UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

QUALITY OF WATER AND TIME OF TRAVEL IN YOCKANOOKANY RIVER, CHOCTAW COUNTY, MISSISSIPPI

Open-File Report 80-770

Prepared in cooperation with the

Mississippi Department of Natural Resources,
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Jackson, Mississippi

1980

UNITED STATES DEPARTMENT OF THE INTERIOR
CECIL D. ANDRUS, Secretary
GEOLOGICAL SURVEY
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FACTORS FOR CONVERTING INCH-POUNDS UNITS TO INTERNATIONAL SYSTEM (SI) UNITS

For use of those readers who may prefer to use international system (SI) units rather than the inch-pound system, the conversion factors for the terms used in this report are listed below:

Multiply inch-pound units	By	To obtain SI units
inch (in)	2.54	centimeter (cm)
foot (ft)	0.3048	meter (m)
cubic foot per second (ft^3/s)	0.02832	cubic meter per second (m^3/s)
mile (mi)	1.609	kilometer (km)
square mile (mi^2)	2.590	square kilometer (km^2)
mile per hour (mi/h)	1.609	kilometer per hour (km/h)
°C=5/9 (°F-32) or °F=9/5 (°C)+32		

National Geodetic Vertical Datum of 1929 is a geodetic datum derived from the average sea level measured over a period of many years at 26 tide stations along the Atlantic, Gulf of Mexico, and Pacific Coasts, and as such does not necessarily represent local mean sea level at any particular place. To establish a more precise nomenclature, the term "NGVD of 1929" is used in place of "Sea Level Datum of 1929" or "mean sea level."

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ABSTRACT

An intensive study of a 3.3-mile reach of the Yockanookany River, including a major tributary, was conducted August 29-31, 1978. The quality-of-water data were collected during a period of generally low streamflow and seasonally high air temperatures. These data show that the quality of water in Yockanookany River was generally good.

The dissolved-solids concentrations were less than 50 milligrams per liter, and the concentrations of nitrogen and phosphorus compounds were low. Ammonia nitrogen and total nitrogen concentrations were higher downstream than upstream. Ammonia nitrogen concentrations ranged from 0.10 to 0.40 milligrams per liter and total phosphorous concentrations ranged from 0.14 to 0.43 milligrams per liter at the downstream site. The 5-day biochemical oxygen demand in the river entering and leaving the study reach generally was less than 2.5 and 6.0 milligrams per liter, respectively. Dissolved-oxygen concentrations generally were higher at the upstream site than the downstream site and were at levels that could support aquatic life at both sites. Several water samples collected at the downstream site contained high fecal bacteria densities and there was some evidence of the presence of wastes of human origin.

It was determined from a time-of-travel study that the rate of solute travel was 0.15 mile per hour at low streamflow. A peak dye concentration traveled through a 3.3 mile reach of Yockanookany River in 22½ hours.

INTRODUCTION

Water is one of the most important natural resources of Mississippi. Even though there is an abundant supply of high quality water in the State, there is a need for a comprehensive management plan for effective utilization and conservation of this resource. To attain this goal, the Mississippi Department of Natural Resources, Bureau of Pollution Control, formerly the Mississippi Air and Water Pollution Control Commission, has been designated the responsibility for developing a statewide waste-treatment management plan.

The U.S. Geological Survey, in cooperation with the Bureau of Pollution Control, is providing hydrologic data necessary for determining the waste-assimilation capacity of selected reaches of major freshwater and tidal streams within the State. The hydrologic data presented in this report are intended for use in developing a comprehensive long-range plan for effective management of water resources.

This report summarizes and documents the results of a short-term intensive study of Yockanookany River conducted on August 29-31, 1978. Chemical, physical, and bacteriological data, time-of-travel data, discharge data, and stream geometry of the Yockanookany River and a major tributary are included in the report.

DESCRIPTION OF THE AREA

Location

The study area is located in north-central Mississippi, in the southeastern part of Choctaw County, along the headwaters of the Yockanookany River near the city of Ackerman. The study area and location of the sampling sites are shown in figure 1.

Cultural Features

Choctaw County is predominately rural and sparsely populated. The population of the county was 8,423 in 1960 and 8,440 in 1970. The population density during the period was about 19 per square mile. Ackerman, with a population of 1,502, is the county seat and principle town. Agriculture and agribusiness contribute significantly to the economy. Forestry and lumber, ready-mix concrete, steel fabrication, textiles, and wood and plastic industries also contribute to the economy of the study area.

Topography and Geology

The study area is located in the north Central Hills physiographic province. The land-surface elevations range between about 500 to 600 feet above National Geodetic Vertical Datum of 1929. Local relief may be 200 to 250 feet. Although the topography is hilly, a large part of the area includes comparatively flat stream channels. The topography as a whole has reached maturity in the cycle of erosion; that is, it is characterized by slopes, dissecting uplands, and relatively wide flats.

Rocks of the Wilcox Group of Paleocene and Eocene age are exposed at the surface. The surface exposures are made up of interbedded or interlaminated silt, sand, clay, and some lignite. The terrace deposits, although not extensive, and the alluvial deposits along Yockanookany River and its tributaries likely originated during Pleistocene times and probably cannot be differentiated from the late age or earlier age (Franklin, 1943, p. 1357).

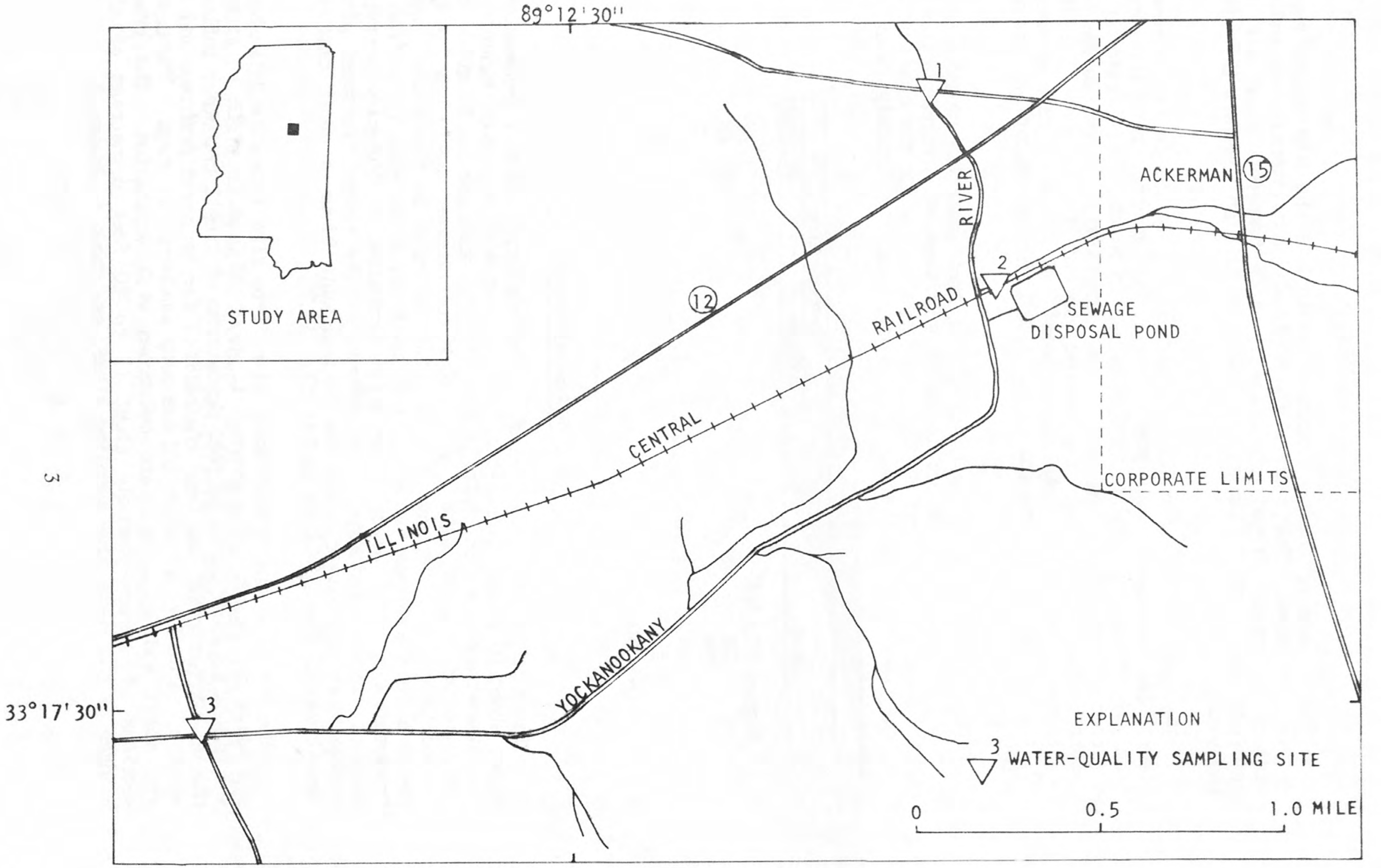

FIGURE 1.--STUDY AREA AND WATER-QUALITY SAMPLING SITES ON YOCKANOOKANY RIVER AND TRIBUTARY, AUGUST 29-31, 1978.

Climate

The climate of Choctaw County is typical of the subtropical region of the southeast. The summers are humid and consistently hot and the winters are mild. Prevailing southerly winds transport moist air from the Gulf into central Mississippi resulting in high rainfall throughout the year.

The mean annual rainfall is about 53 inches and is fairly evenly distributed throughout the year. The normal monthly rainfall ranges from 2.6 inches in October to 5.7 inches in March. Local rainshowers occurred during the study and a tornado causing minor damage was reported in the area on the second day of the study. The NOAA precipitation station at Ackerman recorded 0.41 inches of rain on August 30, the second day of the study, and 0.20 inches on August 27, two days prior to the study.

The National Oceanic and Atmospheric Administration (NOAA) weather station at Louisville, about 15 miles southeast of Ackerman, reported the following maximum and minimum air temperatures for the study period and the two days preceeding the study, and the monthly mean air temperature.

Date	Temperature (°F)	
	Maximum	Minimum
August 27,1978	92	67
28	95	68
29	90	70
30	81	71
31	83	65
Monthly mean	90	68

Drainage and Channel Morphology

The study area is located along the headwaters of the Yockanookany River about 40 miles northeast of its junction with the Pearl River. At the downstream sampling site (site 3), the drainage is 21 mi^2. The drainage upstream of site 1 and site 2 contributes about 8 and 4 mi^2 respectively or 57 percent of the total drainage in the study reach. Most of the drainage entering the study area at site 1 is from a predominately rural area. Site 2 is located on a tributary carrying much of the urban drainage from Ackerman. The sewage treatment plant effluent is discharged into the Yockanookany River a short distance downstream of the tributary inflow (fig. 1).

The reach of the Yockanookany River from site 1 to site 3 is about 3.3 miles in length. The channel is about 20 feet in width at site 1 and widens to about 20 to 30 feet downstream of site 2 tributary inflow. The downstream reach has been channelized for improved drainage and is about 30 to 40 feet in width and has many sandbars and snags. The banks are steep and high, and are overgrown with vegetation. The cross sections of stream channels about 15 to 20 feet downstream of the bridges at the respective sampling sites, are shown in figure 2.

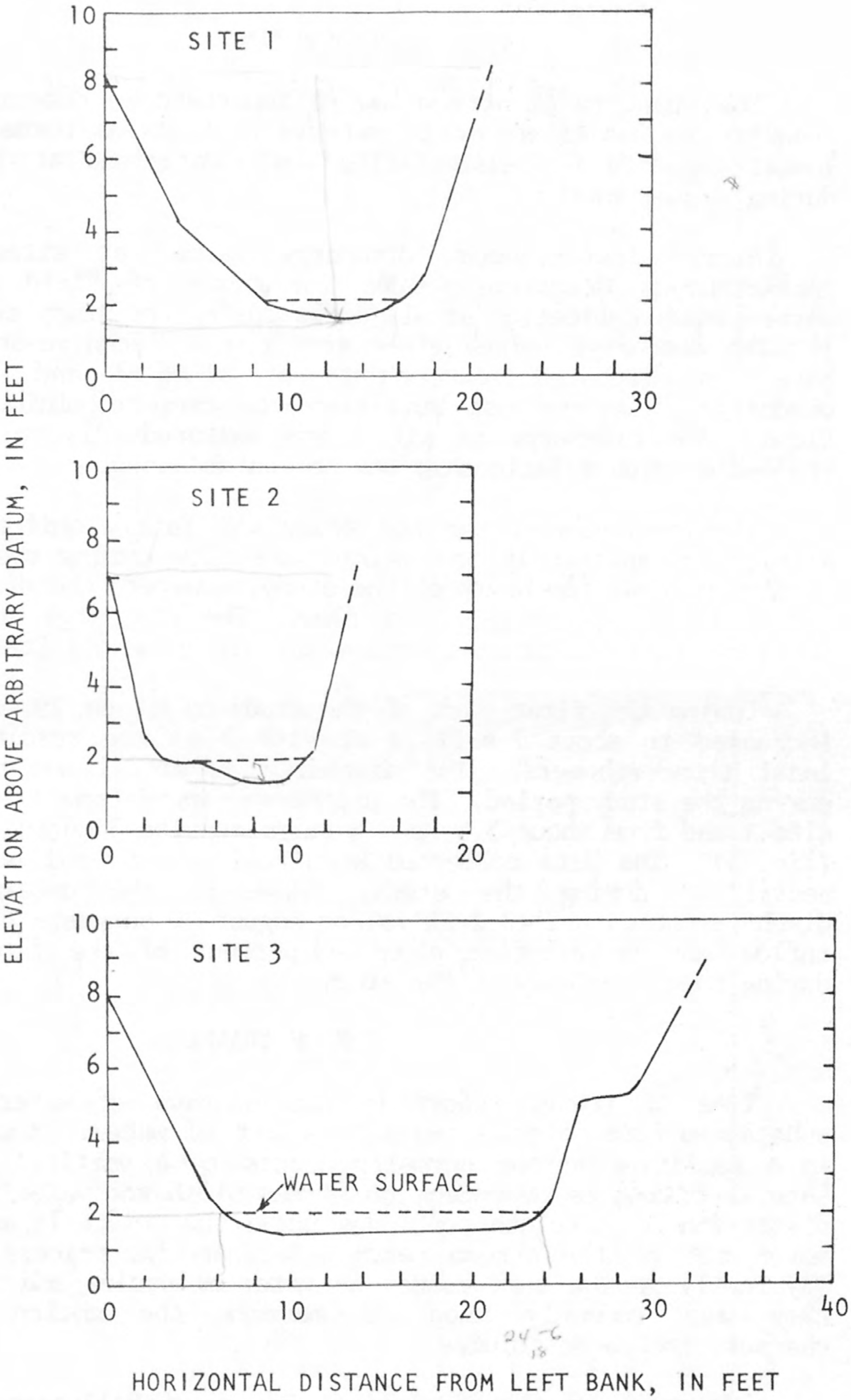

FIGURE 2.--CHANNEL CROSS SECTION AT SAMPLING SITES ON YOCKANOOKANY RIVER AND TRIBUTARY, AUGUST 29-30, 1978.

STREAMFLOW

The quantity of streamflow is important in determining a stream's capacity to assimilate waste material. A stream normally exhibits its lowest capacity for assimilating waste materials at lower streamflows during warmer months.

Hourly instantaneous discharge values at sites 1 and 3 and instantaneous discharge values for times of field measurements and water-sample collection at all sites during the study are given in table 1. The discharge values given are from a discharge-stage relationship based on discharge measurements at sites 1 and 3 on August 29. Discharge data are not sufficient to compute minimum 7-day average flows. The discharge at site 2 was measured only on August 30, and a stage-discharge relationship was not established.

The discharge during the study was fairly uniform at site 1 and site 3 and apparently was above base flow during most of the study. During the last few hours of the study, however, the discharge decreased and probably approached base flow. The discharge at site 3 at 2000 hours on August 28 prior to the study was about 4.1 ft^3/s.

During the first part of the study on August 29, the discharge had increased to about 7.6 ft^3/s at site 3 as the result of runoff from local thundershowers. The discharge at site 1 was slowly decreasing during the study period. The discharge ranged from 0.26 to 2.0 ft^3/s at site 1 and from about 5.5 to 7.6 ft^3/s at site 3 during the study period (fig. 3). The data collected at site 2 was minimal because access was restricted during the study. However, the determination of the discharge at site 2 (3.2 ft^3/s) on August 30 suggests that the tributary inflow was contributing about 40 percent of the flow passing site 3 during the second day of the study.

TIME OF TRAVEL

Time of travel refers to the movement of waterborne solutes or substances from point to point in a body of water. Mixing or dispersion in a receiving stream normally occurs in a vertical direction first. Lateral mixing is dependent on stream width and velocity. Longitudinal dispersion of a solute continues until the solute is uniformly mixed or moves out of the stream reach. Because dye tracers in water behave physically in the same manner as water molecules and soluble material, they are commonly used to measure the motion and dispersion characteristics of solutes.

Personnel of the Mississippi Bureau of Pollution Control injected rhodamine WT dye in Yockanookany River at site 1 on August 29, 1978 at 0750 hours. The dye concentration was monitored 3.3 miles downstream at site 3 to determine the time of travel through the study reach. The discharge at site 3 during the time-of-travel study was fairly steady, ranging between 7.0 and 7.6 ft^3/s. The discharge at site 1 at the time of dye injection was 1.4 ft^3/s.

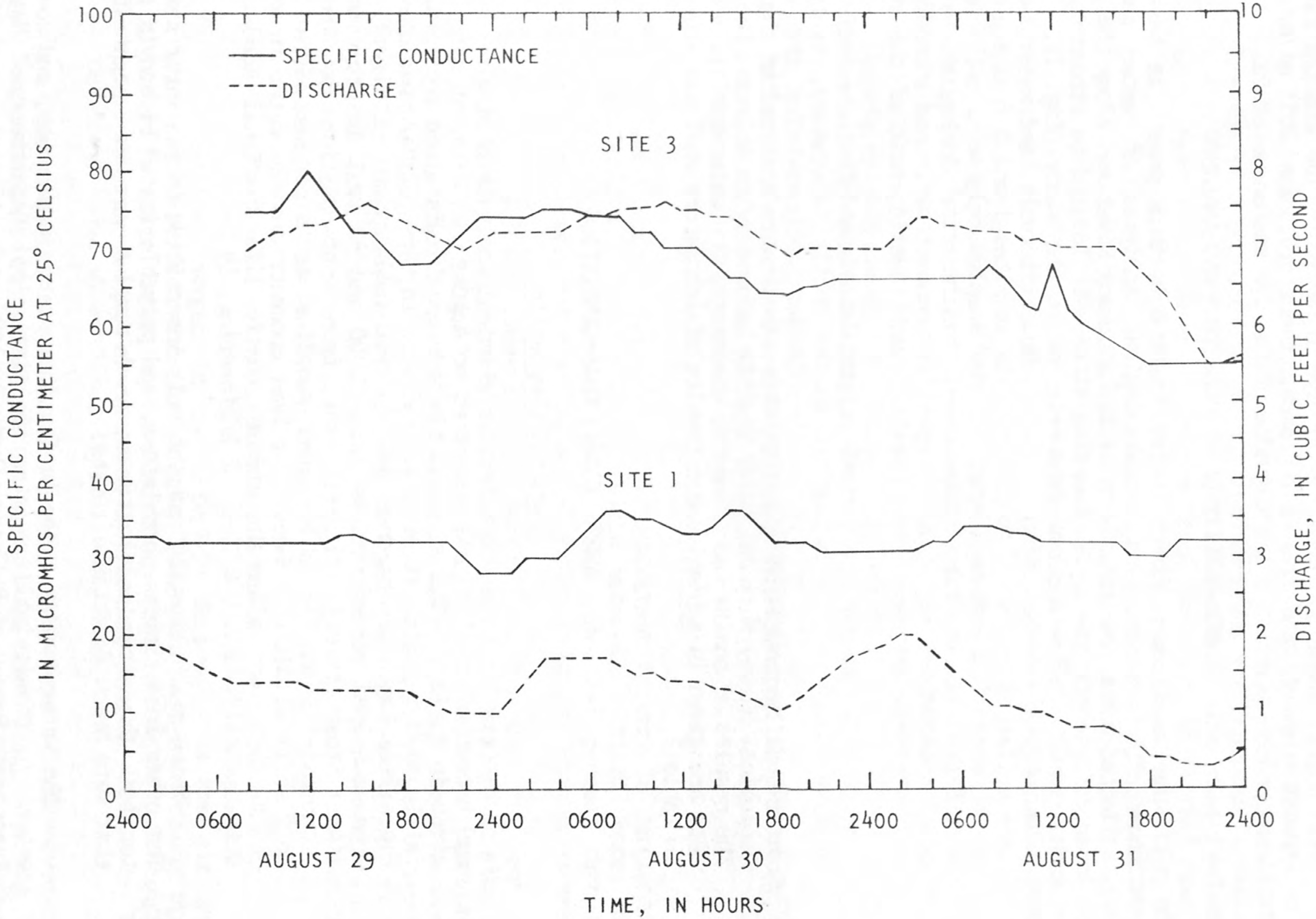

FIGURE 3.--DISCHARGE AND SPECIFIC CONDUCTANCE AT SITES 1 AND 3 ON YOCKANOOKANY RIVER, AUGUST 29-31, 1978.

The peak dye concentration was observed at site 3 on August 30 at 0615 hours, about 22½ hours after dye injection. The average rate of travel through the 3.3 mile reach, therefore, was 0.15 mi/hr. An attempt to measure the leading edge of the dye was unsuccessful.

WATER-QUALITY DATA COLLECTION AND ANALYSES

The assessment of the water quality in this report is based on chemical, physical, and bacteriological analyses of water samples collected along the main stem of Yockanookany River and along the lower part of one tributary. The sampling sites were located on stream reaches that would provide uniform data relevant to the study (fig. 1). Field measurements were performed at about 3-hour intervals, and water samples were collected at about 6-hour intervals at sites 1 and 3 from August 29 to 31 and at site 2 on August 30. Two samples only were collected at site 2 because of restricted access to the site during the study. Continuous dissolved oxygen, specific conductance, and temperature monitors were in operation at site 1 and 3 during most of the study.

The BOD_5 (5-day biochemical oxygen demand) and fecal bacteria were analyzed in the U.S. Geological Survey Mobile Laboratory, centrally located in the study area. The samples collected for the other water-quality parameters given in this report were analyzed by the U.S. Geological Survey National Water Quality Laboratory in Atlanta, Georgia. The results of onsite measurements, discharge, and water-quality monitor data are given in table 1. The results of laboratory analyses are given in table 2.

WATER-QUALITY CHARACTERISTICS

General Composition

The results of a comprehensive chemical analysis of a water sample and bottom material sample collected on August 31, 1978, at site 3 are given in table 2. The water sample was low in dissolved constituents, fairly high in color (60 units), and soft in terms of hardness-of-water classification. The hardness was 16 mg/L (milligrams per liter). The iron and lead concentrations were 3,300 and 39 ug/L (micrograms per liter) respectively. Although the iron concentration exceeds the recommended limit for public water supplies, it is not considered toxic to fish or wildlife. However, a lead concentration in water in excess of 30 ug/L may adversely affect aquatic life (National Academy of Sciences and National Academy of Engineering, 1973).

Diazinon (0.08 ug/L) was the only insecticide in the water sample. The other insecticides, herbicides, and polychlorinated biphenyls (PCB) for both the water and bottom material samples were in concentrations that were below detectable limits.

The water-quality criteria for intrastate, interstate, and coastal waters in Mississippi are given in Mississippi Department of Natural Resources, Bureau of Pollution Control, 1980, page 75.

Specific Conductance and Dissolved Solids

The specific conductance of a water sample is a measure of its ability to conduct an electric current and its degree of mineralization. The specific conductance values in this study are reported in micromhos per centimeter (umhos/cm) at 25°C (Celsius). The dissolved-solids concentration in water is proportional to specific conductance in a ratio ranging from 0.55 to 0.75, depending on the composition of the water (Hem, 1979, p. 99). Approximate dissolved-solids concentrations may be obtained by multiplying the specific conductance values given in table 1 by 0.62. The ratio is based on the sum of the various dissolved constituents and silica rather than the residue on evaporation which includes the weight contributed by color-producing organic matter.

The specific conductance of the water in Yockanookany River was uniformly low and was higher at site 3 than site 1 during the study. The specific conductance ranged from 55 to 80 umhos/cm at site 3 and from 28 to 37 umhos/cm at site 1. The specific conductance at site 3 generally decreased with decreasing streamflow. At site 1, specific conductance remained fairly uniform throughout the study (fig. 3).

The range of specific conductance of the water in this study area indicates that the dissolved-solids concentrations in the study reach were low and less than 50 mg/L.

Water Temperature

Temperature is one of the most important factors in determining a stream's ability to assimilate waste material. It influences almost every physical property of water, every physical process that takes place in water, and all biological activity in the aquatic community.

The stream temperatures during the study did not vary significantly, ranging from 20.0°C (68°F) to 23.0°C (73°F) at site 1 and 21.0°C (70°F) to 24.0°C (75°F) at site 3. Maximum water temperatures were reached about midday and remained warmest during the afternoon and evening hours. The range of stream temperatures varied between the monthly mean maximum and minimum air temperatures for August, which is typical of a stream in a semitropical climate. Water-temperature data from a temperature recorder at sites 1 and 3 and field measurements at all sampling sites are given in table 1.

Dissolved Oxygen

Dissolved oxygen in the water is derived from the air and by photosynthesis from aquatic plants. Dissolved oxygen, normally present in all surface water, is essential to most chemical and biological processes, is a key element for supporting aquatic life, and is an important index of water quality.

Water-quality criteria requires that dissolved-oxygen concentrations be maintained at not less than 5 mg/L during flows exceeding the 7-day Q_{10} except under extreme conditions or authorized exceptions. The dissolved-oxygen level then may range between 4 and 5 mg/L for short period of time, provided that the water quality is maintained in favorable condition in other aspects (Mississippi Air and Water Pollution Control Commission, 1978, p. 78-89).

The dissolved oxygen at the sampling sites in the Yockanookany River was at levels that could support aquatic life. The dissolved-oxygen levels at site 1 generally were higher and less variable than at site 3. Dissolved-oxygen concentrations at site 3 during the study ranged from 5.5 to 8.1 mg/L and followed a pattern of diurnal fluctuation unlike site 1. Dissolved-oxygen concentrations at site 1 only varied 1.0 mg/L, ranging from 7.0 to 8.0 mg/L (fig. 4).

Biochemical Oxygen Demand

Waste assimilation capacity is commonly assessed on the basis of the rate of reaeration and the 5-day biochemical oxygen demand (BOD_5). The BOD_5 is a measure of the amount of oxygen required to stabilize organic wastes by bacterial and chemical action in a closed water sample incubated in the dark at 20°C for 5 days. The amount of the 5-day oxygen demand is generally controlled by the amount of carbonaceous material present.

The amount of oxygen demanding wastes in the water generally was low at site 1, and the 5-day oxygen demand was not excessive during the study. The BOD_5 at sites 1 and 3 ranged from 1.0 to 2.4 mg/L and 2.6 to 7.9 mg/L, respectively. The mean BOD_5 was 1.6 mg/L at site 1 and 4.3 mg/L at site 3. The BOD_5 of two samples collected at site 2 was 4.5 and 5.7 mg/L (table 2). The higher BOD_5 at sites 2 and 3 suggests that most carbonaceous oxygen-demanding wastes transported into the lower reaches of the study area originate from sewage effluent and urban runoff.

Nitrogen Compounds

Organic nitrogen compounds from sewage and certain kinds of industrial wastes are decomposed into inorganic nitrogen compounds by either aerobic or anaerobic bacteria. The concentrations of the nitrogen compounds yield information about the stage of decomposition. The occurrence of the various forms of nitrogen compounds may indicate the amount of oxidation that has occurred since the waste was discharged. The various nitrogen compounds referred to in this report are in the nitrogen, as N, form.

The concentrations of the various nitrogen compounds at all sampling sites generally were low during the study. The concentrations generally increased downstream of site 1 indicating the presence of some waste loading from tributary and treated sewage inflow. The total nitrogen concentrations ranged from 0.52 to 0.79 mg/L at site 1 and from 0.58 to 1.2 mg/L at site 3. Organic nitrogen comprised 60 and 65 percent of the total nitrogen at site 1 and site 3, respectively. The nitrogen concentration of two samples collected at site 2 suggests that in the tributary flow more than 80 percent of the total nitrogen was organic nitrogen. The ammonia concentrations at sites 1 and 2 were

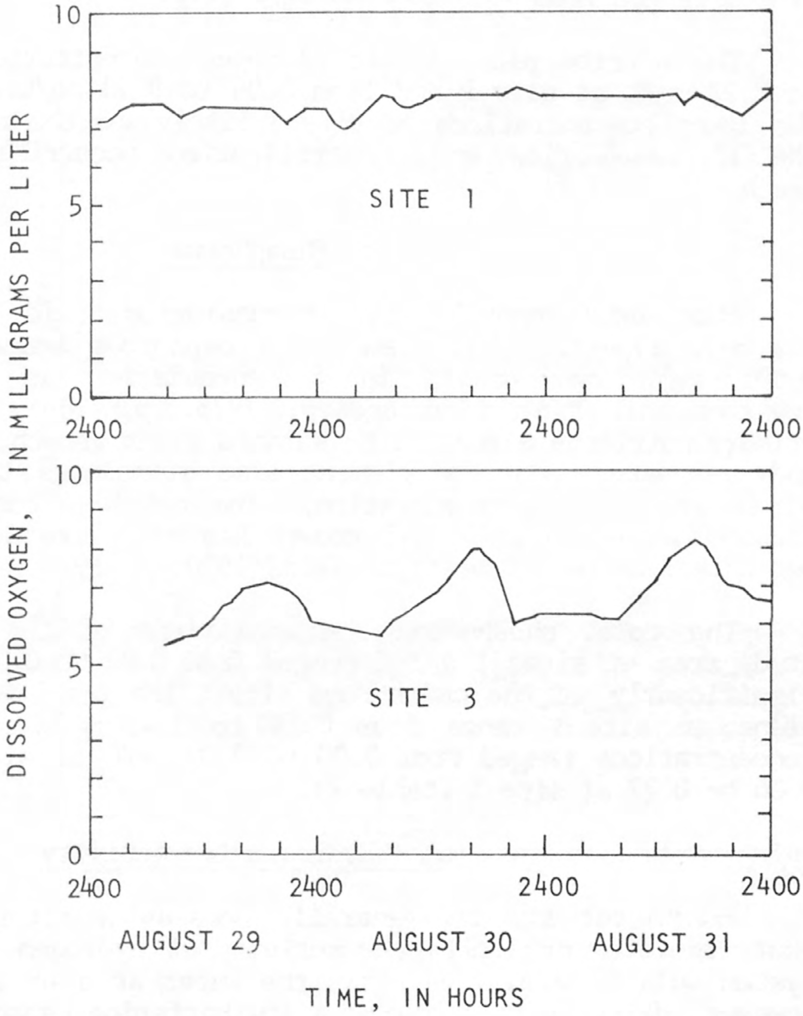

FIGURE 4.--DISSOLVED-OXYGEN CONCENTRATIONS IN YOCKANOOKANY RIVER AT SITES 1 AND 3, AUGUST 29-31, 1978.

generally low, ranging from 0.00 to 0.10 mg/L at site 1 and 0.07 and 0.04 in the two samples collected at site 2. The ammonia nitrogen at site 3 ranged from 0.10 to 0.40 mg/L (fig. 5).

The nitrite plus nitrate nitrogen concentrations ranged from 0.14 to 0.27 mg/L at site 1 and from 0.04 to 0.21 mg/L at site 3 (table 2). The lower concentrations at site 3 likely was the result of dilution by the increased flow and denitrification occurring in the downstream reach.

Phosphorus

Phosphorus generally is not considered toxic to man. However, it has been reported that elemental phosphorous concentrations as low as 0.001 mg/L can result in bioaccumulation in fish tissue (U.S. Environmental Protection Agency, 1976, p. 188). It is one of the primary nutrients essential to aquatic plant growth, but enrichment of a body of water with the element also stimulates the growth of algae, which may cause entrophication. The critical concentration level of phosphorus needed for algal growth has been considered to be 0.1 mg/L, but this remains in question (Velz, 1970, p. 19).

The total phosphorous concentrations of the water entering the study area at sites 1 and 2 ranged from 0.02 to 0.06 mg/L and increased significantly at the downstream site. The total phosphorus concentrations at site 3 range from 0.14 to 0.43 mg/L. The orthophosphorus concentrations ranged from 0.00 to 0.02 mg/L at sites 1 and 2 and from 0.06 to 0.27 at site 3 (table 2).

pH - Hydrogen Ion Activity

Freshwater streams generally possess a natural buffering system that regulates or limits the activity of hydrogen ions. The buffering system will generally maintain the water at a pH range of 6.5 to 8.5; however, dilute waters having a low buffering capacity, in the presence of the acidic soils and tannic acid in the runoff from swamplands and dense pine forests, may have pH values less than 5.0 (Mississippi Air and Water Pollution Control Commission, 1978, p. 27). The presence of industrial wastes in a stream can cause extreme pH changes depending on the chemical and physical composition of the waste effluent.

The pH of the water was fairly uniform in the Yockanookany River during the study. The maximum, minimum, and median pH values at site 1 and site 3 were 6.5, 6.0, and 6.3 units, and 6.7, 6.0, and 6.5 units, respectively. The pH of two samples of tributary inflow at site 2 was 6.8 units (table 1).

Bacteria

The bacteria of the fecal coliform group and fecal streptococcus group are found in large numbers in enteric wastes of warmblooded animals, but are rarely present in soils or plant debris. A fecal coliform to fecal streptococcal bacteria ratio of less than 0.7 is evidence that wastes are of nonhuman origin; a ratio between 2.0 and 4.0

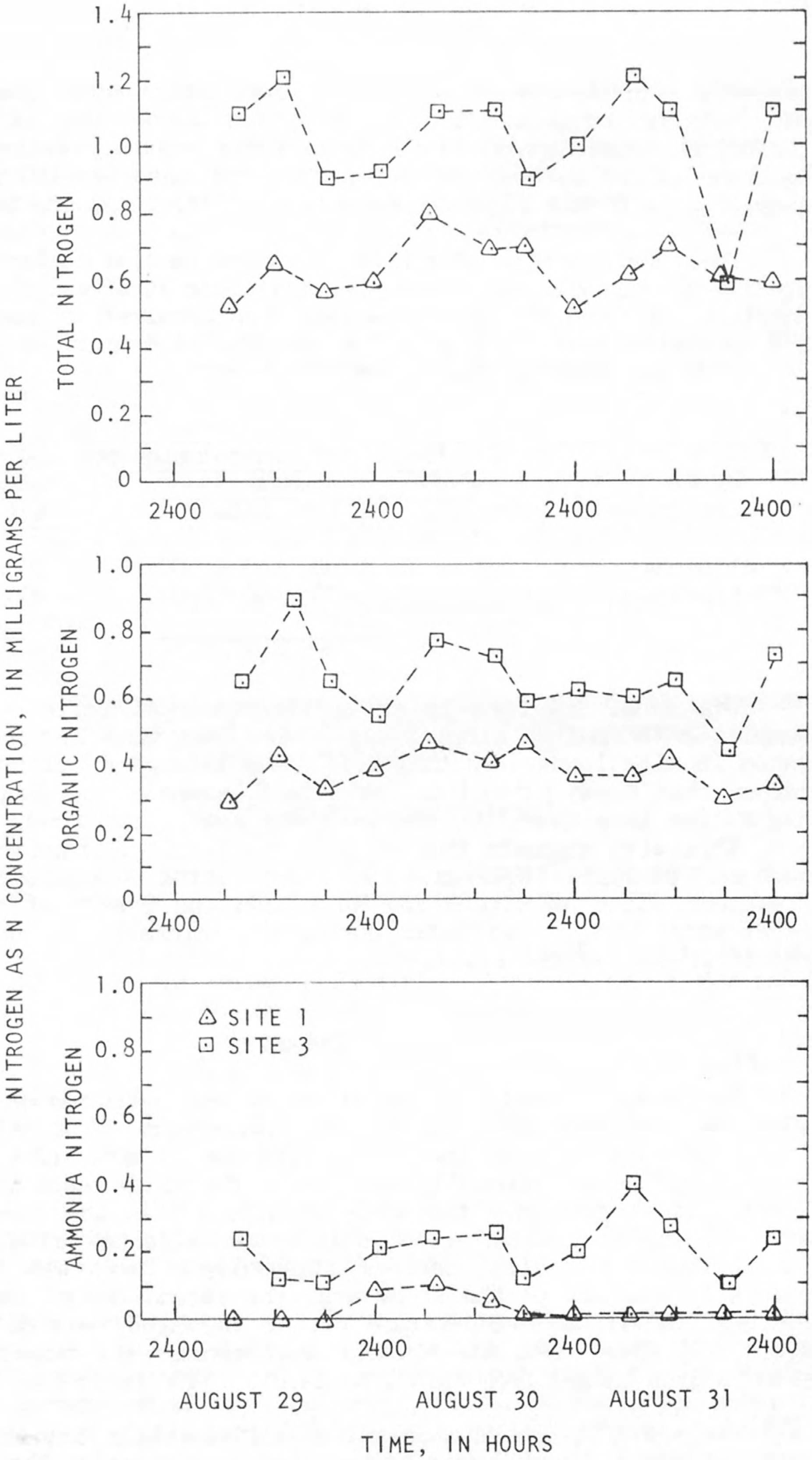

FIGURE 5.--CONCENTRATIONS OF NITROGEN SPECIES AT SITES 1 AND 3 ON YOCKANOOKANY RIVER, AUGUST 29-31, 1978.

suggests a predominance of human wastes; and a ratio greater than 4.0 may be considered strong evidence that wastes are of human origin (Geldreich and Kenner, 1969). Bacteria counts, determined by the membrane filter method, are reported in colonies per 100 milliliters of sample (col/100 mL) (Greeson and others, 1977, p. 53 and 59).

The fecal bacteria densities of water samples collected during the study were variable and were generally lower at site 1 than site 3. The densities of fecal coliform were less than fecal streptococcus at site 1 and generally greater at site 3 (table 2). A summary of fecal bacteria densities are given in the following table.

	Density, in colonies per 100 milliliters			
	Range		Median count	
Fecal Bacteria	Site 1	Site 3	Site 1	Site 3
Coliforms	92-1,200	440-6,500	280	1,500
Streptococci	500-7,000	460-13,000	1,000	1,500

The fecal coliform to fecal streptoccocal ratios of all of the samples collected at sites 1 and 2 were less than 2.0 and all but one ratio at site 1 was less than 0.7. This is a good indication of animal rather than human pollution. At site 3, seven of ten samples collected had ratios less than 2.0, and only one sample had a ratio greater than 4.0. This also suggests that much of the fecal coliform originated from nonhuman sources. However, the lower ratios downstream of a sewage treatment plant at site 3 may have been the result of the mixing of river water with runoff water during the rainfall that occurred during the first part of the study.

SUMMARY

An intensive quality-of-water study was conducted on August 29-31, 1978, on Yockanookany River and the lower part of a major tributary. The total drainage of the study area is 21 mi^2. The discharge of Yockanookany River generally was low in the study reach and ranged from 5.5 to 7.6 ft^3/s during the study at site 3. In the lower part of the study area, the discharge at site 3 was affected slightly by local runoff during the first part of the study. There was 0.41 inches of rainfall reported in the study area the second day of the study. The average maximum air temperature during the study was 85°F, which was about 5°F lower than the monthly mean maximum air temperature. Water temperatures ranged from 20.0°C to 24.0°C (68°F to 75°F).

The specific conductance and dissolved-solids concentration in the water at sites 2 and 3 were higher than that entering the study area at site 1. The specific conductance was less than 40 umhos/cm at site 1 and ranged from 55 to 80 umhos/cm at sites 2 and 3.

The 5-day biochemical oxygen demand was low and did not exceed 2.4 mg/L at site 1 and ranged from 2.6 to 7.9 mg/L at sites 2 and 3. The dissolved-oxygen concentrations at site 1 ranged between 7.0 to 8.0 mg/L. Dissolved oxygen exhibited a pattern of diurnal fluctuation at site 3, and concentrations were generally lower than site 1. The dissolved-oxygen concentrations at this downstream site ranged from 5.5 to 8.1 mg/L.

Total nitrogen concentrations ranged from 0.52 to 1.2 mg/L at all sites. The organic nitrogen comprised 60 to 65 percent of the total nitrogen concentrations at sites 1 and 3. Organic nitrogen comprised nearly 80 percent of the total nitrogen at site 2. The ammonia nitrogen concentrations were generally lowest at sites 1 and 2 and were less than 0.10 mg/L. The ammonia concentrations at site 3 ranged from 0.10 to 0.40 mg/L. The total phosphorus concentrations observed at site 3 during the study ranged from 0.14 and 0.43 mg/L. The total phophorus concentrations at sites 1 and 2 did not exceed 0.06 mg/L.

The fecal bacteria densities in several water samples were high, and the presence of wastes of human origin was indicated in three of ten samples collected at site 3 as evidenced by the fecal coliform to fecal streptococcal ratios exceeding 2.0. Fecal bacteria densities were variable and were highest at site 3, where the fecal coliform ranged from 440 to 6,500 col/100 mL, and the fecal streptococcal bacteria ranged from 460 to 13,000 col/100 mL.

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HYDROLOGIC DATA

TABLE 1. RESULTS OF FIELD DETERMINATIONS, HOURLY DISCHARGE, AND CONTINUOUS MONITOR VALUES, YOCKANOOKANY RIVER AND TRIBUTARY, AUGUST 29-31, 1978.

SITE 1 - LAT 33°18'58" LONG 089°11'30"

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)
AUG						
29...	0100	1.9	33	--	23.0	7.2
29...	0200	1.9	33	--	22.5	7.3
29...	0300	1.8	33	--	22.0	7.4
29...	0400	1.7	32	--	22.0	7.5
29...	0500	1.6	32	--	21.5	7.6
29...	0600	1.5	32	--	21.5	7.6
29...	0630	1.4	32	6.3	21.5	7.6
29...	0700	1.4	32	--	21.5	7.6
29...	0800	1.4	32	--	21.5	7.6
29...	0900	1.4	32	--	21.5	7.4
29...	1000	1.4	32	6.3	21.5	7.3
29...	1100	1.4	32	--	21.5	7.4
29...	1200	1.3	32	--	21.5	7.6
29...	1230	1.3	32	6.2	21.5	7.6
29...	1300	1.3	32	--	21.5	7.6
29...	1400	1.3	33	--	21.5	7.6
29...	1500	1.3	33	6.2	21.5	7.6
29...	1600	1.3	32	--	21.5	7.6
29...	1700	1.3	32	--	22.0	7.5
29...	1800	1.3	32	6.5	22.0	7.5
29...	1900	1.2	32	--	22.0	7.5
29...	2000	1.1	32	--	22.0	7.3
29...	2100	1.0	32	6.0	22.0	7.1
29...	2200	1.0	30	--	22.0	7.3
29...	2300	1.0	28	--	22.0	7.5
29...	2400	1.0	28	6.0	22.0	7.5
30...	0100	1.2	28	--	22.0	7.4
30...	0200	1.4	30	--	21.5	7.2
30...	0300	1.7	30	6.3	21.5	7.0
30...	0400	1.7	30	--	21.5	7.2
30...	0500	1.7	32	--	21.5	7.4
30...	0600	1.7	34	--	21.5	7.7
30...	0645	1.7	36	6.3	21.5	7.8
30...	0700	1.7	36	--	21.5	7.7
30...	0800	1.6	36	--	21.0	7.7
30...	0900	1.5	35	--	21.0	7.6
30...	0945	1.5	35	6.3	21.0	7.6
30...	1000	1.5	35	--	21.0	7.6
30...	1100	1.4	34	--	21.0	7.7

TABLE 1. - CONTINUED

SITE 1 - LAT 33°18'58" LONG 089°11'30"

DATE	TIME	STREAM-FLOW, INSTAN-TANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)
AUG						
30...	1200	1.4	33	--	21.5	7.8
30...	1300	1.4	33	6.4	21.5	7.8
30...	1400	1.3	34	--	21.5	7.8
30...	1520	1.2	37	6.4	21.5	7.8
30...	1600	1.2	36	--	21.5	7.8
30...	1700	1.1	34	--	21.5	7.8
30...	1800	1.0	32	6.5	21.5	7.8
30...	1900	1.1	32	--	21.5	7.8
30...	2000	1.3	32	--	21.5	7.9
30...	2100	1.4	31	--	21.0	8.0
30...	2130	1.5	31	6.5	21.0	8.0
30...	2200	1.6	31	--	21.0	8.0
30...	2300	1.7	31	--	21.0	7.9
30...	2400	1.8	31	6.5	21.0	7.8
31...	0100	1.9	31	--	21.0	7.8
31...	0200	2.0	31	--	21.0	7.8
31...	0300	2.0	31	--	21.0	7.8
31...	0400	1.8	32	--	21.0	7.8
31...	0500	1.6	32	--	20.5	7.8
31...	0600	1.5	34	--	20.0	7.8
31...	0700	1.2	34	6.1	20.0	7.8
31...	0800	1.1	34	--	20.0	7.8
31...	0900	1.1	33	--	20.0	7.8
31...	0945	1.0	33	6.2	20.0	7.8
31...	1000	1.0	33	--	20.0	7.8
31...	1100	1.0	32	--	20.0	7.8
31...	1130	.91	32	6.2	20.0	7.8
31...	1200	.91	32	--	20.0	7.8
31...	1300	.86	32	--	20.5	7.9
31...	1400	.81	32	--	21.0	7.9
31...	1500	.41	30	6.5	21.5	7.6
31...	1600	.71	32	--	21.0	7.8
31...	1700	.56	30	--	21.5	7.7
31...	1800	.41	--	6.1	21.5	7.6
31...	1900	.36	30	--	21.5	7.5
31...	2000	.31	32	--	21.0	7.4
31...	2100	.26	32	6.1	21.0	7.3
31...	2200	.31	32	--	20.5	7.5
31...	2300	.41	32	--	20.5	7.7
31...	2400	.51	32	6.1	20.0	7.9

TABLE 1. - CONTINUED

SITE 2 - LAT 33°18'28" LONG 089°11'20"

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
AUG						
30...	1000	--	78	6.8	24.0	7.8
30...	1200	3.2	--	--	24.0	--
30...	1500	--	68	6.8	25.0	7.8

TABLE 1. - CONTINUED

SITE 3 - LAT 33°17'28" LONG 089°13'34"

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICRO-MHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
AUG						
29...	0800	7.0	75	6.6	23.0	5.5
29...	0900	7.1	75	--	23.0	5.6
29...	0945	7.2	75	6.5	23.0	5.7
29...	1000	7.2	75	--	23.0	5.7
29...	1100	7.2	77	--	23.0	5.7
29...	1200	7.3	80	--	23.0	5.9
29...	1300	7.3	77	--	23.0	6.2
29...	1330	7.4	75	6.5	23.0	6.4
29...	1400	7.4	75	--	23.0	6.5
29...	1500	7.5	72	--	23.0	6.7
29...	1530	7.6	72	6.7	23.0	6.8
29...	1600	7.6	72	--	23.0	6.9
29...	1700	7.5	70	--	23.0	7.0
29...	1800	7.4	68	--	23.0	7.1
29...	1830	7.4	68	6.5	23.0	7.2
29...	1900	7.3	68	--	23.0	7.1
29...	2000	7.2	68	--	23.0	7.0
29...	2100	7.0	70	--	23.0	6.9
29...	2130	7.0	70	6.1	23.0	6.8
29...	2200	7.0	72	--	23.0	6.7
29...	2300	7.1	74	--	23.0	6.4
29...	2400	7.2	74	--	23.0	6.0
30...	0030	7.2	63	6.0	23.0	5.9
30...	0100	7.2	74	--	22.5	5.9
30...	0200	7.2	74	--	22.5	5.9
30...	0300	7.2	75	--	22.5	5.9
30...	0330	7.2	75	6.6	22.5	5.9
30...	0400	7.2	75	--	22.5	5.8
30...	0500	7.3	75	--	22.5	5.8
30...	0600	7.4	74	--	22.5	5.8
30...	0700	7.4	74	--	22.0	5.9
30...	0745	7.5	74	6.6	22.0	6.1
30...	0800	7.5	74	--	22.0	6.2
30...	0900	7.5	72	--	22.0	6.4
30...	1000	7.5	72	--	22.0	6.5
30...	1100	7.6	70	--	22.5	6.6
30...	1115	7.6	70	6.6	22.5	6.6
30...	1200	7.5	70	--	22.5	6.7
30...	1300	7.5	70	--	23.0	6.9

TABLE 1. - CONTINUED

SITE 3 - LAT 33°17'28" LONG 089°13'34"

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPECIFIC CONDUCTANCE (MICROMHOS)	PH (UNITS)	TEMPERATURE (DEG C)	OXYGEN, DISSOLVED (MG/L)
AUG						
30...	1330	7.4	70	6.6	23.0	7.0
30...	1400	2.4	68	--	23.0	7.2
30...	1500	7.4	66	--	23.0	7.6
30...	1540	7.3	66	6.7	23.0	7.9
30...	1600	7.3	66	--	23.0	7.9
30...	1700	7.1	64	--	23.5	8.0
30...	1800	7.0	64	--	23.5	7.7
30...	1830	6.9	64	6.5	23.5	7.6
30...	1900	6.9	64	--	23.0	7.4
30...	2000	7.0	65	--	23.0	6.7
30...	2100	7.0	65	6.6	22.5	6.0
30...	2200	7.0	66	--	22.5	6.2
30...	2300	7.0	66	--	22.5	6.2
30...	2400	7.0	66	--	22.5	6.3
31...	0030	7.0	66	6.5	22.5	6.3
31...	0100	7.0	66	--	22.5	6.3
31...	0200	7.2	66	--	22.5	6.3
31...	0300	7.4	66	--	22.0	6.3
31...	0330	7.4	66	6.5	22.0	6.3
31...	0400	7.4	66	--	22.0	6.3
31...	0500	7.3	66	--	22.0	6.3
31...	0600	7.3	66	--	21.5	6.2
31...	0700	7.2	66	--	21.0	6.2
31...	0740	7.2	68	6.4	21.0	6.1
31...	0800	7.2	68	--	21.0	6.2
31...	0900	7.2	66	--	21.0	6.4
31...	1000	7.1	63	--	21.5	6.6
31...	1015	7.1	62	6.5	21.5	6.7
31...	1100	7.1	62	--	22.0	6.9
31...	1200	7.0	68	6.5	22.0	7.2
31...	1300	7.0	62	--	22.5	7.6
31...	1400	7.0	60	--	23.0	7.8
31...	1500	7.0	59	--	23.0	8.0
31...	1510	7.0	59	6.6	23.0	8.1
31...	1600	7.0	58	--	23.5	8.1
31...	1700	6.8	56	--	23.5	8.0
31...	1800	6.6	55	--	24.0	7.6
31...	1830	6.6	55	6.4	24.0	7.3
31...	1900	6.4	55	--	24.0	7.2

TABLE 1. - CONTINUED

SITE 3 - LAT 33°17'28" LONG 089°13'34"

DATE	TIME	STREAM-FLOW, INSTANTANEOUS (CFS)	SPE-CIFIC CON-DUCT-ANCE (MICRO-MHOS)	PH (UNITS)	TEMPER-ATURE (DEG C)	OXYGEN, DIS-SOLVED (MG/L)
AUG						
31...	2000	6.1	55	--	24.0	7.0
31...	2100	5.7	55	--	24.0	6.9
31...	2130	5.5	55	6.2	23.5	6.8
31...	2200	5.5	55	--	23.5	6.7
31...	2300	5.5	55	--	23.5	6.6
31...	2400	5.6	55	--	23.0	6.6

TABLE 2. RESULTS OF LABORATORY ANALYSIS, YOCKANOOKANY RIVER AND TRIBUTARY, AUGUST 29-31, 1978.

SITE 1 - LAT 33°18'58" LONG 089°11'30"

DATE	TIME	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
AUG								
29...	0630	43	1.5	280	500	.23	.01	.24
29...	1230	15	1.5	920	1600	.21	.01	.22
29...	1800	8	1.5	540	1000	.23	.01	.24
29...	2400	13	1.4	1200	800	.13	.01	.14
30...	0645	28	2.4	⁎1000	4600	.22	.01	.23
30...	1300	24	2.2	--	⁎ 800	.22	.01	.23
30...	1800	14	1.8	--	1400	.21	.01	.22
30...	2400	25	1.5	--	920	.14	.01	.15
31...	0700	18	2.2	⁎180	7000	.23	.01	.24
31...	1130	17	1.7	⁎ 92	6500	.26	.01	.27
31...	1800	18	1.0	⁎180	720	.26	.01	.27
31...	2400	19	1.1	⁎220	820	.24	.01	.25

⁎ NONIDEAL COLONY COUNT.

TABLE 2. - CONTINUED

SITE 1 - LAT 33°18'58" LONG 089°11'30"

WATER QUALITY DATA, WATER YEAR OCTOBER 1977 TO SEPTEMBER 1978

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO. TOTAL (MG/L AS P)
AUG							
29...	.00	.29	.29	.53	2.3	.03	.01
29...	.00	.43	.43	.65	2.9	.03	.01
29...	.00	.33	.33	.57	2.5	.02	.00
29...	.08	.37	.45	.59	2.6	.03	.02
30...	.10	.46	.56	.79	3.5	.04	.00
30...	.05	.40	.45	.68	3.0	.02	.00
30...	.01	.46	.47	.69	3.1	.03	.01
30...	.00	.37	.37	.52	2.3	.03	.01
31...	.01	.37	.38	.62	2.7	.03	.01
31...	.01	.42	.43	.70	3.1	.02	.00
31...	.01	.31	.32	.59	2.6	.03	.01
31...	.01	.33	.34	.59	2.6	.03	.01

TABLE 2. - CONTINUED

SITE 2 - LAT 33°18'28" LONG 089°11'20"

DATE	TIME	OXYGEN DEMAND, CHEM-ICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIO-CHEM-ICAL, 5 DAY (MG/L)	COLI-FORM, FECAL, 0.7 UM-MF (COLS./ 100 ML)	STREP-TOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITRO-GEN, NITRATE TOTAL (MG/L AS N)	NITRO-GEN, NITRITE TOTAL (MG/L AS N)	NITRO-GEN, NO2+NO3 TOTAL (MG/L AS N)
AUG								
30...	1000	38	4.5	2000	3300	.04	.01	.05
30...	1500	37	5.7	2400	1300	.01	.01	.02

26

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO. TOTAL (MG/L AS P)
AUG							
30...	.07	.49	.56	.61	2.7	.03	.00
30...	.04	.72	.76	.78	3.5	.06	.00

TABLE 2. - CONTINUED

SITE 3 - LAT 33°17'28" LONG 089°13'34"

DATE	TIME	OXYGEN DEMAND, CHEMICAL (HIGH LEVEL) (MG/L)	OXYGEN DEMAND, BIOCHEMICAL, 5 DAY (MG/L)	COLIFORM, FECAL, 0.7 UM-MF (COLS./100 ML)	STREPTOCOCCI FECAL, KF AGAR (COLS. PER 100 ML)	NITROGEN, NITRATE TOTAL (MG/L AS N)	NITROGEN, NITRITE TOTAL (MG/L AS N)	NITROGEN, NO2+NO3 TOTAL (MG/L AS N)
AUG								
29...	0800	27	4.6	920	1300	.19	.02	.21
29...	1330	28	4.9	*1900	4000	.18	.02	.20
29...	1830	18	3.5	640	1700	.13	.01	.14
30...	0030	29	4.0	*6500	1200	.15	.02	.17
30...	0745	33	4.4	--	3300	.12	.02	.14
30...	1330	30	5.4	2100	1200	.15	.02	.17
30...	1830	33	3.9	2300	960	.15	.02	.17
31...	0030	26	3.6	--	2500	.16	.02	.18
31...	0740	36	4.2	440	*13000	.15	.03	.18
31...	1200	25	7.9	*1300	3400	.17	.02	.19
31...	1830	31	2.6	640	460	.03	.01	.04
31...	2400	29	2.7	*1700	720	.16	.02	.18

* NONIDEAL COLONY COUNT.

TABLE 2. - CONTINUED

SITE 3 - LAT 33°17'28" LONG 089°13'34"

DATE	NITRO-GEN, AMMONIA TOTAL (MG/L AS N)	NITRO-GEN, ORGANIC TOTAL (MG/L AS N)	NITRO-GEN,AM-MONIA + ORGANIC TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS N)	NITRO-GEN, TOTAL (MG/L AS NO3)	PHOS-PHORUS, TOTAL (MG/L AS P)	PHOS-PHORUS, ORTHO. TOTAL (MG/L AS P)
AUG							
29...	.24	.65	.89	1.1	4.9	.43	.27
29...	.12	.88	1.0	1.2	5.3	.22	.13
29...	.11	.65	.76	.90	4.0	.19	.12
30...	.21	.54	.75	.92	4.1	.28	.15
30...	.23	.77	1.0	1.1	5.0	.28	.13
30...	.25	.72	.97	1.1	5.0	.29	.12
30...	.12	.59	.71	.88	3.9	.22	.14
31...	.20	.63	.83	1.0	4.5	.35	.20
31...	.40	.60	1.0	1.2	5.2	.25	.17
31...	.28	.65	.93	1.1	5.0	.21	.13
31...	.10	.44	.54	.58	2.6	.14	.06
31...	.23	.73	.96	1.1	5.0	.27	.17

TABLE 2. - CONTINUED

SITE 3 - LAT 33°17'28" LONG 089°13'34"

DATE	TIME	COLOR (PLAT-INUM-COBALT UNITS)	TUR-BID-ITY (NTU)	HARD-NESS (MG/L AS CACO3)	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)
AUG								
31...	1200	60	10	16	1	3.9	1.5	5.5

DATE	SODIUM AD-SORP-TION RATIO	BICAR-BONATE (MG/L AS HCO3)	CAR-BONATE (MG/L AS CO3)	ALKA-LINITY (MG/L AS CACO3)	CARBON DIOXIDE DIS-SOLVED (MG/L AS CO2)	SULFATE DIS-SOLVED (MG/L AS SO4)	CHLO-RIDE, DIS-SOLVED (MG/L AS CL)	FLUO-RIDE, DIS-SOLVED (MG/L AS F)
AUG								
31...	.6	18	0	15	9.1	3.7	6.8	.0

DATE	SILICA, DIS-SOLVED (MG/L AS SIO2)	SOLIDS, RESIDUE AT 180 DEG. C DIS-SOLVED (MG/L)	SOLIDS, SUM OF CONSTI-TUENTS, DIS-SOLVED (MG/L)	SOLIDS, DIS-SOLVED (TONS PER AC-FT)	SOLIDS, DIS-SOLVED (TONS PER DAY)	ARSENIC TOTAL (UG/L AS AS)	ARSENIC TOTAL IN BOT-TOM MA-TERIAL (UG/G AS AS)	CADMIUM TOTAL RECOV-ERABLE (UG/L AS CD)
AUG								
31...	11	56	41	.08	1.06	1	0	4

TABLE 2. - CONTINUED

SITE 3 - LAT 33°17'28" LONG 089°13'34"

DATE	CADMIUM RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CD)	CHRO-MIUM, TOTAL RECOV-ERABLE (UG/L AS CR)	CHRO-MIUM, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	COBALT, TOTAL RECOV-ERABLE (UG/L AS CO)	COBALT, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CO)	COPPER, TOTAL RECOV-ERABLE (UG/L AS CU)	COPPER, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS CU)	IRON, TOTAL RECOV-ERABLE (UG/L AS FE)
AUG								
31...	<10	<10	<10	4	<10	4	<10	3300

DATE	IRON, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS FE)	LEAD, TOTAL RECOV-ERABLE (UG/L AS PB)	LEAD, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS PB)	MANGA-NESE, TOTAL RECOV-ERABLE (UG/L AS MN)	MANGA-NESE, RECOV. FM BOT-TOM MA-TERIAL (UG/G)	MERCURY TOTAL RECOV-ERABLE (UG/L AS HG)	MERCURY RECOV. FM BOT-TOM MA-TERIAL (UG/G AS HG)	NICKEL, TOTAL RECOV-ERABLE (UG/L AS NI)
AUG								
31...	2300	39	20	390	80	<.5	.00	7

DATE	NICKEL, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS NI)	SELE-NIUM, TOTAL (UG/L AS SE)	SELE-NIUM, TOTAL IN BOT-TOM MA-TERIAL (UG/G)	ZINC, TOTAL RECOV-ERABLE (UG/L AS ZN)	ZINC, RECOV. FM BOT-TOM MA-TERIAL (UG/G AS ZN)	CARBON, ORGANIC TOTAL (MG/L AS C)	PHENOLS (UG/L)	OIL AND GREASE, TOTAL RECOV. GRAVI-METRIC (MG/L)
AUG								
31...	<10	0	0	30	<10	4.8	0	1

TABLE 2. - CONTINUED

SITE 3 - LAT 33°17'28" LONG 089°13'34"

DATE	PCB, TOTAL (UG/L)	PCB, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	NAPH-THA-LENES, POLY-CHLOR. TOTAL (UG/L)	ALDRIN, TOTAL (UG/L)	ALDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	CHLOR-DANE, TOTAL (UG/L)	CHLOR-DANE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDD, TOTAL (UG/L)	DDD, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
AUG									
31...	.0	0	.00	.00	.0	.0	0	.00	.0

DATE	DDE, TOTAL (UG/L)	DDE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DDT, TOTAL (UG/L)	DDT, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-AZINON, TOTAL (UG/L)	DI-AZINON, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	DI-ELDRIN TOTAL (UG/L)	DI-ELDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
AUG								
31...	.00	.0	.00	.0	.08	.0	.00	.0

TABLE 2. - CONTINUED

SITE 3 - LAT 33°17'28" LONG 089°13'34"

DATE	ENDO-SULFAN, TOTAL (UG/L)	ENDRIN, TOTAL (UG/L)	ENDRIN, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	ETHION, TOTAL (UG/L)	ETHION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR, TOTAL (UG/L)	HEPTA-CHLOR, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	HEPTA-CHLOR EPOXIDE TOTAL (UG/L)	HEPTA-CHLOR EPOXIDE TOT. IN BOTTOM MATL. (UG/KG)
AUG									
31...	.00	.00	.0	.00	.0	.00	.0	.00	.0

DATE	LINDANE TOTAL (UG/L)	LINDANE TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	MALA-THION, TOTAL (UG/L)	MALA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	METH-OXY-CHLOR, TOTAL (UG/L)	METH-OXY-CHLOR, TOT. IN BOTTOM MATL. (UG/KG)	METHYL PARA-THION, TOTAL (UG/L)	METHYL PARA-THION, TOT. IN BOTTOM MATL. (UG/KG)
AUG								
31...	.00	.0	.00	.0	.00	.0	.00	.0

TABLE 2. - CONTINUED

SITE 3 - LAT 33°17'28" LONG 089°13'34"

DATE	METHYL TRI-THION, TOTAL (UG/L)	METHYL TRI-THION, TOT. IN BOTTOM MATL. (UG/KG)	MIREX, TOTAL (UG/L)	PARA-THION, TOTAL (UG/L)	PARA-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	PER-THANE TOTAL (UG/L)	TOX-APHENE, TOTAL (UG/L)	TOXA-PHENE, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
AUG 31...	.00	.0	.00	.00	.0	.00	0	0

DATE	TOTAL TRI-THION (UG/L)	TRI-THION, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	2,4-D, TOTAL (UG/L)	2,4-D, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	2,4,5-T TOTAL (UG/L)	2,4,5-T TOTAL IN BOT-TOM MA-TERIAL (UG/KG)	SILVEX, TOTAL (UG/L)	SILVEX, TOTAL IN BOT-TOM MA-TERIAL (UG/KG)
AUG 31...	.00	.0	.00	0	.00	0	.00	.0