson County and the north-central part of Washington County, with the upper reaches extending into Lee County. The submerged channel of Yegua Creek is the boundary between Burleson and Washington Counties, dividing the main body of the lake surface almost equally between the two counties. In the upstream part of the lake, Yegua Creek also forms the boundary between Burleson and Lee Counties. The largest part of the watershed is in Lee County, but only a small part of the lake lies in that county (figs. 1 and 2).

Yegua Creek, one of the principal tributaries of the Brazos River, is formed by the confluence of the East and Middle Yegua Creeks at a point about 14 miles west of Somerville. The Yegua Creek watershed is about 62 miles long and 32 miles wide and has a drainage area of 1,320 square miles. About 76 percent of this drainage area is upstream from Somerville Dam (fig. 2).

Base from Texas Department of Highways and Public Transportation General Highway Map

Figure 1.-Locations of water-quality data-collection sites on Somerville Lake

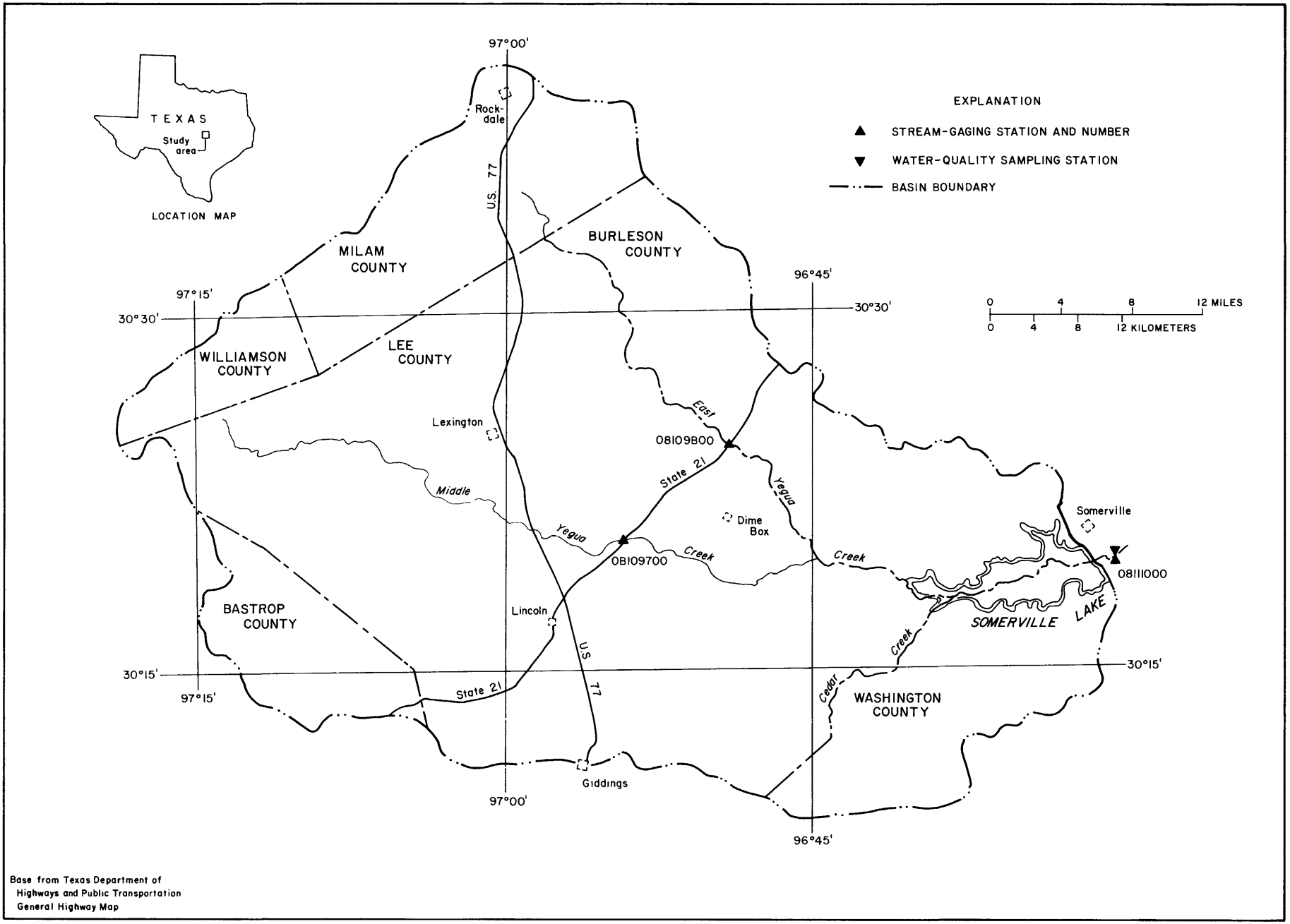

Figure 2.-Location of the Somerville Lake watershed and stream-gaging stations

Somerville Lake was constructed and is operated by the Corps of Engineers for flood control, conservation storage, and other beneficial uses for the surrounding area. Construction of Somerville Dam began June 4, 1962, and was completed on October 27, 1967. The following data regarding the dam and lake were compiled by Dowell and Petty (1973, p. 12-29.0-A):

Feature	Elevation (feet above NGVD of 1929)	Capacity (acre-feet)	Surface area (acres)
Top of dam	280.0	--	--
Maximum design water surface	274.5	1,028,800	39,800
Spillway crest	258.0	507,500	24,400
Top of conservation storage space	238.0	160,100	11,460
Maximum tailwater	243.8	--	--
Streambed	200.0	0	0
Sediment reserve below	238.0	16,200	--
Sediment reserve above	238.0	9,700	--
Usable conservation storage space	--	143,900	--

Deliberate impoundment of water began on January 3, 1967. The conservation storage space reached its capacity for the first time on May 11, 1968. Somerville Lake is a shallow lake with a mean depth of 14 feet. The depth in the main channel usually is less than 35 feet, and in most other areas of the lake, depths less than 10 feet.

The lake as well as the entire drainage area of 1,007 square miles upstream from the dam is located on gently rolling terrain in the south-central section of Texas, which is part of the West Gulf Coastal Plain (Fenneman, 1938, p. 102). Locally the area is recognized as the Post Oak Belt, the western part of the East Texas Timber Belt. The land surface rises from the southeast to the northwest, ranging from 200 feet above sea level on the streambed at the dam to 760 feet above sea level in the Yegua Knobs area, 12 miles west-southwest of Lexington.

The soils of the drainage area are mostly sandy loams with smaller amounts of clay loams and gravelly clay loams. The soils are weathered Tertiary deposits. Several physiographic features trend northeastward to southwestward across the drainage area in conformance with the geological outcrops.

The geologic units range from the oldest in the west to the youngest in the east. All are of the Eocene Series except the youngest formation which is Miocene. The Wilcox Group, undifferentiated, crops out in the headwaters of

the East, Middle, and West Yegua Creeks. Eastward, seven outcrops of the Claiborne Group follow in sequence: the Carrizo Sand, the Reklaw Formation, the Queen City Sand, the Weches Greensand, the Sparta Sand, the Cook Mountain Formation, and the Yegua Formation. The Jackson Group, undifferentiated, crops out parallel to both sides of the main stem of Yegua Creek. The Catahoula Sandstone, which borders the eastern boundary of the watershed, is the last and youngest unit in the sequence.

Development in the watershed is predominantly rural. The loamy, gently rolling terrain is used mostly by small family farms and stock ranches. About two-thirds of the area is used for cropland or improved pasture. Cattle, hogs, and poultry lead in livestock production. Peanuts, which grow well in sandy loams, are the chief cash crop. Wheat, oats, cotton, corn, grain sorghum, hay and watermelons also contribute to the economy of the area.

There are only three centers of population within the watershed. Giddings (population 12,000) lies on the southern boundary of the watershed while almost all of Rockdale (population 5,611) is within the northern boundary. Lexington (population 1,065) lies in the central part of the watershed.

In the northwest part of the watershed, near Rockdale, the Alcoa aluminum plant has been strip mining about 2 million tons of lignite per year since 1952 for its powerplant fuel (W. E. Michalke, Aluminum Company of America, oral commun., 1981). Lignite has been mined intermittently at this site since the turn of the century. Mining was continuous from 1920 to 1940, when cheap natural gas became available.

Since 1975, oil development in the Austin Group, which underlies the study area, has made a drastic impact on the economy of the area. The environmental changes now taking place may result in significant changes in the quality of water draining into Somerville Lake in the future. The number of producing oil wells increased from 1 in 1974 to 150 by the end of 1978. More than 2,500 wells were drilled between 1978-81. In 1981 there were 120 drilling rigs operating in the "Giddings trend," most of which lies within the Somerville Lake watershed. As a result of the oil boom, the population of the city of Giddings has grown from 3,200 in 1975 to an estimate of more than 12,000 in 1981. Thousands of oilfield workers, who live in trailers and follow the drilling rigs, are also dispersed in the Yegua watershed (J. Socha, Giddings Chamber of Commerce, oral commun., 1981).

HYDROLOGIC DATA

Streamflow Records

Daily streamflow stations on Middle Yegua Creek near Dime Box (station 08109700) at mile 17.5 and on East Yegua Creek near Dime Box (station 08109800) at mile 12.2 have been operated by the Geological Survey since August 1962. Mean-annual discharges for these stations for 1962-80 were 53.7 ft^3/s for Middle Yegua Creek near Dime Box (fig. 3) and 59.9 ft^3/s for East Yegua Creek near Dime Box (fig. 4). No water-quality data have been collected at these stations. A streamflow station on Yegua Creek near Somerville (station 08110000) 1.0 mile downstream from Somerville Dam has been in operation since May 1924.

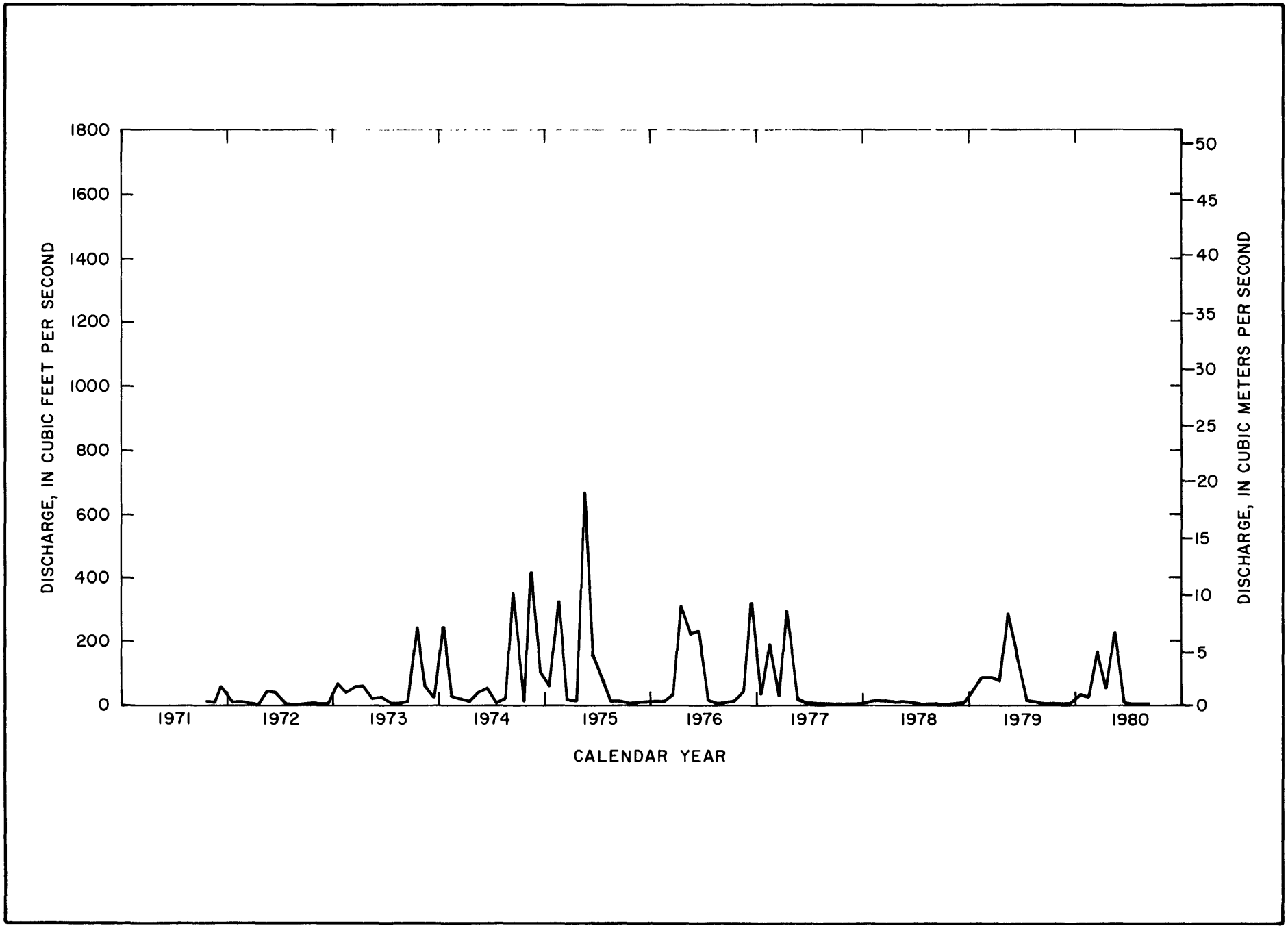

Figure 3.-Monthly mean water discharges for Middle Yegua Creek near Dime Box, October 1971-September 1980

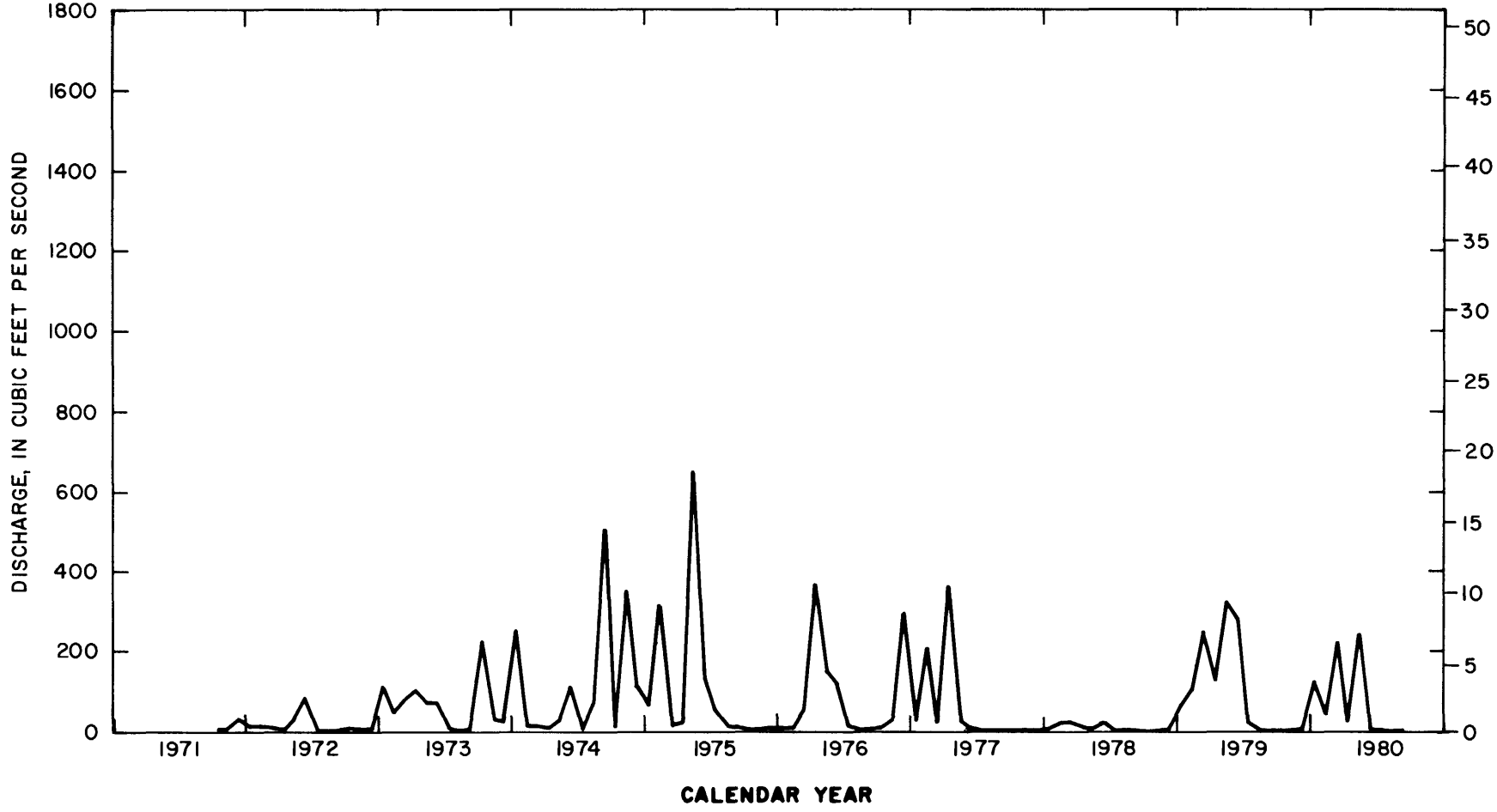

Figure 4.-Monthly mean water discharges for East Yegua Creek near Dime Box, October 1971-September 1980

Unregulated mean-annual discharge for 1924-65 was 290 ft^3/s. Regulated mean-annual discharge for 1965-80 was 314 ft^3/s (fig. 5). Water-quality data for this station have been collected from September 1961 to September 1967 and from October 1968 to the present and table 1 shows a statistical summary.

From October 1971 through September 1980, the combined discharge at the two upstream streamflow stations was about 38 percent of the discharge at Yegua Creek near Somerville. The mean-annual discharge at Yegua Creek near Somerville is greater than the combined flow of the Salt and Double Mountain Forks of the upper Brazos River watershed, both tributaries having much larger drainage areas. Streamflow and water-quality data collected by the Geological Survey are published annually in the Geological Survey series, "Water Resources Data for Texas."

Somerville Lake was proposed and construction started with minimal water-quality data available. In "Chemical Quality of Surface Waters in the Brazos River basin in Texas" (Irelan and Mendieta, 1964), the following statement was made about Yegua Creek: "The quality-of-water record for this stream consists of the analysis of only two samples--one in 1942 and another in 1959. Both of these samples were taken at low flow, and the water was of only fair quality. Much better water could be expected during high flows, and water stored in a reservoir on Yegua Creek probably would contain less than 500 mg/L (milligrams per liter) of dissolved solids. Water in Yegua Creek should be similar to that of the Navasota River, whose drainage area is directly across the Brazos, and is underlain by similar rocks. Available chemical-quality data indicate that all streams draining the belt of Tertiary rocks, which extends along the Texas gulf coast, have produced water of good quality." At that time U.S. Public Health Service "Drinking Water Standards" (1962) specified that the total dissolved solids should not exceed 500 mg/L if more suitable supplies were available.

The average total dissolved solids concentration for Somerville Lake during the 1975-80 study was 220 mg/L. This compares favorably with an average total dissolved solids concentration of 278 mg/L for Navasota River near Bryan during the 1959-60 records that were available at the time of the water-quality projection. The conservative "less than 500 mg/L of dissolved solids" statement was used because that was the criteria set for a public supply.

Water Quality of Lake Somerville

Thermal Stratification

Impoundment of water in a lake or reservoir may result in significant changes in water quality. Some of the changes may be beneficial; other changes may be detrimental. Many of the detrimental changes can be related to thermal stratification--layering of the water due to temperatureinduced density differences.

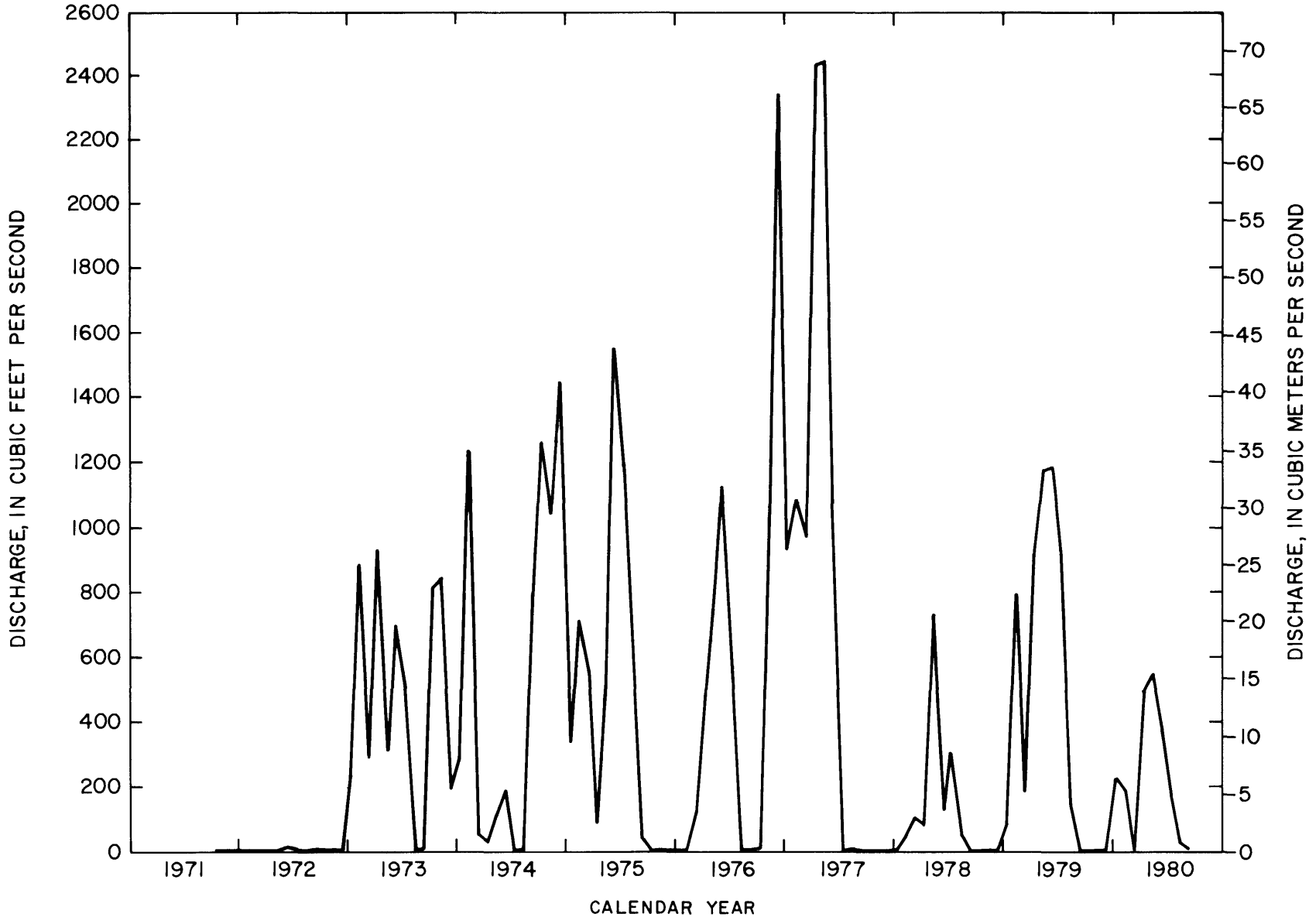

Figure 5.-Monthly mean water discharges for Yegua Creek near Somerville, October 1971-September 1980

The following table (Weast, 1975, p. F-5) shows that pure water reaches its maximum density at a temperature of about 4°C (degrees Celsius) and that the difference in density per 1°C is much greater at warmer temperatures than at cooler temperatures.

Temperature (degrees Celsius)	Density (grams per milliliter)
0.0	0.999868
4.0	1.000000
5.0	.999992
10.0	.999728
15.0	.999129
20.0	.998234
25.0	.997075
30.0	.995678
35.0	.994063

For example, a change in temperature from 29° to 30°C results in a change in density of about 0.0003 g/mL (gram per milliliter). A change in temperature from 10° to 11°C results in a density change of about 0.0001 g/mL. Stable stratification is common in lakes and reservoirs where the density of the upper and lower strata of water differs by as little as 0.0001 to 0.002 g/mL. Thus, temperature differences of 3° to 4°C during the summer may result in stable stratification.

Thermal stratification assumes many patterns, depending upon the geographical location, climatological conditions, depth, surface area, and configuration of the lake or reservoir. During the winter, many deep lakes or reservoirs in the temperate zone are characteristically isothermal--that is, the water has a uniform temperature and density, and circulates freely. With the onset of spring, solar heating warms the incoming water and the water at the lake or reservoir surface causing a decrease in density. This warm surface water floats on the colder and denser water. As the surface water becomes progressively warmer, the density gradient increases and the depth to which wind can mix the water is diminished. Thus, water in the lake or reservoir commonly is separated into three fairly distinct strata:

(1) the epilimnion--a warm freely circulating surface stratum,
(2) the metalimnion--a middle stratum characterized by a rapid decrease in temperature with increases in depth, and
(3) the hypolimnion--a cold, stagnant lower stratum.

Thermal stratification in deep lakes or reservoirs usually persists until fall, when a decrease in atmospheric temperature cools both the surface water in the reservoir and the inflow from streams. When the temperatures and densities of the epilimnion and metalimnion approach those of the hypolimnion, the resistance to mixing is reduced and complete mixing or overturn of the water occurs.

Incoming water to a lake or water already stored will flow into a layer where the water is most similar to its density. The water density is governed by the temperature, dissolved solids, and suspended solids. The movement of water to achieve density equilibrium is referred to as a density current. Density currents may move water as an overflow on top of the water in storage, as an underflow at the bottom of the lake, or as an interflow plume at an intermediate depth.

Many shallow lakes become stratified during periods of calm but may be completely mixed by moderate winds. Moreover, shallow lakes are more quickly heated or cooled by atmospheric influences than deep lakes. Because Somerville Lake is shallow and probably easily mixed by moderate winds, the classical three-layered stratification pattern was not observed on any occasion during the 16 water-quality surveys made.

On May 27, 1977, March 13, 1978, June 19, 1979, and May 21, 1980, there was a temperature gradient in the lower depths of the lake caused by cold inflows. Discharges, both inflow and outflow, were much higher during those surveys than at other times. The maximum temperature difference, 7°C, occurred on June 19, 1979, when the lake water surface was at a record elevation of 246.09 feet, with a depth of 37 feet at site A_C.

The lake can be completely mixed at any time of the year, and was completely mixed during 8 of the 16 surveys. Isothermal conditions have been observed during all four seasons of the year. Wind action is the predominant mixing force all year; wind-induced waves mix the water from top to bottom. Water-temperature data at sites A_C and F_C at the time of the surveys are shown in figure 6. Monthly mean air-temperature data for Somerville Dam also are shown in figure 6. These data show that the air and water temperatures are very similar for the same time period, varying by less than 3°C most of the time.

Dissolved Oxygen

Fish and other aquatic organisms require oxygen to maintain the metabolic processes that produce energy for egg and larvae development and normal activities. Moreover, some of the chemical constituents dissolved in water are related to dissolved-oxygen concentrations; therefore, dissolved oxygen is one of the most important factors that influence the quality of water in a lake or reservoir.

Water entering a lake or reservoir contains organic material derived from both natural sources and from man's waste. Bacterial stabilization of this organic material requires oxygen. Decaying trees, brush, and other oxidizable

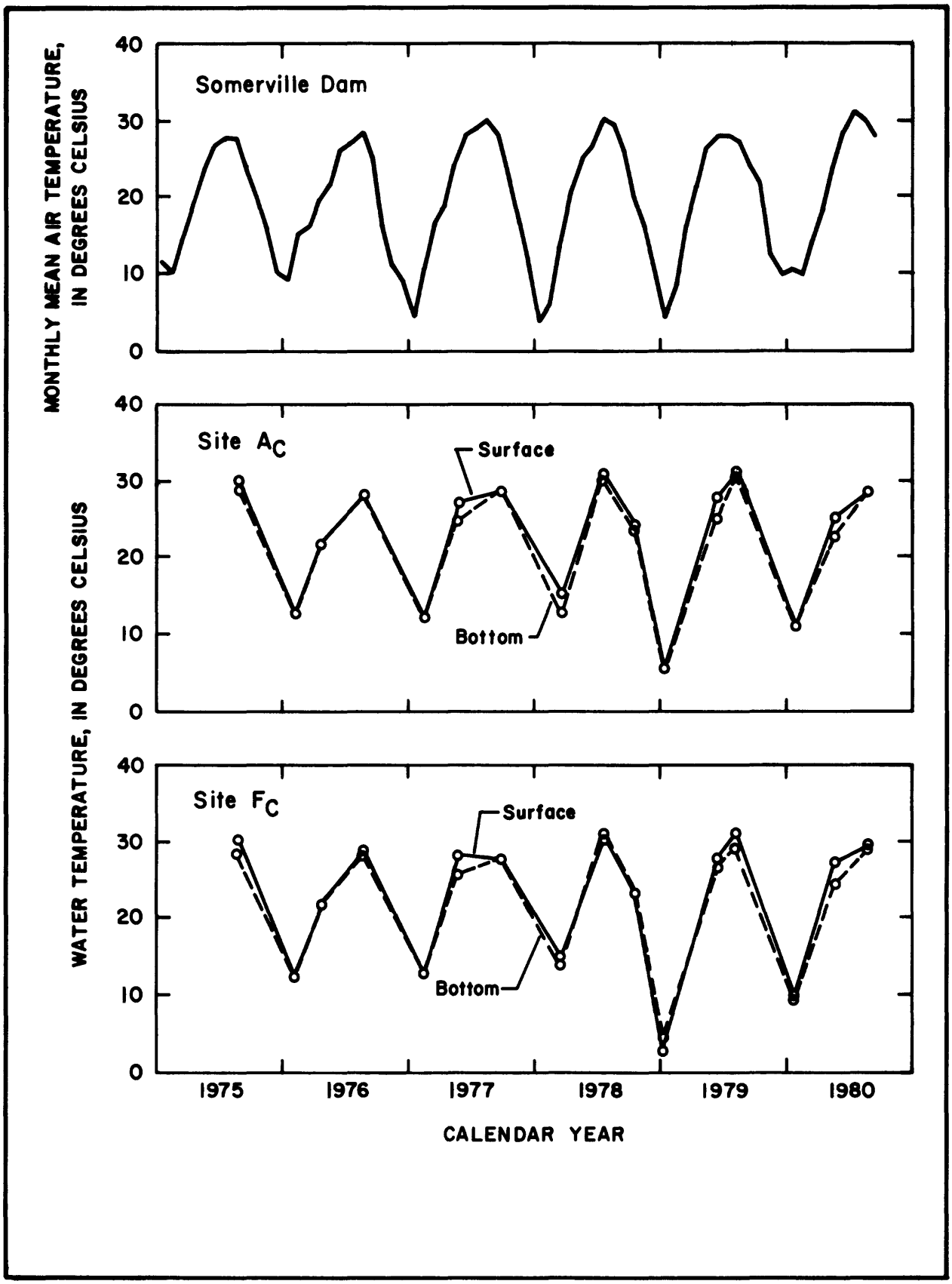

Figure 6.-Variations in monthly mean air temperatures at Somerville Dam and water temperatures at sites A_C and F_C during surveys

material within the area inundated by a reservoir as well as decaying algae and other organic material produced within the reservoir exert an oxygen demand.

The distribution of dissolved oxygen in a lake or reservoir is related to thermal stratification. Oxygen enters the surface stratum by plant photosynthesis and by absorption from the atmosphere. During winter circulation, the water is continually circulated to the atmosphere, and dissolved oxygen used in the decomposition of organic matter is replenished. However, during spring and summer, thermal stratification results in a reduction of vertical circulation of the water. Oxygen used in the decomposition of organic material is not replaced in the hypolimnion, and a vertical dissolved-oxygen gradient develops.

Dissolved-oxygen data for Somerville Lake are given in figures 7 and 8 and in tables 2-17. The concentration of dissolved oxygen varied seasonally and areally as in most lakes in the temperate zone. The lake also follows a common pattern of rather high oxygen saturation during the winter. Even as spring approached during the survey of March 13, 1978, no sample of water at any site, surface or bottom, showed less than 72-percent saturation with oxygen.

During the summer, especially in stratified lakes, it is common to observe high oxygen concentrations at the surface, a decline in the middle layer, and almost complete oxygen depletion at the bottom. All surveys in Somerville Lake showed a decline in oxygen concentrations from surface to bottom during the summer, and the rate of decline in the profiles varied considerably during each survey. However, most concentrations of dissolved oxygen at the bottom were in excess of 50-percent saturation during the summer surveys.

On August 20, 1976, at site A_C, the deepest sampling location on the lake, water near the surface had a dissolved oxygen concentration of 4.8 mg/L (62-percent saturation) while water near the bottom had a dissolved oxygen concentration of 4.4 mg/L (56-percent saturation). The temperature was 28°C from surface to bottom. This profile is similar to those obtained for the winter months.

The depth-averaged concentration of dissolved oxygen at site A_C, near the dam, was about 5.7 mg/L during the summer and about 10.6 mg/L during the winter. The depth-averaged concentrations of dissolved oxygen at site F_C, at the headwaters, were about 5.8 mg/L during the summer and 10.0 mg/L during the winter.

The varied, yet high dissolved oxygen concentrations show Somerville Lake to be a dynamic impoundment. During the winter the cooling of the upper layer creates density currents that result in circulation and aeration of the entire body of water. Wind action on the shallow lake, density currents caused by the daily heating and cooling of surface water, and the circulation of inflow and outflow water promote mixing in the lake during the entire year. The yearly volume of water flowing through the lake averages one and one-half times the volume of the lake.

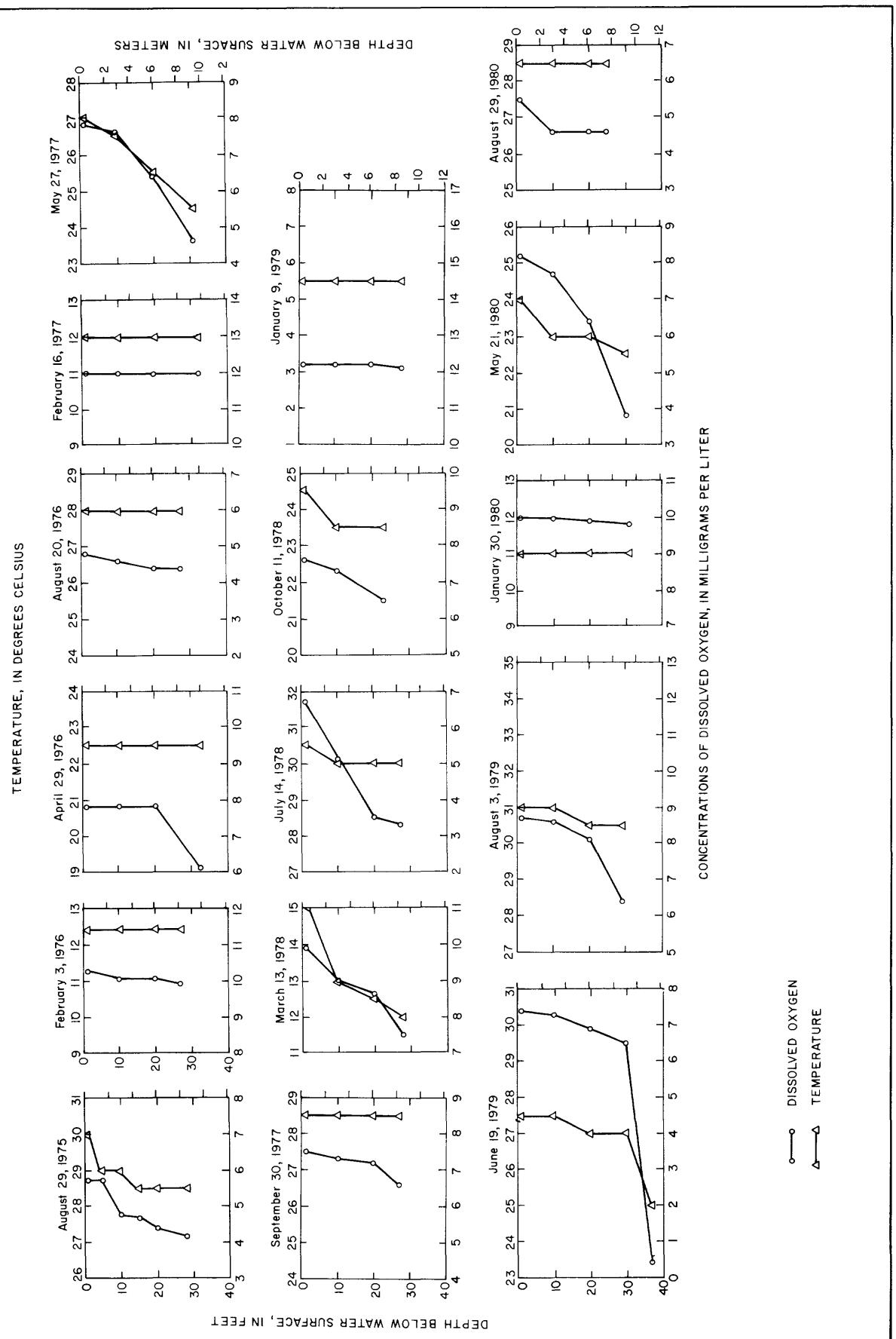

Figure 7.–Seasonal profiles of water temperatures and dissolved oxygen for site A_C

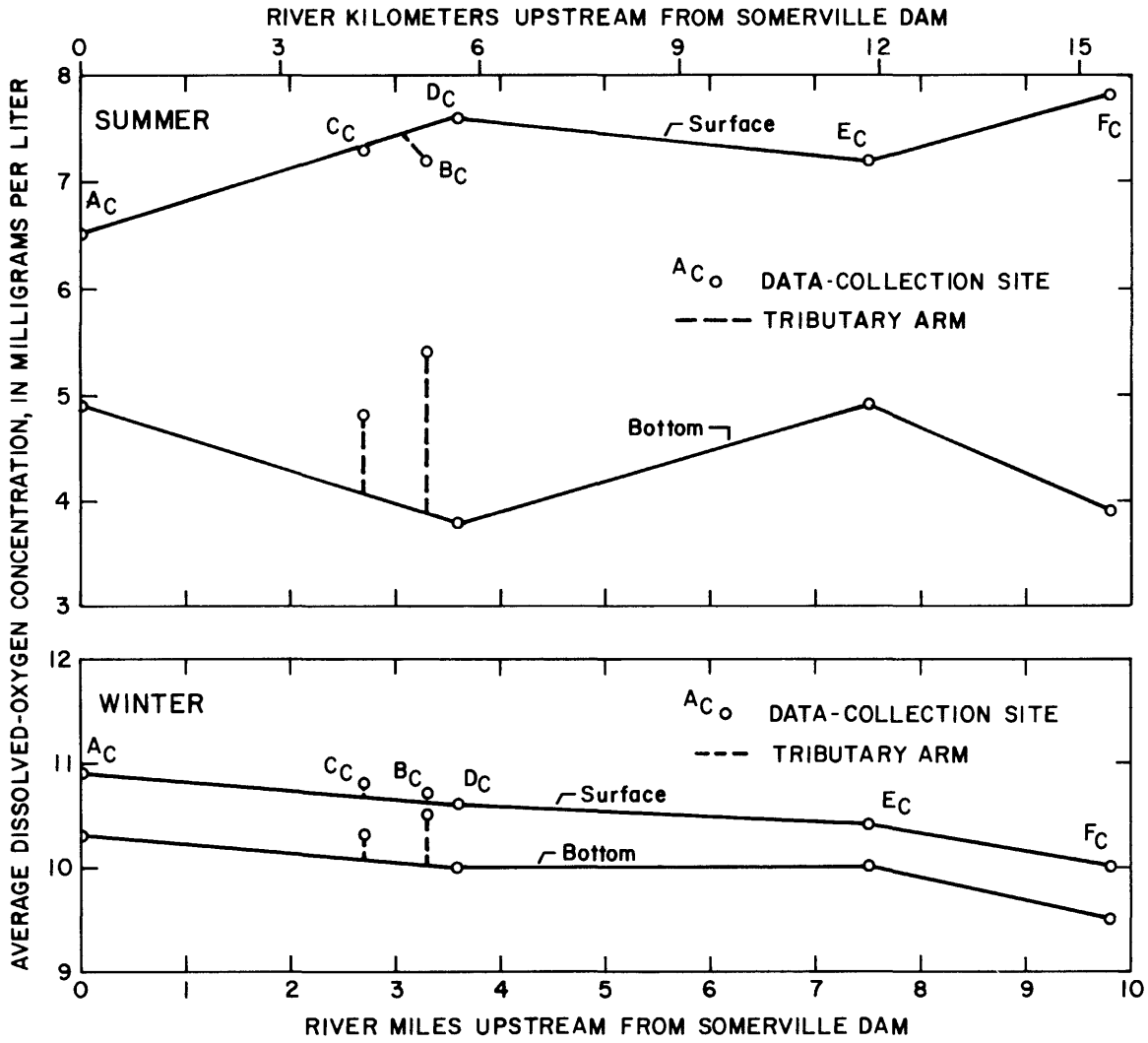

Figure 8.-Variations in average concentrations of dissolved oxygen during summer and winter surveys

Dissolved Iron and Dissolved Manganese

The occurrence and distribution of dissolved iron and dissolved manganese in lake waters are inversely related to the dissolved oxygen concentrations. During thermal stratification, the oxygen utilized in the decomposition of organic material is not replenished, thus in the period of anaerobic decomposition that follows, reducing conditions often result in the dissolution of large amounts of iron and manganese. The concentrations of iron and manganese in the bottom waters of Lake Somerville increased during periods of reduced circulation but decreased as soon as circulation increased. In any season throughout the year, water near the surface of the lake and water near the bottom during periods of circulation at all sites, except the headwaters at site F_C, usually contain less than 50 µg/L (micrograms per liter) of dissolved iron and 40 µg/L of dissolved manganese (figs. 9-11). However, during short periods of stagnation, the concentrations of both constituents near the bottom of the lake increased in the upstream direction in response to decreases in the concentration of dissolved oxygen. For example, on rare occasions at site F_C when the dissolved oxygen concentration decreased significantly, as on August 29, 1975 (1.7 mg/L) and July 14, 1978 (2.8 mg/L), the dissolved iron concentrations were 790 µg/L and 1,100 µg/L, and the dissolved manganese concentrations were 820 µg/L and 520 µg/L. The concentration of oxygen decreases in the upstream direction probably when small amounts of organic material, brought by inflow water, are oxidized. The amounts are small enough that the oxygen demand is satisfied soon after entry into the lake.

The dissolved iron concentrations near the bottom at site F_C, a shallow site in the headwaters of the lake, ranged from 0 to 1,100 µg/L and averaged about 250 µg/L. Dissolved manganese concentrations near the bottom at this site ranged from 0 to 820 µg/L and averaged about 180 µg/L. These are the highest averages of all sites observed on this lake. The organic material in the slow moving inflow probably used most of the oxygen; under these reducing conditions, the iron and manganese at the bottom become soluble.

At site A_C near Somerville Dam, the concentrations of dissolved iron in water near the bottom ranged from 0 to 230 µg/L and averaged about 50 µg/L. The concentrations of dissolved manganese ranged from 0 to 440 µg/L and averaged about 90 µg/L. There was no buildup of concentrations of dissolved iron or dissolved manganese at site A_C during the period of record (fig. 12).

Total Inorganic Nitrogen and Total Phosphorus

The average summer concentrations of total inorganic nitrogen (NO_2+NO_3+NH_4 as N) varied little throughout the reservoir (fig. 13). At site A_C, the average surface concentration was 0.01 mg/L and the average bottom concentration was 0.02 mg/L. At site D_C in the central part of the lake, the average concentrations increased slightly to 0.03 mg/L at the surface and 0.04 mg/L at the bottom. At site F_C, the average concentrations were about the same as for the site near the dam, 0.01 mg/L at the surface and 0.02 mg/L at the bottom.

There also was little difference in the average concentration of total inorganic nitrogen between the winter surface and bottom samples; however,

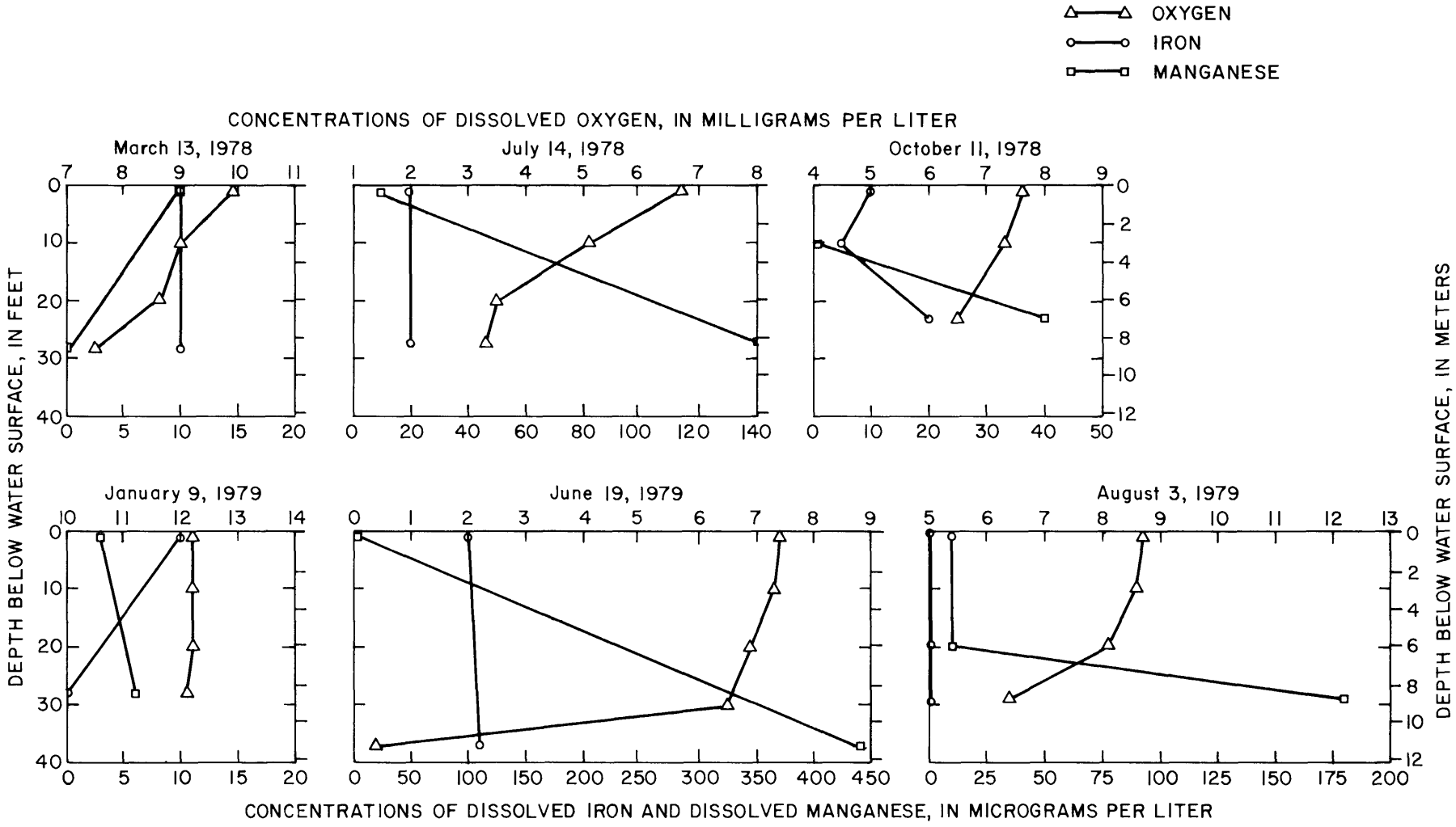

Figure 9.-Seasonal profiles of dissolved oxygen, dissolved iron, and dissolved manganese for site A_C

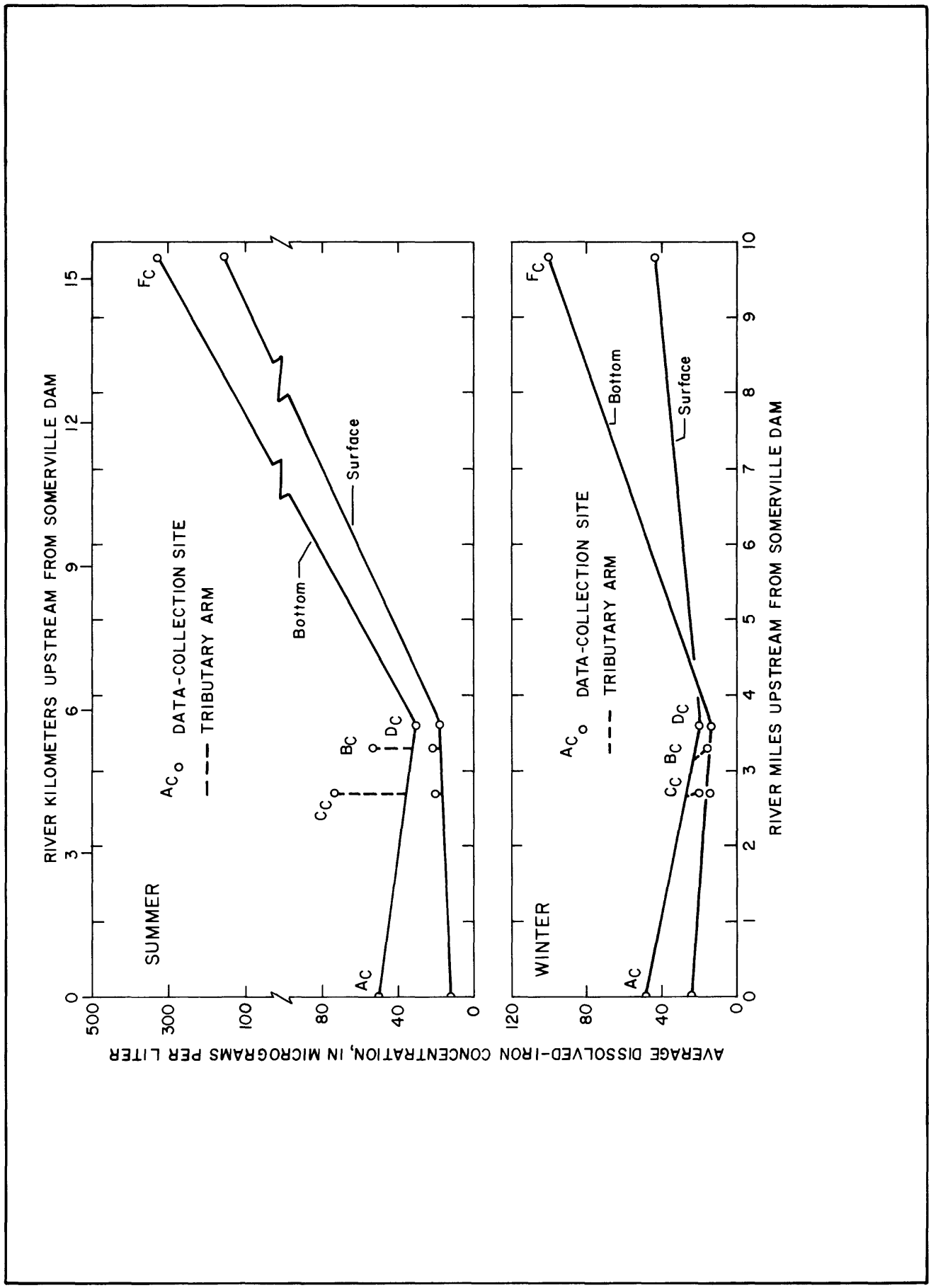

Figure 10.-Variations in average concentrations of dissolved iron during summer and winter surveys

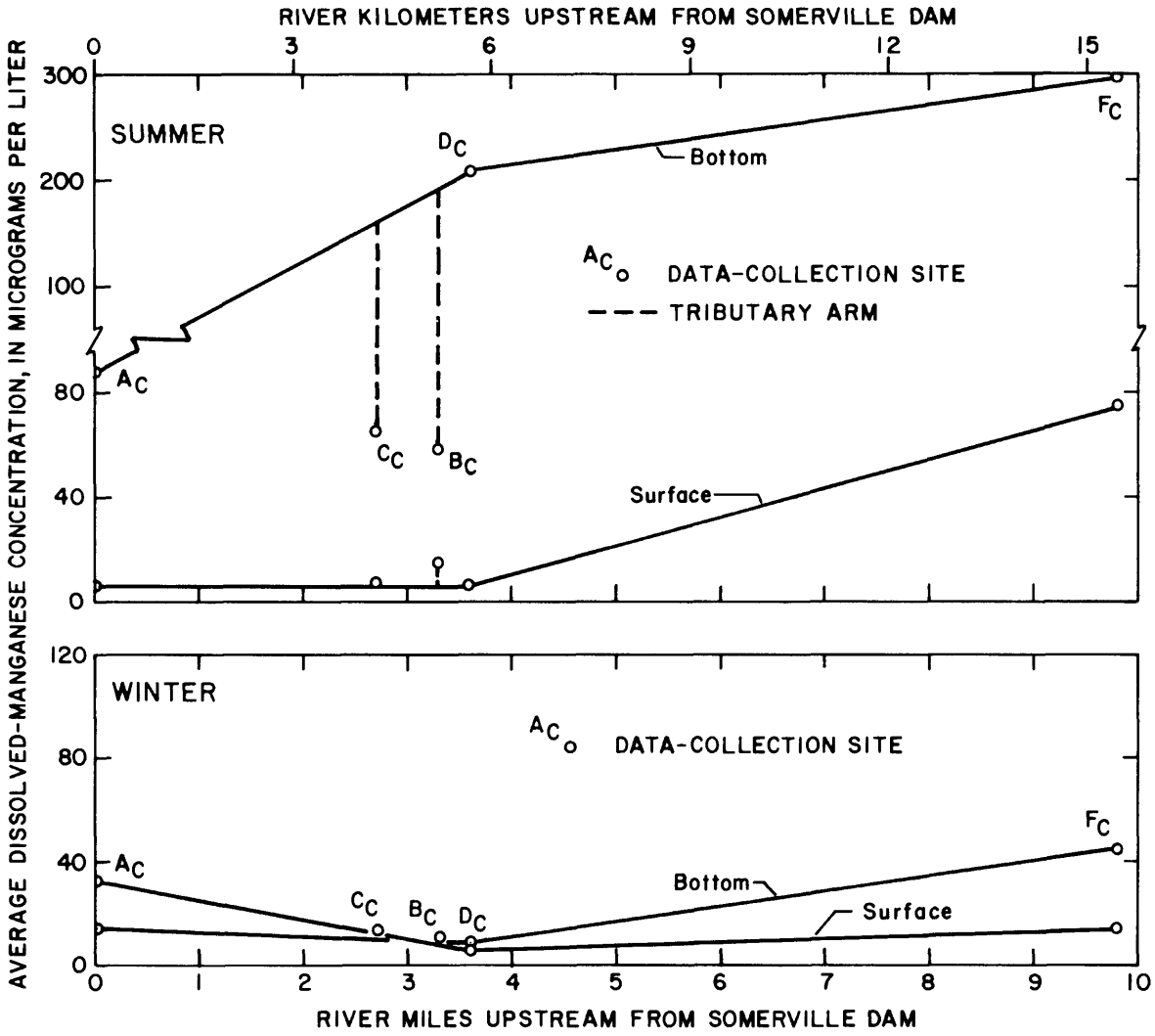

Figure 11.-Variations in average concentrations of dissolved manganese during summer and winter surveys

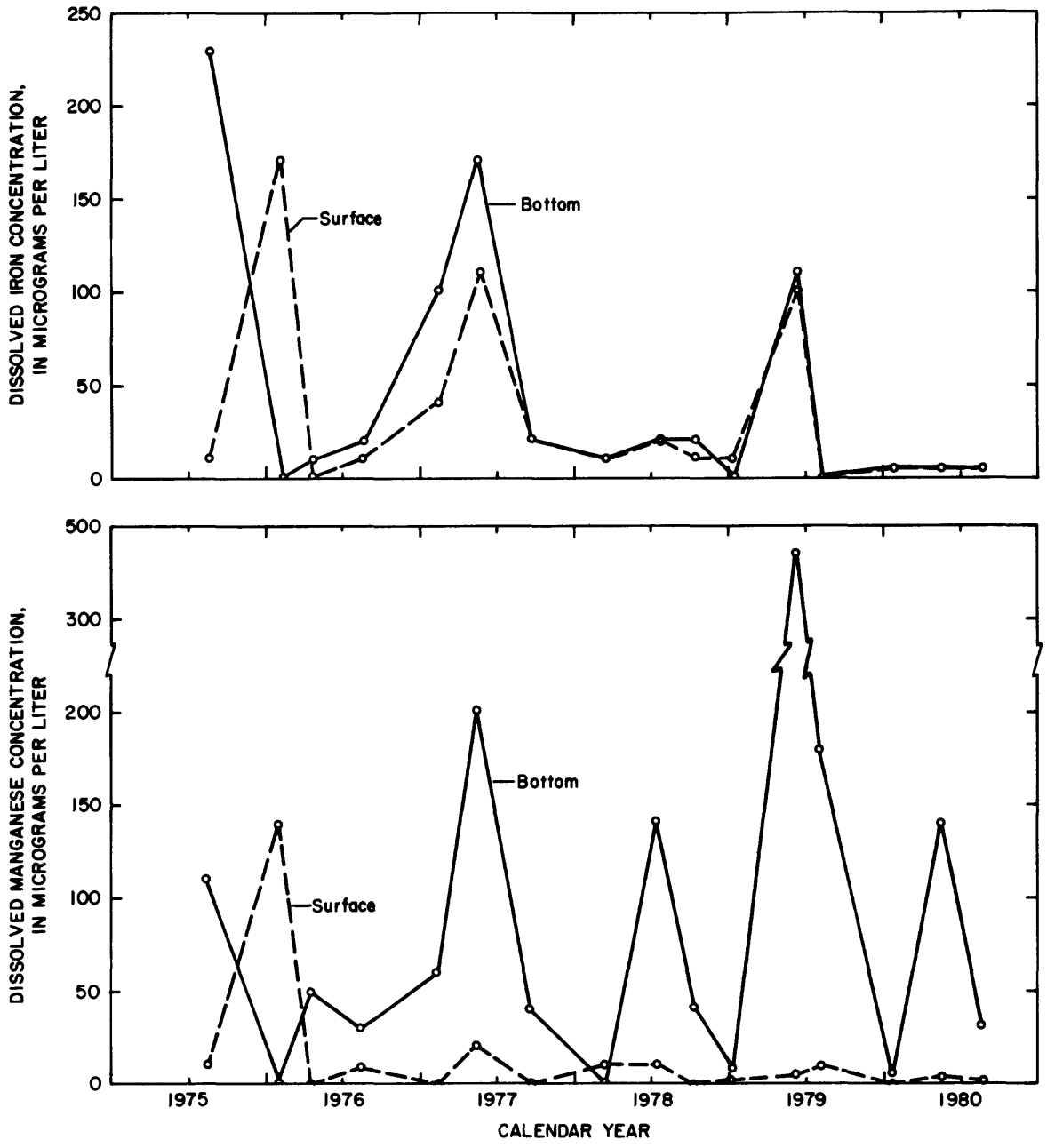

Figure 12.-Variations in concentrations of dissolved iron and dissolved manganese at site A_C, August 1975-August 1980

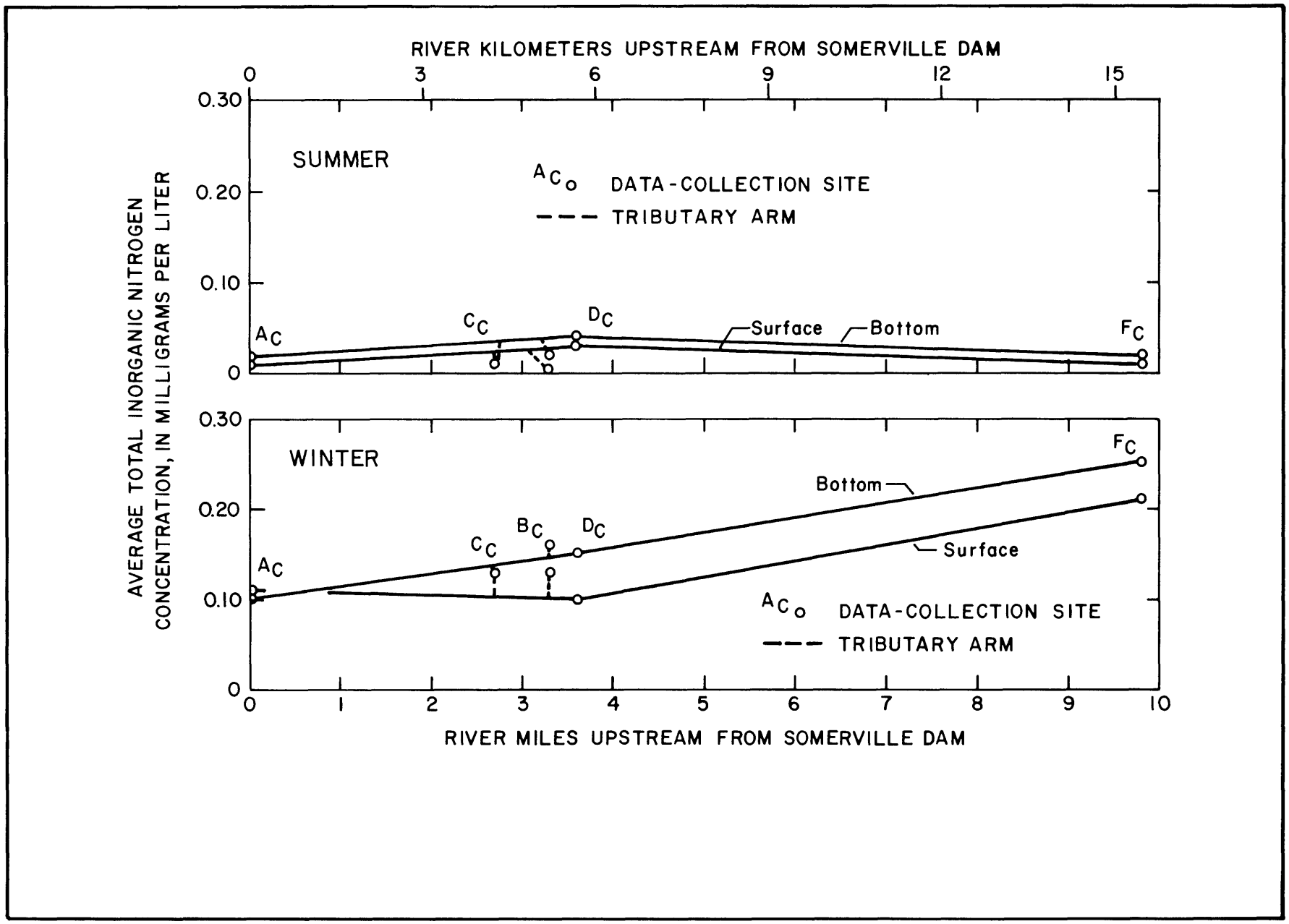

Figure 13.–Variations in average concentrations of total inorganic nitrogen during summer and winter surveys

winter concentrations generally were larger than summer concentrations. During the winter, the average concentration of total inorganic nitrogen was 0.11 mg/L for surface samples and 0.10 mg/L for bottom samples at site A_C. The trends were reversed at site D_C with concentrations of 0.10 mg/L at the surface and 0.15 mg/L at the bottom. At site F_C, the concentrations were somewhat higher and averaged 0.21 mg/L for the surface samples and 0.25 mg/L for the bottom samples.

There was little seasonal variation in the average concentration of total phosphorus from Somerville Lake waters (fig. 14). Surface and bottom total phosphorus concentrations during summer and winter averaged about the same, 0.04 and 0.06 mg/L, near the dam, in the central body of the lake, and in the lower tributary arms. During the summer, the surface total phosphorus concentrations in this downstream area averaged 0.04 mg/L and the bottom average was 0.05 mg/L. At site F_C, the surface concentrations averaged 0.09 mg/L and the bottom concentrations averaged 0.11 mg/L during the summer, while during the winter, the surface concentrations averaged 0.12 mg/L and the bottom concentrations averaged 0.13 mg/L. These concentrations are about double the concentrations that were found at site A_C.

Homogeneous or nearly homogeneous total inorganic nitrogen and total phosphorus concentrations (usually less than 0.03 mg/L) can occur at any time of the year, from surface to bottom, either at the deepest water near the dam, site A_C, or at the shallow inflow site F_C. For example, on January 9, 1979, at site A_C, total inorganic nitrogen was 0.11 mg/L at surface and bottom, and total phosphorus was 0.04 mg/L at surface and bottom. At the same site on August 3, 1979, the concentration of total inorganic nitrogen was 0.00 mg/L at surface and 0.01 mg/L at the bottom, while the concentration of total phosphorus was 0.04 mg/L at surface and bottom (figs. 15-18).

At site A_C from August 1975 to March 1978 there was an apparent trend of slightly increasing total phosphorus concentrations to about 0.10 mg/L. There was a slight decrease from March 1978 to August 1980 to about 0.05 mg/L. The apparent trend at site F_C was a gradual increase of total phosphorus concentration to about 0.17 mg/L during the whole study except for one temporary decrease as inflow increased during the record elevation in the lake in June and July 1979.

Concentrations of total inorganic nitrogen fluctuated from zero to near zero in late summer or early fall to peaks of 0.1, 0.2 and 0.3 mg/L in the spring, while concentrations of total phosphorus showed little change from one season to the next, usually less than 0.03 mg/L. Though some of the changes in concentration of the nutrients can be attributed to plant assimilation and release, other changes may be attributed to their relative solubilities in well oxygenated water. Phosphorus compounds are less soluble, tend to absorb on the sediment, and remain available to go back into solution when the dissolved-oxygen concentration is low. Their low solubilities in oxygen-rich water tend to keep concentrations at relatively low levels. On the other hand, nitrogen compounds are more abundant and more soluble in oxygenated water. During periods of large releases from the lake, most of the total inorganic nitrogen, being in solution, is flushed out through the gates, while phosphorus is trapped in the bottom sediments of the lake.

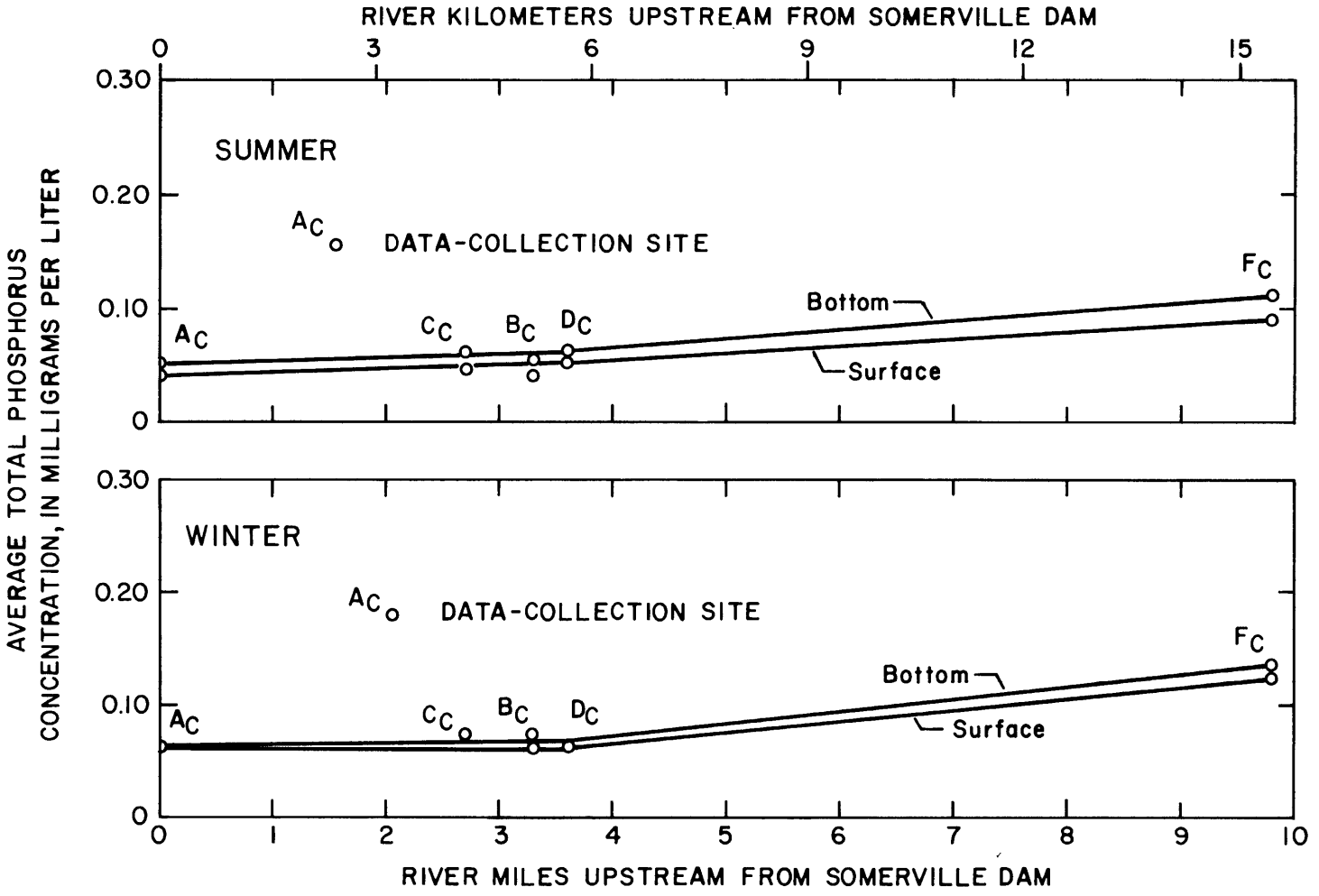

Figure 14.–Variations in average concentrations of total phosphorus during summer and winter surveys

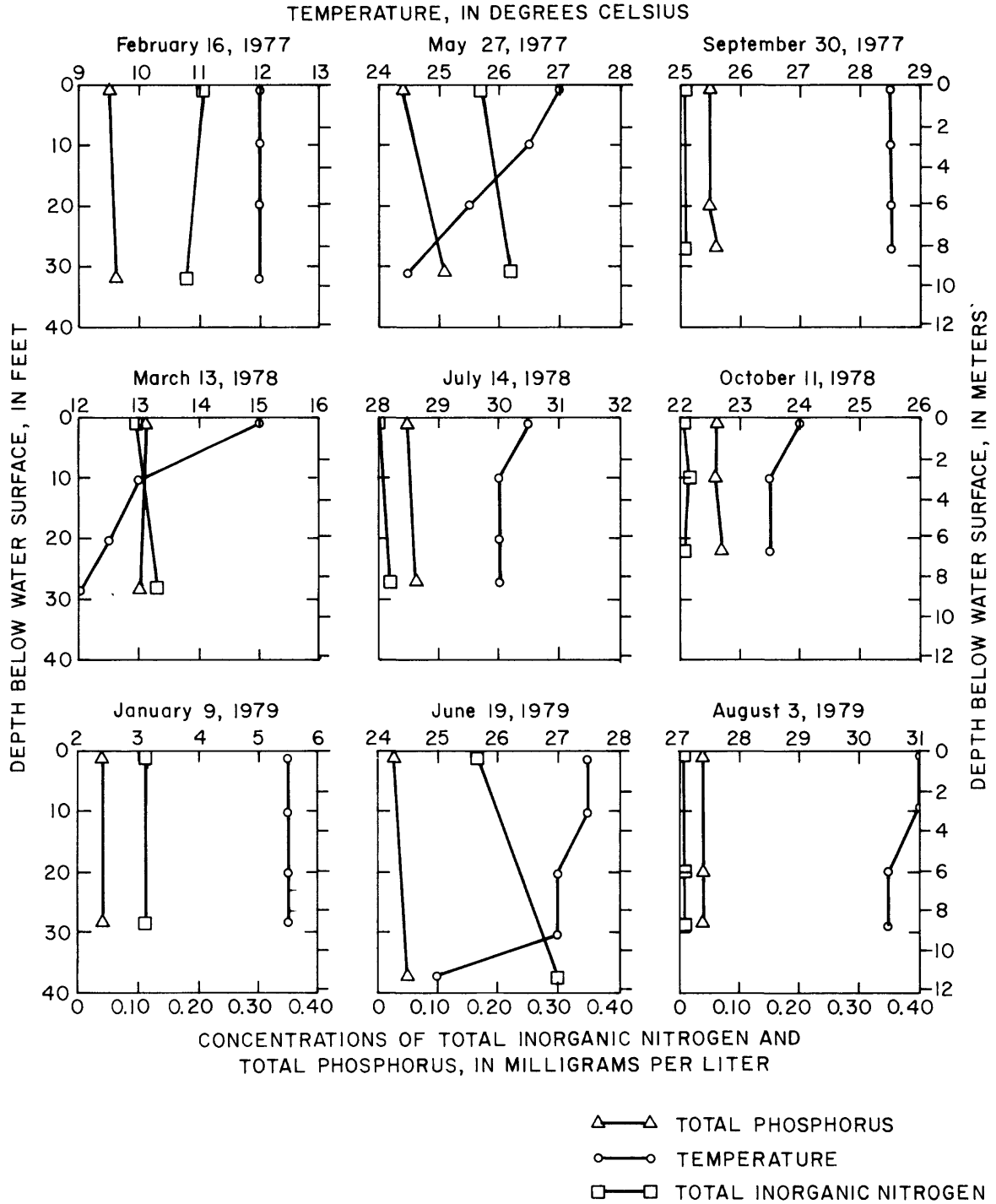

Figure 15.-Seasonal profiles of water temperatures, total inorganic nitrogen, and total phosphorus for site A_C

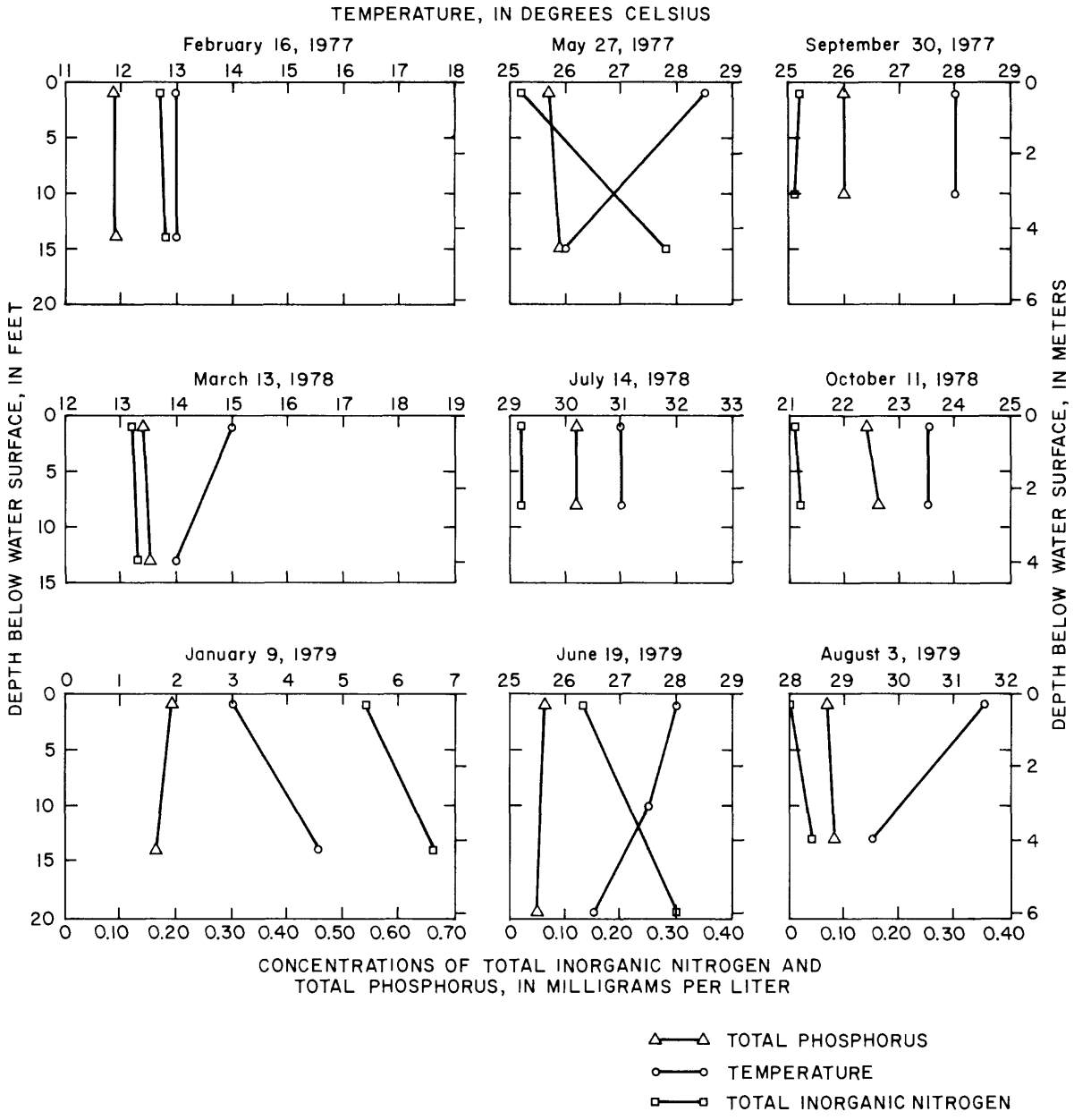

Figure 16.-Seasonal profiles of water temperatures, total inorganic nitrogen, and total phosphorus for site F_C

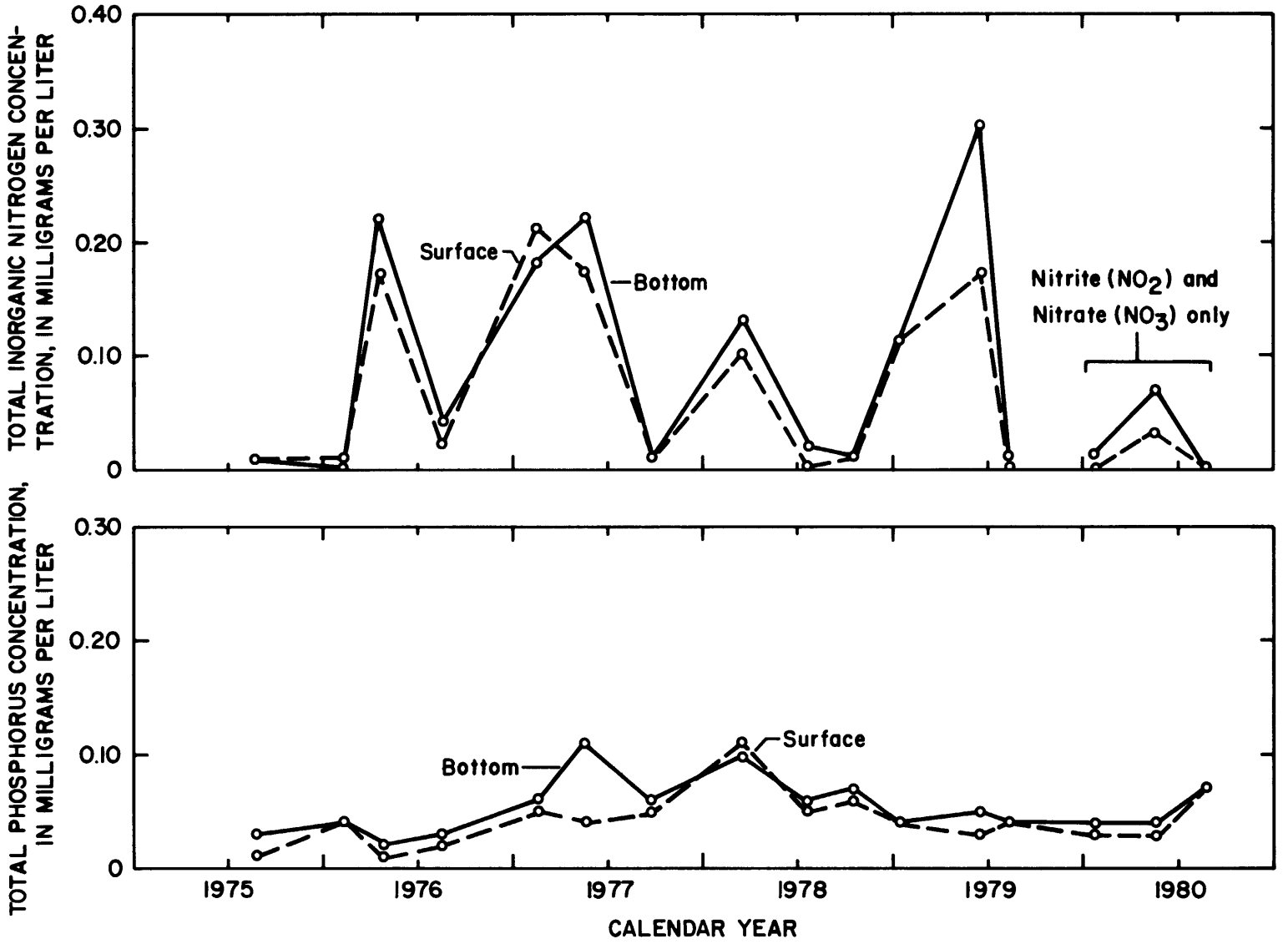

Figure 17.-Variations in concentrations of total inorganic nitrogen and total phosphorus at site A_C, August 1975-August 1980

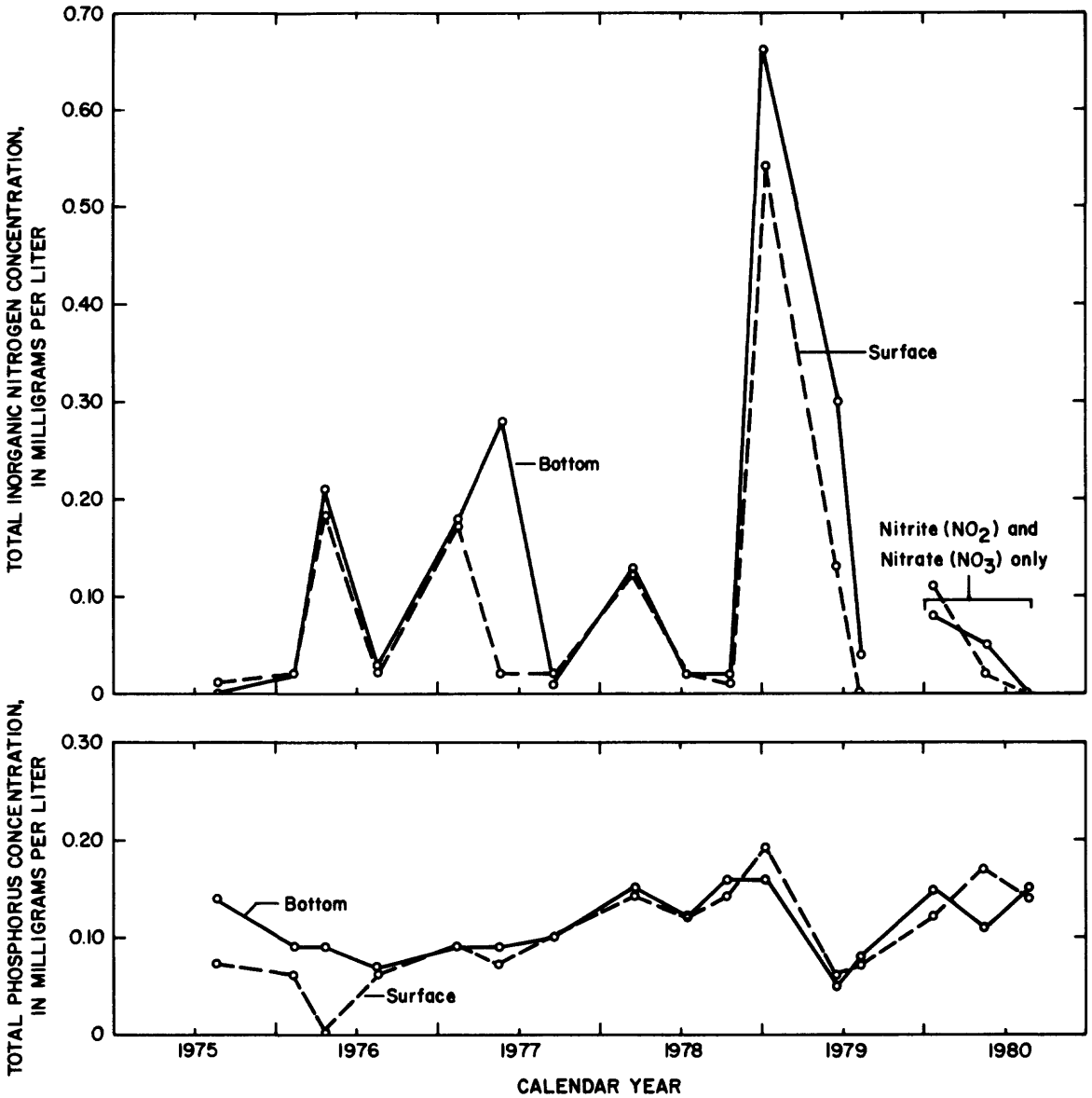

Figure 18.-Variations in concentrations of total inorganic nitrogen and total phosphorus at site FC, August 1975-August 1980

Dissolved Solids, Dissolved Chloride, Dissolved Sulfate, and Hardness

Some of the more important properties or constituents that affect the utility of a lake or reservoir as a public water supply include dissolved solids, dissolved chloride, dissolved sulfate, and hardness. Because dissolved constituents are in the ionic state, they conduct electricity. Therefore, a correlation can be made between the dissolved solids and the specific conductance of the water (Hem, 1970, p. 96-103). Over short time periods and in the absence of outside influences, the relative concentrations of the major constituents maintain a nearly constant ratio to specific conductance. Therefore specific conductance can be used to detect and document variations of selected constituents in the water of a lake. During each lake survey, the specific conductance of water at each data-collection site was determined at depth intervals of 5 to 10 feet. From these data and from results of analyses for dissolved solids, dissolved chloride, dissolved sulfate, and hardness for samples collected near the surface and bottom at selected sites (tables 2-17), linear-regression equations were developed to estimate the volume-weighted average concentration of dissolved constituents. Data in figure 19 show that volume-weighted average concentrations of the total hardness in Somerville Lake ranged from 75 to 140 mg/L and averaged 110 mg/L expressed as calcium carbonate, placing the water in the moderately hard to hard (61 to 180 mg/L) classification (Hem, 1970, p. 225). The volume-weighted average concentrations of dissolved solids ranged from 139 to 292 mg/L and averaged about 220 mg/L. Volume-weighted average concentrations of dissolved chloride ranged from 20 to 68 mg/L and averaged 43 mg/L. Volume-weighted average concentrations of dissolved sulfate ranged from 30 to 130 mg/L and averaged 63 mg/L.

The volume-weighted average concentrations of these constituents changed little throughout the period of record. The lowest concentrations were found on June 19, 1979, after a period of large inflow, when the elevation reached a record of 246.09 feet, and the lake held 270,000 acre-feet of water.

The variations in concentrations of dissolved solids differed only slightly during summer and winter surveys (figure 20). Data show that the average concentrations of dissolved solids in water at the surface differ by less than 10 mg/L from water at the bottom. There was an increase of only about 20 mg/L in the average dissolved solids concentrations from site A_C (at the dam) to site F_C (the headwater) during the summer and only about a 30-mg/L increase during the winter. Data show that significant stratification of the principle dissolved constituents within the lake does not occur, and the lake water is well mixed most of the time. The concentrations of the principal constituents are low enough that Somerville Lake is considered an excellent source of water for municipal, industrial, and agricultural use. In fact, they are lower than public drinking water standards for Texas: Chloride - 300 mg/L, sulfate - 300 mg/L, and total dissolved solids - 1,000 mg/L (Texas Department of Health Drinking Water Standards, revised November 30, 1977).

Water Transparency

Aquatic plants require light for photosynthesis. The principal factors that affect the depth of light penetration in a lake include color and turbid-

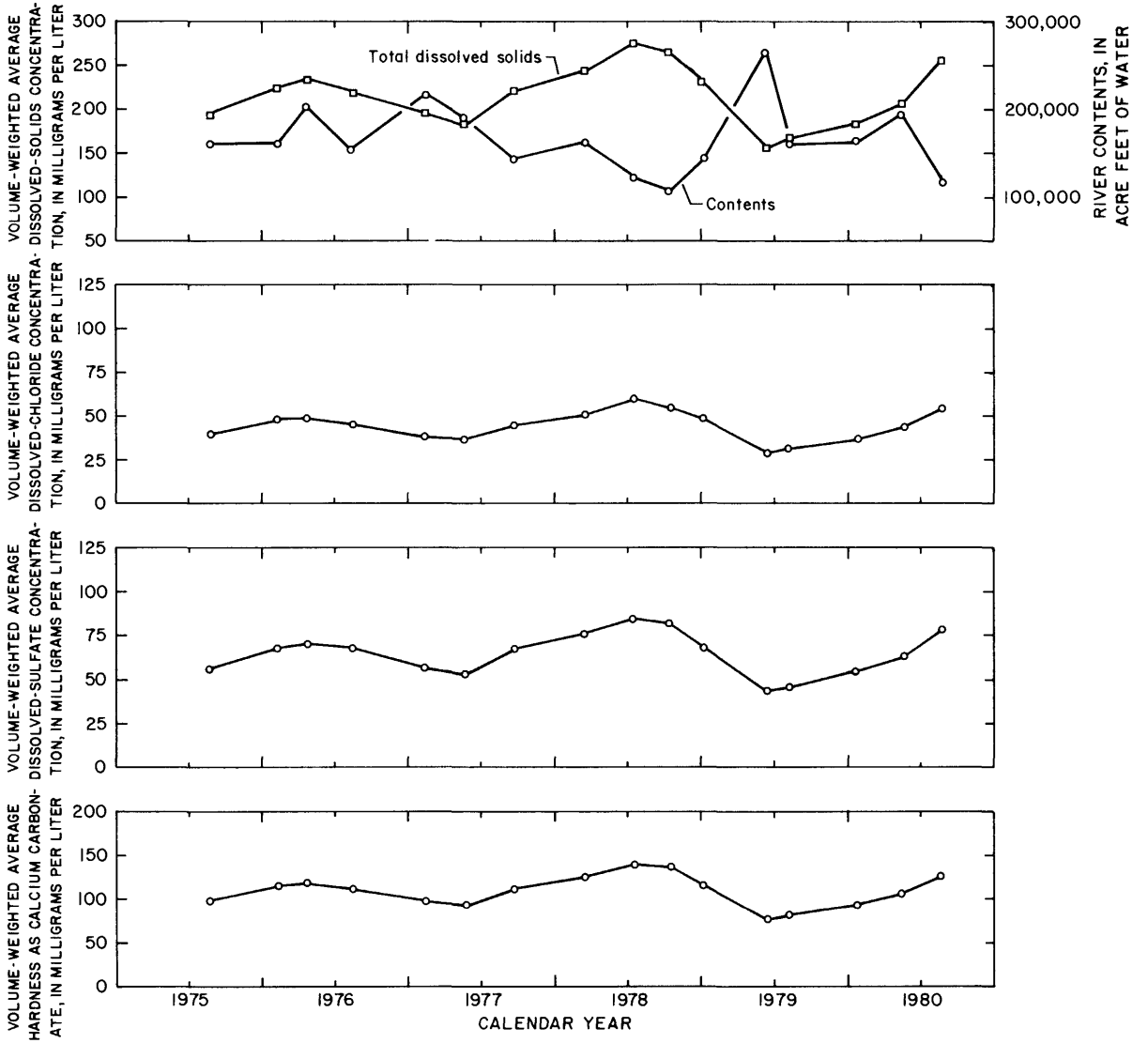

Figure 19.-Variations in volume-weighted average concentrations of dissolved solids, dissolved chloride, dissolved sulfate, and hardness and in contents for Somerville Lake, August 1975-August 1980

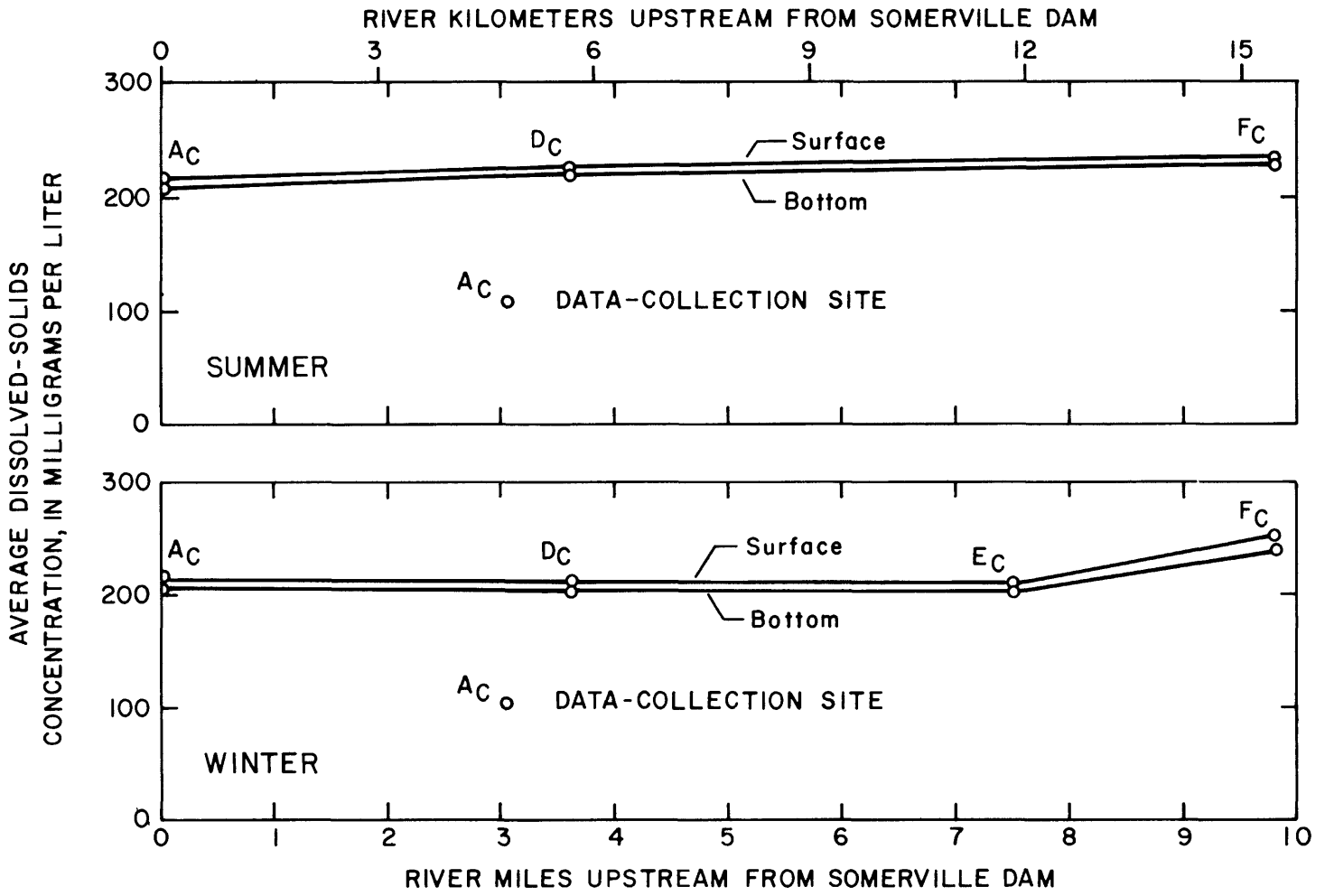

Figure 20.- Variations in average concentration of dissolved solids during summer and winter surveys

ity of the water. Turbidity is dependent upon both the concentration and size of suspended particles. The suspended materials may consist of suspended sediment from inflowing streams and living or dead microscopic plants and animals or their detritus.

Water transparency was measured in Somerville Lake by lowering a Secchi disc into the water and averaging the greatest depth at which it could be visually detected on lowering and raising it. The Secchi disc readings on the more turbid section of the headwaters, at site F_C, averaged 0.30 m, increased to 0.63 m at site D_C, and were greatest near the dam at site A_C, where the average was 0.75 m. An average reading of 0.59 m for the tributary site C_C was comparable to the central site.

The increase in transparency toward the dam indicates that some suspended material is desposited in the upstream part of the lake. Some of the material desposited may again be placed in suspension either by wave action on the shallow lake or by currents during large inflows or discharges.

Phytoplankton

Phytoplankton data were collected at sites A_C and F_C on two surveys during 1980. No interpretation can be made until much more phytoplankton data are collected.

SUMMARY

Somerville Lake is a shallow lake, with a mean depth of 14 feet. The depth of the submerged channel of Yegua Creek usually is less than 35 feet, and in most areas of the lake outside the submerged channel, the depth is less than 10 feet.

During winter the water near the surface cools, increases in density, and replaces the warmer and lighter water below the surface. Due to the rather shallow depth, this circulation pattern keeps the lake almost isothermal and well mixed during the winter. Throughout the year, wind action and density currents caused by daily heating and cooling of the surface water, and the large volume of inflow and discharge ratio to lake volume all contribute to keep Somerville Lake well mixed. Unlike deep lakes, the typical pattern of thermal stratification exists only for short periods. During the 16 lake surveys made, the classical three-layered stratification pattern of deeper lakes was not observed.

Like most lakes in the temperate zone, the concentration of dissolved oxygen varied seasonally and areally. The lake also followed the common pattern of high oxygen saturation during the winter. During the summer the dissolved oxygen concentrations continued to be unseasonably high at greater depths of the lake. Most dissolved oxygen concentrations near the bottom were in excess of 50-percent saturation.

The depth-averaged concentration of dissolved oxygen at the deepest site A_C near the dam, averaged 5.7 mg/L during the summer and about 10.6 mg/L during

the winter. The dissolved oxygen concentrations at the headwaters site F_C averaged about 5.8 mg/L during the summer and 10.0 mg/L during the winter.

The occurrence and distribution of dissolved iron and dissolved manganese in Somerville Lake are inversely related to the dissolved-oxygen concentrations of the water. With the year-round high dissolved oxygen saturation near the surface and near the bottom, dissolved iron concentrations were less than 50 µg/L and dissolved manganese concentrations were less than 40 µg/L. However during short periods of stagnation, the concentration of both constituents near the bottom increase in the upstream direction in response to decreases in dissolved oxygen. At site F_C, the concentrations of dissolved iron near the bottom ranged from 0 to 1,100 µg/L and averaged about 250 µg/L. The dissolved manganese concentration near the bottom ranged from 0 to 820 µg/L and averaged about 180 µg/L.

The average summer concentrations of total inorganic nitrogen varied little throughout the reservoir. The average surface concentration was 0.01 mg/L and the average bottom concentration was 0.02 mg/L, except for a slight increase at the central site D_C, to 0.03 mg/L at the surface and 0.04 mg/L at the bottom. During the winter the average total inorganic nitrogen concentration was 0.11 mg/L for surface samples and 0.10 mg/L for bottom samples at site A_C near the dam. The average concentrations were about the same throughout the lake except at site F_C where the average concentrations were 0.21 mg/L at the surface and 0.25 mg/L at the bottom.

There was little seasonal variation in the average concentration of total phosphorus. Surface and bottom concentrations, during both summer and winter, averaged about the same, 0.04 and 0.06 mg/L near the dam, in the central body of the lake, and in the lower tributary arms. At site F_C, the summer average total phosphorus concentration was 0.09 mg/L at the surface and 0.11 mg/L at the bottom, while the winter concentrations were 0.12 mg/L at the surface and 0.13 mg/L at the bottom.

Total inorganic nitrogen concentrations fluctuated seasonally, with the highest concentrations during the spring and the lowest concentrations during late summer or early fall. Total phosphorus concentrations usually exhibited no major changes from one season to the next.

There were little seasonal, areal, or depth variations in the concentration of dissolved solids, dissolved chloride, dissolved sulfate, or total hardness. The concentrations of these constituents increase during sustained periods of low inflows and decrease during periods of large inflow.

The volume-weighted average concentration of dissolved solids ranged from 139 to 292 mg/L and averaged about 220 mg/L. Volume-weighted average concentrations of dissolved chloride ranged from 20 to 68 mg/L and averaged 43 mg/L. Volume-weighted concentrations of dissolved sulfate ranged from 30 to 130 mg/L and averaged 63 mg/L. Total hardness of the water ranged from 75 to 140 mg/L, expressed as calcium carbonate, placing the water in the moderately hard to hard (61 to 180 mg/L) classification. The concentrations of principal dissolved constituents indicate that Somerville Lake is an excellent source of water for municipal, industrial, or agricultural use.

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Table 1.--Chemical and physical characteristics of water from Yegua Creek near Somerville (station 08110000), October 1968-September 1980

[°C = degrees Celsius; micromhos = micromhos per centimeter at 25° Celsius; mg/L = milligrams per liter]

Constituent	Number of samples	Range in concentration	Average concentration	Percentage of time values were equal to or less than those shown				
				95	75	50	25	5
Temperature, °C	103	4.0 - 32.0	20.5	30.0	27.5	21.5	15.0	7.5
Specific conductance, micromhos	105	214 - 1,920	613	1,270	756	508	364	259
pH, units	83	6.5 - 8.2	7.2	8.0	7.5	7.1	6.9	6.6
Bicarbonate (HCO_3), mg/L	105	37 - 142	66	103	76	61	54	44
Carbonate (CO_3), mg/L	105	0 - 0	0	0	0	0	0	0
Nitrogen, nitrate, total inorganic (N), mg/L	36	.00 - .70	.28	.70	.40	.20	.20	.02
Hardness ($CaCO_3$), mg/L	105	63 - 560	176	367	215	150	103	76
Hardness, noncarbonate ($CaCO_3$), mg/L	105	22 - 480	122	317	165	82	58	31
Calcium (Ca), mg/L	105	19 - 180	53	110	64	43	30	22
Magnesium (Mg), mg/L	105	3.8 - 30	11	21	13	8.8	7.2	4.3
Sodium (Na), mg/L	66	13 - 140	42	99	54	34	24	16
Potassium (K), mg/L	58	3.3 - 10	6.6	9.8	7.4	6.4	5.7	4.7
Chloride (Cl), mg/L	105	16 - 350	88	240	110	64	41	24
Sulfate (SO_4), mg/L	105	26 - 360	101	240	130	79	56	37
Fluoride (F), mg/L	97	.00 - .70	.23	.40	.30	.20	.20	.09
Silica (SiO_2), mg/L	105	2.7 - 19	11	16	12	11	8.8	6.1
Dissolved solids, mg/L	105	121 - 1,160	350	750	432	285	202	143

Table 2--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 29, 1975

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius;
MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
AUG									
29...	1120	1.0	322	7.5	30.0	1.10	5.8	76	93
29...	1122	5.0	322	7.2	29.0	--	5.8	74	--
29...	1124	10	322	7.2	29.0	--	4.8	62	--
29...	1126	15	322	7.1	28.5	--	4.7	60	--
29...	1128	20	322	7.1	28.5	--	4.4	56	--
29...	1130	28	322	7.1	28.5	--	4.2	54	92

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
AUG									
29...	45	26	6.8	22	1.0	5.3	58	46	35
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	44	26	6.6	22	1.0	5.3	59	46	36

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
29...	.2	9.0	179	.01	.000	.010	10	10
29...	--	--	--	--	--	--	--	--
29...	--	--	--	.00	.000	.030	30	0
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--
29...	.2	9.0	180	.01	.000	.030	230	110

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
29...	1145	1.0	322	7.6	29.5	5.4	70
29...	1147	5.0	322	7.3	29.0	5.3	68
29...	1149	10	322	7.2	28.5	4.7	60
29...	1151	15	322	7.1	28.5	4.4	56
29...	1153	24	322	6.9	28.5	3.6	46

Table 2--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 29, 1975--Continued

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
AUG								
29...	1200	1.0	322	8.5	31.5	8.4	114	93
29...	1202	5.0	322	8.1	30.0	7.5	99	--
29...	1204	10	322	7.4	29.5	6.0	78	--
29...	1206	15	322	7.1	29.5	4.7	61	93

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
AUG									
29...	45	26	6.7	22	1.0	5.3	58	46	36
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	45	26	6.7	22	1.0	5.4	59	46	36

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
29...	.2	9.0	180	.01	.000	.020	10	0
29...	--	--	--	--	--	--	--	--
29...	--	--	--	.00	.000	.040	10	20
29...	.2	9.2	181	.00	.000	.040	200	100

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
AUG									
29...	1240	1.0	322	8.5	30.5	.80	8.8	116	93
29...	1242	5.0	322	7.9	29.0	--	7.2	92	--
29...	1245	9.0	322	7.3	28.5	--	5.7	73	91

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
AUG									
29...	44	26	6.9	22	1.0	5.3	60	46	35
29...	--	--	--	--	--	--	--	--	--
29...	40	26	6.4	22	1.0	5.3	62	46	35

Table 2--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 29, 1975--Continued

301805096332501 SOMERVILLE LAKE SITE CC--Continued

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
29...	.2	9.3	181	.00	.000	.060	30	0
29...	--	--	--	--	--	--	--	--
29...	.2	9.6	181	.00	.000	.070	340	0

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
29...	1300	1.0	322	8.7	30.5	9.2	121
29...	1302	5.0	322	8.4	29.5	8.1	105
29...	1304	10	322	7.5	29.0	5.8	74
29...	1307	15	322	7.3	29.0	5.1	65
29...	1310	24	322	7.0	29.0	3.6	46

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
AUG									
29...	1325	1.0	365	9.0	30.5	.50	12.0	158	100
29...	1327	5.0	399	7.4	29.0	--	5.4	69	--
29...	1329	10	399	7.1	28.5	--	2.8	36	--
29...	1333	15	399	6.9	28.5	--	1.7	22	110

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
AUG									
29...	56	29	7.4	26	1.1	5.5	57	55	42
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	63	31	8.3	29	1.2	5.8	59	63	47

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
29...	.2	11	204	.01	.000	.070	10	10
29...	--	--	--	--	--	--	--	--
29...	--	--	--	.01	.000	.080	40	360
29...	.2	11	226	.00	.000	.140	790	820

Table 3--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE FEBRUARY 3, 1976

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius; MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
FEB									
03...	1430	1.0	369	7.9	12.5	.52	10.3	96	110
03...	1432	10	369	7.9	12.5	--	10.1	94	--
03...	1434	20	369	7.9	12.5	--	10.1	94	--
03...	1436	27	369	7.9	12.5	--	10.0	93	110

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB									
03...	58	31	7.2	24	1.0	5.5	60	54	41
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	61	32	7.5	25	1.0	5.6	61	53	41

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB								
03...	.2	9.9	203	.00	.010	.040	170	140
03...	--	--	--	.00	.010	.030	60	60
03...	--	--	--	--	--	--	--	--
03...	.2	9.9	204	.00	.000	.040	0	0

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
03...	1450	1.0	369	7.8	12.5	10.4	97
03...	1452	10	369	7.8	12.0	10.3	95
03...	1454	24	369	7.9	12.0	10.2	94

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
03...	1500	1.0	369	7.9	12.0	10.3	95
03...	1502	13	369	7.9	12.0	10.1	94

Table 3--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE FEBRUARY 3, 1976--Continued

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
03...	1700	1.0	369	8.0	12.5	10.4	97
03...	1702	12	369	8.1	12.5	10.0	93

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
03...	1540	1.0	369	7.7	12.0	10.2	94
03...	1542	10	369	7.7	12.0	10.1	94
03...	1544	22	369	7.8	12.0	10.0	93

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
FEB									
03...	1520	1.0	369	7.8	12.0	.61	10.3	95	110
03...	1522	10	369	7.7	12.0	--	10.3	95	--
03...	1524	20	369	7.7	12.0	--	10.2	94	--
03...	1526	24	369	7.7	12.0	--	9.8	91	110

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB									
03...	58	31	7.3	24	1.0	5.5	60	52	41
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	56	31	7.0	24	1.0	5.5	61	54	42

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB								
03...	.2	10	201	.00	.010	.030	20	0
03...	--	--	--	.00	.010	.040	0	0
03...	--	--	--	--	--	--	--	--
03...	.2	9.7	203	.01	.010	.040	0	0

Table 3--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE FEBRUARY 3, 1976--Continued

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
FEB									
03...	1600	1.0	370	7.7	12.0	.61	10.3	95	110
03...	1602	10	370	7.7	12.0	--	10.3	95	--
03...	1604	19	370	7.7	12.0	--	10.3	95	110

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB									
03...	58	31	7.3	25	1.1	5.5	60	54	42
03...	--	--	--	--	--	--	--	--	--
03...	59	31	7.4	24	1.0	5.5	60	54	41

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB								
03...	.2	10	205	.01	.020	.050	10	0
03...	--	--	--	.00	.000	.050	60	50
03...	.3	10	203	.01	.020	.050	0	20

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
FEB									
03...	1630	1.0	545	7.7	12.5	.43	10.3	96	160
03...	1632	14	536	7.6	12.5	--	10.2	95	150

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MC)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB									
03...	110	45	11	40	1.4	6.5	64	94	68
03...	98	42	11	37	1.3	6.5	64	93	66

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB								
03...	.3	10	304	.00	.020	.060	20	0
03...	.2	11	298	.00	.020	.090	30	0

Table 4--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE APRIL 29, 1976

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius; MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
APR									
29...	1525	1.0	409	7.5	21.5	.88	7.8	88	120
29...	1528	10	409	7.5	21.5	--	7.8	88	--
29...	1532	20	409	7.5	21.5	--	7.8	88	--
29...	1535	32	417	7.3	21.5	--	6.1	69	120

DATF	HARDNESS, NONCARBONATF (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
APR									
29...	68	33	8.5	29	1.2	6.0	60	65	49
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	66	32	8.5	30	1.2	6.0	60	67	49

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
APR								
29...	.4	6.9	227	.07	.100	.010	0	0
29...	--	--	--	--	--	--	--	--
29...	--	--	--	.07	.080	.020	30	10
29...	.3	7.1	230	.08	.140	.020	10	50

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
APR							
29...	1520	1.0	409	7.7	22.0	8.6	98
29...	1522	10	409	7.7	22.0	8.6	98
29...	1523	18	409	7.8	21.5	9.0	101

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
APR							
29...	1500	1.0	404	7.7	22.5	.67	8.3
29...	1505	10	404	7.7	22.5	--	8.3
29...	1507	15	404	7.7	22.0	--	8.4

Table 4--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE APRIL 29, 1976--Continued

302026096341501 SOMERVILLE LAKE SITE BC--Continued

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
APR						
29...	94	.04	.080	.010	30	0
29...	94	--	--	--	--	--
29...	95	.04	.060	.020	0	0

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
APR							
29...	1605	1.0	415	7.6	21.5	.82	8.0
29...	1610	10	415	7.6	21.5	--	8.0
29...	1612	15	415	7.6	21.5	--	8.0

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
APR						
29...	90	.08	.080	.020	20	0
29...	90	--	--	--	--	--
29...	90	.08	.080	.010	0	0

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
APR							
29...	1630	1.0	419	7.7	22.0	8.1	92
29...	1633	10	419	7.7	22.0	8.1	92
29...	1635	24	419	7.7	21.5	8.6	97

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
APR									
29...	1640	1.0	419	7.7	22.0	.73	8.0	91	120
29...	1643	10	419	7.7	22.0	--	8.0	91	--
29...	1646	20	419	7.7	22.0	--	8.0	91	--
29...	1649	27	419	7.7	22.0	--	8.0	91	120

Table 4--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE APRIL 29, 1976--Continued

301904096335601 SOMERVILLE LAKE DC--Continued

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
APR									
29...	67	32	8.7	30	1.2	6.0	60	67	50
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	67	33	8.1	29	1.2	6.0	60	69	50

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
APR								
29...	.3	7.1	231	.06	.090	.020	10	10
29...	--	--	--	--	--	--	--	--
29...	--	--	--	.06	.070	.020	20	0
29...	.2	7.1	232	.06	.080	.020	30	0

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
APR									
29...	1715	1.0	395	7.4	22.0	.52	7.2	82	110
29...	1717	10	390	7.3	22.0	--	7.2	82	--
29...	1720	21	386	7.3	22.0	--	7.0	80	100

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
APR									
29...	61	29	8.3	27	1.1	6.5	56	59	47
29...	--	--	--	--	--	--	--	--	--
29...	60	28	8.1	26	1.1	6.0	53	60	47

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
APR								
29...	.4	10	215	.10	.110	.050	80	0
29...	--	--	--	.09	.170	.050	90	10
29...	.3	10	212	.09	.110	.050	80	0

Table 4--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE APRIL 29, 1976--Continued

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
APR									
29...	1740	1.0	343	7.2	22.0	.27	6.8	77	93
29...	1745	10	346	7.2	22.0	--	6.8	77	--
29...	1747	17	346	7.2	22.0	--	7.2	82	94

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
APR									
29...	50	25	7.3	24	1.1	6.5	52	51	42
29...	--	--	--	--	--	--	--	--	--
29...	51	25	7.7	24	1.1	6.5	52	53	42

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
APR								
29...	.4	12	194	.05	.130	.000	90	10
29...	--	--	--	.05	.140	.070	130	0
29...	.3	11	195	.06	.150	.090	90	0

Table 5--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 20, 1976

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius;
MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
AUG									
20...	0900	1.0	375	7.3	28.0	.58	4.8	62	98
20...	0904	10	375	7.3	28.0	--	4.6	59	--
20...	0908	20	375	7.2	28.0	--	4.4	56	--
20...	0910	27	375	7.2	28.0	--	4.4	56	100

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
AUG									
20...	46	27	7.4	26	1.1	5.8	63	52	44
20...	--	--	--	--	--	--	--	--	--
20...	--	--	--	--	--	--	--	--	--
20...	52	29	7.3	26	1.1	5.8	62	51	44

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
20...	.2	12	205	.01	.010	.020	10	10
20...	--	--	--	.01	.010	.050	60	20
20...	--	--	--	--	--	--	--	--
20...	.3	12	206	.01	.030	.030	20	30

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
20...	0920	1.0	375	7.5	28.5	5.2	68
20...	0924	10	375	7.4	28.5	4.9	64
20...	0928	20	375	7.4	28.5	4.8	62
20...	0930	26	375	7.4	28.0	4.8	62

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG												
20...	0940	1.0	375	7.9	29.5	6.5	86	.00	.000	.050	60	40
20...	0945	11	375	7.2	29.0	2.4	32	.01	.010	.040	30	160

Table 5--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 20, 1976--Continued

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
AUG							
20...	1115	1.0	375	8.1	29.5	.43	7.2
20...	1120	10	375	7.6	29.0	--	5.4

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG						
20...	95	.01	.000	.030	50	0
20...	71	.00	.000	.040	10	5

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
20...	1017	1.0	380	8.2	29.0	7.4	97
20...	1020	10	380	7.9	29.0	6.6	87
20...	1025	21	380	7.5	29.0	5.4	71

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
20...	1010	1.0	378	7.9	29.0	6.6	87
20...	1012	10	378	7.6	28.5	5.8	75
20...	1014	21	378	7.5	28.5	4.4	57

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
AUG									
20...	1000	1.0	378	7.7	29.0	.52	6.2	82	100
20...	1002	10	378	7.5	28.5	--	5.4	70	--
20...	1004	22	378	7.4	28.5	--	4.7	61	100

Table 5--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 20, 1976--Continued

301904096335601 SOMERVILLE LAKE SITE DC--Continued

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
AUG									
20...	48	28	7.5	26	1.1	5.8	64	52	43
20...	--	--	--	--	--	--	--	--	--
20...	48	28	7.4	26	1.1	5.8	64	51	44

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
20...	.2	12	206	.01	.010	.020	30	5
20...	--	--	--	--	--	--	--	--
20...	.2	12	206	.01	.000	.030	20	90

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
AUG									
20...	1035	1.0	408	8.3	29.0	.34	7.3	96	110
20...	1040	13	418	7.6	28.5	--	5.4	70	110

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
AUG									
20...	55	30	8.0	28	1.2	5.8	64	57	49
20...	59	31	8.4	30	1.2	6.0	65	59	50

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
20...	.3	13	223	.01	.010	.060	20	5
20...	.3	13	230	.01	.020	.070	30	50

Table 6--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE FEBRUARY 16, 1977

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius; MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
FEB									
16...	1535	1.0	336	7.7	12.0	.43	12.0	115	93
16...	1537	10	335	7.7	12.0	--	12.0	115	--
16...	1540	20	335	7.7	12.0	--	12.0	115	--
16...	1545	32	336	7.6	12.0	--	12.0	115	92

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
FEB									
16...	55	26	6.7	24	1.1	5.8	46	54	38
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	56	26	6.6	23	1.0	5.8	44	53	38

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB								
16...	.1	10	187	.13	.080	.050	40	0
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	.1	10	184	.13	.050	.060	100	60

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
16...	1355	1.0	335	7.6	12.0	12.0	115
16...	1357	10	335	7.6	12.0	11.9	114
16...	1359	20	335	7.6	12.0	11.6	112
16...	1402	29	335	7.5	12.0	11.6	112

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
FEB							
16...	1610	1.0	295	7.4	11.0	.40	11.2
16...	1615	15	295	7.4	11.0	--	11.2

Table 6--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE FEBRUARY 16, 1977--Continued

302026096341501 SOMERVILLE LAKE SITE BC--Continued

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB						
16...	105	.14	.100	.040	30	0
16...	105	.14	.110	.040	30	10

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
FEB							
16...	1640	1.0	350	7.6	12.0	.43	11.4
16...	1644	13	350	7.6	12.0	--	11.2

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB						
16...	110	.13	.080	.050	40	10
16...	108	.13	.070	.050	40	0

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
16...	1650	1.0	363	7.4	11.5	11.0	104
16...	1652	10	363	7.4	11.5	11.0	104
16...	1655	20	363	7.3	11.5	11.0	104
16...	1658	28	320	7.3	10.5	10.9	101

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB								
16...	1625	1.0	363	7.3	12.0	.49	10.8	104
16...	1627	10	345	7.3	11.0	--	10.9	102
16...	1630	20	320	7.5	10.5	--	11.1	103
16...	1633	28	320	7.5	10.5	--	11.0	102

Table 6--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE FEBRUARY 16, 1977--Continued

301904096335601 SOMERVILLE LAKE SITE DC--Continued

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)
FEB									
16...	100	64	28	7.4	26	1.1	5.6	44	61
16...	--	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--	--
16...	86	49	24	6.4	23	1.1	6.2	46	50

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB								
16...	42	10	202	.11	.100	.050	40	10
16...	--	--	--	--	--	--	--	--
16...	--	--	--	--	--	--	--	--
16...	36	10	178	.13	.120	.040	40	0

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB							
16...	1705	1.0	354	7.1	12.0	10.0	96
16...	1707	10	354	7.1	12.0	10.0	96
16...	1710	23	342	7.2	10.5	10.4	96

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
FEB								
16...	1720	1.0	313	6.8	13.0	.15	8.5	83
16...	1725	14	313	6.8	13.0	--	8.5	83

Table 6--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE FEBRUARY 16, 1977--Continued

301754096380801 SOMERVILLE LAKE SITE FC--Continued

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)
FEB									
16...	86	57	23	7.0	23	1.1	5.4	36	54
16...	86	57	23	7.0	24	1.1	5.4	36	55

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
FEB								
16...	36	9.0	175	.09	.080	.090	80	10
16...	36	9.2	175	.09	.090	.090	70	10

Table 7--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE MAY 27, 1977

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius; MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
MAY									
27...	1025	1.0	312	8.5	27.0	.70	7.8	99	89
27...	1028	10	312	8.2	26.5	--	7.6	96	--
27...	1030	20	312	7.6	25.5	--	6.4	80	--
27...	1035	31	312	7.3	24.5	--	4.6	56	87

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
MAY									
27...	54	26	5.9	21	1.0	4.9	43	53	32
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	51	25	5.9	21	1.0	4.9	43	51	36

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAY								
27...	.1	3.3	168	.16	.010	.040	110	20
27...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
27...	.1	4.0	169	.13	.090	.110	170	200

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
27...	1012	1.0	312	8.5	27.0	7.7	97
27...	1014	10	312	8.0	26.0	7.5	94
27...	1016	20	312	7.6	25.0	6.4	79
27...	1018	27	312	7.2	24.5	5.1	62

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
MAY							
27...	1055	1.0	308	8.6	28.5	.64	7.6
27...	1057	10	308	7.3	26.0	--	5.6
27...	1059	17	308	7.1	25.0	--	4.8

Table 7--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE MAY 27, 1977--Continued

302026096341501 SOMERVILLE LAKE SITE BC--Continued

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAY						
27...	99	.06	.010	.040	70	20
27...	70	--	--	--	--	--
27...	59	.15	.100	.050	70	170

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
MAY							
27...	1350	1.0	302	8.5	27.5	.40	9.4
27...	1355	12	302	7.5	25.5	--	3.5

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAY						
27...	121	.07	.010	.040	30	10
27...	44	.14	.140	.070	20	170

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
27...	1200	1.0	309	8.3	27.5	7.6	97
27...	1204	10	309	8.1	26.5	7.2	91
27...	1208	20	309	7.1	25.0	4.8	59
27...	1210	25	309	7.0	24.5	2.0	24

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY								
27...	1125	1.0	309	8.3	28.0	.64	7.2	92
27...	1128	10	309	7.4	26.5	--	6.2	78
27...	1132	20	309	7.3	25.0	--	5.5	68
27...	1134	25	309	7.1	25.0	--	3.7	46
27...	1136	30	309	7.0	24.5	--	.8	10

Table 7--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE MAY 27, 1977--Continued

301904096335601 SOMERVILLE LAKE DC--Continued

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)
MAY									
27...	89	53	26	5.9	22	1.0	4.9	44	53
27...	--	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--	--
27...	87	51	25	5.9	21	1.0	4.9	44	52
27...	--	--	--	--	--	--	--	--	--

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAY								
27...	33	3.7	170	.08	.010	.040	50	10
27...	--	--	--	--	--	--	--	--
27...	--	--	--	--	--	--	--	--
27...	33	4.4	168	.18	.110	.100	130	200
27...	--	--	--	--	--	--	--	--

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
27...	1220	1.0	309	8.8	28.0	7.8	100
27...	1223	10	309	7.5	25.5	5.2	65
27...	1226	23	309	7.2	25.0	3.1	38

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
MAY												
27...	1240	1.0	399	8.1	28.5	6.8	88	120	67	33	8.0	27
27...	1245	15	375	7.2	26.0	1.5	19	110	60	31	7.5	26

Table 7--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE MAY 27, 1977--Continued

301754096380801 SOMERVILLE LAKE SITE FC--Continued

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAY												
27...	1.1	5.3	59	66	43	6.2	218	.01	.010	.070	30	30
27...	1.1	5.3	59	62	41	7.1	209	.03	.250	.090	70	430

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
SEP								
30...	1250	1.0	398	8.3	28.0	.43	7.7	99
30...	1255	10	398	8.2	28.0	--	7.0	90

Table 8--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE SEPTEMBER 30, 1977

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius;
MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
SEP									
30...	1045	1.0	377	8.2	28.5	.79	7.5	97	110
30...	1050	10	377	8.1	28.5	--	7.3	95	--
30...	1055	20	377	8.1	28.5	--	7.2	94	--
30...	1059	27	377	7.9	28.5	--	6.6	86	110

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)
SEP									
30...	59	30	7.6	26	1.1	5.9	57	63	43
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	59	30	7.5	27	1.1	4.0	57	58	44

DATE	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP								
30...	.2	11	215	.00	.010	.050	20	0
30...	--	--	--	--	--	--	--	--
30...	--	--	--	.00	.010	.050	20	40
30...	.3	8.0	207	.00	.010	.060	20	40

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
SEP							
30...	1105	1.0	377	8.2	28.5	7.5	97
30...	1110	10	377	8.2	28.5	7.4	96
30...	1115	20	377	8.1	28.5	7.3	95

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
SEP							
30...	1120	1.0	377	8.3	28.5	.73	7.4
30...	1125	13	377	8.2	28.5	--	7.2

Table 8--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE SEPTEMBER 30, 1977--Continued

302026096341501 SOMERVILLE LAKE SITE BC--Continued

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP						
30...	96	.00	.000	.050	20	20
30...	94	.00	.010	.080	0	20

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
SEP							
30...	1315	1.0	377	8.2	28.0	.58	7.5
30...	1320	12	377	7.9	28.0	--	6.9

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP						
30...	96	.01	.010	.050	10	0
30...	88	.00	.010	.080	10	0

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
SEP							
30...	1205	1.0	382	8.0	28.0	7.2	92
30...	1210	10	382	8.0	28.0	7.0	90
30...	1215	20	382	7.7	28.0	6.1	78

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)
SEP												
30...	1150	1.0	382	8.3	28.0	7.7	99	110	59	30	7.8	27
30...	1153	10	382	8.1	28.0	7.4	95	--	--	--	--	--
30...	1157	20	382	8.1	28.0	7.2	92	--	--	--	--	--
30...	1159	25	382	8.1	28.5	7.0	91	110	61	31	7.6	25

Table 8--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE SEPTEMBER 30, 1977--Continued

301904096335601 SOMERVILLE LAKE SITE DC--Continued

DATE	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP												
30...	1.1	5.7	58	65	45	11	220	.03	.040	.070	20	0
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--	--	--	--
30...	1.0	5.9	58	54	45	11	208	.01	.010	.060	10	0

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
SEP							
30...	1230	1.0	382	7.9	28.0	7.2	92
30...	1235	10	382	7.8	28.0	6.9	88
30...	1240	21	382	7.6	28.0	6.3	81

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
SEP								
30...	1250	1.0	398	8.3	28.0	.43	7.7	99
30...	1255	10	398	8.2	28.0	--	7.0	90

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	SULFATE DISSOLVED (MG/L AS SO4)
SEP									
30...	110	64	32	8.2	28	1.1	5.9	60	67
30...	110	61	31	8.0	29	1.2	5.9	60	61

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
SEP								
30...	46	10	227	.01	.010	.100	30	0
30...	45	11	221	.01	.000	.100	20	10

Table 9--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE MARCH 13, 1978

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius;
MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
MAR									
13...	1330	1.0	401	8.2	15.0	.80	9.9	101	120
13...	1333	10.0	401	7.7	13.0	--	9.0	88	--
13...	1336	20.0	401	7.6	12.5	--	8.6	83	--
13...	1339	28.0	401	7.5	12.0	--	7.5	72	120

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
MAR									
13...	74	36	8.0	28	1.1	5.5	60	0	68
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	74	36	8.1	28	1.1	5.5	60	0	69

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR									
13...	48	.2	7.8	231	.07	.030	.110	10	10
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	50	.2	7.9	234	.08	.050	.100	10	0

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
13...	1350	1.0	401	8.2	15.5	9.9	102
13...	1353	10.0	401	7.9	13.0	9.4	92
13...	1356	20.0	401	7.7	12.5	8.6	83
13...	1358	27.0	401	7.5	12.5	8.4	82

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR												
13...	1405	1.0	398	8.3	14.5	9.7	98	.02	.000	.100	10	10
13...	1408	13.0	398	7.9	13.5	8.9	88	.06	.010	.100	10	0

Table 9--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE MARCH 13, 1978--Continued

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
MAR							
13...	1550	1.0	401	8.3	13.5	.70	9.6
13...	1555	14.0	401	7.7	12.0	--	7.9

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR						
13...	95	.03	.000	.110	20	10
13...	76	.07	.050	.110	10	20

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
13...	1450	1.0	401	8.5	14.5	10.1	102
13...	1452	10.0	401	7.9	12.5	9.1	88
13...	1455	23.0	401	7.7	12.0	7.9	76

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
MAR									
13...	1430	1.0	401	8.3	14.5	.80	10.1	102	120
13...	1433	10.0	401	8.0	12.5	--	9.4	91	--
13...	1436	20.0	401	7.8	12.5	--	9.1	88	--
13...	1439	27.0	401	7.7	12.5	--	8.0	78	130

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
MAR									
13...	71	35	8.0	28	1.1	5.9	60	0	69
13...	--	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--	--
13...	77	37	8.3	28	1.1	5.7	60	0	69

Table 9--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE MARCH 13, 1978--Continued

301904096335601 SOMERVILLE LAKE SITE DC--Continued

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR								
13...	48	7.8	231	.04	.010	.110	10	10
13...	--	--	--	--	--	--	--	--
13...	--	--	--	--	--	--	--	--
13...	48	7.9	234	.05	.060	.120	20	20

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAR							
13...	1505	1.0	411	8.4	14.0	10.1	101
13...	1507	10.0	411	7.9	12.5	9.0	87
13...	1509	20.0	411	7.8	12.5	8.6	83
13...	1510	25.0	411	7.8	12.5	8.5	83

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
MAR									
13...	1525	1.0	568	8.1	15.0	.40	9.4	96	180
13...	1529	13.0	575	7.5	14.0	--	7.9	79	180

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
MAR									
13...	140	49	13	39	1.3	5.8	40	0	130
13...	150	53	12	39	1.3	5.9	40	0	130

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAR								
13...	64	9.1	330	.07	.050	.140	20	20
13...	66	9.2	335	.05	.080	.150	20	130

Table 10--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JULY 14, 1978

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius; MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
JUL									
14...	0922	1.0	465	8.2	30.5	.61	6.7	91	140
14...	0924	10.0	465	7.5	30.0	--	5.1	69	--
14...	0927	20.0	465	7.1	30.0	--	3.5	47	--
14...	0930	27.0	467	7.1	30.0	--	3.3	45	140

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
JUL									
14...	85	39	9.4	35	1.3	6.2	62	0	82
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	84	39	9.4	33	1.2	6.2	63	0	81

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL									
14...	58	.1	9.4	270	.00	.000	.050	20	10
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	58	.1	9.8	268	.01	.010	.060	20	140

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JUL							
14...	0945	1.0	465	8.5	31.0	7.8	107
14...	0947	10.0	465	7.1	30.0	3.6	49
14...	0950	20.0	465	7.0	30.0	2.6	35

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
JUL							
14...	1000	1.0	475	8.4	32.0	.55	6.4
14...	1003	10.0	475	8.4	31.5	--	6.3

Table 10--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JULY 14, 1978--Continued

302026096341501 SOMERVILLE LAKE SITE BC--Continued

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL						
14...	89	.01	.000	.040	20	0
14...	86	.01	.000	.040	30	0

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)
JUL							
14...	1140	1.0	467	7.8	31.5	.46	6.1
14...	1142	12.0	467	6.9	29.5	--	1.9

DATE	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUL						
14...	84	.01	.000	.050	10	30
14...	25	.01	.010	.070	10	320

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
JUL							
14...	1035	1.0	465	8.4	31.0	6.8	93
14...	1037	10.0	465	7.8	30.5	5.2	70
14...	1040	20.0	465	7.1	30.0	2.9	39

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MC/L AS CACO3)
JUL									
14...	1015	1.0	465	8.5	31.5	.67	7.0	96	140
14...	1017	10.0	465	7.8	31.0	--	4.9	67	--
14...	1018	20.0	465	7.0	30.0	--	2.1	28	--
14...	1020	25.0	470	6.9	30.0	--	.3	4	140

Table 10--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JULY 14, 1978--Continued

301904096335601 SOMERVILLE LAKE SITE DC--Continued

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
JUL									
14...	86	39	9.5	33	1.2	6.2	54	4	83
14...	--	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--	--
14...	83	40	9.4	34	1.3	6.2	68	0	80

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL								
14...	56	9.6	267	.00	.000	.050	30	10
14...	--	--	--	--	--	--	--	--
14...	--	--	--	--	--	--	--	--
14...	59	10	273	.01	.080	.090	110	660

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JUL							
14...	1050	1.0	465	7.9	30.5	6.0	81
14...	1052	10.0	465	7.8	30.0	5.7	77
14...	1055	21.0	465	7.3	30.0	4.2	57

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
JUL									
14...	1111	1.0	478	7.3	31.0	.24	4.8	66	140
14...	1114	8.0	480	7.1	31.0	--	2.8	38	140

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
JUL									
14...	87	40	9.7	34	1.3	6.8	64	0	84
14...	91	41	9.9	34	1.2	6.5	64	0	84

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUL								
14...	61	10	278	.01	.010	.120	840	410
14...	57	11	277	.01	.010	.120	1100	520

Table 11--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE OCTOBER 11, 1978

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius; MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
OCT									
11...	1115	1.0	479	7.8	24.0	.70	7.6	93	140
11...	1120	10.0	479	7.7	23.5	--	7.3	89	--
11...	1125	23.0	479	7.4	23.5	--	6.5	78	140

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
OCT									
11...	82	40	8.8	34	1.3	6.6	66	0	90
11...	--	--	--	--	--	--	--	--	--
11...	81	40	8.6	34	1.3	6.6	66	0	87

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
OCT									
11...	57	.2	11	280	.00	.010	.060	10	0
11...	--	--	--	--	.01	.010	.060	<10	1
11...	57	--	11	277	.00	.010	.070	20	40

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
OCT								
11...	1126	1.0	479	7.7	24.0	.40	7.2	89
11...	1128	10.0	479	7.7	23.5	--	7.2	87
11...	1130	23.0	479	7.7	23.5	--	7.2	87

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
OCT							
11...	1304	1.0	479	8.4	24.0	.40	8.1
11...	1307	9.0	479	8.3	24.0	--	7.8

Table 11--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE OCTOBER 11, 1978--Continued

302026096341501 SOMERVILLE LAKE SITE BC--Continued

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
OCT						
11...	100	.00	.000	.070	<10	<1
11...	96	.00	.010	.070	<10	<1

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
OCT							
11...	1232	1.0	479	7.8	23.5	.60	7.2
11...	1235	10.0	479	7.7	23.5	--	7.0

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
OCT						
11...	88	.01	.010	.070	<10	3
11...	84	.00	.010	.070	<10	1

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
OCT							
11...	1238	1.0	479	8.0	23.5	7.6	93
11...	1240	10.0	479	7.9	23.5	7.4	89
11...	1242	18.0	479	7.6	23.5	6.5	78

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
OCT									
11...	1248	1.0	479	8.0	24.0	.60	7.5	93	140
11...	1251	10.0	479	7.9	24.0	--	7.3	89	--
11...	1254	20.0	479	7.6	23.5	--	6.6	81	140

Table 11--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE OCTOBER 11, 1978--Continued

301904096335601 SOMERVILLE LAKE SITE DC--Continued

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
OCT									
11...	83	40	8.6	34	1.3	6.5	64	0	89
11...	--	--	--	--	--	--	--	--	--
11...	82	40	8.7	34	1.3	6.5	65	0	85

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
OCT								
11...	56	11	277	.01	.010	.070	20	0
11...	--	--	--	--	--	--	--	--
11...	56	11	273	.00	.010	.070	10	0

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
OCT							
11...	1212	1.0	479	7.8	24.0	7.2	88
11...	1214	10.0	479	7.7	23.5	6.9	83
11...	1216	17.0	479	7.6	23.5	6.5	79

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
OCT								
11...	1153	1.0	474	8.1	23.5	7.6	92	140
11...	1202	8.0	474	7.8	23.5	6.6	80	140

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
OCT									
11...	84	41	8.8	33	1.2	6.8	67	0	89
11...	80	40	8.6	33	1.2	6.9	67	0	89

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
OCT								
11...	54	10	276	.00	.010	.140	40	0
11...	56	10	277	.00	.020	.160	20	0

Table 12--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JANUARY 9, 1979

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius;
MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
JAN									
09...	1205	1.0	445	7.6	5.5	.70	12.2	99	130
09...	1210	10.0	445	7.6	5.5	--	12.2	99	--
09...	1215	20.0	445	7.6	5.5	--	12.2	99	--
09...	1225	28.0	445	7.6	5.5	--	12.1	98	120

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
JAN									
09...	77	37	8.5	31	1.2	6.3	61	0	78
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	74	36	8.2	31	1.2	6.2	61	0	71

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN									
09...	53	.2	8.6	253	.05	.060	.040	10	3
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	51	--	8.6	242	.05	.060	.040	0	6

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
09...	1227	1.0	445	7.6	5.5	12.0	98
09...	1229	10.0	445	7.6	5.5	11.9	97
09...	1231	20.0	445	7.6	5.5	11.8	96
09...	1233	29.0	445	7.6	5.5	11.8	96

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
JAN							
09...	1246	1.0	424	7.6	5.0	.60	12.4
09...	1255	13.0	424	7.6	5.0	--	12.6

Table 12--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JANUARY 9, 1979--Continued

302026096341501 SOMERVILLE LAKE SITE BC--Continued

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN						
09...	99	.05	.080	.050	10	20
09...	101	.05	.100	.060	10	20

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
JAN							
09...	1342	1.0	445	7.6	5.5	.70	12.2
09...	1350	10.0	445	7.6	5.0	--	12.0

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN						
09...	99	.05	.100	.040	0	20
09...	96	.04	.040	.050	0	20

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
09...	1325	1.0	415	7.5	5.0	12.2	98
09...	1327	10.0	415	7.5	5.0	12.2	98
09...	1329	23.0	415	7.5	5.0	12.2	98

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
JAN									
09...	1303	1.0	415	7.5	5.0	.50	12.2	98	110
09...	1308	10.0	415	7.5	5.0	--	12.1	97	--
09...	1311	20.0	415	7.5	5.0	--	12.1	97	--
09...	1317	28.0	415	7.5	5.0	--	11.9	95	110

Table 12--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JANUARY 9, 1979--Continued

301904096335601 SOMERVILLE LAKE SITE DC--Continued

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
JAN									
09...	65	32	7.5	28	1.2	6.0	56	0	68
09...	--	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--	--
09...	65	32	7.5	28	1.2	5.9	56	0	69

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JAN								
09...	46	8.2	223	.08	.060	.060	10	10
09...	--	--	--	--	--	--	--	--
09...	--	--	--	--	--	--	--	--
09...	49	8.3	227	.08	.100	.050	10	7

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
09...	1401	1.0	395	7.5	5.0	12.1	97
09...	1403	10.0	395	7.5	5.0	11.9	95
09...	1405	22.0	395	7.5	5.0	11.5	92

Table 13--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JUNE 19, 1979

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius;
MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
JUN										
19...	1225	1.0	299	7.5	27.5	.60	7.4	92	81	44
19...	1227	10.0	299	7.4	27.5	--	7.3	91	--	--
19...	1229	20.0	299	7.2	27.0	--	6.9	87	--	--
19...	1231	30.0	310	7.2	27.0	--	6.5	82	--	--
19...	1233	37.0	331	6.4	25.0	--	.4	5	96	53

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
JUN									
19...	23	5.8	21	26	1.0	5.1	46	0	50
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	27	6.9	25	30	1.1	5.2	52	0	55

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUN									
19...	30	.2	6.9	165	.16	.010	.030	100	5
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	32	--	9.6	187	.23	.070	.050	110	440

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JUN							
19...	1310	1.0	299	7.4	27.5	7.2	91
19...	1312	10.0	299	7.4	27.5	7.1	90
19...	1314	20.0	299	7.3	27.0	7.1	89
19...	1316	31.0	299	7.4	27.0	7.1	89

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
JUN							
19...	1335	1.0	299	7.7	28.5	.60	7.6
19...	1337	10.0	299	7.7	28.5	--	7.5
19...	1339	19.0	299	7.6	28.5	--	7.4

Table 13--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JUNE 19, 1979--Continued

302026096341501 SOMERVILLE LAKE SITE BC--Continued

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUN						
19...	98	.06	.030	.030	60	10
19...	97	--	--	--	--	--
19...	95	.08	.040	.030	70	0

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEC C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)
JUN							
19...	1540	1.0	308	7.1	27.0	.60	6.6
19...	1542	10.0	308	7.1	27.0	--	6.5
19...	1544	20.0	308	6.8	26.5	--	4.4

DATE	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUN						
19...	84	.21	.020	.020	80	20
19...	82	--	--	--	--	--
19...	55	.21	.040	.030	150	80

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JUN							
19...	1415	1.0	258	7.3	27.5	7.0	89
19...	1417	10.0	268	7.2	27.5	6.9	87
19...	1419	20.0	268	7.1	27.0	6.3	79
19...	1421	32.0	308	6.6	26.0	2.1	26

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
JUN									
19...	1350	1.0	258	7.5	28.0	.50	7.5	96	74
19...	1352	10.0	268	7.3	27.5	--	6.9	87	--
19...	1354	20.0	268	7.3	27.5	--	6.9	87	--
19...	1356	34.0	314	6.6	26.0	--	1.4	17	88

Table 13--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JUNE 19, 1979--Continued

301904096335601 SOMERVILLE LAKE SITE DC--Continued

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)
JUN									
19...	39	21	5.2	18	23	.9	5.2	42	0
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	47	25	6.3	22	27	1.0	5.2	51	0

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
JUN									
19...	43	26	7.1	146	.10	.010	.030	160	10
19...	--	--	--	--	--	--	--	--	--
19...	--	--	--	--	--	--	--	--	--
19...	50	32	8.6	175	.17	.180	.020	80	480

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JUN							
19...	1435	1.0	266	7.0	27.0	6.3	79
19...	1437	10.0	266	7.0	27.0	6.2	78
19...	1439	20.0	278	6.9	27.0	5.9	74
19...	1441	30.0	290	6.8	26.5	5.2	65

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
JUN									
19...	1505	1.0	205	6.8	28.0	.30	5.6	71	59
19...	1507	10.0	205	6.8	27.5	--	5.3	67	--
19...	1509	20.0	238	6.6	26.5	--	3.4	42	67

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)
JUN									
19...	22	17	3.9	12	16	.7	4.4	44	0
19...	--	--	--	--	--	--	--	--	--
19...	31	19	4.8	16	21	.9	4.6	44	0

Table 13--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JUNE 19, 1979--Continued

301754096380801 SOMERVILLE LAKE SITE FC--Continued

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JUN									
19...	30	20	8.8	118	.11	.020	.060	320	130
19...	--	--	--	--	--	--	--	--	--
19...	37	23	8.6	135	.23	.070	.050	170	220

Table 14--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 3, 1979

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius;
MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
AUG										
03...	1310	1.0	279	8.4	31.0	1.10	8.7	116	85	42
03...	1314	10.0	279	8.4	31.0	--	8.6	115	--	--
03...	1318	20.0	279	8.2	30.5	--	8.1	107	--	--
03...	1322	29.0	279	7.7	30.5	--	6.4	84	85	42

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
AUG									
03...	25	5.5	18	23	.9	5.2	52	0	43
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	25	5.4	19	24	.9	5.2	52	0	44

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG									
03...	29	.2	7.7	159	.00	.000	.040	0	10
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	.00	.010	.040	0	10
03...	29	--	8.2	162	.00	.010	.040	0	180

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
03...	1340	1.0	279	8.5	31.5	8.6	116
03...	1344	14.0	279	8.4	31.0	8.5	113

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG												
03...	1535	1.0	279	8.1	31.0	7.9	105	.00	.010	.040	0	10
03...	1539	14.0	279	7.5	30.0	6.0	79	.04	.010	.050	10	10

Table 14--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 3, 1979--Continued

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG												
03...	1555	1.0	279	7.9	30.5	7.7	101	.00	.010	.040	0	0
03...	1559	11.0	279	7.3	29.5	5.9	78	.00	.010	.040	0	0

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
03...	1430	1.0	283	8.3	31.0	8.2	109
03...	1434	10.0	283	8.0	30.0	7.6	100
03...	1438	20.0	283	7.0	29.5	4.5	59
03...	1442	24.0	283	6.7	29.0	.6	8

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
AUG									
03...	1410	1.0	283	8.5	31.0	8.8	117	85	41
03...	1414	10.0	283	7.9	30.0	7.1	93	--	--
03...	1418	20.0	283	7.2	29.5	5.6	74	--	--
03...	1422	28.0	283	6.9	29.5	2.8	37	78	34

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
AUG									
03...	25	5.6	20	20	.9	5.3	54	0	44
03...	--	--	--	--	--	--	--	--	--
03...	--	--	--	--	--	--	--	--	--
03...	22	5.7	18	23	.9	5.2	54	0	43

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
03...	30	8.1	165	.02	.000	.050	0	10
03...	--	--	--	--	--	--	--	--
03...	--	--	--	.00	.010	.040	0	40
03...	29	8.5	158	.00	.030	.050	0	200

Table 14--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 3, 1979--Continued

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
03...	1520	1.0	284	8.2	30.5	8.7	115
03...	1524	10.0	284	7.4	29.5	6.5	85
03...	1528	24.0	284	6.9	29.5	3.9	51

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
AUG									
03...	1500	1.0	322	8.1	31.5	8.7	118	99	52
03...	1504	13.0	307	6.9	29.5	3.2	42	92	46

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
AUG									
03...	29	6.4	22	28	1.0	5.5	57	0	50
03...	27	6.0	21	26	1.0	5.3	56	0	47

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	NITROGEN, AMMONIA TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
03...	35	10	186	.00	.000	.070	10	20
03...	32	9.2	175	.01	.030	.080	0	180

Table 15--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JANUARY 30, 1980

FT = feet, MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius;
MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)
JAN										
30...	1320	1.0	318	7.6	11.0	1.00	10.0	91	90	44
30...	1321	1.7	--	--	--	--	--	--	--	--
30...	1322	10.0	318	7.6	11.0	--	10.0	91	--	--
30...	1324	20.0	318	7.6	11.0	--	9.9	90	--	--
30...	1326	31.0	318	7.5	11.0	--	9.8	89	89	42

DATE	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
JAN									
30...	26	6.2	23	28	1.1	5.4	57	0	52
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	26	5.9	22	27	1.0	5.4	57	0	53

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
JAN									
30...	33	.1	9.6	183	.00	.030	<10	<1	--
30...	--	--	--	--	--	--	--	--	380000
30...	--	--	--	--	.01	.040	20	10	--
30...	--	--	--	--	--	--	--	--	--
30...	33	--	9.5	183	.01	.040	<10	5	--

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
30...	1340	1.0	318	7.6	11.0	9.8	89
30...	1342	10.0	318	7.6	11.0	9.7	88
30...	1344	20.0	318	7.6	11.0	9.7	88
30...	1346	29.0	318	7.5	11.0	9.6	87

Table 15--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JANUARY 30, 1980--Continued

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
30...	1400	1.0	306	7.6	10.5	9.9	89
30...	1402	10.0	306	7.6	10.5	9.9	89
30...	1404	15.0	306	7.5	10.5	9.7	87

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
30...	1520	1.0	320	7.7	10.5	10.2	92
30...	1522	12.0	320	7.7	10.5	10.2	92

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
JAN							
30...	1420	1.0	321	7.6	11.0	9.6	87
30...	1422	10.0	321	7.5	11.0	9.5	86
30...	1424	24.0	321	7.5	11.0	9.5	86

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
JAN									
30...	1410	1.0	328	7.6	11.0	.70	9.7	88	93
30...	1412	10.0	328	7.5	11.0	--	9.6	87	--
30...	1414	20.0	328	7.5	11.0	--	9.6	87	--
30...	1416	25.0	328	7.5	11.0	--	9.5	86	93

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM+POTASSIUM DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)
JAN									
30...	49	27	6.3	25	30	1.1	5.4	54	0
30...	--	--	--	--	--	--	--	--	--
30...	--	--	--	--	--	--	--	--	--
30...	49	27	6.2	25	30	1.1	5.3	54	0

Table 15--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE JANUARY 30, 1980--Continued

301904096335601 SOMERVILLE LAKE SITE DC--Continued

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)
JAN								
30...	57	35	9.8	192	.00	.050	20	1
30...	--	--	--	--	.01	.050	40	10
30...	--	--	--	--	--	--	--	--
30...	55	35	9.8	190	.01	.070	20	10

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)
JAN							
30...	1440	1.0	323	7.4	10.5	9.4	85
30...	1442	10.0	323	7.4	10.5	9.4	85
30...	1444	17.0	323	7.3	10.5	9.3	84

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMP-LING DEPTH (FT)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH FIELD (UNITS)	TEMPER-ATURE, WATER (DEG C)	TRANS-PAR-ENCY (SECCHI DISK) (M)	OXYGEN, DIS-SOLVED (MG/L)	OXYGEN, DIS-SOLVED (PER-CENT SATUR-ATION)	HARD-NESS (MG/L AS CACO3)
JAN									
30...	1455	1.0	283	7.0	10.0	.20	8.6	77	78
30...	1456	.3	--	--	--	--	--	--	--
30...	1457	14.0	317	6.9	9.5	--	8.5	75	85

DATE	HARD-NESS, NONCAR-BONATE (MG/L CACO3)	CALCIUM DIS-SOLVED (MG/L AS CA)	MAGNE-SIUM, DIS-SOLVED (MG/L AS MG)	SODIUM, DIS-SOLVED (MG/L AS NA)	SODIUM+ POTAS-SIUM DIS-SOLVED (MG/L AS NA)	SODIUM AD-SORP-TION RATIO	POTAS-SIUM, DIS-SOLVED (MG/L AS K)	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)
JAN									
30...	48	22	5.5	21	27	1.0	5.8	36	0
30...	--	--	--	--	--	--	--	--	--
30...	57	23	6.7	24	31	1.1	6.6	34	0

DATE	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)	PHOS-PHORUS, TOTAL (MG/L AS P)	IRON, DIS-SOLVED (UG/L AS FE)	MANGA-NESE, DIS-SOLVED (UG/L AS MN)	PHYTO-PLANK-TON, TOTAL (CELLS PER ML)
JAN									
30...	57	33	11	173	.11	.120	180	40	--
30...	--	--	--	--	--	--	--	--	9700
30...	66	33	13	190	.08	.150	350	80	--

Table 16--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE MAY 21, 1980

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius;
MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
MAY									
21...	1122	1.0	364	7.9	24.0	.91	8.2	98	110
21...	1123	1.5	--	--	--	--	--	--	--
21...	1124	10.0	364	7.4	23.0	--	7.7	90	--
21...	1126	20.0	364	7.0	23.0	--	6.4	74	--
21...	1128	30.0	362	6.8	22.5	--	3.8	44	110

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
MAY									
21...	62	30	7.3	25	1.1	5.7	52	0	64
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	62	30	7.3	26	1.1	5.8	52	0	62

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
MAY									
21...	38	.1	7.1	203	.03	.030	<10	4	--
21...	--	--	--	--	--	--	--	--	52000
21...	--	--	--	--	.02	.040	40	20	--
21...	--	--	--	--	--	--	--	--	--
21...	38	--	8.2	203	.06	.040	<10	140	--

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
21...	1149	1.0	364	7.9	24.5	8.6	102
21...	1151	10.0	364	7.5	23.5	7.9	93
21...	1153	22.0	364	6.9	23.0	5.6	65

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
21...	1204	1.0	347	8.3	26.0	9.6	119
21...	1206	10.0	357	8.1	24.5	9.0	107
21...	1208	15.0	340	6.8	23.5	5.1	60

Table 16--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE MAY 21, 1980--Continued

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
21...	1341	1.0	363	8.4	26.0	10.1	125
21...	1343	14.0	363	7.0	23.5	6.2	73

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
21...	1234	1.0	368	8.4	26.0	9.9	122
21...	1236	10.0	368	7.3	23.5	7.3	86
21...	1238	20.0	368	6.8	22.5	5.2	60
21...	1240	26.0	368	6.7	22.5	3.5	41

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY								
21...	1217	1.0	354	8.4	26.5	.82	9.7	121
21...	1219	10.0	368	7.2	23.5	--	7.0	82
21...	1221	20.0	368	6.8	23.0	--	4.6	53
21...	1223	28.0	368	6.7	22.5	--	2.9	34

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)
MAY									
21...	99	58	28	7.0	25	1.1	5.6	50	0
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	110	61	30	7.4	26	1.1	5.9	54	0

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
MAY								
21...	61	37	7.1	195	.01	.030	110	30
21...	--	--	--	--	--	--	--	--
21...	--	--	--	--	.02	.040	190	50
21...	63	39	9.2	208	.03	.070	360	260

Table 16--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE MAY 21, 1980--Continued

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
MAY							
21...	1325	1.0	377	8.8	26.5	11.6	145
21...	1327	10.0	377	8.5	24.5	10.0	119
21...	1329	21.0	422	6.6	23.0	2.8	33

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
MAY									
21...	1259	1.0	319	7.9	27.5	.24	9.4	119	87
21...	1300	.4	--	--	--	--	--	--	--
21...	1301	10.0	293	6.6	25.0	--	5.0	60	--
21...	1303	14.0	293	6.6	24.5	--	4.8	57	84

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
MAY									
21...	51	24	6.6	23	1.1	6.2	44	0	53
21...	--	--	--	--	--	--	--	--	--
21...	--	--	--	--	--	--	--	--	--
21...	46	23	6.4	21	1.0	6.8	46	0	49

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)	PHYTOPLANKTON, TOTAL (CELLS PER ML)
MAY								
21...	35	11	181	.02	.170	410	50	--
21...	--	--	--	--	--	--	--	36000
21...	--	--	--	--	--	--	--	--
21...	31	15	176	.05	.110	1100	220	--

Table 17--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 29, 1980

FT = feet; MICROMHOS = micromhos per centimeter at 25° Celsius; °C - degrees Celsius; MG/L = milligrams per liter; UG/L = micrograms per liter

301908096313101 SOMERVILLE LAKE SITE AC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)	HARDNESS (MG/L AS CACO3)
AUG									
29...	0920	1.0	428	7.1	28.5	.61	5.5	70	110
29...	0922	10.0	428	6.9	28.5	--	4.6	58	--
29...	0924	20.0	428	6.9	28.5	--	4.6	58	--
29...	0926	25.0	428	6.9	28.5	--	4.6	58	110

DATE	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)	SULFATE DISSOLVED (MG/L AS SO4)
AUG									
29...	63	32	8.1	32	1.3	7.1	61	0	71
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	64	32	8.2	34	1.4	7.1	61	0	70

DATE	CHLORIDE, DISSOLVED (MG/L AS CL)	FLUORIDE, DISSOLVED (MG/L AS F)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
29...	54	.2	11	245	.00	.070	<10	1
29...	--	--	--	--	.00	.080	10	10
29...	--	--	--	--	--	--	--	--
29...	54	--	11	246	.00	.070	<10	30

301940096315801 SOMERVILLE LAKE SITE AL

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
29...	0945	1.0	428	7.4	29.0	6.8	87
29...	0947	10.0	428	7.1	28.5	5.6	71
29...	0949	13.0	428	7.1	28.5	5.6	71

302026096341501 SOMERVILLE LAKE SITE BC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
29...	1005	1.0	432	7.9	30.0	6.8	88
29...	1007	8.0	432	7.5	30.0	5.9	77

Table 17--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 29, 1980--Continued

301805096332501 SOMERVILLE LAKE SITE CC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
29...	1215	1.0	432	7.5	29.5	6.6	85
29...	1217	8.0	432	6.8	28.5	3.2	41

301847096334601 SOMERVILLE LAKE SITE DR

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
29...	1045	1.0	432	7.7	29.5	6.9	88
29...	1047	10.0	432	6.9	29.0	4.0	51
29...	1049	19.0	432	6.8	29.0	2.6	33

301904096335601 SOMERVILLE LAKE SITE DC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG								
29...	1020	1.0	432	7.8	29.5	.61	6.8	87
29...	1022	5.0	432	7.4	29.0	--	5.8	74
29...	1024	10.0	432	7.2	29.0	--	5.3	68
29...	1026	20.0	432	7.0	29.0	--	4.6	59
29...	1028	25.0	432	7.0	29.0	--	4.6	59

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)
AUG									
29...	120	72	35	8.6	33	1.3	7.1	62	0
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	--	--	--	--	--	--	--	--	--
29...	120	65	33	8.2	33	1.3	7.1	62	0

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
29...	73	57	11	255	.00	.070	<10	3
29...	--	--	--	--	--	--	--	--
29...	--	--	--	--	.00	.080	10	10
29...	--	--	--	--	--	--	--	--
29...	70	54	11	247	.00	.090	<10	80

Table 17--CHEMICAL-QUALITY SURVEYS OF SOMERVILLE LAKE AUGUST 29, 1980--Continued

301817096364101 SOMERVILLE LAKE SITE EC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG							
29...	1100	1.0	432	7.8	29.5	6.9	90
29...	1102	5.0	432	7.4	29.5	6.0	77
29...	1104	10.0	432	7.1	29.5	4.6	59
29...	1106	15.0	432	7.0	29.5	4.5	58
29...	1108	19.0	432	7.0	29.5	4.5	58

301754096380801 SOMERVILLE LAKE SITE FC

DATE	TIME	SAMPLING DEPTH (FT)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH FIELD (UNITS)	TEMPERATURE, WATER (DEG C)	TRANSPARENCY (SECCHI DISK) (M)	OXYGEN, DISSOLVED (MG/L)	OXYGEN, DISSOLVED (PERCENT SATURATION)
AUG								
29...	1130	1.0	452	7.5	30.0	.24	6.0	78
29...	1132	5.0	452	7.0	29.5	--	3.8	49
29...	1134	9.0	452	7.0	29.5	--	3.5	45

DATE	HARDNESS (MG/L AS CACO3)	HARDNESS, NONCARBONATE (MG/L CACO3)	CALCIUM DISSOLVED (MG/L AS CA)	MAGNESIUM, DISSOLVED (MG/L AS MG)	SODIUM, DISSOLVED (MG/L AS NA)	SODIUM ADSORPTION RATIO	POTASSIUM, DISSOLVED (MG/L AS K)	BICARBONATE (MG/L AS HCO3)	CARBONATE (MG/L AS CO3)
AUG									
29...	120	68	34	8.6	35	1.4	7.4	64	0
29...	--	--	--	--	--	--	--	--	--
29...	120	67	34	8.6	34	1.4	7.4	65	0

DATE	SULFATE DISSOLVED (MG/L AS SO4)	CHLORIDE, DISSOLVED (MG/L AS CL)	SILICA, DISSOLVED (MG/L AS SIO2)	SOLIDS, SUM OF CONSTITUENTS, DISSOLVED (MG/L)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)	PHOSPHORUS, TOTAL (MG/L AS P)	IRON, DISSOLVED (UG/L AS FE)	MANGANESE, DISSOLVED (UG/L AS MN)
AUG								
29...	76	58	10	261	.00	.140	20	10
29...	--	--	--	--	.00	.140	10	20
29...	75	57	10	258	.00	.150	10	200