Quality of Surface Waters of the United States 1963

Parts 1 and 2. North Atlantic Slope Basins and South Atlantic Slope and Eastern Gulf of Mexico Basins

---

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1947

Prepared in cooperation with the States of Alabama, Connecticut, Delaware, District of Columbia, Florida, Georgia, Maryland, Massachusetts, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, and with other agencies

Quality of Surface Waters of the United States 1963

Parts 1 and 2. North Atlantic Slope Basins and South Atlantic Slope and Eastern Gulf of Mexico Basins

Prepared under the direction of S. K. LOVE, *Chief, Quality of Water Branch*

GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1947

Prepared in cooperation with the States of Alabama, Connecticut, Delaware, District of Columbia, Florida, Georgia, Maryland, Massachusetts, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, South Carolina, and with other agencies

UNITED STATES GOVERNMENT PRINTING OFFICE, WASHINGTON : 1967

UNITED STATES DEPARTMENT OF THE INTERIOR

STEWART L. UDALL, *Secretary*

GEOLOGICAL SURVEY

William T. Pecora, *Director*

For sale by the Superintendent of Documents, U.S. Government Printing Office
Washington, D.C. 20402 - Price $1.50 (paper cover)

PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Alabama, Connecticut, Delaware, District of Columbia, Florida, Georgia, Maryland, Massachusetts, Mississippi, New Jersey, New York, North Carolina, Pennsylvania, and South Carolina, and with other agencies by personnel of the Water Resources Division under the direction of L. B. Leopold, chief hydrologist, and S. K. Love, chief, Quality of Water Branch. The data were collected under the supervision of the following:

N. H. Beamer, district chemist ---------- Philadelphia, Pa.
G. A. Billingsley, district chemist ---------- Raleigh, N. C.
S. F. Kapustka, district chemist --------- Baton Rouge, La.
K. A. Mac Kichan, district engineer ---------- Ocala, Fla.
F. H. Pauszek, district chemist---------- Albany, N. Y.
J. W. Wark, district chief ---------- Towson, Md.

CONTENTS

[Symbols after station name designate type of data: c, chemical; t, water temperature; s, sediment]

ILLUSTRATION

QUALITY OF SURFACE WATERS OF THE UNITED STATES, 1963

PARTS 1 and 2

INTRODUCTION

The quality-of-water investigations of the United States Geological Survey are concerned with chemical and physical characteristics of the surface and ground water supplies of the Nation. Most of the investigations carried on in cooperation with State and Federal agencies deal with the amounts of matter in solution and in suspension in streams.

The records of chemical analysis, suspended sediment, and temperature for surface waters given in this volume serve as a basis for determining the suitability of the waters examined for all uses. The discharge of a stream and (to a lesser extent) the chemical quality are related to variations in rainfall and other forms of precipitation. In general, lower concentrations of dissolved solids may be expected during the periods of high flow than during periods of low flow. The concentration in some streams may change materially with relatively small variations in flow, whereas for other streams the quality may remain relatively uniform throughout large ranges in discharge. The quantities of suspended sediment carried by streams are also related to discharge, and during flood periods the sediment content in streams may vary over wide ranges.

In 1941, the Geological Survey began publishing annual records of chemical quality, suspended sediment, and water temperature. The records prior to 1948 were published each year in a single volume for the entire country, and in two volumes in 1948 and 1949. Beginning in 1950, the records were published in four volumes and beginning in 1959 in five volumes. The drainage basins covered in the five volumes are shown in Figure 1. The data given in this volume were collected during the water year October 1, 1962, to September 30, 1963. The records are arranged by drainage basins in downstream order according to the Geological Survey method of reporting streamflow. Stations on tributary streams are listed between stations on the main stem in the order in which those tributaries enter the main stem.

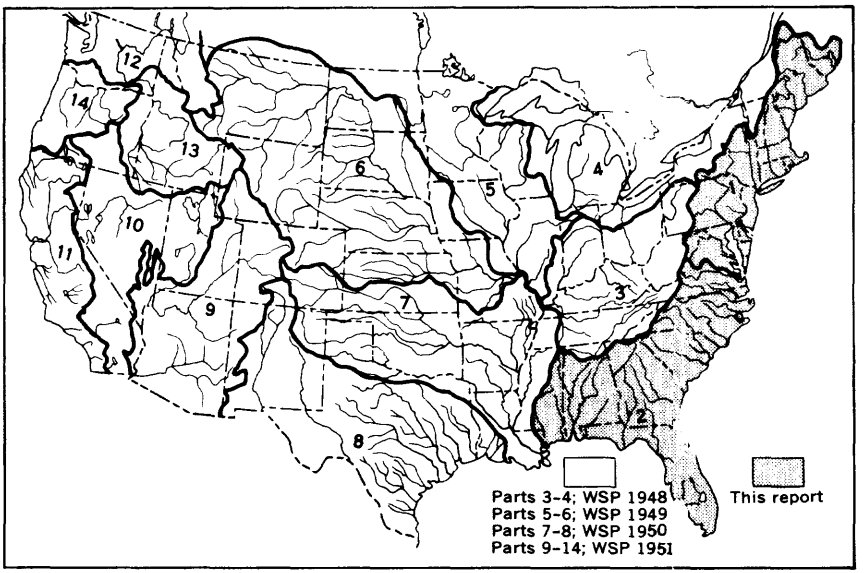

Figure 1.—Map of the conterminous United States showing basins covered by the five water-supply papers on quality of surface waters in 1963. The shaded portion represents the section of the country covered by this volume; the unshaded portion represents the section of the country covered by other water-supply papers.

A station number has been assigned as an added means of identification for each stream location where regular measurements of water quantity or quality have been made. The numbers have been assigned to conform with the standard downstream order of listing gaging stations. The numbering system consists of two digits followed by a hyphen and a six digit number. The notation to the left of the hyphen identifies the Part or hydrologic region used by the Geological Survey for reporting hydrologic data. The number to the right of the hyphen represents the position of the location in the standard downstream order listing measuring stations within each of the 14 parts. The assigned numbers are in numerical order but are not consecutive. They are so selected from the complete 6 digit number scale that intervening numbers will be available for future assignments to new locations. The identification number for each station in this report is printed to the left of the station name and contains only the essential digits. For example, the number is printed as 4-100 for a station whose complete identification number is 04-0100.00.

Descriptive statements are given for each sampling station where chemical analyses, temperature measurements, or sediment determinations have been made. These statements include the

location of the station, drainage area, periods of records available, extremes of dissolved solids, hardness, specific conductance, temperature, sediment loads, and other pertinent data. Records of discharge of the streams at or near the sampling station are included in most tables of analyses.

During the water year ending September 30, 1963, the Geological Survey maintained 172 stations on 114 streams for the study of chemical and physical characteristics of surface water. Samples were collected daily and monthly at 119 of these locations for chemical-quality studies. Samples were also collected less frequently at many other points. Water temperatures were measured daily at 128 stations. Not all analyses of samples of surface water collected during the year have been included. Single analyses of an incomplete nature generally have been omitted. Also, analyses made of the daily samples before compositing have not been reported. The specific conductance of almost all daily samples was determined, and as noted in the table headings this information is available for reference at the district offices listed under Division of Work, on page 34.

Quantities of suspended sediment are reported for 32 stations during the year ending September 30, 1963. Sediment samples were collected one or more times daily at most stations, depending on the rate of flow and changes in stage of the stream. Particle-size distributions of sediments were determined at 15 of the stations.

COLLECTION AND EXAMINATION OF SAMPLES

Samples for analyses are usually collected at or near points on streams where gaging stations are maintained by Surface Water Branch of U.S. Geological Survey for measurement of water discharge. The concentration of solutes and sediments at different locations in the stream-cross section may vary widely with different rates of water discharge depending on the source of the material and the turbulence and mixing of the stream. In general, the distribution of sediment in a stream section is much more variable than the distribution of solutes. It is necessary to sample some streams at several verticals across the channel and especially for sediment, to uniformly traverse the depth of flow. These measurements require special sampling equipment to adequately integrate the vertical and lateral variability of the concentration in the section. These procedures yield a velocity-weighted mean concentration for the section in contrast to the average concentration that existed without regard to the variable velocities of the individual fluid elements.

The near uniformly dispersed ions of the solute load move with the velocity of the transporting water. Accordingly, the mean section concentration of solutes determined from samples is a

precise measure of the total solute load. The mean section concentration obtained from suspended sediment samples is a less precise measure of the total sediment load, because the sediment samplers do not traverse the bottom 0.3 foot of the sampling vertical where the concentration of suspended sediment is greatest and because a significant part of the coarser particles in many streams move in essentially continuous contact with the bed and are not represented in the suspended sediment sample. Hence, the computed sediment loads presented in this report are usually less than the total sediment loads. For most streams the difference between the computed and total sediment loads will be small, in the order of a few percent.

CHEMICAL QUALITY

The methods of collecting and compositing water samples for chemical analysis are described in a manual by Rainwater and Thatcher (1960, 301 p.). No single method of compositing samples is applicable to all problems related to the study of water quality. Although generally holding to the principle of 10 day periods or equivalent to three composite samples per month modifications are usually made on the basis of dissolved-solids content as indicated by measurements of conductivity of daily samples, supplemented by other information such as chloride content, river stage, weather conditions and other background information of the stream.

TEMPERATURE

Daily water temperatures were measured at most of the stations at the time samples were collected for chemical quality or sediment content. So far as practicable, the water temperatures were taken at about the same time each day for an individual station in order that the data would be relatively unaffected by diurnal variations in temperature. Most large, swiftly flowing streams probably have a small diurnal variation in water temperature, whereas sluggish or shallow streams may have a daily range of several degrees and may follow closely the changes in air temperature. The thermometers used for determining water temperature were accurate to plus or minus 0.5°F.

At stations where thermographs are located, the records consist of maximum and minimum temperatures for each day, and the monthly averages of maximum daily and minimum daily temperatures.

SEDIMENT

In general, suspended-sediment samples were collected daily with U.S. depth-integrating cable-suspended samplers (U.S. Interagency, 1963, p. 56–77 and U.S. Interagency, 1952, p. 86–90) from a fixed sampling point at one vertical in the cross section. The US DH-48 hand sampler was used at many stations during periods of low flow. Depth-integrated samples were collected periodically at three or more verticals in the cross section to determine the cross-sectional distribution of the concentration of suspended sediment with respect to that at the daily sampling vertical. In streams where tranverse distribution of sediment concentration ranges widely, samples were taken at two or more verticals to define more accurately the average concentration of the cross section. During periods of high or rapidly changing flow, samples were taken two or more times throughout the day at most sampling stations.

Sediment concentrations were determined by filtration-evaporation method. At many stations the daily mean concentration for some days was obtained by plotting the velocity-weighted instantaneous concentrations on the gage-height chart. The plotted concentrations, adjusted, if necessary for cross-sectional distribution were connected or averaged by continuous curves to obtain a concentration graph. This graph represented the estimated velocity-weighted concentration at any time, and for most periods daily mean concentrations were determined from the graph. The days were divided into shorter intervals when the concentration and water discharge were changing rapidly. During some periods of minor variation in concentration, the average concentration of the samples was used as the daily mean concentration. During extended periods of relatively uniform concentration and flow, samples for a number of days were composited to obtain average concentrations and average daily loads for each period.

For some periods when no samples were collected, daily loads of suspended sediment were estimated on the basis of water discharge, sediment concentrations observed immediately preceding and following the periods, and suspended-sediment loads for other periods of similar discharge, the estimates were further guided by weather conditions and sediment discharge for other stations.

In many instances where there were no observations for several days, the suspended-sediment loads for individual days are not estimated, because numerous factors influencing the quantities of transported sediment made it very difficult to make accurate estimates for individual days. However, estimated loads of suspended sediment for missing days in otherwise continuous period of sampling have been included in monthly and annual totals in order to provide a complete record. For some streams, samples

239-654 O - 67 - 2

were collected weekly, monthly, or less frequently, and only rates of sediment discharge at the time of sampling are shown.

In addition to the records of quantities of suspended sediment transported, records of the particle sizes of sediment are included. The particle sizes of the suspended sediment for many of the stations, and the particle sizes of the bed material for some of the stations were determined periodically.

The size of particles in stream sediments commonly range from colloidal clay (finer than 0.001 mm) to coarse sand or gravel (coarser than 1.0 mm). The common methods of particle-size analyses cannot accommodate such a wide range in particle size. Hence, it was necessary to separate most samples into two parts, one coarser than 0.062 mm and one finer than 0.062 mm. The separations were made by sieve or by a tube containing a settling medium of water. The coarse fractions were classified by sieve separation or by the visual accumulation tube (U.S. Interagency, 1957). The fine fractions were classified by the pipet method (Kilmer and Alexander, 1949) or the bottom withdrawal tube method (U.S. Interagency, 1943, p. 82–90).

EXPRESSION OF RESULTS

Quantities of water for analysis are most conveniently measured in the laboratory by use of volumetric glassware. The analytical results thus obtained in this report are expressed in weights of solute in a given volume of water. To express the results in parts of solute per million (ppm) of water the data must be converted. For most waters this conversion is made by assuming that the liter of water sample weighs 1 kilogram; and thus milligrams per liter are equal to parts per million.

Equivalents per million are not reported, although the expression of analyses in equivalents per million is sometimes preferred. An equivalent per million (epm) is a unit chemical combining weight of a constituent in a million unit weights of water. Chemical equivalence in equivalents per million can be obtained by (a) dividing the concentration in parts per million by the combining weight of that ion, or (b) multiplying the concentration (in ppm) by the reciprocal of the combining weights. The following table lists the reciprocals of the combining weights of cations and anions generally reported in water analyses.

The conversion factors are computed from atomic weights based on carbon-12 (International Union of Pure and Applied Chemistry, 1961).

Results given in parts per million can be converted to grains per United States gallon by dividing by 17.12.

Conversion factors: Parts per million to equivalents per million

Ion	Multiply by	Ion	Multiply by
Aluminum (Al^{+3})	0.11119	Hydroxide (OH^{-1})	0.05880
Arsenic (As^{+3})	.04004	Iodide (I^{-1})	.00788
Barium (Ba^{+2})	.01456	Iron (Fe^{+3})	.05372
Beryllium (Be^{+2})	.22192	Lead (Pb^{+2})	.00965
Bicarbonate (HCO_3^{-1})	.01639	Lithium (Li^{+1})	.14411
Bromide (Br^{-1})	.01251	Magnesium (Mg^{+2})	.08226
Cadmium (Cd^{+2})	.01779	Manganese (Mn^{+2})	.03640
Calcium (Ca^{+2})	.04990	Nickel (Ni^{+2})	.03406
Carbonate (CO_3^{-2})	.03333	Nitrate (NO_3^{-1})	.01613
Chloride (Cl^{-1})	.02821	Phosphate (PO_4^{-3})	.03159
Chromium (Cr^{+6})	.11539	Potassium (K^{+1})	.02557
Cobalt (Co^{+2})	.03394	Sodium (Na^{+1})	.04350
Copper (Cu^{+2})	.03148	Strontium (Sr^{+2})	.02283
Fluoride (F^{-1})	.05264	Sulfate (SO_4^{-2})	.02083
Hydrogen (H^{+1})	.99209	Zinc (Zn^{+2})	.03060

The hardness of water is conventionally expressed in all water analyses in terms of an equivalent quantity of calcium carbonate. Such a procedure is required because hardness is caused by several different cations, present in variable proportions. It should be remembered that hardness is an expression in conventional terms of a property of water. The actual presence of calcium carbonate in the concentration given is not to be assumed. The hardness caused by calcium and magnesium (and other cations if significant) equivalent to the carbonate and bicarbonate is called carbonate hardness; the hardness in excess of this quantity is called noncarbonate hardness. Hardness or alkalinity values expressed in parts per million as calcium carbonate may be converted to equivalents per million by dividing by 50.

The value usually reported as dissolved solids is the residue on evaporation after drying at 180°C for 1 hour. For some waters, particularly those containing moderately large quantities of soluble salts, the value reported is calculated from the quantities of the various determined constituents using the carbonate equivalent of the reported bicarbonate. The calculated sum of the constituents may be given instead of or in addition to the residue. In the analyses of most waters used for irrigation, the quantity of dissolved solids is given in tons per acre-foot as well as in parts per million.

Specific conductance is given for most analyses and was determined by means of a conductance bridge and using a standard potassium chloride solution as reference. Specific conductance values are expressed in micromhos per centimeter at 25°C.

Specific conductance in micromhos is 1 million times the reciprocal of specific resistance at 25°C. Specific resistance is the resistance in ohms of a column of water 1 centimeter long and 1 square centimeter in cross section.

The discharge of the streams is reported in cubic feet per second (see Streamflow, p. 24) and the temperature in degrees Fahrenheit. Color is expressed in units of the platinum-cobalt scale proposed by Hazen (1892, p. 427–428). A unit of color is produced by one milligram per liter of platinum in the form of the chloroplatinate ion. Hydrogen-ion concentration is expressed in terms of pH units. By definition the pH value of a solution is the negative logarithm of the concentration of gram ions of hydrogen. However, the pH meter that is generally used in Survey laboratories determines the activity of the hydrogen ions as distinguished from concentration.

An average of analyses for the water year is given for most daily sampling stations. Most of these averages are arithmetical, time-weighted, or discharge-weighted; when analyses during a year are all on 10-day composites of daily samples with no missing days, the arithmetical and time-weighted averages are equivalent. A time-weighted average represents the composition of water that would be contained in a vessel or reservoir that had received equal quantities of water from the river each day for the water year. A discharge-weighted average approximates the composition of water that would be found in a reservoir containing all of the water passing a given station during the year after thorough mixing in the reservoir. A discharge-weighted average is computed by multiplying the discharge for the sampling period by the concentrations of individual constituents for the corresponding period and dividing the sum of the products by the sum of the discharges. Discharge-weighted averages are usually lower than arithmetical averages for most streams because at times of high discharge the rivers generally have lower concentrations of dissolved solids.

A program for computing these averages on an electronic digital computer was instituted in the 1962 water year. This program extended computations to include averages for pH values expressed in terms of hydrogen ion and averages for the concentration of individual constituents expressed in tons per day. Concentrations in tons per day are computed the same as daily sediment loads.

The concentration of sediment in parts per million is computed as 1,000,000 times the ratio of the weight of sediment to the weight of water-sediment mixture. Daily sediment loads are expressed in tons per day and except for subdivided days are usually obtained by multiplying daily mean sediment concentration in parts per million by the daily mean discharge, and the appropriate conversion factor, normally 0.0027.

Particle-size analyses are expressed in percentages of material finer than indicated sizes in millimeters. The size classification used in this report is that recommended by the American Geophysical Union subcommittee on Terminology (Lane and others, 1947, p. 937). Other data included as pertinent to the size analyses for many streams are the date of collection, the stream discharge, sediment concentration when sample was collected, and the method of analysis.

COMPOSITION OF SURFACE WATERS

All natural waters contain dissolved mineral matter. Water in contact with soils or rock, even for only a few hours, will dissolve some mineral matter. The quantity of dissolved mineral matter in a natural water depends primarily on the type of rocks or soils with which the water has been in contact and the length of time of contact. Some streams are fed by both surface runoff and ground water from spring or seeps. Such streams reflect the chemical character of their concentrated underground sources during dry periods and are more dilute during periods of heavy rainfall. Ground water is generally more highly mineralized than surface runoff because it remains in contact with the rocks and soils for much longer periods. The dissolved-solids content in a river is frequently increased by drainage from mines or oil fields, by the addition of industrial or municipal wastes, or—in irrigated regions—by drainage from irrigated lands.

The mineral constituents and physical properties of natural waters reported in the tables of analyses include those that have a practical bearing on the value of the waters for most purposes. The analyses generally include results for silica, iron, calcium, magnesium, sodium, potassium (or sodium and potassium together calculated as sodium), alkalinity as carbonate and bicarbonate, sulfate, chloride, fluoride, nitrate, boron, pH, dissolved solids and specific conductance. Aluminum, manganese, color, acidity, oxygen consumed, and other dissolved constituents and physical properties are reported for certain streams. Phenolic material and minor elements including strontium, chromium, nickel, copper, lead, zinc, cobalt, arsenic, cadmium, and others are occasionally determined for a few streams in connection with specific problems in local areas and the results are reported when appropriate. The source and significance of the different constituents and properties of natural waters are discussed in the following paragraphs. The constituents are arranged in the order that they appear on standard analytical statement cards which are used to process the chemical quality data in this report.

MINERAL CONSTITUENTS IN SOLUTION

Silica (SiO_2)

Silica is dissolved from practically all rocks. Some natural surface waters contain less than 5 parts per million of silica and few contain more than 50 parts, but the more common range is from 10 to 30 parts per million. Silica affects the usefulness of a water because it contributes to the formation of boiler scale; it usually is removed from feed water for high-pressure boilers. Silica also forms troublesome deposits on the blades of steam turbines.

Aluminum (Al)

Aluminum is usually present only in negligible quantities in natural waters except in areas where the waters have been in contact with the more soluble rocks of high aluminum content such as bauxite and certain shales. Acid waters often contain large amounts of aluminum. It may be troublesome in feed waters where it tends to be deposited as a scale on boiler tubes.

Iron (Fe)

Iron is dissolved from many rocks and soils. On exposure to the air, normal basic waters that contain more than 1 part per million of iron soon become turbid with the insoluble reddish ferric oxide produced by oxidation. Surface waters, therefore, seldom contain as much as 1 part per million of dissolved iron, although some acid waters carry large quantities of iron in solution. Iron causes reddish-brown stains on white porcelain or enameled ware and fixtures and on fabrics washed in the water.

Manganese (Mn)

Manganese is dissolved in appreciable quantities from rocks in some sections of the country. It resembles iron in its chemical behavior and in its occurrence in natural waters. However, manganese in rocks is less abundant than iron. As a result the concentration of manganese is much less than that of iron and is not regularly determined in many areas. Waters impounded in large reservoirs may contain manganese that has been dissolved from the mud on the bottom of the reservoir by action of carbon dioxide produced by anaerobic fermentation of organic matter. It is

especially objectionable in water used in laundry work and in textile processing. Concentrations as low as 0.2 part per million may cause a dark-brown or black stain on fabrics and porcelain fixtures. Appreciable quantities of manganese are often found in waters containing objectionable quantities of iron.

Calcium (Ca)

Calcium is dissolved from almost all rocks and soils, but the highest concentrations are usually found in waters that have been in contact with limestone, dolomite, and gypsum. Calcium and magnesium make water hard and are largely responsible for the formation of boiler scale. Most waters associated with granite or silicious sands contain less than 10 parts per million of calcium; waters in areas where rocks are composed of dolomite and limestone contain from 30 to 100 parts per million; and waters that have come in contact with deposits of gypsum may contain several hundred parts per million.

Magnesium (Mg)

Magnesium is dissolved from many rocks, particularly from dolomitic rocks. Its effect in water is similar to that of calcium. The magnesium in soft waters may amount to only 1 or 2 parts per million, but water in areas that contain large quantities of dolomite or other magnesium-bearing rocks may contain from 20 to 100 parts per million or more of magnesium.

Strontium (Sr)

Strontium is a typical alkaline-earth element and is similar chemically to calcium. Strontium may be present in natural water in amounts up to a few parts per million much more frequently than the available data indicate. In most surface water the amount of strontium is small in proportion to calcium. However, in sea water the ratio of strontium to calcium is 1:30.

Sodium and potassium (Na and K)

Sodium and potassium are dissolved from practically all rocks. Sodium is the predominant cation in some of the more highly mineralized waters found in the western United States. Natural waters that contain only 3 or 4 parts per million of the two together are likely to carry almost as much potassium as sodium. As the total quantity of these constituents increases, the

proportion of sodium becomes much greater. Moderate quantities of sodium and potassium have little effect on the usefulness of the water for most purposes, but water that carry more than 50 or 100 parts per million of the two may require careful operation of steam boilers to prevent foaming. More highly mineralized waters that contain a large proportion of sodium salts may be unsatisfactory for irrigation.

Lithium (Li)

Data concerning the quantity of lithium in water are scarce. It is usually found in small amounts in thermal springs and saline waters. Lithium also occurs in streams where some industries dump their waste water. The scarcity of lithium in rocks is responsible more than other factors for relatively small amounts present in water.

Bicarbonate, carbonate and hydroxide (HCO_3, CO_3, OH)

Bicarbonate, carbonate, or hydroxide is sometimes reported as alkalinity. The alkalinity of a water is defined as its capacity to consume a strong acid to pH 4.5. Since the major causes of alkalinity in most natural waters are carbonate and bicarbonate ions dissolved from carbonate rocks, the results are usually reported in terms of these constituents. Although alkalinity may suggest the presence of definite amounts of carbonate, bicarbonate or hydroxide, it may not be true due to other ions that contribute to alkalinity such as silicates, phosphates, borates, possibly fluoride, and certain organic anions which may occur in colored waters. The significance of alkalinity to the domestic, agricultural, and industrial user is usually dependent upon the nature of the cations (Ca, Mg, Na, K) associated with it. However, moderate amounts of alkalinity does not adversely affect most users.

Hydroxide may occur in water that has been softened by the lime process. Its presence in streams usually can be taken as an indication of contamination and does not represent the natural chemical character of the water.

Sulfate (SO_4)

Sulfate is dissolved from many rocks and soils—in especially large quantities from gypsum and from beds of shale. It is formed also by the oxidation of sulfides or iron and is therefore present in considerable quantities in waters from mines. Sulfate in waters that contain much calcium and magnesium causes the

formation of hard scale in steam boilers and may increase the cost of softening the water.

Chloride (Cl)

Chloride is dissolved from rock materials in all parts of the country. Surface waters in the humid regions are usually low in chloride, whereas streams in arid or semiarid regions may contain several hundred parts per million of chloride leached from soils and rocks, especially where the streams receive return drainage from irrigated lands or are affected by ground-water-inflow carrying appreciable quantities of chloride. Large quantities of chloride may affect the industrial use of water by increasing the corrosiveness of waters that contain large quantities of calcium and magnesium.

Fluoride (F)

Fluoride has been reported as being present in some rocks to about the same extent as chloride. However, the quantity of fluoride in natural surface waters is ordinarily very small compared to that of chloride. Investigations have proved that fluoride concentrations of about 0.6 to 1.7 ppm reduced the incidence of dental caries and that concentrations greater than 1.7 ppm also protect the teeth from cavities but cause an undesirable black stain (Durfor and Becker, 1964, p. 20). Public Health Service, 1962 (p. 8), states, "When fluoride is naturally present in drinking water, the concentration should not average more than the appropriate upper control limit (0.6 to 1.7 ppm). Presence of fluoride in average concentration greater than two times the optimum values shall constitute grounds for rejection of the supply." Concentration higher than the stated limits may cause mottled enamel in teeth, endemic cumulative fluorosis, and skeletal effects.

Nitrate (NO_3)

Nitrate in water is considered a final oxidation product of nitrogenous material and may indicate contamination by sewage or other organic matter. The quantities of nitrate present in surface waters are generally less than 5 parts per million (as NO_3) and have no effect on the value of the water for ordinary uses.

It has been reported that as much as 2 parts per million of nitrate in boiler water tends to decrease intercrystalline cracking of boiler steel. Studies made in Illinois indicate that nitrates in excess of 70 parts per million (as NO_3) may contribute to methemoglobinemai ("blue babies") Faucett and Miller, 1946, p. 593),

and more recent investigations conducted in Ohio show that drinking water containing nitrates in the range of 44 to 88 ppm (as NO_3) may cause methemoglobinemia (Waring, 1949). In a report published by the National Research Council, Maxcy (1950, p. 271) concludes that a nitrate content in excess of 44 parts per million (as NO_3) should be regarded as unsafe for infant feeding. U.S. Public Health Service (1962) sets 45 ppm as the upper limit.

Phosphate (PO_4)

Phosphorus is an essential element in the growth of plants and animals, and some sources that contribute nitrate, such as organic wastes and leaching of soils, may be important as sources for phosphate in water and its occurrence may add to the apparent alkalinity. The addition of phosphates in water treatment constitutes a possible source, although the dosage is usually small. In some areas, phosphate fertilizers may yield some phosphate to water. A more important source is the increasing use of phosphates in detergents. Domestic and industrial sewage effluents may therefore contain considerable amounts of phosphate.

Boron (B)

Boron in small quantities has been found essential for plant growth, but irrigation water containing more than 1 part per million boron is detrimental to citrus and other boron-sensitive crops. Boron is reported in Survey analyses of surface waters in arid and semiarid regions of the Southwest and West where irrigation is practiced or contemplated, but few of the surface waters analyzed have harmful concentrations of boron.

Dissolved solids

The reported quantity of dissolved solids—the residue on evaporation—consists mainly of the dissolved mineral constituents in the water. It may also contain some organic matter and water of crystallization. Waters with less than 500 parts per million of dissolved solids are usually satisfactory for domestic and some industrial uses. Water containing several thousand parts per million of dissolved solids are sometimes successfully used for irrigation where practices permit the removal of soluble salts through the application of large volumes of water on well-drained lands, but generally water containing more than about 2,000 ppm is considered to be unsuitable for long-term irrigation under average conditions.

Chromium (Cr)

Few if any waters contain chromium from natural sources. Natural waters can probably contain only traces of chromium as a cation unless the pH is very low. When chromium is present in water, it is usually the result of pollution by industrial wastes. Fairly high concentrations of chromate anions are possible in waters having normal pH levels. Concentrations of more than 0.05 ppm of chromium in the hexavalent form constitute grounds for rejection of a water for domestic use on the basis of the standards of the U.S. Public Health Service (1962).

Nickel and cobalt (Ni, Co)

Nickel and cobalt are very similar in chemical behavior and also closely related to iron. Both are present in igneous rocks in small amounts and are more prevalent in silicic rocks. Any nickel in water is likely to be in small amounts and could be in a colloidal state. Cobalt may be taken into solution more readily than nickel. It may be taken into solution in small amounts through bacteriological activity similar to that causing solution of manganese. However, few data on the occurrence of either nickel or cobalt in natural water are available.

Copper (Cu)

Copper is a fairly common trace constituent of natural water. Small amounts may be introduced into water by solution of copper and brass water pipes and other copper-bearing equipment in contact with the water, or from copper salts added to control algae in open reservoirs. Copper salts such as the sulfate and chloride are highly soluble in waters with a low pH but in water of normal alkalinity these salts hydrolyze and the copper may be precipitated. In the normal pH range of natural water containing carbon dioxide, the copper might be precipitated as carbonate. The oxidized portions of sulfide-copper ore bodies contain other copper compounds. The presence of copper in mine water is common.

Copper imparts a disagreeable metallic taste to water. As little as 1.5 ppm can usually be detected, and 5 ppm can render the water unpalatable. Copper is not considered to be a cumulative systemic poison like lead and mercury; most copper ingested is excreted by the body and very little is retained. The pathological effects of copper are controversial, but it is generally believed very unlikely that humans could unknowingly ingest toxic quantities from palatable drinking water. The U.S. Public Health

Service (1962) recommends that copper should not exceed 1.0 ppm in drinking and culinary water.

Lead (Pb)

Lead is only a minor element in most natural waters, but industrial or mine and smelter effluents may contain relatively large amounts of lead. Many of the commonly used lead salts are water soluble.

Traces of lead in water usually are the result of solution of lead pipe through which the water has passed. Amounts of lead of the order of 0.05 ppm are significant, as this concentration is the upper limit for drinking water in the standards adopted by the U.S. Public Health Service (1962). Higher concentrations may be added to water through industrial and mine-waste disposal. Lead in the form of sulfate is reported to be soluble in water to the extent of 31 ppm (Seidell, 1940, p. 1409) at 25°C. In natural water this concentration would not be approached, however, since a pH of less than 4.5 would probably be required to prevent formation of lead hydroxide and carbonate. It is reported (Pleissner, 1907) that at 18°C water free of carbon dioxide will dissolve the equivalent of 1.4 ppm of lead and the solubility is increased nearly four fold by the presence of 2.8 ppm of carbon dioxide in the solution. Presence of other ions may increase the solubility of lead.

Zinc (Zn)

Zinc is abundant in rocks and ores but is only a minor constituent in natural water because the free metal and its oxides are only sparingly soluble. In most alkaline surface waters it is present only in trace quantities, but more may be present in acid water. Chlorides and sulfates of zinc are highly soluble. Zinc is used in many commercial products, and industrial wastes may contain large amounts.

Zinc in water does not cause serious effects on health, but produces undesirable esthetic effects. The U.S. Public Health Service (1962, p. 55) recommends that the zinc content not exceed 5 ppm in drinking and culinary water.

Barium (Ba)

Barium may replace potassium in some of the igneous rock minerals, especially feldspar and barium sulfate (barite) is a common barium mineral of secondary origin. Only traces of barium are present in surface water and sea water. Because

natural water contains sulfate, barium will dissolve only in trace amounts. Barium sometimes occurs in brines from oil-well wastes.

The U.S. Public Health Service (1962) states that water containing concentrations of barium in excess of 1 ppm is not suitable for drinking and culinary use because of the serious toxic effects of barium on heart, blood vessels, and nerves.

Bromide (Br)

Bromine is a very minor element in the earth's crust and is normally present in surface waters in only minute quantities. Measurable amounts may be found in some streams that receive industrial wastes, and some natural brines may contain rather high concentrations. It resembles chloride in that it tends to be concentrated in sea water.

Iodide (I)

Iodide is considerably less abundant both in rocks and water than bromine. Measurable amounts may be found in some streams that receive industrial wastes, and some natural brines may contain rather high concentrations. It occurs in sea water to the extent of less than 1 ppm. Rankama and Sahama (1950, p. 767) report iodide present in rainwater to the extent of 0.001 to 0.003 ppm and in river water in about the same amount. Few waters will contain over 2.0 ppm.

PROPERTIES AND CHARACTERISTICS OF WATER

Hardness

Hardness is the characteristic of water that receives the most attention in industrial and domestic use. It is commonly recognized by the increased quantity of soap required to produce lather. The use of hard water is also objectionable because it contributes to the formation of scale in boilers, water heaters, radiators, and pipes, with the resultant decrease in rate of heat transfer, possibility of boiler failure, and loss of flow.

Hardness is caused almost entirely by compounds of calcium and magnesium. Other constituents—such as iron, manganese, aluminum, barium, strontium, and free acid—also cause hardness, although they usually are not present in quantities large enough to have any appreciable effect.

Generally, bicarbonate and carbonate determine the proportions of "carbonate" hardness of water. Carbonate hardness is

the amount of hardness chemically equivalent to the amount of bicarbonate and carbonate in solution. Carbonate hardness is approximately equal to the amount of hardness that is removed from water by boiling.

Noncarbonate hardness is the difference between the hardness calculated from the total amount of calcium and magnesium in solution and the carbonate hardness. If the carbonate hardness (expressed as calcium carbonate) equal the amount of calcium and magnesium hardness (also expressed as calcium carbonate) there is no noncarbonate hardness. Noncarbonate hardness is about equal to the amount of hardness remaining after water is boiled. The scale formed at high temperatures by the evaporation of water containing noncarbonate hardness commonly is tough, heat resistant, and difficult to remove.

Although many people talk about soft water and hard water, there has been no firm line of demarcation. Water that seems hard to an easterner may seem soft to a westerner. In this report hardness of water is classified as follows:

Hardness range (calcium carbonate) in ppm)	Hardness description
0–60	Soft
61–120	Moderately hard
121–180	Hard
more than 180	Very hard

For public use, water with hardness above 200 parts per million generally requires softening treatment (Durfor and Becker, 1964, p. 23–27).

Acidity (H^{+1})

The use of the terms acidity and alkalinity is widespread in the literature of water analysis and is a cause of confusion to those who are more accustomed to seeing a pH of 7.0 used as a neutral point. Acidity of a natural water represents the content of free carbon dioxide and other uncombined gases, organic acids and salts of strong acids and weak bases that hydrolyze to give hydrogen ions. Sulfates of iron and aluminum in mine and industrial wastes are common sources of acidity. The presence of acidity is reported in those waters which have a pH below 4.5.

Sodium-adsorption-ratio (SAR)

The term "sodium-adsorption-ratio (SAR)" was introduced by the U.S. Salinity Laboratory Staff (1954). It is a ratio expressing the relative activity of sodium ions in exchange reaction with soil and is an index of the sodium or alkali hazard to the soil. Sodium-adsorption-ratio is expressed by the equation:

$$SAR = \frac{Na^{+}}{\sqrt{\frac{Ca^{++}+Mg^{++}}{2}}}$$

where the concentrations of the ions are expressed in milliequivalents per liter (or equivalents per million for most irrigation waters).

Waters are divided into four classes with respect to sodium of alkali hazard: low, medium, high, and very high, depending upon the SAR and the specific conductance. At a conductance of 100 micromhos per centimeter the dividing points are at SAR values of 10, 18, and 26, but at 5,000 micromhos the corresponding dividing points are SAR values of approximately 2.5, 6.5, and 11. Waters range in respect to sodium hazard from those which can be used for irrigation on almost all soils to those which are generally unsatisfactory for irrigation.

Specific conductance (micromhos per centimeter at 25°C)

Specific conductance is a convenient, rapid determination used to estimate the amount of dissolved solids in water. It is a measure of the ability of water to transmit a small electrical current (see p. 8). The more dissolved solids in water that can transmit electricity the greater the specific conductance of the water. Commonly, the amount of dissolved solids (in parts per million) is about 65 percent of the specific conductance (in micromhos). This relation is not constant from stream to stream or from well to well and it may even vary in the same source with changes in the composition of the water (Durfor and Becker, 1964, p. 27–29).

Specific conductance of most waters in the eastern United States is less than 1,000 micromhos, but in the arid western parts of the country, a specific conductance of more than 1,000 micromhos is common.

Hydrogen-ion concentration (pH)

Hydrogen-ion concentration is expressed in terms of pH units (see p. 8). The values of pH often are used as a measure of the solvent power of water or as an indicator of the chemical behavior certain solutions may have toward rock minerals.

The degree of acidity or alkalinity of water, as indicated by the hydrogen-ion concentration, expressed as pH, is related to the corrosive properties of water and is useful in determining the proper treatment for coagulation that may be necessary at water-treatment plants. A pH of 7.0 indicates that the water is neither acid nor alkaline. pH readings progressively lower than 7.0 denote increasing acidity and those progressively higher than 7.0 denote increasing alkalinity. The pH of most natural surface waters ranges between 6 and 8. Some alkaline surface waters have pH values greater than 8.0, and waters containing free mineral acid or organic matter usually have pH values less than 4.5.

The investigator who utilizes pH data in his interpretations of water analyses should be careful to place pH values in their proper perspective.

Color

In water analysis the term "color" refers to the appearance of water that is free from suspended solids. Many turbid waters that appear yellow, red, or brown when viewed in the stream show very little color after the suspended matter has been removed. The yellow-to-brown color of some waters is usually caused by organic matter extracted from leaves, roots, and other organic substances in the ground. In some areas objectionable color in water results from industrial wastes and sewage. Clear deep water may appear blue as the result of a scattering of sunlight by the water molecules. Water for domestic use and some industrial uses should be free from any perceptible color. A color less than 15 units generally passes unnoticed (U.S. Public Health Service, 1962). Some swamp waters have natural color in excess of 300 units.

The extent to which a water is colored by material in solution is commonly reported as a part of a water analysis because a significant color in water may indicate the presence of organic material that may have some bearing on the dissolved solids content. Color in water is expressed in terms of units between 0 and 500 or more based on the above standard (see p. 8).

Oxygen consumed

Oxygen consumed is a measure of the amount of oxygen required to oxidize unstable materials in water and may be correlated with natural-water color or with some carbonaceous organic pollution from sewage or industrial wastes.

Tolerances for oxygen consumed in feed water for low-and high-pressure boilers are 15 and 3 ppm, respectively (Northeast Water Works Association, 1940). Wash water containing more than 8 ppm has been reported to import a bad odor to textiles; concentrations for water used in beverages and brewing range from 0.5 to 5.0 ppm (California State Water Pollution Control Board, 1952, 1954).

Organics

Phenols.—Phenolic material in water resources is invariably the result of pollution. Phenols are widely used as disinfectants and in the synthesis of many organic compounds. Waste products from oil refineries, coke areas, and chemical plants may contain high concentrations. Fortunately, phenols decompose in the presence of oxygen and organic material, and their persistence downstream from point of entry is relatively short lived. The rate of decomposition is dependent on the environment.

Very low concentrations impart such a disagreeable taste to water that it is highly improbable that harmful amounts could be consumed unknowingly. Reported thresholds of detection of taste and odor range from 0.001 to 0.01 ppm.

Detergents (ABS).—The chief surfactant in commercial detergents is anionic alkylbenzenesulfonate (ABS). ABS and other anionic surfactants resist chemical oxidation and biological breakdown. Their persistence in water over long periods of time contributes to pollution of both ground water and surface water. Some of the effects produced from detergent pollution are unpleasant taste, odor, and foaming (Wyman, Robertson, and Page, 1962). Although the physiological implications of ABS to human beings is unknown, prolonged ingestion of this material by rats is believed to be nontoxic (Paynter, 1960). The U.S. Public Health Service (1962) recommends that ABS should not exceed 0.5 ppm in drinking and culinary waters.

Temperature

Temperature is an important factor in property determining the quality of water. This is very evident for such a direct use as an industrial coolant. Temperature is also important, but per-

239-654 O - 67 - 3

haps not so evident, for its indirect influence upon aquatic biota, concentrations of dissolved gases, and distribution of chemical solutes in lakes and reservoirs as a consequence of thermal stratification and variation.

Surface water temperatures tend to change seasonally and daily with air temperatures, except for the outflow of large springs. Superimposed upon the annual temperature cycle is a daily fluctuation of temperature which is greater in warm seasons than in cold and greater in sunny periods than with a cloud cover. Natural warming is due mainly to absorption of a solar radiation by the water and secondarily to transfer of heat from the air or from the bottom. Condensation of water vapor at the water surface is reported to furnish measureable quantities of heat. Heat loss takes place largely through radiation, with further losses through evaporation and conduction to the air and bottom. Thus the temperature of a small stream generally reaches a maximum in mid-to late afternoon due to solar heating and reaches a minimum from early to mid-morning after nocturnal radiation.

Temperature variations which commonly occur during summer in lakes and reservoirs of temperate regions results in a separation of the water volume into a circulating upper portion and a non-circulating lower portion. Separating the two is a stratum of water of variable vertical thickness in which the temperature decreases rapidly with increasing depth. This physical division of the water mass into a circulating and a stagnant portion is the result of density differences in the water column associated with the temperature distribution. Knowledge of the stratification in a body of water may result in increased utility by locating strata of more suitable characteristics. For example, the elevation of an intake pipe may be changed to obtain water of lower temperature, higher pH, less dissolved iron, or other desirable properties.

Temperature is a major factor in determining the effect of pollution on aquatic organisms. The resistance of fish to certain toxin substances has been shown to vary widely with temperature. The quantity of dissolved oxygen which the water can contain is also temperature dependent. Oxygen is more soluble in cold water than in warm water, hence the reduction of oxygen concentrations by pollution is especially serious during periods of high temperature when oxygen levels are already low. Increased temperatures also accelerate biological activity including that of the oxygen-utilizing bacteria which decompose organic wastes. These pollutional effects may be especially serious when low flow conditions coincide with high temperatures. Summary temperature data of water are essential for planning multiple uses of water resources.

Turbidity

Turbidity is the optical property of a suspension with reference to the extent to which the penetration of light is inhibited by the presence of insoluble material. Turbidity is a function on both the concentration and particle size of the suspended material. Although it is reported in terms of parts per million of silica, it is only partly synonymous with the weight of sediment per unit volume of water.

Turbid water is abrasive in pipes, pumps, and turbine blades. In process water, turbidities much more than 1 ppm are not tolerated by several industries, but others permit up to 50 ppm higher (Rainwater, Thatcher, 1960, p. 289). Although turbidity does not directly measure the safety of drinking water, it is related to the consumers acceptance of the water. A level of 5 units of turbidity becomes objectionable to a considerable number of people (U.S. Public Health, 1962).

Sediment

Fluvial sediment is generally regarded as that sediment which is transported by suspended in, or deposited by water. Suspended sediment is that part of it which remains in suspension in water owing to the upward components of turbulent currents or by colloidal suspension. Much fluvial sediment results from the natural process of erosion, which in turn is part of the geologic cycle of rock transformation. This natural process may be accelerated by agricultural practices. Sediment is also contributed by a number of industrial and construction activities. In certain sections, waste materials from mining, logging, oil-field, and other industrial operations introduce large quantities of suspended as well as dissolved material.

The quantity of sediment, transported or available for transportation, is affected by climatic conditions, form or nature of precipitation, character of the solid mantle, plant cover, topography, and land use. The mode and rate of sediment erosion, transport, and deposition is determined largely by the size distribution of the particles or more precisely by the fall velocities of the particles in water. Sediment particles in the sandsize (larger than 0.062 mm) range do not appear to be affected by flocculation or dispersion resulting from the mineral constituents in solution. In contrast, the sedimentation diameter of clay and silt particles in suspension may vary considerably from point to point in a stream or reservoir, depending on the mineral matter in solution and in suspension and the degree of turbulence present. The size of sediment particles in transport at any point depends on the type of erodible and soluble material in the drainage area, the

degree of flocculation present, time in transport, and characteristics of the transporting flow. The flow characteristics include velocity of water, turbulence, and the depth, width, and roughness of the channel. As a result of these variable characteristics, the size of particles transported, as well as the total sediment load, is in constant adjustment with the characteristics and physical features of the stream and drainage area.

STREAMFLOW

Most of the records of stream discharge, used in conjunction with the chemical analyses and in the computation of sediment loads in this volume, are published in Geological Survey State reports on the surface-water supply of the United States. The discharge reported for a composite sample is usually the average of daily mean discharges for the composite period. The discharges reported in the tables of single analyses are either daily mean discharges or discharges for the time at which samples were collected, computed from a stage-discharge relation or from a discharge measurement.

State reports containing more complete records of stream discharge may be obtained by writing to the responsible District Engineer, Surface Water Branch, U.S. Geological Survey. For the area covered in this volume, the States, drainage basins, and locations of the district engineers are listed below.

State	Drainage area	Surface Water Branch district office
Alabama	South Atlantic slope and eastern Gulf of Mexico	P.O. Box V University of Alabama Tuscaloosa, Ala. 35486
Connecticut	North Atlantic slope	203 Federal Bldg. P.O. Box 715 Hartford, Conn. 06101
Delaware		106 Engineering Bldg. University of Maryland College Park, Md. 20740
Florida	South Atlantic slope and eastern Gulf of Mexico	Room 244 Federal Building Ocala, Fla. 32670
Georgia		Room 164 Peachtree Seventh Bldg. Atlanta, Ga. 30323

State	Drainage basin	Surface Water Branch district office
Maine	North Atlantic slope	Vickery-Hill Building Court Street Augusta, Maine 04330
Maryland		106 Engineering Bldg. University of Maryland College Park, Md. 20740
Mississippi	South Atlantic slope and eastern Gulf of Mexico	Room 302 Post Office Building Jackson, Miss. 39205
New Hampshire	North Atlantic slope	Room 205 211 Congress Street Boston, Mass. 02110
New Jersey		P. O. Box 967 Room 433 Federal Bldg. Trenton, N. J. 08605
New York		P. O. Box 948 Federal Building Albany, N. Y. 12201
North Carolina	South Atlantic slope and eastern Gulf of Mexico	P. O. Box 2857 Federal Building Raleigh, N. C. 27602
Pennsylvania	North Atlantic slope	1224 Mulberry Street Harrisburg, Pa. 17104
South Carolina	South Atlantic slope and eastern Gulf of Mexico	Room 121 1801 Assembly Street Columbia, S. C. 29201
Virginia	North Atlantic slope South Atlantic slope and eastern Gulf of Mexico	P. O. Box 3327 University Station Charlottesville, Va. 22903
West Virginia	North Atlantic slope	Room 3303 New Federal Building 500 Quarrier St., East Charleston, W. Va. 25301

PUBLICATIONS

Reports giving records of chemical quality and temperatures of surface waters and suspended-sediment loads of streams in the area covered by this volume for the water years 1941–63, are listed below:

Numbers of water-supply papers containing records for Parts 1 and 2, 1941–63

Year	WSP	Year	WSP	Year	WSP	Year	WSP
1941	942	1947	1102	1953	1290	1959	1641
1942	950	1948	1132	1954	1350	[a]1960	1741
1943	970	1949	1162	1955	1400	[a]1961	1881
1944	1022	1950	1186	1956	1450	1962	1941
1945	1030	1951	1197	1957	1520	1963	1947
1946	1050	1952	1250	1958	1571		

[a] In preparation.

Geological Survey reports containing chemical quality, temperature, and sediment data obtained before 1941 are listed below. Publications dealing largely with the quality of ground-water supplies and only incidentally covering the chemical composition of surface waters are not included. Publications that are out of print are preceded by an asterisk.

PROFESSIONAL PAPER

*135. Composition of river and lake waters of the United States, 1924.

BULLETINS

*479. The geochemical interpretation of water analyses, 1911.
770. The data of geochemistry, 1924.

WATER-SUPPLY PAPERS

*108. Quality of water in the Susquehanna River drainage basin, with an introductory chapter on physiographic features, 1904.
*161. Quality of water in the upper Ohio River basin and at Erie, Pa., 1906.

*193. The quality of surface waters in Minnesota, 1907.
*236. The quality of surface waters in the United States, Part 1, Analyses of waters east of the one hundredth meridian, 1909.
*237. The quality of the surface waters of California, 1910.
*239. The quality of the surface waters of Illinois, 1910.
*273. Quality of the water supplies of Kansas, with a preliminnary report on stream pollution by mine waters in southeastern Kansas, 1911.
*274. Some stream waters of the western United States, with chapters on sediment carried by the Rio Grande and the industrial application of water analyses, 1911.
*339. Quality of the surface waters of Washington, 1914.
*363. Quality of the surface waters of Oregon, 1914.
*418. Mineral springs of Alaska, with a chapter on the chemical character of some surface waters of Alaska, 1917.
*596-B. Quality of water of Colorado River in 1925–26, 1928.
*596-D. Quality of water of Pecos River in Texas, 1928.
*596-E. Quality of the surface waters of New Jersey, 1928.
*636-A. Quality of water of the Colorado River in 1926–28, 1930.
*636-B. Suspended matter in the Colorado River in 1925–28, 1930.
*638-D. Quality of water of the Colorado River in 1928–30, 1932.
*839. Quality of water of the Rio Grande basin above Fort Quitman, Tex., 1938.
*889-E. Chemical character of surface water of Georgia, 1944.
*998. Suspended sediment in the Colorado River, 1925–41, 1947.
1048. Discharge and sediment loads in the Boise River drainage basin, Idaho, 1939–40, 1948.
1110-C. Quality of water of Conchas Reservoir, New Mexico, 1939–49, 1952.

Many of the reports listed are available for consultation in the larger public and institutional libraries. Copies of Geological Survey publications still in print may be purchased at a nominal cost from the Superintendent of Documents, Government Printing Office, Washington, D. C. 20402, who will, upon request, furnish lists giving prices.

COOPERATION

Many Municipal, State, and Federal agencies assisted in collecting records for these quality-of-water investigations. In addition to the cooperative programs, many stations were operated from funds appropriated directly to the Geological Survey.

The table on p. 28 lists State and local agencies that cooperated in quality-of-water investigations in the drainage basins included in this volume, and the locations of quality-of-water district offices responsible for the data collected.

State	Cooperating agency	Drainage basin	District office
Alabama	Alabama Water Improvement Commission, A. N. Beck, technical secretary.	South Atlantic slope and eastern Gulf of Mexico	Room 201 Prudential Bldg. 6554 Florida Blvd. Baton Rouge, La. 70806
Connecticut	State Water Resources Commission, William S. Wise, director.	North Atlantic slope	P. O. Box 948 Room 348, Federal Bldg. Albany, N. Y., 12201
Delaware	Delaware Geological Survey, J. J. Groot, State Geologist.		Room 1302 U. S. Custom House 2nd and Chestnut Streets Philadelphia, Pa., 19106
District of Columbia	Department of Sanitary Engineers, David V. Auld, director.		724 York Road Towson, Md. 21204
Florida	Florida Geological Survey, Dr. Robert O. Vernon, director, includes: Southwest Florida Water Management District, Alfred A. McKethan, chairman.	South Atlantic slope and eastern Gulf of Mexico	Room 244 Federal Bldg. Ocala, Fla. 32670

State	Cooperating agency	Drainage basin	District office
Florida	Florida Geological Survey, Sarasota County, Board of County Commissioners, Warren S. Henderson, chairman. Central and Southern Florida Flood Control District, G. E. Dail, Jr., executive director. Metropolitan Dade County, Public Works Department, F.D.R. Parks, chief engineer. Hillsborough County, Board of County Commissioners, E. G. Simmons, chairman. Orange County, Board of County Commissioners, F. B. Surguine, Jr., chairman. Broward County, Board of County Commissioners, F. C. Adler, chairman. City of Miami, Department of Water and Sewers, C. F. Wertz, director.	South Atlantic slope and eastern Gulf of Mexico	Room 244 Federal Bldg. Ocala, Fla. 32670

State	Cooperating agency	Drainage basin	District office
Florida	City of Miami Beach, O. M. Pushkin, City Manager.	South Atlantic slope and eastern Gulf of Mexico	Room 224 Federal Bldg. Ocala, Fla. 32670
Georgia	Department of Mines, Mining and Geology, Captain Garland Peyton, director.		Room 244 Federal Bldg. Ocala, Fla. 32670
Maryland	Maryland Department Geology, Mines and Water Resources, Dr. J. T. Singewald, Jr. succeeded by Dr. Ernst Cloos, acting director. Natural Resources Institute, University of Maryland, Dr. L. Eugene Cronin, director.	North Atlantic slope	724 York Road Towson, Md. 21204
Massachusetts	State Water Resources Commission, C. H. W. Foster, chairman and C. I. Sterling, Jr., chief engineer.		P. O. Box 948 Room 348 Federal Bldg. Albany, N. Y. 12201
Mississippi	Mississippi Board of Water Commissioners, S. A. Thompson, chairman.	South Atlantic slope and eastern Gulf of Mexico	6554 Florida Blvd. Baton Rouge, La. 70806

State	Cooperating agency	Drainage basin	District office
New Jersey	Department of Conservation and Economic Development, Robert A. Roe, Commissioner. Division of Water Policy and Supply, George R. Shanklin, acting director and chief engineer. Division of Fish and Game, L. G. MacNamara, director. New Jersey State Department of Health, Dr. Roscoe P. Kandle, Commissioner, Division of Environmental Health, Alfred H. Fletcher, director. New Jersey State Department of Agriculture, Phillip Alampi, secretary. State Soil Conservation Committee, Grant F. Walton, executive secretary. Passaic Valley Water Commission, Charles G. Bourgin, general superintendent and chief engineer.	North Atlantic slope	Room 1302 U.S. Custom House 2nd and Chestnut Streets Philadelphia, Pa., 19106

State	Cooperating agency	Drainage basin	District office
New York	New York State Department of Commerce, Bureau of Industrial Development, Henry Gallien, director. New York State Conservation Department, Division of Water Resources, F. W. Montanari, assistant commissioner.	North Atlantic slope	P. O. Box 948 Room 348 Federal Bldg. Albany, N. Y., 12201
North Carolina	North Carolina Department of Water Resources, H. E. Brown, director.	South Atlantic slope and eastern Gulf of Mexico	P. O. Box 2857 Raleigh, N. C. 27602
Pennsylvania	Pennsylvania Department of Agriculture, Leland H. Bull, secretary. Pennsylvania Department of Forests and Waters, Maurice K. Goddard, secretary. Soil Conservation Commission, Charles Hess, director City of Philadelphia, James H. J. Tate, Mayor.	North Atlantic slope	Room 1302 U.S. Custom House 2nd and Chestnut Streets Philadelphia, Pa., 19106

State	Cooperating agency	Drainage basin	District office
Pennsylvania	Department of Water, Samuel S. Baxter, Water Commissioner. Conestoga Valley Association, John Kitch, president.	North Atlantic slope	Room 1302 U.S. Custom House 2nd and Chestnut Streets Philadelphia, Pa., 19106
South Carolina	South Carolina State Development Board, W. W. Harper, director.	South Atlantic slope and eastern Gulf of Mexico	P. O. Box 2857 Raleigh, N. C. 27602

DIVISION OF WORK

The quality-of-water program was conducted by the Water Resources Division of the Geological Survey, L. B. Leopold, chief hydrologist, and S. K. Love, chief, Quality of Water Branch. The records were collected and prepared for publication under the supervision of district engineers or district chemists as follows: In Delaware, New Jersey, and Pennsylvania, N. H. Beamer; North Carolina, South Carolina, and Virginia, G. A. Billingsley; Alabama and Mississippi, S. F. Kapustka; Florida and Georgia, K. A. MacKichan; New York and New England, F. H. Pauszek; and District of Columbia, Maryland, and West Virginia, J. W. Wark. Any additional information on file can be obtained by writing the responsible Survey Quality of Water district office.

LITERATURE CITED

American Society for Testing Materials, 1954, Manual on industrial water: Am. Soc. for Testing Mat., Philadelphia, Pa., p. 356.

Baker, M. N., 1949, The quest for pure water: Am. Water Works Assoc., New York, N.Y.

Brandt, H. J., 1948, Intensified injurious effects on fish, especially the increased toxic effect produced by a combination of sewage poisons: Chem. abs. 42, p. 9015.

Busch, Werner, 1927, The applicability of electrometric titration to the determination of the solubility of slightly soluble oxides; Zeitsche. Anorg. Chem., v. 161, p. 161–179.

Durfor, C. N. and Becker, E., 1964, Public water supplies of the 100 largest cities in the United States; 1962: U.S. Geol. Survey, Water-Supply Paper 1812, p. 17–29.

California State Water Pollution Control Board, 1952, Water-quality criteria: California State Water Pollution Control Board, pub. 3., p. 291–292, 377–378.

———— 1954, Water-quality criteria: California State Water Pollution Control Board, pub. 3, Addendum no. 1., p. 291–292.

Eriksson, E., 1952, Composition of atmospheric precipitation II; sulfur, chloride, iodine compounds, bibliography: Tellus, v. 4, p. 280–303.

Faucett, R. L. and Miller, H. C., 1946, Methemoglobinemia occurring in infants fed milk diluted with well waters of high nitrate content: Jour. Pediatrics, v. 29, p. 593.

Hazen, Allen, 1892, A new color standard for natural waters: Am. Chem. Jour., v. 12, p. 427–428.

International Union of Pure and Applied Chemistry, 1961, Table of Atomic weights based on carbon-12: Chem. and Eng. News, v. 39, no. 42, Nov. 20, 1961, p. 43.

Kilmer, V. J. and Alexander, L. T., 1949, Methods of making mechanical analyses of soils: Soil Sci., v. 68, p. 15–24.

Lackey, J. B., and Sawyer, C. N., 1946, Plankton productivity of certain southeastern Wisconsin lakes as related to fertilization: Sewage Works Jour., v. 17, p. 573.

Lane, E. W., and others, 1947, Report of the Subcommittee on Terminology: Am. Geophys. Union Trans., v. 28, p. 937.

Magistad, O. C., and Christiansen, J. E., 1944, Saline Soils, their nature and management: U.S. Dept., Agriculture Circ. 707, p. 8–9.

Maxcy, K. F., 1950, Report on the relation of nitrate concentrations in well waters to the occurrence of methemoglobinemia: Natl. Research Council, Bull. Sanitary Eng. and Environment, App. D., p. 271.

Moore, E. W., 1950, The desalting of saline waters, a review of the present status: Natl. Research Council Comm. on Sanitary Eng. and Environment, Rept. to Subcomm. on Water Supply.

National Research Council, 1954, Sodium restricted diets: Natl. Research Council, pub. 325.

Northeastern Water Works Association, 1940, Progress report, Committee on quality Tolerances of Water for Industrial Uses: Northeast Water Works Assoc. Jour., v. 54.

Paynter, O. E., 1960, The chronic toxicity of dodecylbenzene sodium sulfonate: U.S. Public Health Conference on Physiological Aspects of Water Quality Proc., Washington, D.C., Sept. 8–9, 1960, p. 175–179.

Pleissner, M., 1907, Arb. Kais, Gesundheitsamt, v. 26, p. 384–443.

Rainwater, F. H., and Thatcher, L. L., 1960, Methods for collection and analysis of water samples: U.S. Geol. Survey Water-Supply Paper 1454, 301 p.

Rankama, K., and Sahama, T. G., 1950, Geochemistry: Chicago Univ. Press, Chicago, Ill., p.767.

Riffenburg, H. B., 1925, Chemical character of ground waters of the northern Great Plains: U.S. Geol. Survey Water-Supply Paper 560-B, p. 31–52.

Seidell, Atherton, 1940, Solubilities of inorganic and metal organic compounds, 3d ed., v. 1, D. van Nostrand, New York.

U.S. Inter-Agency Committee on Water Resources, A study of methods used in measurement and analysis of sediment loads in streams:

Report 6, 1952, The design of improved types of suspended-sediment samplers: St. Anthony Falls Hydraulic Lab., Minneapolis, Minn., p. 86–90.

Report 7, 1943, A study of new methods of size analysis of suspended-sediment samplers: St. Anthony Falls Hydraulic Lab., Minneapolis, Minn., p. 82–90.

U.S. Inter-Agency Report 11, 1957, The development and calibration of the visual-accumulation tube: St. Anthony Falls Hydraulic Lab., Minneapolis, Minn., p. 1–109.
Report 14, 1963, Fluvial sediment discharge: U.S. Govt. Printing Office, Washington, D.C., 20402, p. 57–77.

U.S. Public Health Service, 1962, Drinking water standards: U.S. Dept. Health, Education, and Welfare, Public Health Service: Pub. no. 956.

U.S. Salinity Laboratory Staff, 1954, Diagnosis and improvement of saline and alkali soils: U.S. Dept. Agriculture, Agriculture Handb. 60, p. 1–160.

Waring, F. H., 1949, Significance of nitrates in water supplies: Am. Water Works Assoc. Jour., v. 41, no. 2., p. 147–150.

Wayman, C. H., 1962, Limitations of the methylene blue method for ABS determinations: U.S. Geol. Survey, Prof. Paper 450-B, art. 49, p. B117–B120.

Wayman, C. H., Robertson, J. B., and Page, H. G., 1962, Foaming characteristics of synthetic-detergent solutions: U.S. Geol. Survey, Prof. Paper 450-D, art. 178, p. D198.

PART 1. NORTH ATLANTIC SLOPE BASINS

ST. CROIX RIVER BASIN

1-210. ST. CROIX RIVER AT BARING, MAINE

LOCATION.--Temperature recorder at gaging station at site of destroyed international highway bridge at Baring, Washington County.
DRAINAGE AREA.--1,390 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: October 1959 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 87°F July 28; minimum, freezing point on many days in January and February.
EXTREMES, 1959-63.--Water temperatures: Maximum, 87°F July 28, 1963; minimum, freezing point on many days during winter months.
REMARKS.--Discharge records unpublished. Gaging station operated as a supplement to station 1-200, St. Croix River near Baileyville, Maine.

Temperature °F of water, water year October 1962 to September 1963
[Continuous ethyl-alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	54	55	55	54	55	54	54	53	53	52	52	52	52	51	50	50	50	51	51	50	51	51	49	49	49	48	45	45	45	44	45	51
Minimum	53	53	53	54	54	54	53	52	52	52	52	51	51	50	49	48	49	50	49	50	50	49	49	49	48	45	45	45	44	44	44	50
November																																
Maximum	46	45	44	44	42	42	43	42	43	43	44	43	41	41	39	37	38	38	37	36	37	39	39	35	36	37	36	37	37	37	--	40
Minimum	45	44	42	42	42	41	42	41	41	41	43	41	41	39	36	37	37	37	35	35	36	36	35	35	34	36	35	35	36	36	--	39
December																																
Maximum	37	37	37	37	37	37	37	37	38	37	37	36	35	35	35	35	34	35	34	34	34	34	34	34	34	34	33	33	34	33	33	35
Minimum	37	37	36	37	37	37	37	36	37	37	36	35	35	35	34	34	34	34	34	34	34	34	34	34	34	33	33	33	33	33	33	35
January																																
Maximum	33	33	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	32	32	32	32	32	33
Minimum	33	32	32	32	32	32	32	33	33	32	33	33	33	32	32	32	33	33	33	33	33	33	33	32	32	32	32	32	32	32	32	32
February																																
Maximum	32	33	33	33	32	33	32	32	32	33	32	33	32	32	33	33	33	33	33	33	33	33	34	34	34	34	34	34	--	--	--	33
Minimum	32	32	33	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	33	33	33	33	34	34	34	34	34	--	--	--	33
March																																
Maximum	34	34	34	34	34	34	34	34	34	34	34	34	33	33	33	33	34	33	34	34	35	34	35	35	35	34	34	35	36	34	36	34
Minimum	34	34	34	34	34	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	34	34	33
April																																
Maximum	36	36	36	35	37	37	36	35	36	36	37	37	37	37	38	39	41	40	40	40	40	40	39	38	39	40	40	42	43	44	--	38
Minimum	33	34	34	34	35	34	34	34	35	35	36	36	36	36	36	37	38	39	39	39	39	39	38	38	38	39	40	40	42	43	--	37
May																																
Maximum	45	45	45	46	47	48	49	50	52	51	51	51	55	53	54	57	59	59	57	59	63	61	61	62	61	62	65	64	62	63	67	56
Minimum	44	45	45	45	46	47	47	49	50	50	50	50	50	52	53	53	54	55	55	55	59	61	60	59	59	59	59	59	60	62	62	53
June																																
Maximum	67	69	71	73	70	72	70	71	69	70	69	69	69	70	71	67	71	70	71	70	68	67	69	73	72	73	76	75	76	79	--	71
Minimum	63	61	63	66	69	69	68	67	67	68	65	65	65	66	65	65	63	66	65	67	67	66	65	66	67	68	69	70	70	70	--	66
July																																
Maximum	78	76	74	73	74	74	73	71	72	74	75	76	76	75	72	76	77	75	77	78	77	78	79	80	82	82	82	87	83	79	79	77
Minimum	71	72	72	70	71	70	70	69	69	69	70	69	69	71	69	70	72	73	72	73	73	73	72	73	74	75	77	78	77	76	74	72
August																																
Maximum	80	76	77	74	74	76	76	74	73	74	77	72	73	70	70	71	69	68	71	67	70	70	70	67	--	--	65	66	65	65	66	71
Minimum	73	75	73	72	71	70	71	71	71	70	69	69	68	67	66	66	66	66	65	65	65	66	66	64	--	--	61	62	63	63	64	68
September																																
Maximum	67	69	--	66	66	63	61	65	62	64	64	61	61	62	62	60	63	61	65	63	61	60	59	59	60	60	59	58	56	54	--	62
Minimum	63	63	--	63	62	61	58	59	61	61	60	60	58	57	57	58	59	60	61	61	60	59	57	56	56	56	57	56	52	53	--	59

DENNYS RIVER BASIN

1-212. DENNYS RIVER AT DENNYSVILLE, MAINE

LOCATION.--Temperature recorder at gaging station just upstream from railroad bridge, 0.9 mile upstream from Cathance Stream and 1 mile west of Dennysville, Washington County.
DRAINAGE AREA.--92.4 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1958 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 78°F July 28; minimum, freezing point on many days from December to March.
EXTREMES, 1958-63.--Water temperatures: Maximum, 82°F July 29, 1959; minimum, freezing point on many days during winter months.
REMARKS.--Recorder stopped Dec. 21 to Jan. 22; range in temperature 32°F to 35°F.

Temperature °F of water, water year October 1962 to September 1963
[Continuous ethyl alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	55	55	55	55	54	54	53	53	53	52	52	52	51	50	50	50	51	51	50	50	50	50	50	49	49	48	43	43	44	44	44	50
Minimum	54	54	54	54	53	53	52	52	52	52	52	51	50	50	48	47	49	50	49	49	50	50	49	49	47	43	42	42	43	43	42	49
November																																
Maximum	47	47	46	46	46	46	45	43	43	44	45	45	44	43	41	39	39	39	39	39	39	39	38	39	39	40	39	39	38	37	--	42
Minimum	44	46	45	45	46	45	43	43	42	42	43	44	43	41	36	37	38	39	37	35	38	35	35	37	38	38	37	37	35	35	--	40
December																																
Maximum	37	37	37	37	37	38	38	38	38	38	37	34	35	35	35	34	33	34	34	34	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	36	36	36	37	36	37	38	38	38	37	34	32	33	32	32	33	33	33	33	32	--	--	--	--	--	--	--	--	--	--	--	--
January																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	33	33	34	34	33	33	33	33	33	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32	32	33	33	32	32	32	32	32	--
February																																
Maximum	33	33	33	33	33	33	33	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	32	32	32	32	32	32	--	--	--	32
Minimum	33	32	32	33	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March																																
Maximum	32	32	32	32	32	32	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	35	34	35	35	34	32
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	34	34	34	34	32
April																																
Maximum	36	36	37	37	36	37	37	37	37	37	37	38	38	38	38	38	38	38	38	38	38	39	38	38	39	40	41	42	43	43	--	38
Minimum	34	35	36	36	36	35	36	36	36	37	37	36	37	37	38	37	37	36	36	37	37	38	38	38	38	39	40	41	41	42	--	37
May																																
Maximum	43	41	41	45	47	47	48	47	50	50	49	47	49	49	49	50	52	54	56	54	56	56	55	55	57	58	59	59	59	59	60	52
Minimum	41	41	41	41	45	44	43	46	46	48	46	45	46	48	48	48	49	51	52	51	51	53	52	52	53	54	56	56	56	56	56	49
June																																
Maximum	63	65	67	67	64	71	64	62	63	64	64	65	67	67	66	66	66	70	70	70	71	67	66	69	73	74	76	77	73	74	--	68
Minimum	57	58	61	62	62	62	60	59	59	61	61	62	62	63	63	62	61	63	65	67	67	64	64	64	68	70	71	70	68	69	--	64
July																																
Maximum	75	74	72	69	70	70	68	67	65	65	68	72	72	72	69	70	71	71	71	70	70	73	72	75	75	76	76	78	76	75	72	72
Minimum	71	70	68	66	65	68	65	63	63	64	64	65	67	68	67	66	67	68	67	68	68	68	68	69	69	70	72	73	73	70	70	68
August																																
Maximum	71	70	69	69	66	67	70	71	70	70	70	69	67	67	66	65	67	65	66	66	68	68	68	68	66	63	61	62	64	63	64	67
Minimum	68	68	68	66	66	65	66	68	68	67	66	66	65	65	64	63	64	65	62	63	63	67	67	66	63	61	60	61	62	63	62	65
September																																
Maximum	65	65	64	64	64	60	57	57	58	60	59	58	57	55	55	55	57	58	60	60	60	58	57	54	53	55	54	54	54	50	--	58
Minimum	63	63	62	62	60	56	56	56	57	58	58	57	55	54	52	54	55	57	57	59	58	57	54	53	51	51	52	54	50	50	--	56

1-380. SHEEPSCOT RIVER AT NORTH WHITEFIELD, MAINE

LOCATION.--Temperature recorder at gaging station at North Whitefield, Lincoln County, just upstream from highway bridge, 0.5 mile downstream from Pleasant Pond Brook.
DRAINAGE AREA.--148 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1957 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 86°F July 29; minimum, freezing point Jan. 14, 15.
EXTREMES, 1957-63.--Water temperatures: Maximum, 86°F July 29, 1963; minimum, freezing point on many days during winter months.

Temperature °F of water, water year October 1962 to September 1963
[Continuous ethyl alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	56	56	57	57	57	57	55	53	54	54	54	54	53	53	52	52	53	52	52	52	52	52	52	51	51	50	48	47	47	46	47	52
Minimum	*6	56	56	56	57	55	53	53	53	54	54	53	52	52	51	51	52	50	52	52	52	52	51	51	50	48	47	47	46	46	44	52
November																																
Maximum	47	46	44	44	44	44	42	41	42	45	45	43	41	39	39	38	38	37	37	37	38	38	38	37	36	35	36	36	36	37	--	40
Minimum	46	44	43	43	44	42	40	40	41	41	44	41	39	39	37	37	37	37	36	37	37	37	37	36	35	34	35	36	36	36	--	39
December																																
Maximum	37	37	37	37	37	40	39	36	36	36	35	35	35	36	35	35	36	35	35	35	35	34	34	34	36	34	37	37	37	37	34	36
Minimum	36	36	36	37	37	37	36	36	36	35	35	35	35	35	35	35	35	35	35	34	34	34	34	34	33	34	33	33	33	34	33	35
January																																
Maximum	34	35	34	34	34	34	34	34	34	34	34	34	34	34	34	33	33	33	33	33	34	33	33	33	33	33	33	34	34	34	34	34
Minimum	33	33	34	34	34	34	34	34	34	34	34	34	34	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
February																																
Maximum	34	34	34	34	34	34	33	34	34	34	34	34	34	33	33	35	35	34	33	33	33	34	34	34	33	34	34	34	--	--	--	34
Minimum	34	33	33	34	34	33	33	33	34	34	34	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	--	--	--	33
March																																
Maximum	34	33	33	33	33	33	34	33	34	34	34	34	33	33	35	36	34	34	34	34	34	35	35	34	34	36	35	34	34	33	34	34
Minimum	33	33	33	33	33	33	33	33	33	33	33	34	33	33	33	33	34	34	34	34	33	34	34	33	34	34	34	33	33	33	33	33
April																																
Maximum	34	34	34	34	34	35	35	35	36	36	36	39	39	40	40	41	42	41	42	42	44	44	42	41	42	44	44	46	48	47	--	40
Minimum	33	33	33	33	34	34	34	34	34	35	36	36	37	38	40	40	40	41	40	41	42	42	41	40	40	42	43	44	45	45	--	38
May																																
Maximum	46	46	44	48	48	50	51	50	52	52	50	48	50	51	52	53	54	55	56	56	57	57	57	57	58	60	61	62	60	61	64	54
Minimum	44	43	43	44	47	47	48	49	49	50	46	45	47	50	50	51	51	53	52	54	54	57	55	54	55	57	57	58	59	60	59	51
June																																
Maximum	66	67	68	68	69	70	71	70	69	67	67	65	66	66	66	66	67	68	70	72	76	71	71	74	76	79	80	79	78	80	--	71
Minimum	61	62	64	65	66	66	69	66	67	64	65	63	63	64	65	65	65	66	68	69	70	70	69	70	72	76	76	76	76	77	--	68
July																																
Maximum	78	80	77	75	74	73	73	73	71	72	81	77	79	77	76	77	79	78	80	79	78	78	80	80	83	84	83	85	86	83	82	78
Minimum	75	74	75	73	72	72	71	70	69	71	71	73	75	76	75	74	75	76	76	76	76	75	76	76	77	79	79	79	81	81	78	75
August																																
Maximum	80	78	78	75	75	77	77	76	77	77	75	74	72	69	69	70	68	68	68	66	69	72	69	67	64	64	67	67	65	64	65	71
Minimum	76	75	74	73	72	72	74	73	73	73	72	71	69	63	67	66	66	66	64	65	64	66	67	64	62	61	63	62	64	64	63	68
September																																
Maximum	66	66	65	66	64	62	62	63	63	64	62	61	60	58	57	56	58	60	61	61	60	60	58	56	55	55	56	56	56	54	--	60
Minimum	62	62	62	63	61	60	59	59	60	61	59	60	58	56	55	55	56	58	60	60	58	58	56	54	53	54	55	56	54	54	--	58

BLACKSTONE RIVER BASIN

1-1125. BLACKSTONE RIVER AT WOONSOCKET, R. I.

LOCATION.—Temperature recorder at gaging station on right bank at Woonsocket, Providence County, 500 feet downstream from Peters River.
DRAINAGE AREA.—416 square miles.
RECORDS AVAILABLE.—Water temperatures: November 1961 to September 1963.
EXTREMES, 1962-63.—Water temperatures: Maximum, 87°F July 28, 29; minimum, freezing point on many days in December, January and February.
EXTREMES, 1961-63.—Water temperatures: Maximum, 87°F July 28, 29, 1963; minimum, freezing point on many days in 1962 and 1963.

Temperature °F of water, water year October 1962 to September 1963
[Continuous ethyl alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	59	59	61	61	61	61	60	59	58	58	58	58	58	58	56	55	56	56	56	54	54	54	54	54	52	50	49	46	46	46	47	55
Minimum	59	59	59	61	59	60	59	58	58	58	58	58	58	56	53	55	55	56	54	54	54	54	54	52	50	49	46	45	45	46	46	54
November																																
Maximum	47	47	47	45	45	45	44	42	43	44	44	44	44	43	43	41	41	41	41	40	40	41	41	41	41	41	39	39	39	39	--	42
Minimum	47	47	45	45	45	44	42	42	42	43	44	44	43	43	41	41	41	41	40	40	40	40	41	41	41	39	39	39	39	39	--	42
December																																
Maximum	39	39	39	39	41	41	41	41	40	39	39	38	37	36	36	36	36	36	36	37	36	36	36	36	36	36	36	36	36	36	35	37
Minimum	39	39	39	39	39	41	41	40	39	39	38	37	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	36	32	32	37
January																																
Maximum	35	35	35	35	35	35	35	35	36	35	35	36	36	36	35	34	34	34	34	35	36	34	33	33	34	33	33	32	32	32	32	34
Minimum	32	35	35	35	35	35	35	35	35	35	35	35	36	35	34	34	34	34	34	34	34	32	32	32	33	33	32	32	32	32	32	34
February																																
Maximum	33	32	32	32	32	32	32	32	32	32	32	33	34	35	36	39	37	37	37	37	38	37	38	37	37	37	37	37	--	--	--	35
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	33	34	35	34	33	33	33	36	37	34	34	34	34	34	34	36	--	--	--	33
March																																
Maximum	37	36	38	41	39	39	37	38	38	38	38	38	38	38	38	38	38	39	40	40	41	41	41	41	42	43	43	43	43	43	45	40
Minimum	34	35	35	37	37	37	36	36	38	38	36	36	37	38	37	38	38	38	38	39	39	39	40	40	41	41	41	43	42	42	43	38
April																																
Maximum	45	50	50	50	48	46	48	49	50	50	50	50	52	52	53	53	53	54	55	56	57	56	56	55	54	53	54	55	56	57	--	52
Minimum	44	45	50	48	46	46	46	48	49	50	50	49	50	52	52	53	53	53	54	54	56	56	55	54	53	53	53	54	55	56	--	51
May																																
Maximum	57	57	57	59	61	61	63	63	65	66	65	58	57	62	64	64	66	65	64	67	68	70	69	67	66	67	68	66	68	68	69	64
Minimum	56	55	55	56	59	60	60	60	61	61	58	56	56	57	60	61	62	63	63	63	64	65	66	65	65	64	62	65	66	66	66	61
June																																
Maximum	68	72	75	72	77	78	78	76	76	76	72	70	68	68	68	68	70	72	74	73	71	70	70	71	72	74	82	83	77	77	--	73
Minimum	68	64	69	70	72	76	76	74	74	72	70	66	66	68	68	67	67	68	70	64	70	70	69	69	70	71	73	73	77	76	--	70
July																																
Maximum	79	80	80	79	76	73	75	74	73	73	71	72	73	79	77	82	79	77	78	82	77	76	75	78	80	84	86	87	87	85	77	78
Minimum	77	79	79	76	73	72	71	71	71	71	71	71	71	72	73	75	74	76	77	77	76	75	74	74	77	78	75	82	82	74	76	75
August																																
Maximum	77	77	78	79	78	80	81	81	80	80	78	77	75	71	73	74	74	75	74	73	75	76	77	76	72	71	71	71	68	69	70	75
Minimum	75	75	75	75	76	74	76	76	77	76	68	72	69	70	69	70	71	69	66	66	71	72	73	72	70	68	66	65	67	67	67	71
September																																
Maximum	70	71	72	71	69	65	66	67	70	70	68	69	66	63	62	61	61	61	61	63	62	62	61	59	58	58	59	60	59	59	--	64
Minimum	67	66	67	67	65	65	64	63	64	65	65	63	63	61	61	61	60	60	61	61	62	61	59	58	57	57	57	59	59	58	--	62

1-1165. PAWTUXET RIVER AT CRANSTON, R. I.

LOCATION.--Temperature recorder at gaging station on left bank at Cranston, Providence County, 0.7 mile upstream from Pocasset River.
DRAINAGE AREA.--200 square miles.
RECORDS AVAILABLE.--Water temperatures: November 1961 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 84°F July 2; minimum, 34°F on many days during December, January and February.
EXTREMES, 1961-63.--Water temperatures: Maximum, 84°F July 2, 1963; minimum, 33°F Dec. 31 to Jan. 2, 1962.

Temperature (°F) of water, October 1962 to September 1963
[Continuous ethyl alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	62	62	63	63	62	62	60	59	58	58	58	58	58	58	56	56	57	57	56	55	54	55	54	53	53	51	49	48	49	48	49	56
Minimum	58	60	60	61	61	60	59	58	58	58	57	57	58	56	55	55	56	56	55	54	53	53	53	53	51	49	48	48	48	47	47	55
November																																
Maximum	50	49	49	48	47	47	45	44	45	48	49	48	46	44	43	41	41	41	40	42	43	43	44	44	42	41	40	41	40	41	--	44
Minimum	49	49	48	47	47	45	44	44	44	45	48	46	44	43	41	40	40	40	39	40	41	42	42	42	41	40	40	40	40	40	--	43
December																																
Maximum	41	40	42	43	43	43	44	43	41	39	39	38	37	37	37	37	36	37	37	38	37	36	36	36	36	37	37	37	37	37	37	39
Minimum	40	40	40	41	41	43	42	40	39	39	36	35	35	35	34	35	35	35	36	35	34	34	35	34	35	35	36	36	36	35	34	37
January																																
Maximum	36	35	36	36	36	36	36	36	37	37	37	38	38	38	36	36	36	37	38	38	37	37	36	37	36	35	35	36	36	36	36	36
Minimum	34	34	34	34	34	34	35	36	35	36	36	36	36	35	35	34	34	36	36	36	36	35	35	34	34	34	34	34	34	35	35	35
February																																
Maximum	36	36	37	37	37	38	38	38	35	36	37	38	37	37	37	36	35	35	36	37	39	37	35	35	36	36	36	36	--	--	--	37
Minimum	35	35	36	35	36	37	37	35	35	35	36	36	36	36	36	34	34	34	35	35	36	35	35	35	35	36	36	36	--	--	--	35
March																																
Maximum	36	36	37	37	37	37	36	37	37	37	38	38	38	39	40	41	40	40	40	40	39	40	40	41	43	48	50	49	49	48	48	41
Minimum	36	35	36	36	36	35	35	36	37	37	37	38	38	38	39	40	40	40	40	39	39	39	40	40	40	43	48	48	47	47	46	40
April																																
Maximum	50	50	50	49	48	47	47	49	49	48	48	49	51	56	54	53	53	57	57	58	58	60	55	54	53	54	53	55	61	54	--	53
Minimum	47	48	49	48	45	45	45	46	48	48	47	46	48	48	49	50	50	52	53	54	55	53	54	52	51	50	51	51	51	53	--	50
May																																
Maximum	56	55	55	59	62	62	63	63	64	64	61	57	59	59	60	62	64	61	62	66	67	67	67	66	67	65	66	67	67	66	68	63
Minimum	53	53	53	54	58	60	59	61	61	61	57	56	55	57	58	59	60	61	61	62	65	64	65	63	63	63	63	63	65	64	65	60
June																																
Maximum	69	71	72	72	75	75	72	71	75	72	69	66	67	67	65	66	70	72	73	72	72	70	73	76	78	80	82	79	72	75	--	72
Minimum	66	69	68	69	66	68	69	67	69	69	63	62	62	62	63	63	63	63	65	65	64	65	67	66	66	67	68	72	69	71	--	66
July																																
Maximum	81	84	83	76	74	74	74	72	73	70	73	74	74	75	77	79	81	82	83	76	75	73	73	75	78	81	77	80	83	79	79	77
Minimum	71	71	73	72	71	69	70	68	67	67	67	67	68	70	71	70	71	71	72	73	72	71	69	66	67	69	70	71	75	74	69	70
August																																
Maximum	77	76	76	75	75	77	76	75	76	74	73	74	71	70	71	72	70	69	72	70	72	73	74	70	70	70	70	70	68	68	68	72
Minimum	70	69	69	70	70	70	69	69	69	69	69	68	68	66	66	65	66	66	64	66	65	66	66	68	65	64	66	65	66	65	66	67
September																																
Maximum	70	70	69	71	67	65	66	65	68	69	69	67	65	62	61	60	59	60	66	62	62	61	60	60	61	61	62	61	61	60	--	64
Minimum	66	64	66	66	65	63	62	62	63	64	63	64	62	60	58	59	59	59	60	62	61	60	58	58	58	58	59	60	60	59	--	61

POTOWOMUT RIVER BASIN

1-1169.1. HUNT RIVER NEAR DAVISVILLE, R.I.

LOCATION.--Temperature recorder at gaging station at downstream side of bridge on U.S. Highway 1, 1.5 miles north of Davisville, Washington County.
DRAINAGE AREA.--17.3 square miles.
RECORDS AVAILABLE.--Water temperatures: January 1962 to September 1963.
RECORDS AVAILABLE.--Water temperatures: January 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 86°F July 26; minimum, 33°F on many days from January to March.
EXTREMES, January 1962 to September 1963.--Water temperatures: Maximum, 86°F July 26, 1963; minimum, 33°F on many days during winter months.

Temperature °F of water, water year October 1962 to September 1963
[Continuous ethyl alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	58	58	57	60	60	60	60	58	57	57	57	57	57	56	55	54	55	55	54	52	52	52	52	51	49	48	44	46	48	47	49	54
Minimum	57	56	57	57	59	60	58	57	57	57	56	56	56	55	53	53	54	53	52	50	52	52	50	49	48	44	43	43	46	45	46	53
November																																
Maximum	50	49	47	46	47	46	44	43	44	49	49	48	45	44	41	39	39	39	39	39	41	44	44	42	41	40	38	38	38	38	--	43
Minimum	49	47	46	46	46	44	42	42	43	44	48	45	44	41	39	39	39	39	39	39	39	41	42	41	40	38	38	38	37	37	--	42
December																																
Maximum	38	38	39	39	40	42	42	41	39	39	37	34	33	33	33	33	33	33	34	34	34	34	34	34	34	34	34	34	34	34	34	36
Minimum	38	38	38	38	38	40	41	39	39	37	34	33	33	33	33	33	33	33	33	34	34	34	34	34	34	34	34	34	34	34	34	35
January																																
Maximum	34	34	34	34	34	35	35	35	35	35	35	35	35	35	35	34	34	34	35	35	35	34	34	34	33	33	33	33	33	33	33	34
Minimum	34	34	34	34	34	34	35	35	35	35	35	35	35	35	34	34	34	34	34	35	34	34	34	33	33	33	33	33	33	33	33	34
February																																
Maximum	33	33	33	33	33	33	33	33	33	33	35	35	34	34	34	33	33	34	34	34	34	33	33	33	34	34	34	34	--	--	--	34
Minimum	33	33	33	33	33	33	33	33	33	33	33	34	34	34	33	33	33	33	33	33	33	33	33	33	33	33	33	34	--	--	--	33
March																																
Maximum	34	34	37	36	36	36	35	36	37	37	37	36	36	39	40	39	39	39	40	39	39	41	40	42	45	48	50	49	47	45	48	40
Minimum	33	33	34	35	36	35	35	34	35	37	36	36	36	36	37	37	39	38	37	37	37	37	37	37	39	43	47	46	44	43	43	38
April																																
Maximum	48	52	51	49	45	46	47	49	49	48	46	50	52	52	50	50	48	53	53	57	56	57	52	49	48	50	50	52	55	52	--	51
Minimum	43	47	49	45	41	41	43	45	45	45	44	44	46	48	48	48	47	48	50	52	52	51	49	48	48	46	47	48	48	51	--	47
May																																
Maximum	54	53	55	60	61	61	61	59	61	61	57	51	57	56	57	60	62	60	60	62	61	63	61	61	61	58	60	61	60	60	63	59
Minimum	51	49	48	53	57	57	56	57	59	57	51	49	49	53	55	55	56	57	56	58	59	58	58	55	55	56	54	56	59	58	59	55
June																																
Maximum	66	66	66	68	69	70	69	66	70	68	62	60	63	63	62	61	64	67	69	68	66	66	67	69	71	73	73	73	73	70	--	67
Minimum	60	60	62	65	66	67	64	62	64	62	60	59	58	61	60	58	60	62	64	64	64	61	62	63	66	68	69	71	69	68	--	63
July																																
Maximum	73	74	74	71	67	66	67	67	66	66	65	66	68	68	70	70	73	79	79	75	71	69	67	70	81	86	75	75	83	76	73	72
Minimum	69	71	71	69	65	63	63	65	63	63	62	64	66	67	67	68	69	71	72	71	69	67	65	65	69	72	73	73	74	72	70	68
August																																
Maximum	72	72	71	70	71	77	76	80	79	70	68	76	71	68	67	65	65	65	70	67	73	72	77	68	64	68	70	72	66	66	70	71
Minimum	69	70	68	69	68	68	68	69	69	68	66	65	66	67	63	64	63	65	63	65	67	66	67	64	57	56	56	58	62	62	61	65
September																																
Maximum	67	71	70	68	64	58	66	64	72	70	72	68	64	60	58	58	60	61	63	63	62	61	59	59	63	56	59	60	60	59	--	63
Minimum	58	55	61	59	56	56	56	60	62	57	53	57	60	58	57	58	58	59	60	62	61	59	53	52	53	54	56	59	59	58	--	58

THAMES RIVER BASIN

1-1270. QUINEBAUG RIVER AT JEWETT CITY, CONN.

LOCATION.--Water-stage recorder in rear of high school on Slater Avenue at Jewett City, New London County, 570 feet downstream from outlet of canal from Wedgewood Mills at mouth of Pachaug River, and 1,000 feet downstream from railroad bridge.
DRAINAGE AREA.--711 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.
Water temperatures: October 1955 to September 1956, October 1958 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Minimum, freezing point on many days in January, February, and March.
EXTREMES, 1955-56, 1958-63.--Water temperatures: Maximum, 83°F July 26, 27, 1961; minimum, freezing point on many days during winter months.
REMARKS.--Recorder stopped July 1-30; range in temperature 71°F to 84°F.

Chemical analyses, in parts per million, October 1962

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	ABS	Turbidity
																Calcium, magnesium	Noncarbonate				
Oct. 3, 1962	300	4.0		0.29	0.00	6.4	1.2	18	2.1	39	15	10		2.6	88	21	0	141	7.4	0.1	0.4

THAMES RIVER BASIN--Continued

1-1270. QUINEBAUG RIVER AT JEWETT CITY, CONN.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
[Continuous ethyl alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	60	61	61	60	60	60	58	57	55	55	55	55	56	56	56	56	57	57	56	56	56	56	55	54	53	51	49	47	48	47	47	55
Minimum	*8	58	58	58	59	58	57	55	55	55	55	55	55	55	55	56	56	56	55	55	55	55	54	53	51	49	47	47	47	47	47	54
November																																
Maximum	47	48	47	47	46	46	45	43	42	44	46	46	45	44	42	40	40	40	39	38	38	38	40	40	39	39	38	38	38	38	--	42
Minimum	47	47	47	46	46	45	43	42	42	42	44	45	44	42	40	40	39	39	38	38	38	38	38	39	39	38	38	38	38	37	--	41
December																																
Maximum	37	37	38	38	39	40	40	40	39	38	37	36	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	--	36
Minimum	37	37	37	38	38	39	40	39	38	37	36	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	--	35
January																																
Maximum	34	34	34	34	34	34	34	34	34	34	33	33	33	33	33	33	34	33	33	33	32	33	33	33	33	33	33	32	32	32	32	33
Minimum	34	34	34	34	34	34	34	34	34	33	33	33	33	33	33	33	33	33	33	32	32	32	33	32	33	32	32	32	32	32	32	33
February																																
Maximum	32	32	32	32	32	32	32	32	33	33	33	33	32	32	33	32	32	32	32	32	32	33	33	33	33	33	33	32	--	--	--	32
Minimum	32	32	32	32	32	32	32	32	32	33	33	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	32	32	--	--	--	32
March																																
Maximum	32	33	34	33	33	33	32	33	33	34	34	34	34	34	35	36	37	37	37	37	37	38	39	40	40	42	42	42	41	41	42	36
Minimum	32	32	33	33	33	32	32	32	33	33	34	34	34	34	34	35	36	37	37	37	37	37	38	39	40	40	42	41	41	41	41	36
April																																
Maximum	43	46	48	48	47	45	44	46	46	47	47	48	49	50	50	52	51	52	52	54	54	55	54	53	51	50	50	51	52	52	--	50
Minimum	42	43	46	47	45	44	44	44	46	46	47	46	47	48	49	50	50	50	52	52	54	54	53	51	50	50	49	49	50	51	--	48
May																																
Maximum	52	52	52	54	58	60	60	59	60	62	61	58	56	55	57	60	61	61	61	63	63	64	65	65	64	64	65	64	63	65	67	60
Minimum	51	52	51	52	54	58	58	59	59	60	58	56	55	55	55	57	59	61	61	61	63	63	64	63	63	63	63	62	63	63	64	59
June																																
Maximum	67	68	70	72	73	74	73	73	73	72	71	70	68	67	67	66	68	69	71	70	72	71	74	75	79	78	81	83	79	78	--	72
Minimum	66	67	68	70	71	73	72	72	71	71	70	67	66	66	65	64	65	67	68	70	70	70	69	71	72	74	74	77	78	77	--	70
July																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	81	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	76	--
August																																
Maximum	78	79	79	78	77	80	77	78	77	79	78	77	75	73	74	74	73	74	74	71	74	74	76	75	74	72	72	72	70	69	72	75
Minimum	76	75	75	75	75	74	74	74	74	74	74	73	73	71	70	70	70	71	70	70	70	70	71	73	70	69	69	68	69	69	69	72
September																																
Maximum	73	73	69	72	70	67	68	68	69	69	71	68	67	66	65	64	62	63	66	64	64	63	62	62	62	62	61	63	62	61	--	66
Minimum	68	68	69	69	67	64	63	65	65	65	65	65	64	62	62	62	62	62	63	64	63	62	59	58	58	58	59	60	60	59	--	63

1-1560. WEST RIVER AT NEWFANE, VT.

LOCATION.--Temperature recorder at gaging station on right bank 600 feet downstream from highway bridge, and 1 mile northeast of Newfane, Windham County.
DRAINAGE AREA.--308 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1954 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 76°F July 28-31; minimum, freezing point on many days in January, February, and March.
EXTREMES, 1954-63.--Water temperatures: Maximum, 85°F Aug. 5, 6, 1955; and July 29, Aug. 17, 1959; minimum, freezing point on many days during winter months.

Temperature °F of water, water year October 1962 to September 1963
[Continuous ethyl alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	57	57	57	57	57	57	55	53	52	52	52	52	52	52	51	51	52	52	51	51	51	50	49	49	48	47	45	44	44	44	42	51
Minimum	57	57	57	57	55	53	52	52	52	52	52	52	51	51	50	50	51	51	50	50	50	49	49	48	47	45	43	43	44	42	42	50
November																																
Maximum	42	41	41	40	39	39	38	38	38	39	40	40	39	38	37	36	35	35	35	35	34	34	35	35	35	35	34	34	34	34	--	37
Minimum	41	41	40	39	39	38	37	37	38	38	39	39	38	37	36	35	35	35	35	34	34	34	34	35	35	34	34	34	34	34	--	36
December																																
Maximum	34	34	34	34	34	34	35	35	35	34	34	35	35	35	34	34	34	34	34	34	34	34	34	33	33	33	33	33	33	34	34	34
Minimum	33	33	34	33	33	33	34	35	34	34	34	34	35	34	34	34	34	34	33	33	34	34	33	33	33	33	33	33	33	33	34	34
January																																
Maximum	34	34	33	33	33	33	33	33	33	33	32	32	32	33	33	33	33	33	33	33	33	33	33	33	34	33	33	33	34	33	33	33
Minimum	34	33	33	33	33	33	33	33	33	32	32	32	32	32	33	33	33	33	33	32	32	33	33	33	33	33	33	33	33	33	33	33
February																																
Maximum	33	33	33	33	33	33	32	33	33	33	33	33	33	32	32	33	33	33	32	32	32	32	33	33	32	32	33	32	--	--	--	33
Minimum	33	33	33	33	33	32	32	32	33	33	33	33	32	32	32	32	33	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March																																
Maximum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33	34	40	33	33	34	33
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	32
April																																
Maximum	34	34	35	35	35	35	36	37	37	41	38	42	39	39	39	41	41	40	41	41	41	41	41	41	41	40	41	42	43	43	--	39
Minimum	34	34	34	35	35	34	35	36	36	37	38	37	38	39	39	39	40	40	40	40	40	41	41	40	40	40	40	41	42	43	--	38
May																																
Maximum	43	43	44	45	46	47	48	48	49	49	49	47	46	47	48	49	50	50	50	50	50	51	52	52	53	53	53	53	53	55	57	49
Minimum	43	43	43	44	45	46	46	46	48	49	47	45	45	46	47	48	49	49	49	50	50	50	51	51	52	52	51	53	53	53	55	48
June																																
Maximum	59	60	60	62	63	63	64	64	64	63	63	61	59	59	59	59	59	60	61	62	62	62	62	63	65	67	68	68	68	69	--	63
Minimum	57	59	59	60	62	63	63	63	63	63	61	59	58	59	59	58	58	59	60	61	62	61	61	62	63	65	67	68	68	67	--	62
July																																
Maximum	71	72	72	72	69	67	67	66	66	66	66	67	69	70	70	69	70	71	71	71	71	71	71	72	73	75	75	76	76	76	76	71
Minimum	69	71	72	69	67	67	66	66	65	65	65	65	67	69	69	68	68	70	71	71	71	70	70	71	72	73	74	74	75	75	73	70
August																																
Maximum	74	71	71	72	72	72	72	72	72	72	72	69	69	67	67	67	67	67	67	67	68	69	70	70	70	69	66	65	65	65	66	69
Minimum	71	71	70	71	72	71	71	71	72	72	69	69	67	67	65	67	67	67	67	67	67	68	69	70	69	66	65	64	65	65	65	68
September																																
Maximum	66	66	65	66	66	64	62	62	63	63	63	65	64	59	58	60	60	61	62	63	61	58	55	52	53	55	56	57	57	54	--	61
Minimum	65	64	64	65	64	62	62	62	62	63	62	62	58	56	54	57	60	60	60	61	58	55	49	47	49	53	54	56	53	51	--	58

CONNECTICUT RIVER BASIN--Continued

1-1600. SOUTH BRANCH ASHUELOT RIVER AT WEBB, NEAR MARLBORO, N. H.

LOCATION.--Temperature recorder at gaging station on right bank 15 feet downstream from bridge, 800 feet southwest of Webb Station on Boston and Maine Railroad, and 2.5 miles south of Marlboro, Cheshire County.
DRAINAGE AREA.--36.0 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1954 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 87°F July 26; minimum, freezing point on many days from December to March.
EXTREMES, 1954-63.--Water temperatures: Maximum, 87°F July 26, 1963; minimum, freezing point on many days during months.

Temperature °F of water, water year October 1962 to September 1963
[Continuous ethyl alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	57	59	60	59	59	57	53	53	53	53	53	55	54	50	50	52	56	52	52	52	50	51	48	47	45	43	42	44	44	41	44	51
Minimum	53	51	51	53	57	53	53	52	53	52	52	52	50	48	46	48	52	48	46	47	48	46	46	45	43	41	39	40	40	39	41	48
November																																
Maximum	44	44	42	41	41	41	39	41	42	44	44	43	40	39	37	36	37	36	36	36	37	37	37	36	36	35	35	35	35	35	--	39
Minimum	44	42	41	41	41	39	37	38	39	42	43	40	39	37	36	35	36	36	35	34	36	36	36	36	35	33	33	33	33	34	--	37
December																																
Maximum	36	36	36	36	36	37	37	36	36	36	35	32	33	32	33	32	33	32	32	32	32	32	32	32	32	32	32	32	32	33	33	34
Minimum	34	34	35	34	36	36	36	36	36	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33
January																																
Maximum	33	33	32	32	32	32	32	32	32	32	32	32	32	--	--	32	32	32	32	33	33	33	33	33	33	33	33	33	33	32	32	32
Minimum	33	32	32	32	32	32	32	32	32	32	32	32	32	--	--	32	32	32	32	32	32	33	32	32	33	33	33	32	32	32	32	32
February																																
Maximum	33	32	33	33	33	32	32	33	33	32	32	32	33	33	33	34	34	33	32	32	33	33	33	32	32	32	33	32	--	--	--	33
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	32	32	32	32	32	33	32	32	32	32	32	32	--	--	--	32
March																																
Maximum	32	32	32	32	32	32	32	33	33	32	33	33	34	34	34	34	34	33	34	34	34	35	34	35	34	33	32	33	33	33	34	33
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	33	32	32	33	33	33	33	32	32	32	32	32	33	33	33	32
April																																
Maximum	34	35	35	36	36	37	39	39	40	40	38	43	43	43	44	47	46	48	48	49	49	49	47	43	43	44	45	47	50	48	--	43
Minimum	34	34	34	34	34	35	36	37	37	38	38	38	39	39	41	42	44	45	45	45	45	45	43	42	43	41	41	42	43	48	--	40
May																																
Maximum	49	48	50	56	56	56	57	56	62	60	51	48	52	57	57	58	59	57	59	59	57	59	58	58	62	58	63	62	60	61	68	57
Minimum	48	45	43	48	54	50	50	53	55	51	47	46	46	52	54	52	54	55	54	55	52	56	54	52	52	54	53	55	57	59	57	52
June																																
Maximum	71	71	71	74	76	76	70	71	70	67	62	60	68	69	63	63	64	69	72	71	71	67	70	76	77	80	80	77	71	82	--	71
Minimum	57	60	59	66	66	67	66	63	63	62	59	59	58	59	59	56	57	58	60	64	65	62	61	59	63	67	66	69	69	68	--	62
July																																
Maximum	84	84	79	72	71	71	72	68	66	65	72	75	78	77	74	76	81	81	82	78	74	76	78	84	86	87	84	85	86	84	81	78
Minimum	70	71	67	64	63	59	62	62	59	60	61	62	66	69	68	67	69	70	72	72	68	67	68	67	71	71	72	72	75	76	67	67
August																																
Maximum	75	74	73	76	74	78	79	80	78	76	76	74	69	67	72	73	68	70	70	67	76	76	74	71	70	69	70	70	66	72	74	73
Minimum	66	68	67	67	68	66	68	68	68	68	62	66	64	64	61	63	61	63	59	64	61	64	68	64	62	57	60	59	65	65	66	64
September																																
Maximum	73	73	72	74	68	61	71	71	73	69	69	66	65	64	63	67	63	71	71	68	63	60	56	58	59	61	63	63	57	58	--	66
Minimum	61	59	63	62	58	60	57	58	63	59	55	62	57	52	51	56	61	62	62	62	59	56	50	46	47	49	53	57	54	52	--	57

1-1900. FARMINGTON RIVER AT RAINBOW, CONN.

LOCATION.--At dam of Farmington River Power Co., Hartford County, 0.4 mile upstream from gaging station, and 6 miles downstream from Salmon Brook.
DRAINAGE AREA.--591 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1958.
Water temperatures: October 1957 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 82°F July 29; minimum, freezing point on many days from December to March.
EXTREMES, 1957-63.--Water temperatures: Maximum, 82°F July 2, 1958, and July 29, 1963; minimum, freezing point on many days during winter months.

Temperature °F of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0800)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	56	56	56	56	56	58	58	56	56	57	55	54	54	56	55	55	54	54	54	54	54	54	55	53	51	51	49	48	46	46	44	54
November	45	44	44	44	43	43	42	40	41	41	43	43	42	42	42	41	39	38	37	37	37	36	36	38	37	37	37	36	35	35	--	40
December	34	34	34	35	36	37	38	38	37	36	33	34	32	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
January	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	36	36	36	36	36	35	35	36	38	38	38	39	39	40	34
April	42	44	45	44	41	40	42	43	44	45	44	44	45	46	50	48	50	50	50	50	52	54	53	53	50	50	49	48	51	52	--	47
May	50	52	53	50	52	52	54	56	59	60	61	58	58	58	58	59	60	60	60	60	61	61	61	60	62	61	60	60	60	60	62	58
June	60	60	68	64	66	68	69	70	72	72	71	68	65	66	63	63	64	63	62	64	64	66	66	67	68	69	69	74	72	71	--	67
July	78	74	74	74	76	74	72	75	72	70	68	70	70	71	70	70	74	74	74	76	76	76	72	72	76	74	74	76	82	78	78	74
August	78	78	78	76	77	74	75	76	76	76	77	77	76	75	72	71	71	66	68	69	70	71	71	74	72	72	70	70	70	68	68	73
September	70	70	68	68	68	67	64	62	62	64	66	66	64	64	63	62	64	62	62	63	63	62	62	58	57	56	58	58	58	56	--	63

HOUSATONIC RIVER BASIN

1-1990. HOUSATONIC RIVER AT FALLS VILLAGE, CONN.

LOCATION.--At dam upstream from hydroelectric plant of Connecticut Power Co., and about 1.1 miles upstream from gaging station at Falls Village, Litchfield County.
DRAINAGE AREA.--632 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.
Water temperatures: October 1955 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 79°F July 30; minimum, freezing point on many days from December to March.
EXTREMES, 1955-63.--Water temperatures: Maximum, 81°F June 20, 1957; minimum, freezing point on many days during winter months.

Temperature °F of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	57	56	56	57	58	57	56	57	57	56	56	55	55	55	55	55	55	54	53	53	53	53	53	51	50	48	47	46	45	44	44	53
November	45	46	44	44	42	42	39	40	40	40	44	43	41	40	38	37	36	37	35	35	35	36	37	37	36	35	35	35	34	34	--	39
December	35	34	35	35	37	38	39	36	35	35	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
January	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33	32	32	32	32	32	32	32	32	32	32	32
February	32	32	32	32	32	32	32	32	32	33	33	33	33	32	32	32	32	32	32	33	33	32	32	32	32	32	32	32	--	--	--	32
March	32	32	32	32	32	32	32	32	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	36	37	37	37	35	36	34	35	33
April	39	41	44	43	39	37	37	43	44	45	44	45	45	45	45	46	48	48	49	50	50	50	50	47	46	45	46	46	47	52	--	45
May	50	48	47	50	52	51	56	58	59	63	60	53	53	55	57	58	59	61	61	61	60	60	61	57	58	57	58	59	60	60	61	57
June	62	65	67	69	71	72	72	72	70	70	68	64	61	63	63	62	61	64	65	67	66	64	66	68	69	70	72	73	74	73	--	67
July	75	77	75	75	74	73	70	70	67	67	66	66	69	72	71	71	72	73	75	76	75	73	70	71	73	75	77	77	77	79	78	73
August	78	75	75	72	73	72	72	73	73	74	73	73	73	73	73	73	72	68	67	68	69	70	71	70	69	69	69	68	68	68	67	71
September	67	67	68	68	67	67	65	65	66	67	66	67	66	65	62	62	62	62	63	62	62	62	61	58	57	56	55	56	57	56	--	63

1-2055. HOUSATONIC RIVER AT STEVENSON, CONN.
(Formerly published as 1-2050. Lake Zoar at Stevenson, Conn.)

LOCATION.--At tailrace of dam of Connecticut Light and Power Co. at Stevenson, Fairfield County, 0.2 mile upstream from gaging station, and 0.4 mile upstream from Eightmile Brook.
DRAINAGE AREA.--1,545 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1960 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 88°F July 28; minimum, freezing point on many days from December to March.
EXTREMES, 1960-63.--Water temperatures: Maximum, 88°F July 28, 1963; minimum, freezing point on many days during winter months.
REMARKS.--Records furnished by the Connecticut Light and Power Company.

Temperature °F of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 1300)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	66	66	66	66	65	64	64	64	64	63	63	62	62	60	61	61	61	60	60	60	60	60	60	58	58	58	58	57	56	54	56	61
November	55	55	55	55	53	50	50	52	52	52	50	48	48	47	46	47	47	46	46	45	46	45	45	44	44	44	44	43	44	44	--	48
December	43	43	43	42	42	42	40	40	40	40	38	34	36	34	32	32	35	45	45	36	35	34	34	34	34	32	32	32	32	32	32	37
January	32	32	32	32	32	32	32	32	33	33	33	33	33	33	33	33	33	33	34	34	34	34	34	34	34	34	32	32	32	32	32	33
February	32	32	32	32	32	32	32	32	32	34	32	32	32	32	32	32	32	32	33	32	33	33	33	33	33	33	33	32	--	--	--	32
March	32	32	32	32	32	32	36	33	33	33	33	32	32	33	33	33	33	33	34	34	33	33	33	33	34	34	35	35	36	36	40	34
April	40	40	43	42	41	42	44	44	44	44	44	45	45	45	45	45	47	48	48	50	50	50	48	--	48	48	48	48	48	48	--	46
May	53	48	48	54	56	55	55	57	56	59	57	57	56	57	57	58	58	58	58	60	60	62	62	62	60	61	61	61	61	64	64	58
June	72	68	65	70	70	68	68	70	69	70	69	68	68	68	68	68	68	68	68	68	68	68	69	69	72	77	77	78	78	78	--	70
July	78	80	80	76	77	78	78	76	74	73	76	73	75	75	75	75	76	78	80	80	78	78	76	76	83	85	85	88	85	82	84	78
August	82	82	81	80	78	78	78	79	79	78	80	79	78	78	73	73	73	73	73	73	75	80	79	77	75	76	77	77	74	74	74	77
September	73	73	72	72	71	71	70	73	73	73	73	73	70	69	69	69	69	70	74	74	70	68	70	72	72	68	67	67	66	65	--	71

HUDSON RIVER BASIN

1-3277. HUDSON RIVER AT HUDSON FALLS, N. Y.

LOCATION.--West shore of river at Arkell and Smiths Plant, Hudson Falls, Saratoga County.
DRAINAGE AREA.--3,491 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: November 1957 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Minimum, freezing point on many days from December to March.
EXTREMES, 1957-63.--Water temperatures: Maximum, 79°F Aug. 21, Sept. 2, 3, 1959; minimum, freezing point on many days during winter months.
REMARKS.--No discharge records available.

Temperature °F of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0900)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	60	59	59	59	59	59	59	60	59	56	56	56	56	55	55	55	55	56	55	54	54	54	54	53	52	--	51	51	49	47	46	55
November	46	45	45	45	44	44	42	43	43	45	45	44	43	43	42	44	39	40	37	38	38	37	37	37	37	37	37	37	37	37	--	41
December	36	36	38	36	36	38	38	39	40	40	35	34	33	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34
January	32	32	32	32	32	32	32	32	32	32	34	34	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March	32	32	32	32	32	32	32	32	35	35	35	35	35	35	35	35	35	35	36	36	36	36	34	38	39	38	38	39	39	38	38	35
April	37	36	35	35	35	36	37	38	39	40	40	--	40	40	43	43	44	44	45	48	47	47	46	48	44	44	44	44	43	43	--	42
May	47	46	46	46	53	52	54	55	57	--	54	55	55	56	56	56	57	62	57	58	58	59	56	56	55	55	56	58	58	--	--	55
June	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July	78	78	76	74	74	74	74	74	72	70	70	--	74	72	72	73	74	75	75	74	--	76	75	75	77	77	77	78	78	78	78	75
August	--	--	72	73	73	73	74	73	75	74	72	73	72	70	70	70	70	70	68	68	68	69	70	70	70	68	68	68	70	--	69	71
September	69	69	68	68	68	67	67	68	68	68	66	67	68	66	65	64	64	65	65	66	66	66	62	61	61	61	61	60	59	59	--	65

1-3300. GLOWEGEE CREEK AT WEST MILTON, N. Y.

LOCATION.--Temperature recorder at gaging station on left bank at upstream side of highway bridge, 0.5 mile south of West Milton, Saratoga County, 1.5 miles upstream from mouth, and 4 miles northwest of Ballston Spa.
DRAINAGE AREA.--26.0 square miles.
RECORDS AVAILABLE.--Chemical analyses: March 1953 to September 1956.
Water temperatures: March 1953 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 77°F June 27, 30 and July 1, 2; minimum, freezing point on many days from November to March.
EXTREMES, 1953-63.--Water temperatures: Maximum, 82°F July 24, 1961; minimum, freezing point on many days during winter months.

Temperature °F of water, water year October 1962 to September 1963
[Continuous ethyl alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	56	56	55	55	55	54	54	57	55	53	53	55	53	51	51	52	55	52	50	50	49	49	49	48	46	45	43	43	43	42	42	51
Minimum	53	52	52	53	54	53	54	52	53	52	51	52	51	51	50	50	51	50	48	48	49	48	48	46	45	43	42	42	42	41	39	49
November																																
Maximum	41	41	40	39	39	37	37	40	42	43	44	42	38	35	35	34	35	34	34	33	35	38	37	36	35	35	34	34	34	34	--	37
Minimum	40	37	39	38	37	36	33	37	40	41	42	37	35	32	33	32	32	32	32	32	33	35	34	34	34	32	32	32	32	32	--	35
December																																
Maximum	34	35	35	35	38	39	39	34	34	34	32	32	32	32	32	32	33	33	32	33	33	33	32	32	32	32	33	33	33	33	33	34
Minimum	32	33	33	33	34	38	34	34	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	33
January																																
Maximum	33	33	33	32	32	32	33	33	34	34	33	33	33	33	33	33	33	33	33	34	34	34	33	33	34	34	33	33	34	33	34	33
Minimum	33	33	32	32	32	32	32	33	32	32	32	32	32	33	32	32	32	32	32	32	32	33	33	33	33	33	33	33	33	33	33	32
February																																
Maximum	34	34	33	34	33	33	33	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	34	33	33	33	34	33	--	--	--	33
Minimum	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	--	--	--	33
March																																
Maximum	33	33	33	33	33	33	33	33	34	34	34	34	34	34	34	34	34	34	35	34	34	37	35	38	37	35	34	34	35	34	37	34
Minimum	33	33	33	33	33	33	33	33	33	33	33	33	34	34	34	34	34	34	34	33	33	33	33	33	34	33	33	32	32	33	33	33
April																																
Maximum	36	36	36	36	36	37	38	39	39	39	39	40	41	42	42	43	42	43	43	44	45	45	46	41	42	45	46	52	53	52	--	42
Minimum	33	33	33	35	35	35	37	37	37	38	37	38	39	40	40	40	41	41	42	42	43	43	41	40	41	41	41	43	44	44	--	39
May																																
Maximum	45	49	55	59	59	59	59	57	63	63	47	47	53	57	58	62	61	60	55	54	58	62	58	56	60	56	62	58	57	61	65	57
Minimum	43	42	44	49	55	49	49	53	49	47	46	45	46	48	49	52	53	50	50	51	49	55	50	47	49	52	50	54	54	55	55	50
June																																
Maximum	69	70	70	70	72	70	68	64	68	64	57	55	60	63	60	57	62	65	68	66	64	63	68	73	74	75	77	76	74	77	--	67
Minimum	57	58	59	63	63	63	63	60	60	57	55	54	53	56	54	54	54	57	58	62	56	54	57	60	62	64	64	66	68	68	--	59
July																																
Maximum	77	77	76	69	68	66	65	69	64	62	65	67	69	70	70	72	71	74	73	71	71	71	74	73	71	72	73	74	74	74	74	71
Minimum	69	71	67	64	62	62	61	63	60	59	59	59	64	68	66	65	66	69	70	67	68	65	66	66	69	69	71	71	73	69	65	66
August																																
Maximum	71	69	73	71	69	71	71	70	71	70	68	68	66	63	66	66	64	66	65	65	70	71	70	70	55	64	55	55	66	68	68	68
Minimum	64	64	64	68	65	64	66	67	66	66	62	60	61	61	57	60	58	61	59	61	60	63	64	64	59	59	60	59	62	62	62	62
September																																
Maximum	67	67	68	67	63	60	65	66	67	66	64	64	63	58	57	58	58	64	64	64	58	57	56	54	54	58	62	62	57	56	--	61
Minimum	60	59	61	63	56	57	58	59	61	61	58	60	58	54	54	54	54	55	58	58	57	55	53	51	50	52	56	57	55	52	--	57

HUDSON RIVER BASIN--Continued

1-3305. KAYADEROSSERAS CREEK NEAR WEST MILTON, N. Y.

LOCATION.--Temperature recorder at gaging station on right bank 500 feet downstream from Glowegee Creek, 1 mile east of West Milton, Saratoga County, and 3.5 miles northwest of Ballston Spa.
DRAINAGE AREA.--90 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1953 to June 1955.
Water temperatures: October 1952 to September 1963.
Sediment records: February 1953 to June 1955.
EXTREMES, 1962-63.--Water temperatures: Maximum, 78°F July 25; minimum, freezing point on many days from November to March.
EXTREMES, 1952-63.--Water temperatures: Maximum, 83°F July 10, 1955; minimum, freezing point on many days during winter months.

Temperature °F of water, water year October 1962 to September 1963
[Continuous water-stage recorder with thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	59	58	59	59	59	59	59	59	58	57	56	57	57	54	52	54	56	54	52	51	52	51	51	50	47	44	42	45	45	43	44	53
Minimum	57	55	56	58	58	58	59	57	57	56	55	55	53	52	52	52	54	51	49	49	51	50	50	47	43	42	41	42	43	42	42	51
November																																
Maximum	46	46	43	40	40	40	39	40	41	43	44	42	39	37	35	33	34	34	34	32	33	36	36	36	36	36	33	32	32	32	--	37
Minimum	44	43	40	40	40	39	37	37	40	41	42	39	37	34	33	33	33	34	32	32	32	33	36	36	36	33	32	32	32	32	--	36
December																																
Maximum	34	34	33	34	36	37	37	36	35	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
Minimum	32	32	33	33	34	36	36	35	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
January																																
Maximum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February																																
Maximum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March																																
Maximum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	35	33	35	35	35	36	33
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34	34	32
April																																
Maximum	35	36	35	35	36	38	38	40	41	41	40	44	45	44	45	47	45	50	50	50	51	51	49	43	44	45	45	51	52	51	--	44
Minimum	33	35	34	35	34	35	38	37	38	39	38	39	42	42	42	43	44	44	46	46	47	47	42	41	43	43	43	44	45	48	--	41
May																																
Maximum	48	49	53	57	56	56	57	56	61	61	50	49	53	57	57	60	60	58	58	58	56	60	57	56	58	56	62	59	56	59	63	57
Minimum	45	44	47	50	54	51	50	53	56	50	47	46	46	53	54	53	54	54	53	53	51	56	50	47	50	53	52	53	55	56	55	51
June																																
Maximum	66	67	67	67	68	68	67	62	65	62	57	54	58	59	59	57	59	62	65	62	62	59	64	66	67	68	69	69	69	71	--	64
Minimum	57	59	59	62	62	63	62	60	59	57	54	53	52	55	55	54	54	55	57	60	57	54	56	59	62	64	64	66	66	67	--	59
July																																
Maximum	76	74	72	66	65	64	63	66	63	63	66	69	71	71	71	72	74	76	74	72	71	73	75	77	78	77	77	76	76	75	70	71
Minimum	68	70	66	61	60	60	61	62	60	60	62	62	67	69	70	67	72	72	72	69	71	69	72	71	74	73	74	73	75	69	66	68
August																																
Maximum	70	67	68	68	67	69	70	70	70	69	69	67	67	65	65	65	63	65	64	64	67	68	70	69	67	65	65	66	65	66	66	67
Minimum	67	65	65	67	65	65	68	68	67	67	64	64	65	62	60	63	62	63	61	64	63	65	67	66	63	63	63	62	63	63	64	64
September																																
Maximum	66	66	67	67	65	61	64	65	66	66	64	64	64	58	59	59	59	62	62	62	59	58	56	53	54	56	59	59	56	54	--	61
Minimum	62	62	65	65	60	60	59	60	62	63	59	62	58	54	54	54	57	57	60	59	58	56	53	50	50	51	55	56	54	52	--	58

1-3355. HUDSON RIVER AT MECHANICVILLE, N. Y.

LOCATION.--At west shore of Hudson River at West Virginia Pulp and Paper Company, Mechanicville, Saratoga County.
DRAINAGE AREA.--4,500 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1954 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 84°F June 29 (a.m.): minimum, freezing point on many days from December to March.
EXTREMES, 1954-63.--Water temperatures: Maximum, 84°F June 29 (a.m.), 1963; minimum, freezing point on many days during winter months.
REMARKS.--Reported by West Virginia Pulp and Paper Company, taken from their recorder. No discharge records available.

Temperature °F of water, water year October 1962 to September 1963
[Twice-daily measurements at approximately 0700 and 1900]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
a.m.	59	56	57	58	58	58	57	56	56	56	56	56	54	54	54	53	54	53	52	53	54	54	52	51	50	50	63	59	48	46	45	54
p.m.	58	59	59	59	58	58	57	58	56	56	56	56	54	54	52	53	54	53	53	54	54	53	52	51	50	49	63	65	46	45	46	55
November																																
a.m.	46	45	44	43	43	42	40	40	41	41	43	42	41	40	39	39	38	38	36	36	34	36	36	36	36	36	34	34	35	35	--	39
p.m.	46	46	44	43	43	42	41	41	41	42	42	42	41	39	39	39	38	37	36	35	36	36	36	36	36	34	34	36	35	36	--	39
December																																
a.m.	35	35	36	35	35	35	35	36	35	35	34	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
p.m.	36	37	36	36	36	36	35	36	35	34	33	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
January																																
a.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
p.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February																																
a.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
p.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March																																
a.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34	32	34	34	34	35	32
p.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	35	32	33	34	34	36	32
April																																
a.m.	35	37	38	38	36	34	34	35	37	36	37	37	39	40	41	42	44	44	45	45	45	46	46	44	44	44	44	43	45	47	--	41
p.m.	35	38	39	38	34	36	37	37	39	38	38	41	42	42	44	45	46	46	45	46	47	47	46	44	44	44	46	44	46	46	--	42
May																																
a.m.	47	45	45	46	52	52	53	53	54	57	54	52	51	52	54	54	54	56	56	56	56	57	57	56	55	57	56	58	58	58	59	54
p.m.	46	45	48	50	52	54	54	54	57	54	53	52	54	56	56	56	57	56	58	57	58	55	57	58	56	57	60	58	59	60	62	55
June																																
a.m.	62	64	67	66	68	70	70	69	70	70	66	66	64	65	64	63	66	67	66	67	67	65	65	68	70	70	71	74	84	76	--	68
p.m.	65	68	68	70	71	71	70	70	71	69	66	65	65	66	65	66	68	68	68	67	66	66	67	70	70	73	74	77	76	80	--	69
July																																
a.m.	79	78	77	76	76	72	74	74	71	70	70	72	72	73	74	72	72	74	74	74	75	77	75	76	78	79	80	80	83	82	79	75
p.m.	82	80	78	78	74	74	75	74	71	72	72	74	75	76	74	72	75	76	74	76	77	76	77	78	79	80	80	82	83	80	80	77
August																																
a.m.	80	76	74	75	76	74	74	74	74	74	74	76	74	72	70	70	70	70	72	70	69	69	70	71	70	71	70	68	70	68	68	72
p.m.	77	76	76	76	76	74	75	76	76	76	75	76	73	72	70	70	70	70	70	69	69	70	71	71	70	71	69	70	68	69	70	72
September																																
a.m.	68	71	70	71	67	67	65	66	70	67	65	66	64	63	63	66	63	63	64	64	63	62	63	60	59	58	59	60	58	59	--	64
p.m.	70	71	72	70	68	67	67	70	69	68	68	66	64	64	66	65	64	65	65	63	62	62	60	59	59	59	60	60	58	59	--	65

HUDSON RIVER BASIN--Continued

1-3400. MOHAWK RIVER AT UTICA, N. Y.

LOCATION.--At intake of Skenandoa Rayon Corp., Broad Street, Route 55, 1 mile downstream from Genesee Street Bridge, in Utica, Oneida County.
DRAINAGE AREA.--514 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1960 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 79°F July 29; minimum, 33°F on several days in December, January, and February.
EXTREMES, 1960-63.--Water temperatures: Maximum, 79°F July 29, 1963; minimum, 33°F on several days during winter months.

Temperature °F of water, water year October 1962 to September 1963

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	60	61	61	61	61	61	59	58	58	59	59	59	58	57	57	57	57	58	57	56	57	57	56	55	54	53	49	49	49	48	47	56
November	47	47	47	45	43	43	45	44	45	46	45	45	43	43	42	42	41	41	41	39	40	40	40	39	39	39	39	38	39	38	--	42
December	39	39	38	39	--	39	39	38	38	37	35	34	34	34	34	34	34	33	34	33	33	33	34	34	34	34	33	34	35	34	33	35
January	34	34	34	35	35	35	35	36	37	38	39	38	37	36	36	36	35	35	36	36	34	34	34	34	--	35	34	34	33	33	34	35
February	35	36	35	34	35	34	35	33	34	35	35	35	35	35	34	34	34	34	35	35	35	35	34	35	35	35	35	34	--	--	--	35
March	34	35	35	35	36	37	35	36	35	36	36	36	36	37	38	36	36	36	37	35	36	36	36	37	37	37	38	38	38	38	39	36
April	40	40	43	43	40	41	41	42	42	41	42	43	43	44	45	48	50	50	48	46	47	46	46	44	45	46	46	48	52	52	--	45
May	51	51	50	52	55	57	58	58	59	61	53	50	54	57	57	64	63	61	61	61	59	59	57	58	58	59	62	61	62	62	62	58
June	62	66	68	70	70	72	71	72	70	68	67	63	61	61	62	61	63	65	68	68	65	62	64	66	68	71	74	75	75	76	--	67
July	77	78	76	71	70	70	70	69	67	66	67	68	69	70	70	72	71	74	75	75	74	74	74	76	76	78	78	78	79	77	76	73
August	73	72	71	72	70	71	71	73	72	73	71	70	69	66	66	67	67	66	66	66	67	70	71	71	70	70	70	69	68	69	68	70
September	66	65	68	68	68	67	65	66	65	67	68	68	66	64	64	63	63	64	65	65	63	62	60	59	59	60	60	61	61	58	--	64

1-3560. MOHAWK RIVER AT VISCHER FERRY DAM, N. Y.

LOCATION.--At bridge crossing headrace of Vischer Ferry powerplant, operated by New York State Department of Public Works.
DRAINAGE AREA.--3,385 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1951 to September 1953.
Water temperatures: October 1951 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 82°F July 26-28, 31, (p.m.); minimum, freezing point on many days from December to March.
EXTREMES, 1951-63.--Water temperatures: Maximum, 85°F Aug. 5 (p.m.), 1955; minimum, freezing point on many days during winter months.
REMARKS.--No discharge records available.

Temperature °F of water, water year October 1962 to September 1963
(Twice-daily measurements at approximately 0800 and 1600)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
a.m.	61	61	62	61	62	60	60	59	60	59	59	59	58	58	59	59	56	56	56	56	56	55	55	55	53	52	52	52	52	49	49	57
p.m.	62	62	62	62	61	60	60	59	59	59	59	59	55	57	59	59	56	56	56	56	56	55	56	54	53	52	52	51	52	49	49	57
November																																
a.m.	48	46	46	45	44	45	43	43	43	43	42	42	42	42	40	40	40	40	38	40	38	38	38	38	38	38	37	36	37	36	--	41
p.m.	48	46	46	45	45	45	44	43	43	43	43	42	42	41	40	40	40	40	38	40	38	38	38	38	38	38	37	36	37	36	--	41
December																																
a.m.	35	36	36	36	36	36	36	36	36	35	35	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
p.m.	35	36	36	36	36	36	36	34	37	35	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
January																																
a.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
p.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February																																
a.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
p.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March																																
a.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	35	35	32
p.m.	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	35	35	35	32
April																																
a.m.	35	35	34	34	34	34	34	34	34	34	34	35	35	35	35	37	37	38	38	38	38	38	38	38	39	39	39	39	39	39	--	36
p.m.	35	35	34	34	34	34	34	34	34	34	34	35	35	35	35	37	37	38	38	38	38	38	38	38	39	39	39	39	39	39	--	36
May																																
a.m.	39	39	39	43	47	52	54	55	56	58	58	58	56	55	56	57	60	60	60	61	59	61	62	58	58	62	60	63	62	62	62	56
p.m.	39	40	40	45	50	53	54	56	58	58	58	58	56	56	56	57	59	60	62	60	62	62	61	60	62	62	60	64	62	62	65	57
June																																
a.m.	65	66	67	68	69	72	74	74	74	72	70	69	68	68	68	65	67	68	70	70	70	69	68	68	71	70	71	73	74	75	--	70
p.m.	69	67	68	70	73	74	74	74	74	72	70	68	68	68	68	67	69	69	70	70	70	68	68	72	71	72	73	74	76	77	--	71
July																																
a.m.	76	76	78	76	74	74	74	75	72	72	74	73	75	75	75	74	75	75	76	76	77	76	76	78	77	79	79	80	81	80	78	76
p.m.	79	79	78	77	75	76	75	73	76	74	74	74	76	75	75	75	75	75	77	77	78	76	77	79	80	82	82	82	80	80	82	77
August																																
a.m.	78	78	78	78	76	77	75	77	76	77	75	77	75	74	72	77	73	71	70	72	72	71	72	71	72	72	73	72	72	72	72	74
p.m.	80	78	80	74	77	77	75	76	77	78	76	77	75	73	73	73	72	72	73	71	72	72	72	72	73	75	74	74	73	74	74	75
September																																
a.m.	72	72	71	72	72	72	70	70	69	70	70	70	69	67	70	70	68	66	66	65	67	65	64	60	63	63	63	63	62	62	--	67
p.m.	73	72	71	72	72	71	72	72	70	70	70	70	69	68	70	68	68	68	67	67	66	65	64	64	63	63	63	62	62	62	--	68

HUDSON RIVER BASIN--Continued

1-3580. HUDSON RIVER AT GREEN ISLAND, N.Y.

LOCATION.--At gaging station at Green Island, Albany County, just upstream from Troy lock and dam, and 0.5 mile downstream from 5th branch Mohawk River.
DRAINAGE AREA.--8.090 square miles, approximately (including that above site of former auxiliary gage).
RECORDS AVAILABLE.--Water temperatures: October 1954 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 83°F July 27-30; minimum, freezing point on many days from December to April.
EXTREMES, 1954-63.--Water temperatures: Maximum, 83°F July 27-30, 1963; minimum, freezing point on many days during winter months.
REMARKS.--Stream frozen Jan. 1 to Apr. 14.

Chemical analyses, in parts per million, June 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color	Turbidity
																Calcium, magnesium	Noncarbonate				
June 27, 1963.	5,630	3.6		0.36	0.03	19	3.8	11	0.8	58	20	11	0.3	3.1	110	63	16	182	6.6	26	0.4

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0800)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	60	60	60	60	60	60	60	58	59	59	58	58	58	55	55	55	56	56	55	56	56	56	55	53	53	50	52	49	49	48	48	56
November	48	48	46	45	45	44	44	43	43	43	46	44	44	41	40	40	40	38	38	38	38	38	38	38	38	37	37	37	37	37	--	41
December	37	37	37	37	37	37	37	37	37	37	35	34	33	32	34	36	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34
January	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
April	32	32	32	32	32	32	32	32	32	32	32	32	32	32	44	45	47	47	47	47	48	49	48	46	45	45	45	46	48	49	--	40
May	50	47	47	47	55	55	56	56	56	60	55	54	54	55	57	57	58	60	60	60	58	60	60	60	60	60	60	62	60	62	64	57
June	62	62	63	70	71	72	73	71	72	72	70	68	66	67	67	66	67	68	70	70	70	68	67	70	71	74	70	76	78	76	--	70
July	78	79	81	77	77	75	75	74	73	72	72	74	74	74	75	73	75	77	77	77	77	77	76	79	80	81	83	83	83	83	82	77
August	80	79	77	78	77	76	76	76	78	77	77	76	76	75	72	73	72	72	71	72	71	72	75	74	73	71	72	72	71	70	72	74
September	71	71	71	71	70	72	68	70	69	70	70	69	65	66	65	65	65	65	67	68	66	65	63	61	61	61	61	62	61	60	--	66

HUDSON RIVER BASIN--Continued

1-3720.43. HUDSON RIVER AT POUGHKEEPSIE, N. Y.

LOCATION.--At city pumping station on east bank at Poughkeepsie, Dutchess County, 0.3 mile west of North Road, and 1.4 miles north of Mid-Hudson Bridge.
DRAINAGE AREA.--11,700 square miles.
RECORDS AVAILABLE.--Water temperatures: June 1959 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Minimum, 33°F on many days from December to March.
EXTREMES, 1959-63.--Water temperatures: Maximum, 80°F Aug. 29, 1959; minimum, 33°F on many days during winter months.
REMARKS.--No discharge records available.

Temperature °F of water, water year October 1962 to September 1963
Once-daily measurement at approximately 0830

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	--	--	--	--	--	--	--	--	--	--	--	61	61	--	61	60	60	60	60	60	--	59	59	58	58	58	58	--	58	58	56	--
November	56	55	55	--	54	53	51	50	49	49	--	49	49	49	48	47	47	--	45	44	43	--	43	43	--	41	40	40	40	40	--	47
December	40	--	39	39	39	39	39	39	--	37	36	36	36	36	36	--	36	35	34	33	33	33	--	33	--	33	33	33	33	33	--	--
January	--	33	33	33	33	--	33	33	33	33	33	33	--	33	33	33	33	33	33	--	33	33	33	33	33	33	--	33	33	33	33	33
February	33	33	--	33	33	33	33	33	33	--	33	33	33	33	33	33	--	33	33	33	33	33	33	--	33	33	33	33	--	--	--	33
March	33	33	--	33	33	33	33	33	33	--	33	33	33	33	33	33	--	33	33	33	33	33	33	--	33	33	34	34	34	34	--	33
April	35	35	36	38	40	41	--	41	42	42	42	42	42	--	43	43	44	44	44	44	--	45	45	46	46	48	48	--	48	49	--	43
May	49	49	50	50	--	51	51	51	51	52	52	--	53	54	54	55	55	55	--	56	56	56	58	59	60	--	60	61	61	--	62	55
June	62	--	62	63	64	64	65	65	--	66	66	66	66	66	66	--	66	67	67	68	68	68	--	68	68	69	70	71	71	--	--	66
July	72	73	73	--	74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
August	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
September	--	--	--	--	--	--	--	--	73	72	72	70	70	70	--	70	70	70	70	70	69	--	68	67	67	67	67	66	--	66	--	--

HUDSON RIVER BASIN--Continued

1-3735. FISHKILL CREEK AT BEACON, N. Y.

LOCATION.--At gaging station on left bank at upstream side of Bridge Street Bridge in Beacon, Dutchess County, 2.5 miles upstream from mouth.
DRAINAGE AREA.--186 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1962.
Water temperatures: October 1961 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 78°F July 29, 30; minimum, freezing point on many days from December to March.
EXTREMES, 1961-63.--Water temperatures: Maximum, 78°F July 7, 1962, and July 29, 30, 1963; minimum, freezing point on many days during winter months.
REMARKS.--Temperature measurements were made at Texaco Research Center, 0.8 mile upstream from gaging station.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color	Turbidity
															Calcium, magnesium	Noncarbonate				
Oct. 17, 1962.	32	7.6	0.09	0.15	31	9.5	19	2.3	114	25	24	0.1	12	196	117	23	337	6.7	3	0.1
Nov. 20.....	57	7.3	.09	.09	25	7.4	13	1.0	82	33	13	.1	2.9	149	93	26	256	7.9	7	.0
Jan. 30, 1963.	189	5.9	.04	.03	24	7.7	4.0	.9	79	26	6.0	.1	3.6	124	92	27	207	6.8	4	.4
Apr. 4.....	559	5.3	.06	.03	21	6.1	3.5	.8	70	19	5.4	.1	2.0	100	78	20	181	7.0	6	.0
May 17.....	108	4.4	.12	.06	30	8.8	3.8	.8	114	18	6.1	.1	1.8	137	111	18	241	7.0	8	.3
June 26.....	18	5.5	.12	.10	29	9.0	4.7	1.4	110	19	6.2	.1	2.1	138	110	20	242	7.2	8	1.0
Aug. 20.....	69	3.6	--	--	31	11	5.8	1.0	124	23	7.3	.1	1.0	150	123	21	263	7.0	11	.9
Sept. 18.....	23	3.4	.17	.07	35	12	12	1.7	144	27	11	.2	2.6	180	137	19	318	7.0	7	.4

Temperature °F of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	57	56	55	55	55	55	53	50	48	45	44	46	45	45	--
November.....	46	45	45	43	43	42	39	40	41	43	47	46	43	40	38	37	38	38	35	36	36	38	39	39	38	36	35	35	35	35	--	40
December.....	35	36	37	37	38	39	40	36	36	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
January.....	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February.....	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March.....	32	32	32	32	32	32	32	32	32	32	32	32	32	33	34	33	35	35	33	34	34	35	37	37	39	44	47	46	45	45	45	36
April.....	46	46	52	52	46	44	47	47	48	48	45	45	48	49	49	49	51	50	52	53	55	54	52	48	45	47	47	50	53	53	--	49
May.....	54	49	49	54	60	60	60	61	62	65	60	55	54	58	58	58	60	63	60	63	62	62	61	58	60	61	58	61	60	60	63	59
June.....	65	66	67	68	71	71	72	68	68	71	65	64	62	65	64	62	62	65	67	70	68	65	65	67	69	71	73	75	77	73	--	68
July.....	74	77	77	74	73	70	70	70	66	66	67	68	74	74	70	70	72	75	76	77	74	70	68	69	72	74	76	77	78	78	76	73
August.....	76	72	68	70	71	70	72	72	73	73	71	71	71	70	67	67	67	68	67	67	68	69	72	73	70	68	67	66	67	67	67	70
September.....	67	66	67	68	67	65	63	63	65	67	65	66	66	63	61	60	60	61	62	65	63	59	58	55	53	54	56	59	60	57	--	62

1-3743.1. HUDSON RIVER AT PEEKSKILL, N. Y.

LOCATION.--At Charles Point on Lent Cove at Peekskill, Westchester County.
DRAINAGE AREA.--12,600 square miles.
RECORDS AVAILABLE.--Water temperatures: July 1959 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 79°F on several days in July and August; minimum, freezing point on many days in January, February, and March.
EXTREMES, 1959-63.--Water temperatures: Maximum, 80°F on several days in 1959; minimum, freezing point on many days during winter months.
REMARKS.--No discharge records available.

Temperature °F of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0900)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	66	65	65	66	66	65	65	65	65	64	64	64	64	64	64	64	64	64	63	63	62	62	62	57	59	59	59	58	58	58	58	63
November	57	57	57	56	55	55	54	53	52	52	52	52	52	52	52	52	51	50	49	48	48	47	47	47	47	46	46	46	46	45	--	51
December	45	45	45	45	45	45	44	44	42	42	40	39	38	38	36	36	36	36	35	35	34	34	34	35	35	34	34	33	33	33	33	38
January	33	33	33	33	33	33	33	33	33	33	32	32	32	32	32	32	33	33	33	33	33	33	33	33	33	32	32	32	32	32	32	33
February	32	32	32	32	32	33	33	33	32	32	33	33	33	33	33	33	33	33	33	33	33	32	32	32	32	32	33	32	--	--	--	33
March	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	32	32	32	33	35	35	35	34	34	34	35	35	35	36	36	36	34
April	39	39	39	39	40	41	41	42	42	45	45	45	45	45	44	45	45	45	46	47	48	48	48	48	48	48	48	48	48	49	--	45
May	50	49	50	51	51	52	53	53	54	55	55	55	56	56	56	56	56	56	57	57	58	57	57	60	60	61	60	60	60	60	61	56
June	61	61	62	63	64	64	65	65	65	66	66	66	67	66	66	67	67	67	67	68	69	69	69	69	70	70	70	71	72	73	--	67
July	75	75	75	75	74	73	72	73	73	74	73	74	75	75	75	75	76	76	78	78	78	77	77	78	78	78	78	79	79	79	79	76
August	79	79	79	79	79	79	79	79	79	79	79	79	79	79	78	77	76	77	76	76	76	76	76	76	76	76	76	76	76	74	74	77
September	74	74	74	74	74	74	73	73	72	72	71	71	72	71	70	70	70	70	70	69	69	69	68	67	66	66	66	66	66	64	--	70

PASSAIC RIVER BASIN

1-3820. PASSAIC RIVER AT TWO BRIDGES, N. J.

LOCATION.--At partial-record gaging station at bridge on Two Bridges Road, in Two Bridges, Essex County.
DRAINAGE AREA.--360 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 83°F July 28; minimum, freezing point on several days in December, January and February.
REMARKS.--Records of water temperatures provided by Passaic Valley Water Commission. Discharge records at time of sampling.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
June 25, 1963.....	70.8	13	0.16	27	10	47	4.0	126	63	40	0.4	0.4	268	109	5	475	7.0	23
July 30.....	107	20	.32	28	9.2	39	4.5	118	42	41	.6	1.0	258	108	12	438	6.9	35
Aug. 27.....	44.8	20	1.1	32	12	60	6.2	162	64	54	.8	.6	350	130	0	569	6.9	45
Sept. 24.....	56.1	18	1.2	26	10	55	5.0	108	65	39	.7	13	297	106	18	496	6.6	30

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement, between 0800 and 1000)

Month	Day 1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Average
October.....	57	58	58	58	61	64	63	59	61	62	60	62	61	59	58	58	60	57	57	57	59	54	55	54	49	49	45	45	48	46	47	56
November.....	47	46	45	44	43	--	40	41	42	49	52	--	44	42	40	39	44	44	41	38	39	--	42	41	--	38	37	38	43	38	--	42
December.....	40	42	40	41	41	43	40	37	38	35	34	33	33	32	34	34	32	33	35	35	34	33	--	--	--	33	33	34	35	--	--	36
January.....	--	32	32	33	33	--	33	33	34	34	35	38	39	34	33	33	33	35	36	36	35	33	34	33	33	33	33	32	32	33	32	34
February.....	32	33	32	32	32	33	33	32	33	34	33	--	34	33	32	32	32	32	33	34	35	--	34	34	32	33	36	33	--	--	--	33
March.....	33	33	34	34	36	35	34	33	33	38	33	34	36	34	35	35	37	39	37	37	35	37	38	39	40	46	50	46	50	48	50	38
April.....	46	48	54	53	49	46	49	48	48	49	48	49	53	--	55	54	56	54	57	59	60	58	56	53	53	54	54	55	56	58	--	53
May.....	55	51	53	57	63	62	62	64	66	67	62	57	56	60	64	64	66	64	63	63	63	63	63	60	60	61	59	61	61	--	64	61
June.....	67	68	68	68	69	69	72	68	68	71	68	67	66	66	67	66	67	67	70	71	70	70	70	72	73	73	75	77	77	76	--	70
July.....	81	80	78	--	74	75	72	71	70	70	71	70	72	71	71	73	74	77	78	78	78	75	73	77	76	77	79	83	81	81	77	75
August.....	77	75	74	75	75	74	74	73	74	75	73	73	73	72	70	70	69	70	70	71	73	73	74	75	70	71	72	70	70	71	69	72
September.....	68	68	68	71	68	65	64	66	65	65	65	66	65	63	61	61	61	63	65	66	66	64	60	59	58	56	58	59	61	59	--	63

1-3890. POMPTON RIVER AT TWO BRIDGES, N. J.

LOCATION.--At partial-record gaging station at bridge on Two Bridges Road, at Two Bridges, Essex County.
DRAINAGE AREA.--380 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 82°F July 2, 28; minimum, freezing point on several days during winter months.
REMARKS.--Records of water temperatures provided by Passaic Valley Water Commission. Discharge records at time of sampling.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
June 25, 1963.....	106	4.1	0.12	20	6.3	12	1.0	60	25	15	0.0	4.3	117	76	27	213	6.9	3
July 29.....	--	9.3	.28	20	5.8	16	1.0	63	31	18	.1	3.0	148	74	23	229	7.0	10
Aug. 27.....	47.4	5.6	.34	20	7.1	15	1.6	66	28	20	.1	4.9	144	79	25	242	6.8	5
Sept. 24.....	45.4	5.5	.29	22	5.4	19	1.0	63	34	20	.1	8.4	151	77	26	258	6.7	9

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement, between 0800 and 1000)

Month	Day																												Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October.....	58	58	59	60	62	62	61	58	61	60	59	61	60	57	57	57	61	57	57	57	59	54	55	53	49	48	46	46	48	45	47	56
November.....	46	44	45	43	43	--	41	42	43	49	51	--	44	42	40	40	45	45	39	39	40	--	40	40	--	38	37	38	42	38	--	42
December.....	41	42	40	41	41	42	39	37	38	35	33	33	33	32	34	35	32	33	35	35	35	33	--	--	--	33	33	34	35	--	--	36
January.....	--	32	32	33	33	--	33	33	34	34	35	38	38	34	33	33	33	35	35	35	34	33	33	33	33	33	34	32	32	34	32	34
February.....	32	33	32	32	32	33	33	32	33	34	33	--	33	33	32	32	32	32	33	34	33	--	33	34	32	32	35	33	--	--	--	33
March.....	32	33	34	35	35	35	34	34	34	37	34	35	38	35	35	36	37	38	36	37	35	37	38	38	40	45	49	46	48	46	47	38
April.....	46	47	54	51	47	47	49	47	47	47	47	47	51	--	59	53	55	53	56	57	58	55	53	49	50	52	51	54	55	55	--	51
May.....	53	49	53	58	62	60	60	62	65	66	56	54	58	60	61	63	63	62	59	62	61	61	61	57	58	59	57	61	60	--	63	59
June.....	67	66	67	67	69	69	71	65	67	71	67	65	64	67	67	64	67	67	73	72	71	68	69	73	75	75	77	78	77	75	--	70
July.....	81	82	77	--	72	74	71	71	68	69	69	70	74	71	70	73	75	73	78	78	75	75	73	75	77	79	77	82	81	80	77	75
August.....	77	74	75	76	73	72	74	73	73	75	71	73	73	71	68	69	69	70	71	70	73	73	74	75	68	67	70	67	69	70	70	72
September.....	68	66	68	71	68	63	62	64	66	67	67	67	65	62	58	59	60	63	68	67	65	62	57	56	55	54	58	61	58	57	--	63

PASSAIC RIVER BASIN--Continued

1-3895. PASSAIC RIVER AT LITTLE FALLS, N. J.

LOCATION.--At gaging station at Passaic Valley Water Commission intake, in Little Falls, Passaic County.
DRAINAGE AREA.--762 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 83°F July 28; minimum, freezing point Dec. 16, 23, 24, 31 and Jan. 1.
REMARKS.--Records of water temperatures provided by Passaic Valley Water Commission.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Nov. 27, 1962.....	840	12	0.48	17	5.6	9.0	1.5	32	37	12	0.3	4.8	120	66	40	196	6.5	30
Mar. 6, 1963.....	1820	8.7	.62	15	4.1	19	2.2	32	30	26	.3	2.8	144	55	29	237	6.6	17
May 23.....	545	--	2.0	--	--	15	--	56	29	16	--	4.7	--	70	24	222	6.7	25
June 19.....	150	7.7	--	22	7.3	18	2.0	66	32	23	.2	8.4	172	85	31	279	7.6	8
June 25.....	102	7.8	.12	24	8.3	28	2.5	74	42	28	.1	8.8	186	94	34	333	6.7	14
July 30.....	162	12	.38	23	7.5	28	2.2	76	39	31	.2	3.9	206	89	26	322	6.7	15
Aug. 27.....	32	10	.31	24	7.8	30	3.1	82	42	28	.1	9.6	205	92	25	341	7.5	20
Sept. 24.....	62	11	.47	24	8.8	36	3.5	80	53	30	.4	14	225	96	31	377	6.7	22

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement, between 0800 and 1000)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October.....	59	59	59	60	61	61	61	61	61	60	61	62	62	60	60	59	61	60	58	57	57	57	56	55	52	50	47	47	48	48	48	57
November.....	48	48	45	47	45	45	43	43	44	47	49	48	47	42	42	42	42	43	41	41	41	43	41	41	40	39	39	39	39	39	--	43
December.....	39	40	41	41	42	43	42	40	38	37	35	33	33	33	33	32	33	33	33	35	35	33	32	32	33	33	33	33	33	33	32	35
January.....	32	33	33	34	33	34	33	34	34	34	35	36	37	36	34	33	33	34	35	36	36	33	33	33	33	33	33	33	33	33	33	34
February.....	33	33	33	33	33	33	33	33	33	33	33	33	33	34	33	33	33	33	34	34	34	33	33	33	33	33	33	33	--	--	--	33
March.....	33	33	33	35	37	36	35	35	35	35	35	35	35	36	37	37	39	40	39	38	38	38	39	39	41	46	48	48	48	48	48	39
April.....	49	49	52	54	50	48	50	50	51	51	48	49	51	52	53	55	56	55	57	58	60	58	58	53	53	54	54	56	57	58	--	53
May.....	55	53	53	58	61	62	63	64	66	67	63	60	58	60	62	63	65	65	62	67	65	65	64	61	61	62	61	63	62	62	66	62
June.....	67	69	70	69	71	72	73	70	70	72	70	69	66	69	67	66	68	70	72	72	73	70	70	72	74	76	78	80	80	77	--	71
July.....	78	82	80	79	75	74	75	76	73	73	73	75	75	75	73	74	76	78	79	79	78	77	77	76	78	80	81	83	82	82	81	77
August.....	80	76	78	77	76	76	78	77	77	78	77	77	77	73	70	71	71	71	71	71	73	74	76	74	74	72	72	72	72	71	72	74
September.....	72	71	72	72	70	69	68	68	69	70	68	70	70	67	64	64	64	64	64	67	66	65	63	61	60	60	60	62	63	58	--	66

RARITAN RIVER BASIN

1-3965. SOUTH BRANCH RARITAN RIVER NEAR HIGH BRIDGE, N. J.

LOCATION.--Temperature recorder at gaging station at bridge on Cregar Road, 1 mile northeast of High Bridge, Hunterdon County and 4.4 miles upstream from Spruce Run.
DRAINAGE AREA.--65.3 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1960 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 80°F July 2; minimum, freezing point on many days during winter months.
EXTREMES, 1960-63,--Water temperatures: Maximum, 80°F July 2, 1963; minimum, freezing point on many days during winter months.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_3)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1, 1962.....	40	12	--	17	8.5	4.6	1.8	77	16	7.0	0.0	4.7	114	78	15	188	7.9	3
Nov. 5.....	105	12	0.50	12	5.6	4.1	1.5	42	18	6.2	.1	2.4	99	53	19	138	7.1	15
Feb. 26, 1963.....	65	11	.10	14	6.8	5.0	1.0	64	12	5.8	.1	1.6	93	63	11	168	7.6	5
July 1.....	32	12	.31	21	9.0	5.4	1.0	106	9.4	5.3	.1	3.0	127	90	3	197	7.1	5
Sept. 10.....	21	7.0	.16	20	10	5.2	1.6	113	8.2	5.0	.4	2.3	121	91	0	199	7.7	5

RARITAN RIVER BASIN--Continued

1-3965. SOUTH BRANCH RARITAN RIVER NEAR HIGH BRIDGE, N. J.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Water-stage recorder with temperature attachment)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	59	59	59	60	59	59	59	59	60	63	62	58	57	60	60	58	55	55	56	55	53	52	49	47	45	47	48	46	47	55
Minimum	--	--	55	58	59	59	58	56	58	57	57	59	58	55	55	57	58	54	52	51	54	52	52	49	45	44	43	43	46	44	46	53
November																																
Maximum	48	47	46	45	45	45	44	45	45	49	49	48	47	45	43	43	44	44	44	43	44	45	45	44	43	42	41	39	41	41	--	44
Minimum	47	44	45	45	45	44	42	43	44	45	48	47	45	43	41	41	43	44	43	42	42	44	44	43	42	41	39	38	39	40	--	43
December																																
Maximum	40	41	41	40	41	41	40	38	38	38	36	34	34	33	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	33	33	35
Minimum	40	40	40	38	40	40	38	37	37	36	34	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	34
January																																
Maximum	33	32	32	32	32	32	32	32	33	34	35	35	35	34	33	33	33	33	36	36	36	34	34	34	33	33	33	33	33	32	32	33
Minimum	32	32	32	32	32	32	32	32	32	33	34	35	34	33	33	33	32	32	33	36	34	34	34	33	33	33	33	33	32	32	32	33
February																																
Maximum	33	32	32	32	32	32	32	32	32	32	32	32	33	33	33	32	32	33	32	34	35	33	32	32	33	33	33	32	--	--	--	32
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	33	32	32	32	32	32	32	33	32	32	32	32	33	32	32	--	--	--	32
March																																
Maximum	32	32	35	37	36	36	35	35	35	36	35	34	35	36	36	36	36	36	36	36	36	38	38	39	42	44	45	48	48	48	49	38
Minimum	32	32	32	35	36	34	34	34	34	35	34	34	34	35	34	35	36	36	36	36	36	36	37	37	39	41	43	45	47	47	47	37
April																																
Maximum	49	51	53	53	48	49	50	52	48	51	50	55	57	57	57	58	54	60	60	63	58	57	53	51	53	55	59	60	60	58	--	55
Minimum	47	47	51	48	45	45	47	47	47	48	47	48	51	51	51	51	53	53	55	56	55	52	49	47	47	47	54	55	56	57	--	50
May																																
Maximum	57	57	61	62	63	64	62	63	62	63	60	59	60	60	62	62	61	61	61	62	60	61	60	60	61	59	61	59	58	65	68	61
Minimum	54	53	55	57	59	61	58	59	61	60	57	56	56	58	58	59	59	59	58	60	59	59	58	57	57	58	57	58	57	58	60	58
June																																
Maximum	68	62	65	67	69	71	69	67	70	72	69	65	67	64	64	67	69	71	71	69	69	69	71	72	75	75	76	73	71	73	--	69
Minimum	61	61	62	63	64	65	67	63	63	66	65	61	59	60	61	59	60	63	63	64	64	60	60	62	64	65	73	69	70	69	--	64
July																																
Maximum	78	80	77	73	72	72	70	68	69	69	69	71	69	68	71	72	75	76	79	73	72	72	72	76	78	78	79	79	79	79	76	74
Minimum	69	71	71	66	64	64	64	66	61	62	63	63	64	65	65	65	67	71	71	72	69	68	67	67	69	71	72	73	73	73	68	68
August																																
Maximum	72	71	71	74	72	74	70	73	72	74	71	70	69	67	68	68	68	71	67	68	71	71	74	71	68	67	65	65	65	68	69	70
Minimum	69	67	67	68	67	67	67	67	67	68	65	64	67	64	61	61	64	65	62	65	67	67	68	66	61	61	61	60	63	63	64	65
September																																
Maximum	67	67	66	66	64	62	64	64	63	68	65	57	54	51	50	50	60	63	66	65	64	61	61	56	55	57	61	63	62	60	--	63
Minimum	62	59	63	64	62	59	57	59	61	62	60	64	60	57	56	58	58	60	61	63	61	57	56	51	51	51	55	59	60	57	--	59

1-3968. SPRUCE RUN AT CLINTON, N. J.

LOCATION.--At gaging station 0.5 mile north of Clinton, Hunterdon County, 0.6 mile upstream from confluence with South Branch Raritan River, and 1.9 miles southwest of High Bridge.
DRAINAGE AREA.--41.3 square miles.

Periodic determinations of suspended-sediment discharge, water year October 1960 to September 1961
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Mean Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 20, 1960				79	28	S 7.9												
Oct. 21				39	4	4												
Jan. 1, 1961				146	9	S 5.7												
Jan. 2				108	4	S 1.2												
Jan. 15				57	18	2.8												
Jan. 16				65	6	1.1												
Feb. 23				220	28	17												
Feb. 24				220	15	8.9												
Feb. 25				450	345	S 498												
Feb. 26				600	65	105												
Mar. 14				400	190	S 275												
Mar. 23				344	179	S 230												
Mar. 24				220	22	13												
Apr. 13				468	97	S 161												
Apr. 16				339	145	S 170												

S Computed by subdividing day.

RARITAN RIVER BASIN--Continued

1-3970. SOUTH BRANCH RARITAN RIVER AT STANTON, N. J.

LOCATION.--At gaging station on right bank at downstream side of highway bridge at Stanton railroad station, Readington Township, Hunterdon County, 0.4 mile upstream from Prescott Brook.
DRAINAGE AREA.--147 square miles.
RECORDS AVAILABLE.--Water temperatures: December 1959 to November 1961.
Sediment records: December 1959 to September 1963.
EXTREMES, 1962-63.--Sediment concentrations: Maximum daily, 920 ppm Mar. 6; minimum daily, 2 ppm Aug. 4-13.
Sediment loads: Maximum daily, 5,600 tons Mar. 6; minimum daily, less than 0.50 ton on many days during June to September.
EXTREMES, 1959-63.--Water temperatures, 1959-61: Maximum, 84°F July 2, 1961; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 920 ppm Mar. 6, 1963; minimum daily, 1 ppm on many days.
Sediment loads: Maximum daily, 5,600 tons Mar. 6, 1963; minimum daily, less than 0.50 ton on many days.
REMARKS.--Flow affected by ice Dec. 11-17, 19, and Dec. 21 to Mar. 6. Low concentration data were based on periodic samples from Dec. 1, 1961 to present. Sediment samples collected at midstream from bridge.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1, 1962.....	70	12	--	18	8.5	5.7	2.0	74	20	6.8	0.1	3.5	122	80	20	195	7.8	5
Nov. 5.....	215	12	0.37	14	5.6	4.7	2.0	44	24	7.0	.0	2.7	102	58	22	151	7.0	20
Feb. 25, 1963.....	130	11	.32	17	7.3	7.2	1.6	64	18	9.3	.0	2.1	112	73	20	197	7.7	5
Mar. 6.....	2250	5.3	--	8.4	3.2	3.2	3.0	22	16	6.1	.1	2.8	65	34	16	116	6.0	5
Apr. 11.....	180	--	.48	--	--	7.4	--	62	19	7.0	--	4.0	--	68	17	172	6.7	5
July 1.....	56	12	.79	20	8.0	6.4	1.2	90	14	7.0	.1	2.9	123	83	9	195	7.1	10
Sept. 10.....	27	4.7	.63	19	10	5.7	1.8	104	13	6.8	.1	1.0	96	89	4	202	8.1	7

RARITAN RIVER BASIN--Continued

1-3970. SOUTH BRANCH RARITAN RIVER AT STANTON, N. J.--Continued

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day
1	70	5	1	127	8	3	142	4	2
2	67	5	1	93	6	2	137	4	1
3	62	5	1	166	35	16	132	4	1
4	60	5	1	521	110	150	129	4	1
5	170	27	S 17	215	20	12	142	7	3
6	195	23	12	147	12	5	424	180	S 330
7	129	7	2	122	10	3	422	85	S 110
8	95	5	1	110	8	2	241	22	14
9	123	16	5	104	8	2	215	15	9
10	194	24	13	778	430	S 990	208	10	6
11	120	7	2	497	48	S 72	185	10	5
12	102	5	1	283	18	14	170	9	4
13	95	4	1	235	11	7	155	8	3
14	83	4	1	211	9	5	150	7	3
15	76	4	1	174	8	4	150	8	3
16	76	4	1	163	7	3	150	7	3
17	72	4	1	155	6	3	155	10	4
18	68	4	1	180	10	5	157	8	3
19	68	4	1	241	20	13	155	7	3
20	65	5	1	189	13	7	150	6	2
21	65	5	1	177	10	5	140	7	3
22	62	5	1	542	62	S 95	140	8	3
23	63	5	1	322	23	20	150	27	11
24	63	5	1	235	13	8	145	12	5
25	62	5	1	202	6	3	140	10	4
26	70	6	1	186	5	3	130	9	3
27	80	6	1	172	5	2	125	9	3
28	74	6	1	163	5	2	120	8	3
29	70	6	1	155	5	2	120	7	2
30	67	6	1	147	4	2	110	5	1
31	163	24	11	--	--	--	100	5	1
Total	2829	--	86	7012	--	1460	5189	--	549

Day	JANUARY			FEBRUARY			MARCH		
	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day
1	90	6	1	150	6	2	130	4	1
2	95	7	2	140	5	2	160	6	3
3	100	9	2	230	15	9	130	5	2
4	105	9	3	195	11	6	120	4	1
5	110	10	3	180	9	4	800	--	E 200
6	110	10	3	170	8	4	2250	920	5600
7	110	9	3	160	7	3	1300	220	770
8	110	9	3	150	7	3	780	45	95
9	105	8	2	140	6	2	628	27	46
10	105	8	2	145	6	2	675	34	62
11	110	9	3	150	7	3	670	34	62
12	225	14	9	170	8	4	670	26	47
13	325	23	20	195	10	5	560	14	21
14	210	12	7	160	8	3	540	15	22
15	160	11	5	140	6	2	535	18	26
16	145	10	4	130	5	2	470	12	15
17	135	9	3	150	5	2	690	25	47
18	145	9	4	160	5	2	616	17	28
19	140	8	3	150	5	2	490	10	13
20	450	--	E 40	135	4	1	580	15	23
21	350	--	E 20	120	4	1	570	22	34
22	175	11	5	110	4	1	438	10	12
23	167	10	5	128	5	2	392	9	10
24	140	7	3	130	6	2	370	9	9
25	155	8	3	130	6	2	374	8	8
26	175	10	5	125	5	2	374	8	8
27	160	8	3	130	5	2	560	27	41
28	158	7	3	130	5	2	415	11	12
29	158	7	3	--	--	--	358	10	10
30	155	7	3	--	--	--	326	10	9
31	155	7	3	--	--	--	314	9	8
Total	5033	--	178	4203	--	77	17285	--	7245

E Estimated.
S Computed by subdividing day.

RARITAN RIVER BASIN--Continued

1-3970. SOUTH BRANCH RARITAN RIVER AT STANTON, N. J.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	286	8	6	365	45	44	76	3	1
2..	286	8	6	186	15	8	70	3	1
3..	269	8	6	142	5	2	76	4	1
4..	252	8	5	122	3	1	106	8	2
5..	224	8	5	110	3	1	91	4	1
6..	218	7	4	108	3	1	89	4	1
7..	215	7	4	102	3	1	83	3	1
8..	205	7	4	95	3	1	81	3	1
9..	195	7	4	93	3	1	81	3	1
10..	186	7	4	120	5	2	76	3	1
11..	180	7	3	174	10	5	78	3	1
12..	172	7	3	137	7	3	76	3	1
13..	163	7	3	112	5	2	72	3	1
14..	157	7	3	102	3	1	68	3	1
15..	150	7	3	97	3	1	78	5	1
16..	147	7	3	89	3	1	83	4	1
17..	142	7	3	81	3	1	67	3	1
18..	144	7	3	166	15	7	62	3	1
19..	137	7	3	196	11	6	55	3	T
20..	127	6	2	120	6	2	53	3	T
21..	117	6	2	134	8	3	60	3	T
22..	115	7	2	215	10	6	58	3	T
23..	117	8	3	134	7	3	50	3	T
24..	120	8	3	108	5	1	48	3	T
25..	112	7	2	100	3	1	47	3	T
26..	112	7	2	95	3	1	47	3	T
27..	110	6	2	95	3	1	49	3	T
28..	104	6	2	87	3	1	44	3	T
29..	100	6	2	87	3	1	55	4	1
30..	195	20	11	91	3	1	78	7	1
31..	--	--	--	81	3	1	--	--	--
Total	5057	--	108	3944	--	111	2057	--	25

Day	JULY			AUGUST			SEPTEMBER		
1..	56	3	T	59	8	1	26	3	T
2..	48	3	T	93	5	1	24	3	T
3..	46	3	T	72	3	1	26	3	T
4..	38	3	T	50	2	T	78	18	4
5..	37	3	T	41	2	T	33	8	1
6..	36	3	T	38	2	T	30	7	1
7..	37	3	T	38	2	T	30	6	T
8..	46	4	T	38	2	T	28	6	T
9..	48	4	1	36	2	T	27	6	T
10..	42	3	T	36	2	T	27	6	T
11..	37	3	T	33	2	T	23	6	T
12..	37	3	T	32	2	T	47	12	2
13..	36	3	T	32	2	T	310	160	130
14..	36	5	T	79	6	1	174	70	33
15..	58	7	1	85	8	2	102	24	7
16..	50	7	1	53	6	1	105	16	5
17..	40	5	1	42	5	1	218	43	25
18..	34	5	T	44	5	1	120	26	8
19..	33	4	T	47	5	1	76	12	2
20..	53	7	1	55	5	1	56	6	1
21..	68	8	1	48	5	1	47	4	1
22..	62	7	1	38	4	T	32	4	T
23..	46	5	1	37	4	T	39	8	1
24..	40	5	1	33	3	T	38	6	1
25..	37	5	T	31	3	T	34	5	T
26..	33	4	T	32	3	T	33	4	T
27..	31	4	T	32	3	T	32	3	T
28..	30	4	T	31	3	T	27	3	T
29..	31	4	T	31	3	T	116	58	S 29
30..	37	4	T	31	3	T	120	13	4
31..	44	5	1	28	3	T	--	--	--
Total	1307	--	18	1375	--	17	2078	--	259

Total discharge for year (cfs-days)..... 57369
Total load for year (tons)..... 10133

S Computed by subdividing day.
T Less than 0.50 ton.

RARITAN RIVER BASIN--Continued

1-3970. SOUTH BRANCH RARITAN RIVER AT STANTON, N. J.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Nov. 10, 1962.....	1045		50	744	551		20	38	57	70	88	96	97	98	99			SCBW
Mar. 6, 1963.....	0955		34	1750	1480		10	20	33	46	66	83	91	96	99			SCBW
Sept. 29.....	1435		62	241	142		26	51	72	90	95	97	98	99	100			SCBW

239-654 O - 67 - 6

RARITAN RIVER BASIN--Continued

1-4009.32. *BALDWIN CREEK AT BALDWIN LAKE , NEAR PENNINGTON, N.J.*

LOCATION.--At gaging station about 200 feet upstream from earthfill dam, about 1,000 feet above Stony Brook, and 1.1 miles northeast of Pennington, Hopewell Township, Mercer County.
DRAINAGE AREA.--2.52 square miles.
RECORDS AVAILABLE.--Water temperatures: November 1962 to September 1963.
Sediment records: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: November 1962 to September 1963; Maximum daily, 90°F July 28; minimum daily, freezing point Feb. 21, 22.
Sediment concentrations: Maximum daily, 88 ppm Mar. 5; minimum daily, 0 ppm Oct. 1 to Nov. 9, and June 10 to Sept. 30.
Sediment loads: Maximum daily, 10 tons Feb. 12; minimum daily, 0.00 tons on many days during year.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 17, 1962.....	--	15	--	40	16	11	5.5	152	42	16	0.3	1.8	231	166	42	393	7.2	3
Apr. 9, 1963.....	1.0	6.0	0.35	16	9.2	9.4	2.8	35	47	14	.1	3.5	147	78	50	236	6.7	8
July 12.....	(a)	8.2	1.5	28	14	12	2.3	137	13	17	.2	4.6	180	128	15	295	8.2	3

a Less than 0.01 cfs.

1-4009.32. BALDWIN CREEK AT BALDWIN LAKE NEAR PENNINGTON, N. J.--Continued

Temperature (°F) of water, November 1962 to September 1963
(Water-stage recorder with temperature attachment)

Month	Day																													Average	
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31		
November																															
Maximum	--	--	--	--	50	49	48	51	51	55	55	53	52	52	49	48	41	41	41	41	41	44	44	43	43	43	43	42	41	40	40	--	46
Minimum	--	--	--	--	49	49	48	48	48	49	49	53	52	52	49	48	40	41	41	40	41	41	41	43	43	43	42	41	40	39	39	--	45
December																															
Maximum	39	39	39	40	40	40	40	39	38	37	36	35	35	35	36	36	36	36	36	36	36	36	36	36	36	37	37	37	37	37	37	37	37
Minimum	39	39	39	39	40	40	39	38	37	36	35	33	34	35	35	36	36	36	36	36	36	36	36	36	36	36	37	37	37	37	37	37	37
January																															
Maximum	37	37	37	37	37	37	37	37	37	37	37	37	37	34	33	33	35	35	35	35	36	35	35	35	36	36	36	36	36	36	36	36	36
Minimum	37	37	37	37	37	37	37	37	37	37	36	34	33	33	33	33	35	35	35	35	35	35	35	35	35	36	36	36	36	36	36	36	36
February																															
Maximum	36	36	36	35	35	35	34	33	33	34	34	33	33	33	33	33	33	33	34	34	34	33	33	33	33	33	33	33	33	--	--	--	34
Minimum	36	36	35	35	35	34	33	33	33	33	33	33	33	33	33	33	33	33	33	34	33	32	32	33	33	33	33	33	33	--	--	--	33
March																															
Maximum	33	34	33	33	34	35	35	35	35	35	35	35	36	36	36	37	37	37	38	37	37	37	38	39	40	44	47	50	52	52	52	52	39
Minimum	33	33	33	33	33	34	35	35	35	35	35	35	35	36	36	36	37	37	37	37	37	37	36	36	39	40	44	47	50	51	51	51	38
April																															
Maximum	52	55	56	55	53	55	55	56	55	54	50	53	56	56	57	59	58	60	60	62	63	60	58	55	56	56	59	62	61	61	--	--	57
Minimum	51	51	54	53	51	52	53	52	54	50	49	48	51	52	53	53	56	56	58	60	60	58	55	53	53	54	54	56	59	60	--	--	54
May																															
Maximum	60	59	60	64	71	67	68	69	69	73	71	69	70	69	71	73	72	71	72	74	72	71	68	67	68	67	67	67	66	71	71	71	69
Minimum	57	55	57	59	63	66	65	67	68	69	68	67	66	67	67	68	71	69	68	71	71	67	66	65	65	66	64	65	66	66	68	68	66
June																															
Maximum	72	72	71	75	77	80	79	75	76	77	75	74	70	69	69	72	75	78	80	79	79	75	80	81	83	84	85	87	84	86	--	--	77
Minimum	69	71	70	71	72	77	75	72	72	75	74	69	67	69	68	67	69	73	75	76	73	72	73	75	78	79	81	83	83	81	--	--	74
July																															
Maximum	86	85	84	79	76	79	80	77	79	78	77	77	77	77	79	82	85	87	87	86	85	82	81	87	88	88	89	90	88	87	88	88	83
Minimum	85	84	79	75	73	73	74	76	73	75	74	75	76	76	76	77	80	83	83	85	82	81	79	79	81	83	84	86	84	84	82	82	79
August																															
Maximum	86	83	85	83	81	83	81	84	83	84	83	81	79	78	77	79	77	78	78	79	82	80	83	81	78	77	77	77	75	77	76	80
Minimum	83	81	81	81	79	78	79	79	79	80	79	78	78	76	72	72	73	76	73	74	77	78	77	76	73	72	72	71	73	72	73	76
September																															
Maximum	75	79	77	76	75	71	75	77	78	76	75	76	72	68	67	66	65	66	71	75	72	67	65	64	66	65	68	68	67	66	--	--	71
Minimum	72	72	73	74	71	68	67	69	69	72	70	72	68	67	66	64	64	63	66	69	67	65	63	62	61	62	63	66	66	63	--	--	67

RARITAN RIVER BASIN--Continued

1-4009.32. BALDWIN CREEK AT BALDWIN LAKE, NEAR PENNINGTON, N. J.--Continued

Suspended sediment, water year October 1962 to September 1963
(Where no concentrations are reported, loads are estimated)

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	0.01	0	0.00	0.01	0	0.00	1.4	15	0.06
2	.01	0	.00	.01	0	.00	1.3	12	.04
3	.01	0	.00	.01	0	.00	1.2	11	.04
4	.01	0	.00	.01	0	.00	1.1	13	.04
5	.01	0	.00	.01	0	.00	1.4	15	.06
6	.01	0	.00	.01	0	.00	27	--	4.0
7	.01	0	.00	.01	0	.00	9.6	--	1.0
8	.01	0	.00	.01	0	.00	4.8	--	.40
9	.01	0	.00	.01	0	.00	3.8	63	.65
10	.01	0	.00	18	--	2.4	2.8	48	.36
11	.01	0	.00	3.9	--	.30	2.0	45	.24
12	.01	0	.00	1.9	41	.21	1.5	47	.19
13	.01	0	.00	1.3	36	.13	1.1	46	.14
14	.01	0	.00	1.0	34	.09	1.0	41	.11
15	.01	0	.00	.71	35	.07	.81	34	.07
16	.01	0	.00	.61	18	.03	.81	51	.11
17	.01	0	.00	.53	12	.02	.71	67	.13
18	.01	0	.00	4.8	16	.21	.71	47	.09
19	.01	0	.00	5.7	19	.29	.81	28	.06
20	.01	0	.00	3.5	11	.10	.81	21	.05
21	.01	0	.00	3.1	10	.08	.61	22	.04
22	.01	0	.00	36	40 S	3.6	1.2	47	.15
23	.01	0	.00	7.7	42	.87	1.3	28	.10
24	.01	0	.00	4.3	36	.42	.81	22	.05
25	.01	0	.00	2.8	25	.19	.71	20	.04
26	.01	0	.00	2.5	18	.12	.91	19	.05
27	.01	0	.00	2.0	15	.08	.91	14	.03
28	.01	0	.00	1.8	15	.07	.71	13	.02
29	.01	0	.00	1.8	32	.16	.61	13	.02
30	.01	0	.00	1.6	21	.09	.61	14	.02
31	.01	0	.00	--	--	--	.32	19	.02
Total	0.31	--	0.00	105.64	--	9.53	73.36	--	8.38
	JANUARY			FEBRUARY			MARCH		
1	0.28	17	0.01	0.45	8	0.01	0.32	15	0.01
2	.28	17	.01	1.3	8	.03	24	41 S	2.6
3	.32	19	.02	6.4	15	.26	5.3	52	.74
4	.32	20	.02	1.8	12	.06	13	46 S	2.3
5	.32	13	.01	1.6	10	.04	20	88	4.8
6	.38	19	.02	9.9	22 S	.91	49	64 S	9.8
7	.38	9	.01	5.5	49 S	.73	5.7	28	.43
8	.45	15	.02	2.2	22	.13	2.8	38	.29
9	.53	18	.03	.71	17	.03	2.2	53	.31
10	.81	15	.03	.71	13	.02	2.4	58	.38
11	1.7	11	.05	7.0	19 A	.36	1.9	52	.27
12	18	32 S	1.6	46	82 J	10	14	36 S	1.3
13	9.2	49	1.2	4.1	65	.72	5.3	37	.53
14	3.4	33	.30	1.6	50	.22	4.0	36	.39
15	1.6	27	.12	.91	48	.12	2.8	36	.27
16	1.1	24	.07	.81	42	.09	2.5	36	.24
17	.91	21	.05	.81	40	.09	15	--	2.0
18	.91	19	.05	.71	34	.07	7.6	36	.74
19	1.1	32	.10	.71	40	.08	4.3	36	.42
20	15	40 S	1.6	18	62 S	3.3	18	--	2.0
21	4.9	23	.30	3.6	22	.21	7.5	--	.80
22	1.8	20	.10	.81	20	.04	4.3	--	.40
23	2.2	21	.12	.71	17	.03	3.5	--	.30
24	2.7	17	.12	.53	20	.03	3.5	--	.30
25	1.2	15	.05	.45	21	.03	3.8	--	.30
26	.71	11	.02	.45	17	.02	6.3	--	.60
27	.71	12	.02	.32	13	.01	10	--	1.0
28	.71	12	.02	.32	12	.01	4.3	--	.40
29	.61	13	.02	--	--	--	3.1	12	.10
30	.61	11	.02	--	--	--	2.8	10	.08
31	.53	9	.01	--	--	--	2.4	12	.08
Total	73.67	--	6.12	118.41	--	17.65	251.62	--	34.18

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
J Computed from partly estimated-concentration graph and subdividing day.

RARITAN RIVER BASIN--Continued

1-4009.32. BALDWIN CREEK AT BALDWIN LAKE, NEAR PENNINGTON, N. J.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued
(Where no concentrations are reported, loads are estimated)

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	2.0	33	0.18	0.71	C 7	0.01	0.07	49	0.01
2	2.4	16	.10	.45	C 7	.01	.03	42	T
3	2.1	16	.09	.32	C 7	.01	.03	27	T
4	1.3	27	.09	.28	C 7	.01	.12	22	.01
5	.61	32	.05	.22	12	.01	.11	24	.01
6	.91	14	.03	.12	9	T	.11	26	.01
7	.91	14	.03	.16	10	T	.09	49	.01
8	.81	13	.03	.12	16	.01	.05	57	.01
9	1.0	34	.09	.16	13	.01	.01	36	T
10	.81	41	.09	.53	11	.02	.01	0	.00
11	.53	31	.04	.53	10	.01	.01	0	.00
12	.53	12	.02	.32	13	.01	.01	0	.00
13	.53	8	.01	.22	13	.01	.01	0	.00
14	.45	8	.01	.19	12	.01	.01	0	.00
15	.38	8	.01	.16	12	.01	.01	0	.00
16	.38	7	.01	.12	13	T	.01	0	.00
17	.45	8	.01	.11	14	T	.01	0	.00
18	.45	11	.01	.32	17	.01	.01	0	.00
19	.45	8	.01	.45	12	.01	.01	0	.00
20	.28	7	.01	.32	14	.01	.01	0	.00
21	.19	8	T	.38	14	.01	.01	0	.00
22	.19	11	.01	.28	16	.01	.01	0	.00
23	.19	11	.01	.19	17	.01	.01	0	.00
24	.16	11	T	.11	25	.01	.01	0	.00
25	.12	15	T	.09	27	.01	.01	0	.00
26	.16	14	.01	.09	25	.01	.01	0	.00
27	.16	C 4	T	.09	26	.01	.01	0	.00
28	.16	C 4	T	.07	32	.01	.01	0	.00
29	.19	C 4	T	.09	41	.01	.01	0	.00
30	.38	C 4	T	.11	49	.01	.01	0	.00
31	--	--	--	.09	51	.01	--	--	--
Total	19.18	--	0.97	7.40	--	0.29	0.83	--	0.07
	JULY			AUGUST			SEPTEMBER		
1	0.01	0	0.00	0.01	0	0.00	0.01	0	0.00
2	.01	0	.00	.01	0	.00	.01	0	.00
3	.01	0	.00	.01	0	.00	.01	0	.00
4	.01	0	.00	.01	0	.00	.01	0	.00
5	.01	0	.00	.01	0	.00	.01	0	.00
6	.01	0	.00	.01	0	.00	.01	0	.00
7	.01	0	.00	.01	0	.00	.01	0	.00
8	.01	0	.00	.01	0	.00	.01	0	.00
9	.01	0	.00	.01	0	.00	.01	0	.00
10	.01	0	.00	.01	0	.00	.01	0	.00
11	.01	0	.00	.01	0	.00	.01	0	.00
12	.01	0	.00	.01	0	.00	.01	0	.00
13	.01	0	.00	.01	0	.00	.01	0	.00
14	.01	0	.00	.01	0	.00	.01	0	.00
15	.01	0	.00	.01	0	.00	.01	0	.00
16	.01	0	.00	.01	0	.00	.01	0	.00
17	.01	0	.00	.01	0	.00	.01	0	.00
18	.01	0	.00	.01	0	.00	.01	0	.00
19	.01	0	.00	.01	0	.00	.01	0	.00
20	.01	0	.00	.01	0	.00	.01	0	.00
21	.01	0	.00	.01	0	.00	.01	0	.00
22	.01	0	.00	.01	0	.00	.01	0	.00
23	.01	0	.00	.01	0	.00	.01	0	.00
24	.01	0	.00	.01	0	.00	.01	0	.00
25	.01	0	.00	.01	0	.00	.01	0	.00
26	.01	0	.00	.01	0	.00	.01	0	.00
27	.01	0	.00	.01	0	.00	.01	0	.00
28	.01	0	.00	.01	0	.00	.01	0	.00
29	.01	0	.00	.01	0	.00	.01	0	.00
30	.01	0	.00	.01	0	.00	.01	0	.00
31	.01	0	.00	.01	0	.00	--	--	--
Total	0.31	--	0.00	0.31	--	0.00	0.30	--	0.00

Total discharge for year (cfs-days)..... 651.34
Total load for year (tons)..... 77.19

T Less than 0.005 ton.
C Composite period.

RARITAN RIVER BASIN--Continued

1-4010. STONY BROOK AT PRINCETON, N. J.

LOCATION.--At Lawrenceville Road Bridge on U.S. Highway 206 in Princeton Township, Mercer County, 1.6 miles southwest of Princeton, and 4 miles upstream from Carnegie Lake.
DRAINAGE AREA.--44.5 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1956 to September 1962.
Sediment records: January 1956 to September 1963.
EXTREMES, 1962-63.--Sediment concentrations: Maximum daily, 210 ppm Feb. 12; minimum daily, 1 ppm on many days in October, January and September.
Sediment loads: Maximum daily, 1,000 tons Mar. 6; minimum daily, less than 0.05 ton on many days during year.
EXTREMES, 1956-63.--Sediment concentrations: Maximum daily, 939 ppm Mar. 6, 1959; minimum daily, 0 ppm on several days.
Sediment loads: Maximum daily, 6,800 tons Feb. 28, 1958; minimum daily, 0 tons on several days.
Water temperatures (1956-62): Maximum daily, 89°F July 3, 1958 and June 30, 1959, minimum daily, freezing point on many days during winter months.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Nov. 30, 1962.....	34	15	0.19	16	6.6	9.0	2.0	34	41	10	0.2	5.1	123	67	39	202	6.9	10
Jan. 18, 1963.....	30	14	--	15	5.8	9.0	2.5	31	36	12	.3	1.0	145	62	36	199	6.6	5
Apr. 9.....	29	9.2	.59	14	6.8	10	2.0	41	35	12	.1	1.1	128	63	30	205	6.9	5
July 1.....	.9	4.6	--	20	9.0	18	2.4	95	21	23	.2	1.1	168	87	9	265	7.1	15
July 10.....	.8	3.5	--	18	7.8	15	3.6	77	24	21	.2	.9	139	77	14	240	7.0	12

RARITAN RIVER BASIN--Continued

1-4010. STONY BROOK AT PRINCTON, N.J.--Continued

Suspended sediment, water year October 1962 to September 1963
(Where no concentrations are reported, loads are estimated)

Day	OCTOBER				NOVEMBER				DECEMBER			
	Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day
1	8.6	C 1		T	5.4	5		0.1	31	C 4		0.3
2	7.2	C 1		T	6.0	6		.1	28	C 4		.3
3	10	C 1		T	62	120	B	20	26	C 4		.3
4	5.7	C 1		T	108	130	B	40	25	C 4		.3
5	13	C 1		T	38	20		2.1	33	5		.4
6	10	C 1		T	24	15		1.0	391	180	S	500
7	10	C 1		T	19	13		.7	175	48	S	28
8	7.8	5		0.1	16	11		.5	85	10		2.3
9	15	24	S	1.1	15	10		.4	64	7		1.2
10	16	16		.7	289	--		90	51	5		.7
11	11	10		.3	125	20		6.8	38	4		.4
12	10	10		.3	62	10		1.7	33	4		.4
13	8.9	9		.2	48	9		1.2	28	C 2		.2
14	7.9	8		.2	39	8		.8	29	C 2		.2
15	7.0	C 6		.1	33	14		1.2	24	C 2		.1
16	6.4	C 6		.1	29	9		.7	26	C 2		.1
17	6.2	C 6		.1	27	5		.4	25	C 2		.1
18	5.6	C 6		.1	79	--		20	24	C 2		.1
19	5.8	C 6		.1	158	--		20	24	C 2		.1
20	5.2	C 3		T	83	22		4.9	22	C 2		.1
21	4.7	C 3		T	66	14		2.5	14	C 2		.1
22	4.5	C 3		T	684	--		850	29	3		.2
23	4.5	C 3		T	161	22		9.6	38	4		.4
24	4.5	C 5		.1	89	11		2.6	26	C 2		.1
25	4.0	C 5		.1	64	8		1.4	21	C 2		.1
26	7.2	C 5		.1	54	C 5		.7	25	C 2		.1
27	8.5	C 5		.1	45	C 5		.6	23	C 2		.1
28	7.2	C 4		.1	40	C 5		.5	20	C 2		.1
29	6.2	C 4		.1	36	C 5		.5	17	C 2		.1
30	5.4	C 4		.1	34	C 5		.5	18	C 2		.1
31	5.2	C 4		.1	--	--		--	8.9	C 2		T
Total	239.2	--		4.5	2538.4	--		1081.5	1421.9	--		537.0
	JANUARY				FEBRUARY				MARCH			
1	11	C 1		T	16	5		0.2	12	5		0.2
2	12	C 1		T	22	8		.5	275	--		80
3	12	C 1		T	142	19	S	8.1	210	--		40
4	13	C 1		T	52	3		.4	169	--		20
5	14	C 1		T	34	4		.4	414	--		200
6	13	C 1		T	90	24		5.8	925	--		1000
7	13	C 1		T	110	20		5.9	177	--		30
8	14	C 1		T	58	11		1.7	90	--		10
9	16	C 1		T	36	3		.3	71	15		2.9
10	19	C 1		0.1	25	4		.3	71	10		1.9
11	29	5		.4	58	33	S	6.9	63	7		1.2
12	261	30		21	748	210	S	520	226	120	B	70
13	220	26		15	162	38	S	19	115	70		22
14	102	4		1.1	71	18		3.5	85	30		6.9
15	48	3		.4	42	14		1.6	68	20		3.7
16	34	3		.3	23	9		.6	57	15		2.3
17	28	C 1		.1	20	7		.4	238	--		50
18	30	C 1		.1	18	6		.3	140	30	B	11
19	31	5		.4	22	8		.5	88	10		2.4
20	238	43	S	33	206	140	S	140	196	--		50
21	126	14		4.8	135	35		13	124	40		13
22	45	C 10		1.2	32	9		.8	87	25		5.9
23	44	C 10		1.2	23	8		.5	66	15		2.7
24	62	C 10		1.7	19	6		.3	58	10		1.6
25	26	8		.6	17	7		.3	59	10		1.6
26	24	5		.3	17	6		.3	67	12		2.2
27	36	12		1.2	11	5		.1	161	--		20
28	29	7		.5	12	4		.1	97	30		7.9
29	20	C 3		.2	--	--		--	71	15		2.9
30	17	C 3		.1	--	--		--	62	10		1.7
31	19	C 3		.2	--	--		--	56	10		1.5
Total	1606	--		84.2	2221	--		731.8	4598	--		1665.5

S Computed by subdividing day.
T Less than 0.50 or 0.05 ton.
B Computed from estimated-concentration graph.
C Composite period.

RARITAN RIVER BASIN--Continued

1-4010. STONY BROOK AT PRINCETON, N. J.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL			MAY			JUNE			
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)		Tons per day
1	48	7	0.9	23	28	1.7	4.0	5		0.1
2	66	8	1.4	22	12	.7	3.6	5		T
3	60	6	1.0	15	7	.3	6.9	8		.1
4	50	6	.8	12	6	.2	7.2	5		.1
5	36	5	.5	11	6	.2	5.2	C 3		T
6	29	5	.4	12	6	.2	5.2	C 3		T
7	27	5	.4	10	5	.1	4.7	C 3		T
8	26	5	.4	8.2	5	.1	3.8	C 3		T
9	28	5	.4	6.8	7	.1	3.6	C 3		T
10	25	5	.3	11	10	.3	3.4	C 3		T
11	23	5	.3	6.2	5	.1	3.2	C 4		T
12	20	5	.3	7.5	6	.1	3.0	C 4		T
13	19	5	.3	7.8	C 6	.1	2.7	C 4		T
14	18	4	.2	6.9	C 6	.1	2.5	C 4		T
15	16	4	.2	6.6	C 6	.1	3.8	6		.1
16	15	4	.2	6.9	5	.1	2.5	4		T
17	14	4	.2	5.7	4	.1	2.2	C 3		T
18	15	4	.2	9.0	5	.1	1.9	C 3		T
19	14	4	.2	10	C 3	.1	1.8	C 3		T
20	13	3	.1	9.7	C 3	.1	1.8	C 3		T
21	12	3	.1	10	4	.1	1.6	3		T
22	11	3	.1	10	5	.1	1.4	C 4		T
23	11	3	.1	7.8	4	.1	1.1	C 4		T
24	11	3	.1	6.2	3	.1	1.0	C 4		T
25	10	3	.1	5.2	4	.1	1.0	C 4		T
26	9.7	3	.1	5.2	4	.1	1.0	C 4		T
27	10	4	.1	4.9	C 4	.1	1.0	C 4		T
28	10	4	.1	4.7	C 4	.1	.9	C 4		T
29	8.6	16	.4	5.7	6	.1	.9	C 4		T
30	17	38	1.7	6.0	6	.1	1.0	C 4		T
31	--	--	--	4.5	5	.1	--	--		--
Total	672.3	--	11.6	277.5	--	6.0	83.9	--		1.0

Day	JULY			AUGUST			SEPTEMBER			
1	0.9	4	T	5.8	--	0.3	0.6	C 8		T
2	.8	4	T	5.2	--	.2	.5	C 8		T
3	.6	4	T	3.0	8	.1	.5	C 8		T
4	.4	3	T	2.2	6	T	1.2	10		T
5	.4	3	T	1.7	4	T	.8	6		T
6	.3	3	T	1.5	4	T	.7	10		T
7	.3	4	T	1.1	4	T	1.2	10		T
8	2.0	35	A 0.2	1.5	4	T	.9	6		T
9	1.4	20	.1	1.4	4	T	.6	6		T
10	.8	8	T	1.0	3	T	.6	5		T
11	.5	5	T	.8	3	T	.6	4		T
12	.4	5	T	.7	3	T	2.3	15		0.1
13	.5	4	T	.8	5	T	18	50		2.4
14	1.5	10	T	.9	6	T	4.9	10		.1
15	2.8	10	.1	.8	5	T	3.8	8		.1
16	1.2	5	T	.6	4	T	5.2	12		.2
17	.9	3	T	.6	4	T	6.0	10		.2
18	.8	3	T	.6	3	T	4.2	6		.1
19	.7	3	T	.4	3	T	3.6	C 1		T
20	.9	4	T	5.6	--	.2	3.0	C 1		T
21	2.5	10	.1	1.8	10	T	3.6	C 1		T
22	2.2	6	T	1.1	3	T	4.2	5		.1
23	1.6	4	T	1.0	3	T	6.9	5		.1
24	1.4	4	T	1.0	C 2	T	6.6	3		.1
25	1.2	4	T	.9	C 2	T	4.0	3		T
26	1.0	3	T	.7	C 2	T	1.2	3		T
27	.9	3	T	.6	C 2	T	1.0	3		T
28	5.1	--	.6	.6	C 2	T	.9	3		T
29	35	--	2.0	.6	C 2	T	34	29	S	3.7
30	4.6	6	.1	.8	3	T	16	10		.4
31	2.5	5	T	.8	3	T	--	--		--
Total	76.1	--	3.5	46.1	--	1.1	137.6	--		7.9

Total discharge for year (cfs days) 13918.0
Total load for year (tons) 4136.6

S Computed by subdividing day.
T Less than 0.05 ton.
A Computed from partly-estimated concentration graph.
C Composite period.

RARITAN RIVER BASIN--Continued

1-4010. STONY BROOK AT PRINCETON, N. J.--Continued

Particle-size analyses of suspended sediment, February 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment											Method of analysis
							Percent finer than size indicated, in millimeters											
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Feb. 26, 1962.....	1915		37	1990	566		25	36	53	65	85	97	98	99	100			SCBW
Dec. 6.....	1845		42	1490	708		39	56	70	84	96	98	99	100	--			SCBW
Feb. 12, 1963.....	1330		37	1810	303		21	39	61	77	92	96	97	98	99			SCBW

GREAT EGG HARBOR RIVER BASIN

1-4110. GREAT EGG HARBOR RIVER AT FOLSOM, N. J.

LOCATION.--Temperature recorder at gaging station at bridge on State Highway 54, 1 mile south of Folsom, Atlantic County, and 2 miles upstream from Pennypot Stream.
DRAINAGE AREA.--56.3 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1960 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 70°F July 30, Aug. 4; minimum, 33°F on several days in January and February.
EXTREMES, 1960-63.--Water temperatures: Maximum, 71°F on several days in 1961; minimum, freezing point Jan. 4, 1961.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Nov. 16, 1962.....	93	6.7	0.47	2.4	1.0	2.3	1.2	0	10	6.0	0.3	1.4	60	10	10	64	4.5	88
Mar. 12, 1963.....	166	4.6	.28	2.8	.5	2.1	1.2	0	13	3.8	.1	1.1	50	9	9	71	4 4	65
May 29.....	52	5.3	.48	2.0	.2	2.5	.5	1	7.0	3.0	.0	2.1	31	6	5	33	5.1	35

1-4110. GREAT EGG HARBOR RIVER AT FOLSOM, N. J.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Water-stage recorder with temperature attachment)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	58	59	60	60	60	59	58	59	59	61	61	60	57	59	60	59	57	55	56	56	55	55	53	51	50	50	51	50	51	57
Minimum	--	--	57	57	59	60	59	58	58	58	58	59	60	57	57	57	59	57	55	54	55	55	55	53	51	50	49	48	50	49	50	55
November																																
Maximum	52	51	50	50	48	47	45	46	49	51	51	49	47	45	44	43	44	44	44	42	43	45	45	41	41	40	39	40	44	44	--	45
Minimum	51	50	50	48	47	45	43	44	46	49	49	47	45	44	42	40	41	44	42	41	41	43	42	41	40	39	38	39	40	43	--	44
December																																
Maximum	44	44	45	45	46	47	46	43	42	41	38	37	36	37	37	39	39	41	41	41	41	39	39	39	38	39	39	39	38	38	36	40
Minimum	43	43	44	45	45	46	43	42	41	38	37	36	36	36	37	37	38	39	40	40	38	38	39	38	38	38	39	38	37	36	36	39
January																																
Maximum	36	37	39	40	39	40	40	40	40	40	41	41	41	39	36	36	37	39	41	42	42	36	36	36	35	35	36	35	34	35	36	38
Minimum	36	36	37	39	39	39	39	39	40	40	40	41	39	36	36	36	36	37	39	41	36	35	35	35	35	35	35	34	33	33	34	37
February																																
Maximum	35	37	37	36	35	36	37	37	35	37	39	39	37	34	33	33	33	35	36	37	36	34	33	33	35	35	35	35	--	--	--	36
Minimum	35	35	36	35	34	35	36	35	34	34	37	37	34	33	33	33	33	33	35	35	34	33	33	33	33	35	34	34	--	--	--	34
March																																
Maximum	36	37	37	37	37	37	37	36	37	40	39	39	40	42	41	41	45	47	44	43	42	42	43	43	47	51	51	51	51	52	53	43
Minimum	35	36	36	36	37	37	36	36	36	37	37	37	39	40	39	39	41	44	42	41	41	40	40	40	43	47	50	48	49	50	51	41
April																																
Maximum	51	51	54	55	52	47	48	48	48	48	47	48	49	50	50	50	49	52	55	57	56	54	53	50	50	50	51	52	52	52	--	51
Minimum	49	49	51	52	47	45	46	46	48	47	45	45	45	48	48	48	49	49	52	55	54	53	50	48	48	48	49	50	50	52	--	49
May																																
Maximum	52	51	53	56	58	58	57	57	59	60	59	55	52	53	55	55	55	55	56	57	57	55	56	54	52	52	53	53	58	61	63	56
Minimum	49	48	48	51	54	56	55	55	57	59	55	51	50	52	53	53	54	54	55	55	55	54	54	52	51	52	52	52	52	58	61	53
June																																
Maximum	62	62	61	63	65	66	67	67	65	66	66	65	63	62	62	62	61	63	64	64	64	63	61	63	64	65	66	67	67	67	--	64
Minimum	61	61	61	61	63	65	66	65	64	65	65	63	61	61	61	61	60	60	62	63	63	61	60	61	62	64	65	66	65	67	--	63
July																																
Maximum	68	69	69	69	66	65	64	65	65	63	63	62	63	63	65	66	68	68	69	69	68	67	65	--	--	--	--	--	--	70	69	--
Minimum	67	67	69	66	63	63	63	64	63	62	62	62	63	63	63	65	66	67	68	68	67	66	64	--	--	--	--	--	--	69	68	--
August																																
Maximum	68	68	69	70	69	69	68	67	67	67	66	65	66	66	65	63	64	65	64	64	66	66	67	67	67	64	61	63	63	65	65	66
Minimum	68	67	68	69	68	67	66	66	65	65	65	65	65	65	63	61	62	63	63	63	64	65	66	66	64	61	61	61	63	63	64	65
September																																
Maximum	65	64	65	66	66	65	63	62	63	64	64	65	66	63	60	60	60	61	63	65	65	64	62	59	57	65	58	60	61	61	--	63
Minimum	64	63	63	65	65	63	61	61	62	63	63	63	63	60	60	60	59	60	61	63	64	62	59	57	55	57	57	58	60	60	--	61

GREAT EGG HARBOR RIVER BASIN--Continued

1-4110. GREAT EGG HARBOR RIVER AT FOLSOM, N. J.--Continued

Periodic determinations of suspended-sediment discharge, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
July 9, 1963				34	10	0.9											
Aug. 20				47	13	1.6											
Aug. 21				61	14	2.3											
Aug. 22				55	5	.7											
Sept. 4				41	5	.6											
Sept. 5				44	12	1.4											
Sept. 18				76	25	5.1											
Sept. 19				78	14	2.9											
Sept. 20				76	8	1.6											
Sept. 21				74	5	1.0											
Sept. 29				53	9	1.3											

DELAWARE RIVER BASIN

1-4385. DELAWARE RIVER AT MONTAGUE, N. J. (MILFORD, PA.)

LOCATION.--At center of toll bridge at Montague, Sussex County, 0.4 mile downstream from gaging station and approximately 1.2 miles downstream from Saw Kill.
DRAINAGE AREA.--3,480 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1956 to September 1963.
Water temperatures: October 1956 to December 1957.
REMARKS.--Records of specific conductance and temperatures of daily samples for 1956-57 available in district office at Philadelphia, Pa.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 18, 1962.....	1460	1.8		8.8	1.5	2.3	1.2	19	12	3.6	0.0	0.4	56	28	13	84	6.4	5
Nov. 14.....	6600	2.5		7.2	1.0	1.5	1.0	13	13	2.9	.1	.3	47	22	12	68	6.2	7
Dec. 13.....	3500	2.5		6.8	1.2	2.1	1.2	13	11	3.1	.0	.6	49	22	12	70	6.4	7
Jan. 15, 1963.....	5400	2.1		8.0	1.0	2.3	1.0	14	12	3.6	.0	1.0	52	24	13	77	6.3	5
Feb. 13.....	3500	2.5		7.2	1.5	2.1	1.0	15	12	3.7	.1	.5	50	24	12	73	6.3	5
Mar. 20.....	13000	3.5		7.2	1.0	2.5	.5	8	12	3.8	.1	2.3	44	22	16	66	6.1	5
Apr. 17.....	4230	1.4		5 6	1.7	2.1	.5	14	10	3.2	.0	.4	37	21	10	60	7.3	4
May 15.....	3790	1.6		5.6	1.7	2.1	.8	14	11	3.2	.0	.9	39	21	10	62	7.3	3
May 23.....	4230	--	0.21	--	--	1.2	--	19	10	1.0	--	1.1	--	26	11	66	6.6	5
July 24.....	2210	1.7		8.0	1.5	3.0	.5	22	9.6	3.6	.0	.3	52	26	8	68	6.3	5
Aug. 21.....	2050	.9		7.2	1.5	3.0	.5	18	10	3.6	.0	.6	50	24	9	67	6.6	2
Sept. 27.....	1610	.8		7.2	1.5	3.0	.4	18	10	3.2	.0	.3	48	24	9	61	6.6	2

DELAWARE RIVER BASIN--Continued

1-4448. DELAWARE RIVER AT BELVIDERE, N. J.

LOCATION.--At highway bridge in Belvidere, Warren County, 550 feet upstream from gaging station.
DRAINAGE AREA.--4,380 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1944 to September 1947, October 1962 to June 1963.
Water temperatures: October 1944 to September 1947, October 1962 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 121 micromhos Mar. 8; minimum daily, 56 micromhos Mar. 29.
Water temperatures: Maximum, 86°F July 30; minimum, freezing point Oct. 24, Dec. 12-17.
EXTREMES, 1944-47, 1962-63.--Specific conductance: Maximum daily 155 micromhos May 29, 1946; minimum, 42 micromhos Mar. 18, 1945.
Water temperatures: Maximum, 86°F July 30, 1963; minimum, freezing point on many days during winter months.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-10, 1962...	2660	2.3		9.6	1.9	2.6	0.0	25	12	3.6	0.1	1.1	54	32	12	87	6.8	5
Nov. 1-10.....	5170	3.0		9.6	1.9	2.6	.0	21	15	3.6	.2	1.1	56	32	15	87	6.8	8
Dec. 1, 3-10.....	5810	5.7		8.4	2.7	2.0	.5	22	14	3.2	.0	1.1	50	32	14	89	7.1	3
Jan. 3-10, 1963...	2720	3.4		9.6	2.9	2.2	.5	24	16	3.6	.1	1.9	57	36	17	100	7.1	2
Jan. 29.....	3300	2.8		10	1.9	3.7	1.0	24	16	4.0	.1	1.0	61	33	14	97	6.9	5
Feb. 1-10.....	4020	3.9		8.8	2.9	2.3	.5	24	14	3.9	.0	2.1	53	34	15	96	7.1	5
Feb. 27.....	3150	3.2		10	1.9	3.3	1.0	24	14	4.0	.2	1.7	76	33	14	103	6.8	3
Mar. 28.....	65700	3.6		5.2	1.2	2.9	.5	8	12	2.8	.0	2.9	62	18	12	58	6.2	--
Apr. 26.....	6360	--		--	--	2.3	--	24	10	1.0	--	.6	--	27	8	72	6.7	3
June 27.....	2090	2.7		10	2.4	3.5	.2	30	14	3.0	.0	1.1	63	35	11	93	6.9	7

DELAWARE RIVER BASIN--Continued

1-4448. DELAWARE RIVER AT BELVIDERE, N.J.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	60	60	58	60	58	54	52	54	51	50	49	50	48	44	44	44	43	40	39	37	35	35	34	32	36	48	47	49	48	47	47	47
November	47	47	47	45	45	42	40	42	44	46	45	44	44	42	40	40	40	40	38	38	40	42	40	40	39	38	38	38	38	38	--	42
December	38	38	39	38	40	38	38	38	35	35	33	32	32	32	32	32	32	35	35	34	33	33	33	34	34	35	34	34	34	35	--	35
January	--	--	36	35	35	35	35	36	35	35	36	36	35	34	34	34	34	35	35	35	33	33	35	33	33	33	33	33	33	33	34	34
February	34	34	34	33	34	34	35	33	33	35	35	35	35	34	33	33	33	35	35	35	34	33	33	33	33	33	33	34	--	--	--	34
March	34	35	35	36	36	35	36	35	35	35	35	36	35	35	33	36	37	37	37	37	37	36	37	38	40	42	39	40	40	40	44	37
April	44	45	46	48	44	45	45	55	47	45	45	46	46	47	48	50	51	54	54	57	56	55	54	54	48	49	50	50	48	54	--	49
May	53	48	54	55	58	62	62	64	65	68	63	58	58	58	60	64	64	63	60	62	60	62	61	58	61	60	58	62	60	60	64	60
June	66	68	67	67	69	72	74	72	71	75	72	69	66	68	66	66	66	72	71	75	72	69	69	74	75	76	75	80	79	80	--	71
July	82	81	81	82	78	80	78	76	74	74	74	75	78	78	74	76	80	80	83	82	80	78	74	75	80	81	84	83	84	86	83	79
August	80	79	78	78	75	75	77	76	77	77	77	76	77	76	72	70	72	74	72	72	76	76	77	77	74	70	71	70	72	73	72	75
September	70	68	70	74	70	68	67	68	69	70	68	70	70	66	64	65	65	65	67	67	66	64	60	57	57	57	58	55	60	58	--	65

DELAWARE RIVER BASIN--Continued

1-4530. LEHIGH RIVER AT BETHLEHEM, PA.

LOCATION.--At gaging station 120 feet upstream from New Street Bridge at Bethlehem, Northampton County, and 1,800 feet upstream from Monocacy Creek.
DRAINAGE AREA.--1,279 square miles, includes that of Monocacy Creek.
RECORDS AVAILABLE.--Chemical analyses: October 1962 to September 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 18, 1962.	1120	6.7		0.01	0.01	20	7.1	6.9	1.8	37	46	7.0	0.6	1.8	142	79	49		218	6.7	3
Nov. 14.....	4050	6.5		.05	.01	13	3.6	4.1	1.4	21	30	5.0	--	1.7	102	48	31		136	7.2	5
Dec. 19	1900	8.0		.00	.00	13	4.9	5.2	1.0	25	31	6.0	.0	6.1	90	53	32		160	6.8	3
Jan. 31, 1963.	1600	6.4		.01	.05	16	5.6	7.2	1.4	31	38	6.0	--	3.1	116	63	38		198	6.7	7
Mar. 14.....	4160	6.0		.02	.02	14	5.4	5.4	1.8	28	28	7.5	.4	8.2	97	57	34		170	7.0	5
Apr. 22.....	1560	4.1		--	--	14	4.9	5.0	.8	27	33	6.0	--	1.7	93	55	33		158	6.9	5
June 6.....	1430	5.9		.00	.00	16	5.6	8.0	.8	38	35	6.5	.2	4.9	110	63	32		179	7.0	2
July 7.....	550	6.6		.01	.02	25	10	10	2.5	62	53	10	1.0	10	173	104	53		279	7.1	5
Sept. 3.....	377	6.6		.00	.00	29	13	12	2.5	86	52	12	1.2	12	203	126	56		325	7.3	2

DELAWARE RIVER BASIN--Continued

1-4547.2. LEHIGH RIVER AT EASTON, PA.

LOCATION.--At center of Third Street Bridge, Easton, Pa., Northampton County, on U.S. Highway 611.
DRAINAGE AREA.--1,364 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1963.
Water temperatures: October 1961 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 581 micromhos Aug. 19; minimum daily, 89 micromhos May 5.
Water temperatures: Maximum, 83°F July 2, 28; minimum, freezing point on several days in December, January, and February.
EXTREMES, 1961-63.--Specific conductance: Maximum daily, 581 micromhos Aug. 19, 1963; minimum daily, 84 micromhos Sept. 2, 1962.
Water temperatures: Maximum, 86°F Aug. 3, 1962; minimum, freezing point on several days each year.
REMARKS.--Records of specific conductance of daily samples available in district office at Philadelphia, Pa. No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 1, 2, 4-10, 1962		7.8		0.00	0.00	18	7.3	5.8	1.2	39	38	7.0	0.6	6.8	120	75	43		197	7.2	5
Nov. 1, 3,; 5-8, 10		6.5		.02	.01	18	5.6	5.1	2.2	34	39	5.9	.3	3.1	120	68	40		185	7.0	5
Nov. 2, 4, 9		--		--	--	--	--	2.5	--	23	17	2.0	--	1.2	--	35	16		92	6.7	3
Dec. 1-8		5.8		.00	.01	17	5.8	5.0	2.3	36	34	7.0	.3	2.2	105	67	37		185	7.3	5
Dec. 9		--		--	--	--	--	--	--	34	19	--	--	1.4	--	43	15		112	7.7	3
Feb. 6, 1963		--		--	--	--	--	10	--	46	37	12	--	9.2	--	78	41		223	6.9	3
Mar. 1-10		6.4		.00	.00	21	6.8	9.8	3.5	46	38	13	.4	9.7	137	81	43		249	6.9	3
Apr. 7-10		4.8		.06	--	14	5.4	4.6	2.0	30	30	5.5	--	6.4	96	57	33		168	6.9	--
May 1-10		4.3		.00	.00	17	6.6	6.0	2.5	44	34	7.8	.4	7.1	118	70	34		188	7.3	3
June 1-10		5.5		.00	.00	18	7.1	7.0	2.2	48	34	8.0	.4	5.5	110	74	35		198	7.2	3
July 1-10		6.6		.07	.00	25	9.7	9.5	2.5	67	46	9.5	.8	8.7	158	103	48		261	7.3	3
Aug. 2-10		7.0		.00	.00	24	10	10	3.0	62	49	12	.6	7.8	159	101	50		267	7.4	2
Sept. 1-10		7.3		.00	.00	30	13	13	4.5	80	60	16	1.2	12	213	129	63		345	7.2	3

DELAWARE RIVER BASIN--Continued

1-4547.2. LEHIGH RIVER AT EASTON, PA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	64	60	--	66	65	62	66	64	60	60	64	64	64	63	62	60	61	61	63	58	61	58	60	55	58	60	50	58	52	52	51	60
November	47	50	48	47	47	45	49	45	50	50	52	46	45	45	42	44	44	42	44	42	42	41	44	42	--	40	40	40	40	42	--	45
December	42	41	41	43	43	44	42	40	40	37	36	34	34	32	34	36	36	38	38	38	38	34	35	36	36	37	38	36	37	35	32	38
January	--	32	38	36	37	38	38	40	--	40	--	40	36	34	34	36	35	38	38	36	34	35	32	32	--	34	32	--	--	--	32	--
February	--	--	32	32	--	36	--	--	--	36	39	--	--	36	37	--	--	36	40	--	--	35	32	34	36	36	36	36	--	--	--	--
March	37	37	40	40	39	37	36	36	35	36	36	38	39	40	42	41	42	42	41	40	40	41	40	40	50	48	48	46	50	47	48	41
April	46	49	54	51	50	46	45	52	49	--	49	49	46	54	54	52	56	52	60	62	59	58	59	54	53	55	55	60	58	59	--	53
May	54	48	57	59	62	62	64	65	63	69	60	62	61	61	61	61	65	64	60	64	60	62	60	62	61	62	62	62	--	64	65	61
June	67	64	69	70	72	72	72	71	63	71	72	70	70	68	67	70	72	72	73	73	74	70	74	75	80	78	82	82	80	81	--	72
July	82	83	--	80	77	75	75	78	77	80	74	76	80	80	78	80	77	80	82	82	80	80	81	82	81	82	82	83	82	81	80	80
August	--	80	80	79	78	78	80	76	78	77	79	78	76	78	72	74	72	78	76	72	78	80	81	77	74	74	75	72	71	72	73	76
September	73	72	73	70	72	68	69	74	73	72	71	72	71	67	64	64	65	65	72	71	69	70	63	60	62	62	64	65	61	62	--	68

1-4635. DELAWARE RIVER AT TRENTON, N. J. (MORRISVILLE, PA.)

LOCATION.--At gaging station, 450 feet upstream from Calhoun Street Bridge at Trenton, Mercer County, and 0.5 mile upstream from Assunpink Creek.
DRAINAGE AREA.--6,780 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1944 to September 1963.
Water temperatures: October 1944 to September 1963.
Sediment records: September 1949 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 213 micromhos Sept. 20; minimum daily, 69 micromhos Mar. 29.
Water temperatures: Maximum, 91 °F July 27; minimum, 33°F on many days in December, January, and February.
Sediment concentrations: Maximum daily, 480 ppm Mar. 28; minimum daily, 1 ppm Oct. 23-26.
Sediment loads: Maximum daily, 110,000 tons Mar. 28; minimum daily, 9 tons Oct. 23,26.
EXTREMES, 1944-63.--Dissolved solids (1944-47, 1950-51, 1953-56, 1958-59): Maximum, 156 ppm Oct. 1-9, 1953; minimum, 44 ppm Mar. 21-31, 1945.
Hardness (1944-47, 1949-59): Maximum, 103 ppm Oct. 1-9, 1953; minimum, 25 ppm Apr. 1-10, 1950, Feb. 21-28, 1954.
Specific conductance: Maximum daily, 400 micromhos Jan. 24, 1959; minimum daily, 50 micromhos Mar. 19, 1945.
Water temperatures: Maximum, 93°F June 18, 1957; minimum, freezing point on many days during winter months.
Sediment concentrations (1949-63): Maximum daily, 1,720 ppm Nov. 26, 1950; minimum daily, 0 ppm Oct. 21, 1952.
Sediment loads (1949-63): Maximum daily, 1,087,000 tons Aug. 20, 1955; minimum daily, 0 tons Oct. 21, 1952.
REMARKS.--Temperature recorder is located at the intake of the Trenton Water Co. Records of specific conductance of daily samples available in district office, Philadelphia, Pa.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-10, 1962....	5120	4.4		16	6.3	6.2	0.4	41	30	7.6	0.3	6.5	103	66	33	178	7.2	8
Nov. 1-10.....	9110	3.5		15	4.6	4.5	1.6	36	26	5.5	.1	3.1	101	57	27	155	7.3	10
Dec. 1-10.....	9000	4.4		14	5.1	4.4	.5	36	26	5.8	.1	3.7	90	56	27	150	7.1	3
Jan. 1-10, 1963....	4420	7.8		16	6.3	6.3	1.7	48	25	7.0	.(	1.7	110	66	27	184	6.9	3
Feb. 1-5, 7-10.....	6820	5.0		15	5.1	6.8	1.7	39	26	8.5	.2	5.4	103	58	27	177	7.2	5
Mar. 1-10.....	11600	4.6		15	5.4	6.0	4.0	38	25	8.8	.2	6.3	96	60	29	182	7.0	5
Apr. 1-10.....	26100	3.8		8.8	2.2	2.8	1.0	19	15	3.4	.1	2.3	55	31	16	94	7.1	7
Apr. 15.....	9500	--	0.27	--	--	5.1	--	34	24	4.0	--	3.3	--	50	22	129	6.5	7
May 1-10.....	7850	1.3		13	4.4	5.5	.5	38	22	6.0	.2	3.0	82	51	20	133	6.9	3
June 1-10.....	4870	3.5		15	4.4	5.8	1.3	43	22	6.5	.1	3.9	92	56	21	148	6.9	10
July 1-2.....	4200	--		--	--	9.0	--	51	25	8.0	--	4.9	--	64	22	170	6.9	10
Aug. 1-10.....	3480	2.8		18	3.9	7.4	1.7	49	25	9.0	.2	3.6	105	61	21	170	6.8	10
Sept. 1-10.....	2470	3.8		18	6.6	8.9	1.8	57	27	10	.3	4.6	119	72	26	187	6.9	5

DELAWARE RIVER BASIN--Continued

1-4635. DELAWARE RIVER AT TRENTON, N. J. (MORRISVILLE, PA.)--Continued

Dissolved oxygen, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	11.3	7.5	10.7	8.7	12.8	12.1	14.3	13.8	14.2	13.9	14.9	13.5	--	--	11.7	8.9	11.9	8.7	--	--	10.9	7.3	12.8	7.2
2	11.6	7.6	10.7	9.2	12.9	12.1	14.0	13.4	14.8	13.3	14.8	13.1	12.8	12.5	12.4	9.3	11.6	8.4	11.7	7.2	11.8	6.7	12.7	7.7
3	11.5	7.5	9.9	9.4	12.9	12.1	13.5	13.2	13.3	12.7	15.0	13.5	12.5	11.2	12.9	10.2	10.8	8.3	--	--	11.3	7.1	12.9	7.4
4	10.3	7.2	10.0	9.5	13.3	11.8	13.3	13.1	13.1	12.8	14.7	12.8	11.8	11.0	12.9	10.0	12.3	8.1	12.0	6.9	10.6	6.7	11.4	6.9
5	9.7	7.3	10.6	9.8	12.6	11.4	13.1	12.9	13.5	12.7	12.9	12.6	12.1	11.5	12.9	9.5	12.1	8.0	12.8	7.6	--	--	11.9	7.5
6	--	--	11.2	10.3	11.4	10.7	13.0	12.7	13.5	13.0	12.7	12.3	12.2	12.1	13.1	8.6	12.4	7.7	13.2	7.9	--	--	--	--
7	7.7	6.7	11.6	10.6	11.6	10.9	13.6	12.6	13.2	12.7	13.2	12.7	12.2	12.0	13.4	9.0	--	--	13.1	8.1	--	--	--	--
8	7.9	7.5	11.5	10.8	12.0	11.4	--	--	14.3	13.1	13.5	12.8	12.2	11.8	12.7	9.0	--	--	11.7	6.9	--	--	--	--
9	8.1	7.5	11.3	10.7	12.4	12.0	--	--	14.8	14.3	13.2	12.6	11.8	11.5	12.1	8.5	--	--	13.0	7.4	--	--	--	--
10	8.2	7.4	10.8	10.0	12.9	12.2	13.6	12.8	14.7	14.3	12.9	12.4	11.8	11.4	11.8	7.8	--	--	--	--	12.2	6.9	--	--
11	8.4	7.2	10.1	9.6	13.1	12.8	--	--	14.3	13.6	13.0	12.6	--	--	9.8	7.7	--	--	12.5	8.4	12.4	7.5	13.6	6.8
12	9.0	7.4	11.0	10.1	13.6	12.9	--	--	13.6	13.3	13.0	12.5	12.2	11.7	10.7	8.0	10.7	7.6	12.9	8.7	12.3	7.1	13.0	7.5
13	9.5	7.3	10.3	9.6	--	--	--	--	--	--	13.0	12.8	11.9	11.6	11.2	8.8	12.5	7.5	13.2	8.0	10.9	7.5	10.9	6.9
14	8.7	7.7	10.3	10.0	--	--	--	--	--	--	13.0	12.6	11.8	11.2	10.7	9.1	11.2	8.3	11.4	7.2	11.3	6.5	12.9	7.7
15	9.1	7.7	--	--	--	--	--	--	--	--	13.2	12.6	12.6	11.2	11.0	8.8	11.7	8.1	12.8	6.9	12.4	7.7	9.5	7.3
16	10.2	8.3	--	--	--	--	14.2	13.8	--	--	13.0	12.6	13.0	11.4	11.3	8.9	12.2	8.3	13.0	7.9	12.3	7.6	10.1	8.2
17	10.4	8.2	--	--	--	--	14.8	13.9	--	--	12.7	12.4	12.7	11.2	11.4	8.7	--	--	12.9	7.9	13.1	7.5	11.1	8.5
18	11.4	8.3	--	--	13.4	13.0	14.5	13.7	--	--	12.9	12.3	13.6	10.9	10.3	8.6	--	--	12.9	7.8	13.1	6.9	11.3	8.1
19	12.2	8.6	--	--	13.0	12.5	14.4	13.6	13.8	12.8	13.0	12.7	14.2	11.2	10.2	8.5	--	--	12.7	7.3	13.2	7.7	12.5	8.1
20	12.8	8.5	--	--	13.4	12.6	13.5	13.0	13.6	12.4	13.0	12.7	13.5	11.0	9.5	8.4	--	--	11.8	7.0	12.4	7.4	12.1	7.7
21	12.5	8.6	12.1	11.4	14.1	12.9	13.5	12.7	14.3	12.6	--	--	14.5	11.1	9.3	8.2	--	--	10.9	6.0	12.1	7.4	10.7	7.2
22	13.2	8.7	11.5	10.9	14.0	13.6	14.3	13.5	15.0	13.7	--	--	14.2	11.1	10.0	8.8	--	--	10.6	6.0	11.2	7.1	12.6	8.1
23	11.8	8.7	11.8	11.0	14.4	13.4	14.5	14.2	15.0	14.4	--	--	13.0	10.9	--	--	--	--	--	--	11.8	6.8	12.9	8.8
24	12.0	8.4	12.0	11.8	14.4	13.6	--	--	15.0	14.2	--	--	13.7	10.5	--	--	--	--	--	--	10.9	6.9	12.8	9.5
25	12.9	9.1	12.5	12.0	14.6	13.6	--	--	15.0	14.0	--	--	14.6	11.2	--	--	12.3	7.5	11.2	6.9	12.0	6.9	13.1	8.9
26	12.2	9.2	13.1	12.6	14.7	13.9	--	--	15.0	14.1	13.0	12.2	14.5	11.4	--	--	--	--	11.6	6.8	--	--	13.2	8.9
27	13.2	9.7	13.1	12.6	--	--	--	--	15.0	14.4	12.4	12.2	14.5	11.3	--	--	--	--	--	--	--	--	12.9	8.7
28	13.4	10.3	13.1	12.5	--	--	--	--	15.0	14.2	--	--	14.3	11.3	11.5	9.4	10.8	7.3	--	--	12.9	7.4	12.8	8.2
29	13.3	9.9	12.8	12.5	13.9	13.2	--	--	--	--	13.3	13.1	14.5	10.9	11.1	9.1	--	--	--	--	11.7	7.3	9.1	7.7
30	11.8	9.5	12.8	11.8	14.5	13.2	--	--	--	--	--	--	11.0	8.8	11.9	8.8	--	--	12.1	6.1	12.7	6.5	11.1	7.8
31	10.9	9.1	--	--	14.7	14.2	--	--	--	--	--	--	--	--	11.7	8.8	--	--	12.6	6.8	12.2	7.0	--	--
Average	10.8	8.2	11.4	10.7	--	--	--	--	--	--	--	--	13.0	11.2	11.4	8.8	--	--	--	--	--	--	12.0	7.9

DELAWARE RIVER BASIN--Continued

1-4635. DELAWARE RIVER AT TRENTON, N. J. (MORRISVILLE, PA.)--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	66	67	67	65	65	--	65	63	62	64	65	68	66	64	64	65	65	64	63	64	64	63	59	57	54	52	51	53	53	49	49	61
Minimum	61	61	63	65	65	--	63	61	61	61	62	63	63	61	62	62	62	60	59	58	60	58	57	54	52	47	47	47	49	48	49	58
November																																
Maximum	51	50	48	46	45	45	45	46	46	49	49	48	47	45	44	44	44	44	43	42	43	45	44	43	42	41	41	41	41	41	--	45
Minimum	49	48	46	45	44	44	43	45	45	46	48	47	45	44	43	43	43	43	41	42	42	43	42	42	41	39	40	40	39	40	--	43
December																																
Maximum	41	42	41	42	42	45	43	41	40	38	36	35	--	--	--	--	--	33	35	37	35	33	34	34	33	36	--	--	34	34	33	--
Minimum	40	40	40	41	41	42	41	40	38	36	35	33	--	--	--	--	--	33	33	35	33	33	33	33	33	33	--	--	34	33	33	--
January																																
Maximum	33	33	33	33	33	33	33	--	--	33	--	--	--	--	--	34	35	36	37	38	38	34	34	33	--	--	--	--	--	--	--	--
Minimum	33	33	33	33	33	33	33	--	--	33	--	--	--	--	--	33	34	35	36	37	34	33	33	33	--	--	--	--	--	--	--	--
February																																
Maximum	33	33	33	33	33	33	33	33	33	33	34	34	--	--	--	--	--	--	34	36	38	35	33	33	33	35	35	35	--	--	--	--
Minimum	33	33	33	33	33	33	33	33	33	33	33	34	--	--	--	--	--	--	34	34	33	33	33	33	33	33	33	33	--	--	--	--
March																																
Maximum	35	37	39	40	38	38	37	38	38	39	39	38	38	40	41	41	41	41	41	39	39	39	40	--	--	48	48	--	44	--	--	40
Minimum	35	35	35	37	38	37	36	37	37	38	38	38	38	38	39	40	40	40	39	39	38	38	38	--	--	45	43	--	41	--	--	38
April																																
Maximum	--	--	--	--	49	48	49	48	49	50	49	51	52	54	54	56	55	60	61	64	62	60	58	55	56	56	57	59	59	57	--	55
Minimum	--	--	--	--	48	46	46	46	48	48	48	47	50	51	52	53	54	54	58	60	60	58	54	53	52	54	53	54	55	56	--	52
May																																
Maximum	56	57	--	--	--	--	--	--	--	--	--	--	--	64	67	69	--	66	68	67	66	67	66	66	67	64	67	65	64	70	71	--
Minimum	53	53	--	--	--	--	--	--	--	--	--	--	--	62	63	64	--	65	64	66	64	63	63	61	62	62	61	63	63	64	66	--
June																																
Maximum	74	72	71	76	78	78	78	75	76	81	77	74	75	72	73	75	--	--	--	--	--	77	80	82	83	85	87	85	86	86	--	78
Minimum	67	69	69	69	72	73	74	72	72	75	74	68	67	70	69	69	--	--	--	--	--	72	72	73	75	76	78	81	80	79	--	73
July																																
Maximum	89	90	--	81	81	83	82	79	81	--	80	81	81	76	81	84	86	88	90	86	85	84	--	--	89	88	91	90	89	88	89	85
Minimum	82	83	--	76	74	74	74	74	72	--	74	74	75	73	73	76	79	81	82	81	80	80	--	--	80	82	84	84	83	82	80	78
August																																
Maximum	83	84	84	84	83	84	82	84	85	86	84	82	79	77	78	79	80	82	78	79	83	81	85	81	79	--	--	79	74	81	80	81
Minimum	80	79	79	80	77	76	77	77	78	79	78	77	77	71	69	71	73	75	72	73	76	78	78	75	72	--	--	72	72	72	74	75
September																																
Maximum	79	79	79	77	73	70	74	77	--	--	78	78	74	71	66	65	66	68	75	76	72	71	67	67	68	69	71	72	67	67	--	72
Minimum	72	71	73	73	70	67	65	69	--	--	70	72	69	66	64	63	63	66	67	70	68	65	62	59	59	61	63	65	65	62	--	66

DELAWARE RIVER BASIN--Continued

1-4635. DELAWARE RIVER AT TRENTON, N. J. (MORRISVILLE, PA.)--Continued

Suspended sediment, water year October 1962 to September 1963
(Where no concentrations are reported, loads are estimated)

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	4400	10	120	6800	52	950	6840	2	37
2..	4040	9	98	7700	33	690	6400	2	35
3..	3450	6	56	8600	30	700	6060	2	33
4..	3050	3	25	11500	62	1900	5820	2	31
5..	3210	6	52	10500	33	940	5820	2	31
6..	4640	85	1100	9200	14	350	6920	--	80
7..	7500	95	1900	8700	14	330	11000	--	200
8..	7500	55	1100	8300	14	310	13700	--	300
9..	6880	32	590	7800	6	130	15000	--	400
10..	6500	25	440	12000	140	4500	12400	--	300
11..	5980	17	270	18800	220	11000	11000	--	200
12..	5220	13	180	19600	230	12000	9740	--	100
13..	5100	11	150	18000	140	6800	8250	--	100
14..	7020	28	S 570	15700	55	2300	6600	--	80
15..	7000	23	430	13500	19	690	6400	--	70
16..	5460	12	180	11900	10	320	6600	4	71
17..	4660	3	38	10800	7	200	6600	4	71
18..	4110	2	22	10200	6	170	6600	4	71
19..	3800	2	21	10300	5	140	7200	5	97
20..	3310	2	18	8950	2	48	7400	5	100
21..	3250	2	18	8800	3	71	7000	4	76
22..	3350	2	18	11200	25	760	6500	4	70
23..	3250	1	9	11300	14	430	6220	4	67
24..	3210	1	9	11300	6	180	6960	4	75
25..	3350	1	9	11100	5	150	5660	4	61
26..	3420	1	9	10600	5	140	5100	4	55
27..	3310	2	18	8950	4	97	5180	4	56
28..	3720	4	40	8650	4	93	4630	4	50
29..	3660	3	30	7850	3	64	4820	4	52
30..	3080	2	17	7120	2	38	4940	4	53
31..	3520	6	57	--	--	--	3500	2	19
Total	139950	--	7594	325720	--	46491	226860	--	3041
	JANUARY			FEBRUARY			MARCH		
1..	3300	2	18	6400	5	86	4520	3	37
2..	4000	3	32	6000	5	81	5060	4	55
3..	4500	3	36	7000	6	110	5060	4	55
4..	4750	3	38	7300	6	120	5580	5	75
5..	5000	4	54	6400	5	86	9380	--	500
6..	4750	3	38	8400	10	230	18600	--	3000
7..	4500	3	36	8000	8	170	21900	--	3000
8..	4100	3	33	7400	6	120	17600	--	700
9..	4500	3	36	6000	5	81	15500	--	400
10..	4750	3	38	6900	6	110	13200	--	200
11..	4630	3	38	6200	5	84	14900	--	400
12..	5100	4	55	7000	18	340	13400	5	180
13..	8000	--	300	7000	6	110	14800	6	240
14..	9200	--	300	7000	6	110	13700	5	180
15..	8350	--	200	6500	5	88	14700	6	240
16..	8350	--	200	6400	5	86	15500	8	330
17..	8200	7	150	5460	4	59	18000	15	730
18..	7450	6	120	5340	4	58	24900	15	850
19..	7040	5	95	5220	4	56	22900	25	1500
20..	9150	--	400	5700	5	77	27100	75	5500
21..	11500	--	500	6100	6	99	28300	75	5700
22..	9100	--	300	5380	4	58	25100	38	2600
23..	8450	--	200	4630	3	38	21400	20	1200
24..	8200	8	180	4660	3	38	19000	17	870
25..	7200	7	140	4900	3	40	18600	15	750
26..	6600	6	110	4110	3	33	23400	45	2800
27..	6600	6	110	4190	3	34	50900	280	S 43000
28..	7000	6	110	4520	3	37	82700	480	110000
29..	6000	5	81	--	--	--	64900	260	46000
30..	5400	5	73	--	--	--	53300	120	17000
31..	7100	8	150	--	--	--	48500	65	8500
Total	202770	--	4171	170110	--	2639	728400	--	256592

S Computed by subdividing day.

DELAWARE RIVER BASIN--Continued

1-4635. DELAWARE RIVER AT TRENTON, N. J. (MORRISVILLE, PA.)--Continued

Suspended sediment, water year October 1962 to September 1963--Continued
(Where no concentrations are reported, loads are estimated)

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	43200	40	4700	8450	8	180	5510	4	60
2	35900	30	2900	9740	12	320	5320	4	57
3	30900	20	1700	10200	10	280	4940	4	53
4	30200	16	1300	9150	5	120	4750	4	51
5	29100	13	1000	8100	5	110	4560	6	74
6	25300	12	820	7350	4	79	4490	8	97
7	20200	12	650	6800	4	73	4560	9	110
8	17100	11	510	6650	5	90	4490	9	110
9	15300	10	410	6060	4	65	5130	9	120
10	14200	11	420	6020	4	65	4980	9	120
11	13200	10	360	7080	9	170	4750	8	100
12	12300	9	300	9050	19	460	4240	8	92
13	11400	8	250	8700	6	140	4060	8	88
14	10200	7	190	7950	4	86	4680	8	100
15	9500	6	150	7550	4	82	5170	10	140
16	8850	5	120	7300	4	79	4980	10	130
17	8300	4	90	7040	4	76	5050	10	140
18	7900	4	85	7040	4	76	5050	10	140
19	8200	6	130	10500	31	880	4830	10	130
20	8450	9	210	12700	34	1200	4240	10	110
21	8600	9	210	12200	19	630	4090	10	110
22	7800	5	110	10500	6	170	4560	10	120
23	7800	6	130	9560	5	130	4060	10	110
24	7750	8	170	8500	5	110	3780	10	100
25	7850	6	130	7650	5	100	3520	10	95
26	8250	8	180	7080	4	76	3120	10	84
27	7950	7	150	6700	4	72	3060	9	74
28	7450	6	120	6400	4	69	3000	9	73
29	6700	4	72	6300	4	69	3000	9	73
30	6500	4	70	6220	4	67	3550	9	86
31	--	--	--	6140	6	99	--	--	--
Total	436350	--	17637	250680	--	6223	131520	--	2947

Day	JULY			AUGUST			SEPTEMBER		
1	3950	10	110	3520	12	110	2420	4	26
2	4450	12	140	3850	9	94	2680	6	43
3	3920	9	95	3550	6	58	2230	4	24
4	3490	8	75	4790	18	230	2300	4	25
5	3060	7	58	4310	9	100	2600	6	42
6	2400	6	39	3620	6	59	2860	8	62
7	2300	6	37	2920	5	39	2650	6	43
8	2450	6	40	2650	4	29	2450	4	26
9	2520	6	41	2700	3	22	2380	4	26
10	2780	6	45	2860	4	31	2140	4	23
11	3270	8	71	3420	6	55	2040	4	22
12	3030	8	65	3390	7	64	2330	6	38
13	2550	8	55	2570	4	28	3250	13	110
14	2570	8	56	2400	5	32	2730	12	88
15	2750	8	59	2810	6	46	2700	12	87
16	2840	8	61	2700	4	29	2470	10	67
17	2950	8	64	2330	4	25	2330	10	63
18	2730	8	59	2180	4	24	2330	10	63
19	2550	8	55	2500	4	27	2550	10	69
20	2980	10	80	2700	4	29	2700	10	73
21	3620	10	98	2750	4	30	2700	10	73
22	4640	12	150	2890	4	31	2730	10	74
23	4750	10	130	3030	5	41	2810	10	76
24	4860	10	130	2810	4	30	2260	6	37
25	4060	8	88	2700	4	29	2000	5	27
26	3520	8	76	2600	4	28	2160	4	23
27	3490	8	75	2010	4	22	2280	4	25
28	3300	8	71	2000	4	22	2260	4	24
29	3210	9	78	1970	4	21	2650	9	64
30	2680	8	58	1930	4	21	3650	15	150
31	2730	8	59	2350	5	32	--	--	--
Total	100400	--	2318	88810	--	1438	75640	--	1593

Total discharge for year (cfs-days)..... 2877210
Total load for year (tons)..... 352684

DELAWARE RIVER BASIN--Continued

1-4646. DELAWARE RIVER AT BRISTOL, PA.-BURLINGTON, N. J. BRIDGE

LOCATION.--Three hundred feet upstream from the Bristol-Burlington Bridge.
DRAINAGE AREA.--7,163 square miles.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1963.
Water temperatures: October 1954 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 86°F July 30, 31, Aug. 1, 3; minimum, 33°F Jan. 25, 27-31, Feb. 4.
EXTREMES, 1954-63.--Water temperatures: Maximum, 86°F July 30, 31, Aug. 1, 3; 1963; minimum, freezing point in many days during winter months.
REMARKS.--Samples collected at center of stream approximately 3 feet from bottom. Additional data published in WSP 1262, Chemical characteristics of Delaware River water, Trenton, N. J., to Marcus Hook, Pa. Records of discharge given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color	Biochemical demand a	Dissolved oxygen a
																			Calcium, magnesium	Noncarbonate						
Nov. 7, 1962.	8700	4.6		0.04	0.02	14	4.6	6.2	2.8		31		30	7.0	0.3	1.1		110	54	29		157	6.5	5	2.0	11.2
Dec. 3.....	6060	4.8		.05	.03	14	4.4	6.0	1.8		34		29	6.5	.0	4.8		100	53	25		157	7.0	8	4.8	11.6
Feb. 11, 1963	6200	3.7		.09	.02	16	5.1	6.7	1.8		35		28	11	.2	1.9		111	61	33		181	6.6	7	5.3	12.5
Mar. 5.....	9380	4.6		.07	.02	16	6.3	9.0	2.3		41		30	13	.2	5.9		123	66	33		215	7.2	5	5.4	12.9
Apr. 2.....	35900	3.9		.21	.04	6.8	1.9	2.2	1.2		14		14	2.9	.2	4.0		55	25	14		77	7.1	65	2.2	10.2
May 7.....	6800	.9		.10	.00	14	3.9	5.3	.8		33		24	6.2	.3	4.3		92	50	24		137	6.9	5	3.4	9.3
July 1.....	3900	3.5		.00	.00	16	4.9	9.0	1.5		40		30	9.0	.3	7.1		120	60	27		180	6.6	23	.5	2.1
Aug. 5.....	4420	2.7		.02	.00	15	6.1	9.0	2.0		46		30	9.0	.1	5.1		111	63	25		183	6.8	7	.9	3.6
Sept. 3.....	2240	2.1		.00	.00	18	6.8	11	2.0		48		35	10	.4	6.9		132	73	34		209	6.8	2	.9	2.5
Sept. 30.....	3750	2.8		.07	.00	18	6.1	13	2.5		44		37	12	.3	9.8		137	70	34		219	6.6	4	3.0	4.5

a Collected 3 feet below surface.

1-4646. DELAWARE RIVER AT BRISTOL, PA.-BURLINGTON, N. J. BRIDGE--Continued

Dissolved oxygen, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	--	--	9.7	8.3	12.8	12.4	--	--	13.9	13.7	13.4	13.0	11.7	11.6	10.0	9.4	7.2	6.5	--	--	2.3	1.8	2.8	1.8
2	7.8	7.0	10.1	9.2	12.7	12.3	--	--	13.8	13.5	13.8	13.0	--	--	9.5	8.5	7.2	6.3	2.2	1.0	2.3	1.6	2.7	1.9
3	7.6	6.7	10.1	9.7	12.6	12.3	--	--	13.7	13.2	13.9	13.6	12.0	11.5	9.0	8.4	7.0	5.9	--	--	2.4	1.4	3.3	1.9
4	7.1	6.3	10.3	9.9	12.5	11.8	--	--	13.7	13.5	13.6	12.7	11.7	11.2	9.5	8.6	6.4	5.7	3.6	1.4	--	--	--	--
5	6.9	5.9	10.8	10.0	11.9	11.6	--	--	13.5	12.9	12.9	12.4	11.3	11.0	9.8	9.2	6.0	5.4	3.6	2.0	--	--	4.1	2.0
6	6.7	5.9	11.0	10.4	12.1	11.2	--	--	--	--	12.7	12.0	--	--	9.4	8.7	5.4	4.6	3.4	2.0	2.7	2.3	3.8	2.7
7	7.2	6.5	10.7	10.4	11.8	11.4	--	--	--	--	12.0	11.3	--	--	8.7	8.1	4.6	4.0	3.4	2.1	2.7	2.1	3.3	2.5
8	7.3	6.6	11.0	10.5	11.7	11.3	--	--	13.6	13.3	--	--	--	--	8.2	7.6	4.2	3.6	--	--	2.7	1.8	2.9	2.2
9	--	--	11.1	10.5	11.7	11.3	--	--	13.6	13.3	--	--	--	--	7.6	7.0	3.9	3.3	--	--	3.0	1.7	2.5	1.4
10	--	--	10.6	10.2	12.7	11.6	--	--	13.4	13.2	12.1	11.7	11.2	11.1	7.6	6.8	3.8	3.1	2.5	1.9	2.4	1.7	2.1	1.4
11	6.7	6.2	10.7	9.8	13.0	12.4	13.2	12.9	13.5	13.1	11.8	11.1	11.1	10.6	7.1	6.5	3.9	2.4	2.6	1.8	3.2	1.7	2.4	1.6
12	6.8	6.2	9.9	9.6	13.2	12.7	12.9	12.6	13.5	13.1	--	--	11.4	10.8	6.8	6.2	3.6	2.1	2.7	1.8	2.3	1.7	3.0	1.7
13	7.3	6.3	10.4	9.8	13.5	12.8	12.7	12.6	13.5	13.3	--	--	--	--	6.7	6.0	4.1	2.1	2.8	1.7	2.5	1.5	--	--
14	7.2	6.3	11.0	10.4	13.9	13.1	12.8	12.3	13.2	12.5	--	--	--	--	7.3	6.1	3.1	1.5	3.5	1.6	2.5	1.7	--	--
15	7.2	6.5	--	--	13.9	13.2	12.4	12.2	12.7	12.4	12.2	11.8	--	--	7.5	6.7	--	--	3.1	1.9	2.4	1.9	--	--
16	7.1	6.3	--	--	13.9	13.3	12.9	12.3	13.1	12.6	12.4	12.1	11.7	11.4	7.4	6.7	--	--	2.9	1.7	2.5	1.2	--	--
17	7.4	6.4	--	--	14.0	13.4	13.8	12.9	13.2	12.8	12.3	11.8	11.6	11.1	7.3	6.2	--	--	1.8	1.0	2.0	1.4	--	--
18	7.2	6.3	--	--	14.0	13.5	13.9	13.6	13.4	12.9	12.2	11.8	11.3	10.8	7.0	6.3	4.2	2.0	1.2	.7	2.3	.6	4.1	3.6
19	7.0	6.4	--	--	13.9	13.3	13.9	13.7	13.5	13.0	11.3	10.9	11.0	10.3	6.8	6.1	4.6	2.3	1.2	.4	2.2	.8	3.7	3.3
20	7.1	6.3	--	--	13.5	13.2	13.8	13.4	13.5	13.1	--	--	10.7	10.3	7.4	6.5	4.1	2.5	1.4	.5	2.4	.1	3.5	2.9
21	--	--	11.8	11.3	13.5	13.2	13.7	13.3	13.6	13.3	--	--	10.9	10.1	--	--	4.3	2.7	1.7	.5	1.7	.0	3.3	2.8
22	--	--	11.8	11.1	13.3	13.0	13.5	13.0	13.5	13.0	--	--	10.5	9.1	--	--	4.2	2.8	1.6	.8	.8	.0	3.5	2.9
23	7.6	6.5	11.8	11.1	13.3	12.9	--	--	13.1	12.7	--	--	9.5	8.8	7.5	6.6	3.9	2.9	1.8	.5	.8	.0	4.0	3.1
24	8.0	6.8	11.3	11.0	13.6	13.0	--	--	12.8	12.5	--	--	9.5	8.8	--	--	--	--	1.4	.4	.6	.0	4.0	3.6
25	7.9	7.2	11.5	11.1	13.8	13.3	13.9	13.7	12.8	12.5	--	--	9.5	9.0	--	--	--	--	1.7	.4	1.5	.0	3.8	3.3
26	8.2	7.2	12.1	11.4	14.0	13.2	--	--	13.3	12.6	12.5	11.9	9.7	8.7	--	--	--	--	--	--	1.1	.4	3.7	3.1
27	9.0	8.1	12.4	11.7	14.0	13.5	14.0	13.7	13.5	12.9	11.9	11.2	10.4	8.8	--	--	3.2	2.0	--	--	1.9	.5	3.7	3.2
28	9.8	8.4	12.6	12.0	14.1	13.5	14.2	14.0	13.5	12.9	11.7	10.9	10.4	9.5	7.7	7.0	3.3	1.9	--	--	2.5	1.3	3.7	3.2
29	9.9	8.8	12.9	12.3	14.1	13.4	14.3	14.0	--	--	12.0	11.5	10.5	9.8	7.3	6.6	--	--	--	--	2.5	1.5	4.1	3.2
30	9.7	8.4	12.9	12.5	14.0	13.5	14.1	13.8	--	--	12.0	11.7	10.4	9.4	7.3	6.2	--	--	2.7	1.8	3.0	1.8	4.9	3.7
31	9.3	8.3	--	--	--	--	13.9	13.7	--	--	11.8	11.6	--	--	7.3	6.7	--	--	2.9	1.9	2.8	1.7	--	--
Average	7.7	6.8	11.2	10.6	13.2	12.7	--	--	13.4	13.0	--	--	--	--	7.9	7.1	--	--	--	--	2.2	1.2	3.5	2.6

DELAWARE RIVER BASIN--Continued

1-4646. DELAWARE RIVER AT BRISTOL, PA.-BURLINGTON, N. J. BRIDGE--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous resistance bulb-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	67	67	67	67	57	68	67	--	--	66	66	66	66	67	66	66	65	65	65	--	--	64	63	61	60	58	56	56	55	54	64
Minimum	--	66	66	67	67	67	67	67	--	--	65	65	65	65	66	66	65	64	64	64	--	--	62	61	59	57	55	55	53	53	53	62
November																																
Maximum	53	53	52	50	49	47	46	46	47	48	49	49	48	47	45	45	45	45	45	44	45	44	44	45	44	44	43	42	41	42	--	46
Minimum	52	52	50	49	47	46	45	45	46	46	48	48	47	45	45	44	45	44	44	44	44	43	43	44	43	43	42	41	41	41	--	45
December																																
Maximum	43	43	43	43	43	43	43	42	41	40	38	37	35	35	35	36	35	35	35	36	35	35	36	35	35	35	35	36	36	36	--	38
Minimum	41	42	42	42	42	43	42	41	40	37	37	35	34	34	35	35	34	34	35	35	34	34	35	34	34	34	34	35	35	34	--	37
January																																
Maximum	--	--	--	--	--	--	--	--	--	--	37	37	38	39	38	38	37	36	36	38	39	38	--	--	34	--	34	34	33	33	34	--
Minimum	--	--	--	--	--	--	--	--	--	--	36	37	37	37	37	36	36	36	36	36	37	37	--	--	33	--	33	33	33	33	33	--
February																																
Maximum	34	34	35	35	34	--	--	35	35	35	36	36	37	37	36	35	35	36	35	36	37	36	36	36	36	36	36	35	--	--	--	36
Minimum	34	34	34	33	34	--	--	34	34	35	35	36	36	36	35	34	34	34	35	35	36	35	35	35	35	35	35	35	--	--	--	35
March																																
Maximum	35	36	37	38	39	40	39	--	--	39	39	--	--	--	41	42	43	43	42	--	--	--	--	--	--	47	48	46	43	44	46	--
Minimum	35	35	35	36	37	39	37	--	--	39	39	--	--	--	40	40	42	42	41	--	--	--	--	--	--	43	46	42	43	43	44	--
April																																
Maximum	--	--	--	51	--	--	--	--	--	--	50	51	--	--	--	54	55	57	59	60	61	61	61	60	58	58	58	58	59	59	--	--
Minimum	--	--	--	48	--	--	--	--	--	--	49	49	--	--	--	52	53	54	55	57	59	60	59	58	57	56	56	56	57	57	--	--
May																																
Maximum	58	58	58	58	61	62	64	66	67	69	68	68	68	66	67	67	67	67	68	69	--	--	66	--	--	--	67	66	68	68	68	65
Minimum	58	56	57	57	58	60	61	62	65	66	67	66	65	65	66	65	66	66	67	67	--	--	65	--	--	--	66	65	66	66	66	64
June																																
Maximum	69	70	70	72	73	74	76	75	77	78	77	76	76	76	--	--	--	74	75	76	76	77	78	79	79	80	81	81	--	--	--	76
Minimum	67	68	69	70	71	73	74	74	74	75	76	75	74	74	--	--	--	73	74	74	75	75	75	76	77	77	79	79	--	--	--	74
July																																
Maximum	--	85	--	84	83	83	82	--	--	80	81	81	81	79	79	80	81	81	83	83	83	83	84	84	84	--	--	--	--	86	86	--
Minimum	--	83	--	83	82	81	81	--	--	80	79	79	79	77	78	79	79	80	81	82	82	82	82	82	83	--	--	--	--	85	85	--
August																																
Maximum	86	85	86	--	--	84	83	83	84	83	83	82	82	81	80	79	79	79	79	79	79	79	81	80	80	80	80	79	78	79	79	81
Minimum	85	85	85	--	--	82	82	82	82	82	82	81	81	80	79	78	79	78	78	78	78	79	79	79	78	78	78	78	78	78	78	80
September																																
Maximum	78	78	78	--	77	76	76	77	76	76	77	76	--	--	--	--	--	71	71	71	71	70	69	69	70	69	69	69	69	68	--	--
Minimum	77	77	77	--	75	75	74	74	74	75	74	75	--	--	--	--	--	70	70	70	70	69	68	68	68	68	68	68	68	67	--	--

DELAWARE RIVER BASIN--Continued

1-4665. McDONALDS BRANCH IN LEBANON STATE FOREST, N. J.

LOCATION.--Temperature recorder at gaging station in Lebanon State Forest, Burlington County, 25 feet upstream from Butterworth Road Bridge, 3.4 miles upstream from confluence with Cooper Branch, and 7 miles southeast of Browns Mills.
DRAINAGE AREA.--2.31 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1960 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 61°F July 3-5; minimum, freezing point Jan. 1, 2.
EXTREMES, 1960-63.--Water temperatures: Maximum, 66°F Aug. 24-29, 1961; minimum, freezing point Jan. 1, 2, 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
June 19, 1963.....	1.5	4.1		0.8	0.0	2.0	0.0	0	1.6	4.0	0.2	0.2	19	2	2	31		22
July 13.....	1.3	6.7	0.16	.8	.0	1.7	.0	0	1.2	3.3	.2	.0	27	2	2	28		27

DELAWARE RIVER BASIN--Continued

1-4665. McDONALDS BRANCH IN LEBANON STATE FOREST, N. J.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Water-stage recorder with temperature attachment)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	55	54	54	54	56	57	57	57	56	56	56	57	57	56	55	56	56	56	54	53	52	51	50	50	49	48	47	48	48	48	49	53
Minimum	54	54	53	54	54	56	57	56	56	56	55	56	56	55	54	55	56	54	53	52	51	50	50	49	48	47	47	47	48	48	48	53
November																																
Maximum	49	49	50	50	48	47	47	46	47	48	48	48	46	46	46	47	46	46	46	43	44	45	45	43	42	42	42	42	43	43	--	46
Minimum	49	49	49	48	47	46	46	46	46	47	48	46	46	45	45	46	45	46	43	43	43	44	43	43	42	42	42	42	42	43	--	45
December																																
Maximum	43	43	43	44	44	45	45	43	42	41	40	39	38	38	38	36	36	36	36	37	37	37	36	36	37	37	37	36	35	35	34	39
Minimum	43	43	43	43	44	44	43	42	41	40	39	38	38	37	36	36	36	36	36	36	37	36	36	36	36	37	36	35	35	34	33	38
January																																
Maximum	33	33	34	35	36	36	37	38	39	39	39	39	38	37	36	36	37	38	38	39	38	36	37	37	37	37	37	37	37	37	38	37
Minimum	32	32	33	34	35	36	36	37	38	39	39	38	37	36	36	36	36	37	38	38	36	36	36	37	37	37	37	37	37	37	37	36
February																																
Maximum	38	38	38	38	38	39	39	39	39	38	38	38	35	35	36	36	36	37	37	36	34	35	36	36	37	37	37	38	--	--	--	37
Minimum	38	38	38	38	38	38	39	39	38	38	38	35	35	34	35	35	36	36	36	34	34	35	35	36	37	37	37	37	--	--	--	36
March																																
Maximum	38	38	39	39	38	37	35	36	36	36	36	36	35	36	36	36	37	37	37	37	37	37	38	40	41	42	42	42	43	44	44	38
Minimum	38	38	38	38	37	35	35	35	36	35	36	35	35	35	36	36	36	37	37	37	37	37	37	38	40	41	42	42	42	43	44	38
April																																
Maximum	44	44	46	47	47	46	45	45	44	44	44	45	46	46	47	47	47	48	48	49	49	49	49	49	49	49	49	48	48	48	--	47
Minimum	44	44	44	46	46	45	45	44	44	44	44	44	45	46	46	47	47	47	48	48	49	49	49	49	49	49	48	48	48	48	--	46
May																																
Maximum	48	48	49	49	51	52	53	53	54	55	56	56	56	55	55	54	54	53	55	55	55	55	55	55	54	53	53	53	53	53	54	53
Minimum	48	47	48	49	49	51	52	53	53	54	55	56	55	55	54	54	53	53	53	55	55	55	55	54	53	52	52	53	53	53	53	53
June																																
Maximum	55	55	56	57	58	58	58	58	58	58	57	57	57	57	57	57	57	57	57	57	57	57	56	56	57	57	58	58	59	60	--	57
Minimum	54	55	55	56	57	58	58	58	58	57	57	57	57	57	57	57	57	57	57	57	57	56	56	56	56	57	57	58	58	59	--	57
July																																
Maximum	60	60	61	61	61	60	60	59	59	59	58	58	58	58	58	59	58	59	59	60	60	60	60	60	60	60	60	60	60	60	60	60
Minimum	60	60	60	61	60	60	59	59	59	58	58	58	58	58	58	58	58	58	59	59	60	60	60	60	60	60	60	60	60	60	60	59
August																																
Maximum	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	58	58	57	57	58	60
Minimum	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	60	59	58	58	57	57	57	57	59
September																																
Maximum	58	58	58	58	58	58	58	57	57	57	57	58	58	58	58	58	57	57	57	57	57	57	56	56	55	54	54	54	54	54	--	57
Minimum	58	58	58	58	58	58	57	57	57	57	57	57	58	58	58	57	57	57	57	57	57	56	56	55	54	53	54	54	54	54	--	57

DELAWARE RIVER BASIN--Continued

1-4670.3. DELAWARE RIVER AT TORRESDALE INTAKE, PHILADELPHIA, PA.

LOCATION.--In river opposite intake building of the Torresdale Filter Plant.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1963.
Dissolved oxygen: October 1961 to September 1963.
Water temperatures: October 1955 to September 1957, October 1960 to September 1963
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 460 micromhos Feb. 3; minimum daily, 90 micromhos Jan. 13, Mar. 29 to Apr. 1.
Dissolved oxygen: Maximum daily, 12.9 ppm Mar. 2, 3; minimum daily, 0.8 ppm June 29,30.
Water temperatures: Maximum, 85°F July 27, 28; minimum, freezing point on several days in December and January.
REMARKS.--Samples collected at center of stream approximately 3 feet from bottom. Additional data published in WSP 1262, Chemical characteristics of Delaware River water, Trenton, N. J. to Marcus Hook, Pa. Records of specific conductance available in district office at Philadelphia, Pa. Records of discharge given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	pH	Biochemical oxygen demand [a]	Dissolved oxygen [a]
Oct. 1, 1962	4400	12	222	7.3	2.5	6.5
Nov. 7	8700	8.5	192	7.1	1.2	10.3
Dec. 3	6060	7.0	155	7.1	4.7	10.2
Jan. 9, 1963	4500	9.5	193	7.1	2.5	11.8
Feb. 11	6200	9.5	194	7.1	4.5	12.0
Mar. 5	9380	13	215	7.2	5.0	11.7
Apr. 2	35900	2.0	78	6.9	3.1	10.5
May 7	6800	6.5	168	7.2	6.7	8.7
July 1	3950	10	187	6.8	.9	2.1
Aug. 5	4310	10	187	7.0	1.4	3.6
Sept. 3	2230	12	211	7.0	.5	5.1
Sept. 30	3650	16	235	7.0	1.8	5.6

a Obtained from surface samples.

DELAWARE RIVER BASIN--Continued

1-4670.3. DELAWARE RIVER AT TORRESDALE INTAKE, PHILADELPHIA, PA.--Continued

Dissolved oxygen, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	5.1	4.3	7.0	6.0	10.8	10.3	--	--	--	--	12.7	11.9	--	--	9.3	8.4	6.6	4.6	--	--	7.5	5.5	6.6	3.0
2	5.1	3.9	6.9	6.3	10.9	10.3	--	--	11.8	11.1	12.9	11.3	12.2	11.5	9.3	8.5	6.4	4.8	--	--	7.2	4.4	6.7	3.9
3	5.4	3.9	7.8	6.4	10.7	10.2	--	--	11.8	11.1	12.9	11.9	12.0	11.5	9.0	8.2	6.9	4.0	--	--	--	--	7.2	3.9
4	5.0	3.5	8.0	6.8	10.8	10.2	--	--	--	--	12.5	11.7	12.1	11.2	8.6	7.8	6.3	4.0	--	--	--	--	6.6	3.8
5	5.1	3.1	7.9	7.1	10.9	10.1	11.4	10.8	--	--	12.6	12.0	11.3	10.8	8.6	7.7	6.0	4.7	--	--	--	--	6.5	1.7
6	--	--	7.9	7.3	11.3	10.9	11.3	10.7	--	--	12.6	11.9	11.4	10.6	8.5	7.5	5.6	4.4	--	--	6.6	3.5	5.7	1.0
7	--	--	7.8	7.1	11.2	10.8	11.0	10.4	--	--	12.6	12.3	11.2	10.7	8.4	7.0	5.7	4.1	--	--	6.2	3.0	5.9	1.5
8	--	--	7.9	7.4	11.2	10.7	11.1	10.4	--	--	--	--	11.7	10.7	8.7	7.2	5.2	2.4	--	--	5.4	2.1	5.6	3.0
9	4.8	3.4	9.0	7.5	11.0	10.6	11.1	10.6	11.0	10.4	--	--	11.6	11.1	8.1	7.3	4.9	3.2	--	--	5.0	1.5	4.7	3.0
10	4.8	3.8	9.0	7.9	11.1	10.5	11.3	10.5	11.1	10.5	--	--	11.4	10.4	7.8	7.0	4.5	3.1	4.5	1.8	--	--	6.3	3.1
11	4.6	3.6	9.2	8.4	11.5	10.6	11.4	10.7	11.1	10.6	--	--	10.4	10.1	7.5	6.7	4.3	2.9	4.5	1.6	--	--	7.0	1.9
12	4.6	3.3	9.2	8.8	11.6	10.8	11.5	10.8	11.6	10.5	11.5	10.3	10.4	9.9	7.1	6.5	4.9	1.3	4.9	2.0	--	--	7.5	2.7
13	4.7	3.6	8.7	8.1	12.0	11.1	11.9	10.9	11.4	10.8	--	--	10.4	9.6	7.1	6.3	4.5	2.3	5.0	2.1	--	--	7.4	2.3
14	4.7	3.6	8.9	8.0	12.1	11.4	11.9	11.0	11.4	10.9	--	--	10.0	9.7	7.3	6.1	4.0	1.4	4.7	2.4	5.9	2.5	7.1	2.9
15	4.7	3.7	9.3	8.5	12.1	11.5	11.9	11.2	11.7	11.1	12.1	11.4	10.1	9.4	6.7	5.8	4.2	1.9	5.3	2.7	5.6	2.2	6.5	2.7
16	5.0	3.7	9.4	8.7	12.1	11.6	11.9	11.1	--	--	12.2	11.6	10.2	9.7	6.2	5.3	4.2	1.9	5.3	2.9	5.5	2.3	6.3	3.9
17	5.1	4.0	9.7	9.0	11.9	11.2	12.0	10.9	--	--	12.2	11.7	10.1	9.7	6.6	4.9	4.0	1.7	5.0	2.7	5.7	1.9	6.7	4.1
18	5.5	4.0	9.8	9.3	11.7	11.3	11.2	10.7	--	--	12.4	11.5	10.1	9.4	7.0	4.2	--	--	4.5	2.9	6.0	2.4	5.9	4.1
19	5.7	3.9	--	--	12.2	11.4	11.7	10.9	10.9	10.5	12.4	12.0	10.2	9.1	6.9	5.1	--	--	5.5	2.9	6.3	3.4	5.8	3.3
20	5.7	4.1	9.9	9.5	12.2	11.8	12.0	11.2	11.4	10.5	12.4	11.9	9.7	8.9	6.8	5.8	--	--	5.6	2.3	6.3	4.2	5.4	3.6
21	5.8	4.1	10.0	9.6	12.4	11.3	12.4	10.9	--	--	12.5	12.2	9.8	8.8	6.6	5.7	--	--	4.8	1.4	6.4	4.1	5.4	2.5
22	5.6	3.8	10.0	9.3	11.7	11.3	11.1	10.9	--	--	12.6	12.4	9.4	8.5	6.8	5.3	--	--	5.1	2.6	6.1	3.4	6.4	3.0
23	5.9	4.6	10.1	9.7	11.5	11.2	11.1	10.8	--	--	12.8	12.4	9.0	8.1	6.9	5.3	--	--	5.4	2.6	6.1	3.0	6.2	3.7
24	6.5	4.9	10.4	9.8	--	--	11.1	10.8	--	--	12.7	12.4	9.3	8.1	6.7	5.0	--	--	--	--	6.5	2.4	7.0	3.9
25	6.5	5.1	10.2	9.7	--	--	--	--	--	--	12.8	12.2	9.1	7.7	6.7	4.1	3.8	1.7	--	--	7.6	3.7	6.8	3.9
26	7.5	4.8	10.3	9.7	--	--	--	--	--	--	12.7	12.0	8.9	7.7	6.7	4.4	3.5	1.5	--	--	8.7	4.0	7.6	3.8
27	8.0	6.3	10.2	9.6	11.4	11.0	--	--	--	--	12.4	11.5	8.7	7.5	6.9	4.7	3.7	1.4	6.9	3.1	7.7	4.3	6.9	4.0
28	8.2	6.7	10.4	9.8	--	--	--	--	--	--	11.8	11.0	8.7	7.5	6.6	4.3	4.6	1.4	8.0	3.5	8.8	2.9	6.2	3.6
29	8.2	7.1	10.8	9.9	--	--	--	--	--	--	--	--	9.1	7.4	6.5	4.6	3.3	.8	6.4	4.0	7.1	3.1	6.5	3.2
30	7.7	5.1	10.8	9.2	--	--	--	--	--	--	--	--	9.2	7.5	6.3	4.8	3.2	.8	8.1	4.8	7.4	2.8	5.7	4.5
31	6.6	5.5	--	--	--	--	--	--	--	--	--	--	--	--	6.3	4.9	--	--	9.2	5.0	6.9	3.4	--	--
Average	5.8	4.3	9.2	8.4	--	--	--	--	--	--	--	--	10.3	9.4	7.4	6.0	--	--	--	--	--	--	6.4	3.2

1-4670.3. DELAWARE RIVER AT TORRESDALE INTAKE, PHILADELPHIA, PA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous resistance bulb-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	66	67	67	66	67	--	--	--	66	66	66	67	66	66	66	66	66	66	66	65	65	64	63	62	61	60	57	56	56	55	55	64
Minimum	65	65	65	66	66	--	--	--	64	64	65	66	65	64	64	65	65	64	63	62	63	62	61	58	58	54	53	54	53	53	53	61
November																																
Maximum	54	54	53	51	50	49	48	47	47	53	48	48	48	47	46	46	45	45	--	43	43	46	43	43	43	43	43	42	43	42	--	47
Minimum	53	52	51	48	49	47	46	46	46	47	47	47	47	46	45	45	45	44	--	41	42	43	42	42	41	41	41	41	41	41	--	45
December																																
Maximum	42	42	42	42	42	42	41	41	41	40	38	37	35	35	35	34	33	34	34	34	--	34	34	33	33	34	34	34	34	34	--	37
Minimum	41	41	41	41	42	40	39	39	40	38	35	34	33	32	34	32	32	33	33	33	--	33	33	32	32	33	33	33	33	33	--	35
January																																
Maximum	--	--	--	--	33	33	33	33	34	34	35	35	36	36	36	36	37	37	37	38	37	35	36	36	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	32	33	32	32	33	33	34	35	34	34	34	34	34	36	36	36	34	34	35	33	--	--	--	--	--	--	--	--
February																																
Maximum	--	33	34	--	--	--	--	--	34	34	35	35	35	34	35	--	--	--	34	35	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	33	33	--	--	--	--	--	33	33	34	34	34	33	33	--	--	--	33	33	--	--	--	--	--	--	--	--	--	--	--	--
March																																
Maximum	34	35	37	37	37	37	39	--	--	--	--	39	--	--	42	42	46	44	43	42	41	40	40	41	43	46	48	48	--	--	--	--
Minimum	33	33	34	36	36	36	37	--	--	--	--	38	--	--	39	40	41	42	42	41	40	38	38	39	40	42	45	42	--	--	--	--
April																																
Maximum	--	47	49	49	49	50	49	49	48	49	48	50	51	52	52	54	53	57	59	59	60	59	58	58	57	58	59	60	58	59	--	54
Minimum	--	45	46	48	47	49	48	47	48	47	47	48	48	49	49	50	51	52	55	57	58	57	56	55	56	57	57	57	57	57	--	52
May																																
Maximum	58	56	58	60	60	62	62	63	64	67	64	65	66	66	67	67	67	66	67	68	67	68	67	67	67	66	67	65	66	67	69	65
Minimum	55	54	56	58	59	60	60	60	62	63	63	63	63	64	64	65	65	65	65	67	66	67	65	65	65	65	64	65	65	65	65	63
June																																
Maximum	69	68	68	70	71	72	73	72	73	74	74	73	73	73	72	73	74	73	75	--	--	--	--	--	77	77	79	78	79	79	--	74
Minimum	67	67	67	67	69	70	71	71	71	72	73	72	71	71	71	71	71	73	73	--	--	--	--	--	74	75	76	77	77	77	--	72
July																																
Maximum	--	--	--	--	--	--	--	--	--	79	80	80	79	78	78	79	79	80	81	81	80	80	81	--	--	--	85	85	84	84	84	--
Minimum	--	--	--	--	--	--	--	--	--	77	77	77	77	77	76	77	77	79	80	80	79	79	79	--	--	--	82	83	83	83	82	--
August																																
Maximum	83	83	83	82	82	82	81	82	82	--	--	--	--	80	78	78	78	79	77	77	78	78	79	78	78	78	78	77	76	76	76	79
Minimum	82	81	82	81	80	80	80	80	81	--	--	--	--	78	75	77	77	76	76	76	77	77	77	77	76	75	75	75	75	76	76	78
September																																
Maximum	76	76	76	76	75	74	74	74	75	75	75	75	74	73	71	70	69	68	70	70	69	69	68	67	67	67	67	67	67	66	--	71
Minimum	75	75	75	75	73	73	72	72	72	73	72	73	72	71	69	68	68	68	68	69	69	68	65	65	64	65	65	65	65	65	--	70

DELAWARE RIVER BASIN--Continued

1-4671. DELAWARE RIVER AT LEHIGH AVENUE, PHILADELPHIA, PA.

LOCATION.--Between river end of pier 11 of Port Richmond Terminal, Lehigh Avenue, Philadelphia, and west bank of Petty Island, N. J.
DRAINAGE AREA.--7,935 square miles.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1963.
REMARKS.--Samples collected at center of stream approximately 3 feet from bottom. Additional data published in WSP 1262, Chemical characteristics of Delaware River water, Trenton, N. J. to Marcus Hook, Pa. Records of discharge given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	pH	Biochemical oxygen demand [a]	Dissolved oxygen [a]
Oct. 1, 1962	4400	14	239	6.8	3.2	5.9
Nov. 7	8700	12	228	7.0	2.8	7.8
Dec. 3	6060	7.5	158	7.2	6.2	10.1
Jan. 9, 1963	4500	18	261	6.8	5.7	8.0
Feb. 11	6200	12	202	7.0	3.9	11.1
Mar. 5	9380	18	249	6.9	4.4	7.9
Apr. 2	35900	3.0	87	6.9	3.0	10.1
May 7	6800	7.5	174	7.1	3.9	7.3
June 3	4940	6.5	160	6.5	1.0	2.5
July 1	3950	16	248	6.8	1.8	1.1
Aug. 5	4310	14	227	7.0	2.1	4.1
Sept. 3	2230	22	270	6.9	1.3	2.7
Sept. 30	3650	48	404	6.8	.8	1.5

a Obtained from surface samples.

DELAWARE RIVER BASIN--Continued

1-4672. DELAWARE RIVER AT PHILADELPHIA, PA.-BENJAMIN FRANKLIN BRIDGE (PHILADELPHIA-CAMDEN BRIDGE)

LOCATION.--Opposite pier 13 north, 100 feet south of Vine Street and Delaware Avenue, Philadelphia.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1963.
Dissolved oxygen: November 1960 to September 1963.
Water temperatures: November 1960 to June 1963.
EXTREMES, 1962-63.--Dissolved oxygen: Maximum daily, 14.1 ppm Dec. 14; minimum daily, 0.0 ppm on many days during year.
Water temperatures: Minimum, freezing point on many days during winter months.
EXTREMES, 1960-63.--Dissolved oxygen: Maximum daily, 14.1 ppm Dec. 14, 1962; minimum daily, 0.0 ppm on many days each year.
Water temperatures: Maximum, 85°F on several days in September 1961; minimum, freezing point on many days during winter months.
REMARKS.--Samples collected at center of stream approximately 3 feet from bottom. Additional data published in WSP 1262, Chemical characteristics of Delaware River water, Trenton, N. J. to Marcus Hook, Pa. Records of discharge given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color	Biochemical oxygen demand a
Oct. 1, 1962.	4400	0.9		0.00	0.00	19	6.3	14	3.3		50		43	16	0.0	6.6		145	74	33		248	6.7	5	1.8
Nov. 7.....	8700	3.9		.03	.02	18	6.8	23	3.0		35		64	17	.3	2.9		154	73	45		234	6.2	3	3.8
Dec. 3.....	6060	5.8		.12	.03	14	4.6	6.6	2.2		32		32	8.5	.0	4.4		105	54	28		167	6.8	20	7.3
Jan. 9, 1963.	4500	7.3		.08	.03	19	6.3	16	2.9		18		59	20	.3	4.2		175	74	59		290	6.0	5	5.5
Feb. 11.....	6200	4.8		.12	.01	17	5.4	10	2.4		31		36	14	.3	2.9		133	65	39		208	6.4	7	5.2
Mar. 5.....	9380	6.0		.07	.03	17	7.3	14	3.0		41		44	19	.2	6.8		148	73	39		254	6.8	5	4.9
Apr. 2.....	35900	3.9		.07	.00	7.6	2.7	3.1	.5		12		17	5.0	.2	3.2		55	30	20		91	6.4	5	2.3
May 7.....	6800	1.2		.04	.00	14	4.4	8.1	1.0		31		27	8.0	.2	5.5		104	53	28		159	6.8	5	2.2
June 3.....	4900	3.3		.02	.00	13	4.4	9.4	1.6		28		28	9.0	.2	7.4		103	51	28		165	6.6	7	1.9
July 1.....	3900	1.9		.00	.00	19	5.8	14	2.8		26		52	17	.2	10		153	72	50		252	6.3	5	1.6
Aug. 5.....	4420	.5		.03	.00	18	7.1	16	2.8		45		41	16	.2	6.8		145	74	37		242	6.8	7	1.9
Sept. 3.....	2240	.3		.00	.00	19	7.8	23	3.5		36		53	26	.3	9.2		174	80	50		301	6.8	5	.8
Sept. 30.....	3750	.9		.00	.00	21	11	38	4.8		24		75	54	.4	11		248	98	78		432	6.2	5	1.2

a Collected 3 feet from top.

DELAWARE RIVER BASIN--Continued

1-4672. DELAWARE RIVER AT PHILADELPHIA, PA.-BENJAMIN FRANKLIN BRIDGE (PHILADELPHIA-CAMDEN BRIDGE)--Continued

Dissolved oxygen, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	2.1	0.1	3.8	0.7	7.9	5.8	--	--	9.7	7.6	7.8	5.4	11.0	10.6	3.9	2.2	0.6	0.0	0.2	0.1	0.5	0.0	0.0	0.0
2	2.0	.2	2.7	.7	7.9	5.6	--	--	9.4	7.2	8.0	6.2	10.5	10.3	4.3	2.8	.4	.0	.2	.0	.3	.0	.6	.0
3	--	--	3.4	1.0	7.6	5.4	--	--	10.2	7.7	7.9	5.8	10.5	9.8	3.8	2.3	.6	.0	.3	.0	.1	.0	.7	.1
4	1.0	.1	4.6	2.3	7.5	5.0	8.8	7.8	10.7	8.2	8.5	6.3	10.6	9.2	3.5	2.1	.8	.0	.9	.1	.4	.0	.2	.0
5	.8	.1	--	--	7.1	4.8	8.9	7.3	10.0	8.3	8.9	6.4	10.5	9.7	3.7	1.9	.5	.0	1.2	.2	.6	.0	.2	.0
6	.6	.1	6.8	4.1	7.0	4.3	8.5	7.0	10.0	7.7	9.3	6.6	9.6	9.0	--	--	.2	.0	1.2	.6	.4	.0	.2	.2
7	1.4	.1	7.0	4.1	9.3	5.4	8.9	7.0	9.6	7.3	10.8	9.0	9.6	8.7	--	--	.1	.0	.8	.3	.0	.0	.2	.0
8	2.2	.2	6.4	4.2	10.2	8.0	9.3	.7	9.7	7.8	10.6	9.6	9.3	8.3	3.5	1.5	.0	.0	.7	.2	.0	.0	.1	.0
9	1.9	.0	6.5	4.0	10.5	8.2	8.3	6.2	9.7	7.7	9.8	8.7	9.8	8.3	3.0	1.5	.0	.0	.6	.1	.0	.0	.2	.0
10	1.0	.0	5.6	3.9	11.1	8.8	8.5	6.0	9.2	7.7	8.9	8.3	10.3	8.4	2.3	.9	.0	.0	.5	.1	.2	.0	.2	.0
11	1.7	.0	8.7	4.5	13.1	9.3	8.6	5.8	9.0	7.5	9.3	8.1	10.1	9.1	1.8	.1	.0	.0	.6	.1	.2	.0	.3	.0
12	2.6	.1	8.3	6.6	13.0	9.9	8.1	5.6	9.2	7.5	8.2	7.4	9.8	8.5	2.5	.1	.0	.0	.6	.1	.2	.0	.6	.0
13	3.0	.6	8.3	7.0	13.4	9.5	8.5	5.8	10.0	8.2	7.6	6.8	9.4	7.8	2.5	.2	.0	.0	.5	.0	.2	.0	1.0	.2
14	4.5	.3	7.9	7.0	14.1	9.5	9.4	6.9	10.0	8.5	7.9	6.6	9.1	7.6	2.7	.7	.0	.0	.2	.0	.7	.0	1.1	.2
15	3.2	.9	7.7	6.6	13.0	8.8	9.6	7.5	10.3	9.3	8.6	6.7	9.0	7.3	3.0	.9	.0	.0	.6	.1	.5	.0	.5	.2
16	2.3	.6	7.6	5.8	--	--	9.5	7.5	10.5	9.0	9.1	7.2	8.6	6.5	2.2	.2	.0	.0	.9	.1	.6	.0	.2	.0
17	--	--	7.7	5.5	--	--	9.2	7.6	10.3	8.6	9.5	7.4	7.9	5.3	1.2	.0	.0	.0	.6	.1	.9	.0	.2	.0
18	--	--	7.8	6.0	10.9	8.7	9.5	7.1	10.0	8.2	10.7	8.7	7.2	4.6	.7	.0	.0	.0	.4	.1	1.2	.0	.0	.0
19	--	--	8.3	6.7	11.1	7.7	8.8	6.9	9.7	8.4	10.6	9.4	6.5	3.9	1.5	.0	.1	.0	.5	.1	1.1	.0	.0	.0
20	.8	.1	--	--	10.3	8.2	8.6	6.6	9.1	7.6	10.4	9.0	5.6	3.4	2.2	.0	--	--	.3	.2	.4	.0	.0	.0
21	.9	.1	--	--	10.9	8.0	10.2	7.6	10.3	7.9	11.2	9.8	6.1	3.7	2.8	.6	.0	.0	.3	.2	.3	.0	.0	.0
22	.9	.0	8.4	6.3	9.3	7.4	10.5	8.2	10.4	8.4	11.5	10.3	5.6	3.6	3.0	.6	.1	.0	.2	.1	.0	.0	.0	.0
23	.5	.0	10.7	7.6	9.5	7.3	10.4	8.3	10.1	8.3	11.2	10.4	5.5	3.3	4.4	.6	.1	.0	.1	.0	.1	.0	.6	.0
24	1.6	.0	10.3	7.8	10.2	8.1	11.3	9.3	9.8	8.1	11.0	9.9	--	--	3.3	1.4	.2	.0	.1	.0	.7	.0	.6	.2
25	1.5	.0	10.5	8.3	10.0	8.0	11.2	9.2	9.3	7.8	10.9	9.9	3.6	2.8	2.8	.5	.2	.0	.3	.0	.9	.0	.6	.0
26	1.8	.1	9.8	7.8	9.2	7.6	--	--	9.4	7.2	--	--	3.2	2.3	2.0	.2	.2	.0	.6	.1	1.6	.0	.2	.0
27	2.9	.6	9.3	7.2	9.6	8.0	--	--	8.5	5.8	--	--	3.2	2.1	1.9	.2	.3	.0	.8	.1	1.0	.0	.2	.0
28	3.6	.8	8.6	6.9	9.2	7.4	--	--	7.9	5.5	--	--	3.3	1.8	1.1	.0	.2	.0	1.0	.1	.9	.0	.2	.0
29	--	--	8.5	6.8	8.9	6.9	--	--	--	--	10.7	10.0	3.3	1.6	.9	.0	.2	.1	1.5	.2	.1	.0	.0	.0
30	3.0	1.0	8.3	6.4	9.5	7.1	10.4	8.7	--	--	11.2	10.2	3.1	1.9	.6	.0	.2	.1	1.6	.2	.0	.0	.8	.0
31	2.9	1.1	--	--	--	--	9.9	8.2	--	--	10.9	10.4	--	--	.4	.0	--	--	1.7	.2	.0	.0	--	--
Average	2.0	0.3	7.5	5.4	10.3	7.5	--	--	9.7	7.8	9.7	8.2	7.6	6.2	2.5	0.7	0.2	0.0	0.6	0.1	0.5	0.0	0.3	0.0

DELAWARE RIVER BASIN--Continued

1-4672. DELAWARE RIVER AT PHILADELPHIA, PA.-BENJAMIN FRANKLIN BRIDGE (PHILADELPHIA-CAMDEN BRIDGE)--Continued

Temperature (°F) of water, October 1962 to June 1963
(Recorder with temperature attachment, continuous resistance bulb-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	66	66	--	67	67	67	67	66	66	66	66	67	66	66	65	66	--	--	--	65	65	65	65	64	62	61	59	59	--	--	--	--
Minimum	65	65	--	67	67	67	66	65	65	65	65	66	66	65	64	64	--	--	--	65	65	64	64	62	61	59	58	58	--	--	--	--
November																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	43	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	42	--	--
December																																
Maximum	45	45	45	45	45	44	44	44	42	42	41	39	38	37	36	--	--	36	36	36	34	34	34	34	33	33	33	34	34	34	--	38
Minimum	44	44	43	43	44	41	42	42	41	40	39	38	36	35	35	--	--	34	34	34	32	33	33	33	33	33	33	33	34	32	--	37
January																																
Maximum	--	--	--	33	34	33	33	34	34	35	35	36	35	36	36	36	36	37	37	37	37	37	37	36	34	--	--	--	--	33	33	--
Minimum	--	--	--	32	33	33	33	33	33	33	34	35	35	35	35	35	36	36	37	37	36	36	35	34	34	--	--	--	--	33	33	--
February																																
Maximum	33	33	33	33	33	33	34	34	32	33	34	34	34	34	34	33	33	33	34	34	34	33	33	32	32	32	32	33	--	--	--	33
Minimum	32	32	33	32	32	33	33	32	32	32	33	33	34	34	33	32	32	33	33	34	33	32	32	32	32	32	32	32	--	--	--	33
March																																
Maximum	33	34	34	34	34	35	36	36	37	37	36	36	37	40	41	41	41	43	43	44	43	43	42	42	43	44	47	48	45	45	45	40
Minimum	32	33	33	33	34	34	35	35	36	36	36	36	36	37	40	40	41	41	43	43	42	41	40	41	42	42	44	45	42	43	45	39
April																																
Maximum	45	--	48	49	49	50	50	51	50	50	49	50	50	51	51	52	53	53	55	55	56	57	57	--	57	58	58	58	58	58	--	53
Minimum	45	--	46	48	48	49	50	50	50	49	49	49	50	50	50	51	52	53	53	55	55	56	56	--	56	56	57	58	56	57	--	52
May																																
Maximum	58	57	59	59	60	--	--	61	62	63	63	63	64	65	65	66	66	66	66	67	67	67	67	67	66	67	67	67	68	68	68	64
Minimum	56	56	57	58	59	--	--	61	61	62	63	63	63	64	65	65	66	66	66	66	67	67	67	66	66	66	67	67	67	68	68	64
June																																
Maximum	69	69	70	71	71	70	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	68	69	69	70	70	70	70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

DELAWARE RIVER BASIN--Continued

1-4673. DELAWARE RIVER AT WHARTON STREET, PHILADELPHIA, PA.

LOCATION.--Between pier 55 south, Wharton Street, Philadelphia, and Kaighn Point, Camden, N. J.
DRAINAGE AREA.--7,998 square miles.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1963.
REMARKS.--Samples collected at center of river approximately 3 feet from bottom. Additional data published in WSP 1262, Chemical characteristics of Delaware River water, Trenton, N. J. to Marcus Hook, Pa. Records of discharge given for Delaware River at Trenton, N.J.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	pH	Biochemical oxygen demand [a]	Dissolved oxygen [a]
Oct. 2, 1962	4040	21	296	6.6	3.0	3.6
Nov. 8	8300	15	250	7.0	.2	3.6
Dec. 4	5820	8.5	173	7.0	2.2	8.1
Jan. 10, 1963	4750	14	225	6.9	4.0	10.5
Mar. 4	5580	22	307	6.9	4.7	7.1
Apr. 1	43200	3.0	86	6.9	1.2	10.3
May 8	6650	9.0	191	7.0	2.2	6.1
June 4	4750	10	173	6.5	.6	2.0
July 2	4450	18	255	6.7	2.5	.7
Aug. 6	3620	20	271	6.9	1.3	1.8
Sept. 4	2300	57	455	6.5	1.0	1.8

a Obtained from surface samples.

1-4674. DELAWARE RIVER AT LEAGUE ISLAND, PHILADELPHIA, PA.

LOCATION.--Between pier 2, U.S. Naval Base, League Island, Philadelphia, and a point 100 feet offshore, adjacent to and downstream from ferry slip, National Park, N. J.
DRAINAGE AREA.--8,072 square miles.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1963.
REMARKS.--Samples collected at center of river approximately 3 feet from bottom. Additional data published in WSP 1262, Chemical characteristics of Delaware River water, Trenton, N.J. to Marcus Hook, Pa. Records of discharge given for Delaware River at Trenton, N.J.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	pH	Biochemical oxygen demand [a]	Dissolved oxygen [a]
Oct. 2, 1962	4040	29	362	6.8	1.7	3.1
Nov. 8	8300	18	294	6.9	.5	.5
Dec. 4	5820	11	196	6.7	2.9	5.5
Jan. 10, 1963	4750	22	304	6.6	5.6	7.0
Mar. 4	5580	22	326	6.9	5.1	6.2
Apr. 1	43200	3.5	97	6.8	1.5	10.5
May 8	6650	12	220	6.8	2.1	3.1
June 4	4750	14	229	6.7	.1	1.3
July 2	4450	22	295	6.5	3.3	.7
Aug. 6	3620	27	321	6.7	.9	1.6
Sept. 4	2300	104	641	6.6	1.4	2.8

a Obtained from surface samples.

1-4705. SCHUYLKILL RIVER AT BERNE, PA.

LOCATION.--At highway bridge, 50 feet downstream from gaging station at Berne, Berks County, 0.5 mile upstream from Mill Creek, and 6.5 miles downstream from Little Schuylkill River.
DRAINAGE AREA.--355 square miles.
RECORDS AVAILABLE.--Chemical analyses: December 1947 to February 1953, October 1956 to September 1961.
Water temperatures: February 1948 to April 1953, December 1956 to September 1963.
Sediment records: October 1947 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 1,210 micromhos Sept. 21, 22; minimum daily, 161 micromhos Nov. 11.
Water temperatures: Minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 105 ppm Nov. 10; minimum daily, 1 ppm on many days in June, August and September.
Sediment loads: Maximum daily, 1,090 tons Nov. 10; minimum daily, less than 0.50 ton on many days in August and September.
EXTREMES, 1947-63.--Specific conductance: Maximum daily, 1,270 micromhos Oct. 28, 1961; minimum daily, 130 micromhos Apr. 1, 1960, Feb. 26, 1961.
Water temperatures (1948-53, 1956-63): Maximum, 90°F June 17, 1957, June 29, 1959; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 8,030 ppm Nov. 4, 1947; minimum daily, 0 ppm on many days in 1952.
Sediment loads: Maximum daily, 90,180 tons Nov. 12, 1947; minimum daily, 0 tons on many days in 1952.
REMARKS.--Unpublished records of specific conductance and pH of sediment samples available in subdistrict office at Harrisburg, Pa. Flow affected by ice Dec. 11-17, 21-25, Dec. 28 to Mar. 4. Stream frozen Dec. 11-16, 28-31, Jan. 1-3, 24-31, Feb. 1, 13-17, and Feb. 22 to Mar. 1.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-10,1962	434	8.5	--	0.01	0.79	25	13	7.3	2.3	3	120	3.5	0.0	1.1	199	116	114	--	317	5.1	5
Oct. 17.....		9.7	1.0	.04	1.7	24	16	7.0	1.5	2	129	4.0	.1	2.5	215	126	125	--	323	4.8	5
Nov. 1-8, 10..		8.3	--	.02	1.3	21	14	7.0	1.8	2	113	3.0	.0	1.0	180	110	109	--	296	5.2	5
Aug. 16-25,1963		8.5	.5	.03	3.2	45	27	16	4.5	0	235	8.5	.3	12	417	224	224	0.3	563	3.8	3
Sept. 1-10....		10	4.2	.03	6.2	86	60	17	3.2	0	484	8.0	.2	14	796	462	462	.8	961	3.8	3

DELAWARE RIVER BASIN--Continued

1-4705. SCHUYLKILL RIVER AT BERNE, PA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	61	62	58	60	60	60	61	58	60	60	63	66	--	61	58	61	61	57	55	53	60	58	57	49	50	45	46	50	49	45	45	56
November	47	47	47	43	45	45	48	46	--	48	48	48	--	--	--	--	45	--	--	--	--	--	--	44	--	--	--	--	--	--	--	--
December	41	--	--	--	--	43	--	38	--	--	32	32	32	32	32	32	32	--	--	--	32	32	32	32	32	--	--	32	32	32	32	--
January	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March	32	32	32	32	--	34	36	36	35	--	--	--	--	--	--	41	--	--	--	--	--	--	40	--	--	--	50	50	--	50	--	--
April	--	--	--	--	--	49	--	--	--	--	--	--	56	--	--	--	--	--	--	--	60	--	--	--	--	--	56	--	--	--	--	--
May	--	--	--	61	--	--	--	--	--	--	65	--	--	--	--	--	--	61	--	--	--	--	--	--	61	--	--	--	--	--	--	--
June	73	--	--	--	--	--	--	67	--	--	--	--	--	--	67	--	--	--	--	--	--	72	--	--	--	--	--	--	79	--	--	--
July	--	--	--	--	--	73	--	--	--	--	68	68	72	71	70	71	73	77	77	77	74	74	74	73	75	78	77	77	77	77	74	--
August	76	74	74	75	70	70	71	70	72	--	71	69	73	67	65	66	69	69	65	69	71	72	73	73	67	64	65	64	67	68	68	70
September	65	65	68	70	65	63	61	63	64	66	61	68	62	59	56	61	60	63	63	65	63	56	53	50	50	52	55	58	58	57	--	61

DELAWARE RIVER BASIN--Continued

1-4705. SCHUYLKILL RIVER AT BERNE, PA.--Continued

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	368	4	4	536	C 3	4	559	4	6
2	312	C 6	5	454	C 3	4	543	4	6
3	275	C 6	4	545	18	A 26	513	4	6
4	328	C 6	5	863	18	42	490	4	5
5	1770	98	S 490	863	C 5	12	475	4	5
6	1300	13	45	799	C 5	11	1190	89	S 540
7	907	C 5	12	700	C 5	9	2010	71	S 410
8	691	C 5	9	644	C 5	9	1460	10	39
9	738	C 5	10	593	5	8	1200	8	26
10	1140	C 6	18	2910	105	S 1090	1070	8	23
11	940	C 6	15	2820	34	260	860	8	19
12	799	C 6	13	1970	13	69	740	8	16
13	663	6	11	1510	6	24	700	8	15
14	568	C 6	9	1210	5	16	660	8	14
15	513	C 6	8	998	5	13	600	8	13
16	468	C 6	8	874	4	9	620	8	13
17	434	C 6	7	779	4	8	580	8	13
18	393	C 6	6	769	5	10	551	8	12
19	368	C 4	4	779	5	11	528	8	11
20	348	C 4	4	654	4	7	498	8	11
21	336	C 4	4	627	4	7	440	8	10
22	312	C 4	3	944	12	31	460	14	17
23	305	C 4	3	998	11	30	440	11	13
24	281	C 7	5	918	7	17	410	9	10
25	269	C 7	5	841	6	14	410	9	10
26	275	C 7	5	769	5	10	406	8	9
27	246	C 7	5	700	4	8	380	8	8
28	240	C 7	5	644	4	7	390	8	8
29	246	C 6	4	593	4	6	370	9	9
30	264	C 6	4	559	4	6	330	9	8
31	772	9	19	--	--	--	270	9	7
Total	16869	--	749	28863	--	1778	20153	--	1312

Day	JANUARY			FEBRUARY			MARCH		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1	370	12	12	430	7	8	300	10	8
2	340	9	8	460	12	15	320	10	9
3	320	8	7	590	18	29	290	10	8
4	300	8	6	510	12	17	290	10	8
5	290	8	6	450	10	12	908	28	A 70
6	290	7	5	450	10	12	1800	99	S 550
7	280	7	5	490	11	15	1880	50	250
8	270	5	4	450	10	12	1600	33	140
9	260	5	4	410	10	11	1440	18	70
10	250	5	3	360	10	10	1420	15	58
11	290	5	4	410	10	11	1640	18	80
12	400	8	9	470	12	15	1510	9	37
13	800	16	35	450	11	13	1520	8	33
14	720	12	23	400	10	11	1570	9	38
15	630	7	12	350	10	9	1770	10	48
16	580	5	8	310	10	8	1750	13	61
17	540	4	6	300	10	8	2110	15	85
18	500	4	5	310	10	8	2560	14	97
19	470	5	6	350	11	10	2640	18	130
20	730	10	20	390	11	12	2720	24	180
21	760	11	23	410	12	13	2410	17	110
22	600	8	13	350	11	10	1970	14	74
23	580	8	13	320	11	10	1720	12	56
24	500	8	11	300	11	9	1530	10	41
25	460	6	7	290	10	8	1520	9	37
26	430	8	9	280	10	8	1600	8	35
27	520	6	8	280	10	8	2110	18	100
28	450	6	7	270	10	7	1830	10	49
29	360	6	6	--	--	--	1570	8	34
30	360	9	9	--	--	--	1390	6	23
31	380	9	9	--	--	--	1240	5	17
Total	14030	--	303	10840	--	319	48928	--	2536

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
C Composite period.

DELAWARE RIVER BASIN--Continued

1-4705. SCHUYLKILL RIVER AT BERNE, PA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	1080	5	15	753	22	A 44	400	2	2
2..	1030	5	14	543	8	12	374	2	2
3..	918	5	12	483	5	7	374	1	1
4..	841	5	11	447	4	5	400	2	2
5..	738	5	10	434	3	4	380	3	3
6..	663	5	9	413	3	3	830	14	A 32
7..	635	4	7	400	3	3	505	6	8
8..	601	4	6	387	3	3	543	5	7
9..	576	4	6	387	3	3	468	5	6
10..	551	4	6	461	5	6	447	6	7
11..	505	3	4	513	6	8	490	7	9
12..	475	3	4	427	5	6	420	5	6
13..	447	3	4	393	5	5	380	5	5
14..	427	3	3	380	4	4	368	4	4
15..	406	3	3	374	4	4	534	9	13
16..	406	3	3	368	4	4	420	6	7
17..	400	3	3	355	4	4	361	5	5
18..	400	3	3	1110	44	S 160	342	4	4
19..	374	3	3	1100	15	45	318	3	3
20..	368	4	4	852	9	21	312	2	2
21..	342	4	4	769	7	15	342	3	3
22..	330	4	4	700	5	9	299	2	2
23..	336	5	5	593	4	6	269	1	1
24..	348	4	4	551	3	4	258	1	1
25..	318	4	3	513	2	3	240	1	1
26..	305	4	3	551	5	7	235	2	1
27..	293	4	3	543	4	6	223	2	1
28..	281	4	3	483	3	4	223	2	1
29..	275	4	3	461	3	4	244	6	4
30..	462	16	A 20	513	6	8	393	10	11
31..	--	--	--	454	4	5	--	--	--
Total	15131	--	182	16711	--	422	11392	--	154

Day	JULY			AUGUST			SEPTEMBER		
1..	269	3	2	320	13	A 12	142	1	T
2..	212	2	1	392	10	11	132	1	T
3..	179	2	1	206	2	1	127	2	1
4..	179	2	1	179	C 1	T	240	6	4
5..	174	2	1	148	C 1	T	174	3	1
6..	158	2	1	137	C 1	T	148	C 3	1
7..	168	2	1	142	C 1	T	137	C 3	1
8..	196	2	1	142	C 1	T	122	C 3	1
9..	184	2	1	137	C 1	T	117	C 3	1
10..	179	2	1	132	2	1	122	C 3	1
11..	168	C 2	1	117	C 2	1	122	C 5	2
12..	196	C 2	1	108	C 2	1	132	C 5	2
13..	168	C 2	1	120	C 2	1	168	C 5	2
14..	168	C 5	2	362	18	18	127	C 5	2
15..	223	C 5	3	163	2	1	99	C 5	1
16..	179	C 5	2	137	C 1	T	94	C 3	1
17..	163	C 2	1	127	C 1	T	112	C 3	1
18..	153	C 2	1	127	C 1	T	127	C 3	1
19..	158	C 2	1	112	C 1	T	127	C 3	1
20..	158	C 2	1	148	C 1	T	122	C 3	1
21..	184	C 2	1	127	C 1	T	112	C 4	1
22..	168	C 2	1	94	C 1	T	94	C 4	1
23..	201	C 7	4	158	C 1	T	81	C 4	1
24..	168	C 7	3	117	C 1	T	76	C 4	1
25..	142	C 7	3	108	C 1	T	81	C 4	1
26..	137	C 2	1	94	C 1	T	94	C 1	T
27..	132	C 2	1	86	C 1	T	99	C 1	T
28..	127	C 2	1	94	C 1	T	99	C 1	T
29..	132	3	1	94	C 2	1	232	5	3
30..	340	18	17	117	C 2	1	257	3	2
31..	212	3	2	122	C 2	1	--	--	--
Total	5575	--	60	4667	--	56	3916	--	37

Total discharge for year (cfs-days)..... 197075
Total load for year (tons)..... 7908

S Computed by subdividing day.
T Less than 0.50 ton.
A Computed from partly estimated-concentration graph.
C Composite period.

DELAWARE RIVER BASIN--Continued

1-4720. SCHUYLKILL RIVER AT POTTSTOWN, PA.

LOCATION.--At gaging station on right bank at Hanover Street Bridge in Pottstown, Montgomery County, 70 feet from west bank of river, and 0.3 mile downstream from Manatawny Creek.
DRAINAGE AREA.--1,147 square miles.
RECORDS AVAILABLE.--October 1944 to September 1951, October 1962 to August 1963.
Water temperatures: October 1944 to September 1951.
Sediment records: March 1948 to September 1951.
REMARKS.--Records of specific conductance and pH of daily samples available in district office at Philadelphia, Pa.

Chemical analyses, in parts per million, October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 8, 1962.	1750	9.7		0.03	0.02	24	8.5	7.1	2.6	45	57	7.0	--	1.9	172	95	58		262	6.8	5
Oct. 17.....	984	8.5		.04	.00	30	13	14	2.8	52	81	16	.2	7.9	220	129	86		338	6.7	8
Nov. 19.....	2260	10		.02	.01	27	5.4	7.4	2.2	42	55	7.5	--	2.8	177	90	55		276	6.9	7
Dec. 27.....	984	14		.00	.00	42	18	17	2.2	55	130	19	.1	12	288	179	134		489	7.1	3
Feb. 6, 1963.	1600	9.6		.00	.00	36	14	14	2.8	54	100	15	.0	20	238	148	103		411	7.0	3
Mar. 11.....	5890	6.4		.00	.00	21	3.9	5.4	2.5	40	32	7.0	.0	9.9	112	69	36		195	6.7	3
Apr. 25.....	930	8.1		.00	.00	39	15	20	2.0	69	110	19	.2	8.5	284	159	103		445	7.7	--
June 3.....	802	9.4		.00	.00	38	18	14	1.8	60	122	12	.3	6.5	250	169	120		409	7.2	2
July 15.....	461	7.7		.01	.01	41	18	12	3.2	77	117	15	.1	8.4	273	177	114		435	7.6	8
Aug. 28.....	287	--		--	--	--	--	27	--	92	118	28	--	9.8	--	188	113		507	6.9	7

DELAWARE RIVER BASIN--Continued

1-4738. SCHUYLKILL RIVER AT MANAYUNK, PHILADELPHIA, PA.

LOCATION.--At Green Lane Avenue bridge, 5 miles upstream from gaging station at Fairmount Dam, Philadelphia County.
DRAINAGE AREA.--1,893 square miles (at Fairmount Dam).
RECORDS AVAILABLE.--Sediment records: November 1947 to September 1963.
EXTREMES, 1962-63.--Sediment concentrations: Maximum daily, 786 ppm Mar. 6; minimum daily, 3 ppm Oct. 30, 31.
Sediment loads: Maximum daily, 42,400 tons Mar. 6; minimum daily, 1 ton Sept. 27, 28.
EXTREMES, 1947-63.--Sediment concentrations: Maximum daily, 4,910 ppm Dec. 30, 1948; minimum daily, 1 ppm on several days.
Sediment loads: Maximum daily, estimated 650,000 tons Aug. 19, 1955; minimum daily, 1 ton Sept. 27, 28, 1963.
REMARKS.--Records of temperature of sediment samples available in subdistrict office at Harrisburg, Pa. The stream flow records given are for the Schuylkill River at Philadelphia (Fairmount Dam). These records do not include water diverted by the City of Philadelphia for municipal water supply. Prior to the 1958 water year, published sediment records included diverted water.

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	1600	18	78	2130	8 S	46	2230	C 4	24
2	1190	13	42	1600	6	26	2180	C 4	24
3	966	14	36	1850	18 S	116	2090	C 4	23
4	858	12	28	4690	56 S	740	1950	C 4	21
5	1040	12 S	33	3600	28	270	1900	8	41
6	3600	25 S	250	2920	13	100	2470	35 S	290
7	2920	23	180	2370	9	58	7020	200	3800
8	2180	18	110	2000	8	43	5290	88	1300
9	2180	17	100	1730	8	37	4090	27	300
10	2280	13	80	8040	325 S	9650	3550	14	130
11	2620	13	92	9210	272 S	6850	2970	C 9	72
12	2230	15	90	6360	106 S	1880	2470	C 9	60
13	1860	12	60	4650	38	480	2040	C 9	50
14	1550	14	58	3710	20	200	1910	C 11	57
15	1350	12	44	3020	12	98	1850	C 11	55
16	1190	11	35	2620	9	64	1800	C 11	53
17	1070	8	23	2570	10	69	1700	C 7	32
18	1000	6	16	2720	7	51	1650	C 7	31
19	894	7	17	3660	14	140	1600	C 7	30
20	786	7	15	3230	13	110	1500	C 4	16
21	786	5	11	3020	8	65	1400	C 4	15
22	683	5	9	6570	62 S	1300	1350	C 4	15
23	716	5	10	4880	55 S	740	1500	C 4	16
24	620	6	10	3600	20	190	1400	C 4	15
25	590	5	8	3180	9	77	1300	C 4	14
26	620	5	8	3130	4	34	1250	C 4	14
27	533	4	6	3080	4	33	1200	C 4	13
28	590	5	8	2820	C 5	38	1150	C 4	12
29	533	4	6	2620	C 5	35	1110	C 4	12
30	533	3	4	2420	C 5	33	1070	4	12
31	774	3	6	--	--	--	768	8	17
Total	40342	--	1473	108000	--	23573	65758	--	6564

S Computed by subdividing day.
C Composite period.

DELAWARE RIVER BASIN--Continued

1-4738. SCHUYLKILL RIVER AT MANAYUNK, PHILADELPHIA, PA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	JANUARY				FEBRUARY				MARCH			
	Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day
1	2100	26	A	150	1640	6		27	1000	8		22
2	1000	12	A	30	1600	6		26	2290	34	S	315
3	1150	C 12		37	2680	12		87	3580	89	S	994
4	1190	C 12		39	2700	18		130	3880	51	S	563
5	1070	C 12		35	2300	C 12		75	10100	412	S	11600
6	1000	C 5		14	2330	C 12		75	16600	786	S	42400
7	894	C 5		12	2920	20		160	16800	755	S	37800
8	894	C 5		12	2330	10		63	11000	176	S	5340
9	858	C 7		16	1600	C 10		43	8510	110		2500
10	858	C 7		16	1470	C 10		40	6560	78		1400
11	930	C 7		18	1830	C 10		49	6820	100		1800
12	2400	22	S	209	6600	140		2500	6950	130		2400
13	5640	110		1700	4040	78	S	932	7340	80		1600
14	5170	77		1100	2280	32		200	6000	40		650
15	3440	C 10		93	1690	20		91	5700	35		540
16	2670	C 10		72	1230	25		83	5460	38		560
17	2230	C 10		60	1190	17		55	6880	67	S	1340
18	2000	C 10		54	1270	13		45	7540	75		1500
19	1950	7		37	1820	25		120	6760	42		770
20	4010	61	S	986	2740	45	A	340	8380	61	S	1440
21	6060	170		2800	3810	92	A	950	7810	56		1200
22	3600	40		390	2000	52		280	6180	36		600
23	2820	22		170	1350	30		110	5230	C 20		280
24	2570	12		83	1270	20		69	4600	C 20		250
25	1800	10		49	1190	C 8		26	4200	C 20		230
26	1450	C 10		39	1150	C 8		25	4090	C 20		220
27	2140	C 10		58	1040	C 8		22	5530	30	S	477
28	1700	10		46	966	C 8		21	5760	38		590
29	1200	10		32	--	--		--	4650	24		300
30	1270	8		27	--	--		--	4090	18		200
31	1430	6		23	--	--		--	3760	14		140
Total	67494	--		8407	59036	--		6644	204050	--		120021

Day	APRIL				MAY				JUNE			
1	3440	C 13		120	1540	18		75	930	C 18		45
2	3230	C 13		110	2280	26		160	786	C 18		38
3	3080	C 13		110	1600	16		69	858	C 18		42
4	2820	C 13		99	1310	12		42	1000	C 18		49
5	2520	C 13		88	1190	C 9		29	966	C 18		47
6	2280	12		74	1110	C 9		27	966	C 18		47
7	2140	C 11		64	1040	C 9		25	1200	30		97
8	2090	C 11		62	966	10		26	1000	25		68
9	1950	C 11		58	930	10		25	1000	20		54
10	1910	C 19		98	894	12		29	855	17		39
11	1770	C 19		91	1150	18		56	1200	35		110
12	1640	C 19		84	1350	17		62	1120	28		85
13	1550	C 12		50	1110	16		48	818	20		44
14	1470	C 12		48	930	C 15		38	670	23		42
15	1390	C 12		45	894	C 15		36	818	25		55
16	1270	C 12		41	858	C 15		35	1160	20		63
17	1230	13		43	786	C 15		32	892	C 17		41
18	1270	13		45	1080	16		47	670	C 17		31
19	1270	13		45	2040	20		110	606	C 17		28
20	1230	13		43	2230	18		110	542	C 17		25
21	1110	16		48	1820	14		69	574	C 17		26
22	1040	C 12		34	1640	13		58	606	C 17		28
23	1040	C 12		34	1510	C 11		45	510	C 17		23
24	1000	C 12		32	1270	C 11		38	414	C 17		19
25	1040	C 12		34	1110	C 11		33	382	C 17		18
26	930	C 12		30	1040	C 11		31	325	C 17		15
27	894	C 12		29	1040	C 11		31	300	C 10		8
28	822	C 12		27	1110	C 12		36	300	C 10		8
29	786	C 12		25	1070	C 12		35	391	15		16
30	930	C 12		30	1070	C 12		35	733	20		40
31	--	--		--	1110	C 12		36	--	--		--
Total	49142	--		1741	39078	--		1528	22592	--		1251

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
C Composite period.

DELAWARE RIVER BASIN--Continued

1-4738. SCHUYLKILL RIVER AT MANAYUNK, PHILADELPHIA, PA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	JULY			AUGUST			SEPTEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	670	17	31	450	--	E 30	111	13	4
2..	446	16	19	1500	--	E 100	101	16	4
3..	350	15	14	1410	--	E 80	418	27	S 86
4..	216	C 15	9	800	12	26	3240	87	760
5..	198	C 15	8	540	12	17	1620	91	S 430
6..	135	C 15	5	370	10	10	523	48	68
7..	149	C 15	6	235	9	6	280	20	15
8..	255	15	10	230	10	6	217	16	9
9..	382	14	14	230	13	8	198	13	7
10..	255	15	10	220	13	8	163	12	5
11..	235	12	8	180	12	6	135	11	4
12..	181	11	5	160	16	7	135	8	3
13..	216	12	7	180	16	8	123	7	2
14..	275	14	10	240	14	9	123	8	3
15..	300	14	11	450	13	16	148	9	4
16..	325	10	9	200	11	6	375	21	S 27
17..	300	5	4	140	11	4	327	15	13
18..	220	8	5	100	13	4	303	18	15
19..	200	5	3	100	12	3	258	13	9
20..	210	9	5	250	12	8	198	7	4
21..	210	12	7	270	11	8	180	7	3
22..	300	9	7	270	11	8	148	6	2
23..	450	7	8	260	9	6	123	8	3
24..	350	10	9	270	7	5	112	6	2
25..	290	8	6	170	9	4	93	6	2
26..	240	12	8	110	9	3	85	8	2
27..	198	5	3	95	10	3	85	6	1
28..	164	8	4	70	11	2	85	5	1
29..	350	10	9	77	12	2	935	22	56
30..	414	10	11	101	14	4	1610	18	78
31..	216	11	6	122	11	4	--	--	--
Total	8700	--	271	9800	--	411	12452	--	1622

Total discharge for year (cfs-days)..... 686444
Total load for year (tons)..... 173506

E Estimated.
S Computed by subdividing day.
C Composite period.

DELAWARE RIVER BASIN--Continued

1-4738. SCHUYLKILL RIVER AT MANAYUNK, PHILADELPHIA, PA.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Mar. 6, 1963.....	1530		40	20800	1010		8	20	36	48	69	87	94	97	98			SCBW
Mar. 7.....	1255		46	16100	643		16	29	49	62	81	93	95	98	99			SCBW

DELAWARE RIVER BASIN--Continued

1-4745. SCHUYLKILL RIVER AT PHILADELPHIA, PA.

LOCATION.--At Belmont Filter Plant, 1.6 miles upstream from gaging station, 40 feet upstream from Fairmount Dam, 1,000 feet upstream from Spring Garden Bridge, Philadelphia, Philadelphia County, and 8.2 miles upstream from mouth.
DRAINAGE AREA.--1,893 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1945 to September 1963.
Water temperatures: October 1945 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 635 micromhos Sept. 22; minimum daily, 172 micromhos Mar. 7.
Water temperatures: Maximum, 86°F July 2, 3; minimum, 33°F Dec. 15, 16.
EXTREMES, 1945-63.--Dissolved solids (1945-56),(1958-59): Maximum, 362 ppm Oct. 21-30, 1953; minimum, 123 ppm Feb. 21-29, 1948, Jan. 1-10, 1949.
Hardness (1946-59): Maximum, 231 ppm Oct. 4-9, 1951; minimum, 73 ppm Jan. 1-10, 1949.
Specific conductance: Maximum daily, 695 micromhos Sept. 22, 1962; minimum daily, 140 micromhos Feb. 27, 1962.
Water temperatures: Maximum, 88°F July 20, Aug. 7, 1955; minimum, freezing point on many days during winter months.
REMARKS.--Samples collected at raw-water intake on west side of river at Belmont Filter Plant by City of Philadelphia. Records of specific conductance of daily samples available in district office at Philadelphia, Pa.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 1-10, 1962	1880	11		0.01	0.01	34	22	12	3.6	54	130	14	0.2	9.1	286	176	131		451	7.3	7
Nov. 1-10.....	3090	11		.00	.00	29	12	12	2.3	57	73	15	.3	9.1	204	122	76		333	7.2	10
Dec. 1-10.....	3340	12		.00	.00	29	13	10	2.0	49	74	12	.1	9.9	191	126	86		318	7.0	3
Jan. 1-10, 1963	1100	12		.03	.20	37	22	16	2.8	67	125	18	.0	5.1	293	183	128		479	7.0	5
Feb. 1-10.....	2160	11		.00	.00	31	11	15	2.5	52	78	20	.2	11	212	123	80		376	7.1	4
Mar. 1-10.....	8030	7.8		.00	.00	25	11	12	3.0	43	62	17	.2	10	171	108	73		311	7.0	3
Apr. 1-10.....	2810	8.1		.02	.05	26	9.2	9.9	2.2	50	60	12	.1	8.4	175	103	62		291	7.4	3
May 1-4, 6-10..	1300	10		.00	.03	35	15	17	2.5	74	94	18	.2	7.0	249	149	89		390	7.1	4
June 1-10.....	956	9.8		.00	.00	38	18	15	2.4	65	116	17	.2	6.7	288	169	116		422	7.3	3
July 1-10.....	306	7.6		.00	.00	39	15	20	3.9	88	90	25	.3	8.4	269	159	87		429	7.1	10
Aug. 1-10.....	598	5.2		.01	.00	38	15	23	4.7	84	96	26	.4	9.3	275	157	88		438	7.2	10
Sept. 1-10.....	678	5.6		.01	.02	35	14	22	4.5	82	87	24	.3	9.6	276	145	78		418	7.3	4

DELAWARE RIVER BASIN--Continued

1-4745. SCHUYLKILL RIVER AT PHILADELPHIA, PA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	66	65	65	65	66	67	68	67	65	65	65	65	65	66	66	66	66	66	65	65	65	64	63	62	60	58	52	54	54	54	53	63
November	53	53	54	51	50	47	47	47	46	49	51	50	49	48	47	47	47	48	47	46	45	46	46	45	44	43	43	43	43	43	--	47
December	43	43	43	43	43	43	43	42	41	40	40	37	35	34	33	33	34	34	36	37	38	36	37	37	37	37	37	36	37	37	34	38
January	--	34	34	34	34	35	36	37	38	38	38	40	41	39	36	35	35	36	37	39	40	37	36	34	34	34	34	34	34	34	35	36
February	34	35	36	36	35	35	37	37	36	35	35	37	37	35	35	34	34	34	36	36	39	37	35	35	35	34	34	34	--	--	--	35
March	35	35	37	39	39	38	37	37	37	39	40	40	40	40	41	42	44	45	45	44	45	43	43	43	43	48	52	53	55	55	55	43
April	55	55	56	57	56	55	55	53	54	54	53	52	53	55	55	56	58	58	60	63	60	60	65	62	62	63	63	65	65	62	--	58
May	61	61	60	61	61	64	66	68	69	71	71	69	68	68	68	68	69	69	69	69	69	69	69	69	68	67	66	68	67	67	68	67
June	70	72	72	71	73	74	76	77	76	77	79	77	76	75	73	73	73	73	74	77	77	77	79	77	77	78	79	81	83	83	--	76
July	84	86	86	86	82	81	81	78	77	77	77	77	78	78	77	78	79	80	82	83	84	84	81	81	80	81	82	83	84	84	84	81
August	84	83	83	82	82	81	80	80	--	80	80	80	79	79	79	79	--	76	76	77	--	--	78	78	78	77	76	76	76	75	75	79
September	75	75	75	76	75	74	72	72	72	72	72	72	72	72	70	68	68	69	69	68	69	68	68	67	65	65	65	66	65	66	--	70

DELAWARE RIVER BASIN--Continued

1-4762. DELAWARE RIVER AT EDDYSTONE, PA.

LOCATION.--Between river end of piers of Sun Shipbuilding and Drydock Co., Eddystone, and a point 2,000 feet offshore of north river bank of Monds Island, N. J.
DRAINAGE AREA.--10,190 square miles.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1963.
REMARKS.--Samples collected at center of river approximately 3 feet from surface and 3 feet from bottom. Additional data published in WSP 1262, Chemical characteristics of Delaware River water, Trenton, N. J. to Marcus Hook, Pa. Records of discharge given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	pH	Biochemical oxygen demand	Dissolved oxygen
Oct. 2, 1962						
Top	4040	--	527	6.3	2.9	2.0
Bottom	--	61	512	7.0	--	--
Nov. 8						
Top	8300	--	359	6.9	4.0	5.2
Bottom	--	28	365	6.9	--	--
Dec. 4						
Top	5820	--	220	6.7	.9	5.0
Bottom	--	12	218	6.8	--	--
Jan. 10, 1963						
Top	4750	--	925	6.5	5.5	7.0
Bottom	--	185	940	6.4	--	--
Mar. 4						
Top	5580	--	335	7.0	5.6	6.2
Bottom	--	--	336	7.0	--	--
Apr. 1						
Top	43200	--	103	6.9	1.3	8.6
Bottom	--	5.0	106	6.8	--	--
May 8						
Top	6650	--	269	6.8	1.6	1.7
Bottom	--	14	270	6.8	--	--
June 10						
Top	4980	--	271	6.3	.4	2.6
Bottom	--	18	272	6.2	--	--
July 2						
Top	4450	--	518	6.3	2.1	.8
Bottom	--	76	503	6.4	--	--
Aug. 6						
Top	3620	--	463	6.9	.7	2.7
Bottom	--	58	451	6.8	--	--
Sept 4						
Top	2300	--	1440	6.5	.8	1.8
Bottom	--	336	1440	6.5	--	--

1-4770.5. DELAWARE RIVER AT CHESTER, PA.

LOCATION.--At end of Reynolds Aluminum Co. pier, 2,800 feet downstream from Chester Creek, Chester, Delaware County, 11,800 feet downstream from Eddystone, and 19,900 feet upstream from Marcus Hook station.
DRAINAGE AREA.--10,300 square miles.
RECORDS AVAILABLE.--Dissolved oxygen: December 1961 to September 1963.
Water temperatures: December 1961 to September 1963.
EXTREMES, 1962-63.--Dissolved oxygen: Maximum, 9.5 ppm Feb. 21; minimum, 0 ppm on many days during year.
EXTREMES, 1961-63.--Dissolved oxygen: Maximum, 9.8 ppm Mar. 6, 1962; minimum, 0 ppm on many days each year.
REMARKS.--Records of specific conductance available in district office at Philadelphia, Pa.

Dissolved oxygen, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1	1.2	0.3	1.2	0.8	5.8	5.2	--	--	8.4	7.3	6.7	6.0	8.6	7.9	3.9	3.0	0.9	0.0	--	--	--	--	1.8	0.3
2	.9	.2	1.1	.6	5.5	5.1	--	--	8.1	6.9	8.0	5.8	8.6	7.8	3.3	2.7	.8	.0	--	--	--	--	2.8	.5
3	.9	.2	2.7	.5	5.2	4.7	--	--	8.8	7.1	7.7	5.6	8.4	7.3	3.1	2.5	1.7	.0	--	--	--	--	2.5	.8
4	1.1	.1	2.7	1.5	5.1	4.5	8.3	7.7	8.8	6.9	--	--	8.7	7.6	2.8	1.6	1.5	1.0	--	--	--	--	2.5	.9
5	.7	.3	1.9	1.1	4.6	4.2	8.3	7.5	8.0	6.8	--	--	8.6	7.8	2.0	.9	1.0	.2	--	--	--	--	2.6	.7
6	1.2	.2	1.8	.9	6.2	4.1	7.9	7.1	7.8	6.3	--	--	8.1	7.2	1.4	.7	.8	.2	--	--	--	--	2.9	.9
7	1.6	.2	1.5	.6	--	--	7.5	6.8	7.8	6.0	--	--	--	--	1.3	.5	--	--	--	--	1.5	0.1	2.6	.5
8	1.3	.2	1.4	.8	--	--	7.2	6.3	--	--	--	--	--	--	1.3	.6	--	--	--	--	.8	.0	1.1	.1
9	1.0	.4	2.0	.5	--	--	7.5	6.0	--	--	9.0	7.6	--	--	1.1	.4	--	--	--	--	1.7	.0	1.2	.0
10	--	--	4.0	2.2	--	--	6.6	5.5	--	--	8.9	7.8	--	--	1.8	.2	--	--	--	--	1.4	.0	1.8	.0
11	--	--	4.2	2.8	7.0	5.6	6.4	5.1	--	--	--	--	--	--	1.3	.8	1.0	.4	--	--	1.7	.0	2.1	.3
12	--	--	3.9	2.8	7.1	5.7	7.3	5.1	--	--	--	--	6.4	5.9	1.2	.5	1.1	.4	1.2	0.1	2.2	.0	2.7	.5
13	1.1	.5	4.4	2.7	7.4	6.0	6.2	4.9	--	--	7.8	6.9	6.1	5.2	1.4	.6	1.1	.2	1.4	.1	1.0	.0	--	--
14	1.1	.4	5.1	3.2	8.0	6.6	6.3	4.8	8.0	6.6	7.4	6.6	5.7	5.0	1.4	1.1	--	--	1.8	.1	1.8	.1	--	--
15	1.0	.5	5.1	3.8	7.9	6.8	5.8	4.5	8.9	7.2	7.1	6.3	5.4	4.6	1.1	.4	--	--	1.9	.7	1.8	.0	--	--
16	1.0	.4	4.8	3.4	7.4	6.6	5.4	4.3	9.4	8.2	--	--	4.8	4.2	.8	.2	--	--	2.0	.4	2.0	.0	--	--
17	.6	.3	4.7	3.9	7.3	6.2	5.2	4.3	8.9	7.6	--	--	4.7	3.9	1.2	.2	--	--	2.1	.4	1.2	.0	2.5	.2
18	.9	.3	5.6	3.8	6.9	5.9	5.6	4.1	8.6	7.5	--	--	4.0	3.7	1.8	.8	--	--	2.2	.4	1.4	.0	1.9	.0
19	.7	.1	6.0	4.2	6.7	5.7	5.1	4.0	8.5	7.2	--	--	3.8	3.1	1.3	.3	--	--	1.9	.2	1.3	.0	1.1	.0
20	1.0	.0	5.0	4.0	6.5	5.5	5.8	3.7	9.1	7.0	7.9	6.1	4.0	2.9	1.2	.2	--	--	2.3	.2	1.1	.0	.6	.2
21	.8	.0	4.6	3.9	6.5	5.7	6.3	4.9	9.5	7.5	8.4	7.1	3.6	3.0	.6	.0	1.1	.0	2.0	.2	.8	.0	1.1	.0
22	1.1	.0	6.2	4.0	6.8	5.9	6.7	4.9	8.7	7.5	9.0	7.7	3.2	2.4	.2	.0	1.8	.0	1.1	.0	.5	.0	1.2	.0
23	.8	.1	6.3	4.9	6.8	6.7	7.0	5.5	8.3	7.2	8.8	8.2	2.6	2.1	.2	.0	1.5	.0	--	--	1.0	.0	1.6	.3
24	1.5	.0	6.2	5.0	7.0	5.9	8.2	6.4	7.7	7.1	9.4	7.8	3.6	2.5	.2	.0	2.0	.0	--	--	.9	.0	2.8	.7
25	1.3	.1	5.9	4.8	6.7	5.7	8.2	6.8	7.5	6.7	8.7	7.6	3.5	3.0	.4	.0	1.1	.0	--	--	1.8	.0	2.2	.7
26	2.5	.2	6.3	5.0	6.7	5.4	7.8	6.3	7.5	6.4	9.2	7.6	3.6	2.6	.4	.0	--	--	1.8	.2	2.0	.3	2.1	.3
27	3.2	1.7	6.6	5.2	6.3	5.3	9.0	6.5	7.0	6.2	8.9	8.1	3.0	2.1	.4	.0	--	--	2.1	.1	1.7	.2	1.5	.3
28	3.5	2.3	6.6	5.9	6.0	4.8	9.3	8.3	6.7	6.1	9.0	8.1	2.7	1.9	.2	.0	--	--	--	--	1.7	.6	--	--
29	3.0	2.4	6.5	5.8	5.6	4.5	9.3	7.9	--	--	8.7	8.2	3.3	1.8	.2	.0	--	--	--	--	1.5	.2	--	--
30	2.3	1.7	6.3	5.5	--	--	8.5	7.5	--	--	8.6	7.7	3.9	3.2	.4	.0	--	--	1.5	.0	1.5	.2	--	--
31	1.6	1.0	--	--	--	--	8.3	7.4	--	--	8.4	7.1	--	--	.9	.0	--	--	--	--	1.5	.0	--	--
Average	1.4	0.5	4.4	3.1	6.5	5.5	7.2	5.9	--	--	--	--	5.2	4.3	1.3	0.6	--	--	--	--	1.4	0.1	--	--

DELAWARE RIVER BASIN--Continued

1-4770.5. DELAWARE RIVER AT CHESTER, PA.--Continued

Temperature (°F) of water, November 1962 to September 1963
(Recorder with temperature attachment, continuous resistance bulb-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum																																
Minimum																																
November																																
Maximum	--	--	--	--	--	56	56	55	56	56	55	54	54	54	53	52	52	51	50	49	51	50	49	49	48	48	48	48	48	47	--	52
Minimum	--	--	--	--	--	55	54	55	55	55	53	52	53	53	51	51	51	50	49	49	49	49	48	48	48	48	48	48	48	46	47	51
December																																
Maximum	47	48	47	48	48	49	--	--	--	--	--	--	--	40	41	41	41	41	41	41	41	42	41	40	40	41	40	40	40	39	--	--
Minimum	46	46	46	46	48	48	--	--	--	--	--	--	--	40	40	41	40	40	40	41	40	40	40	39	39	40	39	40	39	37	--	--
January																																
Maximum	--	--	--	37	37	36	36	36	36	36	37	37	38	38	37	37	38	39	39	40	40	39	39	38	38	38	37	37	35	34	35	37
Minimum	--	--	--	35	36	36	36	36	36	36	36	37	37	37	37	36	37	38	38	39	39	39	38	38	37	37	37	35	34	34	34	37
February																																
Maximum	36	36	36	36	35	37	37	--	--	--	--	--	--	37	37	36	36	36	37	36	36	36	36	36	36	37	36	36	--	--	--	--
Minimum	35	36	36	35	35	35	36	--	--	--	--	--	--	36	36	35	36	35	36	35	35	35	36	36	36	36	35	35	--	--	--	--
March																																
Maximum	37	36	36	--	--	--	--	--	42	43	--	--	43	42	45	--	--	--	--	46	46	46	46	47	48	50	50	50	52	52	51	--
Minimum	36	35	35	--	--	--	--	--	41	41	--	--	42	42	42	--	--	--	--	46	46	46	46	46	47	47	48	48	50	50	49	--
April																																
Maximum	50	49	48	52	51	52	52	53	53	52	52	52	53	53	54	55	55	57	57	58	59	59	58	58	57	58	58	60	60	60	--	55
Minimum	49	48	49	50	50	51	52	52	52	51	51	51	52	52	42	53	54	55	56	57	58	58	57	57	56	57	57	58	58	59	--	53
May																																
Maximum	60	60	60	63	63	64	64	66	67	68	66	66	67	67	67	68	68	68	69	70	69	70	70	70	70	69	69	69	70	70	71	67
Minimum	59	58	58	60	61	62	63	64	65	66	65	65	65	65	66	66	67	67	67	68	69	69	69	69	69	69	68	69	69	69	69	66
June																																
Maximum	73	72	72	73	73	74	--	--	--	--	76	75	74	--	--	--	--	--	--	--	77	77	77	78	79	80	--	--	--	--	--	--
Minimum	71	71	71	72	73	73	--	--	--	--	75	74	74	--	--	--	--	--	--	--	76	76	76	76	77	78	--	--	--	--	--	--
July																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	81	81	80	80	80	81	82	82	83	83	83	82	--	--	85	85	--	--	85	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	80	80	79	78	78	79	81	80	82	82	82	82	--	--	83	84	--	--	85	--	--
August																																
Maximum	--	--	--	--	--	--	83	83	83	83	83	83	82	81	80	81	80	80	80	80	80	80	81	81	80	80	80	80	79	79	78	--
Minimum	--	--	--	--	--	--	82	82	82	82	82	82	81	80	79	79	79	79	79	78	78	79	79	80	79	78	78	79	78	78	78	--
September																																
Maximum	79	78	78	78	78	76	76	76	78	78	78	78	76	75	74	72	71	71	72	73	72	71	70	70	70	70	71	--	--	--	--	74
Minimum	78	78	78	77	76	75	75	75	75	76	76	76	75	74	72	71	70	70	71	71	71	70	69	68	68	68	69	--	--	--	--	73

1-4772. DELAWARE RIVER AT MARCUS HOOK, PA.

LOCATION.--Between river end of piers of Sun Oil Co., Marcus Hook, and opposite point 2,000 feet offshore from New Jersey bank of river.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1963.
REMARKS.--Data obtained from analyses of center river samples collected approximately 3 feet from surface and 3 feet from bottom. Additional data published in WSP 1262, Chemical characteristics of Delaware River water, Trenton, N. J., to Marcus Hook, Pa. Records of discharge given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Lithium (Li)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color	Biochemical oxygen demand	Dissolved oxygen
Oct. 2, 1962																										
Top.....	4040	--	--	--	--	--	--	--	--		--		--	--	--	--		--	--	--	--	871	6.0	--	3.8	2.9
Bottom....	--	1.4	--	0.02	0.04	28	18	99	7.8		18		113	154	0.5	3.8		495	144	129	--	845	5.7	7	--	--
Nov. 8																										
Top.....	8300	--	--	--	--	--	--	--	--		--		--	--	--	--		--	--	--	--	458	6.7	--	4.0	4.4
Bottom....	--	4.2	--	.02	.36	26	13	63	6.0		6		111	90	.5	5.9		359	119	114	--	606	5.3	5	--	--
Dec. 4																										
Top.....	5820	--	--	--	--	--	--	--	--		--		---	--	--	--		--	--	--	--	223	6.7	--	--	--
Bottom....	--	7.3	--	.02	.15	17	5.6	12	3.0		30		43	13	.2	6.6		138	66	41	--	227	6.5	10	.6	5.0
Jan. 10, 1963																										
Top.....	4750	--	--	--	--	--	--	--	--		--		--	--	--	--		--	--	--	--	3720	6 3	--	3.7	8.2
Bottom....	--	6.7	--	.08	.50	52	107	800	80		20		265	1460	.7	1.6		3000	570	554	--	5370	5.9	7	--	--
Mar. 4																										
Top.....	5580	--	--	--	--	--	--	--	--		--		--	--	--	--		--	--	--	--	433	6.8	--	4.6	6.4
Bottom....	--	7.8	--	.07	.08	22	9.2	32	6.0		38		74	43	.5	9.3		232	93	62	--	401	6.6	5	--	--
Apr. 1																										
Top.....	43200	--	--	--	--	--	--	--	--		--		--	--	--	--		--	--	--	--	109	6.8	--	.6	8.9
Bottom....	--	4.2	--	.07	.00	8.4	3.6	3.7	.5		14		20	5.5	.2	4.5		65	36	25	--	108	6.5	5	--	--
May 8																										
Top.....	6650	--	--	--	--	--	--	--	--		--		--	--	--	--		--	---	--	--	287	6.8	--	1.9	3.0
Bottom....	--	4.8	--	.04	.08	18	5.8	16	1.8		17		57	17.	.3	13		159	69	55	--	246	6.1	5	--	--
June 4																										
Top.....	4700	--	--	--	--	--	--	--	--		--		--	--	--	--		--	--	--	--	435	5.0	--	.9	2.9
Bottom....	--	3.8	0.3	.05	.56	25	11	46	4.2		0		95	75	.6	11		300	108	108	0.2	507	4.1	4	--	--
July 2																										
Top.....	4400	--	--	--	--	--	--	--	--		--		--	--	--	--		--	--	--	--	1700	5.4	--	1.7	1.5
Bottom....	--	2.4	.7	.06	.96	36	36	272	5.0		0		154	450	.9	10		1020	238	238	.5	1800	4.0	4	--	--
Aug 6																										
Top.....	3720	--	--	--	--	--	--	--	--		--		--	--	--	--		--	--	--	--	1200	6.6	--	1.1	1.9
Bottom....	--	.8	--	.02	.55	30	27	185	12		15		125	314	.6	3.9		796	186	174	--	1350	5.9	8	--	--
Sept. 4																										
Top.....	2320	--	--	--	--	--	--	--	--		--		--	--	--	--		--	--	--	--	2170	6.3	--	1.0	2.2
Bottom....	--	2.1	--	.00	.36	44	54	415	15		4		200	710	.7	10		1550	332	329	--	2700	6.1	7	--	--

DELAWARE RIVER BASIN--Continued

1-4800. RED CLAY CREEK AT WOODDALE, DEL.

LOCATION.--Temperature recorder at gaging station, 12 feet upstream from bridge on State Highway 48, 0.3 mile south of Wooddale, New Castle County, and 2.3 miles north of Marshallton.
DRAINAGE AREA.--47.0 square miles.
RECORDS AVAILABLE.--Water temperatures: April 1953 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 87°F July 19; minimum, freezing point on many days during winter months.
EXTREMES, 1953-63.--Water temperatures: Maximum, 87°F July 17, Aug. 2, 6, 1955, and July 19, 1963; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	--	--	--	--	--	--	63	66	65	68	67	62	63	67	67	63	60	60	62	60	57	56	52	50	49	51	54	50	52	--
Minimum	--	--	--	--	--	--	--	--	61	63	61	62	62	59	59	61	63	58	56	55	57	56	55	52	49	48	46	46	49	48	49	--
November																																
Maximum	53	50	48	46	45	46	45	47	49	54	52	51	47	46	44	45	48	48	45	43	46	48	46	43	43	41	41	42	42	42	--	46
Minimum	50	47	46	44	44	44	42	43	47	49	51	47	46	44	41	42	45	45	42	42	43	46	43	42	40	39	39	41	40	40	--	44
December																																
Maximum	42	43	43	43	45	45	42	40	39	38	33	32	32	32	32	32	32	33	35	37	35	35	35	33	33	35	33	34	33	33	33	36
Minimum	40	40	41	40	43	42	40	39	38	33	32	32	32	32	32	32	32	32	33	35	32	32	33	32	32	32	32	32	32	32	32	35
January																																
Maximum	33	32	32	32	32	34	34	35	36	36	38	38	36	35	33	33	34	36	38	38	38	33	35	35	33	33	32	33	33	32	32	34
Minimum	32	32	32	32	32	32	32	33	34	34	36	35	35	32	32	32	32	34	36	38	33	33	33	33	33	32	32	32	32	32	32	33
February																																
Maximum	32	33	33	33	35	35	36	36	33	37	38	39	35	34	34	33	33	33	34	36	35	34	33	33	35	35	34	34	--	--	--	34
Minimum	32	32	32	32	32	32	33	33	32	33	37	33	34	33	33	32	32	32	33	34	33	33	32	32	32	33	32	32	--	--	--	33
March																																
Maximum	35	37	37	38	37	36	39	42	43	45	45	40	43	46	45	45	46	47	46	43	43	45	44	47	51	55	54	56	56	57	57	45
Minimum	34	34	32	37	34	35	36	37	39	42	40	39	40	42	40	41	43	45	43	42	42	40	41	39	44	48	52	48	50	52	53	41
April																																
Maximum	55	57	63	62	55	54	54	55	54	53	52	57	57	58	57	58	57	64	64	68	64	62	58	55	58	59	62	64	62	59	--	59
Minimum	51	51	55	55	50	48	50	49	52	49	48	49	51	51	50	50	55	55	58	62	59	58	55	51	50	52	54	56	56	57	--	53
May																																
Maximum	58	58	62	66	68	69	68	70	73	76	70	67	64	64	67	67	65	64	67	69	65	66	64	64	65	62	65	62	64	70	70	66
Minimum	52	49	53	57	61	65	61	62	67	69	62	58	57	61	61	61	63	62	59	64	62	62	60	57	58	60	59	61	62	64	65	60
June																																
Maximum	71	69	66	70	72	76	78	73	73	78	75	71	68	68	70	69	71	74	75	73	73	72	74	76	78	80	82	84	83	80	--	74
Minimum	65	66	65	66	68	70	72	69	68	71	71	65	63	65	66	64	65	66	67	68	68	64	64	66	68	70	72	74	76	76	--	68
July																																
Maximum	84	83	82	78	77	76	75	77	76	75	76	76	76	74	78	80	83	84	87	83	83	78	77	80	82	84	86	84	84	84	82	80
Minimum	77	78	75	71	67	68	68	70	69	67	68	70	71	71	70	73	75	77	78	80	78	76	73	72	74	76	78	79	78	79	74	74
August																																
Maximum	79	79	78	81	80	80	76	78	79	80	77	78	75	74	74	74	76	76	73	72	77	76	80	76	73	71	71	71	70	74	75	76
Minimum	75	73	74	75	73	71	71	71	72	74	71	70	72	70	67	66	68	73	67	70	72	74	74	72	68	66	64	64	68	69	70	70
September																																
Maximum	74	--	--	--	--	--	--	--	--	72	72	73	72	66	63	61	62	65	70	71	69	64	60	57	58	60	62	64	62	60	--	--
Minimum	67	--	--	--	--	--	--	--	--	68	66	68	66	63	60	60	61	62	65	66	64	60	57	53	52	52	56	58	60	57	--	--

DELAWARE RIVER BASIN--Continued

1-4821. DELAWARE RIVER AT DELAWARE MEMORIAL BRIDGE, WILMINGTON, DEL.

LOCATION.--At center of navigational channel at center of Delaware Memorial Bridge, 1.9 miles downstream from mouth of Christina River.
DRAINAGE AREA.--11,030 square miles.
RECORDS AVAILABLE.--Dissolved oxygen: November 1962 to September 1963.
Water temperatures: October 1956 to September 1963.
EXTREMES, 1962-63.--Dissolved oxygen: Maximum, 11.2 ppm Dec. 22; minimum, 0 ppm on several days in May and June.
Water temperatures: Maximum, 83°F July 30, 31; minimum, freezing point Jan. 4, 5.
EXTREMES, 1956-63.--Water temperatures: Maximum, 84°F on several days in 1959 and 1961; freezing point on many days during winter months.
REMARKS.--Records of specific conductance available in district office at Philadelphia, Pa.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Jan. 25, 1963.	7200	6.9		0.13	0.39	34	25	192	11	3	126	320	0.7	4.2	785	188	186		1480	4.9	15

DELAWARE RIVER BASIN--Continued

1-4821. DELAWARE RIVER AT DELAWARE MEMORIAL BRIDGE, WILMINGTON, Del.--Continued

Dissolved oxygen, in parts per million, November 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min
1			--	--	8.2	5.8	--	--	--	--	--	--	8.9	8.4	7.5	4.5	2.8	0.0	4.2	0.2	5.7	2.3	6.6	3.7
2			--	--	8.2	5.7	--	--	--	--	--	--	8.9	8.1	8.1	5.2	2.8	.0	5.3	.5	5.9	1.2	6.9	3.7
3			--	--	8.1	5.8	--	--	--	--	--	--	8.9	7.9	8.1	5.6	--	--	4.6	.5	5.5	1.2	7.1	4.3
4			--	--	7.8	5.6	--	--	--	--	--	--	9.5	7.8	7.3	4.0	--	--	6.0	1.3	--	--	7.0	3.9
5			--	--	8.2	5.6	--	--	9.8	7.0	--	--	9.8	9.0	6.9	3.9	3.2	1.4	6.2	2.3	--	--	7.4	4.4
6			--	--	8.8	5.8	--	--	10.1	7.1	--	--	9.7	8.7	7.5	3.5	2.7	.4	6.6	2.6	--	--	7.1	4.9
7			--	--	9.4	6.5	--	--	--	--	--	--	9.4	7.9	6.9	3.3	2.7	.1	6.7	3.3	--	--	6.9	4.0
8			--	--	9.0	7.3	--	--	--	--	--	--	9.1	7.6	6.8	3.3	3.2	.1	6.6	3.1	--	--	6.9	3.3
9			--	--	--	--	--	--	--	--	--	--	9.1	7.1	6.7	3.0	2.3	.3	6.4	2.7	--	--	7.0	3.5
10			--	--	--	--	--	--	--	--	--	--	8.8	6.9	6.6	2.7	1.6	.0	6.4	2.9	4.4	.2	6.9	3.4
11			--	--	9.2	6.6	--	--	--	--	--	--	9.1	7.1	7.1	3.7	2.6	.0	6.9	2.9	5.0	.9	7.3	3.5
12			--	--	9.6	6.5	10.6	8.1	--	--	--	--	9.8	7.3	7.1	3.5	2.1	.0	6.5	2.7	5.2	.8	7.3	4.1
13			--	--	10.2	7.2	10.4	7.9	9.1	6.4	7.5	6.4	9.9	7.1	7.0	3.0	2.7	.0	6.8	2.9	5.1	1.2	7.8	4.2
14			--	--	10.0	7.5	--	--	8.8	6.5	7.2	6.3	9.4	6.9	7.1	3.3	1.8	.0	--	--	4.7	1.0	7.7	5.1
15			--	--	10.8	7.9	--	--	8.6	6.5	6.8	6.4	--	--	6.8	2.7	2.0	.0	--	--	6.1	1.8	7.5	5.7
16			--	--	10.2	7.7	9.1	6.0	--	--	6.5	6.2	--	--	6.4	2.9	2.0	.3	--	--	6.3	1.9	7.5	5.3
17			--	--	10.3	7.5	8.9	5.3	--	--	6.4	6.0	8.7	6.2	6.6	3.1	2.7	.3	6.7	3.5	6.8	2.0	6.9	4.8
18			--	--	9.9	7.4	7.0	4.0	--	--	6.6	6.1	8.4	5.5	8.1	3.4	2.7	.4	6.7	3.5	6.3	2.5	6.8	4.5
19			--	--	9.6	7.5	6.6	3.5	--	--	6.8	6.2	7.9	5.3	6.3	2.9	3.3	.5	7.1	3.2	6.3	2.3	--	--
20			--	--	9.1	7.1	6.7	2.6	--	--	7.1	6.1	8.0	5.2	5.9	2.3	5.7	.9	7.0	3.5	6.4	2.6	--	--
21			--	--	10.8	7.4	--	--	10.5	8.2	7.1	6.1	8.3	5.4	5.7	1.8	4.9	.7	7.2	3.4	5.7	1.9	--	--
22			--	--	11.2	8.6	--	--	--	--	8.2	6.6	7.9	5.2	5.2	1.5	5.1	.5	6.8	3.2	--	--	--	--
23			--	--	10.5	7.7	7.8	5.2	--	--	8.4	7.4	7.9	4.6	5.4	1.3	5.0	1.2	6.1	3.0	--	--	--	--
24			--	--	--	--	--	--	--	--	8.2	7.3	8.6	4.3	5.5	1.3	5.2	.9	--	--	4.9	1.6	7.6	5.1
25			--	--	--	--	--	--	--	--	--	--	9.1	4.9	5.4	1.1	5.1	.7	--	--	5.6	2.2	7.4	4.9
26			--	--	--	--	--	--	10.7	7.7	--	--	8.9	4.9	5.2	1.0	4.9	.5	5.4	1.5	5.7	3.1	7.9	4.9
27			8.7	6.6	--	--	--	--	--	--	8.7	7.9	--	--	4.9	1.3	4.9	.6	5.5	1.3	5.8	3.1	7.8	4.7
28			8.9	6.6	10.0	7.0	--	--	--	--	9.1	7.9	--	--	4.9	1.5	4.7	.3	5.4	1.5	6.5	3.2	8.1	4.8
29			8.9	6.7	10.1	6.8	--	--	--	--	9.5	8.0	--	--	4.4	.2	5.0	.2	5.6	1.6	6.5	4.1	7.7	4.9
30			8.9	6.3	9.9	6.2	--	--	--	--	9.4	8.2	8.5	5.4	3.2	.1	4.5	.0	5.7	1.2	6.6	3.5	--	--
31			--	--	--	--	--	--	--	--	9.0	8.5	--	--	2.9	.0	--	--	5.1	1.3	6.7	3.6	--	--
Average			--	--	--	--	--	--	--	--	--	--	8.9	6.6	6.2	2.6	3.5	0.4	6.2	2.3	--	--	7.3	4.4

1-4821. DELAWARE RIVER AT DELAWARE MEMOEIAL BRIDGE, WILMINGTON, DEL.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous resistance bulb-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	67	68	68	67	68	68	68	68	68	68	68	69	69	69	68	69	68	67	68	68	66	66	66	64	63	62	60	58	58	57	57	66
Minimum	65	67	67	67	67	67	67	66	67	67	66	67	67	67	67	67	66	67	66	66	65	65	64	62	61	59	57	56	57	55	55	64
November																																
Maximum	56	56	55	54	54	54	53	53	53	53	52	52	51	50	50	50	49	49	48	48	48	48	46	46	46	45	45	45	44	44	--	50
Minimum	54	54	52	52	52	52	51	51	51	51	52	51	50	49	50	49	48	48	48	47	48	46	45	45	45	45	44	44	44	43	--	49
December																																
Maximum	45	45	45	45	44	45	44	43	--	--	41	40	39	38	37	36	36	36	37	37	36	36	36	--	--	--	--	35	35	37	--	--
Minimum	44	44	44	44	44	44	43	43	--	--	40	38	37	36	35	35	35	35	35	36	34	34	35	--	--	--	--	34	34	35	--	--
January																																
Maximum	--	--	--	32	33	--	--	34	34	34	35	35	35	--	--	36	36	36	36	36	--	--	37	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	32	32	--	--	33	33	33	34	34	35	--	--	34	35	35	35	35	--	--	35	--	--	--	--	--	--	--	--	--
February																																
Maximum	--	--	--	--	34	34	--	--	--	--	--	--	35	35	35	--	--	--	--	--	34	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	33	33	--	--	--	--	--	--	34	34	34	--	--	--	--	--	33	--	--	--	--	--	--	--	--	--	--	--
March																																
Maximum	--	--	--	--	--	36	38	--	--	--	--	--	40	40	40	41	42	43	43	43	43	43	43	43	--	--	46	47	47	49	49	--
Minimum	--	--	--	--	--	35	36	--	--	--	--	--	39	39	39	40	41	42	42	42	43	42	42	43	--	--	46	46	46	47	48	--
April																																
Maximum	49	49	49	49	48	49	49	49	49	49	49	49	50	50	51	52	52	53	54	55	55	56	55	55	54	55	--	--	--	56	--	51
Minimum	47	47	47	48	48	48	48	48	49	49	48	48	49	49	50	50	51	52	53	54	55	55	55	54	53	54	--	--	--	55	--	51
May																																
Maximum	56	56	56	58	59	60	60	61	62	65	63	63	62	63	63	64	64	64	65	66	65	66	66	66	66	66	66	65	66	67	67	63
Minimum	55	54	55	56	57	58	59	60	61	62	63	61	61	62	62	63	63	63	64	65	65	65	65	64	64	64	64	65	65	65	66	62
June																																
Maximum	68	68	68	69	69	71	72	72	72	73	73	72	71	71	71	72	72	73	75	74	73	73	74	75	76	77	78	78	79	80	--	73
Minimum	67	67	67	67	69	69	70	71	70	71	72	71	70	70	71	71	71	72	72	73	73	72	72	73	74	75	76	77	78	79	--	72
July																																
Maximum	81	82	82	80	79	79	79	78	78	77	78	78	78	--	--	--	78	80	81	81	80	80	80	--	--	82	82	82	82	83	83	80
Minimum	79	81	80	79	78	78	78	78	77	76	77	77	77	--	--	--	77	78	79	80	80	79	79	--	--	80	81	82	82	82	81	79
August																																
Maximum	82	82	82	--	--	--	80	80	81	80	81	80	79	79	77	77	77	78	77	77	77	77	78	77	77	77	76	76	75	76	76	78
Minimum	81	81	81	--	--	--	79	79	79	79	79	79	79	76	76	76	76	77	75	75	75	76	76	77	75	75	75	75	75	75	75	77
September																																
Maximum	76	76	76	76	75	73	73	74	74	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	74	74	74	75	73	72	72	72	73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

NANTICOKE RIVER BASIN

1-4870. *NANTICOKE RIVER NEAR BRIDGEVILLE, DEL.*

LOCATION.--At gaging station, 800 feet downstream from Gum Branch, and 2.5 miles southeast of Bridgeville, Sussex County.
DRAINAGE AREA.--75.4 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 15, 1962.	25.5	21	0.2	0.62	0.01	4.4	2.4	16	2.2	93	0.6	10	0.0	0.0	122	21	0		203	6.3	10
Jan. 4, 1963..	58.2	20		.05	.03	4.8	.5	6.0	1.0	15	5.4	6.8	--	5.4	72	14	2		74	5.9	5
Feb. 15.....	90.1	21		.13	.17	3.6	1.7	6.0	1.8	12	6.8	6.3	--	9.8	79	16	6		81	6.6	25
Mar.12.....	869	7.1		.20	.02	3.2	1.2	3.0	1.5	3	9.0	3.1	.1	4.1	59	13	11		53	4.9	35
Mar. 21.....	342	12		.12	.02	4.0	1.5	4.5	1.0	5	11	5.2	.3	5.2	69	16	12		67	5.4	30
Apr. 19.....	87.0	17		.02	.02	4.0	1.0	7.2	1.0	12	5.4	7.3	.1	6.5	77	14	4		76	5.9	10
May 15.....	57.2	18		.06	.01	3.6	1.5	6.7	.5	12	4.2	7.1	.1	7.5	72	15	5		72	6.1	10
May 21.....	55.2	20		.05	.01	4.0	.7	7.3	1.0	11	4.8	7.4	.1	9.7	72	13	4		79	5.9	10
June 21.....	120	15		.25	.06	3.6	1.0	6.0	1.2	8	6.2	6.8	.3	5.3	87	13	7		67	5.9	60
July 11.....	39.4	21		.00	.00	4.0	1.5	11	1.8	22	5.6	9.7	.0	6.9	85	16	0		94	6.5	3
Aug. 19.....	--	21		.00	.00	4.0	1.5	9.5	1.0	20	3.6	8.0	.0	8.2	81	16	0		89	6.4	2
Sept. 9.....	--	23		.00	.00	4.4	2.2	9.0	3.2	23	6.2	9.7	.1	6.3	90	20	1		102	6.6	4

SUSQUEHANNA RIVER BASIN

1-5090. TIOUGHNIOGA RIVER AT CORTLAND, N. Y.

LOCATION.--At bridge on U.S. Highway 11 at Cortland, Cortland County, about 0.3 mile downstream from gaging station, and 0.7 mile from confluence of East and West Branches.
DRAINAGE AREA.--296 square miles (including 16 square miles, the flow from which may be diverted into DeRuyter Reservoir in Oswego River basin).
RECORDS AVAILABLE.--Chemical analyses: October 1956 to September 1957.
Water temperatures: October 1956 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 63°F June 28, 30, July 29; minimum; 33°F on several days in December, January, and February.
EXTREMES, 1956-63.--Water temperatures: Maximum, 74°F July 22, 1957; minimum, freezing point on many days during winter months.

Temperature °F of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0900)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	53	54	54	56	55	55	54	55	54	54	55	58	56	54	53	55	55	51	52	51	52	49	50	48	45	44	44	45	44	44	46	51
November	45	43	44	44	45	44	42	44	42	45	44	41	42	40	41	39	42	42	40	39	42	42	40	42	41	38	38	38	40	40	--	42
December	41	39	42	42	41	41	39	37	37	36	35	35	35	35	34	35	35	37	37	36	33	36	36	35	35	36	35	37	37	36	34	37
January	36	35	36	38	38	42	38	39	39	38	41	39	37	35	35	35	36	36	37	39	34	34	37	33	33	33	37	33	33	36	35	36
February	34	36	33	34	35	36	37	33	34	36	36	37	36	36	35	34	34	37	37	37	35	33	34	35	34	34	33	35	--	--	--	35
March	35	35	35	38	38	38	37	39	38	39	39	39	40	37	39	37	37	34	38	37	37	37	36	38	41	40	39	38	37	41	38	38
April	41	44	47	46	44	42	44	43	43	42	40	41	43	44	43	46	48	51	48	49	49	48	47	43	44	46	45	47	49	51	--	45
May	48	45	49	51	50	51	52	54	56	58	51	46	52	52	54	56	56	54	53	55	55	54	51	48	54	52	54	55	54	55	56	53
June	57	59	60	60	60	61	60	60	61	59	59	57	58	56	56	57	60	59	59	59	56	56	58	58	60	60	60	63	62	63	--	59
July	62	62	59	57	57	56	56	57	57	55	57	59	59	59	57	59	60	61	62	60	60	60	59	60	61	62	61	62	63	61	60	59
August	59	59	61	61	58	61	61	61	59	59	58	57	58	56	59	56	56	56	55	56	56	59	60	60	59	57	57	58	58	59	57	58
September	54	55	59	57	55	56	54	56	58	56	55	57	54	51	57	56	55	56	57	56	55	53	50	49	50	51	54	54	54	53	--	55

SUSQUEHANNA RIVER BASIN--Continued

1-5135. SUSQUEHANNA RIVER AT VESTAL, N. Y.

LOCATION.--At the New York State Electric and Gas Corp., Goudey Station, Johnson City, Broome County, and 4.8 miles upstream from gaging station.
DRAINAGE AREA.--3,960 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: October 1955 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 82°F July 29; minimum, freezing point on many days from December to March.
EXTREMES, 1955-63.--Water temperatures: Maximum, 82°F July 29, 1963; minimum, freezing point on many days during winter months.
REMARKS.--Water is brought to plant underground through tube. Measurements are made at plant by employees.

Temperature °F of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0800)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	56	56	57	60	60	57	56	55	56	56	57	58	58	54	53	56	60	55	54	54	56	53	52	50	46	44	42	42	45	44	44	53
November	44	42	42	37	40	41	39	41	40	43	44	41	40	39	38	37	39	38	36	36	36	39	38	38	37	36	35	35	35	35	--	39
December	35	35	35	36	37	38	36	35	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
January	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	32
March	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	34	36	36	36	37	38	41	40	33
April	41	40	44	46	41	40	42	42	43	43	41	41	43	44	45	45	49	51	50	52	51	48	47	44	43	43	45	47	49	51	--	45
May	51	45	47	51	56	55	56	59	60	62	58	51	51	53	55	56	58	61	56	59	55	57	57	54	56	60	57	61	61	61	61	56
June	63	66	70	70	68	70	73	71	71	74	70	66	61	64	64	61	62	65	67	70	68	62	64	66	69	71	74	76	76	76	--	68
July	78	80	78	70	70	70	71	69	67	67	67	68	72	73	70	69	73	76	77	76	73	73	74	76	77	78	80	80	82	79	75	74
August	76	73	77	74	70	70	74	74	72	72	71	70	72	70	66	67	69	68	68	68	68	70	72	74	68	67	67	67	69	68	69	70
September	66	66	69	69	65	63	64	66	69	70	67	68	65	62	62	62	64	65	66	68	63	59	57	56	56	56	60	61	62	57	--	63

1-5165. COREY CREEK NEAR MAINESBURG, PA.

LOCATION.--At township bridge, 30 feet downstream from gaging station, 500 feet upstream from small tributary, 1.1 miles downstream from Mainesburg, Tioga County, 3.5 miles east of Mansfield, and 4.2 miles upstream from mouth.
DRAINAGE AREA.--12.2 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1958 to September 1962.
Sediment records: May 1954 to September 1963.
EXTREMES, 1962-63.--Sediment concentrations: Maximum daily, 320 ppm Mar. 17; minimum daily, 0 ppm on many days in July, August and September.
Sediment loads: Maximum daily, 180 tons Mar. 17; minimum daily, 0 tons on many days in July, August and September.
EXTREMES, 1954-63.--Water temperatures (1954-62): Maximum, 93°F on several days during August 1959; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,440 ppm Apr. 5, 1957; minimum daily, 0 ppm on many days.
Sediment loads: Maximum daily, 1,940 tons Oct. 14, 1955; minimum daily, 0 tons on many days.
REMARKS.--Records of specific conductance, temperature and pH of periodic sediment samples available in subdistrict office, Harrisburg, Pa. Flow affected by ice Nov. 26-30, Dec. 1-4, 6, 7, 10-31, Jan. 31, Feb. 1-28, Mar. 1-11, 13-17, 19, 22-24.

Chemical analyses, in parts per million, water year October 1962 to September 1963.

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 10, 1962.	1.8	4.1		0.00	0.00	26	4.1	2.5	2.5	74	24	6.8	0.0	0.9	117	82	22		201	7.8	2
May 13, 1963..	7.0	3.8		.00	.00	13	1.9	3.0	.5	36	13	3.8	.0	1.1	67	41	11		102	6.9	3
July 16.....	.1	2.5		.01	.00	26	3.6	5.6	2.6	86	15	9.0	.1	1.1	115	80	10		190	7.0	10

SUSQUEHANNA RIVER BASIN--Continued

1-5165. COREY CREEK NEAR MAINESBURG, PA.--Continued

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day
1..	0.7	C 2	T	4.6	7	0.1	5.4	1	T
2..	.6	C 2	T	3.6	6	.1	5.0	1	T
3..	.5	C 2	T	3.6	6	.1	4.7	1	T
4..	5.4	12	S 0.4	4.6	5	.1	4.5	1	T
5..	11	8	.2	4.6	4	T	4.4	1	T
6..	5.1	C 1	T	4.9	3	T	42	150	S 42
7..	3.0	C 1	T	5.5	6	.1	30	30	2.4
8..	2.1	C 1	T	11	8	.2	25	8	.5
9..	2.1	C 1	T	10	6	.2	22	7	.4
10..	1.8	4	T	91	100	S 44	19	6	.3
11..	1.5	4	T	41	11	1.2	15	5	.2
12..	1.3	4	T	25	7	.5	13	5	.2
13..	1.2	4	T	18	4	.2	11	5	.1
14..	1.1	4	T	15	3	.1	10	5	.1
15..	1.0	4	T	11	2	.1	9.7	5	.1
16..	.9	4	T	10	2	.1	10	4	.1
17..	.8	4	T	9.4	2	.1	10	4	.1
18..	.7	4	T	9.8	2	.1	9.6	4	.1
19..	.7	4	T	7.6	2	T	10	6	.2
20..	.7	4	T	7.0	1	T	12	6	.2
21..	.7	3	T	7.0	1	T	10	4	.1
22..	.7	3	T	29	30	A 2.3	11	3	.1
23..	.7	3	T	14	6	.2	10	2	.1
24..	.7	2	T	11	2	.1	9.6	2	.1
25..	.7	2	T	9.8	2	.1	8.5	2	T
26..	.8	2	T	8.7	2	T	7.6	2	T
27..	1.1	2	T	7.6	2	T	7.0	2	T
28..	1.3	3	T	7.0	2	T	7.4	2	T
29..	2.8	4	T	6.3	2	T	6.5	2	T
30..	2.1	2	T	6.0	1	T	5.6	2	T
31..	6.6	8	.1	--	--	--	5.0	2	T
Total	60.4	--	1.0	403.6	--	50.3	360.5	--	47.7

Day	JANUARY			FEBRUARY			MARCH		
	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day
1..	4.5	2	T	3.2	1	T	0.3	1	T
2..	4.6	1	T	3.2	2	T	.3	1	T
3..	4.6	1	T	3.4	5	T	.3	1	T
4..	4.7	1	T	3.2	2	T	.3	1	T
5..	4.9	1	T	3.4	1	T	.5	2	T
6..	5.0	1	T	3.7	4	T	2.0	10	0.1
7..	5.0	1	T	4.0	6	0.1	13	20	A .7
8..	5.0	1	T	3.3	2	T	12	10	.3
9..	5.0	1	T	2.8	1	T	14	10	.4
10..	5.4	3	T	2.5	1	T	50	--	E 5.0
11..	6.4	11	0.2	2.1	1	T	65	30	A 5.3
12..	11	19	.6	1.6	1	T	86	34	S 18
13..	19	20	1.0	1.3	1	T	220	82	S 60
14..	15	17	.7	1.1	1	T	150	50	A 20
15..	12	2	.1	.9	1	T	72	20	A 3.9
16..	10	2	.1	.8	1	T	50	10	A 1.4
17..	8.6	1	T	.7	1	T	120	320	S 180
18..	7.6	1	T	.8	1	T	64	30	A 5.2
19..	7.4	1	T	1.0	1	T	50	10	1.4
20..	7.6	8	.2	.9	1	T	78	20	A 4.2
21..	6.6	4	.1	.7	1	T	35	9	.9
22..	6.0	1	T	.6	1	T	23	5	.3
23..	5.2	1	T	.5	1	T	20	5	.3
24..	4.6	1	T	.6	1	T	29	7	.5
25..	4.2	1	T	.5	1	T	63	10	A 1.7
26..	3.8	1	T	.4	1	T	105	20	A 5.7
27..	3.5	1	T	.4	1	T	100	10	A 2.7
28..	3.3	1	T	.3	1	T	54	7	1.0
29..	3.2	1	T	--	--	--	42	5	.6
30..	3.4	1	T	--	--	--	36	4	.4
31..	3.3	1	T	--	--	--	29	3	.2
Total	200.4	--	3.4	47.9	--	0.3	1583.7	--	320.2

E Estimated.
S Computed by subdividing day.
T Less than 0.05 ton.
A Computed from partly estimated-concentration graph.
C Composite period.

SUSQUEHANNA RIVER BASIN--Continued

1-5165. COREY CREEK NEAR MAINESBURG, PA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	23	3	0.2	9.0	5	0.1	6.0	2	T
2	21	3	.2	7.6	2	T	4.7	2	T
3	18	3	.1	6.6	2	T	4.1	2	T
4	15	3	.1	5.4	2	T	3.9	2	T
5	11	3	.1	4.9	2	T	3.6	2	T
6	10	3	.1	4.6	2	T	3.0	2	T
7	9.0	2	T	3.9	2	T	2.6	2	T
8	8.0	2	T	3.6	2	T	2.1	2	T
9	7.3	2	T	3.6	2	T	1.8	2	T
10	6.6	2	T	8.3	54 S	2.1	2.2	2	T
11	6.3	2	T	12	35	1.1	1.9	2	T
12	5.4	2	T	7.6	10	.2	1.5	2	T
13	4.9	2	T	7.0	6	.1	1.5	2	T
14	4.1	2	T	6.6	5	.1	1.4	2	T
15	3.9	2	T	5.7	4	.1	1.2	2	T
16	3.6	2	T	4.9	4	.1	.9	1	T
17	4.1	2	T	4.4	4	T	.9	1	T
18	10	10 A	.3	14	19 S	.8	1.1	1	T
19	7.3	5	.1	8.3	4	.1	.7	1	T
20	16	20 A	.9	11	6	.2	.9	1	T
21	10	6	.2	11	3	.1	1.0	1	T
22	9.4	4	.1	9.8	5	.1	.6	1	T
23	19	15	.8	8.0	3	.1	.5	1	T
24	16	5	.2	7.0	3	.1	.4	1	T
25	14	3	.1	6.0	2	T	.3	1	T
26	12	3	.1	26	30 A	2.1	.3	1	T
27	11	3	.1	14	6	.2	.3	1	T
28	9.4	2	.1	12	4	.1	.3	1	T
29	8.3	2	T	12	4	.1	.3	1	T
30	8.3	2	T	10	3	.1	.4	1	T
31	--	--	--	8.0	2	T	--	--	--
Total	311.9	--	4.2	262.8	--	8.3	50.6	--	0.2

Day	JULY			AUGUST			SEPTEMBER		
1	0.2	1	T	0.2	1	T	0.1	0	0
2	.2	1	T	.4	1	T	.1	0	0
3	.2	1	T	.3	1	T	.6	14 S	T
4	.1	0	0	.2	1	T	.6	16	T
5	.1	0	0	.1	0	0	.3	5	T
6	.1	0	0	.1	0	0	.2	2	T
7	.1	0	0	.1	0	0	.1	1	T
8	.1	0	0	.1	0	0	.1	0	0
9	.1	0	0	.1	0	0	.1	0	0
10	.1	0	0	.2	2	0	.1	0	0
11	.1	0	0	.2	1	T	.1	0	0
12	.2	0	0	.1	1	T	.2	0	0
13	.1	0	0	.1	0	0	.3	3	T
14	.1	0	0	.1	0	0	.3	1	T
15	.2	0	0	.1	0	0	.1	0	0
16	.1	0	0	.1	0	0	.1	0	0
17	.1	0	0	.1	0	0	.1	0	0
18	.1	0	0	.3	2	T	.1	0	0
19	.1	2	T	.2	1	T	.1	0	0
20	3.5	37 S	.8	.3	2	T	.2	2	T
21	2.1	18	.1	.3	2	T	.5	4	T
22	1.5	27 S	.2	.2	1	T	.3	2	T
23	1.1	13	T	.1	1	T	.2	1	T
24	.6	10	T	.1	0	0	.1	0	0
25	.4	5	T	.2	0	0	.1	0	0
26	.3	2	T	.1	0	0	.1	0	0
27	.3	2	T	.1	0	0	.1	0	0
28	.3	1	T	.1	0	0	.1	0	0
29	.3	1	T	.1	0	0	.3	3	T
30	.3	1	T	.2	0	0	.3	3	T
31	.2	1	T	.2	0	0	--	--	--
Total	13.3	--	1.2	5.1	--	T	6.0	--	0.1

Total discharge for year (cfs-days)..... 3306.2
Total load for year (tons)..... 436.9

S Computed by subdividing day.
T Less than 0.05 ton.
A Computed from partly estimated-concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

1-5165. COREY CREEK NEAR MAINESBURG, PA.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment											Method of analysis
							Percent finer than size indicated, in millimeters											
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Nov. 10, 1962	1000		46	192	251		18	30	47	61	76	90	92	98	100			SCBW
Dec. 6	1400		38	172	521		14	28	42	57	72	87	92	97	99			SCBW
Mar. 13, 1963	1835		33	378	145		28	47	66	79	84	91	94	97	99			SCBW
Mar. 17	1435		38	241	1110		10	20	33	40	57	81	92	98	100			SCBW
May 10	1925		66	9.4	145		30	55	76	87	96	98	99	100	---			SCBW
July 22	1710		73	4.1	133		10	20	30	45	70	88	96	99	100			SCBW

1-5170. ELK RUN NEAR MAINESBURG, PA.

LOCATION.--At gaging station on left bank 250 feet downstream from highway bridge, 0.5 mile upstream from small tributary, 2.7 miles northeast of Mainesburg, Tioga County, 5.5 miles upstream from mouth, and 5.8 miles east of Mansfield.
DRAINAGE AREA.--10.2 square miles.
RECORDS AVAILABLE.--Water temperatures: November 1956 to September 1962.
Sediment records: May 1954 to September 1963.
EXTREMES, 1962-63.--Sediment concentrations: Maximum daily, 250 ppm Mar. 17, minimum daily, no flow on many days in July, August and September.
Sediment loads: Maximum daily, 58 tons Nov. 10; minimum daily, 0 tons on many days in July, August and September.
EXTREMES, 1954-63.--Water temperatures (1956-62): Maximum daily, 84°F July 27, 1958; minimum daily, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,070 ppm Mar. 31, 1962; minimum daily, 0 ppm on many days.
Sediment loads: Maximum daily, 856 tons Mar. 31, 1962; minimum daily, 0 tons on many days.
REMARKS.--Station established May 1954 as an external control for the SCS Pilot Watershed study of Corey Creek which is adjacent to Elk Creek. Records of temperature, specific conductance and pH of periodic sediment samples available in subdistrict office at Harrisburg, Pa. Flow affected by ice Nov. 26-30, Dec. 1-4, 10-31, Jan. 1-31, Feb. 1-28, and Mar. 1-17, 21-24.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 10, 1962.	2.0	0.3		0.01	0.01	22	3.2	4.2	1.4	60	22	5.4	0.1	0.4	116	18	18		174	77.5	10
Mar. 18, 1963.	46	3.9		.03	.00	9.6	1.7	2.1	2.0	20	13	4.6	.0	2.8	64	31	15		94	6.8	7
May 14.....	5.5	3.0		.00	.00	12	1.5	3.0	.5	34	13	2.4	.0	.7	59	36	8		90	7.3	5
July 16.....	0	1.7		.00	.00	22	3.4	4.6	2.2	78	12	5.5	.1	.8	104	69	5		164	6.8	5

SUSQUEHANNA RIVER BASIN--Continued

1-5170. ELK RUN NEAR MAINESBURG, PA.--Continued

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	0.6	C 1	T	5.1	2	T	5.1	1	T
2	.4	C 1	T	4.2	1	T	4.5	1	T
3	.3	C 1	T	3.9	1	T	4.2	1	T
4	4.4	33	S 1.0	4.2	1	T	4.1	1	T
5	9.4	5	.1	3.9	1	T	3.9	1	T
6	4.2	C 2	T	4.2	1	T	51	128	S 42
7	2.8	C 2	T	4.5	2	T	34	10	1.0
8	2.0	C 2	T	9.1	5	0.1	27	3	.2
9	2.0	C 2	T	10	3	.1	23	2	.1
10	2.0	C 2	T	74	162	S 58	19	3	.2
11	1.7	1	T	37	10	1.0	15	3	.1
12	1.6	1	T	24	5	.3	11	2	.1
13	1.7	1	T	17	3	.1	9.0	3	.1
14	1.4	1	T	13	1	T	8.3	3	.1
15	1.3	1	T	10	1	T	8.0	3	.1
16	1.2	1	T	8.7	1	T	8.3	3	.1
17	1.0	1	T	8.2	1	T	8.2	2	T
18	1.0	1	T	8.7	1	T	7.8	2	T
19	1.0	1	T	6.2	1	T	8.6	2	T
20	.8	1	T	6.2	1	T	10	2	.1
21	.8	1	T	6.2	1	T	7.8	2	T
22	.8	1	T	23	14	S 1.3	8.4	2	T
23	.8	1	T	12	2	.1	8.5	2	T
24	.8	1	T	10	1	T	7.6	2	T
25	.8	1	T	9.1	1	T	6.7	2	T
26	1.0	1	T	7.3	1	T	6.2	2	T
27	1.2	1	T	6.5	1	T	5.6	2	T
28	1.6	1	T	5.8	1	T	6.0	2	T
29	3.6	3	T	5.5	1	T	5.3	1	T
30	3.0	2	T	5.1	1	T	4.5	1	T
31	7.8	3	.1	--	--	--	3.7	2	T
Total	63.0	--	1.4	352.6	--	61.4	340.3	--	44.7
	JANUARY			FEBRUARY			MARCH		
1	3.6	3	T	2.5	2	T	0.2	1	T
2	3.7	1	T	2.6	2	T	.2	1	T
3	3.7	1	T	2.8	2	T	.2	1	T
4	3.8	1	T	2.6	2	T	.2	1	T
5	3.9	1	T	2.7	2	T	.5	4	T
6	4.0	1	T	3.0	2	T	2.0	25	0.1
7	4.0	1	T	3.3	2	T	7.6	35	.7
8	4.0	1	T	2.6	2	T	7.0	10	.2
9	4.0	1	T	2.2	2	T	6.6	8	.1
10	4.4	1	T	2.3	2	T	8.0	12	.3
11	5.0	2	T	1.7	2	T	10	7	.2
12	9.0	10	0.2	1.3	2	T	14	30	1.1
13	15	5	.2	1.0	2	T	90	100	24
14	11	3	.1	.8	2	T	35	90	8.5
15	9.0	3	.1	.7	2	T	24	90	5.8
16	7.6	2	T	.6	1	T	17	170	7.8
17	6.8	2	T	.5	1	T	80	250	54
18	6.0	1	T	.6	1	T	46	160	20
19	5.9	1	T	.8	1	T	31	80	6.7
20	5.9	6	.1	.7	1	T	62	75	13
21	5.4	3	T	.6	1	T	28	45	3.4
22	4.8	3	T	.5	1	T	17	30	1.4
23	4.1	2	T	.4	1	T	16	20	.9
24	3.7	2	T	.5	1	T	26	60	4.2
25	3.3	2	T	.4	1	T	52	120	17
26	3.1	2	T	.3	1	T	88	240	57
27	2.9	2	T	.3	1	T	80	40	8.6
28	2.7	2	T	.2	1	T	50	18	2.4
29	2.6	2	T	--	--	--	39	14	1.5
30	2.7	2	T	--	--	--	36	10	1.0
31	2.6	2	T	--	--	--	29	7	.5
Total	158.2	--	1.2	38.5	--	0.2	902.5	--	240.4

S Computed by subdividing day.
T Less than 0.05 ton.
C Composite period.

SUSQUEHANNA RIVER BASIN--Continued

1-5170. ELK RUN NEAR MAINESBURG, PA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	24	4	0.3	6.9	2	T	6.2	3	0.1
2	19	3	.2	6.2	2	T	4.5	3	T
3	17	3	.1	5.5	2	T	3.9	3	T
4	15	2	.1	4.2	2	T	3.6	3	T
5	12	2	.1	3.9	2	T	3.4	3	T
6	9.6	1	T	3.6	2	T	2.6	3	T
7	9.6	1	T	3.4	2	T	2.4	3	T
8	7.8	1	T	3.0	2	T	2.2	3	T
9	7.3	1	T	3.2	2	T	2.0	3	T
10	6.5	1	T	7.0	9	0.2	2.2	3	T
11	6.5	1	T	11	6	.2	1.8	3	T
12	5.8	1	T	6.5	3	.1	1.5	3	T
13	4.5	1	T	5.8	2	T	1.3	3	T
14	3.9	1	T	5.5	2	T	1.2	3	T
15	3.4	1	T	4.5	2	T	1.1	3	T
16	3.0	1	T	3.9	2	T	.8	3	T
17	3.2	3	T	3.4	2	T	.8	3	T
18	7.3	7	.1	16	14	.6	1.0	3	T
19	5.5	5	.1	8.2	4	.1	.6	3	T
20	13	20	.7	12	8	.3	.6	5	T
21	7.3	5	.1	11	4	.1	1.2	4	T
22	6.5	3	.1	11	3	.1	.6	4	T
23	12	17	.6	8.2	2	T	.3	3	T
24	11	6	.2	6.9	2	T	.2	3	T
25	9.6	4	.1	5.8	3	T	.2	3	T
26	8.2	3	.1	28	15	1.1	.1	3	T
27	7.3	3	.1	14	5	.2	.1	3	T
28	6.5	2	T	12	4	.1	.1	3	T
29	5.8	2	T	12	4	.1	.1	3	T
30	6.2	2	T	10	4	.1	.2	3	T
31	--	--	--	7.8	4	.1	--	--	--
Total	264.3	--	3.3	25 .4	--	3.9	46.8	--	0.4

Day	JULY			AUGUST			SEPTEMBER		
1	0.1	2	T				0	0	0
2	.1	2	T				0	0	0
3	.1	2	T				.1	3	T
4	.1	2	T				.3	5	T
5	0	0	0				.1	2	T
6	0	0	0				.1	1	T
7	0	0	0				0	0	0
8	0	0	0				0	0	0
9	0	0	0				0	0	0
10	0	0	0				0	0	0
11	0	0	0				0	0	0
12	0	0	0				0	0	0
13	0	0	0				.1	3	T
14	0	0	0				0	0	0
15	0	0	0				0	0	0
16	0	0	0				0	0	0
17	0	0	0				0	0	0
18	0	0	0				0	0	0
19	0	0	0				0	0	0
20	.7	10	T				0	0	0
21	.8	8	T				.1	2	T
22	.4	6	T				0	0	0
23	.2	4	T				0	0	0
24	.2	3	T				0	0	0
25	.1	1	T				0	0	0
26	.1	1	T				0	0	0
27	.1	1	T				0	0	0
28	0	0	0				0	0	0
29	0	0	0				.1	3	T
30	0	0	0				.1	2	T
31	0	0	0				--	--	--
Total	3.0	--	0.1	0	--	0	1.0	--	T

Total discharge for year (cfs-days)..... 2420.6
Total load for year (tons)..... 357.0

T Less than 0.05 ton.

SUSQUEHANNA RIVER BASIN--Continued

1-5170. ELK RUN NEAR MAINESBURG, PA.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Nov. 10, 1962.....	0910		46	196	590		7	18	32	43	62	86	92	98	99			SWBC
Dec. 6.....	1300		40	63	567		8	19	38	52	73	92	94	98	99			SWBC
Mar. 26, 1963.....	1815		47	102	466		13	24	36	51	68	85	93	98	99			SWBC

1-5405. SUSQUEHANNA RIVER AT DANVILLE, PA.

LOCATION.--At Mill Street bridge on State Highway 54 at Danville, Montour County, 0.8 mile upstream from Mahoning Creek.
DRAINAGE AREA.--11,220 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1945 to June 1953, October 1956 to September 1963.
Water temperatures: October 1945 to June 1953, October 1956 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 737 micromhos Sept. 26; minimum daily, 100 micromhos Mar. 28.
Water temperatures: Maximum, 85°F July 1, 26, 29; minimum, freezing point Dec. 30, 31.
EXTREMES, 1945-53, 1956-63.--Dissolved solids (1945-47, 1958-60): Maximum, 346 ppm July 31, Aug. 1-16, 1959; minimum, 68 ppm May 21-31, 1946.
Hardness (1945-47, 1949-53, 1956-60): Maximum, 232 ppm Nov. 1-10, 1952; minimum, 35 ppm Mar. 31 to Apr. 7, 1960.
Specific conductance: Maximum daily, 1,010 micromhos Sept. 18, 1962; minimum daily, 81 micromhos Apr. 2, 1960.
Water temperatures: Maximum, 89°F June 30, 1959; minimum, freezing point on many days during winter months.
REMARKS.--Records of specific conductance of daily samples available in district office at Philadelphia, Pa.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 2-10, 1962	9550	5.3		0.00	0.00	43	17	12	0.5	25	155	13	0.2	2.7	277	178	157		442	6.8	5
Nov. 1-10.....	9110	3.0		.00	.00	34	13	9.8	.2	30	111	10	.1	2.3	215	139	114		355	6.9	5
Dec. 1-10.....	12790	3.9		.00	.08	26	10	6.8	1.0	24	85	7.0	.2	2.8	155	106	87		284	6.8	3
Jan. 1-10, 1963	4970	3.9		.00	.57	37	16	10	3.5	26	138	9.5	.3	3.8	237	159	137		410	6.7	5
Feb. 1-10.....	7490	6.7		.00	.00	31	12	11	1.0	26	111	11	.2	4.3	218	127	106		352	6.8	3
Mar. 1-10.....	9550	5.7		.00	.00	37	14	15	1.0	24	137	15	.2	5.4	257	150	131		421	6.8	2
Apr. 1-10.....	47150	15		.19	.00	18	3.6	3.4	.8	36	31	4.8	.1	2.2	114	60	31		148	7.2	7
June 1-10.....	8450	2.5		.00	.00	28	9.7	7.3	1.0	38	83	6.4	.1	1.6	160	110	79		269	7.6	3
July 1-9.....	2960	3.5		.00	.00	42	18	12	1.2	36	156	10	.1	2.0	265	179	150		422	7.1	3
Aug. 1-10.....	2170	4.3		.00	.00	48	22	14	1.5	24	190	11	.2	2.2	340	211	191		491	6.6	3
Sept. 1-10.....	1440	2.7		.00	.02	63	24	20	2.0	25	242	16	.2	1.7	419	256	235		595	6.8	4

SUSQUEHANNA RIVER BASIN--Continued

1-5405. SUSQUEHANNA RIVER AT DANVILLE, PA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	--	62	62	63	64	62	63	60	60	62	63	63	--	62	61	62	62	59	60	61	59	59	55	54	50	45	50	48	48	46	47	58
November	47	47	43	45	45	44	43	43	45	47	46	46	45	45	45	43	43	41	42	40	--	--	--	--	--	40	40	40	40	--	--	--
December	42	42	39	39	38	38	40	39	37	35	33	33	34	34	34	35	35	36	37	35	35	35	35	35	35	35	35	35	35	32	32	36
January	33	35	34	35	34	35	34	35	36	36	35	35	33	34	34	34	35	35	36	36	33	34	33	33	33	35	34	34	35	35	34	34
February	34	37	34	34	35	35	36	34	35	36	35	35	35	34	33	37	35	36	34	36	33	33	35	34	34	36	35	34	--	--	--	35
March	35	37	35	35	35	35	35	35	38	36	35	35	36	36	40	36	39	37	35	38	38	38	40	41	43	45	48	45	44	43	44	38
April	44	48	49	45	58	48	58	47	47	46	47	49	51	35	51	53	54	59	58	58	59	58	58	50	52	52	52	53	54	55	--	52
May	50	55	57	60	60	61	63	66	66	68	62	--	61	61	61	64	63	63	64	63	66	62	60	65	63	63	63	61	61	65	68	62
June	64	64	68	69	71	74	75	71	75	77	75	65	70	70	72	70	71	72	73	73	69	70	71	75	78	80	80	80	77	78	--	73
July	85	83	76	75	74	78	76	75	74	--	73	--	--	--	--	77	80	82	80	78	77	80	79	81	83	85	82	81	85	83	82	79
August	79	78	78	76	75	80	77	78	80	80	77	77	77	70	71	74	73	75	71	--	--	80	--	75	74	74	75	74	74	75	72	76
September	72	74	73	72	68	70	72	74	76	73	--	--	70	67	67	70	70	72	75	69	65	62	62	62	61	63	66	67	65	62	--	69

1-5435. SINNEMAHONING CREEK AT SINNEMAHONING, PA.

LOCATION.--At gaging station 0.2 mile upstream from Grove Run, and 0.7 mile upstream from Pennsylvania Railroad bridge at Sinnemahoning, Cameron County.
DRAINAGE AREA.--685 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961, October 1962 to September 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 30, 1962.	437	6.4	1.8	0.03	0.38	14	6.3	4.4	1.4	0	71	5.0	--	0.1	118	61	61	0.3	234	4.4	5
Dec. 13.....	180	6.7	--	.01	.62	14	5.4	4.8	1.2	0	60	7.0	--	.3	112	57	57	.8	210	4.4	5
Jan. 16, 1963.	1200	5.7	--	.01	.26	8.0	2.9	2.6	.7	1	30	4.5	--	.4	65	32	31	--	114	4.8	5
Feb. 28.....	180	7.4	1.4	.02	.65	14	6.8	5.4	1.0	0	77	7.0	0.0	.7	125	63	63	.6	242	4.2	3
Apr. 4.....	2520	5.1	.4	.01	.26	6.8	2.4	2.6	.8	3	29	2.0	--	.0	59	27	25	--	101	4.8	5
May 16.....	832	4.3	--	.02	.20	10	4.6	4.6	3.0	20	33	5.5	.1	.2	80	44	28	--	128	6.1	5
June 27.....	150	7.6	2.5	.04	1.0	14	7.3	4.5	.8	0	81	6.5	.0	.8	128	65	65	.9	242	3.9	3
Aug. 7.....	55	12	10	.44	2.5	27	13	8.0	2.2	0	185	16	.9	.6	285	121	121	1.6	532	3.6	2
Sept. 18.....	42	9.8	7.0	.35	2.4	27	12	8.2	1.8	0	158	12	--	.5	246	117	117	1.0	447	3.8	7

SUSQUEHANNA RIVER BASIN--Continued

1-5458. WEST BRANCH SUSQUEHANNA RIVER AT LOCK HAVEN, PA.

LOCATION.--Center of Lockport Bridge, which is at the termination of North Jay Street, Lock Haven, Clinton County, and 30.1 miles downstream from gaging station at Renovo, Pa.
DRAINAGE AREA.--3,337 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1945 to September 1951, October 1958 to September 1963.
Water temperatures: October 1945 to September 1951, October 1958 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 1,010 micromhos Dec. 29; minimum daily, 102 micromhos Mar. 27.
Water temperatures: Maximum, 85°F July 1; minimum, freezing point on many days in December and January.
EXTREMES, 1945-51, 1958-63.--Dissolved solids (1945-47): Maximum, 262 ppm Sept. 21-30, 1946; minimum, 51 ppm Mar. 1-10, January 1946.
Hardness (1945-47, 1949-51, 1958-59): Maximum, 206 ppm Sept. 11-20, 1951; minimum, 28 ppm Apr. 1-10, 1950.
Specific conductance: Maximum daily, 1,010 micromhos Dec. 29, 1962; minimum daily, 73 micromhos Apr. 6, 1947.
Water temperatures: Maximum, 88°F June 29, 1959; minimum, freezing point on many days during winter months.
REMARKS.--Records of specific conductance and pH of daily samples available in district office at Philadelphia, Pa. Records of discharge are based on records for West Branch Susquehanna River at Renovo, Pa.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 1-10, 1962	2340	8.7	2.7	0.04	2.1	24	12	3.9	2.0	0	132	6.0	0.1	0.6	206	110	110	0.6	347	4.1	2
Nov. 1-5, 7-10.	1970	7.8	2.8	.05	2.0	27	13	5.6	.8	0	143	5.0	.1	.2	217	121	121	.6	371	4.0	3
Dec. 3-9.....	1680	6.4	--	.02	1.4	21	10	4.8	2.3	0	104	3.6	.0	.1	162	94	94	.3	279	4.4	5
Jan. 1-2, 7-9, 1963....	1080	6.7	--	.02	1.1	22	8.8	4.8	1.8	0	98	5.0	.0	.1	165	91	91	.3	280	4.4	5
Feb. 5-10.....	1780	7.3	2.1	.04	1.2	22	7.8	5.8	1.5	0	104	5.0	.1	2.6	163	87	87	.5	305	4.1	18
Mar. 1-10.....	4340	6.9	2.0	.04	1.2	24	8.7	7.2	1.7	0	110	8.0	.1	2.5	177	96	96	.5	324	4.2	3
Apr. 1-10.....	11200	6.3	1.3	.02	.67	13	5.4	2.5	.5	0	63	4.0	.1	.4	104	55	55	.2	172	4.4	2
May 1, 3-10....	3260	5.2	1.7	.02	.93	16	7.3	3.3	.6	0	84	4.0	.1	.2	129	70	70	.3	225	4.2	4
May 2.....	3860	5.0	1.6	.02	.79	13	7.5	2.7	1.0	0	71	3.5	.0	.0	115	64	64	.3	214	4.2	5
June 1-10.....	4270	5.9	1.3	.02	.88	15	6.3	3.0	.5	0	75	3.0	.1	.4	118	64	64	.3	207	4.1	2
July 1-10.....	1350	7.1	2.5	.10	1.3	27	11	5.0	1.0	0	138	6.0	.1	.2	210	113	113	.6	371	3.7	2
Aug. 1-10.....	704	9.5	4.0	.17	3.0	41	18	9.1	1.0	0	215	6.0	.1	.4	308	177	177	.8	526	3.7	3
Sept. 1-10.....	1010	10	6.4	.29	3.6	49	21	12	2.0	0	251	9.0	.2	.5	384	209	209	1.2	620	3.6	3

SUSQUEHANNA RIVER BASIN--Continued

1-5458. WEST BRANCH SUSQUEHANNA RIVER AT LOCK HAVEN, PA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	58	59	61	60	60	62	63	60	59	61	62	63	62	60	61	64	64	61	59	59	60	58	56	52	52	45	44	47	46	45	45	57
November	45	46	44	44	44	--	43	45	45	47	44	47	45	44	43	41	41	--	40	40	43	42	42	42	42	38	37	37	--	36	--	42
December	--	--	36	36	36	34	33	34	32	--	32	32	32	32	--	--	32	32	32	32	--	--	32	32	32	32	32	32	33	32	--	--
January	32	32	--	--	--	--	32	32	32	--	--	--	--	32	32	32	33	33	33	32	33	34	34	33	33	34	35	--	--	--	--	--
February	--	--	--	--	34	35	35	33	33	33	34	34	34	34	34	--	33	33	33	33	35	34	34	37	37	35	36	37	--	--	--	34
March	36	36	37	37	37	39	39	39	39	38	39	39	39	--	38	39	38	38	39	40	43	43	45	48	--	50	48	48	48	50	48	41
April	50	51	52	49	50	51	51	50	50	48	48	50	50	49	52	52	53	58	59	55	56	58	56	49	51	50	52	50	51	50	--	52
May	48	--	55	59	60	60	63	65	67	70	65	60	60	60	60	60	--	--	63	61	61	60	58	57	60	60	59	60	61	62	65	61
June	67	69	67	65	67	70	70	72	74	76	78	67	68	68	69	70	70	71	73	--	69	68	--	74	77	79	81	78	79	82	--	72
July	85	83	77	77	77	73	74	75	72	72	72	76	76	76	76	78	78	78	81	80	--	81	--	84	84	84	83	84	81	79	78	78
August	76	78	80	76	78	74	71	74	77	75	76	76	74	70	66	68	69	67	65	69	73	73	72	72	71	71	70	70	72	74	73	73
September	71	69	68	66	65	64	67	70	74	70	67	68	65	63	62	66	67	70	67	64	61	59	59	57	58	59	60	61	57	60	--	64

SUSQUEHANNA RIVER BASIN--Continued

1-5475. NORTH BALD EAGLE CREEK AT BLANCHARD, PA.

LOCATION.--At gaging station, 0.7 mile upstream from Marsh Creek, and 0.9 mile south of Blanchard, Centre County.
DRAINAGE AREA.--339 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1958 to September 1963.
Sediment records: December 1955 to March 1958.
REMARKS.--Records of specific conductance and pH of periodic sediment samples available in subdistrict office at Harrisburg, Pa.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 4, 1962..	610	8.0		0.01	0.09	28	8.0	3.7	1.3	84	31	4.5	0.1	1.7	148	103	34		235	7.2	15
Oct. 31.....	176	4.8		.02	.07	40	16	5.3	2.5	161	25	8.0	.0	2.0	212	166	34		342	7.4	5
Nov. 1.....	169	--		--	--	--	--	2.8	--	152	22	8.0	--	1.0	--	154	30		337	7.9	5
Dec. 14.....	517	6.7		.00	.00	39	13	6.4	1.8	148	33	9.0	.0	7.4	227	151	30		349	7.8	5
Jan. 17, 1963.	274	--		--	--	--	--	6.7	--	95	26	8.0	--	5.2	--	106	28		258	7.7	3
Jan. 23.....	180	4.1		.02	.02	32	11	4.4	1.7	116	22	7.3	.0	2.8	135	125	30		287	7.6	5
Mar. 5.....	548	12		.00	.00	41	11	12	3.2	131	30	16	.0	11	217	148	40		379	7.3	3
Mar. 7.....	1350	5.3		.00	.02	22	4.1	2.6	2.1	55	21	5.4	.1	5.5	105	72	27		179	7.0	5
Apr. 2.....	678	6.5		.01	.02	23	7.5	4.3	1.3	76	23	5.0	.0	1.5	126	89	26		216	7.0	5
Apr. 12.....	325	1.9		.00	.00	34	10	4.8	.5	122	18	7.2	.1	5.1	153	126	26		288	7.8	3
May 1.....	301	2.3		..02	.01	31	11	4.4	1.3	114	21	6.9	.0	1.1	157	123	29		279	8.0	5
May 20.....	605	7.1		.02	.00	21	7.1	4.5	.8	78	20	4.0	.0	4.1	122	82	18		185	7.1	5
June 4.....	275	6.2		.02	.00	30	10	4.1	.8	122	19	6.4	.0	5.5	154	116	16		250	7.2	7
July 1.....	159	19		.00	.00	36	13	6.9	1.8	159	18	8.0	.1	6.5	192	144	13		304	7.5	5
Aug. 5.....	143	8.4		.00	.03	40	15	6.0	2.5	173	20	9.0	.1	3.5	197	162	20		332	8.1	8
Sept. 20.....	116	4.9		.01	.00	42	16	6.4	1.8	181a	19	10	.1	7.6	201	171	28		356	8.5	4

a Includes equivalent of 6 parts per million of carbonate (CO_3).

SUSQUEHANNA RIVER BASIN--Continued

1-5590. JUNIATA RIVER AT HUNTINGDON, PA.

LOCATION.--At gaging station, 450 feet downstream from Smithfield Bridge at Huntingdon County, and 0.8 mile upstream from Standing Stone Creek.
DRAINAGE AREA.--816 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1947 to September 1951, October 1962 to August 1963.
REMARKS.--Records of specific conductance and pH of daily samples available in district office at Philadelphia, Pa.

Chemical analyses, in parts per million. water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 30, 1962.	185	7.3		0.12	0.09	45	12	25	2.6	141	47	37	0.3	1.3	266	162	47		466	7.7	5
Dec. 13.....	120	7.8		.03	.02	41	11	24	2.2	119	62	34	--	1.1	2248	148	50		449	7.7	7
Jan. 15, 1963.	1300	8.1		.01	.01	23	7.1	8.6	1.5	56	35	13	--	1.2	136	87	41		239	7.5	5
Jan. 23.....	477	9.2		.03	.01	30	7.8	14	1.9	82	34	21	--	1.9	183	107	40		323	7.5	7
Feb. 26.....	300	16		.05	.00	42	13	28	2.0	132	44	41	.1	6.3	276	159	51		476	7.5	5
Apr. 9.....	1030	4.4		.03	.02	26	8.0	12	1.4	74	38	14	.0	1.0	157	98	38		272	7.2	5
May 20.....	2050	6.3		.00	.01	18	3.9	5.7	1.4	48	24	6.5	.1	2.9	101	61	22		155	6.9	10
July 9.....	260	4.7		.02	.02	36	11	15	3.0	132	39	20	.1	4.1	209	135	27		354	8.2	3
Aug. 14.....	197	5.4		.03	.01	46	13	30	3.2	148	44	53	.1	2.5	289	169	47		487	7.7	30

SUSQUEHANNA RIVER BASIN--Continued

1-5630. RAYSTOWN BRANCH JUNIATA RIVER NEAR HUNTINGDON, PA.

LOCATION.--At gaging station at Hawn Bridge, 0.2 mile below Pennsylvania Electric Co. power dam, 6 miles south of Huntingdon, Huntingdon County, and 9 miles upstream from mouth.
DRAINAGE AREA.--957 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1946 to September 1950, October 1962 to September 1963.
Water temperatures: October 1946 to September 1950.
REMARKS.--Flow is regulated by dam 0.2 mile upstream from gaging station. Records of specific conductance of daily samples available in district office at Philadelphia, Pa.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 31, 1962.	163	6.7		0.08	0.01	34	10	7.1	2.6	104	41	7.0	0.0	0.3	179	126	41		303	7.6	5
Dec. 10.....	304	7.1		.01	.02	22	5.6	4.5	1.6	53	34	5.0	--	1.0	115	78	35		204	7.4	5
Jan. 16, 1963.	1900	6.4		.02	.02	14	3.2	3.3	1.8	25	24	5.0	--	1.9	89	48	28		138	6.9	5
Feb. 25.....	300	5.8		.02	.00	25	8.3	4.4	1.5	66	38	6.5	.1	4.9	134	97	43		235	7.2	3
Apr. 8.....	940	3.7		.22	.03	16	5.4	2.2	1.4	36	29	3.9	.1	2.2	94	62	30		161	7.1	2
May 23.....	381	5.4		.01	.00	21	6.6	3.8	1.6	58	35	4.5	.1	2.4	115	80	32		185	6.9	5
July 9.....	268	7.9		.02	.00	25	8.3	4.0	2.2	66	44	4.0	.1	2.7	136	97	43		218	7.1	5
Aug. 13.....	114	7.7		.05	.02	28	11	4.3	2.0	77	53	4.5	.6	5.5	159	115	52		264	7.0	3
Sept. 20.....	20	3.2		.00	.00	32	14	3.7	1.8	87	61	4.5	--	1.8	178	138	66		296	7.0	4

SUSQUEHANNA RIVER BASIN--Continued

1-5670. JUNIATA RIVER AT NEWPORT, PA.

LOCATION.--At gaging station on State Highway 34 bridge at Newport, Perry County, 1,000 feet upstream from Little Buffalo Creek.
DRAINAGE AREA.--3,354 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1944 to June 1953, February 1956 to September 1963. Water temperatures: October 1944 to June 1953, June 1958 to September 1962. Sediment records: January 1951 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 454 micromhos Sept. 21; minimum daily, 116 micromhos Mar. 20, 21. Sediment concentrations: Maximum daily, 120 ppm Mar. 19; minimum daily, 1 ppm on many days during October, December, and January. Sediment loads: Maximum daily, 10,000 tons Mar. 6, 7; minimum daily, 1 ton on several days during October and September.
EXTREMES, 1944-63.--Dissolved solids (1944-47, 1958-59): Maximum, 282 ppm Oct. 1-10, 1944; minimum, 78 ppm Mar. 1-10, 1945 and May 21-31, 1946. Hardness (1944-47, 1949-53, 1957-58): Maximum, 170 ppm Nov. 1-10, 1952; minimum, 46 ppm Mar. 21-31, 1950 and Apr. 1-10, 1958. Specific conductance: Maximum daily, 499 micromhos Dec. 17, 1946; minimum daily, 59 micromhos Aug. 19, 1950. Water temperatures (1944-53, 1958-62): Maximum, 87°F July 3, 1949; minimum, freezing point on many days during winter months. Sediment concentrations (1951-63): Maximum daily, 1,130 ppm Mar. 2, 1954; minimum daily, 0 ppm on many days. Sediment loads (1951-63): Maximum daily, 128,000 tons Mar. 2, 1954; minimum daily, 0 tors on many days.
REMARKS.--Records of specific conductance and pH of periodic samples available in district office at Philadelphia, Pa. Records of temperature and specific conductance of sediment samples available in subdistrict office at Harrisburg, Pa. Flow affected by ice Dec. 11 to Mar. 7.

Suspended sediment, water year October 1962 to September 1963
(Where no concentrations are reported, loads are estimated)

Day	OCTOBER			NOVEMBER			DECEMBER		
		Suspended sediment			Suspended sediment			Suspended sediment	
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1..	1860	8	40	1020	3	8	1640	7	31
2..	1080	4	12	979	3	8	1490	6	24
3..	1070	4	12	1160	3	9	1440	6	23
4..	3830	--	200	1190	3	10	1270	5	17
5..	7920	--	700	1320	3	11	1350	5	18
6..	3240	--	100	1270	3	10	1910	9	46
7..	2270	--	60	1280	3	10	2690	12	87
8..	1620	--	20	1110	2	6	2450	10	66
9..	1280	2	7	1050	2	6	2430	7	46
10..	1460	3	12	4690	19	240	2270	5	31
11..	1250	2	7	5440	22	320	1500	2	8
12..	1080	2	6	4880	20	260	1000	1	3
13..	964	1	3	4210	18	200	800	1	2
14..	882	1	2	3220	14	120	920	1	2
15..	842	1	2	2500	11	74	1050	2	6
16..	815	1	2	2130	9	52	1100	2	6
17..	715	1	2	1940	8	42	1100	2	6
18..	778	1	2	2240	10	60	1100	2	6
19..	740	1	2	1920	8	41	1000	2	5
20..	706	1	2	2000	10	54	1100	2	6
21..	598	1	2	2070	11	61	1200	2	6
22..	632	1	2	2690	19	140	1200	2	6
23..	522	1	1	3430	28	260	1200	2	6
24..	522	1	1	3300	24	210	1300	2	7
25..	644	1	2	3180	24	210	1200	2	6
26..	728	1	2	2690	12	87	1400	2	8
27..	644	1	2	2400	11	71	1300	2	7
28..	621	1	2	2290	10	62	1300	2	7
29..	621	1	2	1810	8	39	1200	2	6
30..	522	1	1	1680	7	32	900	1	2
31..	749	1	2	--	--	--	800	1	2
Total	41205	--	1212	71089	--	2715	42610	--	502

SUSQUEHANNA RIVER BASIN--Continued

1-5670. JUNIATA RIVER AT NEWPORT, PA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued
(Where no concentrations are reported, loads are estimated)

Day	JANUARY			FEBRUARY			MARCH		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	700	1	2	1200	2	A 6	1050	2	A 6
2	1000	1	3	1500	3	A 12	1000	2	A 5
3	1100	2	6	1400	2	A 8	1200	2	A 6
4	1200	2	6	1300	2	A 8	1500	3	A 12
5	1100	2	6	1700	4	A 18	7700	--	700
6	1300	2	7	1500	3	A 12	32000	--	10000
7	1100	2	6	1700	3	A 14	34000	--	10000
8	1000	1	3	2100	6	B 34	26900	--	8000
9	1300	2	7	1400	3	A 12	16400	--	3000
10	1300	2	7	1900	4	A 20	13400	--	2000
11	1400	2	8	1300	3	A 10	13400	--	2000
12	3000	--	100	1350	3	A 10	11100	--	1000
13	8000	--	600	1350	3	A 10	11100	--	1000
14	9700	--	900	1300	2	A 8	17400	--	4000
15	6400	--	500	1200	2	A 6	19200	--	4000
16	4500	30	A 360	1100	2	A 6	15000	--	3000
17	4000	24	260	1200	2	A 6	14000	--	2000
18	3500	18	A 170	1300	2	A 8	18500	--	4000
19	2600	10	A 70	1400	2	A 8	19900	120	6400
20	2900	7	A 55	1500	2	A 8	18100	62	3000
21	2700	5	36	1400	2	A 8	19900	68	3700
22	1600	3	13	1300	2	A 8	17800	45	2200
23	1800	4	19	1150	2	A 6	13400	50	1800
24	1400	3	11	1150	2	A 6	10400	44	1200
25	1400	3	11	1200	2	A 6	8850	32	760
26	1100	2	6	1100	2	A 6	8230	24	530
27	1200	2	6	1000	2	A 5	8850	34	810
28	1300	2	7	1000	2	A 5	9790	40	1100
29	1200	2	6	--	--	--	9160	38	940
30	1700	3	14	--	--	--	7920	33	710
31	1400	2	8	--	--	--	6880	31	580
Total	73900	--	3213	38000	--	274	414030	--	78459

	APRIL			MAY			JUNE		
1	6300	26	440	2400	10	65	2200	10	59
2	6000	24	390	2520	10	68	1770	8	38
3	6000	24	390	2620	12	85	1690	8	37
4	5440	25	370	2450	10	66	1810	9	44
5	5020	31	420	2110	5	28	1850	9	45
6	4210	22	250	2090	5	28	2290	10	62
7	4340	15	180	2040	5	28	2270	10	61
8	3950	8	85	1920	5	26	4860	20	260
9	3560	7	67	1790	5	24	3430	14	130
10	3690	9	90	1630	5	22	2980	12	97
11	3300	7	62	1870	6	30	2930	12	95
12	3130	8	68	1790	6	29	4210	18	200
13	2860	8	62	1900	6	31	3560	15	140
14	2570	4	28	1630	5	22	3080	15	120
15	2470	4	27	1550	5	21	2960	15	120
16	2430	4	26	1540	5	21	2790	15	110
17	2130	4	23	1500	5	20	2240	14	85
18	2240	4	24	3220	26	230	1920	14	73
19	2450	4	26	6560	--	400	1730	13	61
20	2810	8	61	6000	--	400	1610	13	57
21	2640	8	57	4750	20	A 260	1710	13	60
22	2570	8	56	4080	18	200	1610	13	57
23	2500	8	54	3430	15	140	1450	8	31
24	2180	7	41	3180	14	120	1140	6	18
25	2150	7	41	2670	12	87	1110	6	18
26	2040	7	39	2620	12	85	1130	6	18
27	2760	14	100	2810	12	91	1070	6	17
28	2070	7	39	2380	10	64	935	5	13
29	1960	8	42	2240	10	60	868	5	12
30	2430	10	66	2430	10	66	922	5	12
31	--	--	--	2020	9	49	--	--	--
Total	98200	--	3624	81740	--	2866	64125	--	2150

A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

1-5670. JUNIATA RIVER AT NEWPORT, PA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued
(Where no concentrations are reported, loads are estimated)

Day	JULY			AUGUST			SEPTEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	827	4	9	993	13	A 34	436	3	4
2..	1330	--	30	942	11	A 28	370	2	2
3..	1450	--	30	712	7	13	352	3	3
4..	1380	--	30	712	7	13	417	3	3
5..	1500	--	30	738	8	16	398	3	3
6..	1180	7	22	618	7	12	388	3	3
7..	1180	7	22	738	10	20	476	3	4
8..	868	7	16	606	8	13	466	3	4
9..	854	7	16	572	8	12	455	2	2
10..	894	7	17	476	7	9	446	2	2
11..	788	7	15	528	7	10	406	3	3
12..	750	7	14	518	7	10	594	4	6
13..	664	7	13	408	6	7	388	2	2
14..	712	7	13	379	6	6	370	2	2
15..	750	7	14	426	6	7	320	2	2
16..	629	7	12	486	7	9	252	2	1
17..	788	7	15	497	7	9	304	3	2
18..	800	8	17	497	7	9	328	2	2
19..	700	7	13	466	6	8	328	3	3
20..	725	7	14	417	6	7	446	4	5
21..	700	7	13	360	6	6	379	3	3
22..	688	7	13	446	5	6	370	3	3
23..	583	7	11	455	4	5	320	3	3
24..	675	7	13	466	4	5	273	2	1
25..	788	8	17	446	3	4	273	2	1
26..	675	7	13	398	3	3	288	2	2
27..	629	7	12	344	2	2	352	2	2
28..	618	7	12	344	2	2	360	3	3
29..	640	8	14	398	2	2	408	3	3
30..	528	7	10	417	3	3	408	3	3
31..	773	10	A 20	436	3	4	--	--	--
Total	26066	--	514	16239	--	294	11371	--	82

Total discharge for year (cfs-days)
Total load for year (tons)

A Computed from partly estimated-concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

1-5675. BIXLER RUN NEAR LOYSVILLE, PA.

LOCATION.--At bridge on State Highway 850 at Bixler, 400 feet downstream from gaging station, 2.3 miles upstream from mouth and 3.6 miles west of Loysville, Perry County.
DRAINAGE AREA.--15.0 square miles.
RECORDS AVAILABLE.--Water temperatures: November 1956 to September 1963.
Sediment records: February 1954 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 75°F July 30; minimum, 34°F on several days during December, January and March.
Sediment concentrations: Maximum daily, 277 ppm Mar. 6; minimum daily, 1 ppm on many days during year.
Sediment loads: Maximum daily, 323 tons Mar. 6; minimum daily, less than 0.05 ton on many days during year.
EXTREMES, 1954-63.--Water temperatures (1956-63): Maximum, 85°F, July 27, 1957; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 986 ppm June 10, 1954; minimum daily, 0 ppm Oct. 29, 30, 1956.
Sediment loads: Maximum daily, 650 tons Nov. 1, 1956; minimum daily, 0 tons Oct. 29, 30, 1956.
REMARKS.--Flow affected by ice Dec. 10-13, 24, 29-31, Jan. 1-4, 14-17, 22-25, 27, 28, Feb. 2-4, 8, 9, 13-28.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 16, 1962	3.8	4.8		0.01	0.01	40	7.3	1.7	0.8	128	18	4.0	0.1	1.9	174	130	25		265	7.6	5
Jan. 17, 1963	15	6.5		.01	.01	24	4.4	1.0	.8	71	12	3.2	.0	3.0	97	78	20		175	7.7	5
July 11.....	3.0	3.8		.03	.00	34	8.3	1.6	1.2	130	12	3.0	.0	5.8	147	119	13		246	7.4	4

1-5675. BIXLER RUN NEAR LOYSVILLE, PA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	--	--	61	61	60	58	59	62	64	64	62	60	61	66	64	58	57	58	60	57	55	51	47	46	47	51	52	47	49	57
Minimum	--	--	--	--	58	56	56	55	56	58	56	58	57	53	55	58	58	52	50	50	56	51	51	46	44	42	41	42	47	44	44	52
November																																
Maximum	48	49	46	46	48	46	46	48	47	50	51	49	47	49	47	46	48	48	44	46	49	49	44	47	44	43	42	43	44	43	--	47
Minimum	45	44	41	42	44	43	40	46	46	47	47	44	45	45	42	42	46	43	40	42	44	44	41	44	40	40	37	38	39	38	--	43
December																																
Maximum	44	44	44	44	46	46	38	41	40	37	35	35	35	35	36	37	39	41	42	42	38	37	40	37	37	39	36	36	35	35	34	39
Minimum	38	37	38	39	41	38	38	38	37	34	34	35	35	35	35	36	37	39	38	38	35	35	37	35	35	36	35	35	35	34	34	36
January																																
Maximum	35	35	35	35	36	38	39	40	42	41	40	39	39	38	39	38	40	41	40	43	40	36	38	35	35	36	35	35	35	36	36	38
Minimum	34	35	35	35	35	36	36	39	39	36	39	37	36	35	34	35	35	36	38	40	34	35	35	35	35	35	34	34	34	35	35	36
February																																
Maximum	35	35	35	35	37	40	40	38	36	40	41	40	40	37	35	35	36	36	36	43	41	35	36	36	35	36	36	36	--	--	--	37
Minimum	35	35	35	35	35	36	37	35	35	36	39	36	35	35	35	35	35	35	35	36	35	35	35	35	35	35	35	36	--	--	--	35
March																																
Maximum	36	39	42	40	36	36	41	42	43	42	38	43	44	48	49	48	52	50	43	45	47	49	50	55	58	56	54	58	57	54	57	47
Minimum	35	35	35	34	34	35	36	37	37	38	38	36	40	40	38	39	42	43	41	41	40	40	39	41	45	46	47	46	46	49	47	39
April																																
Maximum	52	60	62	58	53	56	58	56	54	51	53	57	57	59	59	59	55	66	64	66	62	60	56	51	59	58	62	64	56	61	--	58
Minimum	48	47	53	48	41	43	45	44	49	44	43	45	48	48	46	46	53	52	54	58	53	53	47	45	45	48	50	50	51	52	--	48
May																																
Maximum	56	60	64	67	66	67	66	67	68	72	68	63	59	64	64	66	63	63	66	62	58	62	61	61	61	60	60	59	62	64	65	64
Minimum	46	44	49	53	56	55	55	56	62	62	59	54	53	56	57	57	59	59	54	56	53	55	53	50	52	56	54	57	57	58	58	57
June																																
Maximum	66	64	61	63	69	70	69	68	69	70	70	68	66	67	68	68	69	71	70	68	67	67	69	70	70	71	71	72	72	74	--	69
Minimum	58	61	60	61	61	62	64	63	62	66	65	59	58	62	62	61	60	62	63	65	63	59	60	61	62	65	66	69	69	68	--	63
July																																
Maximum	73	--	--	--	--	--	--	--	--	--	--	69	70	68	69	70	72	73	74	74	73	72	72	73	74	74	74	74	74	75	73	--
Minimum	68	--	--	--	--	--	--	--	--	--	--	63	65	65	63	65	67	69	69	70	69	68	68	68	68	69	70	71	70	70	68	--
August																																
Maximum	73	73	72	72	72	72	70	70	71	72	70	69	69	68	67	67	69	70	67	68	70	71	70	70	67	66	--	--	68	69	69	70
Minimum	69	68	69	69	67	66	68	66	66	68	66	65	66	65	62	62	64	66	63	65	67	68	67	67	63	61	--	--	66	65	65	66
September																																
Maximum	67	66	68	69	67	65	65	66	66	66	66	67	67	64	61	60	62	65	65	64	64	60	57	56	56	57	59	61	62	60	--	63
Minimum	63	62	64	67	62	61	61	62	62	62	62	64	64	59	57	57	57	62	61	63	60	57	54	52	52	53	54	58	60	57	--	60

SUSQUEHANNA RIVER BASIN--Continued

1-5675. BIXLER RUN NEAR LOYSVILLE, PA.--Continued

Suspended sediment, water year October 1962 to September 1963
(Where no concentrations are reported, loads are estimated)

Day	OCTOBER				NOVEMBER				DECEMBER			
	Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day
1	3.4	4		T	4.5	3		T	7.5	2		T
2	3.1	6		0.1	4.0	2		T	7.0	2		T
3	3.0	6		T	6.8	5		0.1	6.7	2		T
4	111	183	S	112	8.6	6		.1	6.7	2		T
5	48	34	S	4.9	6.6	5		.1	6.7	2		T
6	17	20		.9	5.7	5		.1	32	44	S	6.0
7	10	6		.2	5.0	5		.1	21	5		.3
8	7.7	3		.1	4.5	5		.1	17	2		.1
9	7.5	5		.1	5.3	5		.1	15	2		.1
10	6.0	8		.1	155	73	S	48	11	2		.1
11	5.1	10		.1	45	8	S	1.1	10	2		.1
12	4.5	6		.1	24	2		.1	9.0	2		T
13	4.2	3		T	18	2		.1	8.2	2		T
14	4.2	3		T	14	1		T	8.6	1		T
15	4.0	3		T	11	1		T	8.0	1		T
16	3.8	4		T	10	1		T	8.3	1		T
17	3.4	3		T	10	1		T	8.0	1		T
18	3.4	3		T	15	6	S	.3	8.3	1		T
19	3.3	3		T	13	9		.3	8.3	1		T
20	3.3	3		T	11	6		.2	10	1		T
21	3.4	3		T	11	5		.1	8.0	1		T
22	3.3	2		T	25	19	S	1.5	8.6	1		T
23	3.3	2		T	16	11		.5	8.6	1		T
24	3.3	2		T	14	4		.2	7.5	1		T
25	3.3	1		T	12	2		.1	7.2	1		T
26	3.4	1		T	10	2		.1	7.5	1		T
27	3.3	1		T	9.2	2		T	6.8	1		T
28	3.3	1		T	8.6	2		T	6.7	1		T
29	3.3	1		T	8.0	2		T	6.5	1		T
30	4.8	3		T	7.7	2		T	6.3	1		T
31	8.2	6		.1	--	--		--	6.1	1		T
Total	298.8	--		119.2	498.5	--		53.7	297.1	--		7.4

Day	JANUARY				FEBRUARY				MARCH			
	Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day
1	6.5	2		T	6.7	2		T	5.8	1		T
2	7.0	2		T	8.0	4		0.1	5.8	1		T
3	7.0	2		T	10	4		.1	6.0	1		T
4	6.5	2		T	7.0	2		T	27	65	S	21
5	6.0	2		T	7.5	1		T	182	163	S	93
6	6.0	2		T	11	2		.1	323	277	S	323
7	5.8	2		T	11	1		T	140	104	S	55
8	6.0	2		T	8.0	1		T	92	65	S	20
9	6.5	2		T	6.4	1		T	55	20	S	2.9
10	7.5	2		T	7.2	1		T	72	40	S	11
11	14	8		0.3	8.2	1		T	48	6		.8
12	39	26	S	3.0	9.8	1		T	52	20	S	3.5
13	53	22	S	3.4	7.5	1		T	100	124	S	48
14	28	4		.3	6.7	1		T	72	25		4.9
15	20	3		.2	6.5	2		T	58	12		1.9
16	17	2		.1	5.8	2		T	51	14		1.9
17	15	2		.1	5.5	2		T	77	41	S	8.6
18	15	2		.1	8.0	3		.1	68	34		6.2
19	14	2		.1	10	2		.1	51	11		1.5
20	19	2		.1	8.3	2		T	67	22	S	4.1
21	15	2		.1	8.0	5		.1	50	10		1.4
22	10	2		.1	7.7	3		.1	39	9		.9
23	10	2		.1	6.3	3		.1	33	10		.9
24	9.8	2		.1	5.8	2		T	29	9		.7
25	9.5	2		.1	5.5	2		T	26	9		.6
26	9.2	2		T	4.5	2		T	26	12		.8
27	9.0	2		T	4.4	2		T	27	12		.9
28	10	2		.1	5.3	1		T	22	7		.4
29	8.9	2		T	--	--		--	20	7		.4
30	8.0	2		T	--	--		--	19	7		.4
31	7.2	2		T	--	--		--	18	7		.3
Total	405.4	--		8.9	206.6	--		1.3	1861.6	--		615.0

S Computed by subdividing day.
T Less than 0.05 ton.

SUSQUEHANNA RIVER BASIN--Continued

1-5675. BIXLER RUN NEAR LOYSVILLE, PA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued
(Where no concentrations are reported, loads are estimated)

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	18	7	0.3	11	19	S 0.6	5.4	6	0.1
2	17	6	.3	8.7	10	.2	5.2	8	.1
3	16	6	.3	8.1	10	.2	6.4	10	.2
4	14	6	.2	7.8	10	.2	10	16	.4
5	13	6	.2	7.5	11	.2	10	18	S .9
6	13	6	.2	6.9	10	.2	11	33	S 1.1
7	13	6	.2	6.4	10	.2	7.8	19	.4
8	12	6	.2	6.1	10	.2	7.5	18	.4
9	12	6	.2	5.7	10	.2	6.9	9	.2
10	12	6	.2	5.9	12	.2	8.6	20	S .5
11	10	6	.2	7.2	18	.3	16	9	.4
12	10	5	.1	5.9	17	.3	11	--	.2
13	9.9	5	.1	5.7	17	.3	8.4	--	.2
14	9.0	5	.1	5.7	16	.2	8.0	--	.2
15	8.7	5	.1	5.4	16	.2	10	--	.2
16	8.4	5	.1	5.2	17	.2	8.0	--	.2
17	8.7	5	.1	6.1	22	.4	6.8	--	.2
18	9.9	10	.3	52	113	S 22	6.0	--	.2
19	8.7	8	.2	20	22	1.2	5.3	--	.2
20	9.6	10	.3	15	10	.4	4.8	--	.2
21	8.4	8	.2	13	6	.2	4.4	--	.2
22	7.8	8	.2	11	8	.2	4.1	--	.2
23	8.7	8	.2	9.3	6	.2	3.8	--	.2
24	7.8	8	.2	8.4	5	.1	3.6	--	.2
25	7.5	8	.2	7.8	5	.1	3.5	--	.2
26	7.2	8	.2	9.6	6	.2	3.5	--	.2
27	6.9	10	.2	8.1	5	.1	3.3	--	.2
28	6.7	10	.2	7.5	5	.1	3.5	16	.2
29	6.7	10	.2	8.1	5	.1	3.8	20	.2
30	12	17	S .7	7.8	6	.1	4.3	22	.3
31	--	--	--	6.1	8	.1	--	--	--
Total	312.6	--	6.4	299.0	--	29.4	200.9	--	8.6

Day	JULY			AUGUST			SEPTEMBER		
1	3.5	10	0.1	4.6	28	S 0.4	2.4	5	T
2	3.7	22	.2	3.5	13	.1	2.2	3	T
3	4.3	36	S .5	3.7	17	S .2	2.4	5	T
4	3.2	10	.1	8.5	131	S 5.4	2.5	6	T
5	3.2	10	.1	2.9	24	.2	2.5	6	T
6	3.2	10	.1	2.7	14	.1	2.5	6	T
7	3.2	11	.1	2.7	14	.1	2.4	6	T
8	3.3	10	.1	2.7	14	.1	2.4	6	T
9	3.0	9	.1	2.6	14	.1	2.2	5	T
10	3.0	9	.1	2.5	14	.1	2.2	3	T
11	3.0	9	.1	2.4	16	.1	2.2	3	T
12	2.9	9	.1	2.4	12	.1	2.2	3	T
13	2.9	9	.1	2.5	12	.1	2.4	5	T
14	3.9	10	.1	2.5	12	.1	2.2	4	T
15	3.8	9	.1	2.4	12	.1	2.2	8	T
16	3.2	9	.1	2.4	12	.1	2.4	6	T
17	3.0	9	.1	2.2	12	.1	2.2	4	T
18	2.9	9	.1	2.2	12	.1	2.2	3	T
19	2.9	11	.1	2.4	11	.1	2.2	3	T
20	3.3	14	.1	2.5	10	.1	2.2	3	T
21	3.0	13	.1	2.6	10	.1	2.2	3	T
22	3.0	13	.1	2.4	9	.1	2.2	3	T
23	3.0	13	.1	2.4	10	.1	2.2	3	T
24	3.0	13	.1	2.4	14	.1	2.2	3	T
25	2.9	13	.1	2.4	14	.1	2.2	3	T
26	2.7	13	.1	2.2	14	.1	2.4	3	T
27	3.0	13	.1	2.2	12	.1	2.4	3	T
28	3.3	12	.1	2.2	12	.1	2.4	4	T
29	4.0	15	.2	3.5	14	.1	4.6	9	0.1
30	4.8	24	.3	3.5	12	.1	2.6	4	T
31	3.2	17	.1	2.9	9	.1	--	--	--
Total	101.3	--	3.9	89.0	--	8.9	71.5	--	0.9

Total discharge for year (cfs-days) 4642.3
Total load for year (tons) 863.6

S Computed by subdividing day.
T Less than 0.05 ton.

SUSQUEHANNA RIVER BASIN--Continued

1-5675. BIXLER RUN NEAR LOYSVILLE, PA.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment											Method of analysis
							Percent finer than size indicated, in millimeters											
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 4, 1962.....	1330		59	192	643		12	25	43	59	76	95	96	98	99			SCBW
Nov. 10.....	0730		50	344	168		28	46	65	77	88	94	96	99	99			SCBW
Mar. 6, 1963.....	0930		37	344	338		27	40	56	70	83	91	95	98	99			SCBW
Mar. 13.....	1330		42	169	280		34	51	62	82	92	96	98	99	100			SCBW
May 18.....	0645		58	110	248		22	38	57	76	93	97	98	99	100			SCBW
Aug. 4.....	0705		67	8.3	384		66	83	96	98	99	99	100	--	--			SCBW

1-5705. SUSQUEHANNA RIVER AT HARRISBURG, PA.

LOCATION.--At Walnut Street Bridge in Harrisburg, Dauphin County, 3,700 feet upstream from gaging station.
DRAINAGE AREA.--24,100 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: Composites of daily samples collected from east channel station 1180: October 1944 to September 1946.
Cross-section samples: One to three times monthly, October 1944 to September 1949.
Monthly cross-section samples: November 1950 to January 1953, March to July 1956, October 1956 to September 1963.
Water temperatures: October 1944 to September 1946.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Station	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
															Calcium, magnesium	Noncarbonate			
Oct. 23, 1962.	E. Channel																		
	120	9580					12		5	163	5.5		4.4		160	156	400	5.7	5
	600						13		13	121	6.5		2.6		120	110	316	6.3	5
	1180						7.1		16	96	6.0		2.3		108	95	276	6.5	5
	W. Channel																		
	600						6.4		16	91	6.5		1.7		104	91	266	6.4	5
	1100						13		69	74	9.5		.5		120	64	313	7.3	5
	1320						11		151	35	16		5.1		162	39	385	7.6	5
Nov. 14.....	E. Channel																		
	120	48200					5.3		13	46	30		1.5		52	42	142	6.4	7
	600						4.6		22	48	5.5		2.2		68	50	185	6.4	5
	1180						3.0		21	38	5.5		1.0		59	42	160	6.5	3
	W. Channel																		
	600						2.8		9	66	4.5		1.6		78	71	209	6.6	7
	1100						6.4		55	31	9.5		1.0		78	33	208	6.7	5
	1320						3.2		94	20	8.5		6.4		108	31	258	7.0	5
Mar. 15, 1963.	E. Channel																		
	120	77700					6.4		13	64	9.5		5.7		81	71	239	6.0	4
	600						10		20	58	17		5.4		83	67	252	6.3	3
	1180						4.4		19	41	5.0		4.4		59	44	161	6.5	2
	W. Channel																		
	600						3.9		28	23	4.0		4.0		47	24	133	6.5	3
	1100						3.4		30	17	4.0		4.7		44	20	120	6.8	2
	1320						3.4		68	17	5.5		7.9		30	25	199	7.1	3

SUSQUEHANNA RIVER BASIN--Continued

1-5705. SUSQUEHANNA RIVER AT HARRISBURG, PA.--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Station	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
															Calcium, magnesium	Noncarbonate			
Apr. 16, 1963	E. Channel																		
	120	28800					7.6		27	98	5.0		4.5		118	96	309	6.6	3
	600						8.0		40	58	5.5		4.7		88	55	236	6.9	2
	1180						4.8		32	50	4.0		2.6		75	49	205	6.8	2
	W. Channel																		
	600						4.1		16	50	3.0		2.2		62	49	307	6.4	2
	1100						8.3		53	35	6.5		1.4		72	29	197	7.1	8
	1320						8.3		a138	21	6.5		6.6		136	27	312	8.5	3
May 16.....	E. Channel																		
	120	29100					6.9		32	80	5.0		3.2		104	78	255	6.8	4
	600								50	51	6.5				87	46	210	6.8	7
	1180								38	45			4.5		71	40	178	6.5	8
	W. Channel																		
	600						5.8		13	47	4.0		.6		53	43	139	6.6	
	1100								47	37	5.0				68	30	164	7.9	5
	1320						8.7		106	22	7.0		3.9		104	17	227	7.2	6
June 17.....	E. Channel																		
	120	18000					12		28	145	7.5		2.9		162	139	379	6.5	6
	600						7.8		48	89	8.5		1.3		128	89	303	6.8	8
	1180						5.3		5	67	3.5		1.4		68	64	180	6.1	1
	W. Channel																		
	600						14		22	68	3.5		2.6		66	48	165	6.4	3
	1100						8.7		68	26	4.0		1.3		70	15	167	7.6	3
	1320						11		a136	17	9.0		5.5		126	19	269	8.4	8

July 17, 1963	E. Channel																	
	120	5050					10		20	221	9.0		4.0		240	224	551	6.5	5
	600						12		28	170	11		1.7		190	167	455	6.5	10
	1180						8.3		26	97	7.5		1.3		116	95	289	6.6	5
	W. Channel																		
	600						12		61	73	8.5		1.2		114	64	282	6.9	5
	1100						14		92	44	9.5		1.2		106	31	275	7.3	5
	1320						9.2		b 121	18	12		3.7		120	19	270	8.3	10
Aug. 16.....	E. Channel																		
	120	3720					21		10	290	12		3.8		284	276	641	6.4	5
	600						17		21	213	12		2.1		220	203	520	6.5	5
	1180						14		34	144	12		.9		164	136	402	6.9	5
	W. Channel																		
	600						16		60	108	14		.9		146	97	377	7.0	5
	1100						19		100	47	22		.9		122	40	330	7.3	5
	1320						19		110	28	23		1.5		112	22	306	7.5	10
Sept. 20....	E. Channel																		
	120	3300					19		8	312	14		5.4		315	309	703	6.0	6
	600						6.9		9	239			3.4		244	237	572	6.2	12
	1180						14		22	175	12		2.2		188	170	451	6.8	2
	W. Channel																		
	600						17		60	122	17		.9		164	115	414	7.3	1
	1100						17		88	76	20		.8		142	70	374	7.8	3
	1320						18		107	25	23		1.4		108	21	292	7.6	2

a Includes equivalent of 5 parts per million of carbonate (CO_3).
b Includes equivalent of 3 parts per million of carbonate (CO_3).

SUSQUEHANNA RIVER BASIN--Continued

1-5765. CONESTOGA CREEK AT LANCASTER, PA.

LOCATION.--At raw water intake, Lancaster, Lancaster County, 500 feet upstream from gaging station at Pennsylvania Railroad Bridge, and 0.8 mile east of Lancaster.
DRAINAGE AREA.--324 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1947 to September 1950, October 1958 to September 1963.
Water temperatures: October 1947 to September 1950, October 1958 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 461 micromhos Oct. 28; minimum daily, 167 micromhos Mar. 5.
Water temperatures: Maximum, 82°F July 2, 20; minimum, freezing point on several days during winter months.
EXTREMES, 1947-50, 1958-63.--Dissolved solids (1947-49): Maximum, 276 ppm July 11-20, 1948; minimum, 156 ppm Apr. 11-20, 1948.
Hardness (1947-50): Maximum, 193 ppm Sept. 1-10, 1948; minimum, 109 ppm May 21-31, 1950.
Specific conductance: Maximum daily, 464 micromhos July 4, 1948; minimum daily, 142 micromhos Jan. 6, 1949.
Water temperatures: Maximum, 83°F June 30 to July 3, 1959; minimum, freezing point on many days during winter months.
REMARKS.--Records of specific conductance of daily samples available in district office at Philadelphia, Pa. Records (January 1962 to September 1963) of water temperatures, pH, and conductance of suspended sediment samples collected one mile downstream are available at quality of water subdistrict office in Harrisburg, Pa.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-10, 1962	119	9.7		0.01	0.05	41	15	9.4	4.3	148	36	12	0.3	13	237	164	43		370	7.8	3
Nov. 1-10.....	272	9.4		.00	.00	38	12	7.4	4.1	121	34	11	.1	12	194	145	46		335	7.6	7
Dec. 1-10.....	347	12		.00	.00	43	12	6.8	2.6	133	33	11	.1	19	214	157	48		356	7.6	10
Jan. 1, 3-5, 8-9, 1963...	140	13		.02	.00	49	16	7.9	1.8	164	28	12	.3	25	235	189	54		421	8.2	3
Feb. 1-10.....	307	9.7		.00	.00	43	12	4.4	4.5	134	26	12	.1	18	199	157	47		375	7.5	5
Mar. 1-10.....	1800	6.2		.05	.02	30	8.3	5.2	4.0	93	22	9.2	.0	10	163	109	33		278	7.5	5
Apr. 1-10.....	326	7.6		.00	.00	42	13	5.5	1.5	152	26	9.0	.1	12	208	159	34		345	7.5	2
May 1-8, 10...	188	7.6		.00	.00	44	14	6.5	1.8	164	26	9.8	.1	13	203	168	33		357	7.8	2
June 1-10.....	137	10		.01	.00	46	13	7.5	2.4	170	25	9.8	.1	11	224	169	29		364	7.5	3
July 1-7.....	80	11		.00	.00	47	13	7.8	4.0	172	28	10	.3	12	230	171	30		370	7.0	10
Aug. 1-10.....	130	8.5		.00	.01	45	10	8.3	5.6	132	41	12	.3	13	219	154	46		352	7.3	10
Sept. 1-10....	219	7.0		.01	.00	42	9.5	7.1	5.7	142	29	10	.3	13	207	144	28		331	7.4	10

SUSQUEHANNA RIVER BASIN--Continued

1-5765. CONESTOGA CREEK AT LANCASTER, PA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	60	60	60	64	63	64	64	63	63	63	63	63	65	62	64	62	64	62	60	60	59	59	53	57	53	50	51	50	52	47	42	59
November	51	47	46	43	46	42	42	43	44	47	50	50	45	45	45	42	45	46	--	42	42	44	--	42	41	44	40	39	40	40	--	44
December	39	40	44	40	44	44	40	38	36	39	33	34	33	33	32	36	36	35	35	35	36	32	32	33	33	32	33	32	33	33	33	36
January	35	--	33	33	33	33	35	34	33	33	35	35	34	32	33	36	35	34	35	35	35	34	33	33	33	34	33	36	33	33	34	34
February	33	35	32	34	32	33	35	34	34	34	34	35	33	34	33	33	33	34	33	35	37	34	34	33	33	33	33	32	--	--	--	34
March	32	33	35	37	34	35	36	38	40	42	41	40	40	42	42	44	45	--	45	44	41	44	42	45	46	51	53	52	54	54	54	43
April	53	52	52	58	49	49	52	52	52	50	--	46	51	52	53	54	55	55	56	59	60	60	58	53	53	54	57	58	59	60	--	54
May	55	53	54	59	63	64	65	66	67	69	68	66	65	64	63	64	64	63	64	67	66	63	63	62	62	62	62	52	61	63	66	63
June	69	69	69	67	69	71	75	73	70	72	75	72	72	68	70	70	70	71	72	73	72	70	70	72	70	73	76	80	80	79	--	72
July	80	82	81	78	76	76	75	--	--	--	73	73	73	73	72	73	75	78	77	82	78	79	78	72	77	80	81	79	78	81	80	77
August	78	75	--	75	75	75	76	76	75	76	76	76	75	73	70	73	70	74	73	72	73	73	75	76	72	69	70	74	69	70	--	74
September	71	70	71	70	70	66	67	67	68	71	70	70	70	73	66	63	61	63	64	66	69	67	64	61	59	59	60	62	63	61	--	66

SUSQUEHANNA RIVER BASIN--Continued

1-5765. CONESTOGA CREEK AT LANCASTER, PA.--Continued

Periodic determinations of suspended-sediment discharge, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 5, 1962				312	44	S 42												
Oct. 6				166	27	12												
Oct. 9				84	21	5												
Oct. 12				89	14	3												
Oct. 16				71	8	2												
Oct. 24				64	10	2												
Oct. 31				213	27	16												
Nov. 4				531	56	S 100												
Nov. 10				1090	148	S 740												
Nov. 11				630	38	S 81												
Nov. 19				428	47	S 59												
Nov. 22				508	68	S 120												
Nov. 23				404	32	35												
Nov. 28				174	11	5												
Dec. 5				143	21	8												
Dec. 6				482	72	S 220												
Dec. 7				1180	278	S 1120												
Jan. 3, 1963				149	10	4												
Jan. 10				136	12	4												
Jan. 12				604	53	S 130												
Jan. 13				1050	128	363												
Jan. 18				260	11	8												
Feb. 6				294	20	16												
Feb. 7				405	24	26												
Feb. 11				380	31	S 38												
Feb. 18				214	26	15												
Feb. 20				251	28	19												
Mar. 2				276	90	S 89												
Mar. 3				807	267	S 684												
Mar. 4				1090	406	S 1270												

Mar. 5, 1963				3970	890	S 10100
Mar. 6				4810	791	S 11900
Mar. 7				3100	479	S 5230
Mar. 8				1510	212	S 892
Mar. 9				1240	192	S 702
Mar. 12				1280	115	S 481
Mar. 13				1230	108	S 381
Mar. 17				1150	112	S 374
Mar. 18				1010	94	256
Mar. 25				544	51	75
Apr. 9				285	19	15
Apr. 16				225	16	10
Apr. 29				165	16	7
Apr. 30				201	40	22
May 4				177	33	16
May 17				123	39	13
May 18				166	41	18
May 30				130	34	12
June 4				133	31	11
June 6				120	28	9
June 21				103	35	10
June 28				34	12	1
July 8				56	19	3
July 16				82	24	5
July 23				65	34	6
July 24				62	23	4
July 29				49	17	2
Aug. 1				266	185	133
Aug. 2				348	340	319
Aug. 3				120	70	23

S Computed by subdividing day.

SUSQUEHANNA RIVER BASIN--Continued

1-5765. *CONESTOGA CREEK AT LANCASTER, PA.*--Continued

Periodic determinations of suspended-sediment discharge, water year October 1962 to September 1963--Continued
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment coacentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Aug. 4, 1963				132	100	36												
Aug. 20				68	21	4												
Aug. 21				125	55	19												
Aug. 22				82	17	4												
Sept. 3				45	25	3												
Sept. 4				1370	1070	3960												

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment coacentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Mar. 5, 1963	1015		35	4760	1270		20	35	58	75	92	97	98	99	100			SCBW
June 10	0850		73	126	198		58	69	84	91	97	99	100					SCBW
Aug. 4	1630		76	168	189		65	79	91	96	97	99	100					SCBW

POTOMAC RIVER BASIN

1-5953. ABRAM CREEK AT OAKMONT, W. VA.

LOCATION.--At gaging station at highway bridge, 0.5 mile east of Oakmont, Mineral County, 1.2 miles downstream from Emory Run, and 1.8 miles southeast of Elk Garden.
DRAINAGE AREA.--47.3 square miles.
RECORDS AVAILABLE.--Sediment records: December 1961 to March 1962 (discontinued).

Periodic determinations of suspended-sediment discharge, December 1961 to March 1962
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Dec 18, 1961	1805		38	250	27	18											
Jan. 7, 1962	0230		38	365	35	35											
Jan. 7	1115		38	301	20	16											
Jan. 8	1135		36	153	5	2.1											
Jan. 9	1110		34	98	2	.5											
Feb. 24	2155		35	262	16	11											
Feb. 25	1200		36	189	7	3.6											
Feb. 26	1850		42	425	36	41											
Feb. 27	0835		40	397	39	42											
Feb. 28	1110		42	580	46	72											
Mar. 1	1055		35	275	13	9.7											
Mar. 21	1750		38	1070	119	344											
Mar. 22	2000		39	685	26	48											
Mar. 23	1450		42	479	19	25											

1-5955. NORTH BRANCH POTOMAC RIVER AT KITZMILLER, MD.

LOCATION.--Temperature recorder at gaging station on left bank, 0.6 mile downstream from bridge on State Highway 38 in Kitzmiller, Garrett County, and 1.5 miles downstream from Wolfden Run.
DRAINAGE AREA.--225 square miles.
RECORDS AVAILABLE.--Water temperatures: August 1961 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum observed, 78°F June 28, 29; minimum, freezing point from December to March.
EXTREMES, 1961-63.--Water temperatures: Maximum, 79°F Aug. 6, 1962; minimum, freezing point on many days during winter months.
REMARKS.--Records fair, probably because of friction in recorder. No record of temperature July 12-21, 25-31.

Temperature °F of water, water year October 1962 to September 1963
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	58	59	58	58	59	60	58	62	62	59	61	64	63	61	65	65	63	57	57	57	55	56	52	48	44	41	42	47	48	46	46	18
Minimum	50	53	56	58	58	56	56	58	59	57	55	57	58	55	58	61	57	53	49	49	53	50	48	44	41	39	38	40	46	42	45	62
November																																
Maximum	46	44	44	43	42	42	42	44	44	45	45	45	45	43	43	43	46	46	44	42	44	44	42	40	39	37	35	34	34	33	--	22
Minimum	44	43	43	43	42	41	39	42	44	44	45	45	43	43	40	42	43	44	42	42	42	42	39	39	37	35	34	33	32	32	--	14
December																																
Maximum	34	33	33	34	36	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--
Minimum	32	32	32	32	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	21
January																																
Maximum	32	32	32	32	32	32	32	32	32	32	32	35	35	33	33	33	33	33	34	35	34	32	32	32	32	32	32	32	32	32	32	13
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	33	33	33	34	32	32	32	32	32	32	32	32	32	32	32	--
February																																
Maximum	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	32	32	32	32	32	32	--	--	--	24
Minimum	32	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	32	32	32	32	32	32	32	--	--	--	14
March																																
Maximum	32	32	32	32	34	36	37	38	38	39	39	37	41	40	39	40	44	44	41	40	39	37	40	43	45	45	45	48	49	49	50	13
Minimum	32	32	32	32	32	34	36	36	36	38	34	34	37	38	36	38	39	41	39	39	37	36	36	39	41	44	43	42	45	48	48	42
April																																
Maximum	51	55	56	57	47	49	51	48	48	46	44	48	46	49	50	51	51	59	59	59	58	57	55	48	49	49	48	52	50	50	--	27
Minimum	49	50	53	46	43	42	45	46	46	42	42	42	44	42	43	44	49	51	53	56	53	54	48	45	44	45	44	44	47	47	--	16
May																																
Maximum	48	50	54	58	58	62	62	59	63	67	66	59	56	59	59	62	62	59	61	61	59	57	57	58	57	59	59	61	63	65	67	--
Minimum	42	41	44	48	52	56	54	54	57	60	57	53	54	55	55	56	59	57	55	58	55	55	52	50	53	53	56	55	59	59	59	33
June																																
Maximum	68	65	63	59	59	66	66	68	69	72	69	62	60	63	64	63	65	68	67	65	67	68	69	72	74	78	77	76	78	76	--	25
Minimum	59	61	59	57	57	59	64	64	64	67	61	58	56	60	60	60	58	60	61	63	62	58	59	61	62	66	68	71	70	70	--	--
July																																
Maximum	76	74	72	66	68	70	71	72	70	65	69	--	--	--	--	--	--	--	--	--	--	73	69	72	--	--	--	--	--	--	--	--
Minimum	66	70	64	60	60	61	63	66	62	60	60	--	--	--	--	--	--	--	--	--	--	65	63	64	--	--	--	--	--	--	--	23
August																																
Maximum	76	76	74	74	72	73	72	76	75	77	76	76	72	68	69	69	71	71	69	69	70	73	73	71	72	71	71	71	71	71	72	32
Minimum	71	68	69	70	67	65	69	68	68	70	68	66	68	63	60	60	61	66	63	65	66	67	65	66	65	61	62	63	69	67	66	--
September																																
Maximum	70	73	74	74	70	64	67	69	71	71	69	72	71	64	60	67	68	69	69	69	69	63	61	58	58	62	63	65	65	61	--	67
Minimum	65	63	69	70	64	61	61	62	64	65	65	66	64	58	56	60	58	60	61	62	63	59	52	50	50	51	54	56	60	56	--	30

1-5985. NORTH BRANCH POTOMAC RIVER AT LUKE, MD.

LOCATION.--Temperature recorder at gaging station on right bank, 0.2 mile downstream from Savage River, and 0.5 mile northwest of Luke, Allegany County.
DRAINAGE AREA.--404 square miles.
RECORDS AVAILABLE.--Water temperatures: December 1961 to September 1963.
EXTREMES, 1961-63.--Water temperatures: Maximum, 86°F Aug. 6, 1962; minimum, freezing point on several days in January 1962.
REMARKS.--Recorder stopped Dec. 22 to June 30.

Temperature °F of water, water year October 1962 to September 1963
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	60	58	58	57	59	60	60	64	64	64	64	68	68	63	67	70	68	61	57	57	56	55	54	--	--	--	--	--	--	--	--	17
Minimum	52	54	56	57	57	57	57	60	62	60	58	60	63	58	60	66	61	55	52	51	55	52	51	--	--	--	--	--	--	--	--	--
November																																
Maximum	--	--	43	43	43	43	42	44	44	45	45	45	44	44	42	42	45	45	45	43	44	45	44	40	40	39	37	36	34	33	--	35
Minimum	--	--	43	43	43	41	40	42	44	44	45	44	44	42	41	41	42	45	43	43	43	44	40	40	39	37	36	34	33	32	--	19
December																																
Maximum	32	32	32	34	36	36	36	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	--	--	--	--	--	--	--	8
Minimum	32	32	32	32	34	36	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	--	--	--	--	--	--	--	--
January																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
February																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
March																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
April																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
May																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
June																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July																																
Maximum	76	77	76	69	70	71	73	73	70	66	67	73	74	72	71	74	79	79	79	79	79	78	76	76	79	80	82	84	83	82	81	67
Minimum	72	75	69	68	68	67	67	70	66	65	65	65	68	70	70	70	72	77	77	77	74	74	74	73	75	75	79	79	79	78	76	34
August																																
Maximum	81	78	78	79	78	75	75	77	76	78	77	75	73	69	68	69	71	73	70	68	69	71	70	70	69	67	74	75	75	72	72	23
Minimum	77	73	75	75	73	72	73	72	72	73	71	71	69	66	66	65	66	69	68	68	68	68	67	67	67	66	66	69	73	69	70	77
September																																
Maximum	71	71	72	72	71	66	65	66	69	70	71	71	71	69	68	68	69	71	72	--	--	--	--	--	--	--	--	--	--	--	--	28
Minimum	68	66	68	71	66	65	64	64	65	68	68	69	68	67	68	68	68	68	69	--	--	--	--	--	--	--	--	--	--	--	--	19

POTOMAC RIVER BASIN--Continued

1-6065. SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, W. VA.

LOCATION.--At the Potomac Edison powerplant, 1,000 feet upstream from gaging station, and 2.5 miles west of Petersburg, Grant County.
DRAINAGE AREA.--642 square miles.
RECORDS AVAILABLE.--Water temperatures: January 1947 to September 1953, November 1954 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 82°F Aug. 2, 3; minimum, freezing point on several days in December, January, and February.
EXTREMES, 1947-63.--Water temperatures: Maximum, 84°F June 27, July 23, 1952, and Aug. 3, 1955; minimum, freezing point on many days during winter months.

Temperature °F of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	60	61	60	61	61	63	63	63	64	65	65	67	67	66	67	68	68	66	64	61	60	60	56	52	49	45	45	46	46	47	48	59
November	49	46	46	46	45	46	45	46	46	48	49	46	45	45	46	47	47	46	45	45	45	47	42	42	41	40	38	34	37	38	--	44
December	38	39	39	38	36	34	34	35	35	33	33	32	32	33	33	33	33	34	34	35	33	33	33	34	33	34	34	34	34	33	32	34
January	33	33	33	33	32	32	33	34	35	38	40	41	41	35	34	35	35	35	36	40	37	33	32	32	32	32	32	32	32	33	33	34
February	32	32	32	32	33	33	34	34	33	34	35	34	33	34	32	32	33	34	33	34	34	33	33	34	33	33	34	34	--	--	--	33
March	35	35	35	36	38	40	40	40	41	40	42	40	43	44	43	44	44	44	42	41	40	40	41	44	49	50	47	49	51	54	55	43
April	58	59	55	51	49	50	51	53	52	51	49	50	50	50	51	51	52	55	59	61	62	60	59	53	54	54	55	54	54	55	--	54
May	50	51	51	55	62	64	61	62	65	68	69	63	58	56	60	63	64	61	62	63	60	61	60	59	60	62	61	60	62	64	66	61
June	65	64	64	63	65	69	67	68	69	70	66	64	64	65	66	65	65	65	68	68	67	66	66	68	71	75	76	77	77	75	--	68
July	73	74	71	73	70	69	71	73	73	74	73	71	71	72	74	77	80	80	80	80	78	76	76	75	76	78	80	80	79	80	81	75
August	81	82	82	80	79	75	72	73	75	76	77	77	76	75	76	78	79	80	80	78	76	76	74	74	75	76	76	75	75	76	78	77
September	78	76	74	72	67	68	70	73	74	74	75	75	73	72	69	69	69	69	68	68	68	67	65	62	63	64	65	66	66	65	--	69

1-6065. SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, W. VA.--Continued

Periodic determinations of suspended-sediment discharge and particle size, water year October 1961 to September 1962
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Jan. 7, 1962	0800		40	5300	130	1860	--	--	--	--	--	--	--	--	--			
Jan. 7	0800		40	5300	143	--	30	39	55	68	80	86	89	96	98			SBWC
Jan. 7	2025		42	4220	39	445	--	--	--	--	--	--	--	--	--			
Jan. 8	0835		39	3170	16	137	--	--	--	--	--	--	--	--	--			
Jan. 9	0945		35	1910	7	36	--	--	--	--	--	--	--	--	--			
Feb. 24	1945		42	5070	111	1520	--	--	--	--	--	--	--	--	--			
Feb. 25	1340		41	3420	17	157	--	--	--	--	--	--	--	--	--			
Feb. 26	2100		42	7440	209	4200	--	--	--	--	--	--	--	--	--			
Feb. 26	2100		42	7440	236	--	25	39	52	63	75	82	86	95	99			SBWC
Feb. 27	1100		46	7080	105	2010	--	--	--	--	--	--	--	--	--			
Feb. 28	0850		46	6310	50	854	--	--	--	--	--	--	--	--	--			
Mar. 1	0750		40	4320	25	292	--	--	--	--	--	--	--	--	--			

POTOMAC RIVER BASIN--Continued

1-6080. SOUTH FORK OF SOUTH BRANCH POTOMAC RIVER NEAR MOOREFIELD, W. VA.

LOCATION.--At gaging station, 0.2 mile downstream from Stony Creek, 6 miles upstream from mouth, and 3.5 miles south of Moorefield, Hardy County.
DRAINAGE AREA.--283 square miles.
RECORDS AVAILABLE.--Sediment records: March to April 1960, January to March 1962 (discontinued).

Periodic determinations of suspended-sediment discharge, January to March 1962
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Jan. 7, 1962	0945		42	2050	88	487												
Jan. 7	1935		42	1850	41	205												
Jan. 8	0955		40	1330	12	43												
Jan. 9	0825		35	817	6	13												
Feb. 24	1830		43	890	43	103												
Feb. 25	1445		39	798	10	22												
Feb. 26	2230		43	2230	142	855												
Feb. 27	1205		46	2290	54	334												
Feb. 28	0800		46	2130	31	178												
Mar. 1	0930		41	1380	14	52												

1-6085. SOUTH BRANCH POTOMAC RIVER NEAR SPRINGFIELD, W. VA.

LOCATION.--At gaging station at highway bridge on Points to Springfield route, 2 miles east of Springfield, Hampshire County, and 13 miles upstream from confluence with North Branch.
DRAINAGE AREA.--1,471 square miles.
RECORDS AVAILABLE.--Sediment records: October 1959 to March 1962, periodic (discontinued).

Periodic determinations of suspended-sediment discharge, January to March 1962
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Jan. 7, 1962	1345		39	5200	94	1320											
Jan. 8	1415		40	5960	60	968											
Jan. 8	2020		37	5160	40	557											
Jan. 9	1335		33	3650	19	188											
Feb. 24	1645		42	5090	182	2500											
Feb. 25	0300		40	7900	388	8300											
Feb. 25	0940		41	7290	198	3920											
Feb. 25	2320		40	5400	125	1820											
Feb. 26	2355		42	11000	625	18600											
Feb. 27	1400		46	12300	286	9550											
Feb. 28	1345		47	12600	175	5970											
Mar. 1	1320		46	7840	68	1440											
Mar. 22	0145		44	20400	775	42800											
Mar. 22	1805		45	28000	529	40000											
Mar. 23	1315		45	12900	147	5130											

POTOMAC RIVER BASIN--Continued

1-6116. CACAPON RIVER AT GREAT CACAPON, W. VA.

LOCATION.--At the Potomac Edison hydroelectric plant, 4 miles downstream from gaging station, 2.5 miles upstream from mouth, and 1 mile south of Great Cacapon, Morgan County.
DRAINAGE AREA.--681 square miles above powerplant; 677 square miles above gaging station.
RECORDS AVAILABLE.--Water temperatures: October 1946 to September 1954, October 1958 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 78°F July 1, 2; minimum, freezing point from December to March.
EXTREMES, 1946-54, 1958-63.--Water temperatures: Maximum, 96°F July 23, 1952; minimum, freezing point on many days during winter months.

Temperatures °F of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	59	59	58	58	60	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
November	--	45	45	--	45	44	44	44	44	44	--	--	44	44	44	44	44	--	44	44	44	--	44	44	--	44	42	40	40	--	--	--
December	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32	32	32	32	32	32	--	32	--	32	32	32	32	32	32	--
January	--	--	--	--	--	--	32	32	32	32	32	32	--	34	33	32	32	32	32	--	32	32	32	32	32	32	--	32	32	32	32	--
February	32	32	--	32	32	32	32	32	32	--	32	32	32	32	32	32	--	--	--	--	--	--	--	--	32	32	32	32	--	--	--	--
March	32	32	--	32	32	32	32	32	32	--	34	35	36	38	39	40	--	42	42	42	42	43	45	--	46	46	48	50	51	52	--	40
April	54	54	54	54	54	54	--	54	54	53	53	52	50	--	50	52	52	53	55	58	--	60	59	56	55	54	54	--	56	56	--	54
May	56	56	56	57	--	60	60	60	60	62	64	--	62	60	60	60	60	60	--	62	62	62	62	62	62	--	62	63	63	64	64	61
June	64	--	66	66	63	63	63	63	--	64	66	66	66	67	68	--	68	68	70	70	70	71	--	71	72	74	74	76	76	--	--	68
July	78	78	76	76	76	76	--	76	76	76	76	76	76	--	76	76	76	76	76	76	--	76	76	76	76	76	76	--	76	76	76	76
August	76	76	76	--	76	76	76	76	76	76	--	75	74	72	72	72	72	--	72	72	72	72	72	72	--	72	72	72	72	71	71	73
September	--	70	70	70	70	68	68	--	--	--	--	--	--	--	--	68	68	68	68	67	66	--	66	64	64	64	63	63	--	62	--	--

1-6130. POTOMAC RIVER AT HANCOCK, MD.

LOCATION.--Temperature recorder at gaging station on left bank, 0.2 mile downstream from Little Tonoloway Creek, 0.5 mile downstream from bridge on U.S. Highway 522 at Hancock, Washington County, and 1.1 miles upstream from Tonoloway Creek.
DRAINAGE AREA.--4,073 square miles.
RECORDS AVAILABLE.--Water temperatures: July 1952 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 89°F July 1, 19, 27; minimum, freezing point from December to March.
EXTREMES, 1952-63.--Water temperatures: Maximum, 93°F July 22, 1952; minimum, freezing point on many days during winter months.
REMARKS.--Records fair, probably because of friction in recorder.

Temperature °F of water, water year October 1962 to September 1963
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	66	67	65	63	67	68	65	64	65	67	67	69	69	68	69	69	69	65	62	62	60	60	57	54	50	47	44	47	51	48	47	19
Minimum	60	60	62	62	62	63	62	63	64	64	62	63	65	62	63	64	65	60	57	55	59	55	54	50	47	42	39	40	47	45	45	63
November																																
Maximum	45	45	45	44	43	44	43	43	43	46	47	47	47	46	45	45	46	46	45	44	44	44	44	43	43	43	41	40	39	38	--	23
Minimum	43	43	44	43	42	40	39	43	43	43	46	47	46	45	44	45	45	45	44	44	44	44	43	43	42	41	40	39	38	37	--	15
December																																
Maximum	38	38	38	38	38	38	37	35	35	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--
Minimum	37	37	36	37	37	37	35	35	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	21
January																																
Maximum	32	32	32	32	32	32	32	32	32	32	32	32	36	36	36	34	32	32	33	34	34	33	32	32	32	32	32	32	32	32	32	12
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	36	34	32	32	32	32	33	33	32	32	32	32	32	32	32	32	32	32	--
February																																
Maximum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	22
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	13
March																																
Maximum	32	32	32	32	32	35	37	37	37	39	39	39	39	42	42	42	43	45	45	45	42	42	42	43	46	49	50	51	52	52	54	13
Minimum	32	32	32	32	32	32	35	37	37	37	39	39	38	38	42	41	41	43	45	42	42	42	41	41	43	46	49	50	51	52	52	42
April																																
Maximum	54	56	59	59	57	55	55	56	55	53	52	53	53	55	56	57	57	61	64	67	65	64	63	59	57	57	57	58	58	59	--	29
Minimum	53	54	56	57	54	53	53	53	53	51	49	50	52	51	52	53	56	55	60	64	63	62	59	56	54	54	55	55	56	56	--	18
May																																
Maximum	59	55	57	62	64	67	69	69	70	74	74	70	68	66	68	70	68	66	68	68	67	66	65	65	64	66	65	64	66	70	71	--
Minimum	53	52	54	57	61	63	65	66	67	69	70	67	65	63	63	66	66	65	64	67	64	62	63	61	63	63	64	62	64	66	67	38
June																																
Maximum	73	71	69	68	67	68	69	70	73	76	76	75	71	70	72	72	73	75	75	75	75	76	77	80	82	84	87	87	87	87	--	28
Minimum	69	69	67	66	67	65	67	69	69	73	73	71	68	68	69	69	69	71	73	73	71	71	72	73	75	76	79	81	81	81	--	--
July																																
Maximum	89	88	85	82	80	80	82	82	81	78	77	82	83	80	80	83	87	88	89	87	84	86	84	86	86	88	89	88	85	88	87	61
Minimum	81	84	82	77	77	76	77	78	74	74	72	73	75	75	73	75	79	82	82	83	80	77	79	79	80	80	82	83	80	80	80	33
August																																
Maximum	88	86	82	86	86	84	80	84	93	86	84	82	78	77	78	80	81	82	77	79	81	85	83	80	79	79	79	77	78	80	81	--
Minimum	80	80	80	79	77	75	77	75	75	77	76	75	75	73	70	71	72	75	72	74	76	77	77	76	72	71	71	72	73	74	75	64
September																																
Maximum	78	79	80	79	76	72	74	75	78	79	78	79	77	72	69	70	72	74	76	75	74	71	68	66	66	67	68	69	70	69	--	33
Minimum	73	72	73	75	69	68	69	71	72	72	72	73	72	67	65	64	64	68	70	71	68	65	61	59	58	59	59	63	66	63	--	21

POTOMAC RIVER BASIN--Continued

1-6140. BACK CREEK NEAR JONES SPRINGS, W. VA.

LOCATION.--At gaging station at highway bridge, 1.3 miles southeast of Tomohawk, 4 miles northwest of Martinsburg, and 3.5 miles northeast of village of Jones Springs, Berkeley County.
DRAINAGE AREA.--243 square miles.
RECORDS AVAILABLE.--Sediment records: April 1960, January to March 1962 (discontinued).

Periodic determinations of suspended-sediment discharge and particle size, January to March 1962
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Jan. 6, 1962.....	2250		34	444	53	64											
Jan. 7.....	0410		35	867	103	242											
Jan. 7.....	1225		39	1100	171	508	67	78	85	90	96	97	98	99	100			BSWC
Jan. 8.....	1600		38	756	15	31											
Feb. 27.....	0935		42	2150	120	696											
Feb. 28.....	1110		43	2300	64	398											
Feb. 28.....	1930		43	1820	35	172											
Mar. 1.....	1720		42	980	18	48											
Mar. 22.....	0535		44	4300	333	3870											
Mar. 22.....	1440		45	3000	79	642											
Mar. 23.....	1015		44	1690	35	169											

POTOMAC RIVER BASIN--Continued

1-6165. OPEQUON CREEK NEAR MARTINSBURG, W. VA.

LOCATION.--At gaging station at bridge on State Highway 9, 3 miles southeast of Martinsburg, Berkeley County, 300 feet upstream from Evans Run, and 2.3 miles upstream from Tuscarora Creek.
DRAINAGE AREA.--272 square miles.
RECORDS AVAILABLE.--Sediment records: March 1959 to March 1962, periodic (discontinued).

Periodic determinations of suspended-sediment discharge, December 1961 to March 1962
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Dec. 19, 1961.....	1420		41	499	105	127											
Jan. 6, 1962.....	2125		34	732	203	401											
Jan. 7.....	0500		37	1090	437	1290											
Jan. 7.....	1330		39	1000	233	630											
Jan. 8.....	1650		40	473	36	46											
Feb. 27.....	1025		41	1390	430	1610											
Feb. 28.....	1035		43	1250	194	655											
Feb. 28.....	1855		45	1050	128	377											
Mar. 1.....	1745		42	632	53	91											

POTOMAC RIVER BASIN--Continued

1-6195. ANTIETAM CREEK NEAR SHARPSBURG, MD.

LOCATION.--Temperature recorder at gaging station on left bank, 400 feet downstream from Burnside Bridge, 1 mile southeast of Sharpsburg, Washington County, and 4 miles upstream from mouth.
DRAINAGE AREA.--281 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 83°F June 28 and July 1-3; minimum, freezing point on several days in December.
REMARKS.--No record of temperature Oct. 1-4, Jan. 11 to Feb. 20. Records poor Apr. 9 to May 27.

Temperature °F of water, water year October 1962 to September 1963
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	--	--	63	63	63	62	62	62	62	64	64	63	63	65	65	64	60	57	58	58	57	56	51	49	46	48	51	51	50	--
Minimum	--	--	--	--	63	63	61	61	62	62	60	61	63	62	62	63	64	60	57	55	56	57	56	51	49	46	45	45	48	50	49	31
November																																
Maximum	49	48	48	47	46	45	45	45	47	50	50	49	46	46	45	44	45	45	45	43	44	45	45	42	42	41	40	39	40	40	--	17
Minimum	48	47	47	46	45	45	44	44	45	47	49	46	46	45	44	44	44	45	43	43	43	44	42	42	41	40	39	39	39	39	--	--
December																																
Maximum	39	39	39	39	39	39	38	38	38	36	34	33	33	32	32	32	32	34	36	37	37	34	35	35	35	35	35	35	35	34	34	27
Minimum	39	39	39	39	39	38	38	38	36	34	33	32	32	32	32	32	32	32	34	36	34	33	33	35	34	35	35	35	34	34	34	15
January																																
Maximum	34	34	35	34	35	35	35	38	38	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4
Minimum	34	34	34	34	34	34	35	35	38	38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	4
February																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	38	38	35	36	37	37	36	36	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	37	35	35	35	36	36	34	35	--	--	--	--
March																																
Maximum	37	38	39	41	40	39	38	42	43	45	45	45	46	46	46	45	48	49	49	47	46	45	46	49	52	54	54	55	55	55	55	37
Minimum	36	37	38	39	38	37	37	38	42	43	45	45	45	46	45	45	45	48	47	46	45	45	45	46	49	52	54	54	54	55	55	20
April																																
Maximum	55	58	60	60	59	55	55	55	55	56	54	54	54	55	55	56	56	57	57	58	58	58	56	55	52	53	54	57	57	58	--	--
Minimum	55	55	58	59	55	54	54	55	55	54	53	54	54	54	55	55	56	56	57	57	57	56	54	52	51	52	53	54	55	56	--	55
May																																
Maximum	58	55	58	62	64	67	67	68	69	70	69	67	63	62	64	66	65	64	66	66	65	65	64	63	64	64	64	63	64	67	69	33
Minimum	53	53	55	58	62	64	66	67	68	69	67	63	61	61	62	63	64	63	64	65	62	61	62	60	61	63	62	62	63	64	66	21
June																																
Maximum	70	68	66	66	67	68	70	70	70	71	72	72	69	72	72	71	72	73	74	73	74	73	74	75	76	79	79	83	82	82	--	--
Minimum	66	66	65	65	66	67	68	69	69	70	71	69	68	69	71	70	69	70	71	72	72	70	69	70	72	73	75	79	80	82	--	41
July																																
Maximum	83	83	83	80	78	78	79	79	76	73	72	74	75	75	74	75	78	80	80	80	80	79	78	77	77	78	79	80	80	79	79	29
Minimum	80	82	80	77	75	74	75	76	73	70	70	71	72	74	72	73	75	78	80	80	79	78	77	76	76	77	78	79	79	79	78	--
August																																
Maximum	78	78	78	77	77	76	74	74	74	75	75	74	73	73	72	71	72	73	73	72	72	74	74	74	72	69	69	70	70	71	71	51
Minimum	78	78	77	77	76	74	74	74	74	74	74	73	73	72	70	70	70	72	72	72	70	72	74	72	68	66	66	68	69	70	71	29
September																																
Maximum	71	70	71	71	71	68	68	69	70	70	70	70	70	68	65	63	63	66	68	70	70	67	63	61	60	61	61	62	64	64	--	--
Minimum	70	68	69	71	68	67	67	68	68	69	68	69	68	65	63	63	62	63	65	67	66	62	59	57	56	57	59	61	62	63	--	54

1-6365. SHENANDOAH RIVER AT MILLVILLE, W. VA.

LOCATION.--At bridge on State Highway 9, 3 miles upstream from gaging station, 0.4 mile downstream from Cattail Run, 5 miles upstream from Harpers Ferry and mouth, and 1 mile upstream from Millville, Jefferson County.
DRAINAGE AREA.--3,040 square miles.
RECORDS AVAILABLE.--Sediment records: October 1961 to March 1962 (discontinued).
REMARKS.--Less than 1 percent of the drainage area is between bridge on Highway 9 and gage.

Periodic determinations of suspended-sediment discharge and particle size, October 1961 to March 1962
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 22, 1961	1025		58	615	14	23	--	--	--	--	--	--	--	--	--			
Oct. 23	1325		58	9310	404	1020	--	--	--	--	--	--	--	--	--			
Dec. 19	1535		41	5410	50	731	--	--	--	--	--	--	--	--	--			
Jan. 7, 1962	1735		38	4820	20	261	--	--	--	--	--	--	--	--	--			
Jan. 8	1115		39	11600	122	3820	--	--	--	--	--	--	--	--	--			
Jan. 8	2135		39	12500	194	6550	35	55	79	85	93	95	97	99	100			SBWC
Jan. 8	2135		39	12500	194	6550	5	12	31	56	89	93	95	99	100			SBN
Feb. 27	1040		44	7550	90	1840	--	--	--	--	--	--	--	--	--			
Feb. 28	0735		44	9910	168	4500	37	56	71	83	91	93	96	98	99			SBWC
Mar. 1	0100		44	11400	142	4380	--	--	--	--	--	--	--	--	--			
Mar. 1	1210		43	11000	122	3620	--	--	--	--	--	--	--	--	--			
Mar. 2	1205		42	8370	80	1810	--	--	--	--	--	--	--	--	--			
Mar. 22	0810		44	19400	154	8070	--	--	--	--	--	--	--	--	--			
Mar. 23	0855		45	29000	360	28200	--	--	--	--	--	--	--	--	--			
Mar. 23	2305		45	22400	222	13400	--	--	--	--	--	--	--	--	--			

POTOMAC RIVER BASIN--Continued

1-6385. POTOMAC RIVER AT POINT OF ROCKS, MD.

LOCATION.--At gaging station on left bank at downstream side of bridge on U.S. Highway 15 at Point of Rocks, Frederick County, 0.3 mile downstream from Catoctin Creek (Virginia), and 6 miles upstream from Monocacy River.
DRAINAGE AREA.--9,651 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1960 to September 1963.
Sediment records: October 1960 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 88°F July 27.
Sediment concentrations: Maximum daily, 808 ppm Mar. 6; minimum daily, 1 ppm Oct. 13-26.
Sediment loads: Maximum daily, 228,000 tons Mar. 21; minimum daily, 3 tons Oct. 19-23, 25, 26.
EXTREMES, 1960-63.--Water temperatures: Maximum, 88°F July 27, 1963; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,180 ppm Feb. 20, 1961; minimum daily, 1 ppm on many days in 1961-62.
Sediment loads: Maximum daily, 276,000 tons Feb. 20, 1961; minimum daily, 3 tons on several days in September and October 1962.
REMARKS.--Flow affected by ice Dec. 27, 28, 31, Jan. 1-14, 29-31, and Feb. 1-8, 17, 18.

Temperature °F of water, water year October 1962 to September 1963
(Once-daily measurements at approximately 0900 October to December 1962 and at 1800 February to September 1963)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	62	61	62	64	65	66	65	65	66	64	63	66	67	64	65	67	68	--	--	--	--	60	59	52	47	44	41	45	52	48	47	59
November	47	46	47	44	45	44	42	47	47	50	51	47	46	48	44	45	47	46	42	43	45	46	42	45	41	42	41	--	--	38	--	45
December	38	39	40	38	40	38	36	38	35	--	--	--	--	--	--	--	--	--	--	35	--	--	--	--	--	--	--	--	--	--	--	--
January	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
February	--	--	--	--	--	--	--	32	--	--	--	--	--	33	32	33	34	36	32	38	32	32	33	35	34	32	33	33	--	--	--	--
March	33	37	41	39	38	34	36	40	46	41	38	40	44	41	44	44	51	46	44	44	42	43	45	46	50	50	52	55	55	56	56	44
April	53	60	63	52	57	59	59	58	56	52	52	56	55	57	57	59	57	63	65	65	65	62	--	53	60	62	61	63	58	61	--	59
May	53	58	63	65	66	67	68	71	75	77	72	69	66	67	68	71	67	70	72	69	67	70	67	70	69	69	--	--	--	72	74	68
June	--	69	68	71	71	70	--	72	75	78	78	--	76	75	--	74	76	78	79	75	74	--	78	80	80	82	85	86	86	84	--	77
July	86	84	81	80	81	81	80	80	79	76	76	78	79	73	79	79	--	84	85	84	82	83	83	85	85	87	88	85	85	85	85	82
August	86	83	81	83	81	81	82	84	84	82	81	82	75	74	76	79	80	79	75	75	79	82	83	79	78	76	75	76	78	80	73	79
September	78	73	--	77	70	73	75	72	80	80	75	79	72	68	62	66	70	73	75	72	67	76	65	65	65	68	74	70	70	65	--	72

POTOMAC RIVER BASIN--Continued

1-6385. POTOMAC RIVER AT POINT OF ROCKS, MD.--Continued

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	1370	C 4	15	1450	C 2	8	4080	C 5	55
2	1510	C 4	16	1530	C 2	8	4020	C 5	54
3	1570	C 4	17	1860	C 2	10	3660	C 4	39
4	1510	C 4	16	2580	C 2	14	3200	C 4	35
5	1570	C 4	17	2480	C 2	13	2920	C 4	31
6	1680	C 4	18	2240	C 2	12	3260	C 4	35
7	1960	C 4	21	2080	C 2	11	3720	C 4	40
8	2060	C 4	22	1920	C 2	10	5050	18	246
9	2120	C 4	23	1870	C 2	10	4770	15	194
10	2120	C 4	23	2780	9	67	4350	7	82
11	2010	C 4	22	7640	41	S 1000	3850	7	A 75
12	1810	C 4	20	14300	63	S 2740	3030	7	A 55
13	1620	C 1	4	14300	71	S 3130	2120	6	A 34
14	1570	C 1	4	9610	62	S 1610	2290	6	A 36
15	1510	C 1	4	6780	56	1030	2440	5	A 32
16	1490	C 1	4	5400	50	729	2870	5	A 38
17	1450	C 1	4	4520	28	346	2740	4	A 30
18	1370	1	4	3920	21	223	2820	4	A 30
19	1270	1	3	4320	31	362	2790	3	A 22
20	1230	1	3	6290	18	306	2660	3	22
21	1190	1	3	9410	29	737	2760	5	A 37
22	1210	C 1	3	9400	28	711	2890	5	A 38
23	1270	C 1	3	9080	18	441	2760	5	A 36
24	1290	C 1	4	10300	25	6963	3720	5	A 50
25	1230	C 1	3	10500	24	6814	4020	5	A 54
26	1170	C 1	3	8720	15	353	3920	5	A 53
27	1130	C 2	6	6980	12	226	3400	5	A 46
28	1150	C 2	6	5680	11	169	3400	5	A 46
29	1130	C 2	6	4940	9	120	3500	5	A 47
30	1110	C 2	6	4350	8	95	3140	5	A 42
31	1390	C 2	8	--	--	--	2800	12	B 91
Total	46070	--	311	177230	--	28268	102950	--	1717
	JANUARY			FEBRUARY			MARCH		
1	2800	15	B 113	3800	7	B 72	3950	7	75
2	3000	15	B 122	4000	7	B 76	4470	10	S 140
3	3200	12	B 104	4200	6	B 68	5650	8	122
4	3500	10	B 94	4200	6	B 68	9120	22	542
5	3500	9	B 85	4500	5	B 61	18500	82	S 4350
6	3200	9	B 78	4500	5	A 61	71900	808	S 167000
7	3200	8	B 69	4500	4	A 49	96100	771	S 194000
8	3200	7	B 60	4500	4	A 49	69700	326	S 63700
9	3200	7	B 60	4420	4	A 48	41600	137	S 15600
10	3200	7	B 60	4290	4	A 46	29800	112	9100
11	3500	7	B 65	4050	4	A 44	23800	60	3860
12	6000	55	S 1300	4080	4	A 44	22400	44	2660
13	22000	95	S 7300	4180	4	45	33000	63	S 6350
14	40000	300	S 36000	3850	C 4	42	76100	269	S 56400
15	33600	100	S 9100	3920	C 4	42	73300	303	S 60600
16	22000	46	S 3190	4120	C 4	44	47000	164	S 21300
17	16800	22	S 1000	5000	C 4	54	35100	82	7770
18	13100	20	B 710	4500	C 4	49	36300	62	S 6120
19	10400	15	B 420	3950	C 6	64	41400	78	8720
20	9160	12	B 300	3980	C 6	64	53400	151	S 24600
21	8600	10	B 230	4390	C 6	71	116000	711	S 228000
22	8160	10	B 220	5330	C 6	86	82000	315	S 73500
23	7640	9	B 190	6300	C 6	102	44000	142	S 17400
24	7010	8	B 150	5680	C 6	92	30000	74	S 6080
25	4940	8	B 110	5050	C 6	82	24600	46	3060
26	4980	7	B 95	4520	C 6	73	20600	C 13	723
27	4390	7	B 85	4250	C 6	69	18900	C 13	663
28	3950	6	B 65	4080	C 6	66	18300	C 13	642
29	4000	10	B 108	--	--	--	17500	C 9	425
30	3800	8	B 82	--	--	--	15600	C 9	379
31	3800	8	B 82	--	--	--	14000	C 9	340
Total	269830	--	61147	124140	--	1731	1194090	--	984221

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.
C Composite period.

POTOMAC RIVER BASIN--Continued

1-6365. POTOMAC RIVER AT POINT OF ROCKS, MD.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL				MAY				JUNE			
	Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day
1	13000	C 4		140	5750	8		124	3160	12		102
2	12300	C 4		132	6000	C 12		194	3130	15		127
3	11800	C 4		127	6290	C 12		204	3730	18		181
4	11100	C 4		120	6180	C 12		200	5790	33		516
5	10100	C 4		109	5680	C 12		184	7770	50		1070
6	9360	C 7		177	5360	C 12		174	15900	75		3220
7	8800	C 7		166	5100	C 7		96	13500	49		1790
8	8320	C 7		157	4890	C 7		93	11400	48		1480
9	8050	C 7		152	4640	C 7		88	10300	43		1200
10	7790	C 7		147	4400	C 7		83	8480	38		870
11	7560	C 4		82	4230	C 7		80	7480	36		727
12	7290	C 4		79	3920	C 9		95	7140	31		598
13	6840	C 4		74	3660	C 9		89	9700	36		943
14	6400	C 2		35	3600	C 9		87	9810	28		742
15	6080	C 2		33	3600	C 9		87	7750	26	A	544
16	5750	C 2		31	3450	C 9		84	6260	46		777
17	5540	C 2		30	3820	C 12		124	5280	42		599
18	5460	C 2		29	4920	C 12		159	4580	27		334
19	5280	C 10		143	4500	C 12		146	4020	23		250
20	5250	C 10		142	4640	C 12		150	3510	24		227
21	5320	C 10		144	5280	15		214	3480	55		517
22	5430	C 10		147	5030	14		190	3300	54		481
23	5180	10	A	140	4440	C 15		180	2970	45		361
24	5070	13		178	4060	C 15		164	2810	6		46
25	5750	15		233	4230	C 15		171	2890	6		47
26	7560	20		408	3890	C 15		158	2760	6		45
27	6990	15		283	3570	13	A	125	2390	8		52
28	6360	6		103	3300	13	A	116	2220	8		48
29	5900	3		48	3240	13	A	114	2220	8		48
30	5750	3		47	3220	C 11		96	2340	11		69
31	--	--		--	3240	C 11		96	--	--		--
Total	221380	--		3836	138130	--		4165	176070	--		18011

Day	JULY			AUGUST			SEPTEMBER		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1	2540	17	117	1570	C 4	17	1260	C 3	10
2	2440	22	145	1440	C 4	16	1220	C 3	10
3	2490	27	182	1400	C 4	15	1140	C 3	9
4	2810	26	197	1380	C 4	15	1420	C 3	12
5	2920	22	173	1340	C 4	14	1420	C 3	12
6	2840	21	161	1300	C 3	11	1420	C 3	12
7	3330	28	252	1260	C 3	10	1400	C 3	11
8	2810	22	167	1220	C 3	10	1380	C 3	11
9	2440	18	119	1200	C 3	10	1500	C 3	12
10	2130	C 12	69	1160	C 3	9	1650	C 3	13
11	2020	C 12	65	1220	C 4	13	1690	C 3	14
12	1910	C 12	62	1260	C 4	14	1610	C 3	13
13	1800	C 12	58	1360	C 4	14	1460	C 3	12
14	1760	C 8	38	1300	C 4	14	1300	C 3	11
15	1740	C 8	38	1240	C 4	13	1300	C 3	11
16	1530	C 8	33	1180	C 4	13	1280	C 3	10
17	1610	10	43	1120	C 4	12	1120	C 3	9
18	1630	13	57	1060	C 4	11	1100	C 3	9
19	1630	C 14	62	1100	C 3	9	1060	C 3	9
20	1630	C 14	62	1550	C 3	13	1000	C 3	8
21	1630	C 14	62	1460	C 3	12	1060	C 3	9
22	1630	C 14	62	1420	C 3	12	1000	C 3	8
23	1550	C 14	59	1300	C 3	10	960	C 3	8
24	1400	C 7	26	1340	C 3	11	980	C 4	11
25	1420	C 7	27	1280	C 3	10	920	C 4	10
26	1420	C 7	27	1630	C 6	26	940	C 4	10
27	1380	C 7	26	1420	C 6	23	960	C 4	10
28	1360	C 7	26	1420	C 4	15	880	C 4	10
29	1320	C 3	11	1340	C 4	14	1240	C 4	13
30	1260	C 3	10	1260	C 4	14	1240	C 4	13
31	1530	C 3	12	1300	C 4	14	--	--	--
Total	59910	--	2448	40790	--	414	36910	--	320

Total discharge for year (cfs-days)..... 2587500
Total load for year (tons)..... 1107089

A Computed from partly estimated-concentration graph.
C Composite period.

POTOMAC RIVER BASIN--Continued

1-6385. POTOMAC RIVER AT POINT OF ROCKS, MD.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment											Method of analysis
							Percent finer than size indicated, in millimeters											
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Mar. 21, 1963.....	1750		42	124600	766		25	38	54	73	86	93	95	98	100	100		BSWC
Mar. 21.....	1750		42	124600	1050		10	19	39	55	77	92	97	99				BN

POTOMAC RIVER BASIN--Continued

1-6430. MONOCACY RIVER AT JUG BRIDGE, NEAR FREDERICK, MD.

LOCATION.--At Riech's Ford Bridge, 1 mile downstream from U.S. Highway 40, 1.2 miles downstream from gaging station, and 2 miles southeast of Frederick, Frederick County.
DRAINAGE AREA.--817 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1960 to September 1963.
Sediment records: October 1960 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 85°F July 26, 27; mimimum, freezing point on many days in December, January, and February.
Sediment concentrations: Maximum daily, 1,100 ppm Mar. 4; minimum daily, 1 ppm on several days during year.
Sediment loads: Maximum daily, 20,000 tons Mar. 7; minimum daily, less than 0.50 ton on several days during year.
EXTREMES, 1960-63.--Water temperatures: Maximum, 85°F July 26, 27, 1963; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,100 ppm Mar. 4, 1963; minimum daily, 1 ppm on many days in 1960-63.
Sediment loads: Maximum daily, 20,000 tons Mar. 7, 1963; minimum daily, less than 0.50 ton on many days in 1960-63.
REMARKS.--Flow affected by ice Dec. 10-18, 21-31, Jan. 1-6, 15-19, 22, 23, and Feb. 14, 15. No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff.

Temperature °F of water, water year October 1962 to September 1963
(Once-daily measurements at approximately 2100)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	62	62	65	62	62	64	64	64	64	--	65	68	64	66	66	69	66	58	58	61	--	56	54	50	48	44	39	51	48	47	42	58
November	47	46	43	45	43	42	42	44	48	49	48	45	45	43	43	45	46	43	40	39	43	41	43	43	42	38	37	40	39	37	--	43
December	42	39	39	40	42	38	35	35	35	32	32	32	32	32	32	32	32	33	33	32	32	33	34	32	32	32	33	32	32	32	--	34
January	32	32	33	34	32	32	36	35	34	35	34	34	32	32	32	32	33	34	34	36	32	32	32	--	--	32	32	32	32	33	32	33
February	32	33	32	33	32	34	34	32	32	35	33	32	32	33	32	32	32	33	33	35	32	--	--	34	35	32	32	34	--	--	--	33
March	--	34	34	36	34	34	36	36	37	40	36	38	40	42	42	43	48	49	44	40	43	42	44	50	54	53	52	55	56	56	57	44
April	53	59	63	56	52	53	55	56	52	49	52	54	54	56	55	58	59	--	--	--	66	61	59	51	59	58	61	64	58	62	--	57
May	52	57	62	65	--	69	69	72	75	72	72	67	62	64	61	69	--	66	69	69	65	67	65	64	66	65	65	64	67	69	67	66
June	72	--	64	66	69	72	74	68	72	72	70	67	72	71	74	69	73	75	75	74	71	72	75	74	78	82	84	84	84	79	--	74
July	80	84	78	74	75	79	82	78	74	76	73	74	76	69	76	76	83	84	80	82	79	79	80	80	83	85	85	82	75	83	--	79
August	--	--	77	84	75	78	77	77	78	81	78	78	75	70	75	77	79	80	75	74	76	81	81	76	76	75	79	76	72	78	74	77
September	69	74	76	72	--	69	76	71	74	73	72	--	68	65	62	62	67	70	71	71	64	67	61	61	66	63	66	66	65	61	--	68

POTOMAC RIVER BASIN--Continued

1-6430. MONOCACY RIVER AT JUG BRIDGE, NEAR FREDERICK, MD.--Continued

Suspended sediment, water year October 1962 to September 1963
(Where no concentrations are reported, loads are estimated)

Day	OCTOBER				NOVEMBER				DECEMBER			
	Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day
1..	137	C 4		1	290	7		5	263	C 2		1
2..	108	C 4		1	270	4		3	247	C 2		1
3..	100	C 4		1	222	5		3	233	3		2
4..	128	14		5	364	13		13	222	8		5
5..	986	234	S	1070	699	55		104	216	6		3
6..	694	150	S	327	495	25		33	584	31	S	84
7..	278	48		36	378	54		55	2470	179	S	1270
8..	183	26		13	263	22		16	1060	56		160
9..	142	20		8	222	8		5	770	23		48
10..	126	20		7	1720	321	S	2930	550	12		18
11..	118	15		5	2540	407	S	3820	350	9		9
12..	137	25		9	761	80		164	300	6	A	5
13..	118	10		3	475	32		41	250	6	A	4
14..	105	7		2	374	16		16	250	5	A	3
15..	100	C 2		1	307	C 4		3	220	5	A	3
16..	100	C 2		1	263	C 4		3	220	4	A	2
17..	105	C 2		1	247	C 4		3	240	4	A	3
18..	105	C 2		1	407	21	S	31	250	C 3		2
19..	100	C 2		1	2010	184	S	1200	288	C 3		2
20..	100	C 2		1	1030	58	S	170	302	C 4		3
21..	100	C 2		1	693	18		34	230	C 4		2
22..	102	C 2		1	1530	57	S	273	200	C 4		2
23..	100	C 2		1	1590	59	S	277	280	C 4		3
24..	100	C 2		1	748	20		40	250	C 4		3
25..	98	C 2		1	549	C 7		10	230	C 3		2
26..	100	C 1		T	440	C 7		8	220	C 3		2
27..	102	C 1		T	387	C 7		7	200	C 3		2
28..	100	C 1		T	338	C 4		4	180	C 3		1
29..	102	C 3		1	307	C 4		3	150	C 3		1
30..	112	C 3		1	282	C 4		3	140	C 3		1
31..	186	C 3		1	--	--		--	130	3	A	1
Total	5172	--		1502	20201	--		9277	11495	--		1648
	JANUARY				FEBRUARY				MARCH			
1..	150	C 1		T	250	C 6		4	400	--		8
2..	170	C 1		T	250	C 6		4	1000	24	S	65
3..	200	C 1		1	350	C 6		6	1500	500	S	2025
4..	210	C 1		1	450	C 6		7	3500	1100	S	10400
5..	220	C 1		1	350	C 6		6	7000	750	S	13000
6..	220	C 25		15	350	13	A	13	8000	650	S	16000
7..	220	C 25		15	700	42		79	6000	700	S	20000
8..	220	C 25		15	600	36		60	4500	260		3300
9..	220	C 25		15	400	38		40	3500	140		1400
10..	226	C 25		16	300	16	A	13	3000	130	S	900
11..	266	26		19	400	120	S	280	2500	130	S	950
12..	829	141	S	316	1120	440	S	340	3500	65	S	280
13..	3450	304	S	2960	770	80		166	3500	260	S	3100
14..	2690	74	S	567	475	40		51	3000	73	S	591
15..	1400	32	S	125	350	16		15	2450	41		271
16..	930	C 12		30	300	--		8	1980	23		123
17..	675	C 12		22	250	--		7	3410	106	S	1200
18..	575	C 12		19	400	15		16	3180	123	S	1130
19..	560	C 12		18	500	100		135	2080	42	S	160
20..	803	27	S	59	800	34		73	5210	462	S	6950
21..	1930	96	S	507	1500	100		405	3320	184	S	1850
22..	980	32	S	89	800	--		220	2050	31		172
23..	630	13		22	500	--		14	1590	22		94
24..	400	--		10	400	C 8		9	1350	C 4		15
25..	350	--		8	300	C 8		6	1200	C 4		13
26..	300	C 8		6	250	C 8		5	1090	C 4		12
27..	250	C 8		5	200	C 8		4	1460	C 4		16
28..	250	C 8		5	200	C 8		4	1400	C 4		15
29..	250	C 8		5	--	--		--	1010	C 4		11
30..	250	C 8		5	--	--		--	880	C 4		10
31..	250	C 8		5	--	--		--	832	C 4		9
Total	20074	--		4881	13515	--		1990	85392	--		84070

S Computed by subdividing day.
T Less than 0.50 ton.
A Computed from partly estimated-concentration graph.
C Composite period.

POTOMAC RIVER BASIN--Continued

1-6430. MONOCACY RIVER AT JUG BRIDGE, NEAR FREDERICK, MD.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued
(Where no concentrations are reported, loads are estimated)

Day	APRIL				MAY				JUNE			
	Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day
1..	804	C 4		9	500	15	A	20	200	32		18
2..	874	C 4		9	400	16	A	17	180	--		40
3..	802	C 4		9	350	11	A	10	300	750	S	1500
4..	710	C 4		8	320	14	A	12	1500	180	S	700
5..	620	C 4		6	300	16	A	13	1090	84		247
6..	575	C 3		5	280	15	A	11	814	48		105
7..	560	C 3		5	260	11	A	8	640	34		59
8..	545	C 3		4	240	C 17		11	2420	308	S	3290
9..	555	C 3		4	220	C 17		10	1660	284	S	1400
10..	580	C 3		5	200	C 17		9	926	84		210
11..	520	C 3		4	200	C 17		9	809	C 54		118
12..	465	C 3		4	220	C 17		10	726	C 54		106
13..	440	C 3		3	200	C 10		5	555	C 54		81
14..	415	C 3		3	180	C 10		5	465	C 54		62
15..	395	C 3		3	180	C 10		5	435	C 54		58
16..	378	C 3		3	180	C 10		5	405	C 16		16
17..	365	12		11	180	--		5	324	C 16		13
18..	380	20	A	20	900	32	S	40	274	C 16		11
19..	385	30	A	30	600	50	S	140	246	C 16		10
20..	356	24	A	22	400	16	A	17	223	C 10		6
21..	320	19		16	350	12	A	11	220	C 10		6
22..	302	C 9		7	350	C 9		9	209	C 10		6
23..	333	C 9		8	300	C 9		7	195	C 10		5
24..	342	C 3		3	250	C 9		6	177	C 10		5
25..	315	C 3		3	220	C 9		5	160	C 3		1
26..	284	C 3		2	200	C 9		5	155	C 3		1
27..	266	C 3		2	200	C 8		4	150	C 3		1
28..	254	C 3		2	200	C 8		4	145	C 3		1
29..	242	C 3		2	200	C 8		5	334	12	S	13
30..	310	C 3		3	350	220		200	540	37		54
31..	--	--		--	250	110		75	--	--		--
Total	13691	--		215	9180	--		693	16477	--		8143

Day	JULY				AUGUST				SEPTEMBER			
1..	455	58	S	71	80	C 5		1	74	C 5		1
2..	324	43		38	72	C 5		1	63	C 5		1
3..	234	C 7		4	74	C 5		1	62	C 5		1
4..	238	C 7		4	84	C 5		1	72	C 5		1
5..	174	C 7		3	70	9		2	74	C 2		T
6..	152	C 7		3	63	9		2	72	C 2		T
7..	138	C 7		3	62	4		1	62	C 2		T
8..	135	C 1		T	72	C 5		1	60	C 2		T
9..	132	C 1		T	63	C 5		1	60	C 2		T
10..	128	C 1		T	62	C 5		1	56	C 2		T
11..	130	C 1		T	58	4		1	53	C 7		1
12..	128	C 1		T	55	C 6		1	46	C 7		1
13..	130	C 10		4	74	C 6		1	37	C 7		1
14..	190	C 10		51	86	C 6		1	35	C 7		1
15..	262	C 10		7	70	C 6		1	34	C 6		1
16..	254	C 5		4	76	C 6		1	34	C 6		1
17..	223	C 5		3	63	C 3		1	38	C 6		1
18..	171	C 5		2	60	C 3		1	41	C 6		1
19..	155	5		2	69	12	S	10	41	C 6		1
20..	155	C 2		1	170	81	S	43	41	C 6		1
21..	145	C 2		1	118	60	A	19	40	C 5		1
22..	140	C 2		1	112	40	A	13	38	C 5		1
23..	135	C 2		1	115	15	A	5	38	C 5		1
24..	135	C 9		3	118	8	A	3	40	C 5		1
25..	128	C 9		3	95	5	A	1	40	C 5		1
26..	118	C 9		3	74	5	A	1	42	C 6		1
27..	110	C 9		3	65	C 8		1	40	C 6		1
28..	197	44	S	58	70	C 8		2	40	C 6		1
29..	264	114	S	87	80	C 8		2	189	67	S	44
30..	128	40	S	14	82	C 8		2	236	54	S	39
31..	95	14		4	72	C 8		2	--	--		--
Total	5503	--		378	2484	--		124	1798	--		105

Total discharge for year (cfs-days)..... 204982
Total load for year (tons)..... 113026

S Computed by subdividing day.
T Less than 0.50 ton.
A Computed from partly estimated-concentration graph.
C Composite period.

POTOMAC RIVER BASIN--Continued

1-6430. MONOCACY RIVER AT JUG BRIDGE, NEAR FREDERICK, MD.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 6, 1962.....	0825		59	832	169		34	49	76	88	96	98	98	99	100	100		BSW
Nov. 11.....	0850		49	2580	394		26	50	72	89	96	98	99	99	100	100		BSW
Nov. 19.....	2130		40	1880	131		36	58	82	89	96	98	98	99	100	100		BSW
Nov. 22.....	2105		41	2370	78		12	34	57	78	94	98	99	100	100	100		BSW
Mar. 20, 1963.....	1855		40	6710	689		25	40	57	70	83	89	91	92	94	--		BSW

1-6452. WATTS BRANCH AT ROCKVILLE, MD.

LOCATION.--Temperature recorder at gaging station on left bank, 0.2 mile south of State Highway 28, and 1.3 miles west post office in Rockville, Montgomery County.
DRAINAGE AREA.--3.70 square miles.
RECORDS AVAILABLE.--Water temperatures: September 1957 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 82°F July 27 and Aug. 4; minimum, freezing point Dec. 29, 30.
EXTREMES, 1957-63.--Water temperatures: Maximum, 88°F June 29, 30, 1959; minimum, freezing point on many days during winter months.

Temperature °F of water, water year October 1962 to September 1963
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	64	65	59	63	66	66	65	65	63	65	67	69	67	65	65	69	66	62	58	60	59	60	59	54	47	47	49	53	56	48	48	28
Minimum	51	53	53	58	59	56	55	57	58	56	54	55	57	54	58	60	57	52	49	49	53	50	50	46	43	41	39	40	48	46	47	16
November																																
Maximum	52	49	46	48	46	47	48	51	52	54	54	49	47	48	48	49	50	48	45	46	47	50	45	46	44	43	44	45	46	46	--	51
Minimum	44	42	44	42	42	40	38	43	46	50	47	43	44	43	41	42	48	44	41	43	44	43	41	42	40	38	38	40	39	39	--	22
December																																
Maximum	46	46	46	45	46	44	40	41	39	36	35	35	34	34	34	35	36	38	36	38	35	35	36	35	34	38	37	36	33	34	34	13
Minimum	38	39	39	40	40	38	37	37	35	34	34	34	34	34	34	34	34	34	34	35	34	34	33	33	33	34	34	33	32	32	33	--
January																																
Maximum	34	33	33	34	34	35	36	35	37	38	37	37	37	36	36	36	37	39	38	41	40	35	37	34	34	34	34	34	34	33	35	22
Minimum	33	33	33	33	33	33	33	34	33	33	36	34	34	33	33	33	33	36	37	37	33	33	33	33	33	33	33	33	33	33	33	13
February																																
Maximum	34	34	35	34	37	37	37	37	34	39	39	37	37	34	35	34	34	37	34	37	37	34	35	34	36	35	35	36	--	--	--	--
Minimum	33	34	33	33	33	33	34	33	33	33	37	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	--	--	--	24
March																																
Maximum	36	39	45	42	40	41	45	47	44	48	40	37	46	46	49	45	55	52	44	51	46	50	51	56	59	57	58	60	60	61	57	22
Minimum	35	35	33	36	36	34	36	37	37	39	34	34	37	39	36	37	40	44	40	40	40	39	38	39	43	46	46	44	46	48	50	--
April																																
Maximum	51	64	65	64	56	58	59	59	53	54	57	59	57	61	61	61	56	67	70	68	66	61	62	55	62	59	61	64	54	60	--	60
Minimum	49	49	52	48	44	44	47	45	48	43	43	44	46	46	45	45	51	52	55	57	52	55	52	48	47	47	46	47	47	52	--	24
May																																
Maximum	52	59	64	67	67	65	66	67	69	72	64	62	60	61	65	63	59	64	67	65	64	64	61	62	63	62	60	58	61	66	65	22
Minimum	46	44	45	49	52	55	52	53	55	58	54	50	48	51	52	53	53	56	53	55	57	54	52	50	50	54	54	55	55	56	55	--
June																																
Maximum	65	60	61	69	70	69	70	63	71	78	71	66	68	70	69	64	70	72	72	71	69	69	72	74	76	77	78	77	79	78	--	41
Minimum	55	57	58	58	59	59	61	60	59	63	64	59	58	60	60	57	56	58	60	61	61	57	57	59	61	63	64	67	68	68	--	22
July																																
Maximum	80	79	77	74	74	75	76	75	72	70	72	72	73	67	73	76	79	81	81	80	77	75	75	77	77	80	82	79	79	81	77	--
Minimum	68	68	67	62	61	61	63	66	61	60	62	62	63	63	61	64	66	69	70	71	68	67	67	66	67	67	69	72	70	71	68	46
August																																
Maximum	78	79	73	82	78	77	75	78	78	81	77	78	74	72	73	73	75	77	69	72	71	75	75	71	72	69	71	71	68	75	74	31
Minimum	69	68	68	69	66	64	67	67	66	69	66	64	67	65	61	62	64	67	64	66	66	66	67	66	62	60	61	62	64	65	65	--
September																																
Maximum	72	72	73	71	67	68	70	70	72	73	69	72	68	61	58	58	63	65	69	70	67	64	61	59	59	62	65	64	63	62	--	55
Minimum	62	60	65	67	62	60	60	61	62	63	62	64	61	57	56	57	57	61	60	60	60	56	53	50	49	51	54	56	60	55	--	27

WEST FORK OF NORTHWEST BRANCH ANACOSTIA RIVER AT LAYHILL, MD.

LOCATION.--At staff gage on bridge on county road, 0.4 mile west of Layhill, Montgomery County, and 1 mile upstream from Northwest Branch Anacostia River tributary.
DRAINAGE AREA.--1.70 square miles.
RECORDS AVAILABLE.--Sediment records: October 1962 to September 1963 (Periodic).

Periodic determinations of suspended-sediment discharge, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Nov. 21, 1962				18	120	5.8												
Nov. 21				20	114	6.2												
Nov. 22				23	57	3.5												
Nov. 22				14	19	.7												
Feb. 12, 1963				10	44	1.2												
Feb. 20				18	293	14												
Feb. 20				13	161	5.7												
Feb. 20				12	159	5.2												
Feb. 20				9.5	85	2.2												
Mar. 6				49	896	119												
Mar. 6				30	235	19												
Mar. 6				26	165	12												
Mar. 6				19	107	5.5												
Mar. 6				17	93	4.3												
Mar. 12				5.2	322	4.6												
Mar. 12				26	392	28												
Mar. 12				34	405	37												
Mar. 12				35	262	25												
Mar. 12				32	219	19												
Mar. 12				20	90	4.9												
Mar. 19				5.5	70	1.1												
Mar. 19				6.8	52	1.1												
Mar. 19				16	82	3.5												
Mar. 20				16	47	1.9												
June 2				.2	41	T												
June 2				.5	47	.1												
June 2				.7	52	.1												
June 3				1.7	89	.4												
June 3				12	322	10												
June 3				24	334	22												

T Less than 0.05 ton.

POTOMAC RIVER BASIN--Continued

WEST FORK OF NORTHWEST BRANCH ANACOSTIA RIVER AT LAYHILL, MD.--Continued

Periodic determinations of suspended-sediment discharge, water year October 1962 to September 1963--Continued
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
June 3, 1963.....				45	573	70											
June 3.....				47	499	63											
June 3.....				44	369	44											
June 3.....				42	229	26											
June 3.....				46	171	21											
June 3.....				45	183	22											
Aug. 13.....				1.9	363	1.9											
Aug. 13.....				14	257	9.7											
Aug. 13.....				1.0	103	.3											
Aug. 19.....				4.9	190	2.6											
Aug. 19.....				.7	129	.3											
Aug. 20.....				39	481	51											
Aug. 20.....				68	315	58											
Aug. 20.....				39	133	14											
Aug. 21.....				8.5	31	.7											
Sept. 29.....				5.2	201	2.9											
Sept. 29.....				11	197	5.9											
Sept. 29.....				16	83	3.6											
Sept. 29.....				14	53	2.0											
Sept. 29.....				4.0	39	.4											

NORTHWEST BRANCH ANACOSTIA RIVER TRIBUTARY AT LUTES, MD.

LOCATION.--At staff gage at county road crossing at Lutes, Montgomery County, 0.2 mile upstream from mouth, and 1 mile downstream from West Fork of Northwest Branch Anacostia River at Layhill.
DRAINAGE AREA.--0.47 square mile.
RECORDS AVAILABLE.--Sediment records: October 1962 to September 1963 (Periodic).

1-6495-2

Periodic determinations of suspended-sediment discharge, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Mar. 19, 1963.....				4.2	3030	34												
Mar. 19.....				3.4	5260	48												
Mar. 20.....				3.6	4290	42												
Mar. 20.....				3.4	2180	20												
June 2.....				4.8	4170	54												
June 2.....				6.4	5580	96												
June 2.....				3.6	2180	21												
June 2.....				2.8	1190	9												
June 3.....				6.7	5770	104												
June 3.....				10	9490	256												
June 3.....				13	7250	254												
June 3.....				10	4560	123												
June 3.....				12	6260	203												
June 3.....				17	10600	487												
June 3.....				21	9270	526												
June 3.....				37	18900	1890												
June 3.....				21	15200	862												
June 3.....				10	14900	402												
June 3.....				7.9	4050	86												
June 3.....				8.5	10100	232												
June 3.....				12	10500	340												
June 3.....				17	8110	372												
June 3.....				14	5110	193												
June 3.....				10	4360	118												
June 3.....				11	5380	160												
Aug. 13.....				16	10300	447												
Aug. 13.....				12	7190	234												
Aug. 13.....				10	25500	694												
Aug. 13.....				23	13300	829												
Aug. 13.....				19	19900	25												
Aug. 13.....				4.0	1030	11												
Aug. 19.....				39	24000	2532												
Aug. 19.....				8.9	9250	224												

POTOMAC RIVER BASIN--Continued

1-6505. NORTHWEST BRANCB ANACOSTIA RIVER NRAR COLESVILLE, MD.

LOCATION.--At gaging station, 400 feet upstream from bridge on State Highway 183, 1.5 miles southwest of Colesville, Montgomery County, 3 miles upstream from Burnt Mills, and 10 miles upstream from Sligo Branch.
DRAINAGE AREA.--21.3 square miles.
RECORDS AVAILABLE.--Sediment records: October 1962 to September 1963.
EXTREMES, 1962-63.--Sediment concentrations: Maximum daily, 3,950 ppm Aug. 20; minimum daily, not determined.
Sediment loads: Maximum daily, 3,810 tons Aug. 20; minimum daily, less than 0.50 ton on many days during year.
REMARKS.--Flow affected by ice Dec. 11-16, 25, 29-31, Jan. 1, 15-17, 22-31, Feb. 8, 9, 13, 14, 16, 17, 21-27, and Mar. 3.

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day	Mean discharge (cfs)	Suspended sediment: Mean concentration (ppm)	Suspended sediment: Tons per day
1	3.4	--	T	4.9	3	T	7.9	--	E 0.1
2	3.2	--	T	4.6	3	T	7.8	--	E .1
3	3.4	--	T	12	25	S 1.2	7.9	--	E .1
4	21	276	S 34	10	34	S 1.1	7.8	--	E .1
5	11	89	S 3.7	7.5	11	.2	7.7	--	E .1
6	5.2	--	E .1	7.2	--	E .2	45	--	E 8.7
7	4.2	--	E .1	5.6	--	E .1	22	--	E 1.1
8	4.1	--	E .1	5.4	--	E .1	14	--	E .5
9	4.2	--	T	8.5	212	S 19	12	--	E .3
10	4.0	--	T	111	729	S 362	9.5	--	E .2
11	3.9	--	T	15	16	.6	8.0	--	E .3
12	3.9	--	T	9.5	--	E .4	7.0	--	E .2
13	4.1	--	T	9.0	--	E .2	7.0	--	E .2
14	3.7	--	T	9.0	--	E .2	7.0	--	E .1
15	3.6	--	T	7.5	--	E .2	7.0	--	E .1
16	3.8	--	T	6.7	--	E .1	8.0	--	E .1
17	4.0	--	T	6.4	--	E .1	8.4	--	E .1
18	3.9	--	T	24	155	S 20	8.2	--	E .1
19	3.9	--	T	19	48	S 3.3	8.1	--	E .1
20	4.0	--	T	11	--	E .3	8.2	--	E .1
21	4.3	--	T	28	335	S 67	7.0	13	.2
22	4.3	--	T	112	398	S 177	10	--	E .3
23	4.1	--	T	19	--	E .8	8.5	--	E .2
24	3.9	--	T	13	--	E .4	8.0	--	E .2
25	3.9	--	T	11	--	E .3	7.0	--	E .1
26	4.1	--	T	9.6	--	E .2	8.6	--	E .1
27	4.3	--	T	9.1	--	E .1	8.3	2	T
28	4.4	--	T	8.8	--	E .1	7.6	3	.1
29	4.4	--	T	9.2	--	E .2	7.0	--	E .1
30	4.5	--	T	8.2	--	E .2	7.0	--	E .1
31	5.1	--	.1	--	--	--	7.0	--	E .1
Total	149.8	--	38.1	521.7	--	655.6	304.5	--	14.2

E Estimated.
S Computed by subdividing day.
T Less than 0.05 ton.

POTOMAC RIVER BASIN--Continued

1-6505. NORTHWEST BRANCH ANACOSTIA RIVER NEAR COLESVILLE, MD.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	JANUARY				FEBRUARY				MARCH			
	Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment			Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day		Mean concentration (ppm)		Tons per day
1	7.0	--	E	0.1	9.3	7		0.2	9.8	--	E	0.2
2	8.6	--	E	.2	10	--	E	.3	15	--	E	.8
3	8.8	--	E	.2	18	75	S	3.6	14	--	E	.3
4	8.8	9		.2	11	--	E	.3	14	--	E	1.1
5	8.4	--	E	.2	24	--	E	.1	72	602	S	196
6	8.6	--	E	.1	27	--	E	.1	253	2012	S	1880
7	8.7	--	E	.1	15	--	E	.4	38	145	S	19
8	9.0	--	E	.1	10	11		.3	23	--	E	1.7
9	8.9	--	E	.1	10	--	E	.3	19	--	E	.8
10	10	--	E	.3	11	--	E	.2	19	--	E	.6
11	19	58		3.0	15	140	S	7.5	19	--	E	1.0
12	107	686	S	226	100	1030	S	254	184	1150	S	650
13	83	178	S	43	25	35		2.4	58	75	S	14
14	30	35		2.8	20	--	E	1.1	32	30		2.6
15	15	--	E	1.0	15	8		.3	23	16		1.0
16	11	--	E	.7	10	--	E	.4	27	20		1.5
17	11	--	E	.4	10	--	E	.3	79	329	S	93
18	13	12		.4	11	--	E	.2	31	20		1.7
19	14	17	S	.6	13	--	E	.7	47	244	S	52
20	46	256	S	30	93	1540	S	743	73	134	S	34
21	29	65		5.1	30	148	S	17	30	--	E	1.6
22	15	--	E	1.2	12	65	S	3.6	22	12		.7
23	12	--	E	.3	9	--	E	1.0	19	--	E	.5
24	10	--	E	.3	9	--	E	.5	19	--	E	.4
25	10	--	E	.2	9	--	E	.4	19	--	E	.4
26	9	--	E	.2	9	--	E	.3	20	46	S	3.0
27	9	--	E	.2	9	--	E	.2	30	85	S	8.0
28	9	--	E	.2	9.6	--	E	.2	19	--	E	.4
29	9	--	E	.2	--	--		--	17	7		.3
30	9	--	E	.2	--	--		--	16	--	E	.3
31	9	--	E	.2	--	--		--	16	--	E	.3
Total	565.8	--		317.8	553.9	--		1038.9	1276.8	--		2967.2
	APRIL				MAY				JUNE			
1	16	--	E	0.3	14	--	E	0.5	6.6	--	E	0.4
2	18	--	E	.3	11	--	E	.3	19	120		6.2
3	16	--	E	.3	10	11		.3	180	2270	S	1450
4	14	--	E	.2	9.3	--	E	.3	45	140		17
5	12	--	E	.2	9.0	--	E	.3	192	1800	A	3700
6	13	--	E	.2	9.6	--	E	.3	95	1500	A	1100
7	13	--	E	.2	8.8	--	E	.3	26	270	S	19
8	12	--	E	.2	8.2	--	E	.2	18	--	E	3.6
9	13	--	E	.2	8.1	--	E	.2	15	--	E	1.8
10	12	--	E	.2	8.0	13		.3	12	--	E	1.2
11	12	--	E	.2	7.5	--	E	.2	11	--	E	1.0
12	11	5		.1	7.4	--	E	.2	9.5	--	E	.7
13	11	--	E	.1	7.4	--	E	.2	9.0	--	E	.5
14	11	--	E	.1	8.3	--	E	.3	9.0	18		.4
15	11	--	E	.1	7.7	--	E	.2	10	--	E	.5
16	11	--	E	.1	7.2	--	E	.2	8.0	--	E	.3
17	11	--	E	.2	8.1	22	S	.6	7.6	--	E	.3
18	12	--	E	.3	12	--	E	1.4	7.1	--	E	.3
19	11	7		.2	7.8	--	E	.3	6.3	--	E	.2
20	10	--	E	.1	8.0	--	E	.4	11	34	S	1.9
21	9.8	--	E	.1	9.2	--	E	.6	12	58	S	2.2
22	9.9	--	E	.2	8.0	--	E	.3	7.1	--	E	.5
23	16	15		.6	7.1	--	E	.2	6.3	--	E	.4
24	11	--	E	.2	6.8	9		.2	6.0	--	E	.4
25	10	--	E	.2	6.6	--	E	.1	5.2	--	E	.3
26	10	6		.2	6.5	--	E	.1	5.2	--	E	.3
27	9.7	--	E	.2	6.6	--	E	.1	5.0	--	E	.2
28	9.3	--	E	.1	6.8	--	E	.1	4.6	14		.2
29	9.6	--	E	.2	8.8	26	S	.9	6.0	65	A	1.8
30	1.6	--	E	.5	16	222	S	14	17	420	A	20
31	--	--		--	7.4	35		.7	--	--		--
Total	361.3	--		6.5	267.2	--		24.3	771.5	--		6331.6

E Estimated.
S Computed by subdividing day.
A Computed from partly estimated-concentration graph.

POTOMAC RIVER BASIN--Continued

1-6505. NORTHWEST BRANCH ANACOSTIA RIVER NEAR COLESVILLE, MD.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	JULY			AUGUST			SEPTEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	12	--	E 5.5	2.2	23	0.1	3.3	--	E 0.2
2..	5.6	--	E .1	2.2	23	.1	3.0	--	E .2
3..	5.2	--	E .6	1.9	23	.1	3.3	--	E .2
4..	4.4	--	E .4	2.0	23	.1	3.3	--	E .1
5..	4.1	30	.3	1.6	20	.1	3.8	--	E .1
6..	4.1	27	.3	1.3	18	.1	4.1	8	.1
7..	3.8	25	.3	1.4	14	.1	3.5	--	E .1
8..	3.5	22	.2	1.7	14	.1	3.3	--	E .1
9..	3.3	20	.2	1.4	14	.1	3.0	--	E .1
10..	3.0	17	.1	1.0	14	T	2.8	--	E .1
11..	3.3	15	.1	1.1	14	T	2.6	--	E .1
12..	3.0	12	.1	.7	14	T	2.6	--	E .1
13..	3.0	12	.1	19	2520	S 430	2.8	10	.1
14..	12	218	S 12	11	871	S 48	2.4	10	.1
15..	7.1	58	S 1.3	2.8	200	1.5	3.3	18	S .2
16..	4.4	40	.5	2.4	72	.5	11	87	S 2.2
17..	3.8	37	.4	2.2	44	.3	6.0	32	.5
18..	3.5	34	.3	2.0	26	.1	4.1	24	.3
19..	3.3	31	.3	6.0	695	S 100	3.5	20	.2
20..	3.0	25	.2	150	3950	S 3810	3.3	16	.1
21..	2.8	20	.2	54	468	S 178	3.3	12	.1
22..	2.6	20	.1	9.5	67	S 1.4	3.8	12	.1
23..	2.8	18	.1	6.0	34	.6	3.0	10	.1
24..	2.6	16	.1	4.6	--	E .4	2.8	8	.1
25..	2.4	16	.1	4.1	--	E .3	3.0	7	.1
26..	2.2	14	.1	3.8	--	E .2	3.3	5	T
27..	2.3	14	.1	3.8	--	E .2	3.5	5	T
28..	2.2	14	.1	3.3	--	E .1	3.0	5	T
29..	2.3	21	.1	6.0	164	S 3.2	66	2550	S 811
30..	2.2	21	.1	4.6	90	1.1	9.5	100	A 2.1
31..	1.9	21	.1	3.8	--	E .3	--	--	--
Total	121.7	--	24.5	317.4	--	4573.1	176.2	--	818.8

Total discharge for year (cfs-days)..... 5387.8
Total load for year (tons)..... 16811.4

E Estimated.
S Computed by subdividing day.
T Less than 0.05 ton.
A Computed from partly estimated-concentration graph.

1-6505. NORTHWEST BRANCH ANACOSTIA RIVER NEAR COLESVILLE, MD.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
June 3, 1963.....	0935		61	141	4700		10	22	34	45	62	93	99	--				BN
June 3.....	0935		61	141	4700		4	31	43	62	78	83	95	99	100			BSW
Aug. 13.....	1940		72	73	15100		30	40	54	72	88	93	99	100				BSW

RAPPAHANNOCK RIVER BASIN

1-6640. RAPPAHANNOCK RIVER AT REMINGTON, VA.

LOCATION.--At gaging station at bridge on U.S. Highway 29 at Remington, Fauquier County, 0.3 mile upstream from Tinpot Run, 0.4 mile downstream from Ruffans Run, and 2.5 miles downstream from Hazel River.
DRAINAGE AREA.--616 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1951 to September 1956.
Water temperatures: May 1951 to September 1956, October 1958 to September 1959.
Sediment records: April 1951 to September 1963.
EXTREMES, 1962-63.--Sediment concentrations: Maximum daily, 1,730 ppm Mar. 12; minimum daily, 2 ppm July 8 and Aug. 24, 25.
Sediment loads: Maximum daily, 32,300 tons Mar. 12; minimum daily, less thar 0.50 ton on many days in July, August, and September.
EXTREMES, 1951-63.--Sediment concentrations: Maximum daily, 1,730 ppm Mar. 12, 1963; minimum daily, 1 ppm on many days.
Sediment loads: Maximum daily, 32,300 tons Mar. 12, 1963; minimum daily, less than 0.50 ton on many days.
REMARKS.--Flow affected by ice Jan. 26, 27, 29-31, Feb. 1-8, 10, 14, 15, 23-26, 28.

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	87	15	4	164	9	4	325	10	9
2	79	15	3	147	7	3	310	9	8
3	77	15 B	3	128	10	3	295	11	9
4	89	16 B	4	158	12	5	285	14	11
5	282	41	31	199	11	6	280	10	8
6	251	24	16	242	16	10	712	71 S	190
7	147	12	5	199	12	6	1120	66 S	210
8	119	10	3	154	8	3	709	19	36
9	110	6	2	144	15	6	572	12	19
10	116	6	2	3590	716 S	8770	440	9	11
11	105	5	1	1660	193 S	1010	350	10	9
12	100	5	1	787	55	117	320	14	12
13	94	5	1	560	25	38	300	8	6
14	89	5	1	444	15	18	290	8	6
15	87	7	2	366	10	10	330	7	6
16	89	9	2	330	9	8	340	14	13
17	97	8	2	305	11	9	350	11	10
18	94	10	3	315	17	14	320	7	6
19	87	8	2	794	50	107	305	11	9
20	87	11	3	644	30	52	325	9	8
21	89	7	2	534	19	27	285	11	8
22	89	8	2	1160	102 S	353	285	10	8
23	92	10 B	2	1030	52 S	151	408	10	11
24	87	12 B	3	722	21	41	378	13	13
25	84	14	3	592	13	21	315	11	9
26	79	8	2	510	15	21	320	9	8
27	79	5 B	1	444	15	18	414	9	10
28	84	6	1	402	10	11	320	10	9
29	87	10	2	372	9	9	310	7	6
30	89	9	2	340	10	9	670	19	34
31	102	7	2	--	--	--	702	14	27
Total	3247	--	113	17436	--	10860	12685	--	739

S Computed by subdividing day.
B Computed from estimated-concentration graph.

RAPPAHANNOCK RIVER BASIN--Continued

1-6640. RAPPAHANNOCK RIVER AT REMINGTON, VA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	JANUARY			FEBRUARY			MARCH		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	486	9	12	480	10	13	450	20	24
2	553	10	15	460	9	11	696	82 S	178
3	566	10	15	630	28	48	768	108	224
4	498	10	13	570	27	42	592	45	72
5	432	8	9	510	33	45	664	35	63
6	444	9	11	460	35	43	1700	425 S	2350
7	450	7	9	440	19	23	1850	358 S	1870
8	468	5	6	460	15	19	1230	102 S	342
9	474	6	8	426	11	13	995	50	134
10	510	9	12	410	10	11	898	40	97
11	832	50 S	149	432	10	12	832	25	56
12	2680	336 S	2520	618	19	32	5970	1730 S	32300
13	3350	346 S	3130	624	23	39	4920	698 S	9850
14	2150	144 S	861	500	18	24	3430	340	3150
15	1300	90	316	470	12	15	2150	280 S	1660
16	1030	16	44	402	12	13	1700	150 S	687
17	930	14	35	420	12	14	2080	240 S	1320
18	800	68	147	456	15	18	1850	125	624
19	722	30	58	468	19	24	2640	1170 S	11100
20	898	26	63	768	51 S	141	6950	945 S	18800
21	1030	31	86	1120	158 B	478	3280	293 S	2730
22	728	26	51	670	53	96	2300	110	683
23	716	22	43	460	30	37	1780	80	384
24	592	22	35	500	23 A	31	1480	70	280
25	480	15	19	520	20	28	1300	60	211
26	500	15	20	480	15 A	19	1160	50	157
27	480	33	43	390	14	15	1260	60	204
28	432	98	114	440	30	36	1060	38	109
29	430	27	31	--	--	--	1030	30	83
30	520	18	25	--	--	--	865	20	47
31	530	16	23	--	--	--	832	17	38
Total	26011	--	7923	14584	--	1340	58712	--	89827

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1	800	22	48	650	30	53	195	54	28
2	800	13	28	468	12	15	183	66	33
3	735	18	36	402	6	7	769	87 S	280
4	696	10	19	372	6	6	1920	112 S	615
5	624	8	13	345	5	5	1030	85 S	242
6	605	7	11	325	5	4	995	94 S	257
7	598	6	10	310	5	4	709	82 S	159
8	579	4	6	290	3	2	612	26	43
9	566	5	8	280	3	2	540	18	26
10	566	4	6	265	3	2	426	18	21
11	510	5	7	242	4	3	350	7	7
12	486	6	8	224	5	3	320	6	5
13	474	7	9	220	4	2	270	6	4
14	462	7	9	224	4	2	238	6	4
15	438	5	6	242	4	3	224	7	4
16	426	5	6	224	4	2	207	8	4
17	426	3	3	215	4	2	203	7	4
18	444	5	6	436	23	27	195	9	5
19	444	7	8	390	13	14	179	8 B	4
20	414	7	8	265	10	7	172	7	3
21	372	5	5	256	10	7	258	6	4
22	360	5	5	246	8	5	242	6	4
23	390	7	7	238	5	3	175	5	2
24	438	8	9	207	6	3	154	4	2
25	372	7	7	203	6	3	144	4	2
26	350	6	6	199	5	3	131	5	2
27	340	4	4	195	4	2	122	6	2
28	335	4	4	199	23	12	113	5	2
29	325	4	4	220	27	16	110	5	1
30	498	10	13	336	24	22	131	5	2
31	--	--	--	265	13	9	--	--	--
Total	14873	--	319	8953	--	250	11317	--	1771

S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.

RAPPAHANNOCK RIVER BASIN--Continued

1-6640. RAPPAHANNOCK RIVER AT REMINGTON, VA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	JULY			AUGUST			SEPTEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	147	8	3	24	4	T	27	5	T
2	140	7	3	23	4	T	22	5	T
3	139	6	2	22	4	T	15	7	T
4	131	5	2	20	3	T	13	7	T
5	94	7	2	18	4	T	15	7	T
6	79	5	1	16	4	T	30	7 B	1
7	72	3	1	16	5	T	79	5	1
8	68	2	T	15	3	T	53	5	1
9	61	4	1	15	3	T	36	5	T
10	55	4	1	16	3	T	28	8	1
11	53	4	1	15	3	T	22	9	1
12	53	3	T	13	16	1	17	7	T
13	55	5	1	13	34	1	14	4	T
14	61	4	1	13	39	1	13	7	T
15	77	3	1	10	30	1	13	5	T
16	87	3	1	9.2	47	1	14	5	T
17	72	4	1	8.8	59	1	12	6	T
18	55	3	T	8.4	42 B	1	12	5	T
19	46	3	T	8.0	27	1	12	5	T
20	40	3	T	26	8	1	11	6	T
21	40	3	T	32	7	1	11	5	T
22	36	3	T	55	6	1	11	4	T
23	64	3	1	42	3	T	9.6	4	T
24	89	3	1	38	2	T	8.8	5	T
25	70	3	1	28	2	T	8.4	4	T
26	48	3	T	22	3	T	8.0	4	T
27	38	3	T	17	5	T	8.0	6	T
28	32	3	T	15	5	T	7.6	6	T
29	28	3	T	15	5	T	44	4	T
30	28	3	T	19	5	T	164	5	2
31	26	4	T	25	5	T	--	--	--
Total	2084	--	25	617.4	--	11	738.4	--	7

Total discharge for year (cfs-days)..... 171257.8
Total load for year (tons)..... 113185

T Less than 0.50 ton.
B Computed from estimated-concentration graph.

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color	ABS	Turbidity
PAWCATUCK RIVER BASIN																					
1-1183. PENDLETON HILL BROOK NEAR CLARKS FALLS, CONN.																					
Nov. 28, 1962.	11	7.9	0.08	0.01	2.4	1.2	3.1	0.4	5	7.9	4.0	0.1	0.2	34	11	7	40	6.0	21	0.0	0.3
Apr. 18, 1963.	9.4	5.0	.06	.03	2.8	1.2	3.4	.8	7	6.7	4.0	.2	.7	33	12	7	43	6.2	24	.0	.4
Sept. 24.....	.45	--	.15	.00	5.0	1.4	4.1	1.1	10	13	4.4	--	--	--	19	11	63	5.9	--	--	--
MYSTIC RIVER BASIN																					
1-1187.8. MYSTIC RIVER AT MYSTIC, CONN.																					
Sept. 26,1963A			0.05	0.05	347	1000	9620	336	124	2210	16500			31600	4980	4880	43500	7.3			
Sept. 26B.....			.10	.07	351	1140	9520	354	124	2330	16700			31400	5580	5470	43000	7.1			
POQUONOCK RIVER BASIN																					
1-1190. GREAT BROOK AT POQUONOCK BRIDGE, CONN.																					
Nov. 28, 1962.	22.1	6.5	0.21	0.03	4.0	1.5	6.1	1.1	9	10	9.0	0.1	0.6	50	16	9	70	6.2	19	0.0	0.4
Apr. 18, 1963.	4.9	6.2	.05	.10	3.1	1.4	3.5	.7	8	7.7	4.8	.2	.3	34	14	7	48	6.2	5	.0	.4
Sept. 24.....	.63	--	.46	.34	6.4	1.7	4.9	1.1	19	9.2	7.4	--	--	43	23	8	69	6.4	--	--	--
THAMES RIVER BASIN																					
1-1193.5. WILLIMATIC RIVER AT WEST WILLINGTON, CONN.																					
Dec. 3, 1962..	C59	--	0.18	--	4.2	1.1	4.7	1.0	9	5.7	6.5	--	--	56	15	8	63	6.6	--		
Apr. 17, 1963.	118	6.5	.21	0.03	3.2	1.0	4.5	.7	8	9.5	5.9	0.0	0.9	44	12	6	56	6.2	22		0.0
May 23.....	162	4.3	.18	.00	3.6	.7	6.1	.7	5	7.9	7.5	.1	4.0	45	12	8	65	5.8	22		.3
July 25.....	37	7.7	.50	.10	4.8	1.2	9.7	1.0	16	8.8	9.0	.1	6.5	67	17	4	95	6.4	28	0.4	.2
Sept. 11.....	--	5.2	.42	.10	5.4	1.5	15	1.0	26	12	11	.1	5.2	76	20	0	119	6.3	22		.0
1-1195. WILLIMATIC RIVER NEAR SOUTH COVENTRY, CONN.																					
Dec. 3, 1962..	86	--	0.21	--	5.4	1.1	6.2	1.3	10	3.7	6.9	--	--	70	18	10	77	6.8	--		--
Apr. 17, 1963.	182	6.5	.32	0.03	4.0	1.0	4.8	.8	8	8.9	6.9	0.2	1.8	48	14	8	61	6.3	14		0.0
May 23.....	258	3.2	.27	.00	4.2	1.1	5.2	.9	8	8.5	6.5	.1	1.7	44	15	9	66	5.8	18		.5
July 25.....	54	7.4	.33	.05	5.4	1.4	7.5	1.1	15	9.6	8.3	.1	5.6	59	20	7	89	6.4	21	0.1	.1
Sept. 11.....	23	5.2	.34	.10	6.5	1.4	13	1.8	27	11	11	.1	4.2	73	22	0	118	6.7	8		.0

A Surface sample.
B Bottom sample.
C Daily mean discharge.

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color	ABS	Turbidity
THAMES RIVER BASIN--Continued																					
1-1200. HOP RIVER NEAR COLUMBIA, CONN.																					
Dec. 3, 1962..	55	--	0.10	--	7.8	1.8	5.5	1.2	24	8.1	6.8	--	--	82	27	8	95	6.5	--		--
Apr. 17, 1963.	71	5.6	.11	0.02	5.0	.9	4.6	1.2	10	9.5	7.9	0.1	1.1	47	16	8	68	6.5	12		0.1
May 23.....	93	3.8	.11	.01	5.2	1.0	4.5	1.0	12	8.9	6.2	.1	.4	43	17	7	64	6.7	8		.3
July 25.....	14	8.2	.18	.04	8.2	1.1	5.3	1.4	16	9.4	9.6	.1	3.4	59	25	12	88	6.2	6	0.1	.6
Sept. 10.....	2.8	7.6	.20	.03	8.6	1.1	6.2	1.8	5	10	10	.0	18	75	26	22	106	5.3	3		.7
1-1200.5. WILLIMATIC RIVER AT WILLIMATIC, CONN.																					
Dec. 3, 1962..	C146	--	0.21	--	5.6	1.5	5.8	1.3	24	10	6.5	--	--	66	20	1	82	6.0	--		--
Apr. 17, 1963.	310	6.0	.33	0.05	3.9	1.1	5.0	1.0	8	9.1	7.0	0.1	1.4	49	14	8	66	6.3	19		0.4
May 23.....	450	3.1	.13	.00	5.4	.9	5.0	1.0	13	8.9	6.3	.1	.8	45	17	7	69	6.2	18		.9
July 25.....	78	6.4	.27	.03	6.2	1.6	6.6	1.2	16	9.6	9.0	.1	4.6	58	22	9	88	6.3	15	0.1	.4
Sept. 10.....	30	5.7	.39	.05	7.4	1.8	10	1.8	25	11	11	.1	4.3	70	26	6	114	6.5	9		.0
1-1208. NATCHAUG RIVER AT CHAPLIN, CONN.																					
Dec. 3, 1962..	C74	--	0.09	0.00	4.6	1.1	3.0	0.8	15	5.5	4.7	--	--	42	16	4	57	6.2	--		--
Apr. 17, 1963.	94	5.4	.09	.01	3.2	1.0	3.3	.8	9	6.6	5.1	0.1	0.3	39	12	5	49	6.5	15		0.0
May 23.....	88	4.4	.07	.02	4.0	1.0	3.6	.7	11	5.9	5.3	.1	.9	37	14	5	49	6.5	22		.1
July 25.....	12	7.3	.16	.01	6.0	1.1	4.4	1.0	17	6.0	7.5	.1	.8	45	20	6	65	6.5	16	0.0	.5
Sept. 10.....	2.0	4.7	.05	.03	5.6	1.4	4.6	1.4	20	5.4	8.1	.1	.7	44	20	4	73	7.0	6		.0
1-1211. MOUNT HOPE RIVER AT ATWOODVILLE, CONN.																					
Dec. 3, 1962..	C27	--	0.12	--	5.6	1.5	3.4	1.3	14	6.5	5.5	--	--	53	20	9	68	6.3	--		--
Apr. 17, 1963.	49	6.1	.10	0.03	4.2	1.3	3.2	1.1	13	7.8	5.1	0.1	0.5	38	16	6	56	6.7	14		0.3
May 23.....	45	5.8	.22	.01	4.9	1.6	3.7	.9	16	5.7	5.7	.1	.1	44	19	6	59	6.9	19		.4
July 25.....	5.8	9.6	.21	.03	6.3	1.8	4.3	1.4	20	6.0	7.9	.0	1.2	52	23	7	79	6.6	7	0.0	.1
Sept. 12.....	1.0	7.7	.14	.07	7.0	2.0	3.8	1.8	25	6.6	7.1	.1	1.1	54	26	5	81	6.9	7		.0
1-1213.5. FENTON RIVER AT GURLEYVILLE, CONN.																					
Apr. 17, 1963.	34	5.6	0.07	0.03	3.6	1.5	3.2	0.8	13	7.8	5.1	0.1	0.4	41	15	5	57	6.5	10		0.2
May 23.....	30	6.9	.22	.00	5.4	1.3	3.7	.9	15	6.9	4.7	.1	.0	48	19	7	62	5.8	9		4.0
July 25.....	4.2	8.3	.16	.02	8.0	1.9	4.0	1.0	24	7.2	7.0	.1	1.0	53	28	9	80	6.6	7	0.0	.5
Sept. 12.....	.2	11	.09	.04	8.2	2.3	4.1	1.9	28	9.2	6.0	.1	2.1	61	30	7	90	6.6	2		.0

1-1220. NATCHAUG RIVER AT WILLIMANTIC, CONN.

Dec. 3, 1962..	218	--	0.14	0.00	6.2	1.3	3.7	1.0	21	7.1	4.8	--	--	55	21	4	71	6.7	--		--
Apr. 17, 1963.	227	5.3	.12	.02	4.0	1.0	3.1	1.0	10	7.0	4.8	0.1	0.3	38	14	6	51	6.6	13		0.0
May 23.....	239	5.8	.19	.01	4.9	1.2	3.6	1.0	19	4.9	4.5	.0	.1	39	17	2	59	5.9	7		.5
July 25.....	136	6.1	.54	.12	6.2	1.9	4.0	1.2	21	5.8	7.0	.1	1.4	48	24	7	72	6.6	27	0.0	.4
Sept. 10.....	136	4.3	.34	.04	6.4	1.2	5.5	1.5	24	5.2	7.2	.0	1.0	48	21	2	76	6.5	11		1.0

1-1225. SHETUCKET RIVER NEAR WILLIMANTIC, CONN.

Dec. 3, 1962..	372	--	0.17	0.00	6.6	1.3	5.5	1.2	18	7.5	6.1	--	--	63	22	7	77	6.4	--		--
Apr. 17, 1963.	550	5.6	.22	.03	4.6	1.1	5.2	1.3	9	9.5	7.8	0.1	2.0	49	16	9	72	6.2	9		0.2
May 23.....	600	5.0	.12	.00	5.2	.9	5.4	1.2	10	9.3	7.0	.1	2.3	50	17	9	71	6.1	13		.2
July 25.....	155	6.5	.30	.07	6.5	2.6	8.1	1.5	16	11	11	.1	4.2	61	27	14	98	6.3	16	0.1	.3
Sept. 10.....	155	4.5	.19	.01	7.2	1.2	8.0	2.0	20	7.0	10	.1	4.4	64	23	7	106	6.1	9		1.0

1-1227.8. SHETUCKET RIVER AT BALTIC, CONN.

Oct. 30, 1962.	--	--	0.21	0.01	13	0.8	6.9	2.0	30	17	8.0	--	--	72	36	12	130	7.1	--		--
Dec. 3.....	C400	--	.17	.00	6.2	1.6	5.2	1.4	14	7.5	6.5	--	--	49	22	11	74	6.7	--		--
Apr. 17, 1963.	900	5.2	.15	.01	4.4	1.0	4.1	1.2	11	9.3	5.9	0.1	1.1	45	15	6	62	6.4	14		0.3
May 23.....	350	3.8	.36	.00	5.2	1.6	4.8	1.2	15	8.7	6.0	.1	1.4	45	20	7	67	6.5	21		1.0
July 25.....	38	6.0	.22	.03	7.3	1.3	6.6	1.6	18	10	9.1	.1	3.4	55	24	9	91	6.2	15	0.1	.7
Sept. 12.....	170	5.0	.17	.04	7.2	1.6	12	2.2	24	12	13	.2	4.2	70	25	5	121	6.5	--		.0

1-1230.6. LITTLE RIVER AT VERSAILLES, CONN.

Dec. 3, 1962..	C47	--	0.25	0.00	6.2	1.1	6.5	1.2	12	11	5.2	--	--	64	20	10	83	5.8	--		--
Apr. 17, 1963.	75	6.1	.25	.03	5.0	.9	5.1	1.3	15	12	4.5	0.1	0.2	55	16	4	71	6.4	21		2.0
May 23.....	74	8.0	.25	.01	8.8	1.0	7.5	1.5	15	22	5.8	.1	.0	74	26	14	105	5.5	18		2.0
July 25.....	6.5	9.5	1.1	.28	8.8	1.5	11	1.9	45	4.0	8.7	.1	.7	76	28	0	116	6.3	55	0.1	6.0
Sept. 12.....	30	14	2.2	.38	26	1.7	44	3.1	126	42	18	.1	1.2	D212	72	0	346	6.6	65		5.0

C Daily mean discharge.
D Calculated from determined constituents.

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color	ABS	Turbidity
THAMES RIVER BASIN--Continued																					
1-1230.7. SHETUCKET RIVER AT TAFTVILLE, CONN.																					
Oct. 30, 1962.	--	--	0.28	0.00	18	0.7	7.1	2.1	50	14	8.5	--	--	78	48	7	110	7.9	--		--
Dec. 3.....	E470	--	.20	.01	6.6	.9	5.6	1.3	14	11	6.8	--	--	61	20	9	82	6.0	--		--
Apr. 17, 1963.	E1000	5.9	.24	.02	4.5	1.0	4.1	1.1	12	8.6	5.8	0.1	0.5	43	15	5	63	6.5	13		0.0
May 23.....	E445	5.5	.20	.00	4.4	1.8	4.7	1.2	26	.2	6.0	.1	.0	47	19	0	62	5.6	23		7.0
July 25.....	E47	6.3	.27	.03	7.3	1.5	6.6	1.5	19	9.2	9.0	.2	3.6	58	24	9	93	6.3	11	0.1	.4
Sept. 12.....	E210	4.2	.42	.17	9.7	1.6	15	2.4	38	14	13	.2	2.8	86	31	0	146	6.5	7		.0
1-1271.6. SHETUCKET RIVER AT NORWICH, CONN. (CONN. ROUTE NO. 2)																					
Sept. 26,1963F	E160		0.34	0.07	104	300	2540	115	63	627	4590			8850	1490	1440	14000	6.5			
Sept. 26G.....	E160		.16	.16	260	843	6900	252	106	1710	12300			23200	4120	4030	33000	6.8			
1-1271.7. SHETUCKET RIVER AT NORWICH, CONN. (CONN. ROUTE NO. 12)																					
Sept. 26,1963F	E160		0.39	0.05	68	142	1310	50	52	340	2280			4370	753	712	7390	6.5			
Sept. 26G.....	E160		.14	.05	330	990	8730	347	133	2160	15600			29500	4900	4790	40300	6.9			
1-1275.5. YANTIC RIVER AT NORWICH CONN. (LEFT CHANNEL)																					
Sept. 26,1963F			0.30	0.10	108	320	2740	121	60	668	4900			9490	1590	1540	14700	6.8			
Sept. 26H.....			.27	.07	281	896	7560	267	153	1810	13200			25000	4390	4260	35300	7.0			
1-1275.55. YANTIC RIVER AT NORWICH, CONN. (RIGHT CHANNEL)																					
Sept. 26,1963F			0.40	0.07	135	430	3280	135	74	785	6070			11600	2110	2050	17700	6.5			
Sept. 26I.....			.22	.05	312	977	8350	302	130	2020	14700			28000	4800	4690	38500	6.9			
1-1277.5. OXOBOXO BROOK AT MONTVILLE, CONN.																					
July 9, 1963..	E4.0				6.4	1.0	10	1.9	14	18	8.6		4.0	71	20	9	107	6.7			
Sept. 25.....	6.8		0.72	0.14	26	.3	14	1.9	28	54	6.8		9.7	168	66	43	232	5.5			

NIANTIC RIVER BASIN

1-1277.9. LATIMER BROOK AT EAST LYME, CONN.

Nov. 28, 1962.	25	7.9	0.08	0.03	3.6	2.2	4.1	0.8	9	9.9	5.7	0.1	0.4	43	18	11	55	6.3	9	0.0	0.7
Apr. 17, 1963.	--	6.5	.09	.05	3.4	1.3	3.9	.7	10	7.3	5.0	.1	.6	35	14	6	52	6.5	5	.0	.4
Sept. 25.....	4.0	--	.08	.03	5.6	1.2	4.7	1.2	8	18	5.4	--	--	66	19	13	88	5.8	--	--	--

CONNECTICUT RIVER BASIN

1-1895. SALMON BROOK NEAR GRANBY, CONN.

Nov. 27, 1962.	106	8.8	0.08	0.01	9.2	1.1	3.2	0.6	19	13	4.2	0.1	2.0	57	28	12	82	7.5	6	0.0	0.4
Apr. 16, 1963.	115	6.2	.05	.05	10	1.0	3.8	.8	21	11	5.8	.1	2.0	54	29	12	83	6.7	5	.0	.5

1-1927. MATTABESSET RIVER AT EAST BERLIN, CONN.

Nov. 27, 1962.	64	13	0.42	0.03	24	7.8	18	2.8	76	34	16	0.4	1.8	185	92	30	287	6.6	5	0.2	0.5
Apr. 16, 1963.	56	7.8	.52	.25	28	7.2	18	2.8	110	29	18	.3	.3	165	100	10	301	6.8	6	.8	1.0

QUINNIPIAC RIVER BASIN

1-1965.8. MUDDY RIVER NEAR NORTH HAVEN, CONN.

Nov. 28, 1962.	10	8.9	0.07	0.01	22	4.5	6.3	1.6	54	31	8.5	0.2	4.1	124	74	29	197	7.3	3	0.0	0.5
Apr. 17, 1963.	7.8	4.4	.07	.04	20	3.9	5.6	1.1	51	22	7.7	.1	4.4	97	66	24	168	7.0	2	.0	.4

HOUSATONIC RIVER BASIN

1-1978. WILLIAMS RIVER NEAR GREAT BARRINGTON, MASS.

Aug. 26, 1963.	5.30		0.08	0.00	42				170	8.2	17				161		340	7.9			
Sept. 10.....	4.14			.00					174		20				164		358	7.8			

1-1981.3. HOUSATONIC RIVER AT ASHLEY FALLS, MASS.

Aug. 27, 1963.	130		0.22		37				151	31	14				147		347	7.8			
Sept. 10.....	150			0.10					158		13				140		338	7.9			

E Estimated.
F Sampling depth 1.5 feet.
G Sampling depth 5 feet.
H Sampling depth 15 feet.
I Sampling depth 4 feet.

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color	ABS	Turbidity
															Calcium, magnesium	Noncarbonate					
SAUGATUCK RIVER BASIN																					
1-2095. SAUGATUCK RIVER NEAR WESTPORT, CONN.																					
Nov. 27, 1962.	53	7.9	0.10	0.00	9.0	1.7	4.2	1.2	16	17	6.0	0.1	0.6	60	30	17	90	7.0	8	0.0	0.6
Apr. 16, 1963.	66	5.8	.02	.05	9.5	2.2	4.1	1.2	24	14	6.5	.1	1.4	58	33	13	101	6.6	2	.0	.4
NORWALK RIVER BASIN																					
1-2097. NORWALK RIVER AT SOUTH WILTON, CONN.																					
Nov. 27, 1962.	54	8.3	0.96	0.05	16	4.2	5.4	2.0	38	23	12	0.2	1.6	106	58	27	163	7.3	24	0.0	0.6
Apr. 15, 1963.	35	4.7	.79	.03	21	4.3	6.2	2.0	50	22	15	.1	1.2	109	70	29	180	7.2	14	.0	.5
HUDSON RIVER BASIN																					
1-3615. CATSKILL CREEK AT OAK HILL, N. Y.																					
Oct. 18, 1962.	4.3	3.7	0.01	0.00	23	3.2	5.2	1.2	76	15	6.5	0.0	0.0	101	71	8	178	7.8	3		0.0
Nov. 20.....	76	4.3	.01	.00	13	1.2	3.0	.6	34	14	3.5	.0	.8	59	38	10	103	7.6	7		.0
Jan. 30, 1963.	30	3.4	.03	.00	15	2.0	2.7	.8	40	14	4.5	.1	1.2	67	46	13	113	6.8	3		.3
Apr. 4.....	630	4.0	.05	.00	7.8	.1	1.6	.6	17	8.5	1.8	.1	.8	35	20	6	60	6.8	9		1.0
May 17.....	66	3.1	.03	.00	12	3.3	2.0	.6	37	13	1.8	.1	.0	56	44	13	93	6.9	3		.4
June 26.....	18	3.9	.00	.00	18	2.2	3.6	1.6	57	11	3.0	.1	2.7	74	54	8	134	7.1	3		.7
Aug. 20.....	3.8	4.1	.01	.02	22	4.3	4.4	1.0	76	11	5.0	.1	.2	92	73	10	158	7.6	3		.3
Sept. 18.....	1.2	5.4	.03	.00	23	3.2	6.0	1.4	J77	12	6.0	.0	.5	97	71	7	167	8.6	2		.4
1-3621.98. ESOPUS CREEK AT SHANDAKEN, N. Y.																					
Aug. 20, 1963.	E32	2.1	0.01	0.01	5.6	2.3	1.6	0.1	17	8.8	2.0	0.1	0.0	30	24	10	54	6.7	3		0.9
Sept. 19.....	14	2.8	.01	.00	6.8	1.4	2.2	.4	20	7.6	2.8	.0	.2	35	23	7	60	7.4	3		.6

1-3645. ESOPUS CREEK AT SAUGERTIES, N. Y.

Oct. 18, 1962.		2.2	0.03	0.03	35	4.4	15	2.1	94	28	26	0.1	1.8	161	106	29	302	7.3	4		0.2
Nov. 20.....		5.1	.09	.03	13	2.4	3.4	.6	22	20	5.9	.1	1.4	67	43	25	113	7.0	6		.1
Jan. 30, 1963.		3.9	.10	.03	15	2.5	5.6	.7	28	20	10	.1	2.0	81	48	25	134	7.1	5		.4
Apr. 4.....		3.3	.11	.03	9.8	.5	3.2	.4	18	11	5.2	.1	1.4	47	27	12	86	6.6	3		.0
May 17.....		2.6	.11	.01	16	3.0	5.0	.6	40	18	9.0	.1	1.6	83	53	20	137	6.6	4		.3
June 26.....		4.0	.08	.06	17	2.4	5.1	1.0	40	16	9.0	.0	1.7	83	53	20	143	6.8	7		1.0
Aug. 20.....		.9	.01	.08	19	2.8	8.2	1.6	52	16	13	.1	1.3	99	59	17	165	6.7	5		1.0
Sept. 18.....		.8	.02	.11	23	4.1	8.4	.7	62	20	15	.1	1.0	107	75	24	195	6.8	4		.5

1-3675. RONDOUT CREEK AT ROSENDALE, N. Y.

Oct. 17, 1962.	134	2.2	0.04	0.00	15	2.9	4.4	1.0	42	18	6.9	0.1	0.3	76	50	15	137	7.3	1		0.0
Nov. 20.....	285	3.7	.05	.05	10	2.0	3.9	.5	26	12	4.8	.0	1.3	58	33	12	98	7.2	4		.1
Jan. 30, 1963.	E250	3.6	.13	.02	12	2.1	2.7	.6	26	15	4.5	.1	1.7	61	39	17	98	6.7	6		.6
Apr. 4.....	1170	3.4	.06	.04	7.0	.7	1.9	.5	14	9.5	2.3	.1	1.2	37	21	9	62	6.8	9		.0
May 17.....	238	1.8	.15	.01	9.9	1.4	2.9	.7	28	9.8	4.0	.1	.9	50	31	8	89	6.9	5		.5
June 26.....	86	2.6	.03	.04	15	1.5	3.5	.8	38	14	3.9	.1	1.6	64	44	13	114	6.5	5		.9
Aug. 20.....	92	.8	.03	.03	17	3.6	5.1	.5	52	16	5.8	.1	.4	78	58	15	139	6.9	4		.6
Sept. 19.....	31	1.8	.05	.03	21	4.2	6.2	.9	66	17	8.7	.0	.6	97	70	16	174	7.5	3		.4

1-3680. WALLKILL RIVER NEAR UNIONVILLE, N. Y.

Jan. 11, 1963.	C70	7.4	0.27		33	12	5.8	0.5	113	31	9.8	0.1	4.3	168	132	40	297	7.2	5	--	
Mar. 4.....	C92	7.3	.07		32	11	12	2.7	110	26	24	.2	3.4	175	125	35	343	7.0	5	--	
June 6.....	62	4.7	.39		35	14	8.0	.5	150	22	11	.1	1.5	K190	145	22	313	6.9	10	0.0	
June 26.....	32	6.2	.03	0.19	35	13	6.0	1.6	143	20	9.8	.2	3.7	176	141	24	306	7.0	8	--	0.7
Sept. 3.....	C9.9	5.7	1.0		46	20	12	2.5	226	29	17	.1	1.2	L239	198	13	439	7.8	23	.1	

C Daily mean discharge.
E Estimated.
J Includes equivalent of 2 parts per million of carbonate (CO_3).
K Includes 0.30 parts per million of phosphate (PO_4).
L Includes 0.40 parts per million of phosphate (PO_4).

239-654 O - 67 - 14

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color	ABS	Turbidity
															Calcium, magnesium	Noncarbonate					
HUDSON RIVER BASIN--Continued																					
1-3690. POCHUCK CREEK NEAR PINE ISLAND, N. Y.																					
Oct. 17, 1962.	31	7.0	0.14	0.01	28	9.7	6.2	1.3	106	30	6.5	0.1	1.7	142	110	23	256	7.8	10		0.0
Nov. 20.....	132	7.1	.09	.03	23	7.8	4.1	.9	81	25	5.2	.1	2.1	119	90	23	207	7.9	10		.0
Jan. 30, 1963.	C90	6.2	.08	.00	26	12	3.4	1.0	106	22	5.0	.2	3.6	136	115	28	241	7.2	6		.0
Apr. 4.....	342	3.1	.08	.00	22	7.9	2.4	.9	80	17	4.4	.1	1.1	99	88	22	198	7.1	18		.1
May 17.....	64	5.1	.21	.16	28	11	3.7	.7	122	19	4.2	.1	2.7	142	115	15	249	7.1	11		.7
June 26.....	31	5.9	.24	.20	28	11	3.9	.8	121	16	5.2	.1	2.3	139	115	16	243	7.3	17		1.0
Aug. 20.....	10	4.0	--	--	40	16	10	1.7	188	20	9.8	.2	1.8	200	166	12	359	7.2	9		.4
Sept. 19.....	7.3	4.7	.21	.03	45	18	9.5	1.6	204	21	12	.1	1.6	217	187	22	393	7.8	4		.0
1-3710. SHAWANGUNK KILL AT PINE BUSH, N. Y.																					
Oct. 17, 1962.	26	3.6	0.07	0.04	24	4.0	5.1	1.8	43	44	7.7	0.0	0.2	118	77	42	201	7.3	5		0.0
Nov. 20.....	70	5.2	.08	.05	17	3.0	3.9	1.0	32	29	5.9	.1	.7	87	55	29	145	7.6	5		.0
Jan. 30, 1963.	C84	5.2	.08	.03	16	2.6	3.9	1.2	33	21	5.8	.1	1.9	81	51	24	131	6.7	4		.8
Apr. 4.....	183	3.6	.08	.03	11	.9	3.2	.8	24	14	4.0	.1	1.0	55	31	12	96	6.7	10		.0
May 17.....	50	2.5	.15	.03	14	3.6	4.0	.6	42	18	4.8	.1	.6	73	50	16	117	7.3	8		.6
June 26.....	18	3.1	.15	.02	16	2.2	4.2	1.0	48	14	4.1	.0	.8	78	49	10	127	7.2	12		.4
Aug. 20.....	20	2.3	.04	.02	18	3.5	4.6	.5	58	13	6.0	.1	.2	83	60	12	143	7.6	9		.5
Sept. 19.....	10	1.6	.02	.02	21	4.6	5.1	.7	66	17	7.8	.2	.2	95	72	18	167	7.4	3		.5

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
HUDSON RIVER BASIN--Continued																		
1-3680. WALLKILL RIVER NEAR UNIONVILLE, N. Y. - OWENS, N. J.																		
Jan. 11, 1963.....	70	7.4	0.27	33	12	5.8	0.5	113	31	9.8	0.1	4.3	168	132	40	297	7.2	5
Mar. 4.....	92	7.3	.07	32	11	12	2.7	110	26	24	.2	3.4	175	125	35	343	7.0	5
June 6.....	62	4.7	.39	35	14	8.0	.5	150	22	11	.1	1.5	190	145	22	313	6.9	10
Sept. 3.....	9.9	5.7	1.0	46	20	12	2.5	226	29	17	.1	1.2	239	198	13	439	7.8	23
HACKENSACK RIVER BASIN																		
1-3785. HACKENSACK RIVER AT NEW MILFORD, N. J.																		
Dec. 6, 1962.....	300	11	0.47	27	5.8	9.6	2.2	69	32	13	0.0	1.7	156	92	35	251	6.6	10
Mar. 6, 1963.....	908	9.7	.19	31	6.6	20	2.1	77	32	32	.2	3.3	195	105	42	341	7.0	15
June 24.....	--	6.9	.13	34	6.8	14	1.2	91	39	21	.0	2.7	190	113	39	302	7.0	10
PASSAIC RIVER BASIN																		
1-3787. PASSAIC RIVER AT OUTLET OF OSBORN POND, N. J.																		
Sept. 23, 1963.....	0.13					8.0		68	20	8.0		0.7		71	16	176	7.9	5
1-3790. PASSAIC RIVER NEAR MILLINGTON, N. J.																		
Nov. 8, 1962.....	56	14	0.50	11	5.8	7.9	2.8	28	27	11	0.3	1.0	124	52	29	151	6.5	60
Mar. 6, 1963.....	452	6.4	1.1	6.8	2.4	4.8	1.7	13	16	7.8	.1	1.9	72	27	17	99	6.4	35
May 23.....	35	--	1.2	--	--	7.1	--	51	12	6.0	--	1.7	--	49	7	124	7.7	80
June 25.....	3.9	15	.08	14	6.1	7.8	.8	61	18	6.8	.2	1.9	107	60	10	161	7.0	18
July 29.....	3.2	16	.85	17	6.8	11	1.0	70	24	9.6	.2	.4	133	71	13	188	6.9	50
Aug. 27.....	2.2	13	.43	15	6.1	9.2	1.8	69	16	9.7	.3	1.0	120	63	6	172	6.7	10
Sept. 24.....	2.0	14	.43	18	6.6	9.7	2.2	68	25	11	.2	.7	124	72	17	196	7.0	10
1-3795. PASSAIC RIVER NEAR CHATHAM, N. J.																		
Apr. 25, 1963.....	36	--	0.10	--	--	34	--	68	26	46	--	7.9	--	80	25	335	6.7	15
June 25.....	13	14	.07	23	8.4	64	3.8	98	30	75	0.2	11	289	92	12	498	6.9	23
July 30.....	11	17	.38	23	7.8	52	3.5	92	36	63	.2	5.2	271	90	14	437	6.9	20
Aug. 27.....	6.5	10	.04	28	11	140	11	111	36	196	.4	15	528	115	24	952	6.6	15
Sept. 24.....	8.5	16	.41	24	9.7	66	4.5	90	41	82	.3	6.7	303	100	26	534	6.7	23

C Daily mean discharge.

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
PASSAIC RIVER BASIN--Continued																		
1-3795.7. PASSAIC RIVER AT HANOVER, N. J.																		
June 25, 1963.....	16.0	8.2	0.15	26	11	72	5.0	98	44	82	0.4	19	311	110	30	569	6.8	25
July 29.....	--	15	.81	24	8.8	52	4.0	100	39	65	.3	2.1	281	96	14	469	6.9	20
Aug. 27.....	9.8	7.7	.89	30	11	85	7.5	103	45	121	.8	21	404	120	36	717	6.6	15
Sept. 24.....	11.2	16	.12	26	10	49	5.4	108	50	51	.5	2.0	275	106	18	501	6.7	22
1-3797. ROCKAWAY RIVER AT BERKSHIRE VALLEY, N. J.																		
Sept. 24, 1963.....	3.97					4.8		68	11	5.5		0.6		65	10	145	7.6	10
1-3797.5. ROCKAWAY RIVER AT DOVER, N. J.																		
Sept. 25, 1963.....						3.7		82	14	7.0		0.7		84	17	192	8.0	10
1-3798. GREEN POND BROOK AT DOVER, N. J.																		
June 25, 1963.....	4.32					7.1		60	32	2.2		2.3		100	51	242	6.8	15
1-3800. BEAVER BROOK AT OUTLET OF SPLIT ROCK, N. J.																		
Apr. 24, 1963.....						6.2		14	9.6	7.5		2.0		20	9	57	6.4	5
1-3805. ROCKAWAY RIVER ABOVE RESERVOIR, AT BOONTON, N. J.																		
Nov. 8, 1962.....	118	11	0.28	13	5.4	4.5	0.9	38	22	6.1	0.0	0.7	96	55	24	145	6.5	7
Mar. 12, 1963.....	410	10	.29	11	3.2	11	1.0	28	18	18	.3	.6	101	41	18	157	6.7	20
Apr. 25.....	92	--	.33	--	--	6.4	--	52	19	9.0	--	1.3	--	62	20	156	6.6	5
June 26.....	46	5.2	.04	17	6.9	5.6	.5	61	17	9.9	.1	1.9	101	71	21	174	7.7	3
July 29.....	28	7.2	.26	19	7.5	10	.8	76	19	11	.2	.8	118	79	16	194	7.6	10
Aug. 27.....	19	6.6	.13	19	8.3	9.0	1.3	83	19	12	.1	1.3	129	92	14	207	7.0	5
Sept. 24.....	67	6.7	.29	20	7.8	6.9	1.6	78	19	11	.2	1.3	127	82	18	202	7.2	10

1-3810. ROCKAWAY RIVER BELOW RESERVOIR, AT BOONTON, N. J.

June 26, 1963.....	0.9	5.8	0.00	15	67	5.9	1.0	54	20	8.9	0.1	2.6	99	65	21	165	7.1	3
Sept. 24.....	.2					3.7		94	.0	9.0		3.1	126	84	7	202	7.2	2

1-3812. ROCKAWAY RIVER AT PINE BROOK, N. J.

June 25, 1963.....	--	--	0.15	--	--	--	--	158	61	--	--	--	--	--	--	523	7.0	--
July 30.....	13.4	20	.72	31	17	72	7.5	189	110	38	1.0	2.8	397	148	0	669	7.0	35
Aug. 27.....	8.8	20	.70	32	16	70	8.2	130	98	44	1.6	53	423	146	40	724	6.4	20
Sept. 24.....	9.6	22	.27	25	19	92	10	195	122	48	1.6	13	456	141	0	808	6.7	38

1-3815. WHIPPANY RIVER AT MORRISTOWN, N. J.

Nov. 8, 1962.....	19	19	0.64	18	6.3	9.0	2.0	46	28	11	0.3	9.3	128	71	34	206	6.6	10
Mar. 12, 1963.....	131	15	.42	10	4.4	7.6	1.7	26	20	9.9	.2	4.4	105	43	22	148	6.7	25
Apr. 25.....	30	--	1.2	--	--	9.4	--	54	20	9.5	--	4.6	--	62	18	177	7.3	5
June 25.....	19	15	.07	17	6.4	20	1.8	64	39	12	.1	5.5	144	69	17	239	7.1	3
July 29.....	12	19	.31	19	7.1	12	1.5	80	21	14	.2	3.6	148	77	11	224	7.4	10
Aug. 27.....	10	17	.25	22	7.8	18	2.2	89	33	15	.1	4.5	172	87	14	270	6.9	10
Sept. 24.....	8.8	15	.60	22	9.2	31	2.7	92	54	16	.2	6.9	207	93	18	331	7.0	8

1-3816. WHIPPANY RIVER NEAR WHIPPANY, N. J.

June 25, 1963.....	23.6	19	0.23	23	8.9	42	4.8	152	13	42	0.4	0.7	236	94	0	442	7.0	35
July 30.....	101	10	1.1	14	4.1	17	2.5	60	28	14	.2	.6	136	52	3	207	6.6	40
Aug. 27.....	17.4	29	1.3	35	10	85	5.5	202	73	58	.8	.8	440	129	0	669	7.0	100
Sept. 24.....	16.2	33	1.5	34	9.7	110	5.6	300	58	46	.4	3.1	477	125	0	700	7.0	100

1-3818. WHIPPANY RIVER NEAR PINE BROOK, N. J.

June 25, 1963.....	29.1	--	--	--	--	42	--	84	76	32	--	8.5	--	108	39	432	7.9	75
Aug. 27.....	24.3	23	1.2	34	11	60	4.2	143	84	46	0.8	4.1	367	130	13	564	6.5	50
Sept. 24.....	22.1	22	.95	34	9.7	60	4.2	96	57	34	1.2	1.4	346	125	0	543	7.2	90

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
PASSAIC RIVER BASIN--Continued																		
1-3819. PASSAIC RIVER AT PINE BROOK, N. J.																		
June 25, 1963...	69.2	12	0.23	27	11	42	4.5	120	49	41	0.4	2.7	245	113	14	455	6.9	25
July 30.....	217	14	.39	21	6.3	30	3.8	92	42	27	.2	.8	198	79	3	326	6.7	40
Aug. 27.....	53.9	21	1.1	34	11	60	6.2	113	82	62	.7	9.8	389	130	38	632	6.4	30
Sept. 24.....	52.5	21	1.2	32	11	68	5.5	124	73	52	.6	20	372	125	24	609	6.6	35
1-3820.5. PEQUANNOCK RIVER NEAR STOCKHOLM, N. J.																		
June 26, 1963....	0.39					6.0		81	13	6.5		0.3		76	10	166	7.2	15
Sept. 25.....	.03					6.9		110	16	8.0		.2		103	13	225	7.5	5
1-3823.6. KANOUSE BROOK AT NEWFOUNDLAND, N. J.																		
June 26, 1963..	0.86					2.8		29	7.0	3.0		0.9		30	6	70	7.4	30
1-3825. PEQUANNOCK RIVER AT MACOPIN INTAKE DAM, N. J.																		
Nov. 28, 1962...	5.0	9.0	0.09	8.0	2.9	3.8	0.2	18	18	6.4	0.0	0.2	60	32	17	95	6.7	5
Mar. 12, 1963...	8.0	9.2	.01	7.6	2.9	5.4	.5	14	15	12	.0	.8	72	31	20	109	6.7	4
June 18.....	1.1	8.8	.16	10	3.4	5.3	.2	31	15	8.5	.0	.4	74	39	14	114	6.9	5
1-3835. WANAQUE RIVER AT AWOSTING, N. J.																		
June 26, 1963...	12					3.7		21	14	3.0		0.4		28	11	78	7.1	10
1-3840. WANAQUE RIVER AT MONKS, N. J.																		
June 26, 1963...	17					2.5		26	12	3.0		0.4		33	12	85	6.8	75
1-3845. RINGWOOD CREEK NEAR WANAQUE, N. J.																		
June 26, 1963...	30					2.3		14	14	0.5		0.6		22	11	60	6.8	25
1-3860. WEST BROOK NEAR WANAQUE, N. J.																		
June 26, 1963...	2.8					3.7		28	12	2.0		0.6		31	8	83	7.7	20

1-3870. WANAQUE RIVER AT WANAQUE, N. J.

Nov. 30, 1962.....	16	6.2	0.09	9.6	5.4	4.2	0.5	30	19	7.0	0.1	2.8	73	46	22	123	6.6	10
Mar. 11, 1963.....	17	8.8	.31	15	4.1	6.0	1.5	38	21	9.2	.1	5.1	103	55	24	161	6.6	3
June 20.....	17	5.6	--	9.6	3.9	4.3	.6	26	17	6.6	.0	1.7	71	40	19	107	6.8	5
June 26.....	17	--	--	--	--	5.1	--	26	18	5.5	--	1.5	--	38	17	106	7.0	15
Sept. 23.....	16	--	--	--	--	5.3	--	26	15	6.5	--	.8	--	35	14	100	6.8	5

1-3870.35. POST BROOK AT POMPTON LAKES, N. J.

June 26, 1963.....						11		45	20	10		2.3		50	13	159	7.0	25

1-3870.4. WANAQUE RIVER AT RIVERDALE, N. J.

Sept. 23, 1963.....						6.7		38	16	8.5		1.1		46	15	125	7.2	10

1-3870.95. PEQUANNOCK RIVER AT RIVERDALE, N. J.

June 25, 1963.....	a 12.0					74		52	124	47		9.0		84	42	543	6.8	15
Sept. 23.....	a 7.9					13		37	27	22		4.7		66	36	251	6.4	15

1-3875. RAMAPO RIVER NEAR MAHWAH, N. J.

June 26, 1963.....	32					20		90	27	24		2.8		96	22	287	6.9	75

1-3876. DARLINGTON BROOK AT DARLINGTON, N. J.

Sept. 25, 1963.....	0.4					7.1		103	16	4.5		1.0		93	9	209	7.7	10

1-3876.7. RAMAPO RIVER NEAR DARLINGTON, N. J.

Sept. 25, 1963.....	13.6					18		87	25	28		3.4		100	29	287	7.8	5

a Measurements of base flow.

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
PASSAIC RIVER BASIN--Continued																		
1-3877. BEAR SWAMP BROOK NEAR OAKLAND, N. J.																		
Sept. 25, 1963	0.02					3.9		11	12	3.0		0.3		17	8	57	6.8	5
1-3878.8. POND BROOK AT OAKLAND, N. J.																		
Sept. 25, 1963	5.8					4.8		62	16	4.0		0.8		63	12	148	7.9	10
1-3879.3. RAMAPO RIVER TRIBUTARY NO. 5, AT OAKLAND, N. J.																		
Sept. 25, 1963	1.1					5.8		75	20	6.0		9.3		86	25	199	7.3	5
1-3879.5. RAMAPO RIVER TRIBUTARY NO. 6, AT POMPTON LAKES, N. J.																		
Sept. 25, 1963	0.4					22		46	18	15		17		42	5	207	6.9	10
1-3880. RAMAPO RIVER AT POMPTON LAKES, N. J.																		
June 26, 1963	39					12		76	22	16		2.8		84	22	224	7.1	25
Sept. 24	19					14		84	24	21		5.0		96	27	248	7.5	4
1-3885. POMPTON RIVER AT POMPTON PLAINS, N. J.																		
May 23, 1963	158	--	1.0	--	--	9.4	--	40	26	8.6	--	3.3	--	54	21	163	6.9	4
June 25	111	4.9	.06	20	5.6	14	1.0	60	26	16	0.1	3.8	129	73	24	218	7.8	6
July 29	98	7.8	.38	18	5.6	12	1.0	59	22	15	.1	2.4	120	68	20	198	7.0	10
Aug. 27	69	4.4	.27	18	5.6	9.6	1.2	58	23	15	.1	2.9	119	68	21	198	6.9	5
Sept. 24	64	4.4	.28	20	5.6	12	1.7	62	24	17	.1	4.3	133	73	22	214	6.8	5
1-3891. SINGAC BROOK AT SINGAC, N. J.																		
June 26, 1963	5.8					18		104	36	21		13		124	39	345	3.2	75
1-3905. SADDLE RIVER AT RIDGEWOOD, N. J.																		
June 26, 1963	5.8					9.4		106	23	11		2.6		108	21	253	8.2	20
1-3910. HOHOKUS BROOK AT HOHOKUS, N. J.																		
June 26, 1963	6.9					23		144	36	16		3.4		130	12	369	7.1	25

1-3915. SADDLE RIVER AT LODI, N. J.

Nov. 27, 1962.....	86	12	0.47	37	10	15	2.6	104	45	21	0.0	2.1	214	134	49	370	7.2	5
Mar. 6, 1963.....	472	3.9	.45	13	2.7	11	2.8	31	20	17	.0	1.0	102	44	18	174	6.4	20
June 18.....	41	12	.53	38	12	23	3.2	124	40	29	.4	13	251	145	43	411	6.9	10
June 26.....	27	--	--	--	--	31	--	142	47	38	--	12--	--	162	46	473	7.0	30
Sept. 25.....	17	--	--	---	--	29	--	140	42	44	--	6.6	--	163	49	490	7.2	10

ELIZABETH RIVER BASIN

1-3935. ELIZABETH RIVER AT ELIZABETH, N. J.

Apr. 5, 1963.....	11	2.1	0.44	76	15	39	2.5	182	102	46	0.1	9.5	438	251	102	698	7.6	6
Apr. 11.....	6.3	--	.32	--	--	40	--	192	88	47	--	10	--	236	79	658	7.2	10
June 26.....	10	19	.29	64	22	40	2.0	209	94	46	.1	2.8	418	250	79	666	7.1	10

RARITAN RIVER BASIN

1-3968. SPRUCE RUN AT CLINTON, N. J.

Oct. 1, 1962.....	20	15	--	18	7.1	5.9	1.5	63	24	6.0	0.2	2.8	122	74	23	184	6.9	5
Nov. 5.....	51	16	0.31	15	5.6	6.0	1.8	46	29	6.6	.0	2.6	117	61	23	165	7.3	15
Feb. 28, 1963.....	28	16	.09	16	5.8	7.0	1.0	54	23	8.5	.1	2.0	119	64	20	184	7.6	5
July 1.....	12	15	.74	18	6.3	6.4	1.4	70	21	6.8	.2	2.8	117	71	14	178	6.9	5

1-3985. NORTH BRANCH RARITAN RIVER NEAR FAR HILLS, N. J.

Nov. 7, 1962.....	19	14	0.45	12	4.9	5.0	1.8	44	17	6.2	0.1	0.9	101	50	14	131	7.0	10
Mar. 6, 1963.....	273	11	.55	8.8	3.2	4.4	2.2	22	16	6.8	.1	5.1	77	35	17	115	6.6	7
July 10.....	8.3	7.2	.52	12	4.9	5.0	.4	50	14	4.6	.0	1.3	90	50	9	132	7.8	5
Sept. 13.....	9.4	13	.47	13	4.4	5.6	1.3	51	14	5.8	.1	2.3	82	51	9	130	6.8	9

1-4000. NORTH BRANCH RARITAN RIVER NEAR RARITAN, N. J.

Nov. 14, 1962.....	236	13	0.37	14	7.3	7.4	1.8	44	29	6.9	0.3	3.8	113	65	29	169	7.0	25
Mar. 7, 1963.....	3130	6.7	.96	6.8	2.9	3.3	2.5	13	18	5.0	.1	3.3	68	29	19	96	7.2	8
Apr. 11.....	170	--	.22	--	--	7.8	--	58	25	8.0	--	2.6	--	70	23	178	6.7	5
July 10.....	34	16	.50	19	7.5	11	.6	80	22	9.3	.2	.9	130	79	13	206	7.0	7
Sept. 22.....	34	8.4	.34	21	8.0	10	2.6	87	28	10	.1	2.4	142	86	19	221	6.8	5

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
RARITAN RIVER BASIN--Continued																		
1-4005. RARITAN RIVER AT MANVILLE, N. J.																		
Nov. 13, 1962	716	13	0.39	21	8.0	8.2	2.3	40	49	8.2	0.3	6.6	145	86	53	220	6.9	20
Mar. 8, 1963	2400	7.6	.24	10	3.4	4.5	2.8	23	22	7.1	.1	2.6	90	39	20	130	6.3	25
Apr. 11	372	--	.21	--	--	13	--	62	58	9.0	--	2.9	--	98	47	268	6.7	5
July 17	99	7.8	.22	29	9.2	11	.8	90	46	8.8	.2	1.1	187	111	37	268	7.4	7
Sept. 23	70	8.2	.37	31	9.2	10	2.7	80	57	12	.2	3.7	175	116	50	295	7.3	8
1-4007.3. MILLSTONE RIVER AT PLAINSBORO, N. J.																		
June 27, 1963	4.6	5.4	0.02	6.0	5.4	7.8	1.5	29	10	12	0.2	4.6	81	37	13	123	6.6	5
1-4020. MILLSTONE RIVER AT BLACKWELLS MILLS, N. J.																		
Nov. 13, 1962	428	11	0.60	12	8.3	8.4	4.1	22	38	13	0.3	6.9	129	64	46	184	6.3	22
Mar. 8, 1963	1720	7.3	1.4	5.6	3.9	4.8	3.8	3	28	8.0	.1	5.0	82	30	29	120	5.3	10
Apr. 9	178	--	.87	--	--	12	--	28	36	14	--	6.1	--	58	35	195	6.2	5
July 17	48	7.9	.37	19	8.3	23	4.6	58	43	28	.2	3.1	193	82	34	308	6.4	15
Sept. 23	63	6.5	.60	19	7.3	16	4.7	15	64	20	.1	13	161	78	65	274	6.2	7
1-4030. RARITAN RIVER AT BOUND BROOK, N. J.																		
Mar. 11, 1963	2330	10	0.20	12	3.9	5.5	2.4	28	23	7.7	0.3	1.6	96	46	23	145	6.6	15
July 17	137	9.5	.30	36	8.8	14	2.6	88	67	15	.3	1.6	222	126	54	333	8.0	15
Sept. 23	116	7.4	.36	28	8.3	12	3.4	62	58	17	.2	6.0	186	104	53	294	6.8	6
1-4055. SOUTH RIVER AT OLD BRIDGE, N. J.																		
Nov. 29, 1962	114	9.6	0.35	7.2	3.9	3.6	2.3	2	30	7.3	0.0	1.3	75	34	33	121	5.1	5
Mar. 18, 1963	259	7.3	.45	6.8	2.9	3.3	3.0	2	30	7.2	.2	1.6	77	29	28	123	4.8	3
June 4	97	6.0	.06	6.4	2.9	5.3	2.8	2	23	9.4	.2	4.9	77	28	27	101	5.0	5
SHARK RIVER BASIN																		
1-4077. SHARK RIVER AT GLENDOLA, N. J.																		
Aug. 29, 1963	6.0					7.4		41	16	11		0.7	50	17		141	7.4	30

WRECK POND BROOK BASIN

1-4078. WRECK POND BROOK NEAR SPRING LAKE, N. J.

Aug. 29, 1963.....	3.8					8.3		10	12	14		2.4		24	16	100	6.7	25

MANASQUAN RIVER BASIN

1-4079. MANASQUAN RIVER AT WEST FARMS, N. J.

Aug. 29, 1963.....	17.0					17		72	26	15		6.3		76	17	236	7.7	60

1-4080. MANASQUAN RIVER AT SQUANKUM, N. J.

Nov. 28, 1962.....	75	16	3.1	16	3.4	8.1	3.0	22	38	11	0.3	2.1	117	54	36	179	6.4	10
Mar. 15, 1963.....	86	15	1.9	12	3.9	6.8	3.0	15	29	10	.4	6.1	99	46	34	161	6.2	10
June 3.....	42	16	1.7	18	2.2	6.4	2.5	28	29	9.9	.1	4.6	121	54	31	160	7.7	16

METEDECONK RIVER BASIN

1-4081. NORTH BRANCH METEDECONK RIVER AT LAKEWOOD, N. J.

Aug. 30, 1963.....	11.5					6.4		26	11	8.5		1.4		32	11	105	6.6	20

TOMS RIVER BASIN

1-4083. MAIN BRANCH TOMS RIVER AT WHITESVILLE, N. J.

Aug. 30, 1963.....	26.2					5.3		7	11	6.0		2.4		16	11	61	6.1	30

1-4084. RIDGEWAY BRANCH NEAR LAKEHURST, N. J.

Aug. 30, 1963.....	9.2							0	31	7.0		0.3		13	13	157	3.8	50

1-4084.4. UNION BRANCH AT LAKEHURST, N. J.

Aug. 30, 1963.....	14.7					4.6		3	3.2	6.0		0.6		5	3	36	5.2	40

1-4084.6. MANAPAQUA BROOK AT LAKEHURST, N. J.

Aug. 30, 1963.....	1.8					8.0		7	7.2	7.5		5.1		10	5	68	6.1	20

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
TOMS RIVER BASIN--Continued																		
1-4085. TOMS RIVER NEAR TOMS RIVER, N. J.																		
Nov. 20, 1962	263	4.2	0.62	24	2.7	26	2.3	0	55	57	0.3	0.8	192	71	71	364	4.3	100
Mar. 15, 1963	365	3.6	.52	17	4.9	28	4.5	4	57	50	.1	1.1	195	63	59	325	5.0	65
June 3	204	4.2	--	16	2.4	14	2.0	0	34	40	.3	2.4	140	50	50	228	4.0	40
FORKED RIVER BASIN																		
1-4090.5. NORTH BRANCH FORKED RIVER NEAR FORKED RIVER, N. J.																		
Aug. 29, 1963	6.6					3.9		4	1.6	5.5		0.5		5	2	33	5.8	40
OYSTER CREEK BASIN																		
1-4091. OYSTER CREEK NEAR WARETOWN, N. J.																		
Aug. 29, 1963	22.3					4.1		6	3.2	6.0		0.2		8	3	38	6.0	10
MILL CREEK BASIN																		
1-4091.5. MILL CREEK NEAR MANAHAWKIN, N. J.																		
Aug. 29, 1963	12.2					5.8		7	2.4	6.0		0.2		4	0	30	6.0	10
1-4092. FOURMILE BRANCH MILL CREEK NEAR MANAHAWKIN, N. J.																		
Aug. 29, 1963	2.9					5.8		7	1.8	8.0		0.2		7	2	40	6.0	20
CEDAR RUN BASIN																		
1-4092.5. CEDAR RUN NEAR MANAHAWKIN, N. J.																		
Aug. 29, 1963	1.1					4.6		2	1.0	7.5		0.3		3	2	34	5.2	20
TUCKERTON CREEK BASIN																		
1-4093. MILL BRANCH TUCKERTON CREEK NEAR TUCKERTON, N. J.																		
Aug. 29, 1963	1.6					5.1		4	2.0	6.0		0.2		3	0	28	5.4	25

1-4094. MULLICA RIVER NEAR BATSTO, N. J.

Dec. 6, 1962.....	157	3.2	1.1	1.2	0.2	0.9	0.2	0	5.9	1.2	0.0	0.3	27	4	4	38	4.4	--
Apr. 29, 1963.....	63	--	--	--	--	3.0	--	4	8.1	3.5	--	.9	--	11	8	47	5.4	4
June 25.....	36	4.4	3.6	1.2	.2	1.6	.0	2	3.4	3.3	.3	1.4	41	4	3	28	5.0	150

1-4095. BATSTO RIVER AT BATSTO, N. J.

Nov. 16, 1962.....	166	5.1	0.35	2.8	0.7	1.7	1.2	0	10	4.1	0.3	0.3	43	10	10	55	4.5	25
June 25, 1963.....	59	6.2	1.5	1.2	.5	1.9	.0	2	3.2	4.3	.0	.8	32	5	4	26	5.2	40

1-4100. OSWEGO RIVER AT HARRISVILLE, N. J.

Nov. 16, 1962.....	90	7.4	0.41	1.2	0.2	2.5	0.4	0	9.2	3.5	0.0	0.2	34	4	4	52	4.4	7
June 25, 1963.....	38	14	1.1	.8	.5	2.1	.2	0	5.0	3.6	.1	.4	30	4	4	39	4.4	15

GREAT EGG HARBOR RIVER BASIN

1-4108. FOURMILE BRANCH NEAR WILLIAMSTOWN, N. J.

Sept. 11, 1963.....	1.7					3.4		4	2.0	4.0		5.3		8	5	34	5.6	10

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
DELAWARE RIVER BASIN																					
1-4282. MASTHOPE CREEK AT MASTHOPE, PA.																					
May 14, 1963..	39.3							3.2		10	10	1.3		0.7		14	6		53	6.5	9
Sept. 18.....	1.8							2.1		22	6.4	.0		.2		20	2		54	7.1	9
1-4315. LACKAWAXEN RIVER AT HAWLEY, PA.																					
Oct. 4, 1962..	63	13		0.01	0.01	12	1.9	4.5	1.6	40	13	3.0		0.8	76	38	5		112	7.1	2
1-4316.5. WEST BRANCH WALLENPAUPACK CREEK NEAR HAMLIN, PA.																					
May 16, 1963..	39.1							3.9		21	13	2.0		1.0		26	9		78	6.8	17
Sept. 17.....	1.8							4.8		54	6.8	3.0		1.0		46	2		110	6.7	10
1-4321. BLOOMING GROVE CREEK NEAR ROWLAND, PA.																					
May 14, 1963..	38.5							3.7		6	11	2.0		0.5		12	7		49	6.4	13
Sept. 18.....	2.2							2.1		14	8.8	.0		.0		16	5		45	6.6	15
1-4397. LITTLE BUSHKILL AT BUSHKILL, PA.																					
May 14, 1963..	39.8							2.5		8	9.8	0.5		0.7		12	6		45	6.4	21
Sept. 17.....	.6							2.8		20	7.8	2.0		.6		22	6		60	6.4	10
1-4400. FLAT BROOK NEAR FLATBROOKVILLE, N.J.																					
Nov. 6, 1962..	76	5.0		0.15		15	3.4	2.1	1.0	38	20	3.8	0.1	0.2	80	52	21		121	7.3	13
Mar. 6, 1963..	122	5.3		.16		17	3.9	3.4	.2	48	16	5.8	.1	2.2	84	59	19		147	7.1	3
July 9.....	19	7.5		.31		28	6.8	2.2	.2	97	20	3.9	.0	.5	133	98	19		206	7.9	13
1-4426. MARSHALL CREEK AT MINISINK,HILLS, PA.																					
May 14, 1963..	40							3.2		24	16	3.0		1.3		34	15		98	6.8	5
Sept. 17.....	5.0							7.8		61	18	5.5		.5		60	10		149	7.4	10

1-4455. PEQUEST RIVER AT PEQUEST, N. J.

Oct. 30, 1962	31	5.8		0.10		54	26	18	2.0	224	51	25	0.1	7.8	321	242	58		543	7.7	30
Feb. 27, 1963	56	7.4		.18		49	25	9.6	1.5	204	46	14	.0	4.2	275	226	59		495	7.8	25
July 3	37	6.6		.24		42	26	12	1.4	218	38	19	.1	5.0	264	212	34		456	7.4	15

1-4477.5. BEAR CREEK NEAR WHITE HAVEN, PA.

May 13, 1963	84.3							1.2		4	6.8	1.0		0.4		10	7			5.7	4
Sept. 16	2.6							3.2		8	4.8	3.5		.8		10	4		43	6.8	22

1-4570. MUSCONETCONG RIVER NEAR BLOOMSBURY, N. J.

Oct. 31, 1962	126	5.3		0.18		25	10	5.2	1.5	92	20	15	0.0	2.8	145	104	28		242	7.2	8
Feb. 28, 1963	101	6.7		.21		24	12	5.6	.2	103	18	9.8	.1	4.9	140	110	25		274	7.9	3
July 2	71	12		.24		27	14	5.0	.4	134	16	6.6	.0	4.3	167	125	15		261	8.1	8

1-4640. ASSUNPINK CREEK AT TRENTON, N. J.

Mar. 14, 1963	200	9.0		1.1		14	5.4	9.7	2.5	14	39	13	0.2	9.1	128	57	46		204	6.1	5
Apr. 15	58	--		.19		--	--	14	--	30	38	20	--	18	--	75	51		235	7.0	--
May 27	38	11		.15		24	8.0	18	4.0	23	63	24	.6	19	214	93	74		338	6.1	27

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Boron (B)	Bicarbonate (HCO_3)	Carbonate (CO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphorus as PO_4	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color	Copper (Cu)	Zinc (Zn)
WICOMICO RIVER BASIN																										
1-4865. BEAVERDAM CREEK NEAR SALISBURY, MD.																										
Nov. 28,1962	10	19		0.28	0.00	5.5	0.9	6.8	1.6		11		8.8	6.5	0.0	4.7	0.10	68	17	8		81	6.3	20		
June 19,1963	18	12	0.2	a.29	a.00	4.0	.2	6.9	.6	0.00	14		3.6	7.1	.1	2.2	.05	60	11	0		62	6.3	40	0.03	0.00
PATUXENT RIVER BASIN																										
1-5925. PATUXENT RIVER NEAR LAUREL, MD.																										
July 1,1963	14	7.3	0.1	a1.3	a0.50	6.0	2.4	3.0	2.4	0.00	24		6.0	4.4	0.2	2.5	0.02	54	25	6		75	6.5	7	0.06	1.1
July 23.....	13	7.2		.07	.00	5.5	2.8	5.1			26		6.4	4.1	.0	2.2		51	25	4		77	6.9	3		
Aug. 16.....	12	7.0		.26	.00	6.5	2.7	4.4			27		5.2	4.2	.4	2.3		54	27	5		78	6.5	30		
Sept. 9.....	10	6.7		a.15	a.00	7.5	2.8	2.8			28		4.6	4.4	.0	2.7		52	30	7		79	6.3	30		
Sept. 19....	11	7.4		a.28	a.01	9.0	.9	5.3			30		4.4	4.6	.0	2.5		54	26	2		78	6.7	30		
1-5944.1. LITTLE PATUXENT RIVER AT FORT MEADE, MD.																										
June 27,1963	41	15	0.1	0.57	0.06	12.5	2.2	24	3.3	0.00	64		26	7.6	0.4	5.1		137	39	0		204	6.4	8	0.02	0.00
July 23.....	20	10		.00	.00	9.5	3.5	11			50		9.2	7.1	.1	1.0		82	38	0		130	7.2	5		
Aug. 2.....	13	11		.00	.00	10	3.6	11			48		11	7.2	.1	3.2		84	40	1		134	7.0	8		
Aug. 16.....	e20	10		.02	.00	10	3.2	11			40		15	8.0	.1	.9		85	38	5		136	6.3	10		
Aug. 26.....	e20	11		a.00	a.00	12	2.7	9.2			48		8.4	7.8	.1	1.7		82	41	2		128	7.0	5		
Sept. 9.....	20	4.8		a.00	a.00	11	2.8	9.2			48		7.8	6.9	.1	1.6		b68	39	0		124	7.3	5		
Sept. 19....	--	10		a.00	a.00	12	3.2	9.9			47		9.6	9.4	.1	2.6		85	43	5		138	7.4	5		
1-5944.5. PATUXENT RIVER AT HARDESTY, MD.																										
June 27,1963	85	13	0.0	2.0	0.10	10	1.9	7.4	2.5	0.00	30		13	7.3	0.2	5.0	0.26	b78	33	1		120	6.4	2	--	--
July 23.....	56	9.1	--	a.00	a.00	10	2.7	16	--	--	40		15	12	.3	5.0	--	90	36	3		143	6.8	5	--	--
Aug. 2.....	48	8.7	--	.02	.00	11	2.8	11	--	--	40		13	8.8	.3	2.7	--	84	39	6		136	7.0	7	--	--
Aug. 16.....	76	7.5	--	a.00	a.00	10	1.7	7.4	--	--	21		18	6.6	.1	3.2	--	68	32	15		109	6.1	10	--	--
Aug. 26.....	77	12	.3	2.1	.10	11	2.6	8.0	3.5	.03	29		19	10	.1	4.8	.14	88	38	14		135	6.5	5	0.07	0.20
Sept. 9.....	61	8.6	.2	1.5	.04	11	2.8	10	3.5	.00	36		15	12	.2	5.2	.17	b88	39	10		143	6.4	5	.04	.00
Sept. 19....	62	11	--	a.01	a.00	11	2.3	9.7	--	--	27		18	10	.1	3.5	--	82	37	15		128	6.4	5	--	--

1-5945.6. PATUXENT RIVER AT NOTTINGHAM, MD.

Aug. 2,1963		1.5		0.01	0.00	32	53	528			32		142	900	0.3	0.4		1690	300	274		3120	6.5	8		
Aug. 16.....		1.2		a.01	a.01	44	86	719			32		185	1280	.3	.5		2420	464	438		4230	6.5			
Aug. 26.....		3.9		a.00	a.02	29	57	463			28		125	820	.2	1.3		1600	306	283		2860	6.4			
Sept. 9.....		2.1		a.00	a.00	43	100	815			31		210	1450	.3	.4		2800	520	494		4810	6.4			
Sept. 19....		2.3		a.05	a.00	38	70	600			33		158	1060	.2	1.1		2140	385	358		3610	6.4			

1-5947. PATUXENT RIVER AT BENEDICT, MD.

June 28,1963		3.8	0.8	0.24	0.00	149	383	3240	118	0.85	60		930	5880	0.8	1.9	0.13	11700	1950	1900		16800	6.5	5	0.01	0.00
Aug. 16.....		5.0		a.36	a.01	149	468	3730			63		928	6650	.6	.4		12600	2300	2250		18300	6.7	--		
Aug. 26.....		4.2		a.04	a.00	169	257	4420			65		1020	7060	.7	1.8		13800	1480	1430		19900	6.7	5		

a In solution when analyzed.
b Calculated from determined constituents.
e Estimated.

239-654 O - 67 - 15

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS--Continued

Periodic determinations of suspended-sediment discharge, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment: Percent finer than size indicated, in millimeters										Method of analysis
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
PASSAIC RIVER BASIN																	
1-3795. PASSAIC RIVER NEAR CHATHAM, N.J.																	
July 24, 1963				24	18	1.2											
Aug. 5				14	20	.8											
Aug. 8				9.8	27	.7											
Aug. 18				11	27	.8											
Aug. 19				8.5	23	.5											
Aug. 22				12	10	.3											
Aug. 26				6.1	19	.3											
Aug. 29				5.7	23	.4											
Sept. 2				3.8	16	.2											
Sept. 9				8.9	10	.2											
Sept. 10				8.5	10	.2											
Sept. 11				7.3	10	.2											
Sept. 12				7.9	11	.2											
Sept. 13				52	150	21											
Sept. 16				17	37	1.7											
Sept. 17				48	160	23											
Sept. 18				36	77	7.5											
Sept. 19				29	53	4.1											
Sept. 20				21	50	2.8											
Sept. 21				15	45	1.8											
Sept. 22				11	38	1.1											
Sept. 23				8.9	30	.7											
Sept. 24				8.5	26	.6											
Sept. 25				8.1	22	.5											
Sept. 26				8.1	18	.4											
Sept. 27				8.1	17	.4											
Sept. 28				8.1	15	.3											
Sept. 29				107	220	96											
Sept. 30				90	150	36											

PART 2. SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS

PASQUOTANK RIVER BASIN

2-438.52. PASQUOTANK RIVER NEAR ELIZABETH CITY, N. C.

LOCATION.--At end of county road 4.6 miles northwest of Elizabeth City, Pasquotank County, and 4 miles downstream from Lake Drummond Canal.
DRAINAGE AREA.--275 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1963.
Water temperatures: October 1957 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 87 ppm Jan. 18; minimum, 9.0 ppm June 3-30.
Specific conductance: Maximum daily, 385 micromhos Jan. 18; minimum daily, 61 micromhos Aug. 2.
Water temperatures: Maximum, 89°F June 26, July 3, 27; minimum, 36°F Jan. 2.
EXTREMES, 1957-63.--Chloride: Maximum, 1,940 ppm Oct. 15, 1961; minimum, 7.5 ppm Jan. 29-31, 1962.
Specific conductance: Maximum daily, 6,380 micromhos Oct. 15, 1961; minimum daily, 56 micromhos July 18, 19, 1962.
Water temperatures: Maximum, 95°F July 25, 1961; minimum, freezing point Jan. 27, 1961.
REMARKS.--Salinity station. No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
Oct. 1-31,1962		8.9	0.63	6.5	2.9	9.2	1.6	15	13	13	0.2	0.8		123	64	28	16	110	6.0	360
Nov. 1-30.....		10	.69	5.9	4.6	11	1.7	14	15	18	.3	1.0		150	75	34	22	120	6.2	320
Dec. 2-21.....		13	.40	7.4	3.2	12	1.4	11	20	18	.4	1.1		145	82	82	22	120	6.0	320
Dec. 23-31....		11	.49	7.5	2.5	11	1.5	8	17	17	.3	1.2		132	74	29	22	115	5.7	210
Jan. 1-9, 1963		9.5	.36	7.1	2.9	8.4	.8	6	18	14	.3	1.0		119	65	30	24	105	5.4	160
Jan. 10-13....		9.6	.54	7.2	3.6	20	1.4	9	--	32	.3	.5		--	--	33	26	155	4.8	160
Jan. 14-15....		9.6	.44	6.8	3.9	14	1.2	7	23	23	.2	1.4		--	87	33	28	130	5.5	--
Jan. 19-31....		8.6	.32	6.5	2.7	7.7	1.2	7	17	13	.3	.9		104	61	27	22	105	5.6	170
Feb. 1-28.....		7.4	.32	6.0	1.8	6.4	1.0	6	17	10	.2	1.6		103	55	22	18	90	5.4	180
Mar. 1-31.....		5.0	.40	5.1	2.6	6.6	1.5	5	16	10	.2	1.2		100	51	24	20	86	5.4	220
Apr. 1-30.....		5.9	.80	5.9	2.6	8.0	.9	9	14	12	.4	.8		115	55	26	18	92	5.8	360
May 1-31.....		8.9	.89	7.1	2.5	11	1.2	9	15	17	.3	1.7		143	70	28	21	120	5.9	400
June 1-2.....		7.4	--	6.3	3.1	--	--	12	12	18	--	1.8		--	--	28	18	130	6.4	--
June 3-30.....		7.2	.92	5.0	1.8	6.3	1.4	6	14	9.0	.3	1.9		123	51	20	15	84	5.4	400
July 1-31.....		8.4	1.1	6.3	2.3	9.2	1.4	11	12	13	.3	1.8		132	61	25	16	97	5.7	400
Aug. 1-31.....		7.3	.41	4.6	1.6	7.5	2.2	10	11	11	.3	1.7		98	53	18	10	81	6.1	360
Sept. 1-30....		6.0	.47	6.6	2.4	9.3	1.8	12	14	15	.3	2.3		120	64	26	16	105	6.2	280
Time-weighted average.....		8.0	0.62	6.1	2.6	8.9	1.4	10	15	14	0.3	1.4		122	62	29	18	102	--	320

PASQUOTANK RIVER BASIN--Continued

2-438.52. PASQUOTANK RIVER NEAR ELIZABETH CITY, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1			35						18			
2												
3												
4												
5				17								
6												
7												
8												
9												
10												
11			18	32								
12												
13												
14				23	10							
15		18										15
16	13			35		10	12	17	9.0	13	11	
17				78								
18				87								
19												
20												
21												
22			30									
23												
24												
25				13								
26												
27			17									
28												
29					--							
30					--							
31		--			--		--		--			--

PASQUOTANK RIVER BASIN--Continued

2-438.52. PASQUOTANK RIVER NEAR ELIZABETH CITY, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0430 and 1900)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	70	69	69	72	71	70	71	75	71	71	74	74	71	71	73	73	74	67	67	67	70	66	67	67	62	57	57	58	61	65	58	68
November	57	58	57	55	54	52	55	55	56	56	55	55	52	52	53	52	58	55	52	52	54	56	52	51	50	49	50	52	52	54	--	54
December	54	54	56	54	54	51	48	50	49	43	44	39	39	41	39	41	41	44	44	43	43	44	45	43	42	41	43	42	46	39	38	45
January	38	36	41	42	37	38	40	41	42	46	46	49	47	43	44	44	46	47	48	50	48	46	46	42	41	41	39	38	37	38	39	43
February	39	40	37	39	41	42	46	42	42	42	46	45	45	45	42	40	39	41	42	45	44	40	42	41	42	40	40	--	--	--	--	42
March	42	45	47	48	52	54	—	53	53	54	53	54	56	58	58	--	55	60	54	56	52	51	52	54	58	56	58	64	64	64	62	55
April	64	71	77	67	64	62	62	63	62	62	60	63	61	64	62	64	64	69	73	72	69	69	73	67	67	61	66	65	63	65	--	66
May	60	65	74	64	74	68	69	72	81	81	67	63	68	72	73	66	70	74	74	73	72	78	72	72	69	68	68	71	72	74	74	71
June	73	70	70	72	73	74	79	78	84	83	80	78	78	79	78	73	74	75	78	80	71	75	76	80	80	89	85	86	80	81	--	78
July	80	88	89	84	85	85	83	85	76	77	79	80	78	77	79	82	84	87	84	84	86	81	81	82	82	85	89	83	88	80	80	83
August	83	82	84	86	84	80	84	85	85	82	82	83	--	81	78	78	81	82	84	81	81	82	85	87	80	79	77	78	78	80	80	82
September	76	78	80	78	77	73	75	76	77	80	78	79	71	70	70	68	72	70	72	73	77	70	68	66	68	71	72	70	70	--	--	73

PASQUOTANK RIVER BASIN--Continued

2-438.62. PASQUOTANK RIVER AT ELIZABETH CITY, N. C.

LOCATION.--At bridge, draw section on U.S. Highway 158 at Elizabeth City, Pasquotank County.
DRAINAGE AREA.--303 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1963.
Water temperatures: October 1957 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 2,710 ppm Jan. 11, 12, (B); minimum, 12 ppm Mar. 25 (T).
Specific conductance: Maximum daily, 8,500 micromhos Jan. 11, 12, (B); minimum daily, 96 micromhos Mar. 22 (B), 23 (T).
Water temperatures: Maximum, 86°F July 27 (T); minimum, 33°F Jan. 1 (T).
EXTREMES, 1957-63.--Chloride: Maximum, 8,020 ppm Oct. 30 (B), 1958; minimum, 4.5 ppm Mar. 6 (T), 1961.
Specific conductance: Maximum daily, 20,800 micromhos Oct. 29 (B), 1958; minimum daily, 63 micromhos June 3 (T), 1961.
Water temperatures: Maximum, 89°F July 29, 30 (T), 1959, Sept. 1 (T), 1960; minimum, freezing point on several days during January and December 1958.
REMARKS.--Salinity station. Top (T) and bottom (B) samples were collected once daily. No discharge records available.

Chemical analyses, in parts per million, March to June 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Mar. 13-23, 24(T), 1963		4.5	0.32	6.0	2.5	8.3	2.2	8	16	13	0.3	0.7	A104	25	18	100	6.1	180
June 5-9		6.5	.42	6.2	2.9	12	2.2	11	14	20	.2	2.5	115	28	18	140	6.3	260
June 15		6.3	--	6.4	3.7	--	--	12	16	29	--	1.6	--	31	21	180	6.4	--

A Organic matter present; sum of mineral constituents 58 parts per million.

PASQUOTANK RIVER BASIN--Continued

2-438.62. PASQUOTANK RIVER AT ELIZABETH CITY, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
1	120	245	170	375	450	675	500	525	118	1975	14	900	251	32	254	259	219	465	49	94	90	98	128	275
2	140	275	175	275	370	370	1000	1300	675	1875	21	220	75	275	240	245	215	202	83	62	75	70	182	260
3	135	150	205	210	400	400	1200	1425	850	900	14	625	40	252	245	475	325	325	82	79	131	94	232	240
4	118	245	245	450	500	525	425	375	400	1350	16	650	152	240	201	350	95	70	67	76	98	203	226	275
5	120	190	350	350	925	1075	1475	1625	585	1700	27	585	51	55	250	310			86	163	57	92	208	216
6	88	113	275	300	1520	1520	975	2125	260	225	116	275	78	108	181	262	20	20	127	132	88	174	216	152
7	94	275	400	625	1520	1550	190	2180	975	1700	47	56	19	19	229	264			104	120	104	102	182	196
8	195	375	225	675	1300	1290	555	2250	260	1225	19	215	38	41	390	410			98	127	100	98	161	191
9	105	300	350	880	1550	1575	1325	2275	375	350	19	475	59	155	340	370			91	88	98	139	158	193
10	61	300	675	675	675	1030	1475	2530	350	1400	375	19	27	89	202	465	16	40	96	97	144	139	218	240
11	200	300	525	525	1350	1350	2020	2710	585	1450	67	113	46	60	203	214	18	214	158	208	126	143	242	212
12	245	245	525	1020	555	1250	2050	2710	400	350	46	72	38	70	250	252	96	128	109	104	170	171	245	260
13	170	245	275	1000	525	1200	350	2375	275	750			40	67	264	300	50	51	148	200	184	212	230	234
14	125	190	300	650	585	575	1000	2360	150	900			35	116	410	445	72	78	231	223	148	185	155	158
15	150	230	675	1200	900	1585	555	2375	135	108			48	131	310	490	29	29	220	204	--	--	164	166
16	140	240	675	1200	715	1650	475	2325	54	525			99	121	325	325	24	78	129	295	128	223	128	128
17	118	235	275	1450	350	1630	750	2275	48	1000			182	199	350	425	46	46	230	222	134	208	171	275
18	96	99	1575	1825	1175	1680	1020	2325	1085	1075		13	196	202	450	460	27	31	226	233	205	228	193	275
19	61	61	715	675	900	1680	400	2180	113	1135	13		275	86	440	490	42	42	174	275	160	184	147	260
20	75	80	675	675	370	350	1020	2180	120	460			191	800	400	520	91	83	214	230	204	224	135	158
21	195	245	1520	1800	1450	1450	425	1650	27	550			96	335	500	490	174	177	161	191	202	231	325	260
22	245	300	1550	1700	1520	1520	375	300	46	285			118	252	430	460	64	58	193	242	132	235	114	208
23	325	325	750	1225	675	1550	400	2020	30	725			232	300	385	385	35	48	141	207	161	220	161	161
24	220	245	1275	1275	1125	1950	800	825	59	46		245	123	139	335	335	30	61	121	160	161	218	159	161
25	300	325	1200	1450	825	2450	1650	1680	48	500	12	700	158	171	310	310	56	67	126	--	182	186	182	188
26	170	165	500	500	1825	1825	300	1850	35	97	44	775	171	275	335	310	35	46	161	191	151	188	226	243
27	187	210	425	525	475	2275	675	1625	16	14	72	455	237	252	325	370	30	21	174	171	150	208	196	275
28	375	275	450	525	475	2225	880	850	49	750	38	400	185	252	430	460	31	31	161	192	161	233	325	325
29	240	425	500	500	1150	2225	108	1325	--	--	27	400	182	226	490	490	108	40	184	184	202	241	350	375
30	120	275	500	650	1000	1000	83	1450	--	--	32	425	275	275	370	400	121	64	162	160	202	233	260	260
31	125	400	--	--	750	750	1700	1800	--	--	31	375	--	--	275	490	--	--	107	113	168	310	--	--

PASQUOTANK RIVER BASIN--Continued

2-438.62. PASQUOTANK RIVER AT ELIZABETH CITY, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Top and bottom once-daily measurements at approximately 1030)

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Top.....	70	71	71	71	71	70	72	73	74	73	73	72	73	72	73	76	74	71	67	68	67	67	67	63	64	58	57	57	59	59	59	68
Bottom.....	69	69	70	70	70	69	70	71	72	71	71	71	71	71	72	78	72	70	--	67	66	66	65	62	62	58	58	59	--	58	56	67
November																																
Top.....	58	58	56	55	56	54	54	54	55	54	55	55	54	51	54	54	49	55	52	53	57	57	51	51	50	47	49	50	54	53	--	54
Bottom.....	56	57	55	54	55	53	53	53	53	53	54	54	53	52	53	53	48	53	53	52	58	57	51	52	50	48	48	50	53	52	--	53
December																																
Top.....	53	55	54	53	54	46	44	48	49	43	44	41	37	38	38	40	39	41	43	45	39	40	39	39	40	40	43	42	41	38	37	43
Bottom.....	53	56	55	54	53	47	45	49	50	44	45	40	38	39	38	38	39	39	44	44	41	42	40	40	39	41	41	40	39	39	36	43
January																																
Top.....	33	36	35	36	35	37	37	38	38	40	41	45	47	42	41	39	42	43	39	45	45	43	46	42	41	41	42	38	39	38	39	40
Bottom.....	34	37	36	37	36	35	38	36	37	41	40	41	44	38	38	40	39	40	42	43	41	40	45	41	40	41	41	40	38	38	40	39
February																																
Top.....	37	39	38	36	39	40	43	40	39	42	46	43	43	43	41	42	41	39	43	49	45	41	41	40	41	40	36	40	--	--	--	41
Bottom.....	37	39	38	37	38	39	41	38	38	40	42	44	41	42	42	40	39	41	42	42	44	39	40	40	42	40	36	39	--	--	--	40
March																																
Top.....	43	38	45	42	51	53	53	51	53	53	54	59	60	59	57	56	58	61	56	59	54	52	51	54	57	57	60	60	60	62	62	55
Bottom.....	41	37	42	45	49	50	50	50	51	55	53	56	57	57	56	55	56	59	55	58	54	51	50	54	54	55	55	56	58	59	58	53
April																																
Top.....	59	63	65	65	63	62	61	59	63	60	61	61	60	63	61	60	63	63	67	67	68	72	70	65	66	65	66	66	66	64	--	64
Bottom.....	61	60	61	63	62	62	60	59	62	59	60	60	--	60	60	59	64	64	64	64	65	70	66	64	65	64	65	65	64	64	--	63
May																																
Top.....	63	62	65	64	68	66	66	68	68	71	71	63	66	66	69	67	70	70	69	74	71	73	70	--	68	68	68	71	72	74	74	68
Bottom.....	62	61	63	63	67	66	65	69	69	69	70	64	65	66	67	70	67	68	70	70	70	72	70	69	67	67	67	69	70	71	72	68
June																																
Top.....	74	72	72	75	75	72	79	78	78	79	82	81	79	77	80	78	75	77	76	70	78	76	76	78	80	78	78	77	80	80	--	77
Bottom.....	72	71	71	72	72	79	75	75	75	76	77	78	78	71	78	77	75	76	77	78	78	75	75	76	76	76	77	78	77	79	--	75
July																																
Top.....	78	81	83	80	80	79	82	81	80	76	79	79	80	78	83	81	80	83	82	82	82	82	80	82	79	82	86	81	83	85	83	81
Bottom.....	82	78	81	79	79	80	83	82	79	77	78	78	79	78	80	78	79	81	80	80	81	80	80	81	82	83	84	80	84	84	82	80
August																																
Top.....	83	82	82	83	82	83	85	84	85	84	83	84	82	80	--	80	84	83	--	83	81	84	80	83	80	80	80	80	80	80	80	82
Bottom.....	82	83	83	82	80	83	83	83	84	83	82	83	81	80	--	79	82	81	82	82	80	82	82	82	80	79	79	79	79	80	78	81
September																																
Top.....	79	81	80	80	76	75	75	77	77	76	76	79	77	73	71	70	70	69	75	78	69	76	63	65	66	66	72	70	69	67	--	73
Bottom.....	78	79	79	79	76	75	73	75	76	75	77	77	76	72	71	70	70	69	72	76	72	75	64	66	66	66	70	69	68	66	--	73

CHOWAN RIVER BASIN

2-532.44. CHOWAN RIVER AT WINTON, N. C.

LOCATION.--At bridge, draw section on U.S. Highway 158 and State Highway 97, at Winton, Hertford County, and 2.7 miles downstream from Meherrin River.
DRAINAGE AREA.--4,198 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1954 to September 1963.
Water temperatures: October 1954 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 113 ppm Sept. 21; minimum, 5.7 ppm May 1-31.
Specific conductance: Maximum daily, 480 micromhos Sept. 21; minimum daily, 46 micromhos Jan. 10.
Water temperatures: Maximum, 77°F July 31; minimum, 37°F Jan. 31.
EXTREMES, 1954-63.--Chloride: Maximum, 398 ppm Dec. 15, 1958; minimum, 2.9 ppm Apr. 1-30, 1958.
Specific conductance: Maximum daily, 1,400 micromhos Dec. 13, 15, 1958; minimum daily, 36 micromhos May 12, 1958.
Water temperatures: Maximum, 87°F Aug. 5, 7, 8, 1955, July 27, 1957; minimum, freezing point Feb. 12, 1960.
REMARKS.--Salinity station. No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 15-24, 1962....		12	0.20	5.9	2.6	19	2.1	38	9.4	18	0.2	1.0	99	26	0	140	7.2	110
Nov. 1-30.....		11	.34	5.1	2.4	13	2.9	27	11	14	.2	1.4	80	23	1	120	6.3	120
Jan. 1-3, 1963.....		13	.29	6.7	1.8	30	2.5	38	14	33	.4	1.1	A122	24	0	190	6.7	100
Jan. 4.....		--	--	--	--	--	--	17	--	9.0	--	--	--	10	0	88	7.1	--
Jan. 5-6.....		14	.30	5.5	2.5	30	2.2	38	14	32	.4	1.3	A121	24	0	190	6.9	110
Jan. 7-31.....		10	.22	4.6	1.7	6.9	1.2	16	9.4	8.5	.2	.8	67	18	6	73	6.6	75
Feb. 1-28.....		8.0	.08	4.1	1.7	12	1.4	25	6.8	9.3	.1	2.2	70	17	0	91	6.7	55
Mar. 1-31.....		7.0	.14	4.6	1.7	5.4	2.4	15	6.8	6.5	.1	.9	57	18	6	65	6.7	65
Apr. 1-30.....		8.5	.26	5.2	2.6	7.0	1.4	31	6.0	8.0	.1	1.7	59	24	0	84	7.2	70
May 1-31.....		7.9	.15	5.8	1.6	6.2	1.5	31	5.4	5.7	.1	1.1	54	21	0	81	7.0	45
June 1-30.....		8.0	.30	6.3	1.6	14	1.7	32	6.2	16	.2	1.1	89	22	0	135	7.0	140
July 1-31.....		9.4	.22	7.5	1.8	12	1.9	36	6.4	9.4	.2	1.7	85	26	0	115	7.0	60
Aug. 1-31.....		5.5	.09	6.6	2.2	10	3.1	35	6.4	11	.2	1.5	65	26	0	110	7.1	50
Sept. 1-16.....		9.2	.13	6.9	2.4	8.1	2.5	31	10	8.5	.2	.6	84	27	2	97	6.6	45
Time-weighted average.....		8.6	0.20	5.7	2.0	10	2.0	28	7.5	10	0.2	1.3	72	22	1	100	--	75

A Calculated from determined constituents.

CHOWAN RIVER BASIN--Continued

2-532.44. CHOWAN RIVER AT WINTON, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	46		--									
2	47		38	33								
3	47		38									
4	46		38	9.0								
5	43		--									
				32								
6	46		38									
7	46		38									
8	43		38									8.5
9	43		35									
10	43		38									
11	46		38									
12	46		38									
13	43		38									
14	43		38									
15			38		9.3							
						6.5	8.0	5.7	16	9.4	11	
16			38									
17		14	38									54
18			38									46
19	18		38	8.5								30
20			38									108
21			38									113
22			38									110
23			38									108
24			38									110
25	91		--									108
26	91		--									110
27	91		--									110
28	91		--									110
29	--		--		--							110
30	--		--		--							110
31	--	--	--		--		--		--			--

CHOWAN RIVER BASIN--Continued

2-532.44. CHOWAN RIVER AT WINTON, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0900)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	64	63	63	63	62	62	62	61	61	62	62	62	62	62	62	62	61	61	60	60	59	59	58	58	57	57	57	58	--	--	--	61
November	55	56	54	54	51	54	50	49	49	49	50	50	50	51	49	48	48	47	48	49	47	48	49	49	49	49	47	48	48	47	--	50
December	49	48	46	45	45	45	44	44	43	43	43	43	41	41	40	40	40	40	40	40	39	39	39	39	--	--	--	--	--	--	--	--
January	41	40	40	40	39	39	40	39	40	40	41	41	40	40	40	39	40	40	40	41	41	39	38	39	39	--	39	--	--	38	37	40
February	40	39	39	40	39	38	38	39	39	40	40	40	39	38	39	38	39	40	40	39	40	39	38	38	40	39	40	38	--	--	--	39
March	50	48	49	51	52	52	53	54	54	54	54	53	52	53	54	55	56	56	57	58	58	58	58	59	59	59	59	60	58	58	58	55
April	58	59	60	59	59	58	59	59	59	59	60	60	60	61	60	60	59	58	60	59	59	60	58	58	60	57	58	58	60	59	--	59
May	60	61	61	60	60	60	61	61	62	62	61	62	61	61	61	60	60	61	60	61	60	61	62	61	62	62	60	62	61	61	60	61
June	62	62	63	63	64	64	65	64	65	65	65	66	65	66	66	67	67	67	67	68	68	68	68	69	70	70	71	71	72	75	--	67
July	70	71	71	69	70	71	72	72	72	71	72	72	72	73	73	73	74	74	74	73	74	75	75	76	75	76	76	75	75	76	77	73
August	72	73	74	75	75	75	76	76	74	74	73	74	75	74	75	74	75	73	74	73	74	75	74	73	74	74	75	75	74	74	73	74
September	73	72	72	71	72	73	72	71	71	72	71	70	69	69	68	68	67	67	66	66	65	65	66	65	65	66	66	65	65	65	--	68

CHOWAN RIVER BASIN--Continued

2-536.52. CHOWAN RIVER NEAR EDENHOUSE, N. C.

LOCATION.--At bridge, draw section on U.S. Highway 17, 0.8 mile northeast of Edenhouse, Bertie County.
DRAINAGE AREA.--4,871 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1963.
Water temperatures: October 1957 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 880 ppm Dec. 22, 23, (B); minimum, 7.5 ppm Mar. 1-31.
Specific conductance: Maximum daily, 3,000 micromhos Dec. 22, 23, (B); minimum daily, 58 micromhos Mar. 22 (T).
Water temperatures: Maximum, 86°F on several days in July and August; minimum, 37°F Feb. 17, 18, (T).
EXTREMES, 1957-63.--Chloride: Maximum, 9,140 ppm Nov. 11 (B), 1958; minimum, 3.0 ppm June 1-30, 1961.
Specific conductance: Maximum daily, 23,500 micromhos Nov. 11 (B), 1958; minimum daily, 43 micromhos Sept. 22 (B), 1960.
Water temperatures: Maximum, 91°F June 11 (T), 1959; minimum, freezing point Jan. 24, 25, 1961.
REMARKS.--Salinity station. Top (T) and bottom (B) samples were collected once daily. No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-20, 1962.....		7.6	0.06	4.6	2.5	12	1.9	24	7.4	16	0.2	0.6	67	22	2	110	6.9	60
Nov. 21-30.....		7.2	.14	5.3	2.7	15	1.9	25	8.0	20	.1	2.4	84	24	4	130	6.8	60
Dec. 1-5.....		9.4	.17	5.3	2.4	17	2.5	30	7.2	21	.3	1.5	90	23	0	138	6.9	80
Feb. 1-5, 1963.....		10	.13	5.1	2.4	14	1.9	15	12	22	.1	2.0	90	23	10	120	6.5	60
Feb. 6-28.....		8.9	.14	4.3	2.0	7.7	1.6	13	11	11	.1	2.2	59	19	8	86	6.4	65
Mar. 1-31.....		7.0	.07	4.3	1.8	6.4	2.8	12	10	7.5	.2	1.4	63	18	8	70	6.7	80
Apr. 1-30.....		6.2	.14	4.6	1.8	6.0	1.5	14	8.6	7.7	.4	1.7	56	19	8	69	6.8	90
May 1-30, 31(T).....		4.4	.16	3.8	1.8	7.4	1.5	18	8.0	8.5	.1	1.3	57	16	2	81	6.6	70
June 1-30.....		4.0	.13	4.4	1.4	7.5	1.5	22	6.4	8.0	.1	1.1	56	17	0	86	6.8	70
July 1-31.....		7.3	.19	3.9	2.0	11	1.9	21	9.2	11	.1	1.9	74	18	2	99	7.0	70
Aug. 1-31.....		9.0	.20	4.3	2.5	15	2.3	23	8.4	18	.1	.9	88	22	2	121	6.9	70
Sept. 1-18.....		9.2	.12	4.3	3.3	16	3.2	25	11	25	.2	.7	93	24	4	140	7.4	40

CHOWAN RIVER BASIN--Continued

2-536.52. CHOWAN RIVER NEAR EDENHOUSE, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
1			38	48			179	177																
2			56	56			177	177																
3			40	40	21	21	172	170	22	22														
4			38	48			170	170																
5			32	35			170	170																
6			48	40	110	88	122	122																
7			54	38	111	91	122	122																
8			51	51	113	91	96	99																
9			51	48	80	80	135	145																
10			51	51	78	80	135	135															25	25
11	16	16	51	51	79	80	132	132																
12			40	40	35	48	99	120																
13			40	43	30	48	118	116																
14			40	40	30	15	122	122																
15			43	40	102	113	120	122																
16			40	40	113	113	86	86			7.5	7.5	7.7	7.7	8.5	8.5	8.0	8.0	11	11	18	18		
17			40	40	111	113	75	75	11	11														
18			46	43	91	89	75	75																
19			46	46	89	89	56	56															19	39
20			46	46	91	91	150	157															51	21
21	80	80			110	775	157	152															40	41
22	48	46			130	880	110	106															41	43
23	48	48			125	880	152	152															47	48
24	48	48			205	185	157	157															48	48
25	46	72	20	20	180	180	207	207															16	15
26	35	72			182	182	81	78															64	65
27	51	54			195	200	78	78															46	64
28	67	67			200	200	40	38															75	80
29	67	64			197	205	40	40	--	--													91	91
30	51	54			200	197	40	40	--	--													89	94
31	54	54	--	--	182	182	56	59	--	--				--		79		--					--	--

CHOWAN RIVER BASIN--Continued

2-536.52. CHOWAN RIVER NEAR EDENHOUSE, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
/Top and bottom once-daily measurements between 1100 and 1500/

Month	Day																											Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Top.....	69	70	70	74	74	74	75	75	73	75	75	75	71	71	71	71	71	71	69	69	69	67	67	67	61	61	61	60	60	60	58	69
Bottom.....	70	69	69	73	73	73	74	74	74	74	74	76	71	71	71	71	71	71	68	68	68	67	67	67	60	60	60	58	58	58	58	68
November																																
Top.....	58	59	56	56	56	55	55	55	58	58	58	55	54	54	54	54	54	54	54	54	56	56	56	56	56	56	56	56	56	56	--	56
Bottom.....	58	58	56	56	56	54	54	54	56	56	56	55	54	54	54	54	54	54	54	54	55	55	55	55	55	55	55	55	55	55	--	55
December																																
Top.....	56	57	--	52	52	50	50	50	46	46	46	44	40	40	40	40	40	42	42	--	44	46	45	43	41	40	40	40	40	40	40	45
Bottom.....	57	56	--	51	51	50	50	50	45	45	45	44	41	41	39	39	39	40	40	--	44	44	44	41	40	40	40	40	40	40	40	44
January																																
Top.....	40	40	38	39	39	39	39	45	45	45	46	46	46	42	42	42	41	41	41	42	42	42	41	41	41	38	38	38	38	38	38	41
Bottom.....	40	40	39	38	38	38	38	43	43	43	43	44	44	42	41	41	40	40	40	41	41	41	41	41	41	39	39	39	38	38	38	40
February																																
Top.....	42	42	39	42	--	42	39	39	39	41	41	41	40	40	40	39	37	37	40	41	40	40	40	40	%40	40	39	--	--	--	--	40
Bottom.....	41	40	38	41	41	41	38	38	38	40	40	40	39	39	39	39	38	38	39	39	39	39	39	39	39	39	40	--	--	--	--	39
March																																
Top.....	44	44	49	49	49	53	53	53	53	53	53	53	53	53	53	51	51	57	57	57	53	52	52	57	57	57	60	60	60	60	60	54
Bottom.....	43	43	47	47	47	51	51	51	51	51	51	51	51	51	51	51	53	56	56	56	52	52	52	56	56	56	59	59	59	59	59	53
April																																
Top.....	--	67	67	67	67	67	67	63	63	62	61	61	61	61	61	61	61	68	69	69	68	68	68	66	64	64	66	66	66	65	--	65
Bottom.....	59	67	67	67	67	67	67	62	62	62	60	60	60	60	60	60	60	65	66	66	66	67	67	66	65	65	65	65	65	64	--	64
May																																
Top.....	63	63	65	66	66	66	67	74	75	73	73	66	65	67	67	67	67	72	73	73	70	70	72	68	67	67	69	67	67	73	73	69
Bottom.....	63	63	63	64	64	65	66	69	70	70	70	66	66	66	66	66	66	69	70	70	70	70	70	67	67	67	67	67	67	71	71	67
June																																
Top.....	73	71	71	--	78	78	78	79	80	80	83	80	80	80	80	80	78	78	79	78	78	76	74	71	81	82	81	71	80	81	--	78
Bottom.....	71	71	71	--	76	76	76	77	77	77	79	78	78	78	78	78	77	76	78	78	78	75	73	70	76	77	77	79	78	79	--	76
July																																
Top.....	--	84	83	83	82	82	83	82	79	79	79	79	79	80	81	81	82	82	82	82	82	81	81	81	--	86	86	86	86	86	86	82
Bottom.....	--	80	80	80	80	80	80	80	79	79	78	78	78	79	79	79	81	81	81	81	81	80	80	80	--	84	84	84	84	84	84	81
August																																
Top.....	86	86	86	86	84	84	85	84	84	83	83	83	82	82	82	80	80	80	82	82	82	85	83	83	83	83	83	83	83	83	83	83
Bottom.....	84	84	84	85	83	83	84	83	83	82	82	82	81	81	81	80	80	80	81	81	81	83	85	85	85	83	85	85	85	80	80	83
September																																
Top.....	80	--	80	79	76	76	76	78	78	79	79	79	78	78	70	70	70	71	74	73	73	73	73	73	68	69	68	68	68	68	--	74
Bottom.....	79	--	78	78	76	76	76	76	77	77	78	78	77	77	70	70	70	70	72	76	76	76	76	76	66	66	66	66	66	66	--	73

ROANOKE RIVER BASIN

2-660. ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA.

LOCATION.--At gaging station at bridge on State Highway 746, 2.8 miles northwest of Randolph, Charlotte County, and 3.6 miles upstream from Roanoke Creek.
DRAINAGE AREA.--3,000 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: April 1929 to March 1930, October 1950 to September 1956.
Water temperatures: October 1950 to September 1956.
Sediment records: January 1954 to September 1963.
EXTREMES, 1954-57.--Sediment concentrations: Maximum daily, 2,060 ppm May 20, 1957; minimum daily, 6 ppm Dec. 28-31, 1955.
Sediment loads: Maximum daily, 71,500 tons Mar. 2, 1954; minimum daily, 13 tons Sept. 21, 22, 1956.
REMARKS.--Sediment samples collected daily from January 1954 to June 1957 and at approximately ten-day intervals and during flood stages from July 1957 to September 1963.

Suspended sediment, water year October 1962 to September 1963
(Where no concentrations are reported, loads are estimated)

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	840	--	160	1320	--	70	2230	--	240
2	645	--	100	1350	--	150	2070	--	220
3	620	--	80	1380	--	150	1990	--	210
4	620	--	70	1520	--	160	1950	--	210
5	695	--	80	1660	--	180	1840	--	200
6	870	--	190	1950	--	210	1910	--	310
7	1050	45	128	1910	--	210	3200	--	3200
8	780	--	80	1740	--	190	3200	--	2900
9	670	--	50	1740	--	280	2740	--	2100
10	620	--	30	10700	719	S 26500	2920	--	1700
11	595	--	30	22300	616	S 36400	1990	--	590
12	595	--	30	17900	--	12100	1800	--	390
13	595	10	16	6780	--	1800	1700	--	370
14	595	--	20	4500	--	730	1630	--	310
15	720	--	60	3300	--	450	1600	--	300
16	990	--	210	2650	--	290	1880	--	300
17	1350	--	360	2230	--	300	1770	--	290
18	1320	--	320	3200	--	2400	1630	--	180
19	1240	--	270	4400	--	1500	1800	--	190
20	1210	--	260	3700	--	800	2070	30	168
21	1180	--	220	3200	--	520	1800	--	150
22	1240	--	200	3800	--	3000	1950	--	160
23	1240	--	200	4200	--	2500	2390	--	190
24	1240	--	130	3200	--	1100	2740	--	220
25	1210	--	130	2830	--	460	2830	--	230
26	1180	--	60	2650	--	290	2740	--	220
27	1180	18	57	2390	35	226	2740	--	300
28	1140	--	60	2650	--	210	3300	--	1500
29	1180	--	60	2150	--	230	3800	--	3200
30	1210	--	70	2150	--	230	5940	--	6400
31	1240	--	70	--	--	--	6260	--	2900
Total	29860	--	3801	125450	--	93636	78410	--	29848

S Computed by subdividing day.

ROANOKE RIVER BASIN--Continued

2-660. ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued
(Where no concentrations are reported, loads are estimated)

Day	JANUARY			FEBRUARY			MARCH		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	4900	--	1600	2390	--	260	1990	--	640
2	3800	--	1200	2310	--	250	6020	--	11400
3	3100	--	920	2470	--	270	6100	--	4900
4	2830	--	760	2830	--	310	3700	--	1400
5	2740	--	670	2650	--	290	2920	100	790
6	2560	--	550	2470	--	270	7270	689	S 15400
7	2560	--	550	2390	40	258	17600	524	S 24700
8	2390	--	390	2390	--	320	14300	--	8900
9	2920	45	350	2230	--	300	8760	--	3100
10	2740	--	300	2150	--	290	3700	--	1000
11	3300	--	450	2070	--	340	2150	--	520
12	4900	--	5300	3100	--	2700	6740	410	S 8820
13	7280	--	6100	5400	--	3400	20200	596	S 32000
14	7060	--	2500	5000	--	1400	21000	--	10000
15	5500	--	1600	3900	--	630	10800	--	3500
16	4500	--	1200	2920	--	470	10400	--	14000
17	3500	--	1900	2120	--	290	8080	--	10000
18	3500	--	760	1460	--	200	9440	--	7600
19	3100	--	590	1600	--	220	8480	--	6400
20	4200	--	2000	1910	--	210	6100	--	3000
21	5100	--	2900	1910	--	210	5300	--	2300
22	4900	--	2100	1770	--	190	3560	--	2300
23	3900	--	1200	1520	--	160	4100	--	2300
24	3400	--	730	1520	--	160	3700	--	1200
25	2470	--	530	1700	--	140	4200	--	1100
26	2650	--	500	1840	25	124	3900	--	840
27	2390	--	390	1740	--	90	3800	--	820
28	2390	--	390	1770	--	100	3500	80	760
29	2070	--	280	--	--	--	3100	--	590
30	2070	--	220	--	--	--	3010	--	570
31	2070	--	220	--	--	--	3010	--	490
Total	110790	--	39150	67530	--	13852	216930	--	181340

	APRIL			MAY			JUNE		
1	2920	--	470	2070	--	340	2470	--	330
2	2920	--	470	2470	--	400	2390	--	320
3	2560	--	410	1880	60	300	2470	--	330
4	1460	--	160	1910	--	310	2070	--	220
5	1560	--	170	1280	--	210	1050	30	85
6	1600	--	260	960	--	160	840	--	90
7	2740	--	2800	1790	--	290	1020	--	110
8	1910	--	830	1910	--	310	960	--	100
9	1600	--	350	1660	--	270	930	--	100
10	1600	--	220	1520	--	210	720	--	80
11	1630	40	176	2030	--	270	1360	--	150
12	1630	--	180	1880	--	250	1520	--	160
13	1880	--	200	1740	--	230	1520	--	160
14	1910	--	210	1910	--	260	1140	--	120
15	1910	--	210	1420	--	150	1380	--	150
16	1990	--	210	1110	35	105	900	--	70
17	2230	--	240	1280	--	140	620	--	50
18	2230	--	180	2490	--	1800	893	--	70
19	2230	--	180	1770	--	910	1140	--	90
20	2740	--	590	1180	--	350	1080	30	87
21	2740	--	810	2110	--	1900	1110	--	90
22	2830	--	760	1320	--	500	1350	--	110
23	2830	80	611	2180	246	S 1920	1020	--	80
24	2320	--	440	1600	--	560	645	--	50
25	1110	--	180	1940	--	1400	696	--	60
26	1020	--	170	1240	--	370	1050	--	90
27	1050	--	170	810	--	90	1020	--	80
28	1530	--	290	1020	--	110	990	--	80
29	1520	--	290	1520	--	160	960	--	80
30	1990	--	380	2150	--	290	870	--	70
31	--	--	--	2740	--	300	--	--	--
Total	60190	--	12617	52890	--	14865	36184	--	3662

S Computed by subdividing day.

ROANOKE RIVER BASIN--Continued

2-660. ROANOKE (STAUNTON) RIVER AT RANDOLPR, VA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued
(Where no concentrations are reported, loads are estimated)

Day	JULY			AUGUST			SEPTEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	595	--	60	990	--	80	510	--	10
2..	1370	--	480	930	--	80	362	--	10
3..	2150	--	990	900	--	70	306	--	8
4..	1380	--	340	780	--	60	290	--	8
5..	960	60	156	438	--	20	406	--	20
6..	653	--	90	600	10	16	530	--	30
7..	870	--	140	750	--	80	930	--	430
8..	530	--	70	900	--	100	1350	--	1000
9..	550	--	70	1050	--	140	595	--	180
10..	930	--	130	930	--	100	902	--	440
11..	900	--	100	778	--	80	1620	--	1000
12..	900	--	70	430	--	30	670	--	90
13..	930	--	80	390	--	30	570	20	31
14..	870	30	70	470	--	40	645	--	50
15..	620	--	50	490	--	40	1590	--	1200
16..	550	--	60	490	25	33	1420	--	650
17..	870	--	90	478	--	40	955	--	100
18..	1020	--	110	464	--	30	645	--	30
19..	1050	--	110	400	--	20	570	--	30
20..	1020	--	110	350	--	20	530	--	30
21..	840	--	90	410	--	30	510	10	14
22..	478	--	50	478	--	40	490	--	10
23..	515	--	60	482	--	30	342	--	9
24..	1080	40	120	490	--	30	294	--	8
25..	1050	--	110	474	--	30	358	--	10
26..	960	--	100	362	--	30	394	--	10
27..	960	--	100	346	--	20	394	--	10
28..	810	--	90	530	--	30	414	--	20
29..	482	--	40	550	20	30	490	--	10
30..	790	--	60	530	--	30	780	--	40
31..	1180	--	100	530	--	10	--	--	--
Total	27863	--	4296	18190	--	1419	19862	--	5488

Total discharge for year (cfs-days) 844149
Total load for year (tons) 403974

ROANOKE RIVER BASIN--Continued

2-715. DAN RIVER AT LEAKSVILLE, N. C.

LOCATION.--At gaging station 0.5 mile below bridge on State Highway 87 at Leaksville, Rockingham County, and 0.5 mile above Smith River.
DRAINAGE AREA.--1,150 square miles.
RECORDS AVAILABLE.--Chemical analyses: November 1944 to October 1945, October 1954 to September 1955, October 1961 to September 1963.
Water temperatures: November 1944 to October 1945, October 1961 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 58 ppm Aug. 1-31; minimum, 40 ppm Mar. 6-19.
Hardness: Maximum, 20 ppm Oct. 1-31, Aug. 1-31; minimum, 12 ppm Mar. 6-19.
Specific conductance: Maximum daily, 83 micromhos Feb. 5; minimum daily, 34 micromhos Mar. 12.
Water temperatures: Maximum, 81°F July 19, Aug. 11; minimum, freezing point on many days in December, January, and February.
EXTREMES, 1944-45, 1954-55, 1961-63.--Dissolved solids: Maximum, 58 ppm Nov. 1-30, 1961, Aug. 1-31, 1963; minimum, 35 ppm Sept. 11-20, 1945.
Hardness: Maximum, 26 ppm June 14, 1962; minimum, 12 ppm on many days in 1945 and 1963.
Specific conductance (1961-63): Maximum daily, 168 micromhos June 14, 1962; minimum daily, 34 micromhos Mar. 12, 1963.
Water temperatures (1944-45, 1961-63): Maximum, 87°F July 1, 1945; minimum, freezing point on many days in 1944, 1945, 1962, and 1963.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-31, 1962.....		18	0.14	5.1	1.7	5.1	1.7	32	2.0	2.5	0.0	0.7	A53	20	0	63	6.8	18
Nov. 1-30.....		15	.04	4.5	1.5	3.6	1.8	24	3.2	3.9	.0	.5	46	17	0	55	7.3	20
Dec. 1-31.....		15	.01	4.2	1.4	4.5	1.4	24	3.4	2.9	.1	.9	50	16	0	56	7.4	5
Jan. 1-31, 1963.....		14	.03	4.0	1.6	3.7	1.3	21	3.8	2.5	.0	.9	48	16	0	50	7.2	25
Feb. 1-28.....		14	.05	3.9	1.5	4.8	1.2	22	4.0	3.2	.0	.7	47	16	0	52	7.2	20
Mar. 1-5.....		13	.03	3.5	1.7	5.3	1.1	22	4.6	2.5	.1	2.2	A45	16	0	59	6.6	15
Mar. 6-19.....		10	.00	3.1	1.0	3.3	1.6	15	4.0	2.3	.2	1.6	40	12	0	44	6.5	25
Mar. 20-31.....		14	.04	3.8	1.5	4.8	.9	22	3.2	2.3	.2	1.0	47	16	0	52	6.7	32
Apr. 1-30.....		14	.08	4.2	1.4	4.5	1.1	26	2.8	2.6	.0	.5	A44	16	0	52	7.2	15
May 1-31.....		17	.03	5.0	1.4	4.2	1.1	26	3.8	3.0	.0	1.0	57	18	0	60	6.6	22
June 1-30.....		18	.02	4.8	1.6	4.4	1.1	27	3.0	2.4	.0	.5	55	18	0	62	6.9	20
July 1-31.....		17	.09	4.8	1.6	4.2	1.6	28	2.8	2.2	.1	.7	51	18	0	62	7.1	15
Aug. 1-31.....		17	.03	5.1	1.8	4.9	1.6	32	3.0	2.5	.1	1.0	58	20	0	68	7.0	15
Sept. 1-30.....		17	.00	3.9	2.0	5.3	1.2	28	4.8	2.3	.1	1.0	A52	18	0	60	7.2	8
Time-weighted average.....		16	0.05	4.4	1.6	4.4	1.4	26	3.4	2.7	0.0	0.8	50	17	0	58	--	17

A Calculated from determined constituents.

ROANOKE RIVER BASIN--Continued

2-715. DAN RIVER AT LEAKSVILLE, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0700 and 2200)

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	61	62	61	61	63	65	68	68	69	67	65	66	66	66	70	70	69	66	62	63	60	59	58	56	52	50	50	50	52	53	52	61
November	52	50	49	50	49	49	48	48	48	50	49	51	49	49	47	49	51	53	50	48	49	47	48	48	47	45	45	45	48	47	--	49
December	49	47	--	48	50	45	44	--	40	38	36	32	32	33	37	34	36	38	41	40	39	39	38	36	35	40	39	39	38	38	35	39
January	32	35	33	35	34	35	38	39	40	42	43	49	48	42	38	34	32	32	36	40	35	32	36	32	--	32	32	32	32	32	32	36
February	32	32	32	32	33	33	34	32	32	32	32	32	33	32	33	37	--	38	39	34	39	32	33	39	34	39	38	39	--	--	--	34
March	39	40	39	42	44	45	45	48	50	50	46	46	46	48	50	48	47	50	52	50	49	48	50	53	54	52	55	55	57	57	58	49
April	59	60	62	62	60	58	59	59	59	59	59	58	57	57	56	56	61	62	62	66	64	64	64	62	60	60	61	60	59	61	--	60
May	59	58	61	64	64	64	63	64	64	66	66	66	63	66	68	68	66	66	70	70	68	71	69	66	65	--	64	64	66	69	66	65
June	68	66	68	67	72	74	74	74	75	80	79	76	75	76	72	72	70	--	70	74	73	73	72	70	73	76	74	74	74	75	--	73
July	77	77	77	76	76	74	72	76	73	72	72	73	70	72	71	76	75	80	81	80	78	78	74	75	76	78	78	80	79	79	78	76
August	78	78	77	80	80	80	78	78	78	78	81	78	77	76	74	73	72	73	76	78	78	76	78	76	76	71	69	71	76	74	73	76
September	72	72	72	72	73	70	70	68	73	70	73	76	74	72	70	68	69	68	74	72	70	69	67	64	61	64	64	64	60	62	--	69

ROANOKE RIVER BASIN--Continued

2-755. DAN RIVER AT PACES, VA.

LOCATION.--At gaging station at bridge on State Highway 658, 0.5 mile southeast of Paces, Halifax County, 0.5 mile upstream from Big Toby Creek, and 2.7 miles upstream from Birch Creek.
DRAINAGE AREA.--2,550 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to August 1956.
Water temperatures: January 1954 to September 1956.
Sediment records: January 1954 to September 1963.
EXTREMES, 1954-57.--Sediment concentrations: Maximum daily, 2,260 ppm July 13, 1955 and Sept. 18, 1957; minimum daily, 10 ppm Jan. 17, 1956.
Sediment loads: Maximum daily, 94,200 tons Sept. 18, 1957; minimum daily, 11 tons Sept. 23, 1956.
REMARKS.--Sediment samples collected daily from January 1954 to June 1957 and at approximately ten-day intervals and during flood stages from July 1957 to September 1963.

Suspended sediment, water year October 1962 to September 1963
(Where no concentrations are reported, loads are estimated)

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	1120	--	210	1200	--	60	2250	--	360
2..	1020	--	190	1220	--	70	2180	--	350
3..	1150	--	220	1350	--	70	1790	--	290
4..	1180	--	250	1400	--	110	1790	--	240
5..	1250	--	270	1610	--	90	5260	--	11000
6..	1610	--	390	1610	--	90	11100	--	20000
7..	1610	93	404	1450	--	80	6650	--	6100
8..	1250	--	300	1400	--	80	4360	--	3300
9..	875	--	190	2070	--	340	3400	--	2300
10..	1220	--	230	13900	1410	S 57400	2920	--	1700
11..	1350	--	260	21800	856	S 48700	2840	--	1500
12..	1450	--	230	13300	--	9700	2530	--	1200
13..	1350	50	180	4350	--	1600	2320	--	1000
14..	1350	--	180	3080	--	1000	2180	--	820
15..	1200	--	160	2680	--	800	2320	--	810
16..	1150	--	120	2460	--	660	2320	--	750
17..	1250	--	140	2250	--	490	2040	--	610
18..	1200	--	100	3600	--	3700	2180	--	530
19..	1180	--	100	8500	--	17000	2600	--	490
20..	1180	--	100	6180	--	5500	2600	50	351
21..	1120	--	90	4360	--	2700	2600	--	280
22..	1120	--	90	5960	--	9300	2600	--	280
23..	1200	--	100	6200	--	10000	2840	--	310
24..	1180	--	60	4680	--	4800	2390	--	260
25..	1120	--	60	3320	--	1900	2390	--	320
26..	1080	--	60	3080	--	1000	3000	--	650
27..	1050	18	51	2390	65	419	3640	--	980
28..	1100	--	60	2530	--	440	4600	--	1100
29..	1000	--	50	2460	--	400	4760	--	1500
30..	975	--	50	2320	--	380	7840	--	18000
31..	1120	--	60	--	--	--	8170	--	11000
Total	37010	--	4955	132710	--	178879	110460	--	88381

S Computed by subdividing day.

ROANOKE RIVER BASIN--Continued

2-755. DAN RIVER AT PACES, VA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued
(Where no concentrations are reported, loads are estimated)

Day	JANUARY			FEBRUARY			MARCH			
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day	
1..	4440	--	3000	2600	--	420	2600	--	740	
2..	3400	--	1900	2530	--	410	6070	--	16000	
3..	2760	--	1300	2760	--	450	8980	--	1400	
4..	3000	--	1300	2920	--	430	5000	--	4500	
5..	2760	--	1000	2840	--	420	3880	215	2300	
6..	2680	--	900	2600	--	390	13100	910	S 39100	
7..	2180	--	650	2530	60	410	23600	1010	S 63400	
8..	2180	--	500	2460	--	370	17500	--	23000	
9..	2600	60	421	2320	--	380	5200	--	2700	
10..	2530	--	410	2180	--	350	4050	--	1300	
11..	2530	--	380	1970	--	320	3450	--	790	
12..	2680	--	400	3640	--	2800	9950	878	S 32600	
13..	3880	--	2900	6040	--	9300	25800	894	S 60000	
14..	3960	--	3600	5640	--	4200	30900	--	34000	
15..	3160	--	1900	3640	--	2000	23500	--	15000	
16..	2840	--	1100	2840	--	1300	5970	--	2300	
17..	2680	--	800	2530	--	960	4800	--	2300	
18..	2600	--	700	2180	--	710	6920	--	5400	
19..	3080	--	700	2520	--	990	5840	--	2700	
20..	5080	--	6400	4280	--	3100	4730	--	1900	
21..	8170	--	7100	3960	--	1200	4570	--	1700	
22..	6470	--	2700	3240	--	700	4090	--	1400	
23..	4440	--	1300	2680	--	510	3770	--	1200	
24..	3560	--	860	2460	--	400	3530	--	1000	
25..	2840	--	610	2320	--	340	2810	--	830	
26..	2460	--	430	2460	50	332	2730	--	770	
27..	2530	--	410	2390	--	350	3210	--	870	
28..	2390	--	390	2460	--	330	3370	100	910	
29..	1970	--	290	--	--	--	3130	--	850	
30..	2110	--	280	--	--	--	2890	--	780	
31..	2530	--	380	--	--	--	2810	--	720	
Total	100490	--	45011	82990	--	33872	248750	--	322460	

Day	APRIL			MAY			JUNE		
1..	2260	--	520	2570	--	350	3690	--	2500
2..	2330	--	500	2410	--	330	2390	--	1200
3..	2570	--	560	1980	55	294	1730	--	580
4..	2650	--	570	1850	--	270	1610	--	430
5..	2570	--	520	1910	--	310	1730	90	420
6..	2490	--	500	1400	--	210	1790	--	390
7..	2570	--	520	1670	--	250	1610	--	350
8..	2570	--	560	1670	--	250	1670	--	360
9..	2410	--	520	1730	--	280	1610	--	300
10..	2260	--	460	1670	--	270	1450	--	250
11..	2260	65	400	1610	--	240	1400	--	230
12..	2120	--	370	1550	--	210	1300	--	250
13..	2050	--	330	1400	--	170	1300	--	260
14..	2050	--	330	1450	--	200	1250	--	220
15..	1850	--	270	1450	--	160	1200	--	210
16..	1850	--	250	1500	40	160	1170	--	220
17..	1910	--	260	1610	--	260	1100	--	210
18..	1910	--	260	1980	--	530	1150	--	220
19..	1910	--	230	2120	--	830	1250	--	240
20..	1910	--	230	1520	--	640	1350	65	240
21..	1790	--	220	1550	--	540	1350	--	240
22..	1730	--	230	1730	--	510	1790	--	310
23..	1730	50	230	1790	90	435	1670	--	270
24..	1850	--	250	1730	--	440	1350	--	220
25..	1850	--	270	1550	--	420	1220	--	200
26..	1790	--	240	1450	--	390	1300	--	230
27..	1730	--	230	1450	--	390	1350	--	240
28..	1730	--	230	1500	--	340	1350	--	240
29..	1550	--	230	1850	--	600	1450	--	250
30..	2050	--	300	2890	--	2000	1450	--	230
31..	--	--	--	3850	--	3200	--	--	--
Total	62300	--	10590	56390	--	15479	46030	--	11510

S Computed by subdividing day.

ROANOKE RIVER BASIN--Continued

2-755. DAN RIVER AT PACES, VA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued
(Where no concentrations are reported, loads are estimated)

Day	JULY			AUGUST			SEPTEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	1120	--	180	1270	--	820	1350	--	470
2..	1120	--	180	1040	--	730	825	--	280
3..	2070	--	2800	1230	--	960	555	--	190
4..	2330	--	5500	800	--	380	514	--	170
5..	1730	--	3200	875	--	280	900	--	490
6..	1100	--	1300	538	100	145	1250	--	540
7..	1000	--	840	875	--	200	1350	--	400
8..	950	--	600	950	--	210	1400	--	380
9..	950	--	440	875	--	190	950	--	240
10..	950	--	330	900	--	190	700	--	150
11..	1100	--	310	875	--	190	900	--	190
12..	1050	--	260	585	--	130	975	--	210
13..	1150	--	250	426	--	90	1020	80	220
14..	1100	75	220	514	--	110	1000	--	220
15..	950	--	180	645	--	140	1670	--	360
16..	650	--	120	750	70	142	1400	--	300
17..	850	--	160	825	--	160	925	--	190
18..	1050	--	180	775	--	150	1050	--	200
19..	1100	--	210	542	--	100	1050	--	180
20..	1080	--	190	374	--	70	1020	--	140
21..	1050	--	180	466	--	90	950	55	141
22..	850	--	150	750	--	160	925	--	120
23..	625	--	110	890	--	240	650	--	90
24..	1120	205	620	900	--	240	675	--	80
25..	1400	--	910	840	--	180	490	--	50
26..	1300	--	420	680	--	130	800	--	90
27..	1180	--	290	620	--	100	850	--	90
28..	1400	--	340	1140	--	620	875	--	90
29..	1000	--	240	1280	--	1000	1450	--	530
30..	1000	--	320	1120	150	454	3460	--	5400
31..	1550	--	1200	1300	--	510	--	--	--
Total	35875	--	22230	25650	--	9111	31929	--	12201

Total discharge for year (cfs-days) 970584
Total load for year (tons) 754679

ROANOKE RIVER BASIN--Continued

2-810.94. ROANOKE RIVER AT JAMESVILLE, N. C.

LOCATION.--At boat dock in Jamesville, Martin County, and 1 mile downstream from lower mouth of Devils Gut.
DRAINAGE AREA.--9,247 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1954 to September 1963.
Water temperatures: October 1955 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 79 ppm Aug. 1-31; minimum, 64 ppm Feb. 1-28, May 1-31.
Hardness: Maximum, 32 ppm Nov. 1-30; minimum, 26 ppm Jan. 1-31, Feb. 1-28, and May 1-31.
Specific conductance: Maximum daily, 140 micromhos Nov. 15; minimum daily, 82 micromhos Jan. 27-29.
Water temperatures: Maximum, 85°F Aug. 3, 4, 6, 8, 11; minimum, 36°F Jan. 4, 5, 7, 29, Feb. 4.
EXTREMES, 1955-63.--Dissolved solids: Maximum, 91 ppm June 1-10, 1956; minimum, 54 ppm June 1-30, 1957.
Hardness: Maximum, 52 ppm Oct. 1, 1959; minimum, 13 ppm June 1-30, 1957.
Specific conductance: Maximum daily, 188 micromhos Oct. 7, 1961; minimum daily, 66 micromhos Mar. 3, 1958.
Water temperatures: Maximum, 88°F July 6, 1956; minimum, freezing point Jan. 11, 1961.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-31, 1962.....		9.2	0.09	8.4	2.4	9.3	2.2	45	7.0	6.0	0.1	1.3	76	31	0	110	7.3	25
Nov. 1-30.....		9.4	.09	8.2	2.6	10	2.4	45	8.4	7.3	.1	1.7	A72	32	0	115	7.1	30
Dec. 1-31.....		10	.06	7.5	2.4	8.0	2.6	42	7.2	6.4	.3	1.3	68	29	0	105	6.8	22
Jan. 1-31, 1963.....		10	.07	6.8	2.3	7.7	2.6	37	6.4	6.4	.0	1.0	68	26	0	93	6.9	35
Feb. 1-28.....		11	.08	6.3	2.5	7.3	2.2	33	8.0	5.5	.0	2.1	64	26	0	91	6.9	25
Mar. 1-31.....		11	.14	6.6	2.5	7.3	2.0	32	7.0	7.1	.0	1.0	69	27	1	96	6.9	50
Apr. 1-30.....		8.3	.07	7.1	2.5	6.5	1.7	35	8.0	5.3	.0	1.7	75	28	0	89	6.9	35
May 1-31.....		9.0	.07	6.6	2.3	7.4	2.1	34	8.0	4.8	.0	1.6	64	26	0	95	6.9	30
June 1-30.....		8.7	.08	6.9	2.4	7.1	1.7	36	7.2	4.9	.0	1.8	73	27	0	99	7.4	40
July 1-31.....		9.7	.03	7.9	2.4	7.8	2.4	39	8.8	4.8	.1	2.5	72	30	0	105	7.1	15
Aug. 1-31.....		9.9	.04	8.3	2.5	8.2	2.2	41	8.0	4.4	.1	1.6	79	30	0	105	7.4	20
Sept. 1-30.....		9.6	.03	7.9	2.8	7.4	1.4	44	7.8	5.7	.2	.8	A66	31	0	105	7.6	8
Time-weighted average.....		9.6	0.07	7.4	2.5	7.8	2.1	39	7.6	5.7	0.1	1.5	71	29	0	101	--	28

A Calculated from determined constituents.

ROANOKE RIVER BASIN--Continued

2-810.94. ROANOKE RIVER AT JAMESVILLE, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 1600)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	68	68	69	69	69	70	70	70	71	71	71	71	71	71	72	73	73	72	70	69	69	68	68	65	69	61	60	59	58	67	68	68
November	58	58	57	56	57	55	56	55	55	64	--	53	53	53	52	52	52	53	54	53	52	53	52	51	51	50	49	49	48	50	--	53
December	50	50	50	50	50	50	49	49	48	46	44	42	42	40	40	39	39	38	38	38	39	40	40	39	39	39	40	40	39	39	38	43
January	38	38	38	36	36	37	36	37	38	40	40	40	43	43	43	40	40	40	41	40	42	42	43	41	39	39	39	37	36	37	38	39
February	38	37	38	36	39	--	40	40	--	39	40	42	39	40	39	37	37	38	--	40	41	40	40	39	40	39	38	38	--	--	--	39
March	38	39	41	45	47	48	48	46	45	45	44	46	48	50	49	49	52	53	52	52	52	49	--	47	48	50	51	54	55	56	57	49
April	58	58	60	59	58	57	58	58	58	58	57	58	58	59	59	58	58	60	62	62	64	65	67	67	66	--	65	64	64	64	--	61
May	63	63	63	63	63	64	65	66	66	67	67	68	68	67	66	68	67	67	68	68	68	68	68	68	68	68	69	69	69	69	69	67
June	68	69	70	70	71	72	73	73	74	75	76	76	75	75	76	75	76	75	76	75	74	73	74	--	75	75	75	77	78	80	--	74
July	79	80	80	80	80	80	79	79	80	79	79	80	78	79	79	79	80	80	80	81	80	81	81	81	81	81	81	81	82	82	82	80
August	83	84	85	85	84	85	84	85	--	--	85	84	84	83	84	82	81	81	81	81	81	82	81	81	80	--	79	81	79	--	79	82
September	--	79	78	78	77	77	77	77	76	77	77	76	76	75	75	74	74	73	73	72	72	73	73	72	70	70	69	68	68	69	--	74

ROANOKE RIVER BASIN--Continued

2-811.19. CASHIE RIVER AT WINDSOR, N. C.

LOCATION.--Three-fourths of a mile southb of Windsor, Bertie County, 4.8 miles above Wading Place Creek.
DRAINAGE AREA.--179 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1963.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963.

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 2, 1962		8.9	0.27	6.7	1.9	21	3.2	45	9.2	17	0.2	1.0	115	24	0	145	6.6	90
Nov. 2		10	.31	7.9	2.1	22	3.8	53	8.4	18	.3	.7	117	28	0	161	6.9	75
Dec. 4		16	.04	6.1	1.8	8.5	1.9	11	18	11	.1	.8	82	22	14	99	5.9	50
Jan. 3, 1963		13	.08	5.5	1.4	7.1	1.5	8	15	11	.0	1.6	73	20	14	83	6.2	32
Feb. 4		8.6	.00	3.8	1.0	6.4	2.0	6	12	7.4	.4	.3	53	14	8	59	6.4	30
Mar. 1		6.0	.03	3.2	1.2	4.6	1.0	7	9.8	6.4	.1	1.7	51	13	8	50	6.0	45
Apr. 2		2.1	.11	3.4	1.1	5.3	1.2	11	4.4	7.5	.0	1.3	54	13	4	60	6.1	80
May 3		4.7	.16	4.9	1.3	8.7	1.7	23	2.8	11	.1	.5	68	18	0	78	6.2	80
June 4		8.2	.11	3.9	1.1	4.8	1.2	12	8.2	5.6	.2	.6	54	14	4	56	6.5	75
July 2		9.4	.48	5.6	1.4	13	2.0	30	4.4	14	.2	.3	104	20	0	120	6.6	160
Aug. 2		7.5	.06	6.4	1.8	20	4.5	44	7.0	17	.2	.7	108	23	0	142	6.4	80
Sept. 4		1.5	.05	6.2	2.2	27	4.8	56	11	19	.3	.5	114	24	0	165	6.9	50

ALBEMARLE SOUND

2-811.53. ALBEMARLE SOUND NEAR EDENTON, N. C.

LOCATION.--At bridge, draw section on State Bighway 32, 7.6 miles southeast of Edenton, Chowan County.
DRAINAGE AREA.--14,600 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1963.
Water temperatures: October 1957 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 2,825 ppm Dec. 19 (B); minimum, 7.8 ppm Apr. 1-29.
Specific conductance: Maximum daily, 8,850 micromhos Dec. 19 (B); minimum daily, 75 micromhos Mar. 31 (B).
Water temperatures: Maximum, 85°F June 27 (T), Aug. 1, 2, (T); minimum, 35°F Jan. 2, Feb. 4, 5.
EXTEEMES, 1957-63.--Chloride: Maximum, 12,100 ppm Nov. 3-6 (B), 1958; minimum, 4.7 ppm Apr. 1-30, 1958.
Specific conductance: Maximum daily, 30,600 micromhos Nov. 6 (B), 1958; minimum daily, 50 micromhos May 20 (B), 1958.
Water temperatures: Maximum, 88°F June 25 (T), 1962; minimum, freezing point Feb. 4, 1961.
REMARKS.--Salinity station. Top (T) and bottom (B) samples were collected once daily. No discharge records available.

Chemical analyses, in parts per million, March to May 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Mar. 1-2, 1963.....		10	0.11	5.8	3.5	15	4.0	24	11	24	0.0	1.2	A87	28	9	145	6.8	60
Mar. 3-9, 10(T).....		9.5	.15	5.0	2.6	10	3.6	21	8.2	14	.2	1.3	73	23	6	100	7.1	65
Mar. 11-31.....		8.6	.11	5.2	2.5	8.0	2.9	21	8.6	11	.2	1.5	71	24	6	93	6.9	60
Apr. 1-29.....		8.1	.14	5.0	3.1	7.4	1.7	28	8.4	7.8	.4	1.7	63	26	2	86	7.0	90
May 4-8, 9(T).....		7.2	.09	4.1	3.4	9.9	2.0	22	8.4	14	.0	1.2	82	24	6	110	7.1	70
May 25-29, 30(T)....		7.2	.14	4.2	3.1	11	2.3	24	9.4	14	.2	.9	81	24	4	120	7.0	65
May 31.....		6.7	--	4.4	3.5	--	--	24	9.8	17	--	1.9	--	26	6	125	6.8	--

A Calculated from determined constituents.

ALBEMARLE SOUND--Continued

2-811.53. ALBEMARLE SOUND NEAR EDENTON, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
1	230	230	525	525	700	715	375	375	--	170	24	24			24	56	18	21	--	229	142	113	179	207
2	96	94	525	525	670	675	425	425	167	169					19	56	48	54	67	242	147	108	166	182
3	94	94	525	525	650	675	375	555	19	14					19	56	48	55	69	155	105	104	164	220
4	75	91	675	715	500	950	425	425	14	12							50	55	56	54	200	310	166	220
5	75	200	675	675	525	525	425	425	14	13							39	61	108	107	215	325	223	223
6	78	200	650	650	525	525	300	1250	160	300	14	14			14	14	39	60	110	112	204	--	193	188
7	108	300	555	625	800	825	400	1250	60	325							40	59	90	118	244	290	191	188
8	110	180	525	800	--	1000	400	775	103	92							40	108	70	152	229	211	179	199
9	165	150	525	1000	1000	1000	555	575	91	119						56	40	96	91	88	208	208	75	325
10	165	150	625	675	975	975	525	555	94	118		113			30	118	40	94	52	50	224	265	78	375
11	145	150	525	650	--	880	350	1925	92	116					32	139	58	123	78	82	245	179	375	150
12	275	300	525	600	880	880	375	1020	99	99					16	14	61	125	77	82	121	117	425	113
13	275	1550	525	625	475	525	525	800	91	91					20	70	67	61	77	82	285	340	275	168
14	300	1250	525	600	450	425	555	2125	81	81					22	43	67	67	59	76	295	310	164	166
15	275	400	525	600	425	1520	600	525	84	83					59	76	70	67	59	161	275	270	163	260
16	275	400	525	555	700	1950	450	715	70	75			7.8	7.8	54	56	56	61	88	257	230	230	400	500
17	300	300	375	1125	500	2725	475	600	80	68					56	56	51	48	122	290	243	204	325	325
18	300	300	375	1125	500	2575	555	850	60	59					36	36	51	48	126	265	108	188	182	260
19	225	215	450	1125	370	2825	475	2530	73	75					35	38	42	46	166	203	223	455	113	325
20	220	220	400	650	1050	1150	555	1200	55	75					47	59	48	51	188	191	233	440	179	375
21	400	600	450	1150	1020	1520	425	2350	64	64	11	11			47	94	50	49	188	200	265	425	180	275
22	525	555	555	880	1020	1700	425	2350	25	22					51	51	49	52	192	215	87	325	221	375
23	--	555	525	625	925	925	450	2300	40	40					46	44	38	35	184	177	102	518	163	188
24	450	450	525	625	915	925	450	412	40	--					47	46	63	27	--	167	131	580	127	126
25	425	425	555	555	750	1000	1020	1100	43	43							21	38	157	154	193	168	121	188
26	400	625	625	650	555	530	1050	1000	24	21					14	14	21	40	106	150	167	207	105	223
27	600	750	625	625	530	650	880	975	14	14							21	32	108	152	166	300	87	80
28	600	900	108	400	475	500	425	425	14	14							21	128	84	155	130	510	164	400
29	600	625	675	675	525	600	412	525	--	--							46	215	38	161	144	520	83	81
30	--	650	675	715	525	555	300	600	--	--			38	35		46	54	229	158	231	142	525	350	650
31	--	--	--	--	400	400	300	600	--	--			--	--	17	17	--	--	120	118	151	335	--	--

ALBEMARLE SOUND--Continued

2-811.53. ALBEMARLE SOUND NEAR EDENTON, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
[Top and bottom once-daily measurements at approximately 1200]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Top.....	68	68	68	69	70	71	70	70	73	73	71	72	72	72	71	71	71	70	68	68	68	66	--	62	62	62	56	55	55	--	--	68
Bottom.....	68	68	68	69	70	70	69	69	70	70	70	71	72	71	70	70	70	69	68	68	68	66	--	62	62	62	56	56	55	--	--	67
November																																
Top.....	55	55	55	55	55	53	52	53	53	54	53	53	53	51	51	51	52	54	54	51	55	54	51	50	49	49	48	49	53	52	--	52
Bottom.....	55	55	55	54	54	53	51	53	53	53	53	53	53	51	51	51	53	53	54	54	54	53	52	52	50	50	49	50	54	50	--	53
December																																
Top.....	53	52	54	53	52	49	46	49	47	40	40	38	38	38	38	38	40	42	39	39	38	37	39	39	37	41	42	39	40	--	39	43
Bottom.....	52	51	54	53	53	50	48	49	49	43	42	39	39	--	39	38	40	40	40	40	--	39	39	38	38	40	40	39	40	40	39	43
January																																
Top.....	39	35	36	36	36	36	38	38	37	37	40	40	40	40	40	41	41	39	43	43	42	42	42	42	38	38	38	37	36	37	38	39
Bottom.....	39	35	38	36	36	36	37	37	37	37	39	39	38	38	38	41	41	39	42	42	40	40	40	40	39	37	39	37	36	37	38	38
February																																
Top.....	38	38	36	35	35	39	39	40	40	41	42	41	39	41	39	37	40	39	39	42	41	37	39	40	40	40	37	37	--	--	--	39
Bottom.....	38	38	36	35	35	39	39	39	39	40	40	41	39	41	39	37	40	40	39	42	41	37	39	40	40	40	37	37	--	--	--	39
March																																
Top.....	42	42	42	44	47	48	48	48	48	49	50	51	55	54	52	53	55	55	54	55	53	51	51	52	57	55	55	62	57	58	58	52
Bottom.....	41	42	41	44	44	49	48	48	48	49	51	52	54	54	52	53	55	--	53	55	53	50	51	51	58	55	55	58	57	57	57	51
April																																
Top.....	59	59	62	62	61	60	59	59	60	59	58	59	58	58	59	59	59	61	62	63	64	64	64	64	61	61	63	62	61	63	--	61
Bottom.....	59	59	62	62	60	60	58	58	60	59	57	59	57	57	59	59	59	61	--	64	63	64	64	63	61	61	62	61	61	63	--	60
May																																
Top.....	62	62	62	64	64	63	64	65	69	70	70	64	64	64	66	64	64	70	70	70	70	69	68	68	66	66	66	68	68	70	69	66
Bottom.....	62	62	62	62	62	63	63	64	68	68	68	64	64	64	66	64	65	69	69	68	68	69	67	67	65	65	66	67	68	69	69	66
June																																
Top.....	69	69	71	72	73	75	76	--	80	80	78	78	76	78	78	77	74	74	74	74	73	73	74	75	75	82	85	82	84	81	--	76
Bottom.....	69	69	70	71	72	74	75	74	76	76	76	76	74	77	77	76	74	74	74	74	73	72	74	74	74	77	79	79	78	78	--	75
July																																
Top.....	79	81	81	80	79	79	81	81	77	75	76	76	76	81	81	78	80	81	81	81	81	81	80	--	80	81	81	81	84	81	80	80
Bottom.....	78	79	79	79	79	79	79	80	77	75	75	75	75	79	79	78	80	80	80	80	82	80	80	80	80	81	81	80	82	81	80	79
August																																
Top.....	85	85	81	80	81	82	84	83	82	82	82	80	80	80	79	79	80	79	80	80	79	82	83	82	79	78	77	77	78	78	77	80
Bottom.....	83	83	80	80	81	82	83	82	82	82	81	80	80	80	78	78	79	79	80	80	79	81	80	81	79	78	75	76	78	78	77	80
September																																
Top.....	76	76	76	76	76	74	74	74	78	78	74	76	73	73	71	69	68	68	74	72	71	73	70	69	67	67	65	65	68	66	--	72
Bottom.....	76	76	76	76	76	74	74	74	76	76	74	75	72	72	71	69	68	68	71	70	70	72	70	69	66	67	64	65	67	66	--	71

SCUPPERNONG RIVER BASIN

2-811.66. SCUPPERNONG RIVER NEAR CRESWELL, N. C.

LOCATION.--At bridge on county road at Cross Landing, 3.5 miles east of Creswell, Washington County.
DRAINAGE AREA.--115 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1959 to September 1963.
Water temperatures: October 1959 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 175 ppm Nov. 20; minimum, 8.0 ppm Aug. 1-31.
Specific conductance: Maximum daily, 760 micromhos Nov. 20; minimum daily, 65 micromhos June 4.
Water temperatures: Maximum, 81°F Aug. 12, 13; minimum, 40°F on several days in December and January.
EXTREMES, 1959-63.--Cbloride: Maximum, 890 ppm Dec. 8, 1961; minimum, 5.1 ppm Aug. 21-31, 1961.
Specific conductance: Maximum daily, 3,300 micromhos Dec. 8, 1961; minimum daily, 40 micromhos June 30, 1962.
Water temperatures: Maximum, 84°F Aug. 1, 11, 12, 1961; minimum, freezing point Jan. 26, 1961.
REMARKS.--Salinity station. No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-30, 1962.....		12	0.44	11	3.3	9.8	1.7	37	9.0	14	0.1	0.7	100	40	10	125	6.5	180
Oct. 31.....		--	--	29	2.8	--	--	90	--	9.3	--	--	--	84	10	210	7.8	--
Nov. 1-17.....		14	.83	12	3.6	10	1.4	39	10	14	.2	1.2	126	44	12	130	7.0	170
Nov. 21-30.....		13	.61	12	3.8	11	2.2	33	15	19	.2	1.2	145	46	19	150	7.0	140
Dec. 1-31.....		13	.39	11	3.0	8.5	1.4	22	14	15	.3	1.4	106	40	22	120	6.4	160
Jan. 1-19, 1963.....		12	.48	12	2.9	9.0	.9	28	14	14	.2	1.7	115	41	18	120	7.0	160
Jan. 20-31.....		8.0	.31	7.4	1.6	5.8	1.3	11	13	9.5	.2	1.5	A100	25	16	84	6.4	180
Feb. 1-15.....		8.7	.37	8.8	1.8	6.9	1.0	18	15	11	.1	2.4	100	30	14	99	6.5	160
Feb. 17-28.....		6.5	.32	7.7	2.4	5.9	.7	16	13	11	.2	2.3	88	29	16	95	6.5	120
Mar. 1-31.....		6.6	.35	7.5	2.7	6.9	1.3	19	11	10	.1	1.4	88	30	14	98	6.8	140
Apr. 1-30.....		7.2	.58	9.5	3.4	7.8	.7	28	11	12	.2	1.4	92	38	15	115	7.2	180
May 1-2.....		7.2	1.0	9.9	2.9	6.9	1.1	26	9.6	9.0	.1	2.1	B63	37	16	110	7.1	120
May 4-15.....		9.1	.97	13	3.2	8.8	1.0	40	10	12	.0	1.6	107	46	13	140	7.2	130
May 17-31.....		9.7	.67	11	2.9	7.7	1.1	30	12	10	.1	1.7	112	39	14	130	7.0	120
June 1.....		--	--	10	3.5	--	--	31	--	21	--	1.6	--	40	14	140	7.2	--
June 2-27.....		9.7	.81	7.5	2.2	6.3	1.3	15	12	9.0	.2	2.1	C108	28	16	88	6.1	320
June 28-30.....		11	.80	9.6	2.6	7.6	.8	25	9.6	10	.2	1.4	B66	35	14	105	7.0	--
July 1-31.....		13	1.0	11	2.4	8.5	1.0	30	12	12	.3	1.5	122	37	12	110	6.6	320
Aug. 1-31.....		10	.39	6.8	1.8	6.4	1.5	15	9.8	8.0	.3	1.3	102	24	12	81	6.2	280
Sept. 1-27.....		13	.60	10	3.2	6.6	1.0	32	10	9.2	.3	2.6	D122	38	12	110	7.5	240
Time-weighted average.....		10	0.57	9.4	2.8	7.8	1.2	26	12	12	0.2	1.6	106	36	14	110	--	200

A Organic matter present; sum of mineral constituents 54 parts per million.
B Calculated from determined constituents.
C Organic matter present; sum of mineral constituents 58 parts per million.
D Organic matter present; sum of mineral constituents 73 parts per million.

SCUPPERNONG RIVER BASIN--Continued

2-811.66. SCUPPERNONG RIVER NEAR CRESWELL, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1								9.0	21			
2												
3								96				
4												
5												
6												
7												
8					11							
9												
10		14		14				12				
11												
12												
13												
14												9.2
15	14		15			10	12		9.0	12	8.0	
16					43			123				
17												
18		170										
19		48										
20		175										
21												
22					11							
23												
24								10				
25				9.5								
26		19										
27												
28												46
29					--				10			38
30					--							38
31	9.3	--			--		--		--			--

SCUPPERNONG RIVER BASIN--Continued

2-811.66. SCUPPERNONG RIVER NEAR CRESWELL, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0700)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	70	68	65	65	64	62	60	60	60	60	68
November	60	60	60	60	60	58	60	60	58	58	60	60	58	58	55	55	55	--	56	56	56	55	55	56	52	50	50	52	52	52	--	56
December	58	58	58	58	58	55	55	50	45	45	45	45	40	40	40	40	40	40	40	42	42	42	42	44	46	48	48	46	46	45	45	47
January	45	42	40	40	42	40	40	48	44	42	44	48	48	48	46	46	48	46	48	50	50	48	46	46	46	44	42	40	41	41	41	45
February	44	43	44	44	44	45	52	48	48	50	50	50	50	48	46	45	48	48	46	50	50	46	46	46	45	45	45	45	--	--	--	47
March	46	48	50	50	52	54	56	60	60	60	60	62	64	65	62	60	60	62	60	60	60	62	62	65	65	60	60	65	68	70	70	60
April	68	70	70	68	70	67	68	68	67	65	65	65	64	65	66	68	65	66	70	75	75	75	72	70	70	72	72	70	70	70	--	69
May	65	63	66	68	67	70	69	70	70	75	72	75	74	72	75	72	74	75	75	74	74	75	70	68	65	64	64	65	66	68	68	70
June	70	69	69	72	72	75	75	75	75	76	76	77	77	77	77	74	74	74	74	74	74	72	72	72	72	72	74	74	74	74	--	74
July	78	78	78	78	78	78	78	78	78	76	77	77	78	78	79	79	79	79	79	79	79	79	80	80	80	80	80	80	80	79	78	79
August	77	77	78	78	78	78	79	79	79	79	80	81	81	78	72	72	75	75	75	76	76	77	77	77	77	76	76	79	79	77	77	77
September	78	78	78	78	74	74	75	75	75	75	75	75	68	68	68	68	69	69	71	71	71	66	66	66	66	69	69	68	68	68	--	71

PAMLICO RIVER BASIN

2-830. FISHING CREEK NEAR ENFIELD, N. C.

LOCATION.--Temperature recorder at gaging station 15 feet downstream from bridge on U.S. Highway 301, 2,000 feet downstream from Atlantic Coastline Railroad bridge, 2 miles southwest of Enfield, Halifax County, 4.8 miles downstream from Rocky Creek, and 40 miles upstream from mouth.
DRAINAGE AREA.--521 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1948 to September 1949.
Water temperatures: October 1948 to September 1949, October 1953 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 81°F Aug. 5, 8; minimum, 33°F Dec. 15-19.
EXTREMES, 1948-49, 1953-63.--Water temperatures: Maximum, 86°F on several days in 1955 and 1959; minimum, 33°F on several days in 1948, 1958, and 1963.
REMARKS.--Recorder stopped Oct. 1, 3; range in temperature 61°F to 63°F. Recorder pen not marking July 18-24.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Mar. 1, 1963.....	825	13	0.09	3.7	1.6	4.3	1.1	22	3.4	3.9	0.1	0.7	A43	16	0	56	6.8	18
Sept. 4.....	53	16	.02	5.8	1.7	4.7	2.0	30	7.2	2.0	.0	.3	A55	22	0	64	7.4	10

A Calculated from determined constituents.

PAMLICO RIVER BASIN--Continued

2-830. FISHING CREEK NEAR ENFIELD, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
/Continuous ethyl alcohol-actuated thermograph/

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	62	62	64	65	65	66	67	67	66	67	67	67	66	66	66	66	65	63	62	62	61	60	58	57	54	51	51	51	51	62
Minimum	--	--	61	62	62	63	64	65	66	66	66	66	66	66	66	66	66	65	63	62	62	61	60	58	57	54	51	50	50	51	50	61
November																																
Maximum	50	50	51	50	50	49	48	47	48	50	51	51	51	50	49	48	48	48	48	48	48	49	50	50	48	46	44	44	45	45	--	48
Minimum	50	50	50	50	49	48	47	46	46	48	50	51	50	48	48	47	47	48	48	48	47	47	49	48	46	44	43	43	44	45	--	48
December																																
Maximum	48	48	48	49	49	49	48	45	43	43	41	39	36	35	34	33	33	33	34	35	36	37	36	36	36	36	37	38	38	38	38	40
Minimum	46	47	48	48	49	48	45	43	43	41	39	36	35	34	33	33	33	33	33	34	35	36	36	36	36	36	36	37	38	38	36	39
January																																
Maximum	36	35	34	34	34	34	35	36	37	38	40	42	45	45	45	43	41	39	40	44	46	46	42	40	38	36	36	35	35	34	34	39
Minimum	35	34	34	34	34	34	34	35	36	37	38	40	42	45	43	41	39	38	38	40	44	42	40	38	36	36	35	35	34	34	34	37
February																																
Maximum	34	35	36	37	37	38	41	42	42	42	41	42	42	42	41	39	38	37	36	38	39	41	41	39	38	38	38	37	--	--	--	39
Minimum	34	34	35	36	37	37	38	41	42	41	41	41	42	41	39	38	37	36	36	36	38	39	39	38	38	38	37	37	--	--	--	38
March																																
Maximum	37	40	42	44	48	52	54	53	52	51	51	51	52	54	55	55	53	54	55	55	56	55	53	52	53	54	55	56	57	58	58	52
Minimum	37	37	40	42	44	48	52	52	51	51	51	50	50	52	54	53	53	53	54	55	55	53	51	51	52	53	53	55	56	57	58	51
April																																
Maximum	58	61	63	66	66	65	62	59	58	58	58	57	57	57	57	57	57	59	62	66	68	68	68	68	66	64	62	62	61	59	--	62
Minimum	58	58	61	63	65	62	59	58	57	56	57	56	56	56	56	55	55	57	59	62	65	66	66	65	64	62	60	60	59	59	--	60
May																																
Maximum	59	58	59	60	61	62	63	66	68	70	71	71	68	66	66	66	65	66	68	68	69	71	70	67	66	65	63	63	65	67	69	66
Minimum	58	57	56	57	58	60	62	63	66	68	70	68	66	65	65	65	65	65	65	67	68	68	67	66	65	63	63	62	63	65	66	64
June																																
Maximum	70	70	70	70	71	73	74	74	76	78	78	79	79	77	77	76	73	72	72	72	72	71	71	71	72	73	75	76	76	78	--	74
Minimum	67	68	68	68	69	70	71	73	73	74	76	76	77	75	76	73	72	71	71	71	71	70	70	69	69	70	72	74	75	76	--	72
July																																
Maximum	80	80	80	80	78	76	76	77	77	74	74	73	72	72	75	76	75	--	--	--	--	--	--	--	78	80	80	79	79	80	80	--
Minimum	78	79	78	77	74	74	74	75	73	72	72	71	70	71	71	74	73	--	--	--	--	--	--	--	77	77	78	77	76	78	79	--
August																																
Maximum	80	80	80	80	81	80	80	81	80	80	79	79	80	79	78	76	76	78	78	78	77	77	78	78	78	77	74	74	74	74	75	78
Minimum	78	78	78	79	79	79	79	79	79	78	75	78	78	78	75	75	75	75	77	77	76	75	77	76	77	74	73	73	73	73	73	76
September																																
Maximum	75	75	74	75	75	73	72	73	73	73	74	74	74	74	70	67	68	68	67	69	69	69	69	66	64	65	65	65	65	65	--	70
Minimum	74	73	73	74	73	72	71	71	71	72	72	73	74	70	66	64	67	66	65	67	68	69	66	64	64	64	64	64	65	65	--	69

239-654 O - 67 - 17

PAMLICO RIVER BASIN--Continued

2-835. TAR RIVER AT TARBORO, N. C.

LOCATION.--At gaging station at bridge on U.S. Highway 64, in Tarboro, Edgecombe County, 6.5 miles downstream from Fishing Creek.
DRAINAGE AREA.--2,140 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1944 to September 1945, October 1953 to September 1954, October 1961 to September 1963.
Water temperatures: October 1944 to September 1945, October 1953 to September 1954, October 1961 to September 1963.
Sediment records: January 1958 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 85 ppm Aug. 1-31; minimum, 48 ppm Mar. 1-31.
Hardness: Maximum, 24 ppm on many days during year; minimum, 16 ppm Jan. 1-31 and Mar. 1-31.
Specific conductance: Maximum daily, 175 micromhos Sept. 8; minimum daily, 51 micromhos Mar. 11.
Water temperatures: Maximum, 82°F on several days in July and August; minimum, 33°F Jan. 29.
Sediment concentrations: Maximum daily, 237 ppm Nov. 13; minimum daily, 7 ppm Oct. 26 and Nov. 1.
Sediment loads: Maximum daily, 3,320 tons Mar. 9; minimum daily, 4 tons Sept. 9, 25, 28.
EXTREMES, 1944-45, 1953-54, 1958-63.--Dissolved solids (1944-45, 1953-54, 1961-63): Maximum, 89 ppm Sept. 21-30, 1954; minimum, 45 ppm on many days in February 1945 and January 1954.
Hardness (1944-45, 1953-54, 1961-63): Maximum, 26 ppm Aug. 23-31, 1962; minimum, 9 ppm Jan. 21-31, 1954.
Specific conductance (1961-63): Maximum daily, 175 micromhos Sept. 8, 1963; minimum daily, 44 micromhos Jan. 12, 13, 1962.
Water temperatures (1944-45, 1953-54, 1961-63): Maximum, 84°F July 2, 1945; minimum, 33°F Jan. 29, 1963.
Sediment concentrations (1958-63): Maximum daily, 353 ppm July 17, 1958; minimum daily, 6 ppm Dec. 28-30, 1960 and Nov. 11, 12, 1961.
Sediment loads (1958-63): Maximum daily, 6,130 tons May 12, 1958; minimum daily, 4 tons Nov. 12, 1961 and Sept. 9, 25, 28, 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-15, 1962.....	626	17	0.25	5.6	1.6	8.0	2.0	29	4.2	8.0	0.0	1.5	70	20	0	83	7.1	37
Oct. 16-31.....	336	16	.30	6.6	2.0	12	2.4	34	4.4	13	.1	1.5	78	24	0	110	7.1	35
Nov. 1-11.....	784	16	.18	5.9	2.4	10	2.4	33	5.2	12	.1	2.5	A73	24	0	105	7.0	25
Nov. 12-30.....	3135	13	.07	4.5	1.7	5.3	2.7	16	7.8	6.8	.0	.6	68	18	5	69	7.2	55
Dec. 1-31.....	1632	16	.14	5.5	1.2	7.1	1.7	24	5.6	7.7	.2	1.2	65	19	0	76	6.8	22
Jan. 1-31, 1963.....	3801	12	.09	4.2	1.5	5.7	1.7	16	6.6	6.8	.1	1.0	60	16	4	63	6.6	38
Feb. 1-28.....	3706	11	.08	4.2	1.6	5.8	1.9	16	7.0	6.2	.0	1.5	54	17	4	65	6.6	25
Mar. 1-31.....	5595	8.6	.09	4.0	1.5	5.4	1.5	17	6.4	5.0	.1	.5	48	16	2	61	6.3	35
Apr. 1-30.....	1564	12	.30	5.1	2.1	7.4	1.5	29	3.6	7.1	.0	.3	58	22	0	80	7.3	40
May 1-31.....	951	14	.28	5.6	2.1	8.2	1.7	32	4.4	6.8	.0	1.8	67	23	0	91	7.2	50
June 1-20.....	724	17	.41	6.2	1.7	8.0	1.7	32	4.0	7.0	.2	2.3	66	22	0	92	7.2	35
June 21-30.....	459	15	.06	6.0	2.1	9.9	1.3	34	5.0	9.2	.2	2.1	68	24	0	105	6.8	20
July 1-31.....	339	15	.09	5.9	2.0	9.3	1.9	32	5.0	8.4	.1	.5	73	24	0	99	7.0	20
Aug. 1-31.....	244	15	.11	6.1	2.1	11	2.4	34	5.6	10	.1	2.1	85	24	0	115	6.8	25
Sept. 1-30.....	205	15	.11	5.7	2.1	13	1.8	29	7.0	14	.3	2.3	77	22	0	120	7.4	17
Time-weighted average.....	1775	14	0.16	5.3	1.8	8.2	1.9	26	5.5	8.3	0.1	1.3	67	21	1	87	--	32

A Calculated from determined constituents.

PAMLICO RIVER BASIN--Continued

2-835. TAR RIVER AT TARBORO, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0600 and 0915)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	63	65	65	68	67	67	68	69	70	68	67	67	69	69	68	68	68	64	61	62	62	63	60	57	54	50	47	48	51	54	56	62
November	51	52	52	51	50	49	48	48	51	52	55	52	53	52	52	51	53	55	50	49	49	54	50	48	47	43	45	47	48	49	--	50
December	49	50	51	51	50	49	45	45	45	41	38	35	34	34	34	35	35	37	37	41	39	38	38	39	37	37	39	40	39	39	37	41
January	35	35	35	34	35	36	36	36	38	40	42	45	48	44	42	40	40	42	44	47	48	44	42	39	37	36	36	34	33	35	37	39
February	35	36	38	36	37	40	42	41	40	41	42	45	42	42	40	38	36	37	38	40	44	39	38	38	38	39	36	36	--	--	--	39
March	38	41	42	44	53	53	52	52	51	53	51	53	54	56	53	53	54	55	54	57	54	50	49	51	53	57	56	55	58	60	61	52
April	59	63	64	67	60	61	58	58	59	58	56	57	57	57	57	56	59	61	64	66	66	69	67	62	61	61	62	62	59	61	--	61
May	58	56	59	62	64	62	62	66	69	72	72	66	64	65	68	68	67	68	70	71	71	71	68	65	63	62	62	64	67	69	69	66
June	79	79	70	71	73	74	76	77	76	79	80	79	75	75	77	75	71	70	73	75	75	70	70	71	72	73	77	77	78	79	--	75
July	81	80	81	78	77	77	78	79	76	74	78	73	75	73	76	79	78	80	81	82	81	80	78	78	77	78	78	81	78	81	82	78
August	79	81	81	81	81	82	82	82	82	82	78	80	80	78	75	76	75	78	79	80	77	77	80	81	76	74	75	72	75	77	78	79
September	75	75	75	76	74	72	71	73	72	73	75	75	75	68	65	63	67	69	69	70	72	69	64	61	60	64	65	66	68	65	--	70

PAMLICO RIVER BASIN--Continued

2-835. TAR RIVER AT TARBORO, N. C.--Continued

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	910	52	128	331	7	6	2180	31	182
2..	730	38	75	356	9	9	1910	30	155
3..	618	32	53	406	12	13	1730	29	135
4..	530	28	40	565	15	23	1640	25	111
5..	530	29	41	530	18	26	1550	22	92
6..	582	35	55	673	21	38	1510	22	90
7..	770	78	162	790	21	45	1510	19	77
8..	1070	71	205	711	12	23	1510	19	77
9..	790	37	79	654	17	30	1510	20	82
10..	618	30	50	1380	82	306	1460	14	55
11..	512	28	39	2230	130	783	1330	15	54
12..	495	40	53	3540	170	1620	1290	12	42
13..	440	50	59	4620	237	2960	1250	12	40
14..	403	35	38	5260	142	2020	1160	12	38
15..	391	30	32	4640	80	1000	1030	13	36
16..	374	21	21	2160	51	297	1010	13	35
17..	368	28	28	1730	39	182	1010	12	33
18..	334	21	19	1550	37	155	1070	14	40
19..	345	19	18	1420	36	138	1070	15	43
20..	328	20	18	1290	30	104	1070	16	46
21..	339	19	17	1290	24	84	1070	18	52
22..	345	18	17	1550	35	146	1070	17	49
23..	317	9	8	2240	44	266	1160	15	47
24..	314	9	8	4200	105	1190	1290	22	77
25..	339	9	8	5000	133	1800	1510	18	73
26..	336	7	6	5520	87	1300	1820	22	108
27..	336	9	8	4560	58	714	2090	30	169
28..	342	9	8	3480	44	413	2030	47	258
29..	325	9	8	2980	38	306	3600	52	505
30..	300	10	8	2540	35	240	3600	48	467
31..	331	9	8	--	--	--	3540	43	411
Total	14762	--	1317	68196	--	16237	50580	--	3679
	JANUARY			FEBRUARY			MARCH		
1..	4140	65	727	2760	23	171	3600	27	262
2..	4560	93	1150	2700	25	182	3960	31	331
3..	3720	50	502	2760	28	209	4500	32	389
4..	2810	37	281	3360	34	308	4800	38	492
5..	2380	30	193	3900	29	305	4680	46	581
6..	2180	29	171	4440	33	396	4140	41	458
7..	2000	22	119	4140	41	458	4140	49	548
8..	1860	18	90	3660	32	316	5060	94	1280
9..	1730	15	70	3300	31	276	6110	201	3320
10..	1680	17	77	2880	24	187	6990	142	2680
11..	1590	17	73	2540	21	144	7760	109	2280
12..	1510	15	61	2340	24	152	7830	80	1690
13..	1510	18	73	2820	35	266	6450	52	906
14..	1590	18	77	3960	46	492	6050	57	931
15..	1680	19	86	4860	72	945	6520	68	1200
16..	1910	18	93	4800	67	868	7130	70	1350
17..	2000	19	103	4020	40	434	7760	48	1010
18..	1770	19	91	3240	30	262	7190	48	932
19..	2090	32	181	2820	27	206	7470	48	968
20..	3660	60	593	3540	48	459	7910	70	1490
21..	5890	96	1530	4320	42	490	8530	78	1800
22..	7770	109	2290	5190	84	1180	8770	50	1180
23..	8690	82	1920	5450	108	1590	7910	48	1030
24..	9660	70	1830	4860	50	656	6130	41	679
25..	9660	51	1330	4080	38	419	4580	48	594
26..	7870	40	850	3720	29	291	3720	44	442
27..	6180	33	551	3720	23	231	3120	46	388
28..	5050	32	436	3600	23	224	2880	49	381
29..	4260	25	288	--	--	--	2760	46	343
30..	3480	20	188	--	--	--	2640	50	356
31..	2940	20	159	--	--	--	2340	47	297
Total	117820	--	16183	103780	--	12117	173430	--	30588

PAMLICO RIVER BASIN--Continued

2-835. TAR RIVER AT TARBORO, N. C.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	2190	40	237	910	31	76	1270	59	202
2	2090	41	231	1110	32	96	1030	52	145
3	1940	48	251	1230	37	123	870	59	139
4	1890	47	240	1150	32	99	830	47	105
5	1740	33	155	930	28	70	950	45	115
6	1640	30	133	890	38	91	1070	73	211
7	1640	28	124	795	22	47	1010	40	109
8	1990	32	172	778	19	40	1070	38	110
9	2440	38	250	740	15	30	970	44	115
10	2820	45	343	700	18	34	760	29	60
11	2640	43	307	660	21	37	640	25	43
12	2290	50	309	622	31	52	570	19	29
13	2040	50	275	570	28	43	570	20	31
14	1890	42	214	570	29	45	474	17	22
15	1640	33	146	522	27	38	426	18	21
16	1490	27	109	570	26	40	410	16	18
17	1440	29	113	554	24	36	382	15	15
18	1350	30	109	588	26	41	396	14	15
19	1270	28	96	680	25	46	354	15	14
20	1270	36	123	812	28	61	426	18	21
21	1190	38	122	795	36	77	442	15	18
22	1070	39	113	1010	115	314	506	30	41
23	1010	48	131	1350	120	437	522	25	35
24	950	46	118	2040	95	523	458	20	25
25	910	39	96	2040	119	655	522	22	31
26	890	37	89	1440	86	334	522	21	30
27	812	33	72	1150	64	199	442	19	23
28	795	28	60	990	78	208	368	17	17
29	778	25	53	950	60	154	474	25	32
30	812	30	66	1010	54	147	337	16	15
31	--	--	--	1310	58	205	--	--	--
Total	46917	--	4857	29466	--	4398	19071	--	1807

Day	JULY			AUGUST			SEPTEMBER		
1	301	14	11	309	29	24	194	18	9
2	290	15	12	245	20	13	188	18	9
3	292	15	12	301	20	16	166	20	9
4	318	16	14	260	17	12	154	16	7
5	474	22	28	284	18	14	158	13	6
6	778	46	97	346	19	18	222	18	11
7	522	27	38	245	15	10	190	13	7
8	382	22	23	222	16	10	156	12	5
9	318	22	19	265	16	11	130	10	4
10	276	37	28	250	14	9	140	13	5
11	238	22	14	240	15	10	160	15	6
12	524	68	96	250	12	8	186	15	8
13	506	49	67	176	12	6	152	14	6
14	368	42	42	235	19	12	150	12	5
15	329	39	35	235	16	10	170	12	6
16	270	28	20	204	12	7	309	25	21
17	258	27	19	200	11	6	346	37	35
18	255	25	17	196	11	6	396	32	34
19	346	31	29	172	12	6	368	32	32
20	329	32	28	172	11	5	309	21	18
21	304	38	31	196	10	5	265	19	14
22	216	27	16	152	11	5	228	18	11
23	218	30	18	162	12	5	190	13	7
24	220	30	18	200	12	6	172	10	5
25	212	24	14	309	20	17	168	9	4
26	204	20	11	458	28	35	152	11	5
27	202	17	9	382	22	23	168	11	5
28	218	18	11	265	23	16	146	11	4
29	396	38	41	235	17	11	170	17	8
30	340	50	46	200	12	6	245	24	16
31	318	38	33	204	17	9	--	--	--
Total	10222	--	897	7570	--	351	6148	--	322

Total discharge for year (cfs-days).....647962
Total load for year (tons).....82753

PAMLICO RIVER BASIN--Continued

2-843.92. TRANTERS CREEK NEAR WASHINGTON, N. C.

LOCATION.--At bridge on county road, 0.9 mile upstream from mouth, 0.4 mile west of Atlantic Coast Line Railroad, and 2.5 miles northwest of Washington, Beaufort County.
DRAINAGE AREA.--254 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1963.
Water temperatures: October 1960 to September 1963.
EXTREMES, 1962-63.--Chloride: *Maximum*, 880 ppm Oct. 18; *minimum*, 7.0 ppm May 22-31.
Specific conductance: Maximum daily, 3,000 micromhos Oct. 18; minimum daily, 47 micromhos Jan. 22.
Water temperatures: Maximum, 87°F Aug. 8; minimum, freezing point Jan. 31.
EXTREMES, 1960-63.--Chloride: Maximum, 2,130 ppm Dec. 11, 1961; minimum, 3.4 ppm July 1-7, 1962.
Specific conductance: Maximum daily, 6,850 micromhos Dec. 11, 1961; minimum daily, 35 micromhos June 24, 1961.
Water temperatures: Maximum, 88°F Aug. 1, 1961; minimum, freezing point Jan. 17, 18, 1962, Jan. 31, 1963.
REMARKS.--Salinity station. No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-9, 1962.....		8.5	0.17	5.3	1.8	6.3	2.2	18	9.4	7.5	0.2	1.4	64	20	5	76	6.5	100
Nov. 13-30.....		8.5	.38	4.6	2.0	7.1	3.0	15	10	10	.2	.6	72	20	7	87	6.4	100
Dec. 1-31.....		9.4	.17	5.9	2.1	8.2	2.4	12	13	13	.2	1.1	70	24	14	96	6.5	75
Jan. 1-18, 1963.....		6.0	.12	6.2	1.8	7.2	1.5	11	12	12	.1	1.4	72	22	14	89	6.3	70
Jan. 19-31.....		4.4	.21	4.2	1.3	4.1	1.7	8	10	7.3	.2	1.1	A70	16	10	60	5.8	140
Feb. 1-13.....		5.3	.09	5.1	1.8	5.8	1.3	8	13	9.0	.1	1.8	61	20	14	78	6.7	50
Feb. 14.....		--	--	--	--	--	--	33	--	19	--	--	--	36	10	130	7.5	--
Feb. 15-28.....		3.5	.09	5.8	1.3	6.3	1.2	11	12	9.5	.1	1.4	60	20	10	83	6.6	80
Mar. 1-31.....		2.0	.13	4.9	2.0	6.4	2.5	11	11	9.5	.1	1.2	63	20	11	80	6.4	60
Apr. 1-30.....		4.7	.26	5.9	1.6	7.2	1.5	19	8.8	9.5	.1	1.7	64	22	6	85	7.1	75
May 1-21.....		8.0	.23	6.6	2.0	8.9	1.8	26	7.0	10	.1	2.1	77	24	3	102	7.2	70
May 22-31.....		5.4	.14	4.6	2.0	5.0	1.7	12	8.4	7.0	.1	2.2	67	20	10	71	6.4	90
June 1-15.....		9.1	.34	6.0	1.6	7.4	1.7	18	8.2	9.0	.2	.9	71	22	6	89	7.1	110
June 16-30.....		9.1	.33	6.9	2.2	9.0	2.1	28	8.0	11	.1	.5	78	26	3	103	7.1	90
July 1-21.....		9.0	.14	8.1	2.6	12	2.1	33	8.0	14	.2	1.9	90	30	4	128	7.2	60
Aug. 15-31.....		6.8	.20	7.6	2.1	10	2.2	18	11	14	.1	1.7	89	28	12	118	6.6	75
Sept. 1.....		--	.31	--	--	--	--	24	--	20	--	--	--	31	12	140	7.4	--
Sept. 4-16.....		8.3	.12	7.7	3.0	16	3.5	24	17	25	.2	1.7	102	32	12	160	7.4	50

A Organic matter present; sum of mineral constituents 39 parts per million.

PAMLICO RIVER BASIN--Continued

2-843.92. TRANTERS CREEK NEAR WASHINGTON, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		400									47	20
2		525									54	44
3		375									46	51
4		475									48	
5	7.5	245									47	
6		200									118	
7		275									88	
8		245			9.0				9.0		80	
9		121									59	
10	27	64		12							52	
11	10	75						10		14	38	25
12	19	30									45	
13	88										47	
14	500				19						38	
15	400						9.5					
16	555		13			9.5						
17	450											65
18	880											72
19	425											80
20	650											80
21	625	10			9.5							121
22	750									168	14	73
23	325								11	203		188
24	650									199		775
25	625			7.3						120		825
26	300							7.0		147		136
27	555									122		450
28	575									126		300
29	400				--					83		161
30	425				--					82		179
31	375	--			--		--		--	56		--

PAMLICO RIVER BASIN--Continued

2-843.92. TRANTERS CREEK NEAR WASHINGTON, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
/Once-daily measurement between 1700 and 1830/

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	70	69	69	69	69	69	69	69	69	69	69	69	72	73	75	74	72	69	69	68	68	68	67	65	64	62	58	59	59	60	60	67
November	60	59	58	57	51	54	53	53	53	55	56	55	55	53	53	53	53	53	52	51	51	52	52	52	51	49	48	49	51	52	--	53
December	51	52	53	55	54	53	51	50	48	43	43	42	39	38	37	--	37	37	38	39	38	38	38	39	39	41	41	41	41	41	39	43
January	38	37	36	34	34	35	35	36	37	39	41	42	44	43	43	44	45	43	43	43	48	48	47	44	41	40	38	37	--	35	32	40
February	36	38	38	38	40	40	41	44	44	44	44	45	46	47	45	43	41	39	40	42	43	44	44	43	40	40	40	39	--	--	--	42
March	38	41	45	47	51	55	56	57	57	50	55	56	57	57	58	59	59	59	60	61	60	57	54	53	53	55	57	58	59	64	63	55
April	64	65	66	67	65	64	62	61	62	63	62	60	60	61	60	60	60	62	64	65	67	69	70	68	67	66	68	66	65	65	--	64
May	64	65	65	65	66	68	69	70	72	72	74	72	71	72	72	71	70	70	71	72	72	70	68	66	65	65	64	64	65	67	66	68
June	65	66	68	71	74	74	74	76	77	78	78	80	81	80	80	80	80	78	77	79	77	76	75	76	76	78	80	80	80	81	--	76
July	82	82	83	83	83	83	83	83	82	82	80	79	79	79	80	80	81	82	82	83	83	85	85	84	83	83	84	84	84	84	84	82
August	85	85	85	85	85	86	86	87	85	85	85	85	84	82	80	79	81	80	79	79	79	78	79	79	78	77	77	77	78	79	79	82
September	80	80	80	79	77	77	77	77	77	77	78	79	76	75	73	72	73	74	74	75	75	74	72	70	70	69	69	69	69	70	--	75

2-844.72. PAMLICO RIVER AT WASHINGTON, N. C.

LOCATION.--At bridge on U.S. Highway 17 at Washington, Beaufort County, 0.7 mile below Kennedy Creek.
DRAINAGE AREA.--3,080 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1963.
Water temperatures: October 1961 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 2,225 ppm Oct. 18 (B); minimum, 7.0 ppm Dec. 5.
Specific conductance: Maximum daily, 7,100 micromhos Oct. 18 (B); minimum daily, 66 micromhos Feb. 1 (T).
Water temperatures: Maximum, 86°F Aug. 10 (T); minimum, 34°F Dec. 16 (T).
EXTREMES, 1961-63.--Chloride: Maximum, 5,980 ppm Dec. 4 (B), 1961; minimum, 4.2 ppm July 1 (T), 1962.
Specific conductance: Maximum daily, 17,600 micromhos Dec. 23 (B), 1961; minimum daily, 46 micromhos Jan. 14, 1962.
Water temperatures: Maximum, 86°F Aug. 10 (T), 1963; minimum, 34°F Dec. 16 (T), 1962.
REMARKS.--Salinity station. Top (T) and bottom (B) samples were collected once daily. No discharge records available.

Chemical analyses, in parts per million, October 1962 to August 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-7, 8(T), 1962		12	0.12	5.7	2.2	8.3	2.3	23	9.2	9.5	0.1	2.0	68	23	4	89	6.9	55
Nov. 13, 14(T).....		11	.31	5.0	2.9	13	3.4	20	8.0	20	.1	.9	A75	24	8	125	7.0	130
Nov. 14(B), 15-18...		10	.28	5.1	2.3	10	3.2	18	9.8	16	.2	1.5	78	22	8	110	6.8	80
Nov. 23-24, 25(T)...		9.8	.34	4.6	2.1	6.4	3.2	18	9.8	9.5	.1	1.0	A56	20	5	79	6.5	160
Nov. 26-29.....		12	.29	6.5	2.3	11	2.9	24	12	16	.2	.8	A76	26	6	120	6.7	90
Nov. 30.....		11	.20	4.0	2.0	5.4	2.4	15	5.4	7.5	.2	.8	A46	18	6	71	6.4	--
Dec. 1-2.....		12	.18	4.8	1.5	6.1	2.7	17	9.0	8.0	.1	.6	A53	18	4	75	6.4	50
Dec. 5.....		12	.16	5.3	1.5	5.5	2.6	17	5.2	7.0	.2	1.0	A48	19	5	73	6.6	110
Dec. 6-21.....		13	.23	7.1	2.6	10	2.6	20	11	15	.2	1.8	85	28	12	110	7.0	75
Dec. 26.....		13	.19	6.1	2.3	9.2	2.4	20	11	14	.1	1.2	A69	24	8	110	6.7	40
Jan. 5-7, 1963.....		8.9	.11	4.8	2.2	8.9	1.8	14	12	14	.1	.8	78	21	10	98	6.9	40
Jan. 26-31.....		4.6	.20	4.9	1.3	4.6	1.8	9	11	8.0	.2	1.0	66	17	10	68	6.4	110
Feb. 1-28.....		6.8	.11	5.3	1.7	5.9	1.6	12	12	9.8	.1	2.1	56	20	10	80	6.4	45
Mar. 1-31.....		4.7	.11	5.5	1.2	6.4	2.5	14	9.0	9.0	.2	1.4	65	19	8	77	6.4	50
Apr. 1-30.....		8.0	.24	6.3	2.5	7.9	1.7	24	7.6	10	.2	2.6	64	26	6	95	7.3	60
May 1-31.....		11	.23	6.8	2.2	8.8	1.8	29	6.2	9.3	.0	1.0	76	26	2	110	7.3	40
June 1-15.....		13	.27	6.8	2.0	7.6	1.9	27	7.8	8.3	.1	2.7	76	25	3	110	6.8	55
June 20-30.....		13	.14	7.2	2.5	10	1.8	36	7.2	12	.1	2.1	77	28	0	130	7.2	40
July 1-5.....		12	.00	8.2	2.2	12	2.2	35	7.8	12	.2	2.1	88	30	0	126	7.2	30
July 18-21.....		11	.02	7.1	2.9	14	3.6	34	7.8	17	.2	1.4	A82	30	2	137	6.6	20
Aug. 15-26.....		10	.10	7.2	2.9	14	3.9	26	12	21	.2	1.9	90	30	9	143	7.4	40

A Calculated from determined constituents.

PAMLICO RIVER BASIN--Continued

2-844.72. PAMLICO RIVER AT WASHINGTON, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
1			775	775	8.0	8.0	120	121													147	151	144	144
2			750	750			123	123													61	123	113	113
3			625	625	83	86	123	121											12	12	61	59	113	113
4		9.5	625	625	88	88	123	16													59	60	113	113
5	9.5		625	880	7.0	7.0															59	59	56	54
6			880	880			14	14											64	66	60	213	54	54
7			880	880															66	67	440	450	54	54
8		21	555	210			43	14									8.3	8.3	66	67	450	450	54	54
9	12	19	200	200			111	118											66	68	450	450	94	94
10	190	170	200	205			120	118											154	161	450	452	94	94
11	175	160	205	200			119	120											160	161	54	41	92	94
12	155	160	200	300			120	120											161	161	40	40	94	94
13	165	185	20	20			118	118											161	161	40	40	110	113
14	375	375			15	15	118	118											220	222	40	40	136	136
15	375	375					118	118	9.8	9.8									222	232			136	139
16	375	375	16	16			118	118			9.0	9.0	10	10	9.3	9.3	86	91	220	219			139	137
17	375	375					150	127									94	94	220	220			137	139
18	1850	2225					153	156									94	91					715	715
19	2125	2150	150	170			156	156									94	92					715	715
20	825	800	160	170			156	157											17	17			715	715
21	880	825	170	160			156	156													21	21	715	715
22	1020	1020	160	160	130	140	157	156											575	585			450	375
23	1025	1020		9.5	140	142	156	156											585	585			375	375
24	1020	1020	9.5		142	140	156	156											585	585			375	375
25	1020	1020		105	142	142	159	157									12	12	585	585			375	375
26	750	750			14	14													365	365			1175	1175
27	750	750	16	16	118	125													365	365	385	385	1175	1175
28	1020	1020			125	125													365	365	390	385	1175	1175
29	1020	1020			125	125	8.0	8.0											365	375	390	395	1175	1175
30	775	775	7.5	7.5	125	125			--	--									153	150	395	400	350	350
31	750	750	--	--	122	122			--	--			--	--			--	--	149	149	137	121	--	--

2-844.72. PAMLICO RIVER AT WASHINGTON, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Top and bottom once-daily measurements at approximately high tide)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Top.....	69	69	70	69	69	70	70	74	74	72	73	71	71	71	70	70	71	68	68	67	66	67	67	65	66	62	56	57	60	60	60	67
Bottom.....	68	68	69	69	69	70	69	72	73	72	72	71	70	70	70	70	71	69	70	67	67	67	66	66	64	64	58	59	59	59	60	67
November																																
Top.....	60	57	56	56	57	52	53	53	53	53	52	51	53	53	52	52	52	53	52	51	52	52	51	51	51	50	49	49	49	49	--	52
Bottom.....	60	59	56	57	57	53	53	52	52	53	52	52	52	53	53	52	53	53	52	51	52	51	52	51	51	51	50	50	50	49	--	53
December																																
Top.....	49	49	59	59	57	56	53	54	54	49	45	44	40	35	35	34	36	36	36	37	39	40	40	40	38	38	40	40	40	39	38	44
Bottom.....	49	49	59	58	57	55	54	53	54	50	46	44	40	37	36	36	36	37	36	38	40	39	40	40	39	39	40	40	40	39	39	44
January																																
Top.....	35	35	37	36	35	36	36	37	36	36	38	39	39	38	37	35	38	38	38	38	39	38	38	40	40	39	39	37	37	38	38	37
Bottom.....	37	37	38	37	37	36	37	37	37	37	38	40	39	39	38	36	38	37	38	38	40	40	38	40	40	39	38	38	38	38	39	38
February																																
Top.....	39	39	37	38	38	38	39	38	38	39	41	42	43	43	43	43	43	43	44	43	42	42	40	41	43	41	39	39	--	--	--	41
Bottom.....	38	38	38	38	39	39	39	39	38	39	40	42	44	43	43	42	43	43	43	42	43	43	41	41	42	40	40	40	--	--	--	41
March																																
Top.....	39	40	40	41	42	42	44	46	47	51	54	55	55	56	56	55	56	56	56	57	56	55	56	57	57	57	56	56	57	57	57	52
Bottom.....	40	40	40	40	42	41	44	45	47	51	53	54	55	56	55	55	55	56	56	56	56	56	56	56	57	56	56	56	56	56	57	52
April																																
Top.....	60	61	62	63	65	65	65	64	65	64	62	60	60	60	59	58	58	58	58	60	65	68	69	68	68	68	67	69	68	69	--	64
Bottom.....	59	61	61	62	64	65	65	65	64	63	61	61	61	60	58	57	58	58	60	61	64	67	69	69	68	67	67	68	68	68	--	63
May																																
Top.....	65	65	66	65	65	66	65	67	67	69	71	74	73	72	70	70	70	71	71	73	73	73	71	70	70	71	68	66	66	67	68	69
Bottom.....	66	65	65	64	66	65	65	66	67	68	71	73	72	70	70	70	70	71	70	72	73	73	70	70	70	70	67	65	66	66	68	69
June																																
Top.....	67	--	67	69	71	75	76	78	79	79	79	81	81	79	80	78	78	78	79	79	79	78	79	77	77	75	79	80	80	80	--	77
Bottom.....	67	--	68	69	72	74	75	77	78	79	78	79	79	79	80	79	79	78	78	79	78	77	78	78	79	77	79	80	79	80	--	77
July																																
Top.....	80	81	83	81	81	81	82	82	81	80	80	81	80	79	80	80	80	81	80	81	82	82	82	81	82	82	81	82	82	84	84	81
Bottom.....	80	80	82	80	79	81	81	80	80	79	80	80	80	79	79	80	79	80	80	80	80	81	80	81	80	81	81	81	81	83	82	80
August																																
Top.....	82	83	84	84	85	85	85	83	85	86	85	84	85	83	80	80	80	80	82	80	80	79	80	80	81	79	78	78	78	78	81	82
Bottom.....	82	82	83	84	84	83	85	84	85	84	84	84	84	82	80	82	79	80	80	78	80	79	79	78	79	79	79	78	78	78	79	81
September																																
Top.....	82	80	80	81	79	78	79	78	76	76	75	74	77	76	75	75	75	73	74	75	76	75	74	73	72	71	68	69	70	69	--	75
Bottom.....	81	79	80	80	79	79	79	79	76	76	75	75	76	76	76	74	75	75	75	75	76	74	74	74	74	72	69	69	69	69	--	75

NEUSE RIVER BASIN

2-852.2. LITTLE RIVER NEAR ORANGE FACTORY, N. C.

LOCATION.--At gaging station at bridge on U.S. Highway 501, 1 mile upstream from Mountain Creek, and 1.5 miles northwest of Orange Factory, Durham County.
DRAINAGE AREA.--81.6 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1963 (discontinued).
Water temperatures: October 1961 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 83°F July 18-20, 28; minimum, 35°F on several days in December and January.
EXTREMES, 1961-63.--Water temperatures: Maximum, 83°F July 18-20, 28, 1963; minimum, freezing point Dec. 31, 1961, Jan. 14, 15, 1962.

Chemical analyses, in parts per million, October 1962 to August 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 11, 1962.....	6.8	16	0.06	6.7	2.6	5.9	1.7	41	2.0	5.7	0.0	0.5	64	28	0	85	6.6	20
Nov. 8.....	11	17	.03	6.0	2.6	5.2	2.0	38	3.4	5.5	.2	.3	65	26	0	78	6.9	20
Dec. 5.....	41	16	.03	5.0	2.1	5.1	.8	30	3.6	5.0	.0	.1	57	22	0	65	7.0	20
Jan. 9, 1963.....	41	15	.04	5.1	1.8	5.2	.5	26	4.8	4.0	.0	.1	A50	20	0	62	7.4	10
Mar. 6.....	2640	4.1	.08	3.0	1.1	2.0	1.5	10	6.2	1.2	.0	1.3	A25	12	4	37	6.0	45
Mar. 14.....	216	9.7	.06	3.3	1.2	2.8	.8	16	5.2	3.7	.0	.2	44	13	0	48	6.3	45
Apr. 10.....	53	13	.04	4.8	1.9	4.6	.4	30	2.4	4.9	.0	.1	48	20	0	63	7.0	55
May 28.....	20	15	.01	5.9	2.2	4.9	1.1	36	2.2	3.5	.0	.1	A53	24	0	71	6.9	15
July 9.....	5.7	12	.05	6.5	2.2	5.5	1.0	37	2.2	4.0	.0	.2	60	25	0	76	6.8	30
July 23.....	115	13	.00	7.1	2.5	5.4	1.7	44	3.6	3.6	.1	.2	61	28	0	77	7.4	5
Aug. 5.....	10	14	.07	6.4	1.2	4.6	1.3	31	5.6	3.4	.1	.0	A52	21	0	58	7.5	40

A Calculated from determined constituents.

2-852.2. LITTLE RIVER NEAR ORANGE FACTORY, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
/Continuous ethyl-alcohol actuated thermograph/

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	62	63	63	64	66	65	66	69	68	66	66	66	67	68	67	67	67	67	63	61	59	61	60	59	54	52	48	48	53	56	56	62
Minimum	57	60	62	63	64	63	64	65	66	63	62	62	63	65	65	64	64	63	61	57	57	59	58	54	51	48	46	46	48	53	54	59
November																																
Maximum	54	52	51	50	50	49	48	48	57	57	55	54	52	50	49	50	53	56	55	52	52	55	54	49	48	46	46	46	49	49	--	51
Minimum	51	49	50	49	49	47	46	46	48	55	53	51	50	48	46	48	50	53	52	51	51	52	49	48	46	45	45	45	46	48	--	49
December																																
Maximum	49	48	49	50	50	50	46	43	44	42	38	37	36	36	35	35	36	37	39	42	42	41	41	40	39	41	42	42	42	42	40	42
Minimum	48	47	47	49	49	46	42	42	42	38	37	36	36	35	35	35	35	36	36	39	40	40	39	38	37	38	41	42	42	40	37	40
January																																
Maximum	37	36	36	38	38	41	41	42	41	42	46	49	50	49	44	40	38	42	45	48	48	44	42	42	37	36	38	38	35	37	39	41
Minimum	36	35	35	36	36	37	40	41	40	40	42	46	49	44	40	38	37	38	42	45	44	41	41	37	36	36	36	35	35	35	37	39
February																																
Maximum	39	39	41	40	41	44	45	45	43	41	44	44	44	42	41	39	38	38	39	42	43	42	38	39	41	41	38	40	--	--	--	41
Minimum	38	38	39	38	38	41	44	43	41	39	41	43	42	40	39	37	36	36	38	39	42	38	37	38	38	37	36	36	--	--	--	39
March																																
Maximum	42	44	44	47	52	54	54	50	49	51	50	48	54	54	54	51	52	54	54	55	55	49	49	51	54	54	56	57	58	59	59	52
Minimum	39	42	42	43	47	52	50	47	47	48	48	48	48	52	50	50	50	52	54	54	49	46	46	46	50	52	52	52	52	55	56	49
April																																
Maximum	61	64	66	67	63	58	58	58	58	59	57	59	57	56	56	56	59	55	69	71	70	67	71	66	64	65	64	63	61	61	--	62
Minimum	56	58	61	63	58	56	54	54	57	55	55	53	53	53	53	50	55	48	55	66	63	64	66	61	59	59	57	59	59	59	--	57
May																																
Maximum	60	60	62	65	68	68	66	65	73	76	77	74	68	67	71	70	68	74	74	74	74	76	74	70	68	67	66	66	69	73	74	70
Minimum	56	53	54	56	59	61	63	60	65	69	71	68	64	63	66	67	66	68	67	69	71	71	70	66	65	66	66	65	66	68	68	65
June																																
Maximum	74	72	71	74	74	76	79	78	79	82	82	80	78	78	78	78	72	72	74	76	76	74	74	74	75	77	78	78	79	78	--	76
Minimum	69	69	69	69	71	72	73	74	74	76	78	76	74	74	74	72	71	70	70	73	73	71	71	70	70	70	73	74	75	76	--	72
July																																
Maximum	80	80	81	80	78	76	78	78	78	74	74	74	74	74	77	78	79	83	83	83	82	81	79	74	76	79	81	83	82	81	80	79
Minimum	76	77	76	76	74	74	74	76	74	71	69	70	70	73	73	74	76	78	80	81	79	76	72	71	73	74	76	78	78	78	75	75
August																																
Maximum	77	78	80	80	82	82	80	82	82	82	79	80	80	80	78	77	78	80	80	80	80	82	80	80	80	77	74	74	74	75	78	79
Minimum	75	75	75	77	78	78	77	78	78	78	75	76	78	77	74	74	74	74	78	78	78	78	76	77	77	74	73	72	72	74	74	76
September																																
Maximum	77	76	77	76	76	74	74	73	74	74	74	75	75	73	67	67	69	69	70	71	72	72	68	65	66	67	67	67	68	66	--	71
Minimum	74	72	73	75	74	73	70	70	71	72	72	72	73	67	66	66	66	68	67	68	69	68	65	62	62	63	64	66	66	65	--	69

NEUSE RIVER BASIN--Continued

2-871.82. NEUSE RIVER AT FALLS, N. C.

LOCATION (revised).--At bridge on Secondary Road 200 at Falls, Wake County, 1.8 miles downstream from Horse Creek, and 1.5 miles upstream from Richland Creek.
DRAINAGE AREA.--770 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1954, November 1960 to September 1963.
Water temperatures: October 1953 to September 1954, November 1960 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 119 ppm Sept. 1-14; minimum, 43 ppm Dec. 27-31.
Hardness: Maximum, 34 ppm on many days during year; minimum, 11 ppm July 2.
Specific conductance: Maximum daily, 228 micromhos Aug. 27; minimum daily, 46 micromhos Mar. 8, Aug. 2.
Water temperatures: Maximum, 80°F July 28; minimum, freezing point Dec. 13.
EXTREMES, 1953-54, 1960-63.--Dissolved solids: Maximum, 129 ppm Sept. 21-30, 1954; minimum, 38 ppm Jan. 15-17, 1961.
Hardness: Maximum, 46 ppm Jan. 1, 1962; minimum, 11 ppm July 2, 1963.
Specific conductance (1960-63): Maximum daily, 228 micromhos Aug. 27, 1963; minimum daily, 37 micromhos Aug. 4, 1961.
Water temperatures: Maximum, 81°F July 15, 1954; minimum, freezing point on many days in 1960-62.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-15, 1962.....		14	0.16	7.4	2.1	8.9	2.7	37	5.8	7.7	0.1	2.9	73	28	0	100	7.3	45
Oct. 16-31.....		17	.07	9.0	2.6	16	3.6	51	6.6	13	.2	6.1	104	34	0	145	7.1	18
Nov. 1-6.....		14	.10	7.9	3.0	16	4.1	43	7.8	14	.2	3.8	100	32	0	140	7.1	35
Nov. 7-30.....		11	.03	5.4	2.0	5.9	2.4	22	7.6	6.4	.1	1.3	57	22	4	74	7.3	50
Dec. 1-26.....		14	.08	6.3	2.2	8.3	2.1	29	8.0	8.0	.3	2.8	70	24	0	95	7.2	12
Dec. 27-31.....		10	.04	3.5	1.9	5.3	1.4	16	8.2	3.8	.0	1.3	A43	17	4	68	6.4	20
Jan. 1-31, 1963.....		12	.06	5.1	2.0	6.5	1.7	22	8.0	5.7	.2	1.7	64	22	4	73	7.3	25
Feb. 1-28.....		13	.01	5.0	1.9	6.4	1.3	22	9.0	5.5	.1	2.5	A56	20	2	72	7.4	17
Mar. 1-6.....		10	.01	4.3	2.0	5.1	1.2	20	6.6	5.3	.3	1.9	58	19	2	73	6.5	17
Mar. 7-23.....		9.4	.02	4.1	1.6	3.7	1.4	16	6.6	3.8	.1	1.2	54	16	4	62	6.3	45
Mar. 24-31.....		13	.03	5.1	2.1	6.2	1.1	25	6.0	5.5	.1	2.6	62	21	0	80	6.7	17
Apr. 1-30.....		13	.17	6.3	2.6	8.8	1.5	32	4.8	7.1	.0	2.7	65	26	0	92	7.1	30
May 1-31.....		14	.13	7.0	2.6	11	2.1	37	5.4	8.8	.0	5.5	78	28	0	120	7.4	30
June 1-30.....		16	.07	7.9	2.7	11	1.9	43	5.8	9.3	.2	4.7	94	30	0	140	7.2	33
July 1.....		--	--	--	--	--	--	49	--	9.4	--	--	--	34	0	12[illegible]	7.9	--
July 2.....		--	--	--	--	--	--	11	--	2.8	--	--	--	11	2		7.0	--
July 3-5.....		13	.04	7.0	2.3	12	--	29	9.0	9.4	.2	7.8	--	27	3		7.6	30
July 6-14.....		15	.06	6.0	2.7	9.5	2.0	36	7.0	6.2	.3	5.4	77	28	0		6.7	30

July 15-24, 1963....		16	.00	8.6	2.7	15	2.5	48	7.0	9.9	.3	6.2	95	32	0	143	6.8	10
July 25-31.....		11	.06	5.4	2.3	8.0	2.2	29	6.4	6.5	.2	4.0	67	23	0	91	7.5	30
Aug. 1-4.....		9.0	.00	4.8	1.5	5.1	2.0	20	6.2	4.8	.2	2.6	46	18	2	62	7.0	40
Aug. 5-17.....		14	.07	6.7	2.9	12	3.0	38	6.6	8.2	.2	5.3	94	29	0	118	7.3	50
Aug. 18-31.....		15	.06	8.7	3.1	19	3.2	54	8.2	15	.3	7.3	A108	34	0	163	7.0	18
Sept. 1-14.....		17	.00	9.5	2.5	21	5.6	60	8.8	15	.3	7.9	A119	34	0	170	7.1	25
Sept. 15-16.....		7.4	.03	4.8	1.8	6.4	4.4	16	11	4.8	.2	7.2	A56	20	6	74	6.2	20
Sept. 17-30.....		16	.04	7.3	2.5	13	2.7	40	9.4	9.5	.3	3.7	85	28	0	120	7.0	28
Time-weighted average.....		14	0.07	6.5	2.3	9.9	2.3	33	7.1	8.1	0.2	3.8	76	26	1	105	--	29

A Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

2-871.82. NEUSE RIVER AT FALLS, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0815 and 1200)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	59	61	62	63	65	65	65	67	67	67	67	67	66	66	65	67	64	64	61	61	61	60	59	57	55	54	52	50	52	51	50	61
November	51	51	50	49	49	48	46	45	46	53	54	55	53	51	48	49	51	54	51	50	52	53	53	50	47	45	45	45	47	48	--	50
December	49	49	49	50	50	48	--	--	--	41	38	36	32	33	34	35	36	38	38	39	40	39	39	38	36	37	39	39	39	39	38	40
January	36	35	36	36	37	37	37	41	43	46	46	47	47	45	43	39	40	41	43	46	46	42	40	38	35	35	35	35	34	35	36	40
February	38	38	38	38	40	46	48	48	44	43	43	44	42	41	41	37	37	37	38	41	43	43	43	41	41	41	36	38	--	--	--	41
March	38	41	44	44	49	52	50	50	50	50	48	49	52	53	53	51	51	51	53	53	51	50	49	49	50	54	54	56	55	56	54	50
April	58	61	63	64	62	61	58	57	58	55	58	57	56	55	55	53	57	59	62	65	66	67	70	68	61	61	60	61	60	--	--	60
May	59	55	56	59	60	64	63	65	68	70	69	68	64	64	64	64	66	68	68	68	71	70	68	67	65	65	64	64	66	66	68	65
June	67	67	68	69	70	70	71	72	74	77	77	76	73	74	72	70	70	70	70	72	71	70	69	69	71	70	71	73	74	75	--	71
July	78	74	76	75	75	74	75	75	73	73	72	70	71	72	73	74	74	76	79	79	79	78	79	75	75	74	77	80	78	78	78	75
August	76	74	74	74	74	76	78	78	79	78	78	79	77	76	74	72	72	75	77	78	76	74	76	77	75	74	74	72	72	73	73	75
September	73	73	72	74	74	72	72	73	72	72	72	72	72	69	67	64	66	66	66	66	66	66	65	64	66	66	65	65	65	65	--	69

NEUSE RIVER BASIN--Continued

2-875.66. NEUSE RIVER AT SMITHFIELD, N. C.

LOCATION.--At bridge on U.S. Highway 70 at Smithfield, Johnston County, and 1.7 miles upstream from Swift Creek.
DRAINAGE AREA.--1,201 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1954 to September 1955, October 1958 to September 1963.
REMARKS.--Records of discharge are given for Neuse River near Clayton. No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 3, 1962.....	261	16	0.05	7.5	2.0	15	3.2	35	8.4	14	0.1	8.0	96	28	0	132	6.6	15
Nov. 2.....	231	17	.02	6.7	2.7	20	3.4	49	6.2	18	.3	3.6	108	28	0	157	6.5	20
Dec. 4.....	733	15	.09	5.4	2.0	8.0	2.1	26	7.2	7.9	.0	1.9	63	22	1	85	7.1	40
Jan. 3, 1963.....	1380	12	.04	4.9	1.4	7.6	1.4	20	7.8	8.4	.0	.9	59	18	1	78	6.2	22
Feb. 5.....	2570	10	.07	5.0	1.6	7.5	1.3	19	8.8	9.0	.1	.3	56	19	4	82	6.6	12
Mar. 5.....	1820	11	.01	4.1	1.7	6.6	1.1	21	7.2	6.7	.1	1.5	56	17	0	68	6.3	23
Apr. 2.....	812	13	.02	4.7	1.9	7.2	1.5	28	4.0	7.0	.1	.8	59	20	0	81	6.2	20
May 1.....	824	14	.00	6.1	2.3	10	2.8	36	5.2	8.2	.2	.5	70	24	0	95	7.1	15
June 4.....	410	16	.00	7.1	1.9	11	3.5	34	5.8	10	.2	5.6	82	26	0	108	6.7	15
July 2.....	613	14	.01	7.9	2.2	24	4.0	47	6.4	26	.3	.3	113	28	0	175	6.4	17
Aug. 1.....	691	14	.02	5.3	1.8	9.2	4.7	29	6.8	7.3	.1	2.9	70	20	0	93	6.2	20
Sept. 4.....	120	15	.00	8.2	2.7	36	5.6	54	9.4	36	.3	.5	A142	32	0	215	6.4	15

A Calculated from determined constituents.

239-654 O - 67 - 18

2-S88.21. NEUSE RIVER AT GOLDSBORO, N. C.

LOCATION.--At bridge on U.S. Highway 117, 2 miles southwest of Goldsboro, Wayne County, and 1.7 miles upstream from gage.
DRAINAGE AREA.--2,370 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1948 to September 1949, October 1958 to September 1963.
Water temperatures: October 1948 to September 1949, October 1960 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 104 ppm July 27-31; minimum, 41 ppm Dec. 30-31.
Hardness: Maximum, 26 ppm July 17-31; minimum, 14 ppm Nov. 12-30, Dec. 30-31, and Jan. 1-31.
Specific conductance: Maximum daily, 181 micromhos July 29; minimum daily, 46 micromhos Jan. 23.
Water temperatures: Maximum, 87°F July 16, 17; minimum, freezing point Jan. 7.
EXTREMES, 1948-49, 1960-63.--Dissolved solids: Maximum, 104 ppm Oct. 20-31, 1961, July 27-31, 1963; minimum, 31 ppm July 5-12, 1962.
Hardness: Maximum, 26 ppm Oct. 20-31, 1961, July 17-31, 1963; minimum, 11 ppm Jan. 1-10, 1949.
Specific conductance (1960-63): Maximum daily, 181 micromhos July 29, 1963; minimum daily, 37 micromhos July 6, 1962.
Water temperatures: Maximum, 88°F Aug. 7-9, 1962; minimum, freezing point Jan 28, 1961, Jan. 7, 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-19, 1962.....	997	12	0.24	5.3	1.2	10	2.3	22	6.6	10	0.1	3.0	75	18	0	91	7.0	45
Oct. 20-31.....	512	13	.18	5.8	1.9	13	2.6	28	7.6	14	.1	3.5	78	22	0	110	6.6	38
Nov. 1-9.....	1300	13	.13	4.8	1.8	12	2.9	24	7.0	14	.1	1.5	76	20	0	110	7.3	45
Nov. 10-11.....	4600	8.5	.23	3.7	1.8	8.0	3.0	18	7.4	9.7	.2	1.1	A53	16	1	80	6.5	70
Nov. 12-30.....	6415	9.2	.05	3.8	1.3	5.5	2.6	16	6.6	7.3	.1	.6	57	14	2	64	6.2	60
Dec. 1-29.....	2092	12	.18	4.5	1.2	8.7	2.0	19	6.4	9.2	.3	2.6	65	16	0	81	7.3	33
Dec. 30-31.....	5020	9.5	.04	2.7	1.8	5.8	1.4	14	6.4	4.8	.3	.8	A41	14	3	65	6.4	20
Jan. 1-31, 1963.....	5275	9.8	.04	3.7	1.3	6.5	1.6	14	5.6	8.1	.1	.8	52	14	3	62	6.6	40
Feb. 1-28.....	4548	9.2	.08	3.7	1.5	6.9	1.6	15	6.6	6.9	.0	1.8	51	15	2	66	7.0	30
Mar. 1-31.....	6269	7.8	.11	3.4	1.6	6.3	1.6	16	6.4	6.1	.0	.7	47	15	2	64	6.0	35
Apr. 1-30.....	1980	9.9	.27	5.1	1.3	9.1	1.6	25	4.4	8.7	.1	2.9	61	18	0	90	7.0	50
May 1-21.....	948	13	.0	5.5	2.0	13	2.2	29	6.2	12	.1	3.7	73	22	0	119	7.0	30
May 22-31.....	2304	9.7	.14	3.9	1.7	7.5	1.6	19	6.0	7.9	.1	1.7	68	17	2	79	6.8	75
June 1-8.....	1526	12	.04	5.0	1.7	8.8	--	6	7.0	8.3	.1	13	--	20	14	88	6.3	35
June 9-30.....	758	12	.16	5.9	1.8	12	1.7	29	7.4	12	.0	2.9	84	22	0	125	7.2	38
July 1-15.....	648	13	.13	5.8	1.9	11	2.3	31	7.2	9.7	.2	2.5	84	22	0	110	7.1	40
July 16.....	491	--	--	--	--	--	--	22	--	9.0	--	--	--	18	0	90	7.5	--
July 17-26.....	476	10	.03	6.9	2.2	13	2.2	32	8.0	15	.1	3.1	89	26	0	130	7.2	22

July 27-31, 1963....	806	12	.07	7.1	2.0	19	2.5	37	9.6	19	.2	2.7	104	26	0	158	6.5	35
Aug. 1-13.....	841	11	.03	5.2	1.6	8.8	1.9	22	9.2	8.3	.3	3.0	66	20	2	90	6.5	23
Aug. 14-21.....	356	12	.10	7.1	1.7	18	2.6	35	10	20	.3	1.9	99	24	0	151	6.8	40
Aug. 22-31.....	574	9.1	.14	6.3	1.2	14	2.5	27	9.0	15	.2	2.2	78	20	0	115	7.0	50
Sept. 1-4.....	404	10	.13	6.1	2.3	14	2.1	34	8.2	16	.2	1.5	A78	24	0	130	6.6	--
Sept. 5-12.....	1465	9.3	.19	4.7	1.2	9.4	1.8	16	10	9.1	.2	2.9	A57	17	4	85	6.4	45
Sept. 13-30.....	462	12	.19	5.7	2.0	14	2.2	28	10	16	.3	3.7	81	22	0	130	7.0	27
Time-weighted average.....	2507	11	0.13	4.9	1.6	9.8	2.0	22	7.0	10	0.1	2.2	67	18	1	93	--	39

A Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

2-888.21. NEUSE RIVER AT GOLDSBORO, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0530 and 0900)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	65	65	66	68	66	68	68	68	70	70	70	70	70	70	70	70	71	65	68	68	68	66	66	65	64	60	56	55	54	68	68	66
November	56	55	58	55	54	50	50	51	54	54	54	54	54	52	50	50	52	52	50	50	52	55	52	50	50	49	48	48	50	50	--	52
December	50	52	52	54	54	54	48	48	46	44	42	42	38	36	35	36	36	36	40	44	42	42	40	40	40	40	40	42	40	40	38	43
January	36	35	35	35	35	36	32	40	40	42	44	48	46	46	42	35	36	42	40	45	46	45	42	40	38	36	35	35	35	36	38	39
February	38	40	40	40	40	41	42	44	44	44	44	45	44	42	40	40	39	38	40	42	42	40	40	40	42	42	40	38	--	--	--	41
March	39	40	42	45	49	52	54	54	54	52	54	54	58	56	56	56	55	55	56	58	56	58	54	56	54	55	56	56	56	58	60	53
April	62	65	65	68	66	66	63	60	60	60	60	60	60	60	60	58	58	60	62	58	68	68	62	62	58	68	64	68	68	68	--	63
May	68	64	64	62	62	65	68	70	74	74	80	75	74	74	75	75	74	72	74	74	72	72	70	68	65	65	65	65	60	70	70	70
June	70	70	70	70	75	78	80	80	80	80	85	85	85	84	84	84	82	80	78	80	80	72	75	72	75	75	78	80	82	82	--	78
July	82	82	80	80	80	80	80	80	80	80	78	78	82	82	82	87	87	84	85	84	84	82	82	82	82	83	85	85	85	85	85	82
August	85	84	84	84	85	86	86	85	85	84	84	85	84	84	82	82	80	80	84	84	85	84	84	84	82	80	80	78	76	78	78	83
September	78	78	76	78	78	72	70	74	74	74	76	76	76	76	72	70	68	70	72	72	72	70	68	66	68	68	72	72	72	72	--	73

NEUSE RIVER BASIN--Continued

2-891.92. NEUSE RIVER AT WHITEHALL, N. C.

LOCATION (revised).--At bridge on Secondary Road 1731 at Whitehall, Wayne County, and 3.5 miles downstream from Walnut Creek.
DRAINAGE AREA.--2,492 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1958 to September 1963.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 3, 1962.....		9.5	0.15	3.9	1.4	8.5	1.7	16	7.4	12	0.1	0.5	67	16	3	78	6.3	50
Nov. 2.....		11	.05	5.6	1.5	12	2.2	27	7.8	14	.1	2.1	A70	20	0	105	6.4	25
Dec. 4.....		11	.08	3.8	1.6	7.8	1.8	19	6.8	9.5	.0	.0	63	16	0	78	6.0	50
Jan. 3, 1963.....		8.7	.08	4.0	1.3	5.2	1.5	10	9.8	6.2	.0	2.2	58	15	7	61	6.0	33
Feb. 5.....		8.9	.03	3.7	1.1	6.5	1.2	14	6.8	7.5	.1	.8	47	14	2	67	6.3	10
Mar. 5.....		7.8	.02	3.6	1.4	6.2	1.2	14	7.2	7.0	.1	2.5	49	15	4	64	6.4	22
Apr. 2.....		8.4	.02	3.8	1.4	6.8	1.4	18	5.2	8.0	.0	1.1	47	16	0	73	6.3	30
May 1.....		11	.04	5.1	1.4	11	1.8	28	5.0	12	.1	1.0	69	19	0	110	6.5	30
June 4.....		9.3	.04	4.8	1.5	7.4	1.6	22	5.8	8.3	.1	.3	53	18	0	78	6.1	12
July 2.....		8.7	.01	4.6	1.5	9.2	1.9	26	7.0	8.5	.0	.2	62	18	0	87	6.2	20
Aug. 1.....		6.8	.00	4.1	1.2	9.0	3.4	16	9.6	8.0	.1	2.4	57	15	2	73	6.2	15
Sept. 4.....		5.4	.05	5.2	1.9	13	3.9	28	9.6	14	.2	.4	87	21	0	110	6.1	30

A Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

2-895. NEUSE RIVER AT KINSTON, N. C.

LOCATION.--At bridge on U.S. Highway 258, 0.2 mile south of Kinston, Lenoir County, and 0.9 mile downstream from gage.
DRAINAGE AREA.--2,690 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1949 to September 1950, January 1955 to September 1956, October 1958 to September 1963.
REMARKS.--No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 3, 1962	2060	9.5	0.19	3.8	1.3	7.4	1.7	13	8.4	9.7	0.1	1.4	61	14	4	73	6.4	60
Nov. 2	621	11	.03	5.8	1.7	11	2.2	26	7.8	12	.1	2.1	A67	22	0	105	6.3	25
Dec. 4	3140	11	.02	3.8	1.5	6.9	1.8	16	6.8	8.9	.0	1.3	51	16	2	75	6.1	40
Jan. 3, 1963	5640	8.9	.03	3.8	1.2	5.1	1.5	13	7.2	6.1	.1	.8	47	14	4	58	6.1	28
Feb. 5	5380	8.8	.00	3.7	1.5	7.3	2.2	12	11	7.2	.1	.7	50	15	5	61	7.0	5
Feb. 27	6240	7.3	.05	3.8	1.1	5.6	1.2	13	7.0	6.5	.0	1.1	46	14	4	58	6.5	27
Mar. 5	5550	7.4	.01	3.8	1.1	6.3	1.1	13	7.2	7.3	.1	2.4	50	14	4	63	6.3	25
Apr. 2	3010	7.8	.02	3.8	1.3	6.8	1.5	19	5.2	7.8	.1	.7	52	15	0	72	6.0	25
May 2	1140	11	.04	5.3	1.7	11	1.9	26	6.4	12	.1	2.3	70	20	0	110	6.7	30
June 4	1780	9.0	.00	4.6	1.3	7.3	2.7	21	5.6	7.6	.2	.4	51	17	0	73	6.2	13
July 2	851	9.7	.00	5.8	1.5	10	2.1	29	6.6	10	.1	.2	64	20	0	93	6.2	8
Aug. 1	1580	8.0	.01	5.3	1.9	11	3.9	27	9.0	11	.1	.4	75	21	0	105	6.1	30
Aug. 14	1060	8.2	.13	5.2	1.5	6.3	2.0	16	6.8	8.3	.1	3.5	A50	19	6	79	6.2	40
Sept. 4	505	5.4	.02	5.6	1.9	12	3.9	27	8.8	13	.1	.5	77	22	0	109	6.1	30

A Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

2-918.31. NEUSE RIVER AT COWEN LANDING, NEAR VANCEBORO, N.C.

LOCATION.--At Cowen Landing 6 miles southeast of Vanceboro, Craven County.
DRAINAGE AREA.--4,027 square miles.
RECORDS AVAILABLE.--Chemical analyses: September 1954 to September 1963.
Water temperatures: October 1954 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 83 ppm Oct. 23-31; minimum, 47 ppm Feb. 28.
Hardness: Maximum, 28 ppm Oct. 23-31; minimum, 16 ppm Feb. 28.
Specific conductance: Maximum daily, 160 micromhos Oct. 29 (p.m.); minimum daily, 56 micromhos Jan. 27 (p.m.).
Water temperatures: Maximum, 85°F on many days in June, July, and August; minimum, freezing point Dec. 23 (a.m.).
EXTREMES, 1954-63.--Dissolved solids: Maximum, 6,270 ppm Oct. 15 (p.m.), 1954; minimum, 38 ppm Apr. 16, 17, 18 (a.m.), 1962.
Hardness: Maximum, 1,550 ppm Aug. 12 (p.m.), 1955; minimum, 12 ppm July 16 (p.m.), 17-20, 1955.
Specific conductance: Maximum daily, 12,900 micromhos Aug. 12 (p.m.), 1955; minimum daily, 40 micromhos Feb. 25 (a.m.), 1960.
Water temperatures: Maximum, 92°F July 28 (p.m.), 1955; minimum, freezing point Dec. 16 (a.m.), 1958, Dec. 23 (a.m.), 1962.
REMARKS.--Salinity station. Samples were collected twice daily (0730 and 1630). There was no indication of sea-water encroachment in samples collected.
No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-22, 1962.....		10	0.08	5.5	1.8	9.3	2.6	21	7.8	11	0.2	3.4	63	22	4	94	6.6	40
Oct. 23-31.....		10	.16	7.6	2.0	11	2.8	31	9.4	14	.1	3.6	83	28	2	120	7.3	35
Nov. 1-11.....		9.4	.02	6.7	2.1	10	2.7	28	8.0	13	.1	1.6	69	26	2	105	7.3	25
Nov. 12-30.....		7.8	.21	3.4	2.6	6.2	3.1	14	7.4	8.5	.2	2.6	55	20	8	71	6.4	80
Dec. 1-31.....		11	.17	4.6	2.1	8.0	2.5	18	6.4	10	.2	2.8	66	20	6	86	6.8	50
Jan. 1-31, 1963.....		7.6	.15	5.2	1.2	6.4	1.7	15	8.8	8.5	.1	2.4	60	18	6	72	6.3	70
Feb. 1-26, 27(a.m.).		6.9	.07	4.7	1.4	5.7	1.7	13	9.8	8.3	.1	3.5	52	18	8	71	6.8	50
Feb. 27(p.m.).....		--	--	--	--	--	--	4	--	12	--	--	--	18	13	125	5.4	--
Feb. 28.....		6.3	.07	3.8	1.6	6.4	1.6	13	10	8.2	.1	2.5	A47	16	6	70	6.5	--
Mar. 1-31.....		5.0	.13	4.2	2.0	6.4	2.9	14	6.2	8.5	.1	2.2	56	19	8	70	7.2	60
Apr. 1-30.....		6.7	.04	5.5	1.9	7.2	1.6	23	8.8	9.0	.1	2.8	56	22	2	87	6.5	45
May 1-24.....		10	.09	6.5	1.6	9.7	2.0	27	6.8	11	.1	3.6	69	22	0	112	7.2	30
May 25-31.....		6.7	.11	5.0	1.8	5.5	1.6	15	8.4	7.5	.0	2.7	62	20	8	75	6.4	60
June 1-12.....		9.3	.07	5.4	1.8	7.1	1.8	20	6.8	8.3	.1	2.1	61	20	4	88	6.7	45
June 13-30.....		9.9	.09	6.7	1.8	9.7	2.2	29	8.0	10	.2	2.8	73	24	0	115	6.8	40
July 1-31.....		9.5	.10	6.4	1.7	10	2.5	26	8.4	10	.2	3.1	73	23	2	108	6.8	30
Aug. 1-31.....		8.4	.18	5.3	1.6	8.6	3.7	21	7.6	10	.2	3.3	63	20	2	91	6.9	50
Sept. 1-5, 6(a.m.)..		7.3	.03	5.8	2.1	10	3.5	28	9.2	13	.2	3.5	69	24	0	110	6.6	15
Sept. 6(p.m.), 7-10, 11(a.m.).....		6.1	.13	4.8	1.2	5.7	1.6	12	10	7.0	.1	2.8	56	17	7	70	6.5	45
Sept. 11(p.m.), 12-22.....		9.5	.18	6.3	1.9	7.5	3.3	20	10	10	.2	3.3	71	24	7	96	6.8	35
Sept. 23-30.....		10	.10	7.5	1.8	12	3.4	29	10	15	.2	3.7	80	26	2	120	7.0	30
Time-weighted average.....		8.4	0.12	5.4	1.8	8.0	2.4	20	8.0	9.8	0.1	2.9	64	21	4	90	--	47

A Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

2-918.31. NEUSE RIVER AT COWEN LANDING, NEAR VANCEBORO, N.C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
/Twice-daily measurements at approximately 0730 and 1630/

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
a.m.	67	68	69	69	69	70	70	71	71	72	70	70	71	70	70	70	71	71	69	67	66	66	67	62	63	58	58	65	55	58	60	67
p.m.	70	70	70	70	71	73	74	75	74	75	72	72	73	72	72	73	74	70	70	68	70	65	70	66	64	60	67	57	64	61	60	69
November																																
a.m.	59	55	55	55	55	57	54	55	57	53	55	54	56	51	53	54	53	55	53	53	52	55	55	51	50	50	49	50	52	54	--	54
p.m.	60	59	55	56	56	58	55	51	55	55	55	58	57	56	54	55	55	58	53	52	54	55	50	54	51	48	50	52	54	49	--	54
December																																
a.m.	54	53	55	55	53	49	48	48	49	48	45	46	38	39	37	39	41	40	45	39	35	39	32	34	35	40	42	38	38	39	40	43
p.m.	55	55	56	56	55	50	50	50	50	50	48	48	40	41	40	40	48	45	50	45	42	43	45	44	43	44	45	45	42	43	44	47
January																																
a.m.	38	39	39	39	38	41	39	39	38	40	41	--	48	45	42	38	39	40	40	45	45	39	40	40	40	38	40	38	38	38	39	40
p.m.	44	43	43	42	40	45	44	45	43	44	45	52	50	49	48	45	45	45	45	50	50	48	48	43	44	42	44	40	42	42	43	45
February																																
a.m.	36	39	37	36	40	40	45	45	37	40	44	45	42	39	39	38	40	39	40	40	42	38	41	39	40	39	40	41	--	--	--	40
p.m.	40	43	40	40	43	44	47	47	42	45	47	47	47	45	45	44	44	43	45	45	45	42	45	43	45	43	45	45	--	--	--	44
March																																
a.m.	38	45	42	46	50	55	55	50	55	55	55	55	60	60	60	55	55	60	60	55	55	50	50	50	50	50	55	55	55	55	60	53
p.m.	42	48	48	--	60	55	55	50	55	60	60	60	60	60	60	55	60	65	60	60	55	50	55	55	55	55	55	60	60	60	--	56
April																																
a.m.	60	65	65	65	65	65	65	60	65	60	60	60	60	60	60	55	60	60	65	65	70	70	65	65	65	65	65	65	65	65	--	63
p.m.	65	70	70	70	65	65	65	65	65	65	60	60	60	60	60	60	60	60	70	70	75	75	70	70	70	70	70	70	65	65	--	66
May																																
a.m.	65	--	60	65	65	65	65	65	70	75	75	75	70	70	70	70	70	70	70	70	70	70	70	65	65	65	65	65	65	70	70	68
p.m.	--	65	65	70	70	70	70	70	75	75	75	75	70	70	70	70	70	75	75	75	75	75	70	70	65	65	65	65	70	70	70	70
June																																
a.m.	70	70	70	70	70	70	75	75	80	80	80	80	80	80	80	80	80	75	75	75	75	75	75	75	75	75	80	80	75	80	--	76
p.m.	70	70	70	75	75	75	80	85	80	85	85	85	85	85	80	80	80	75	80	80	80	75	75	80	75	80	80	80	80	85	--	79
July																																
a.m.	85	85	85	85	80	80	80	80	80	80	75	75	80	75	80	80	80	80	80	80	80	80	80	80	85	80	80	80	80	80	80	80
p.m.	85	85	85	85	85	85	85	85	80	80	85	80	85	80	80	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	84
August																																
a.m.	80	80	80	80	85	80	80	80	80	80	80	80	80	80	80	75	75	75	75	80	80	80	80	80	80	75	80	80	80	80	80	79
p.m.	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	80	80	80	80	80	80	80	85	80	80	80	80	80	80	80	80	83
September																																
a.m.	80	80	80	80	80	75	70	70	70	70	75	75	75	75	70	70	70	70	70	70	70	75	70	70	70	70	70	70	70	70	--	73
p.m.	80	80	80	80	80	75	75	75	75	75	75	80	75	75	70	75	75	75	75	75	75	75	75	75	75	75	70	75	75	75	--	76

2-918.36. NEUSE RIVER AT STREETS FERRY, NEAR VANCEBORO, N. C.

LOCATION.--At Streets Ferry 1.5 miles east of Lima, Craven County.
DRAINAGE AREA.--4,040 square miles.
RECORDS AVAILABLE.--Chemical analyses: September 1954 to September 1963.
Water temperatures: October 1954 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 16 ppm Sept. 28-30; minimum, 7.0 ppm Jan. 22-31.
Specific conductance: Maximum daily, 140 micromhos Sept. 28; minimum daily, 59 micromhos Jan. 31 (T).
Water temperatures: Maximum, 90°F June 9; minimum, 35°F Jan. 1.
EXTREMES, 1954-63.--Chloride: Maximum, 6,630 ppm Oct. 15 (m.), 1954; minimum, 3.0 ppm June 22-30, 1961.
Specific conductance: Maximum daily, 17,800 micromhos Oct. 15 (m.), 1954; minimum daily, 40 micromhos Nov. 3 (B), 1959.
Water temperatures: Maximum, 92°F June 29, 30, (T), 1959, July 7, 22 (T), 1962; minimum, 33°F Feb. 19 (B), 1958.
REMARKS.--Salinity station. Top (T) and bottom (B) samples were collected once daily. There was no indication of sea-water encroachment in samples collected. No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-11, 1962.....		10	0.21	5.9	1.8	7.9	2.2	20	6.0	10	0.2	3.2	62	22	6	89	7.0	70
Oct. 12-31.....		11	.20	7.1	2.1	11	2.7	27	8.2	12	.3	2.3	72	27	4	110	6.9	50
Nov. 1-11.....		9.7	.28	6.3	2.8	10	2.8	25	8.8	14	.1	3.6	71	28	7	110	7.2	45
Nov. 12-30.....		8.0	.24	4.7	1.4	5.8	2.7	15	8.4	8.0	.1	1.4	61	18	6	73	6.8	80
Dec. 1-16.....		11	.31	5.3	1.8	7.2	2.1	17	8.4	10	.2	1.9	64	20	6	80	6.6	70
Dec. 17-31.....		11	.24	5.9	2.0	8.3	1.9	20	8.4	11	.1	2.3	63	22	6	91	6.9	45
Jan. 1-4, 1963.....		9.6	.17	4.8	1.8	7.2	2.0	16	8.6	10	.1	2.1	63	19	6	84	6.8	60
Jan. 5-21.....		8.3	.15	4.7	1.7	6.1	1.4	16	9.6	8.5	.2	1.6	61	19	6	73	6.5	60
Jan. 22-31.....		5.9	.18	4.2	1.8	4.2	1.8	11	8.6	7.0	.2	1.1	64	18	9	62	6.2	120
Feb. 1-28.....		7.0	.13	4.6	1.8	6.0	1.3	13	8.4	8.2	.1	2.6	50	18	8	70	6.5	55
Mar. 1-31.....		5.4	.11	4.2	2.6	6.2	2.5	15	8.6	7.5	.1	1.8	55	21	8	69	7.2	60
Apr. 1-30.....		5.8	.27	4.6	1.9	6.6	1.6	19	4.8	9.0	.1	3.3	53	20	4	81	6.9	70
May 1-31.....		8.3	.17	5.9	2.3	8.1	2.1	23	6.8	10	.1	2.0	69	24	6	101	7.1	35
June 1-18.....		9.0	.21	6.0	1.5	7.7	2.3	18	7.6	8.7	.2	5.8	72	21	6	98	7.2	55
June 19-30.....		11	.20	7.4	2.0	9.9	2.4	31	7.8	11	.1	3.0	77	27	2	125	7.3	35
July 1-31.....		9.9	.07	7.9	1.5	10	2.5	27	8.0	10	.2	3.7	75	26	3	112	6.9	30
Aug. 1-31.....		9.0	.22	6.1	1.8	7.9	3.7	20	8.8	9.2	.4	5.1	68	22	6	93	6.9	50
Sept. 1-27.....		9.9	.20	5.9	2.2	7.7	3.1	21	9.4	11	.1	3.7	73	24	7	97	7.2	40
Sept. 28-30.....		9.4	.10	7.9	2.7	12	3.3	28	9.2	16	.2	3.8	79	31	8	130	6.9	20
Time-weighted average.....		8.6	0.19	5.7	2.0	7.7	2.3	20	8.0	9.6	0.2	2.9	65	22	6	90	--	55

NEUSE RIVER BASIN--Continued

2-918.36. NEUSE RIVER AT STREETS FERRY, NEAR VANCEBORO, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
[Top and bottom once-daily measurements between 0700 and 2100]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Top.....	--	66	68	63	65	68	66	68	74	72	64	--	--	--	--	--	--	68	65	70	68	68	70	72	66	--	--	--	--	--	--	--
Bottom.....	--	64	66	65	63	66	64	66	76	70	66	--	--	--	--	--	--	65	63	68	66	65	68	70	64	--	--	--	--	--	--	--
November																																
Top.....	--	58	58	--	51	54	52	55	56	57	58	57	56	54	54	54	57	59	58	57	54	56	56	53	51	48	50	55	54	54	--	55
Bottom.....	--	60	59	--	54	55	52	55	56	57	58	57	56	54	54	54	57	59	58	58	54	56	56	54	52	49	49	54	54	54	--	55
December																																
Top.....	54	55	55	54	55	50	--	50	50	46	46	40	40	40	40	40	45	45	45	45	43	44	45	43	45	44	44	48	40	37	36	45
Bottom.....	55	55	55	55	55	50	--	50	50	46	46	40	40	40	40	40	45	45	45	45	43	44	45	43	45	44	45	48	40	37	36	46
January																																
Top.....	35	40	39	40	40	41	40	42	48	50	50	50	40	45	48	53	58	50	50	55	52	50	52	45	45	45	46	40	41	41	41	46
Bottom.....	35	40	39	40	40	41	40	42	48	50	50	50	40	45	48	53	56	50	49	55	52	50	52	45	45	45	46	40	41	41	41	45
February																																
Top.....	45	41	43	45	42	45	44	46	46	47	45	44	45	48	42	46	45	44	45	47	49	49	46	45	45	44	45	44	--	--	--	45
Bottom.....	45	41	43	45	42	45	44	46	46	47	45	44	45	48	42	46	45	44	46	47	49	49	46	45	44	45	45	46	--	--	--	45
March																																
Top.....	54	52	50	50	55	50	50	57	59	58	57	60	60	62	60	65	65	65	67	66	65	62	60	59	60	58	60	67	65	65	60	59
Bottom.....	54	52	50	50	55	50	50	57	59	58	57	60	60	62	60	65	65	65	67	66	65	62	60	59	60	58	60	67	65	65	60	59
April																																
Top.....	66	60	65	67	66	66	68	68	62	66	60	67	62	63	60	60	60	68	70	65	67	66	74	74	67	69	71	69	66	66	--	66
Bottom.....	66	60	65	67	66	66	68	68	62	66	60	67	62	63	60	60	62	68	70	65	67	66	74	74	67	69	71	69	66	66	--	66
May																																
Top.....	60	63	67	69	70	70	69	71	68	70	72	68	69	75	67	69	69	70	69	70	68	70	70	68	67	69	69	68	69	70	69	69
Bottom.....	60	63	67	69	70	70	69	71	68	71	71	68	69	75	68	69	69	70	69	70	68	70	70	68	67	69	69	68	69	70	69	69
June																																
Top.....	68	67	69	70	79	87	85	80	90	86	87	86	79	78	85	87	84	82	80	81	83	80	79	80	81	81	82	89	80	80	--	81
Bottom.....	68	68	69	70	79	87	84	80	90	85	87	86	79	78	85	87	84	82	80	81	83	80	79	80	81	81	82	89	80	81	--	81
July																																
Top.....	83	80	78	81	79	82	83	80	78	80	85	85	85	86	85	80	83	81	79	84	83	88	85	89	89	81	87	81	88	87	89	83
Bottom.....	83	80	78	81	79	82	83	80	78	80	85	85	85	86	85	80	83	81	79	84	83	88	85	89	89	81	87	81	88	87	89	83
August																																
Top.....	80	84	81	83	88	86	89	89	88	88	88	86	83	86	89	89	83	80	84	85	85	88	81	82	81	82	80	82	82	82	82	84
Bottom.....	80	84	81	83	76	86	89	89	88	88	88	86	83	86	89	89	83	80	84	85	85	88	81	82	81	82	80	82	82	82	82	84
September																																
Top.....	82	--	81	80	85	81	83	82	82	88	89	89	86	88	83	70	75	81	81	79	81	80	80	81	75	70	72	72	70	70	--	80
Bottom.....	88	--	81	80	85	81	83	82	82	88	89	89	86	88	83	70	75	81	81	79	81	80	80	81	75	70	72	72	70	70	--	80

NEUSE RIVER BASIN--Continued

2-920. SWIFT CREEK NEAR VANCEBORO, N. C.

LOCATION (revised).--Temperature recorder at gaging station at bridge on Secondary Road 1478, 2.5 miles upstream from bridge on State Highway 118, 2.5 miles;downstream from Clayroot Swamp, and 3.5 miles northwest of Vanceboro, Craven County.
DRAINAGE AREA.--182 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1950 to September 1952, January 1955 to September 1959.
Water temperatures: October 1951 to September 1952, July 1954 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 76°F on several days in July; minimum, 37°F Jan. 4-7.
EXTREMES, 1951-52, 1954-63.--Water temperatures: Maximum, 87°F July 29, 1952; minimum, freezing point on several days in December 1958.
REMARKS.--Recorder stopped Oct. 1 and Sept. 3-12.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Feb. 28, 1963.....	606	5.9	0.00	5.8	1.4	5.3	1.0	9	12	8.0	0.1	1.5	A45	20	12	77	6.2	20
Aug. 15.....	144	5.2	.05	6.3	1.1	16	2.4	14	11	25	.2	2.3	A77	20	9	130	7.2	55

A Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

2-920. SWIFT CREEK NEAR VANCEBORO, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Continuous ethyl-alcohol actuated thermograph)

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	65	66	68	68	68	68	69	70	70	70	69	69	69	69	70	70	69	69	68	67	66	66	65	64	62	59	56	54	54	55	64
Minimum	--	65	65	66	68	68	68	68	69	70	69	69	69	69	69	69	69	69	68	67	66	66	65	64	62	59	56	54	54	54	54	63
November																																
Maximum	55	55	55	55	55	55	54	53	52	55	56	56	56	56	54	52	54	57	57	56	54	56	56	55	53	52	50	52	53	55	--	54
Minimum	55	55	55	55	55	54	53	52	52	52	55	56	56	54	52	52	52	54	56	54	54	54	55	53	52	50	50	50	52	53	--	53
December																																
Maximum	56	55	54	53	52	52	50	46	45	45	44	43	41	40	39	38	38	38	39	42	42	42	41	40	40	40	41	41	41	41	41	44
Minimum	55	54	53	51	51	50	46	45	45	44	43	41	40	39	38	38	38	38	38	39	42	41	40	40	40	40	40	41	41	41	38	43
January																																
Maximum	38	38	38	38	37	37	38	38	39	40	44	47	49	49	47	44	41	41	43	46	47	47	46	44	42	40	38	38	38	38	38	42
Minimum	38	38	38	37	37	37	37	38	38	39	40	44	47	47	44	41	39	39	41	43	46	46	44	42	40	38	38	38	38	38	38	40
February																																
Maximum	38	38	39	39	39	40	44	44	44	42	43	45	45	45	43	42	39	38	41	43	44	44	43	40	39	39	39	39	--	--	--	41
Minimum	38	38	38	39	39	39	40	44	42	41	41	43	45	43	42	39	38	38	38	41	43	43	40	39	38	39	38	38	--	--	--	40
March																																
Maximum	40	45	46	48	53	56	56	55	53	54	54	58	59	59	59	58	55	58	58	58	58	55	52	53	56	57	58	58	60	60	61	55
Minimum	39	40	45	46	48	53	55	52	51	51	52	52	58	59	58	55	55	55	58	57	55	51	49	49	53	56	57	57	57	59	60	53
April																																
Maximum	62	64	66	66	66	63	61	59	58	58	59	57	57	57	57	56	57	61	64	65	66	66	67	67	66	63	61	60	60	59	--	62
Minimum	61	62	64	66	63	61	59	56	57	58	57	56	56	56	56	55	56	57	61	64	65	66	66	66	63	61	60	60	59	59	--	60
May																																
Maximum	59	59	58	58	59	60	61	62	64	66	67	67	67	65	64	64	64	65	65	66	66	65	65	64	62	61	60	61	63	64	65	63
Minimum	59	58	57	57	58	59	60	61	62	64	66	67	65	64	64	64	64	64	65	65	65	65	64	62	61	60	60	60	61	63	64	62
June																																
Maximum	65	65	65	66	67	68	69	71	71	73	74	74	74	74	73	73	73	71	70	70	70	70	70	69	68	68	70	70	71	72	--	70
Minimum	65	65	65	65	66	67	68	69	71	71	73	74	74	73	73	73	71	70	70	70	70	70	69	68	68	68	68	70	70	71	--	70
July																																
Maximum	74	74	74	76	76	74	74	74	74	74	73	72	72	71	71	72	73	73	74	76	76	76	76	76	74	73	72	72	72	73	73	74
Minimum	72	74	74	74	74	74	74	74	74	73	72	72	71	71	71	71	72	73	73	74	76	76	76	74	73	72	72	72	72	72	73	73
August																																
Maximum	73	73	73	73	73	73	73	73	73	73	73	73	73	73	73	72	70	71	71	71	71	71	72	74	74	74	74	72	73	73	73	73
Minimum	73	73	73	73	73	73	73	73	73	73	73	73	73	73	72	70	70	70	71	71	71	71	71	72	74	74	72	72	72	72	72	72
September																																
Maximum	73	73	--	--	--	--	--	--	--	--	--	--	73	73	73	72	70	69	68	69	70	70	70	69	68	67	66	66	67	68	--	--
Minimum	72	73	--	--	--	--	--	--	--	--	--	--	73	73	72	70	69	68	68	68	69	70	69	68	67	66	66	66	66	67	--	--

NEUSE RIVER BASIN--Continued

2-921.62. NEUSE RIVER AT NEW BERN, N. C.

LOCATION.--At bridge on U.S. Highway 17 in New Bern, Craven County.
DRAINAGE AREA.--4,467 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1956 to September 1963.
Water temperatures: October 1956 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 5,550 ppm Jan. 17, 19, (B); minimum, 9.0 ppm on many days in November, January, and March.
Specific conductance: Maximum daily, 16,000 micromhos Jan. 17, 19, (B); minimum daily, 61 micromhos Feb. 1 (B).
Water temperatures: Maximum, 85°F July 5 (T); minimum, 36°F on several days in December and January.
EXTREMES, 1956-63.--Chloride: Maximum, 9,420 ppm Sept. 28 (B), 1957; minimum, 4.5 ppm on several days in June and July 1961.
Specific conductance: Maximum daily, 25,900 micromhos Sept. 28 (B), 1957; minimum daily, 52 micromhos May 16 (T), 1958, May 2 (T), 1959.
Water temperatures: Maximum, 89°F June 17, 22, Aug. 3, 18 (T), 1957; minimum, 33°F Feb. 18 (T), 19, 20, 1958.
REMARKS.--Salinity station. Top (T) and bottom (B) samples were collected once daily. No discharge records available.

Chemical analyses, in parts per million, November 1962 to August 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Nov. 24, 1962.....		7.9	0.21	4.9	1.3	6.4	2.5	16	10	9.0	0.0	0.3	A51	18	4	77	6.3	--
Nov. 28, 29(T).....		9.2	.17	4.8	1.9	9.8	2.6	17	9.6	16	.0	.6	A63	20	6	105	6.5	70
Dec. 3-11.....		10	.24	6.3	2.5	9.0	2.3	22	9.2	13	.2	1.6	80	26	8	100	7.1	80
Dec. 13.....		11	.18	7.1	2.8	13	2.5	25	11	21	.1	1.0	A82	29	8	130	6.7	40
Dec. 14, 15(T).....		11	.18	6.4	1.9	9.8	2.0	21	8.6	14	.1	.9	A65	24	7	97	6.9	40
Jan. 24(B), 25-31, 1963.....		6.0	.15	5.2	1.5	5.5	1.6	12	10	9.0	.1	1,9	61	19	9	67	6.6	70
Feb. 1-28.....		6.8	.12	6.3	2.0	6.8	1.3	16	10	10	.1	2.7	63	24	12	86	6.7	60
Mar. 1-31.....		5.3	.11	4.5	2.6	7.4	2.5	17	9.0	9.0	.1	1.4	63	22	8	83	6.9	60
Apr. 1-23.....		5.9	.29	6.2	2.6	8.2	1.5	23	9.8	12	.1	2.6	64	26	8	100	7.0	70
Apr. 24.....		4.5	.19	11	2.6	11	1.5	38	9.8	15	.0	2.1	A77	36	6	130	7.4	--
May 8-11.....		8.4	.04	7.5	2.7	12	2.2	33	7.0	16	.2	2.3	79	30	3	131	7.3	25
May 24-31.....		7.4	.17	7.5	1.8	8.4	2.2	24	9.0	11	.1	1.4	76	26	6	113	6.9	50
June 1-9.....		8.7	.11	7.5	1.5	7.6	1.8	22	8.0	9.2	.2	1.0	72	24	6	98	7.2	55
Aug. 13.....		--	.13	--	--	--	--	22	--	39	--	--	--	30	12	167	6.6	--
Aug. 21.....		--	.23	--	--	--	--	20	--	19	--	--	--	28	12	133	6.3	--

A Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

2-921.62. NEUSE RIVER AT NEW BERN, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
1	300	2150	775	1950	68	73	500	825							91	91			131	450	450	1140	750	3800
2	300	1225	715	1450	64	64	150	1375							141	340			141	400	234	1235	1400	4000
3	155	1825	800	1850			86	1925							64	75			179	1265	202	3150	1875	4000
4	116	1625	1300	1750			94	2325							35	47			1050	2250	83	242	1650	3150
5	88	1625	1300	1680			1875	2360							27	29	9	9	450	1515	40	3075	1250	3620
6	155	2125	1250	1700			35	1575							61	63			710	2510	228	2925	750	3620
7	375	2325	500	1725	13	13	39	2125							22	56			635	1850	108	3300	625	3050
8	525	2000	450	2400			99	2500											750	2525	208	2910	555	3150
9	575	2250	275	2575			255	1775											1225	2935	365	3225	375	2975
10	1000	2530	555	650			176	2360							16	16	71	1525	1450	1885	248	3375	600	2975
11	1125	1450	113	555			35	2325									220	1490	910	2085	395	3375	252	2800
12	900	4000	126	1450	56	59	28	1575					12	12	109	112	575	2825	940	2440	240	3375	350	2710
13	525	4000	400	1350	21	21	27	2250							43	91	1490	3625	1200	2760	39	39	150	2325
14	835	3620	200	675	14	14	325	2625							27	22	2450	1750	1265	1375	40	89	600	925
15	650	3250	145	750		47	375	3620	10	10					141	150	1475	2120	1335	1375	218	680	950	1075
16	650	3620	56	650	105	75	625	5150			9.0	9.0			134	134	1915	2510	1385	1495	126	1170	1085	1085
17	580	3620	32	2475	38	1250	555	5550							67	79	990	2615	860	1075	73	1365	500	1450
18	825	3620	67	2450	54	1550	255	5150							64	94	1015	2650	590	1440	61	1985	3250	575
19	2600	2925	46	1200	35	1275	400	5550							78	152	1325	2615	400	1360	48	1040	555	4200
20	2500	2500	48	2150	32	1680	650	4750							38	38	1510	2435	365	950	40	1010	950	4200
21	1400	2225	59	2425	425	2100	375	2880							26	24	1235	1585	475	2025	19	19	4380	1000
22	1125	2530	21	91	220	1900	96	3620							21	22	1735	2125	975	3265	69	1075	1625	2425
23	1450	2475	19	195	245	2600	40	3250							48	38	1390	1735	1325	2225	47	1550	1750	3200
24	2475	2575	9.0	9.0	370	3100	16						15	15			815	1715	1425	3625	93	2420	1950	2475
25	1300	2250	120	800	950	3620							61	86			600	1450	1685	2510	310	2435	2125	2625
26	1750	1850	675	715	975	3620							16	14			700	1450	1215	3265	465	4115	1975	2125
27	1325	1915	245	500	525	3450		9					46	99	11	11	475	1550	1310	3265	370	4770	950	2275
28	1000	2250	16	16	555	2360	9						30	30			325	825	1425	3265	850	4456	1075	2575
29	1150	1975		125	400	3200			--	--			134	226			91	95	1950	1265	1040	3960	1450	2100
30	620	2180	30	51	1650	1650			--	--			20	16			144	490	1000	2760	1275	3040	1325	1625
31	775	2400	-	-	160	750			--	--			--	--			--	--	1040	2685	495	4190	--	--

NEUSE RIVER BASIN--Continued

2-921.62. NEUSE RIVER AT NEW BERN, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Top and bottom once-daily measurements at approximately high tide)

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Top	68	68	68	69	70	69	69	74	73	70	70	70	70	73	74	73	72	70	68	65	64	65	65	63	60	57	54	54	54	58	59	66
Bottom	70	69	70	70	70	70	70	73	71	71	71	71	71	72	73	73	72	71	69	65	66	66	66	65	64	58	58	57	57	58	58	67
November																																
Top	57	55	54	54	54	51	50	52	54	55	53	54	54	54	53	53	53	55	53	52	52	53	52	51	50	48	46	52	52	50	--	53
Bottom	58	57	55	55	55	53	53	54	54	55	55	55	55	54	54	53	53	54	54	54	54	55	54	52	50	49	48	52	52	51	--	54
December																																
Top	54	50	53	55	53	54	47	46	48	43	43	41	36	37	36	36	38	39	42	43	42	40	40	40	40	41	41	45	43	42	37	43
Bottom	54	50	52	54	53	54	48	47	48	44	44	42	38	38	37	37	40	40	43	43	42	42	42	42	42	42	42	44	43	42	38	44
January																																
Top	36	36	37	37	36	37	38	39	40	40	41	42	44	43	42	41	40	45	42	45	46	46	46	43	40	40	39	36	36	40	40	40
Bottom	38	38	38	38	38	38	39	39	40	40	40	43	43	43	43	42	41	44	44	44	47	46	46	43	41	40	40	38	38	40	40	41
February																																
Top	38	38	40	38	40	42	43	44	42	42	47	47	45	45	43	40	40	39	41	46	--	41	43	43	43	40	39	38	--	--	--	42
Bottom	39	38	40	39	42	42	43	44	43	42	45	47	46	45	44	41	40	40	43	45	--	44	44	43	43	--	40	39	--	--	--	42
March																																
Top	44	44	45	49	51	54	54	53	53	55	55	58	62	60	58	57	59	59	59	58	57	57	52	53	56	56	58	59	58	59	64	55
Bottom	45	44	45	47	50	54	55	53	52	55	55	57	60	60	59	57	57	59	59	59	58	57	52	53	56	56	58	58	58	59	63	55
April																																
Top	62	64	65	66	64	63	61	61	62	60	60	63	63	59	59	56	60	61	64	66	68	69	70	67	66	66	66	66	65	66	--	64
Bottom	61	64	65	66	65	63	62	61	62	61	61	61	62	59	57	55	60	61	64	66	68	69	70	68	68	66	66	66	66	66	--	64
May																																
Top	65	60	64	64	66	67	67	68	69	72	73	69	68	69	70	69	69	73	72	74	72	72	71	67	67	67	66	65	68	69	68	68
Bottom	65	63	65	64	66	67	67	68	69	71	72	69	68	68	70	70	69	72	72	73	73	72	72	68	68	67	65	65	67	69	68	68
June																																
Top	68	68	69	70	75	74	75	80	80	82	78	80	76	77	78	78	74	74	74	77	78	75	74	73	74	79	79	79	80	80	--	76
Bottom	68	68	69	70	74	74	74	78	89	80	76	75	76	78	76	77	75	77	77	76	78	77	74	74	73	77	77	77	79	79	--	76
July																																
Top	81	80	79	78	85	78	76	77	80	78	79	77	78	77	78	80	81	81	79	83	79	78	79	77	79	81	81	80	81	82	80	79
Bottom	79	80	79	78	83	76	78	79	80	77	78	76	78	78	78	79	80	80	80	82	79	78	80	78	79	80	80	79	82	80	80	79
August																																
Top	--	80	82	82	82	83	83	81	82	82	79	80	82	80	78	81	77	78	80	80	81	81	78	79	79	77	78	78	76	77	80	80
Bottom	92	91	92	91	90	82	82	81	83	83	80	81	82	81	80	81	78	79	80	80	80	80	79	80	79	77	78	77	78	78	79	80
September																																
Top	77	76	81	77	78	77	73	73	76	73	74	76	75	74	68	68	66	72	69	70	74	73	67	65	65	75	67	68	68	70	--	72
Bottom	77	77	80	77	78	76	75	75	76	74	76	75	75	75	68	68	68	73	70	71	77	73	69	66	66	66	67	68	70	69	--	72

NEUSE RIVER BASIN--Continued

2-925. TRENT RIVER NEAR TRENTON, N. C.

LOCATION (revised).--At gaging station, 50 feet downstream from Free Bridge on Secondary Road 1129, 800 feet downstream from Little Chinquapin Branch, 1.5 miles southwest of Phillips Crossroads, and 6 miles west of Trenton, Jones County.
DRAINAGE AREA.--168 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1951 to September 1953, January 1955 to December 1962 (discontinued).
Water temperatures: October 1951 to September 1953, January 1955 to December 1962 (discontinued).
EXTREMES, 1951-53, 1955-62.--Dissolved solids: Maximum, 153 ppm Sept. 1-10, 1957; minimum, 27 ppm June 28-30, 1962.
Hardness: Maximum, 117 ppm Aug. 11-20, 1957; minimum, 15 ppm July 1-9, 1962.
Specific conductance (1955-62): Maximum daily, 257 micromhos June 17, 1957; minimum daily, 31 micromhos July 2, 5, 7, 1962.
Water temperatures: Maximum, 86°F June 17, 1957; minimum, freezing point on many days during winter months.
REMARKS.--Salinity station. There was no indication of sea-water encroachment in samples collected. No discharge records available.

Chemical analyses, in parts per million, October to December 1962

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-11, 1962.....	259	7.2	0.16	11	1.7	3.4	0.7	30	5.0	5.5	0.2	1.1	71	34	10	79	6.6	120
Oct. 12-31.....	44	8.1	.19	22	2.4	4.5	1.0	65	7.6	5.0	.1	1.2	119	64	10	140	6.9	110
Nov. 1-10.....	84	7.0	.20	18	1.7	3.9	1.1	52	6.8	8.0	.1	1.4	85	52	10	120	7.1	60
Nov. 11-18.....	632	5.0	.20	6.5	2.2	3.2	1.6	21	6.0	5.8	.2	.3	53	25	8	64	6.5	120
Nov. 19-30.....	248	6.1	.19	10	1.7	3.8	.9	27	6.0	7.0	.2	1.5	68	32	10	76	7.2	80
Dec. 1-31.....	142	6.3	.14	13	1.3	4.4	1.0	34	6.2	8.5	.2	1.5	75	38	10	96	7.3	80

Temperature °F of water, October to December 1962
(Once-daily measurement between 0630 and 1630)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October.....	61	65	65	63	62	62	65	65	65	65	65	64	62	68	68	68	68	68	68	65	65	65	65	62	55	53	53	48	48	55	55	62
November.....	54	54	54	54	54	48	48	49	55	48	48	48	52	48	49	50	51	53	55	55	54	54	54	52	52	52	45	46	50	50	--	51
December.....	49	49	48	46	48	47	45	45	44	46	48	48	35	35	36	37	38	38	38	38	36	36	42	42	40	40	42	45	40	44	35	42

2-925.54. TRENT RIVER AT POLLOCKSVILLE, N. C.

LOCATION.--At bridge on U.S. Highway 17 in Pollocksville, Jones County, and 0.4 mile upstream from Mill Creek.
DRAINAGE AREA.--372 square miles.
RECORDS AVAILABLE.--Chemical analyses: January 1955 to November 1958, October 1961 to September 1963.
Water temperatures: January 1955 to November 1958, October 1961 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 125 ppm May 1-25; minimum, 59 ppm Jan. 20-31.
Hardness: Maximum, 92 ppm May 1-25; minimum, 24 ppm Jan. 20-31.
Specific conductance: Maximum daily, 240 micromhos May 11, 15, 17, 25; minimum daily, 51 micromhos Jan. 24.
Water temperatures: Maximum, 82°F July 23, Aug. 7-9; minimum, 38°F Jan. 3-7.
EXTREMES, 1955-58, 1961-63.--*Dissolved solids:* Maximum, 5,080 ppm Jan. 1-8, 1955; minimum, 57 ppm Feb. 24-28, 1962.
Hardness: Maximum, 1,200 ppm Jan. 19, 1955; minimum, 19 ppm Sept. 21-30, 1955.
Specific conductance: Maximum daily, 9,230 micromhos Jan. 19, 1955; minimum daily, 36 micromhos Sept. 22, 23, 1955.
Water temperatures: Maximum, 88°F June 7, 1956; minimum, freezing point on many days in December 1957, January and February 1958.
REMARKS.--Salinity station. There was no indication of sea-water encroachment in samples collected. No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-14, 1962		7.0	0.13	14	0.9	3.7	0.7	39	4.6	5.2	0.2	0.4	67	40	8	93	6.9	110
Oct. 15-31		7.8	.27	23	2.3	4.7	.7	71	8.4	6.5	.1	1.4	105	68	10	140	7.1	100
Nov. 1-10		8.3	.20	29	2.1	5.1	1.2	87	8.6	8.0	.2	2.4	120	82	10	180	7.4	60
Nov. 11-21		6.6	.16	17	1.7	3.8	1.8	47	10	7.0	.0	.2	A71	48	10	110	7.0	--
Nov. 22-30		6.6	.27	17	1.6	4.2	.9	47	7.6	7.0	.1	1.2	82	49	10	110	7.0	90
Dec. 1-31		7.0	.21	19	1.8	4.9	1.0	50	9.4	8.0	.2	1.2	97	54	14	120	7.1	100
Jan. 1-19, 1963		5.6	.18	16	1.6	4.0	.5	44	13	7.5	.2	.5	85	48	12	110	7.2	100
Jan. 20-31		3.6	.18	7.5	1.5	3.1	.9	17	6.6	6.0	.2	.6	59	24	10	60	6.4	140
Feb. 1-28		4.2	.11	12	1.0	3.0	.4	26	8.4	6.5	.1	2.6	70	33	12	83	7.0	90
Mar. 1-25		3.8	.17	13	1.9	4.5	.9	39	6.6	6.5	.3	1.7	74	42	10	100	7.3	90
Mar. 26-31		4.3	.28	20	2.3	4.6	.5	59	10	7.5	.2	1.5	95	60	12	130	7.4	70
Apr. 1-30		5.1	.25	23	2.3	4.8	.6	68	8.8	8.0	.0	2.4	97	68	12	155	7.5	80
May 1-25		8.1	.04	34	1.8	5.8	1.0	101	7.6	7.0	.1	1.6	125	92	8	215	7.5	25
May 26-31		4.4	.23	13	1.0	2.9	1.1	31	8.4	3.8	.3	1.4	B94	38	12	96	6.9	130
June 1-10		6.6	.22	17	1.4	4.4	1.0	44	9.6	6.0	.3	.6	93	48	12	125	7.3	130
June 11-27		7.9	.24	24	2.1	5.6	1.0	73	8.8	7.4	.1	.6	113	70	10	175	7.8	110
June 28-30		--	--	--	--	--	--	--	--	15	--	--	--	--	--	205	--	80
July 1-31		7.6	.11	29	1.4	5.1	1.2	79	10	6.0	.2	1.8	110	77	12	175	7.2	50
Aug. 1-31		7.1	.18	19	1.3	4.1	1.5	54	9.2	6.3	.2	2.0	92	52	8	122	7.2	90
Sept. 1-6		9.1	.17	25	1.7	4.5	1.5	70	9.2	6.7	.2	1.8	99	68	10	150	7.2	55
Sept. 7-17		6.7	.16	14	1.7	2.5	1.4	35	12	4.2	.2	1.7	79	41	12	98	7.0	80
Sept. 18-30		8.1	.20	22	1.7	3.1	1.2	51	12	7.5	.2	1.0	112	62	20	135	7.6	95
Time-weighted average		6.4	0.18	20	1.7	4.4	1.0	56	8.9	6.8	0.2	1.5	93	57	11	132	--	85

A Calculated from determined constituents.
B Organic matter present; sum of mineral constituents 52 parts per million.

NEUSE RIVER BASIN--Continued

2-925.54. TRENT RIVER AT POLLOCKSVILLE, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0700)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	65	65	65	66	66	67	67	68	69	68	68	68	69	69	69	69	69	69	68	68	67	66	67	63	61	61	60	59	58	57	57	65
November	58	57	57	55	55	53	55	55	54	54	54	55	54	52	52	53	53	53	53	53	53	54	54	53	52	50	51	51	51	51	--	54
December	54	53	55	56	55	55	55	56	56	49	48	45	43	42	40	40	42	42	43	43	43	43	43	43	43	44	45	45	43	43	42	47
January	41	39	38	38	38	38	38	40	42	42	45	45	46	46	46	46	46	45	46	48	51	49	48	47	43	43	43	42	40	40	40	43
February	40	41	41	41	43	43	45	45	45	45	45	47	47	48	45	45	45	45	44	44	45	46	45	45	45	44	44	43	--	--	--	44
March	42	42	45	48	48	49	49	49	50	50	50	54	54	58	59	59	59	59	60	60	59	59	57	55	54	56	56	57	60	62	61	54
April	61	64	64	65	65	65	65	63	63	62	61	61	61	61	61	61	61	61	62	62	68	70	70	68	69	69	69	67	66	65	--	64
May	65	65	66	67	67	68	69	70	70	73	74	72	70	68	68	68	69	71	72	--	73	72	72	71	71	71	72	72	72	71	71	70
June	70	70	70	72	73	75	75	76	76	78	78	78	79	79	79	77	77	76	76	77	77	77	76	75	76	76	76	77	77	78	--	76
July	80	79	79	80	80	80	80	81	81	80	80	78	76	78	78	80	80	80	78	78	80	80	82	80	78	79	80	80	80	80	80	80
August	80	79	80	80	80	81	82	82	82	81	81	81	81	80	80	79	79	80	80	80	80	80	80	79	79	78	79	78	78	78	78	80
September	78	78	78	78	75	75	75	73	73	74	74	74	74	73	73	72	71	72	72	73	73	73	71	70	68	67	67	68	68	68	--	73

CAPE FEAR RIVER BASIN

2-935. HAW RIVER NEAR BENAJA, N. C.

LOCATION (revised).--Temperature recorder at gaging station 200 feet upstream from site of old High Rock Mill, 500 feet upstream from bridge on Secondary Road 2620, 0.5 mile upstream from Rockingham-Guilford County line, 6 miles downstream from Troublesome Creek, and 6 miles east of Benaja, Rockingham County.
DRAINAGE AREA.--168 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1952 to September 1953.
Water temperatures: October 1952 to September 1953, July 1954 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 81°F July 29; minimum, 33°F Dec. 16, 17.
EXTREMES, 1952-63.--Water temperatures: Maximum, 84°F Aug. 2, 1953; minimum, freezing point on many days in 1954-56, 1958-61.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Diasolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific condoctance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Feb. 6, 1963.....	288	14	0.02	4.6	1.7	3.9	1.7	26	3.4	2.6	0.2	0.5	A46	18	0	60	6.6	5
Sept. 3.....	35	18	.00	6.9	3.3	6.5	1.8	40	6.2	3.6	.2	.1	A67	30	0	79	6.7	5

A Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-935. HAW RIVER NEAR BENAJA, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Continuous ethyl-alcohol actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	59	60	61	62	64	64	66	68	68	66	65	66	66	67	67	67	67	67	62	58	58	58	58	57	53	48	46	45	48	53	53	60
Minimum	56	58	60	61	62	64	64	66	66	63	62	62	63	65	65	65	64	62	58	55	56	57	56	53	48	46	42	42	45	48	52	58
November																																
Maximum	52	48	47	46	47	46	45	45	51	52	51	50	50	49	46	47	50	53	53	49	48	51	51	46	46	43	41	42	45	46	--	48
Minimum	48	46	46	46	46	45	44	43	45	51	50	50	49	46	45	45	47	50	49	48	48	48	46	45	43	41	41	41	42	45	--	46
December																																
Maximum	46	45	46	47	48	48	44	41	40	40	36	35	34	34	34	34	34	35	36	39	39	38	37	37	36	34	36	37	37	37	36	39
Minimum	45	44	44	46	47	44	41	40	40	36	35	34	34	34	34	33	33	34	35	36	38	37	37	36	34	34	34	36	37	36	34	37
January																																
Maximum	34	34	34	34	34	36	37	38	38	38	44	48	49	48	40	36	35	38	40	45	45	42	38	38	34	34	34	34	34	34	36	38
Minimum	34	34	34	34	34	34	36	37	38	38	38	44	48	40	36	35	35	35	38	40	42	36	36	34	34	34	34	34	34	34	34	36
February																																
Maximum	36	36	36	36	36	39	40	40	39	37	37	39	39	37	36	35	34	35	36	38	39	40	35	34	37	39	36	36	--	--	--	37
Minimum	36	35	35	35	35	36	39	39	37	36	36	37	37	35	34	34	34	34	35	36	38	35	34	34	34	36	34	34	--	--	--	36
March																																
Maximum	38	42	42	45	51	53	53	51	48	50	50	45	53	53	52	51	52	55	56	56	56	50	48	51	54	56	56	56	58	60	60	52
Minimum	36	38	39	42	45	51	51	48	47	47	45	44	45	52	50	49	48	52	55	55	50	46	46	48	51	54	54	56	56	58	60	49
April																																
Maximum	62	64	68	69	66	60	57	59	60	58	58	58	58	57	56	56	59	64	68	71	69	67	70	67	62	62	62	62	60	58	--	63
Minimum	60	62	64	66	60	56	55	57	58	57	57	57	57	55	54	53	56	59	64	68	66	66	66	62	60	59	59	60	58	56	--	60
May																																
Maximum	58	57	58	61	63	65	65	67	70	71	72	71	65	63	67	66	65	67	68	69	69	70	69	65	63	62	62	62	64	66	68	65
Minimum	57	54	55	58	60	62	64	63	66	69	69	65	61	60	63	65	65	65	65	66	67	68	65	62	62	62	62	62	62	64	66	63
June																																
Maximum	68	68	66	68	70	72	74	74	74	77	77	77	74	74	74	72	68	66	69	71	71	70	69	69	70	72	72	74	74	75	--	72
Minimum	68	66	66	65	67	68	70	71	71	72	75	73	70	69	70	60	66	65	65	68	70	68	67	66	66	66	69	70	70	72	--	68
July																																
Maximum	78	76	76	75	72	72	72	75	74	72	71	71	70	69	72	74	76	78	80	80	78	76	74	72	73	76	78	80	81	78	76	75
Minimum	73	74	74	72	70	70	70	70	72	68	65	65	65	68	68	70	72	73	75	76	74	71	71	70	71	72	74	76	76	76	75	71
August																																
Maximum	78	79	80	80	80	80	78	79	79	78	77	77	77	77	76	73	74	76	76	77	73	74	76	78	76	73	69	69	71	72	74	76
Minimum	75	74	74	75	76	74	73	74	74	74	73	71	73	72	68	68	68	70	72	71	71	72	74	74	73	69	68	68	68	71	72	72
September																																
Maximum	72	72	73	73	73	70	67	68	69	71	71	73	71	70	65	65	67	67	68	68	69	69	65	61	59	61	63	63	62	62	--	68
Minimum	70	68	72	71	70	67	65	65	66	67	67	68	70	65	63	63	65	64	63	63	64	65	61	57	54	57	59	60	61	61	--	64

2-935.49. HAW RIVER AT ALTAMAHAW, N. C.

LOCATION.--At bridge on State Highway 87 at Altamahaw, Alamance County, 1.2 miles above Reedy Fork.
DRAINAGE AREA.--188 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1963.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 15, 1962.....		19	0.04	15	5.2	76	7.2	126	35	46	1.0	16	296	60	0	463	7.7	50
Nov. 17.....		15	.04	4.9	1.6	4.3	2.1	24	5.6	4.4	.1	1.3	A51	18	0	64	6.5	35
Dec. 13.....		13	.11	7.5	3.1	23	3.0	57	17	12	.4	2.6	123	31	0	168	6.9	40
Jan. 13, 1963.....		15	.02	5.2	1.9	4.2	1.3	27	4.4	3.2	.0	.7	51	21	0	60	6.6	8
Feb. 14.....		11	.06	6.6	2.7	9.6	2.0	29	12	8.9	.4	1.8	74	28	4	109	6.5	20
Mar. 18.....		11	.00	7.5	2.4	11	2.2	30	13	12	.5	2.1	80	29	4	120	6.2	20
Apr. 18.....		17	.01	11	4.1	43	6.6	68	22	28	2.4	14	186	44	0	298	7.3	20
May 16.....		20	.03	13	4.4	86	9.6	154	30	49	2.8	6.0	301	50	0	500	7.1	28
June 15.....		13	.00	9.7	3.5	58	7.0	99	24	36	1.2	7.2	212	38	0	340	7.0	20
July 15.....		18	.01	6.5	2.7	5.9	1.8	42	3.0	4.9	.2	.4	64	27	0	85	6.5	7
Aug. 15.....		17	.00	8.0	2.8	8.3	2.5	49	2.8	5.5	.2	1.1	74	32	0	101	7.3	6
Sept. 18.....		15	.04	6.6	2.4	5.3	3.4	41	3.0	3.1	.1	.6	60	26	0	79	7.0	20

A Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-969.59. HAW RIVER AT BYNUM, N. C.

LOCATION.--At millrace to textile mill, 100 yards downstream from bridge at Bynum, Chatham County, and 5.5 miles upstream from gaging station.
DRAINAGE AREA.--1,280 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1963.
Water temperatures: October 1955 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 312 ppm Aug. 19-21; minimum, 51 ppm Mar. 5-21.
Hardness: Maximum, 50 ppm Aug. 19-21; minimum, 20 ppm Mar. 5-21.
Specific conductance: Maximum daily, 535 micromhos Aug. 21; minimum daily, 53 micromhos Mar. 6.
Water temperatures: Maximum, 85°F July 31; minimum, freezing point Dec. 13-15, Jan. 29.
EXTREMES, 1955-63.--Dissolved solids: Maximum, 355 ppm Aug. 24-25, 1956; minimum, 41 ppm June 24-26, 1962.
Hardness: Maximum, 50 ppm on many days in October, November 1961, and August 1963; minimum, 12 ppm July 1, 1962.
Specific conductance: Maximum daily, 657 micromhos Aug. 24, 1956; minimum daily, 47 micromhos Feb. 18, 19, 1960.
Water temperatures: Maximum, 88°F July 5, 1956; minimum, freezing point on many days in 1958-63.
REMARKS.--Records of discharge are given for Haw River near Pittsboro. No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-4, 1962.....	297	17	0.03	9.6	3.7	44	3.9	84	18	30	0.6	3.9	A173	39	0	260	6.8	15
Oct. 5-10.....	488	14	.00	7.5	2.9	20	3.1	53	10	16	.4	.4	106	31	0	150	7.0	10
Oct. 11-12.....	220	16	--	8.3	3.9	29	3.5	62	13	21	.5	2.8	A130	37	0	195	7.3	32
Oct. 13-31.....	166	15	.09	11	3.5	44	4.3	85	17	34	.8	4.3	184	42	0	280	7.7	28
Nov. 1-8.....	275	18	.06	11	4.1	64	5.2	112	24	45	.9	7.7	A238	44	0	400	7.2	23
Nov. 9-30.....	2419	13	.03	6.1	2.5	9.8	2.6	30	9.8	9.3	.2	1.5	87	26	1	110	7.2	35
Dec. 1-4.....	697	17	.20	7.5	2.9	17	2.4	43	11	14	.1	3.4	A97	31	0	140	7.4	32
Dec. 5-12.....	3019	13	.03	5.6	2.4	7.5	2.5	27	9.2	6.8	.2	2.2	71	24	2	89	6.8	32
Dec. 13-23.....	678	18	.08	7.2	2.8	18	2.4	40	11	16	.4	2.9	A99	30	0	140	7.2	25
Dec. 24-31.....	3035	14	.01	5.5	2.5	8.2	1.8	28	8.2	6.6	.1	3.9	81	24	2	91	6.6	25
Jan. 1-9, 1963.....	1242	22	.02	5.9	2.3	10	1.8	31	9.8	8.5	.4	2.4	82	24	0	100	6.9	7
Jan. 10-20.....	1765	16	.07	6.8	2.6	13	2.0	35	9.4	12	.2	2.5	91	28	0	120	6.6	33
Jan. 21-31.....	2215	13	.03	6.7	2.2	9.9	1.6	30	9.2	7.4	.2	1.6	A67	26	2	94	7.1	15
Feb. 1-17.....	1957	15	.07	6.5	2.5	12	1.8	32	10	10	.1	2.8	83	26	0	115	7.2	15
Feb. 18-27.....	2039	13	.11	5.3	2.3	9.6	1.5	27	9.6	7.6	.1	1.1	73	22	0	93	7.0	35
Feb. 28.....	1320	--	--	6.1	2.7	--	--	44	--	9.2	--	--	--	26	0	130	7.8	15
Mar. 1-4.....	3322	12	.03	5.5	2.3	8.0	1.4	25	8.4	7.2	.2	2.3	A60	23	2	97	6.8	55
Mar. 5-21.....	5985	12	.02	4.6	1.9	6.0	1.7	21	8.4	4.3	.1	1.8	51	20	2	74	7.4	18
Mar. 22-31.....	1432	16	.00	6.6	2.2	12	1.8	34	9.0	8.7	.2	3.2	A77	26	0	110	7.7	8
Apr. 1-9.....	1000	14	.07	6.7	3.1	14	2.1	40	9.2	8.6	.3	1.9	A80	30	0	140	7.1	15
Apr. 10-30.....	631	12	.04	7.5	3.3	22	2.5	52	10	16	.5	3.6	A104	32	0	170	7.6	15
May 1-14.....	588	16	.04	8.6	3.1	22	2.7	54	12	16	.6	4.6	114	34	0	200	7.7	25
May 15-31.....	478	17	.11	8.5	3.8	36	3.1	69	14	26	.7	5.1	A150	36	0	250	7.3	30
June 1-2.....	578	19	.04	9.1	3.4	32	--	62	--	22	.8	--	--	36	0	225	6.7	20

June 3-8, 1963.....	672	14	.01	6.7	2.7	17	2.4	42	11	13	.6	2.6	92	28	0	150	7.6	40
June 9-30.....	274	15	.01	10	3.1	42	2.6	82	17	28	.9	4.0	175	38	0	275	7.7	23
July 1-16.....	427	12	.06	7.6	2.9	17	3.1	41	13	12	.6	4.9	101	31	0	150	7.4	20
July 17-31.....	278	13	.06	9.4	3.3	43	4.1	77	20	32	.7	2.8	184	37	0	290	7.2	30
Aug. 1-18.....	158	13	.01	9.9	3.5	40	3.6	73	16	32	.9	2.9	A159	40	0	250	7.3	22
Aug. 19-21.....	392	16	.05	13	4.1	94	6.3	125	39	70	1.4	6.4	312	50	0	525	7.3	37
Aug. 22-28.....	453	8.7	.06	6.6	1.7	15	2.9	32	11	11	.2	3.9	83	24	0	120	7.1	38
Aug. 29-31.....	205	13	.02	8.7	2.2	42	3.7	52	18	40	.6	4.0	162	30	0	270	7.4	33
Sept. 1-18.....	252	14	.05	9.0	3.3	47	4.1	74	21	39	.7	3.9	183	36	0	300	7.1	18
Sept. 19-23.....	147	12	.14	7.7	2.8	25	3.1	54	16	18	.4	4.8	A118	30	0	188	6.6	--
Sept. 24-28.....	101	11	.05	9.3	2.8	48	4.0	91	23	33	.5	4.0	A182	34	0	310	7.0	20
Sept. 29-30.....	1492	11	.05	6.4	2.6	19	2.9	43	14	15	.3	4.6	A98	26	0	160	6.1	--
Time-weighted average.....	1201	14	0.05	7.8	2.9	25	2.8	53	13	19	0.5	3.3	121	31	0	186	--	24

A Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-969.59. HAW RIVER AT BYNUM, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0600 and 2400)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	65	66	67	68	68	70	69	72	70	69	69	69	69	70	70	70	--	66	64	65	64	64	63	58	53	52	53	54	55	57	55	64
November	50	53	51	52	50	48	51	52	54	53	52	51	50	52	49	50	--	52	52	50	49	49	48	46	47	44	45	46	47	47	--	50
December	49	50	49	50	47	45	44	45	44	39	36	35	32	32	32	34	37	38	38	39	37	38	38	35	37	38	39	39	39	37	36	40
January	35	34	34	34	35	36	38	39	40	43	46	45	47	43	41	39	40	41	40	48	43	42	40	35	35	34	35	33	32	36	38	39
February	36	37	39	38	39	41	43	40	41	43	44	41	41	--	39	36	37	38	37	40	40	37	38	38	40	37	36	40	--	--	--	39
March	40	42	43	47	50	52	52	53	51	55	48	49	51	50	52	51	--	--	--	54	53	52	54	53	53	54	55	55	57	58	59	52
April	62	64	67	65	63	60	59	59	58	59	60	59	57	55	57	59	61	--	66	67	69	70	70	68	64	64	62	63	62	63	--	62
May	59	61	62	63	64	68	70	71	73	73	73	71	70	69	70	72	--	73	77	76	75	74	70	69	68	68	67	68	70	71	69	70
June	70	69	69	70	72	75	77	78	79	80	82	78	76	79	77	73	75	76	76	74	72	71	73	75	77	78	79	78	78	79	--	76
July	78	77	78	77	76	77	77	79	75	74	73	74	74	74	76	78	81	83	82	81	80	79	78	77	79	80	78	80	82	83	85	78
August	84	82	81	80	82	82	83	82	82	80	81	82	80	79	77	75	76	80	80	81	79	79	78	77	75	74	73	73	74	74	75	79
September	77	77	79	77	76	74	74	76	73	74	75	76	73	71	67	68	--	--	71	72	70	68	65	62	65	64	67	66	65	64	--	71

2-981.56. NEW HOPE RIVER NEAR NEW HILL, N. C.

LOCATION (revised).--At bridge on Secondary Road 1700, 0.2 mile downstream from mouth of Beaver Creek, and approximately 4 miles downstream from gaging station near Pittsboro, Chatham County.
DRAINAGE AREA.--340 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1956 to September 1963.
Water temperatures: October 1956 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 144 ppm Oct. 18-31; minimum, 47 ppm Jan. 19-31.
Hardness: Maximum, 54 ppm Oct. 18-31; minimum, 12 ppm Nov. 9, 10.
Specific conductance: Maximum daily, 270 micromhos Nov. 4; minimum daily, 32 micromhos Nov. 9.
Water temperatures: Maximum, 77°F July 19-21; minimum, freezing point on several days in December and January.
EXTREMES, 1956-63.--Dissolved solids: Maximum, 177 ppm Oct. 1-31, 1961; minimum, 31 ppm Sept. 1, 6-9, 1959.
Hardness: Maximum, 56 ppm Oct. 1-31, 1961; minimum, 8 ppm July 24, 1957.
Specific conductance: Maximum daily, 308 micromhos Oct. 31, 1961; minimum daily, 25 micromhos July 24, 1957.
Water temperatures: Maximum, 80°F July 1, 2, 1959; minimum, freezing point on many days in 1958-63.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-17, 1962.....		14	0.01	9.8	3.0	13	4.0	41	11	13	0.3	2.8	95	36	3	140	6.9	35
Oct. 18-31.....		15	.19	15	3.8	24	5.8	71	11	22	.4	8.0	144	54	0	210	7.4	33
Nov. 1-6.....		15	.08	15	3.9	28	6.2	62	14	24	.5	--	--	53	2	250	6.9	32
Nov. 7-8.....		--	--	9.8	3.6	--	--	34	--	14	--	--	--	40	12	160	6.8	75
Nov. 9-10.....		--	--	2.7	1.2	--	--	8	--	1.0	--	--	--	12	6	37	6.2	80
Nov. 11-16.....		8.6	.02	4.4	1.5	5.0	2.5	16	10	5.2	.3	1.0	60	17	4	65	6.7	55
Nov. 17-21.....		13	.28	7.1	2.4	10	3.0	26	11	9.5	.1	3.5	A74	28	6	110	6.6	33
Nov. 22-30.....		11	.08	5.2	1.7	6.5	2.3	18	10	6.8	.2	2.3	61	20	5	77	6.1	45
Dec. 1-26.....		15	.11	7.4	3.0	10	2.5	27	9.6	11	.2	4.3	88	31	9	110	7.3	25
Dec. 27-31.....		9.7	.00	4.6	1.8	6.3	1.6	19	8.4	6.8	.3	2.0	60	19	4	74	6.6	45
Jan. 1-18, 1963.....		13	.02	6.4	2.2	8.5	1.8	23	9.6	9.6	.1	1.8	66	25	6	94	7.1	30
Jan. 19-31.....		8.8	.07	5.0	1.5	6.2	1.5	16	8.4	5.6	.1	1.2	A47	18	6	63	6.7	35
Feb. 1-19.....		10	.06	5.1	1.8	7.5	1.6	17	9.8	7.4	.0	2.2	61	20	6	80	7.3	30
Feb. 20-28.....		10	.00	4.6	1.5	6.6	1.3	15	9.0	6.2	.1	2.4	53	18	5	70	6.6	17
Mar. 1-31.....		11	.03	5.1	1.5	6.6	1.4	20	7.6	5.9	.1	2.0	A52	18	2	76	7.4	25
Apr. 1-30.....		12	.20	7.8	2.8	11	2.3	37	7.4	10	.1	4.0	83	31	1	120	7.6	25
May 1-28.....		15	.06	8.8	2.6	13	2.8	37	9.2	11	.3	6.4	93	33	2	145	6.7	20
May 29-31.....		--	--	2.9	1.5	--	--	12	--	2.4	--	--	--	13	3	58	6.7	50
June 1-11.....		12	.03	6.4	2.2	7.3	2.1	26	8.0	7.3	.2	1.7	81	25	4	88	7.0	45
June 12-19.....		17	.22	9.2	3.5	11	2.4	43	8.6	10	.3	2.3	97	37	2	135	6.9	45
June 20-21.....		--	--	11	3.4	16	--	51	--	14	.2	--	--	40	0	170	6.6	--
June 22.....		--	--	--	--	--	--	23	--	6.6	--	--	--	17	0	86	6.9	--
June 23-30.....		14	.05	10	2.3	12	2.6	38	11	12	.3	4.4	98	34	3	140	7.4	30
July 1-2.....		17	.14	10	3.2	14	--	47	--	13	.3	--	--	38	0	151	7.1	--

A Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-981.56. NEW HOPE RIVER NEAR NEW HILL, N. C.--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
July 3, 1963.....		--	--	--	--	--	--	20	--	7.6	--	--	--	19	2	78	7.2	--
July 4-16.....		15	.05	9.2	2.8	12	3.1	40	9.6	9.6	.2	2.4	98	34	2	131	7.2	30
July 17-26.....		15	.09	12	3.5	20	4.1	54	14	17	.3	5.3	134	44	0	197	7.3	30
July 27-31.....		11	.02	7.6	2.0	8.6	2.3	26	12	8.6	.3	2.1	77	27	6	105	7.4	40
Aug. 1-4.....		13	.04	8.8	2.4	9.8	2.4	31	9.6	7.4	.2	3.2	73	32	6	115	6.6	65
Aug. 5-16.....		17	.03	12	3.2	17	3.5	51	12	16	.3	3.4	115	44	2	170	7.3	33
Aug. 17-31.....		15	.03	13	4.0	22	4.3	57	14	20	.4	3.6	136	48	1	200	7.3	33
Sept. 1-15.....		16	.00	13	3.9	23	4.4	63	14	21	.6	4.7	140	49	0	215	7.1	18
Sept. 16.....		--	--	9.6	2.4	12	--	39	--	12	--	4.0	--	34	2	140	7.3	90
Sept. 17-21.....		12	.04	7.4	1.7	7.0	3.8	20	16	6.2	.3	1.3	A67	26	9	93	6.5	55
Sept. 22-30.....		14	.02	10	3.3	14	5.5	20	17	27	.3	2.6	112	38	22	150	6.9	35
Time-weighted average.....		13	0.07	8.3	2.6	12	2.9	34	10	11	0.2	3.4	88	31	4	125	--	32

A Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-981.56. NEW HOPE RIVER NEAR NEW HILL, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0520 and 1325)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	60	61	62	64	64	64	65	65	65	64	64	65	65	64	65	64	64	61	60	59	58	60	59	56	51	50	45	44	53	51	52	59
November	49	49	49	48	48	46	44	44	46	42	54	52	51	50	47	47	49	51	49	50	50	52	51	47	46	44	43	44	46	46	--	48
December	47	48	49	50	49	48	44	42	41	39	37	34	32	32	32	32	32	33	33	37	37	36	38	37	36	36	37	39	39	38	36	39
January	34	32	33	33	33	35	35	37	37	38	41	44	47	46	42	38	35	37	41	44	46	41	39	37	34	34	34	33	32	33	35	37
February	36	36	38	37	36	38	42	43	41	39	39	43	41	40	38	36	34	33	36	38	40	39	36	35	36	38	35	35	--	--	--	38
March	36	39	41	42	46	52	52	49	48	49	49	48	50	54	54	53	50	52	55	56	54	50	46	47	49	53	53	54	54	55	57	50
April	59	60	62	65	62	61	58	56	57	56	56	55	55	55	55	53	57	65	62	66	64	65	67	63	60	--	58	59	59	59	--	60
May	58	55	56	55	56	59	61	61	64	67	67	67	65	63	64	66	66	66	65	66	68	68	67	63	62	62	62	62	65	65	65	63
June	65	65	65	65	68	68	68	69	70	71	73	72	71	71	72	72	70	68	68	70	70	67	67	67	67	68	70	70	72	74	--	69
July	74	75	74	74	71	70	71	72	72	69	68	68	68	70	70	72	73	74	77	77	77	75	75	74	73	72	72	74	74	75	75	73
August	75	75	75	75	76	76	75	76	76	75	74	73	76	75	74	70	70	71	73	74	73	74	75	75	75	71	70	70	70	72	71	74
September	70	70	71	71	72	70	68	69	68	68	69	70	72	70	65	64	61	62	62	64	65	66	61	62	60	60	61	62	64	63	--	66

CAPE FEAR RIVER BASIN--Continued

2-1020. DEEP RIVER AT MONCURE, N. C.

LOCATION (revised).--At bridge on U.S. Highway 1, at Moncure, Chatham County, 1.2 miles downstream from gaging station, 3.5 miles downstream from Rocky River, and 3.2 miles upstream from confluence with Haw River.
DRAINAGE AREA.--1,410 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1943 to September 1944, October 1955 to September 1956, October 1961 to September 1963.
Water temperatures: October 1943 to September 1944, October 1955 to September 1956, October 1961 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 114 ppm Oct. 1-7; minimum, 44 ppm Jan. 1-31.
Hardness: Maximum, 30 ppm Oct. 1-7, Nov. 1-8, Sept. 4-30; minimum, 16 ppm Mar. 1-14.
Specific conductance: Maximum daily, 200 micromhos Sept. 21; minimum daily, 50 micromhos Mar. 21.
Water temperatures: Maximum, 88°F Aug. 2, 3, 9, 13; minimum, freezing point Jan. 29.
EXTREMES, 1943-44, 1955-56, 1961-63.--Dissolved solids: Maximum, 114 ppm Oct. 1-7, 1962; minimum, 38 ppm Mar. 21-31, 1944, July 1-5, 1962.
Hardness: Maximum, 35 ppm Nov. 1-30, 1961; minimum, 12 ppm on many days during 1944 and 1956.
Specific conductance (1955-56, 1961-63): Maximum daily, 200 micromhos Sept. 21, 1963; minimum daily, 25 micromhos July 21, 1956.
Water temperatures: Maximum, 94°F July 3, 1956; minimum, freezing point Jan. 29, 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-7, 1962.....	266	10	0.00	7.4	2.9	22	3.4	45	9.0	24	0.2	2.8	114	30	0	160	6.9	20
Oct. 8-23.....	132	8.5	.08	6.9	1.9	10	3.0	36	6.2	8.0	.1	1.9	72	25	0	100	6.8	33
Oct. 24-31.....	91	5.7	.01	6.7	2.6	13	3.0	41	7.4	12	.0	.5	A71	28	0	110	6.7	25
Nov. 1-8.....	131	8.4	.00	7.7	2.7	16	3.2	46	8.8	16	.2	.9	89	30	0	130	7.2	20
Nov. 9-30.....	1606	9.3	.01	5.2	1.9	5.9	2.4	22	8.4	6.0	.2	1.2	56	21	3	74	6.8	65
Dec. 1-31.....	1872	10	.01	4.7	1.8	5.6	1.7	20	7.6	5.0	.3	2.0	55	20	3	73	6.9	40
Jan. 1-31, 1963.....	2107	9.7	.06	4.6	1.5	5.3	1.4	19	6.6	4.0	.1	1.4	A44	18	2	62	7.0	30
Feb. 1-28.....	2670	11	.04	4.6	1.3	5.7	1.5	16	7.0	5.5	.1	2.4	54	17	4	64	7.1	30
Mar. 1-14.....	5415	9.9	.03	3.8	1.6	5.2	1.0	16	6.2	5.5	.1	2.3	55	16	3	66	6.5	30
Mar. 15.....	4300	--	--	--	--	--	--	18	--	6.0	--	--	--	20	5	100	7.2	--
Mar. 16-31.....	2919	11	.04	3.4	2.0	5.5	1.3	18	3.8	4.6	.1	2.4	50	17	2	64	6.6	18
Apr. 1-30.....	746	9.2	.09	5.1	2.3	8.3	1.4	30	5.2	7.2	.1	1.4	57	22	0	89	7.4	20
May 1-31.....	629	11	.13	6.1	2.3	9.6	1.5	35	6.2	7.6	.0	2.0	69	24	0	110	7.2	35
June 1-8.....	638	12	.06	5.0	1.9	7.8	1.3	24	7.2	7.2	.1	1.9	70	20	1	81	7.2	70
June 9-30.....	267	9.9	.08	6.2	2.5	11	1.8	36	6.8	9.3	.1	2.5	77	26	0	115	6.7	30
July 1-31.....	262	7.8	.02	6.1	3.1	15	1.6	45	5.8	14	.1	1.1	82	28	0	130	7.4	23
Aug. 1-31.....	111	6.0	.04	5.1	2.0	9.7	2.0	29	7.0	8.0	.0	2.0	61	21	0	88	6.8	33
Sept. 1-3.....	93	7.3	.07	5.1	2.6	13	2.1	34	7.2	14	.2	1.5	A70	24	0	120	6.4	--
Sept. 4-30.....	186	6.6	.05	5.9	3.6	21	2.7	47	10	22	.3	1.5	97	30	0	155	7.7	17
Time-weighted average.....	1193	9.1	0.05	5.4	2.2	9.8	1.9	30	6.9	9.0	0.1	1.8	66	23	1	96	--	31

A Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-1020. DEEP RIVER AT MONCURE, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0700 and 2220)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	62	64	65	68	70	71	71	69	70	71	71	72	72	71	72	71	71	70	--	--	63	63	63	61	59	56	54	54	54	55	57	65
November	57	58	58	58	58	57	57	58	59	60	61	61	61	60	60	61	60	59	58	58	57	57	54	51	51	51	52	53	53	54	--	57
December	54	55	55	54	53	50	48	47	46	41	39	33	34	36	35	39	40	41	42	44	43	43	44	44	42	41	41	40	41	39	38	43
January	37	37	38	38	37	38	37	37	39	40	42	45	49	--	--	--	42	--	--	--	--	--	40	38	40	38	40	38	32	40	--	--
February	37	--	41	40	--	--	42	40	47	50	51	55	45	--	44	42	40	57	49	51	--	38	40	43	50	48	38	55	--	--	--	45
March	59	--	64	--	--	59	57	--	--	--	--	53	60	57	53	55	51	56	58	58	53	52	53	65	62	--	--	59	61	70	--	--
April	69	--	72	67	63	--	65	--	--	61	63	--	61	--	60	62	65	65	69	70	71	70	66	65	--	66	70	68	65	--	--	--
May	65	67	68	68	69	69	--	70	71	70	72	--	68	--	71	--	--	70	--	68	72	70	--	69	68	67	68	70	70	70	69	--
June	69	69	70	--	71	75	75	76	82	--	80	80	80	82	84	--	79	80	80	81	76	75	79	76	--	81	80	80	83	81	--	78
July	82	--	84	80	79	--	80	78	79	80	80	79	80	80	81	82	83	--	82	85	83	80	80	80	80	83	83	83	80	81	86	81
August	85	88	88	87	86	--	87	84	88	--	--	87	88	82	83	--	--	82	83	--	80	80	83	84	71	76	--	76	--	--	77	--
September	77	76	--	75	76	76	77	--	79	79	78	77	--	--	--	76	--	--	78	80	80	--	--	77	76	79	--	--	78	74	--	--

CAPE FEAR RIVER BASIN--Continued

2-1025. CAPE FEAR RIVER AT LILLINGTON, N. C.

LOCATION.--At gaging station at bridge on U.S. Highway 401, 1,800 feet downstream from Norfolk Southern Railway bridge, 0.5 mile north of Lillington, Harnett County, and 1 mile downstream from Neal Creek.
DRAINAGE AREA.--3,440 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: November 1944 to October 1945, October 1954 to September 1955, November 1960 to September 1963.
Water temperatures: November 1944 to October 1945, October 1954 to September 1955, June 1959 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 88°F on several days in July and August; minimum, 37°F Jan. 3.
EXTREMES, 1944-45, 1954-55, 1959-63.--Water temperatures: Maximum, 96°F June 30, 1959; minimum, 34°F on several days in 1944 and 1955.
REMARKS.--Recorder stopped Sept. 24-30.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 2, 1962.....	697	9.5	0.04	7.4	2.4	17	2.9	43	9.8	15	0.3	1.2	93	28	0	138	6.9	20
Nov. 1.....	330	6.4	.01	8.1	3.2	25	3.3	62	12	20	.3	.0	116	33	0	184	7.2	40
Dec. 3.....	1290	12	.07	5.0	2.8	7.8	1.8	28	8.4	8.5	.0	.2	77	24	1	92	6.5	75
Jan. 2, 1963.....	5090	9.4	.05	5.1	1.5	4.8	1.3	17	8.2	4.9	.1	1.6	56	19	5	64	6.4	33
Feb. 5.....	6700	11	.07	5.1	2.0	6.7	1.2	21	8.0	6.5	.0	1.4	A52	21	4	74	6.3	27
Mar. 4.....	7070	10	.01	4.2	1.9	6.6	1.1	22	8.2	6.2	.1	1.2	55	18	0	70	6.3	25
Apr. 1.....	2300	11	.01	4.8	2.1	8.0	1.2	29	5.6	7.5	.1	1.1	57	21	0	85	6.7	20
May 1.....	3060	6.2	.01	6.3	2.5	13	2.7	43	8.0	8.9	.2	.3	76	26	0	115	7.4	20
June 3.....	1190	12	.01	6.6	2.2	16	3.3	40	8.8	13	.5	2.1	87	28	0	130	6.8	22
July 1.....	637	2.5	.01	7.1	2.5	23	3.5	56	10	17	.5	.0	101	28	0	165	7.4	17
July 31.....	1190	7.3	.00	7.3	2.6	22	4.6	51	12	17	.4	.3	100	28	0	160	7.0	10
Sept. 3.....	244	3.3	.02	6.4	2.4	23	5.6	47	13	18	.4	.7	A96	26	0	165	6.6	30
Sept. 5.....	542	4.4	.01	4.1	1.5	11	2.1	22	9.0	11	.3	.6	56	16	0	92	6.7	28

A Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-1025. CAPE FEAR RIVER AT LILLINGTON, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Continuous ethyl-alcohol actuated thermograph)

Month	Day																												Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	72	72	72	74	74	74	74	75	77	76	75	75	76	77	77	75	76	74	72	69	68	68	68	68	66	62	60	56	58	62	64	71
Minimum	71	71	72	72	74	74	74	74	75	74	74	75	75	76	75	74	74	72	69	67	67	67	67	66	62	60	56	55	55	57	62	69
November																																
Maximum	64	61	59	57	57	58	58	58	58	57	57	55	56	55	54	53	53	55	55	53	53	54	54	54	52	52	51	50	50	50	--	55
Minimum	61	58	57	57	57	57	57	56	57	56	55	55	55	54	53	53	53	53	53	53	53	53	54	52	52	51	50	50	50	50	--	54
December																																
Maximum	51	51	52	52	52	52	51	49'	49	48	47	44	42	40	40	39	39	39	40	42	42	42	42	43	43	42	41	41	41	41	41	44
Minimum	50	50	51	52	52	51	49	49	48	47	44	42	40	40	38	39	39	39	39	40	42	42	42	42	42	41	41	41	41	41	41	44
January																																
Maximum	41	40	38	38	38	39	39	40	40	42	44	46	47	47	47	46	44	44	44	46	46	46	46	45	42	41	40	40	39	38	39	42
Minimum	40	38	37	38	38	38	39	39	40	40	42	44	46	47	46	44	44	44	44	44	46	46	45	42	41	40	40	38	38	38	38	41
February																																
Maximum	39	40	39	40	40	42	43	44	43	44	45	45	45	45	44	43	42	41	41	41	42	42	42	42	41	41	41	41	--	--	--	42
Minimum	39	39	39	39	40	40	42	43	43	43	44	45	45	44	43	42	41	41	41	41	41	42	41	41	41	41	41	39	--	--	--	41
March																																
Maximum	40	40	42	44	47	50	50	50	50	50	50	50	50	51	51	51	51	51	52	54	54	54	52	52	53	53	54	56	58	58	59	51
Minimum	40	40	40	42	40	47	50	50	50	50	50	50	50	50	50	51	51	51	51	52	54	52	51	50	52	53	53	54	56	57	58	50
April																																
Maximum	62	64	66	66	66	65	64	64	62	62	62	60	60	60	60	60	62	65	67	68	70	71	72	72	69	68	69	69	69	66	--	65
Minimum	59	62	64	66	64	64	63	62	62	62	60	59	60	60	60	59	60	62	65	67	68	68	71	69	67	67	67	68	66	66	--	64
May																																
Maximum	66	63	63	64	65	68	70	70	74	75	76	75	72	69	74	74	74	73	74	75	76	77	77	74	73	71	71	70	71	70	70	71
Minimum	63	62	62	63	64	65	68	69	70	74	74	72	68	67	67	74	73	72	73	74	75	75	74	73	71	70	70	70	70	69	69	70
June																																
Maximum	71	71	71	74	76	75	76	76	77	81	84	83	82	81	83	82	79	75	78	81	80	78	75	75	76	79	81	81	81	82	--	78
Minimum	70	70	70	71	73	73	74	76	76	77	81	82	80	78	81	79	75	74	75	78	78	75	75	75	75	76	78	80	80	80	--	76
July																																
Maximum	85	88	87	86	82	82	82	82	82	78	77	78	79	78	81	82	83	86	87	86	86	84	82	81	82	83	84	86	85	86	86	83
Minimum	81	85	86	82	79	80	81	81	78	75	73	75	77	77	76	79	81	81	83	84	84	82	79	78	79	81	82	83	82	85	86	80
August																																
Maximum	86	87	87	87	88	88	88	88	88	88	87	86	86	86	85	83	82	84	86	84	78	85	85	86	85	82	78	79	82	81	83	85
Minimum	93	85	95	97	95	85	95	95	95	97	95	85	85	85	82	82	81	82	82	77	77	78	85	84	82	78	77	77	79	81	81	83
September																																
Maximum	83	83	82	82	79	79	79	81	81	80	81	82	81	80	76	74	76	76	76	77	79	79	76	--	--	--	--	--	--	--	--	--
Minimum	81	80	79	80	79	78	78	79	79	79	80	79	80	76	74	74	74	76	76	76	76	76	74	--	--	--	--	--	--	--	--	--

CAPE FEAR RIVER BASIN--Continuued

2-1057.71. CAPE FEAR RIVER NEAR ACME, N. C.

LOCATION.--At bridge on State Highway 141, 6 miles northwest of Acme, Columbus County.
DRAINAGE AREA.--5,223 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1956 to September 1963.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 2, 1962		6.9	0.15	4.0	1.4	11	1.7	22	8.4	8.6	0.2	1.0	70	16	0	88	6.8	70
Nov. 1		7.1	.00	5.0	1.8	15	2.1	32	9.2	14	.2	.8	A71	20	0	119	6.2	35
Dec. 3		8.0	.11	3.4	1.4	4.4	1.2	12	6.2	6.2	.1	1.0	52	14	4	55	6.2	100
Jan. 2, 1963		8.5	.02	4.2	1.4	5.2	1.3	14	7.0	5.5	.1	1.4	46	16	5	61	6.2	33
Feb. 4		8.5	.06	2.6	1.5	5.2	.8	12	6.2	5.4	.1	.3	39	12	2	52	6.4	22
Mar. 4		8.5	.02	3.3	1.5	5.4	.8	15	6.8	5.8	.1	1.7	45	14	2	56	6.4	28
Apr. 1		7.7	.06	3.4	1.2	5.4	1.0	16	5.2	6.0	.1	.9	46	14	0	60	6.5	65
May 1		4.8	.04	3.7	1.6	7.9	1.1	22	5.2	7.5	.1	.6	49	16	0	79	6.4	30
June 3		5.0	.04	4.9	1.6	14	1.4	31	7.4	11	.3	.4	62	18	0	105	6.4	27
July 1		5.2	.21	3.8	2.4	8.0	1.5	30	.4	8.1	.2	.3	61	20	0	80	7.0	15
July 31		4.0	.00	3.8	1.2	8.8	2.3	19	7.8	6.8	.2	1.0	47	14	0	68	6.2	20
Sept. 3		4.5	.10	4.4	1.1	12	2.0	24	7.4	12	.3	1.2	59	16	0	96	6.6	32

A Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-1070. SOUTH RIVER NEAR PARKERSBURG, N. C.

LOCATION (revised).--Temperature recorder at gaging station 5 feet downstream from bridge on Secondary Road 1503, 1.9 miles southwest of Parkersburg, Sampson County, and 2.1 miles upstream from Cypress Creek.
DRAINAGE AREA.--382 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1954 to September 1955.
Water temperatures: November 1961 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 84°F Aug. 5-8; minimum, freezing point Dec. 14, 15.
EXTREMES, 1961-63.--Water temperatures: Maximum, 84°F Aug. 5-8, 1963; minimum, freezing point Dec. 14, 15, 1962.
REMARKS.--Recorder stopped Jan. 8-14, 20-22, 24-28.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Feb. 5, 1963.....	1090	3.4	0.06	1.4	0.7	3.9	0.9	4	4.4	4.0	0.2	0.5	A21	6	3	38	5.5	50
Sept. 3.....	35	7.7	.04	1.6	1.0	6.4	1.3	6	8.0	7.0	.0	.7	A37	8	3	53	5.9	60

A Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-1070. SOUTH RIVER NEAR PARKERSBURG, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Continuous ethyl-alcohol actuated thermograph)

Month	Day																											Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	64	65	66	67	68	68	69	71	72	72	70	68	69	71	70	71	71	70	69	67	65	65	65	65	62	58	56	53	54	56	56	66
Minimum	63	64	65	66	67	67	68	69	71	69	68	67	68	69	71	69	69	69	66	64	63	64	64	62	58	56	52	50	51	54	55	64
November																																
Maximum	55	55	53	53	53	52	51	49	55	56	56	56	55	54	53	51	52	54	54	52	51	53	53	50	49	48	46	47	48	49	--	52
Minimum	54	53	52	52	52	50	48	48	49	55	55	54	54	53	51	51	51	52	52	51	50	51	50	48	48	46	45	45	47	48	--	50
December																																
Maximum	50	51	52	52	52	51	48	44	44	44	42	39	37	33	33	34	35	37	38	40	40	40	40	40	39	39	40	41	41	40	40	42
Minimum	49	50	51	52	50	48	44	43	44	41	39	37	33	32	32	33	33	35	36	38	40	39	38	38	38	38	39	40	40	39	37	40
January																																
Maximum	37	35	34	34	34	36	37	--	--	--	--	--	--	--	46	43	40	41	43	--	--	--	46	--	--	--	--	--	37	36	38	--
Minimum	34	33	33	33	33	34	36	--	--	--	--	--	--	--	43	40	38	39	41	--	--	--	44	--	--	--	--	--	35	36	36	--
February																																
Maximum	38	38	40	40	39	42	44	44	44	42	43	44	44	44	43	42	40	39	42	44	45	45	45	41	41	42	41	40	--	--	--	42
Minimum	38	38	38	39	39	39	42	44	42	40	41	43	44	42	41	39	38	37	39	42	43	43	41	39	39	41	38	37	--	--	--	40
March																																
Maximum	40	45	46	48	52	55	55	54	53	53	54	57	60	60	60	58	57	60	60	61	61	56	53	53	55	56	58	58	60	61	63	56
Minimum	39	40	44	45	48	52	53	51	51	51	51	52	57	58	58	55	55	57	59	60	56	53	50	50	52	55	56	56	56	57	59	53
April																																
Maximum	64	65	67	68	68	65	61	61	61	62	62	60	60	60	59	58	61	65	68	69	71	71	72	72	68	64	63	63	63	64	--	64
Minimum	61	62	64	66	63	61	60	58	60	60	60	57	57	58	57	55	58	61	65	67	68	69	70	68	64	62	61	62	62	62	--	62
May																																
Maximum	64	63	62	64	66	67	69	70	73	74	75	75	71	68	71	71	72	74	75	75	73	70	70	67	65	64	64	65	67	68	69	69
Minimum	63	60	59	61	62	64	66	66	68	70	72	71	67	66	67	69	70	71	71	72	70	69	67	64	64	63	63	64	65	67	67	66
June																																
Maximum	70	70	69	71	73	75	76	78	78	80	81	81	80	80	81	81	77	74	74	76	78	77	73	71	72	74	75	76	76	77	--	76
Minimum	68	68	68	68	71	72	73	75	76	76	78	78	77	75	78	77	74	72	71	74	75	73	71	70	70	71	73	73	75	75	--	73
July																																
Maximum	80	81	80	80	78	76	77	78	78	74	73	73	74	74	76	79	79	80	82	83	83	82	80	75	74	78	80	80	79	80	80	78
Minimum	77	78	77	77	74	74	75	76	74	72	70	70	71	72	72	75	77	77	78	79	80	78	75	72	73	73	76	78	76	77	77	75
August																																
Maximum	80	83	83	83	84	84	84	84	83	82	82	82	81	82	81	78	77	78	79	79	79	78	80	81	81	77	75	76	77	77	78	80
Minimum	77	79	79	81	81	82	81	82	80	80	79	78	79	79	77	74	74	74	76	77	76	77	77	78	77	74	72	73	73	75	75	77
September																																
Maximum	78	78	77	78	78	76	75	75	75	75	76	76	76	74	71	68	69	69	71	72	73	73	71	67	65	67	67	67	67	68	--	72
Minimum	74	75	74	75	76	74	72	72	72	72	73	73	74	71	68	67	66	66	67	68	71	71	67	64	64	64	64	65	66	66	--	70

2-1075.72. CAPE FEAR RIVER AT ROYSTER, N. C.

LOCATION.--At Royster, Brunswick County, 2.5 miles below Indian Creek.
DRAINAGE AREA.--7,060 square miles.
RECORDS AVAILABLE.--Chemical analyses: November 1961 to September 1963.
Water temperatures: November 1961 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 6,800 ppm Sept. 29; minimum, 7.0 ppm Mar. 1-31.
Specific conductance: Maximum daily, 19,000 micromhos Sept. 29; minimum daily, 46 micromhos Jan. 28.
Water temperatures: Maximum, 88°F Aug. 10-13; minimum, 40°F Jan. 3-6, 8.
EXTREMES, 1961-63.--Chloride: Maximum, 6,800 ppm Sept. 29, 1963; minimum, 4.5 ppm Apr. 14-22, 1962.
Specific conductance: Maximum daily, 19,000 micromhos Sept. 29, 1963; minimum daily, 46 micromhos Jan. 28, 1963.
Water temperatures: Maximum, 88°F Aug. 10-13, 1963; minimum, 40°F Jan. 3-6, 8, 1963.
REMARKS.--Salinity station. No discharge records available.

Chemical analyses, in parts per million, October 1962 to August 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-5, 1962		8.0	0.15	5.4	2.3	21	2.0	31	12	23	0.2	1.3	104	23	0	150	6.2	100
Oct. 6-14		6.9	.17	4.2	2.0	12	1.6	19	10	16	.3	1.2	79	18	3	105	6.2	120
Oct. 15		--	--	5.0	2.9	--	--	20	--	30	--	--	--	24	8	160	7.0	--
Oct. 17-18		6.8	.28	5.5	2.2	22	1.8	35	7.6	32	.3	.6	A96	22	0	160	6.3	--
Nov. 11-15		6.5	.20	4.3	1.1	11	2.6	20	8.6	12	.0	1.0	71	16	0	94	6.4	120
Nov. 16-22		6.9	.26	4.6	1.3	7.3	2.3	14	8.6	9.5	.1	1.3	71	16	5	74	6.8	120
Nov. 23		--	--	5.9	2.1	--	--	11	--	18	--	--	--	24	15	130	6.5	--
Nov. 24-30		8.5	.24	4.1	1.6	6.4	1.9	14	8.6	8.0	.1	.6	64	16	5	69	6.8	110
Dec. 1-2		8.5	.17	3.7	1.9	7.8	1.7	15	8.0	11	.2	.8	A51	17	4	77	6.4	70
Dec. 6-10		8.9	.22	3.7	1.8	6.5	1.6	13	7.2	8.0	.2	.3	A44	16	6	68	6.2	110
Dec. 11-18		8.9	.21	4.7	1.3	7.7	1.9	13	9.4	9.5	.3	2.0	70	18	7	75	6.5	55
Dec. 19-21		8.7	.22	5.2	1.4	12	1.7	15	9.4	15	.5	.3	A61	18	6	100	6.4	90
Dec. 22-23		8.7	.13	3.6	1.3	6.3	1.4	12	6.4	8.5	.2	.8	A43	14	8	64	6.3	60
Dec. 24-31		9.4	.18	4.1	1.7	8.3	1.7	14	8.0	11	.3	2.2	62	17	6	78	6.3	90
Jan. 1-17, 1963		8.0	.17	4.6	1.0	7.7	1.2	13	9.6	10	.2	1.0	61	16	5	74	7.0	120
Jan. 18-25		7.2	.11	4.5	1.0	7.2	1.2	15	9.4	9.5	.2	.6	63	15	2	70	6.5	90
Jan. 26-31		5.6	.20	3.4	1.2	3.7	1.2	10	7.4	5.5	.2	1.3	55	14	6	48	6.0	75
Feb. 1-28		6.7	.10	3.4	1.1	5.9	1.0	11	7.6	8.0	.1	2.8	59	13	4	62	6.7	90
Mar. 1-31		6.8	.11	3.3	1.4	6.0	2.0	12	6.0	7.0	.1	.8	B72	14	4	63	6.5	120
Apr. 1-5		5.7	.22	3.8	1.5	6.6	1.1	13	7.0	7.5	.1	1.0	A41	16	5	66	6.9	100
Apr. 6-20		6.1	.25	4.4	1.7	9.3	1.1	19	7.6	11	.4	1.0	61	18	2	88	7.1	100
Apr. 21-30		6.0	.27	4.2	1.4	11	1.2	20	8.0	12	.7	1.0	65	16	0	98	7.0	100
May 1-11		6.0	.23	5.6	2.0	16	2.0	27	7.4	19	.2	1.1	93	22	0	150	7.2	90
May 21-31		5.4	.22	5.7	1.8	14	1.6	28	8.4	17	.3	.8	78	22	0	140	7.0	90

A Calculated from determined constituents.
B Organic matter present; sum of mineral constituents 40 parts per million.

CAPE FEAR RIVER BASIN--Continued

2-1075.72. CAPE FEAR RIVER AT ROYSTER, N. C.--Continued

Chemical analyses, in parts per million, October 1962 to August 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
June 1-6, 1963.....		6.7	0.22	4.2	1.5	11	1.5	19	7.2	13	0.1	.6	75	16	1	98	6.9	110
June 7-11.....		7.8	.18	5.7	1.7	13	1.7	25	7.6	15	.3	.8	86	21	0	130	7.2	110
June 25-30.....		8.5	.29	6.2	1.8	14	2.0	27	8.4	18	.2	.9	93	22	0	145	7.2	130
July 3-7.....		5.9	.22	5.4	1.4	13	2.5	20	8.4	17	.3	2.4	73	20	3	111	6.2	80
July 8-11.....		5.0	.24	5.8	1.9	20	2.8	27	10	25	.2	2.2	95	22	0	150	6.4	110
July 14-22.....		4.5	.22	6.1	2.6	26	2.1	25	12	37	.2	1.6	122	26	6	197	6.9	90
July 29-31.....		4.0	.25	7.5	1.7	24	2.8	33	11	28	.3	2.0	98	26	0	173	6.6	--
Aug. 1-10.....		5.0	.18	6.3	1.8	19	2.7	30	8.8	23	.3	2.1	92	22	0	142	6.8	110
Aug. 12.....		--	.18	--	--	--	--	28	--	22	--	--	--	22	0	142	7.2	--

CAPE FEAR RIVER BASIN--Continued

2-1075.72. CAPE FEAR RIVER AT ROYSTER, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		2530	11							90		--
2		4000								98		2975
3	23	2825	16				7.5					1500
4		2475	43						13			800
5		1525	25							17		675
6		775						19			23	675
7		575										2575
8		775	8.0									2650
9		1450										48
10	16	27		10					15	25		1350
11											61	1475
12								515	40	142	22	1680
13		12					11	103	18	141	61	1200
14								101	14		202	46
15	30		9.5		8.0			600	13		48	40
16	225					7.0		640	450		67	1225
17	32							58	151		465	1850
18								775	43	37	280	825
19	3620	9.5						33	375		470	900
20	1915		15					725	144		910	650
21	1020			9.5					52		305	1200
22	2850		8.5						122		880	880
23	3620	18							27	230	280	1100
24	2250								109	245	290	2600
25	2020						12			275	108	5150
26	2075	8.0						17		44	1060	5980
27	775		11						18	39	1050	3620
28	775									39	370	3250
29	2125			5.5	--						845	6800
30	2475				--					28	2885	375
31	2775	--			--		--		--		1495	--

CAPE FEAR RIVER BASIN--Continued

2-1075.72. CAPE FEAR RIVER AT ROYSTER, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0700 and 1945)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	70	72	71	73	73	73	73	74	74	72	73	72	74	74	74	75	75	74	72	72	72	71	71	67	62	62	64	64	65	64	64	71
November	64	63	62	62	60	59	60	60	59	55	55	62	56	55	54	55	55	56	56	--	55	55	54	53	53	52	50	52	52	53	--	56
December	53	54	54	54	55	51	51	50	49	47	42	45	41	41	41	41	41	42	42	41	42	42	42	42	42	42	42	43	43	43	41	45
January	41	41	40	40	40	40	41	40	41	41	42	44	45	45	45	45	46	46	46	48	48	47	46	45	45	45	42	41	42	42	42	43
February	42	42	42	42	41	43	43	44	44	44	46	47	47	48	47	47	46	46	44	44	46	44	44	44	44	45	43	44	--	--	--	44
March	45	45	48	48	50	50	50	53	53	53	55	56	57	57	57	57	57	56	56	58	59	59	55	55	57	57	58	60	60	62	62	55
April	63	63	63	64	64	65	65	64	64	64	64	64	64	63	63	63	63	65	65	65	67	67	69	69	69	69	69	67	69	67	--	65
May	68	68	68	68	69	69	69	70	71	72	72	72	72	72	73	73	73	74	75	74	74	74	74	73	72	70	70	70	71	--	--	71
June	72	72	72	72	72	74	77	77	79	79	81	82	82	83	82	83	82	81	80	81	80	80	81	81	81	81	82	81	81	81	--	79
July	83	83	82	83	83	83	83	83	83	83	83	83	82	82	83	83	83	83	83	83	84	84	84	84	84	85	85	85	84	84	84	83
August	84	83	82	84	84	84	85	86	86	88	88	88	88	87	85	85	84	85	85	84	85	85	85	85	85	85	85	83	83	83	83	85
September	--	82	82	80	80	80	81	81	81	80	80	80	78	77	77	78	77	76	76	76	76	76	74	73	73	73	73	74	73	73	--	77

2-1075.76. CAPE FEAR RIVER AT NAVASSA, N. C.

LOCATION.--At bridge, draw section on Atlantic Coast Line Railroad at Navassa, Brunswick County.
DRAINAGE AREA.--7,060 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1959 to September 1963.
Water temperatures: October 1959 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 9,500 ppm Sept. 25-27 (B); minimum, 6.0 ppm Jan. 20-31.
Specific conductance: Maximum daily, 25,000 micromhos Sept. 25-27 (B); minimum daily, 41 micromhos Jan. 29 (T).
Water temperatures: Maximum, 85°F July 29, Aug. 6-9; minimum, 36°F Dec. 14 (T), Jan. 6 (T).
EXTREMES, 1959-63.--Chloride: Maximum, 9,500 ppm Sept. 25-27 (B), 1963; minimum, 5.0 ppm on many days in February 1960 and April 1962.
Specific conductance: Maximum daily, 25,000 micromhos Sept. 25-27 (B), 1963; minimum daily, 40 micromhos Feb. 22, 26, 1960.
Water temperatures: Maximum, 87°F Aug. 1, 4, 1961; minimum, 36°F Dec. 14 (T), 1962, Jan. 6 (T), 1963.
REMARKS.--Salinity station. Top (T) and bottom (B) samples were collected once daily at high tide. No discharge records available.

Chemical analyses, in parts per million, October 1962 to August 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 2(B), 1962.....		--	--	7.7	7.1	--	--	28	--	101	--	--	--	48	25	420	7.1	--
Oct. 6.....		7.6	0.14	5.3	1.5	17	1.6	23	10	20	0.2	1.0	A75	19	0	130	6.5	--
Oct. 8-10.....		7.4	.16	4.6	2.1	15	1.5	17	10	20	.2	.9	81	20	6	115	6.3	120
Nov. 14(B), 15-28...		7.0	.24	3.9	1.5	7.0	1.8	13	8.0	9.0	.1	.8	67	16	6	68	6.3	100
Dec. 1-2.....		8.0	.23	5.0	1.4	9.8	1.7	18	8.6	11	.2	.3	A55	18	3	91	6.4	90
Dec. 7(B), 8-13.....		8.9	.18	4.2	1.8	8.9	2.0	17	8.4	12	.2	.5	81	18	4	90	6.4	90
Dec. 14-18.....		8.6	.24	3.4	1.5	6.1	1.7	8	6.6	8.5	.2	1.3	A42	14	8	65	6.2	70
Dec. 19-21.....		8.5	.19	4.7	1.2	11	1.5	14	7.6	14	.3	.3	78	15	4	91	6.3	90
Dec. 27.....		8.4	.19	3.5	1.1	5.6	1.4	12	7.2	8.0	.3	.8	A42	14	4	63	6.0	55
Dec. 29.....		8.5	.17	3.5	1.0	5.9	1.2	12	6.0	8.0	.3	.7	A41	13	3	63	6.1	50
Dec. 30-31.....		9.5	.18	4.6	1.5	12	1.7	21	7.8	13	.2	1.0	A61	18	0	98	6.4	55
Jan. 1-19, 1963.....		8.1	.17	3.6	1.9	8.8	1.0	14	8.8	12	.2	.7	71	17	6	80	6.6	100
Jan. 20-31.....		6.8	.17	3.4	1.1	4.9	1.0	11	7.2	6.0	.1	.7	B63	13	4	51	6.1	120
Feb. 1-28.....		6.5	.13	3.4	1.0	6.3	.9	11	7.6	8.7	.1	1.5	59	12	4	60	6.8	110
Mar. 1-4.....		7.2	.09	3.1	1.9	6.0	1.5	10	11	7.0	.1	1.2	59	16	8	59	6.5	80
Mar. 5-8.....		7.9	.10	3.5	1.9	9.2	1.9	15	7.0	12	.0	1.2	A52	17	4	84	6.6	80
Mar. 9-31.....		7.3	.13	2.9	1.9	6.0	2.0	14	6.0	6.5	.1	.9	C77	15	4	64	6.8	140
Apr. 1-5.....		6.0	.24	3.5	1.2	5.4	1.0	13	5.0	6.2	.0	1.0	51	14	4	59	6.1	90

A Calculated from determined constituents.
B Organic matter present; sum of mineral constituents 37 parts per million.
C Organic matter present; sum of mineral constituents 41 parts per million.

CAPE FEAR RIVER BASIN--Continued

2-1075.76. CAPE FEAR RIVER AT NAVASSA, N. C.--Continued

Chemical analyses, in parts per million, October 1962 to August 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Apr. 6-19, 1963....		6.6	0.22	3.9	1.3	7.5	1.1	17	5.4	9.1	0.1	0.8	63	16	2	75	6.8	90
Apr. 20-28.....		6.4	.31	4.2	1.9	13	1.4	26	6.6	14	.0	1.2	76	18	0	98	6.6	100
May 27-31.....		5.3	.13	5.1	1.7	13	1.5	20	8.0	16	.2	.2	80	20	4	115	6.4	90
June 1-12.....		7.2	.23	5.4	1.6	13	1.7	20	8.0	17	.4	.5	85	20	4	130	7.1	130
Aug. 1(T).....		--	.20	--	--	--	--	32	--	33	--	--	--	30	4	198	7.2	--
Aug. 2(T).....		--	.17	--	--	--	--	38	--	31	--	--	--	28	0	189	7.6	--
Aug. 22.....		--	.36	--	--	--	--	26	--	33	--	--	--	26	5	187	6.9	--
Time-weighted average.....		7.2	0.18	3.8	1.5	8.1	1.4	15	7.4	11	0.1	0.9	68	16	4	79	--	110

CAPE FEAR RIVER BASIN--Continued

2-1075.76. CAPE FEAR RIVER AT NAVASSA, N. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	October		November		December		January		February		March		April		May		June		July		August		September	
	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom	Top	Bottom
1	46	48	2125	4000	11	11									80	178			510	1775	33	82	--	--
2	38	101	3620	4380							7.0	7.0			94	94			940	1445	31	61	2880	4200
3	55	54	--	--	190	1925							6.2	6.2	27	26			780	1390	--	--	2850	4200
4	46	72	--	--	675	1575									--	--			750	960	--	--	3000	4000
5	--	--	1575	2530	575	--									--	--			445	1405	117	130	2300	3620
6	20	20	2975	4380	--	--									1035	1625	17	17	--	--	62	68	375	500
7	425	750	775	1625	575										975	2000			--	--	174	202	--	--
8			880	2710											585	1310			470	445	51	69	--	--
9	20	20	4000	7240											218	252			465	430	585	655	2180	4000
10			4380	5980											430	680			144	161	--	--	2710	4200
					12	12	12	12																
11	35	38	32	19											--	--			325	840	--	--	2325	3800
12	27	35	19	19											--	--			615	1365	520	985	2250	3620
13	46	51	880	2975									9.1	9.1	252	1230	109	385	--	--	530	965	--	--
14	125	180	48						8.7	8.7					55	565	450	1250	--	--	207	290	--	--
15	140	215													1340	3625	--	--	675	1460	330	465	--	--
16	130	240			8.5	8									1635	3175	--	--	715	1190	650	1410	3620	5150
17	190	400													2260	4000	890	1675	875	1200	--	--	4000	5550
18	1055	400													--	--	1490	2150	585	1210	--	--	2625	4380
19	205	4380													64	141	1390	2260	820	1295	1620	1685	2150	3620
20	635	3620			14	14					6.5	6.5			--	--	204	170	--	--	1355	1455	1075	2050
21	2050	4000	9	9											--	--	1075	1360	--	--	--	--	--	--
22	4380	6380			950	1550									--	--	--	--	229	214	33	33	--	--
23	2950	5150			575	1425									91	27	--	--	149	202	755	1565	2250	3620
24	4000	5550			--	--							14	14	--	--	59	31	1310	2865	--	--	2850	7925
25	--	--			--	--	6.0	6.0							--	--	22	22	61	39	--	--	5550	9500
26	300	400			91	96									--	--	237	1150	675	2560	1560	3960	6800	9500
27	2880	4380			8.0	8											310	1360	--	--	2015	5354	6800	9500
28	2675	4000			83	108											575	1565	--	--	1945	5554	--	--
29	1650	2575	145	1425	8.0	8			--	--			178	252	16	16	42	32	234	1510	2395	5354	--	--
30	2825	4380	525	1125	13	13			--	--			166	141			--	--	290	1265	2385	4225	4750	5375
31	--	--	--	--					--	--			--	--			--	--	178	405	--	--	--	--

CAPE FEAR RIVER BASIN--Continued

2-1075.76. CAPE FEAR RIVER AT NAVASSA, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
[Top and bottom once-daily measurements at approximately high tide]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Top.....	74	72	72	73	--	75	75	--	75	70	72	72	73	73	72	72	71	70	71	68	67	68	68	64	--	--	57	56	68	67	--	69
Bottom.....	74	72	72	73	--	75	74	--	75	70	72	72	71	71	71	71	69	71	70	68	68	67	69	64	--	--	55	55	68	68	--	69
November																																
Top.....	59	59	--	--	63	60	57	61	61	63	56	57	58	54	55	--	--	55	54	--	56	54	54	52	51	50	--	--	53	51	--	--
Bottom.....	69	59	--	--	64	61	57	61	62	62	57	57	58	55	56	--	--	54	55	--	55	54	54	53	52	50	--	--	53	52	--	--
December																																
Top.....	53	53	52	53	55	--	52	51	48	49	--	39	38	36	46	44	--	--	47	49	41	39	40	--	--	45	46	43	45	39	37	--
Bottom.....	53	52	52	53	--	--	52	51	48	49	--	38	37	37	47	45	--	--	48	48	40	40	40	--	--	45	45	44	44	40	37	--
January																																
Top.....	--	--	39	38	38	36	39	39	--	--	44	46	44	--	--	44	46	46	44	46	--	--	--	37	38	42	42	43	42	43	--	--
Bottom.....	--	--	39	--	37	37	40	39	--	--	43	45	43	--	--	45	46	47	45	46	--	37	--	38	39	43	41	42	43	43	--	--
February																																
Top.....	38	40	39	40	--	--	44	43	41	--	49	--	--	--	43	43	--	46	46	44	47	43	44	42	--	45	43	47	--	--	--	--
Bottom.....	39	40	40	41	--	--	43	43	42	--	48	--	--	--	42	43	--	46	44	45	47	44	43	43	--	45	43	47	--	--	--	--
March																																
Top.....	46	44	44	46	--	--	54	54	54	54	50	52	--	60	57	60	61	60	61	--	--	51	55	58	58	60	58	61	60	64	64	56
Bottom.....	46	45	45	45	--	--	55	55	53	54	49	51	--	61	56	60	61	60	61	--	--	52	54	59	59	60	58	61	60	64	65	56
April																																
Top.....	63	--	64	65	62	65	64	66	64	--	64	65	63	63	61	64	65	67	65	--	--	70	70	65	66	65	--	--	66	68	--	--
Bottom.....	64	--	65	65	62	65	63	65	65	--	65	65	64	62	62	63	65	66	64	--	--	70	70	66	67	66	--	--	67	69	--	--
May																																
Top.....	64	64	64	--	--	70	70	70	70	75	--	--	70	70	75	75	75	--	75	--	--	--	70	--	--	--	70	75	75	70	70	--
Bottom.....	65	65	65	--	--	70	70	70	70	75	--	--	70	70	75	75	75	--	75	--	--	--	70	--	--	--	70	--	75	70	70	--
June																																
Top.....	--	--	75	75	75	75	75	--	--	80	80	80	80	80	--	--	80	80	80	80	80	--	--	80	80	80	80	80	80	--	--	--
Bottom.....	--	--	75	75	75	75	75	--	--	80	80	80	80	80	--	--	80	80	80	80	80	--	--	80	80	80	80	80	80	--	--	--
July																																
Top.....	80	80	80	80	80	--	--	80	80	80	80	80	--	--	80	80	80	80	80	--	--	80	80	80	80	80	--	--	85	80	80	--
Bottom.....	80	80	80	80	80	--	--	80	80	80	80	80	--	--	80	80	80	80	80	--	--	80	80	80	80	80	--	--	85	80	80	--
August																																
Top.....	80	80	--	--	80	85	85	85	85	--	--	80	80	80	80	80	--	--	80	80	--	80	80	--	--	80	80	80	80	80	--	--
Bottom.....	80	80	--	--	80	85	85	85	85	--	--	80	80	80	80	80	--	--	80	80	--	80	80	--	--	80	80	80	80	80	--	--
September																																
Top.....	--	80	80	--	--	--	--	--	80	80	80	80	--	--	--	75	75	75	75	75	--	--	70	70	70	70	70	--	--	65	--	--
Bottom.....	--	80	80	--	--	--	--	--	80	80	80	80	--	--	--	75	75	75	75	75	--	--	70	70	70	70	70	--	--	65	--	--

2-1086.22. NORTHEAST CAPE FEAR RIVER AT CASTLE HAYNE, N. C.

LOCATION.--At bridge on U.S. Highway 117, 0.8 mile north of Castle Hayne, New Hanover County, and 4.7 miles upstream from Prince George Creek.
DRAINAGE AREA.--1,499 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1954 to September 1963.
Water temperatures: October 1954 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 87 ppm Sept. 7-13; minimum, 52 ppm Jan. 20-31.
Hardness: Maximum, 34 ppm Feb. 15; minimum, 13 ppm Jan. 20-31.
Specific conductance: Maximum daily, 155 micromhos May 24; minimum daily, 43 micromhos Jan. 24.
Water temperatures: Maximum, 84°F on several days in July and August; minimum, 40°F Jan. 31, Feb. 1, 2.
EXTREMES, 1954-63.--Dissolved solids: Maximum, 1,530 ppm Oct. 21-22, 25-27, 29, 1954; minimum, 42 ppm Mar. 1-31, 1960.
Hardness: Maximum, 516 ppm Oct. 15, 1954; minimum, 10 ppm Sept. 21-30, 1955.
Specific conductance: Maximum daily, 5,060 micromhos Oct. 23, 24, 1954; minimum daily, 34 micromhos Sept. 25, 1955, Mar. 10, 1959.
Water temperatures: Maximum, 90°F Aug. 10, 1956; minimum, 37°F Feb. 2, 17, 1958, Mar. 13, 1960.
REMARKS.--Salinity station. There was no indication of sea-water encroachment in samples collected. No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-31, 1962.....		6.7	0.26	5.6	1.3	5.7	0.8	14	3.2	10	0.2	1.2	A77	19	8	65	6.2	160
Nov. 1-15.....		6.7	.31	7.0	1.1	6.7	1.2	17	4.2	10	.2	1.3	77	22	8	74	6.6	160
Nov. 16-30.....		6.0	.32	6.3	.7	5.3	1.5	14	6.2	6.5	.3	.4	B76	18	7	65	7.1	140
Dec. 1-31.....		7.0	.20	6.0	1.1	7.0	1.2	14	5.0	12	.2	.7	66	20	8	72	6.8	140
Jan. 1-19, 1963.....		5.3	.17	6.3	1.4	6.6	1.1	14	6.2	11	.1	1.0	63	21	10	75	6.4	120
Jan. 20-31.....		3.7	.11	3.7	.9	3.8	.9	8	6.8	6.0	.1	.3	C52	13	6	46	6.7	110
Feb. 1-14.....		4.1	.13	5.5	.7	5.6	1.4	9	7.6	9.5	.2	4.4	65	16	9	68	6.5	50
Feb. 15.....		--	--	--	--	--	--	24	--	13	--	--	--	34	14	115	7.1	--
Feb. 16-28.....		3.4	.12	5.2	1.0	6.6	1.4	10	7.2	10	.1	2.9	61	17	9	73	6.2	120
Mar. 1-14.....		3.0	.14	5.1	1.4	6.5	1.2	12	7.0	9.0	.1	1.0	60	18	8	70	6.8	120
Mar. 15-31.....		2.1	.21	5.2	.8	7.8	1.4	15	4.0	12	.1	1.1	66	16	4	79	6.8	130
Apr. 1-30.....		3.3	.27	5.2	1.7	7.4	1.2	16	3.8	12	.2	1.3	65	20	7	85	6.8	160
May 1-21.....		4.5	.29	7.4	1.1	7.7	1.7	18	4.8	13	.1	2.1	65	23	8	99	6.8	110
May 22-23.....		4.6	.35	8.8	1.2	11	2.0	21	7.4	16	.0	3.5	D65	27	10	137	7.1	120
May 24.....		--	--	--	--	13	2.5	17	8.0	20	--	--	--	28	14	155	7.1	120
May 25-31.....		5.2	.23	7.3	1.1	8.3	1.4	14	9.6	12	.0	1.9	80	22	11	104	6.1	110
June 1.....		--	.11	--	--	--	--	11	--	14	--	--	--	19	10	120	6.5	--
June 2-10.....		5.6	.17	4.8	1.4	7.1	1.6	10	7.0	11	.2	1.7	70	18	10	84	6.6	130

A Organic matter present; sum of mineral constituents 42 parts per million.
B Organic matter present; sum of mineral constituents 41 parts per million.
C Organic matter present; sum of mineral constituents 30 parts per million.
D Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-1086.22. NORTHEAST CAPE FEAR RIVER AT CASTLE HAYNE, N. C.--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
June 11, 1963.....		--	0.20	--	--	--	--	10	--	18	--	--	--	18	10	135	6.7	--
June 12-17.....		5.7	.21	5.8	1.0	7.7	1.7	13	6.6	11	0.1	1.6	74	18	8	86	6.8	150
June 18.....		--	.20	--	--	--	--	13	--	14	--	--	--	26	15	125	7.0	--
June 19-30.....		5.8	.26	6.7	1.1	7.7	1.2	15	5.8	12	.1	1.0	76	21	8	92	6.7	150
July 1-31.....		6.3	.13	6.3	1.6	10	2.4	16	6.8	15	.2	4.7	74	22	9	100	6.6	120
Aug. 1-13.....		6.3	.14	7.1	2.4	8.8	2.4	12	8.0	17	.2	4.7	82	28	18	90	6.3	120
Aug. 14-31.....		5.9	.16	5.3	1.2	6.0	1.7	11	6.4	8.2	.2	1.4	74	17	8	68	6.0	180
Sept. 1-6.....		7.4	.26	6.6	1.4	6.8	1.1	18	7.2	9.7	.2	1.8	79	22	7	72	6.5	160
Sept. 7-13.....		7.7	.24	6.7	1.3	10	2.1	14	8.4	17	.2	2.0	87	22	10	102	6.5	140
Sept. 14-30.....		7.3	.17	6.4	1.2	7.6	1.6	15	9.0	14	.2	2.0	84	21	8	85	7.0	140
Time-weighted average.....		5.4	0.21	6.0	1.3	7.2	1.5	14	5.9	11	0.2	1.9	71	20	8	80	--	130

A Organic matter present; sum of mineral constituents 42 parts per million.
B Organic matter present; sum of mineral constituents 41 parts per million.
C Organic matter present; sum of mineral constituents 30 parts per million.
D Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-1086.22. NORTHEAST CAPE FEAR RIVER AT CASTLE HAYNE, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 1800)

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	71	71	71	72	72	71	71	71	71	70	70	70	69	69	69	68	66	67	67	66	66	66	65	65	65	64	64	64	64	63	63	68
November	62	62	61	61	61	60	60	60	59	59	58	57	57	57	57	57	56	56	56	56	56	55	55	55	54	54	53	53	53	52	--	57
December	52	52	51	51	51	50	50	49	48	48	47	47	46	45	45	44	41	41	41	41	41	41	42	42	43	43	43	44	44	44	43	45
January	43	45	43	44	44	44	44	44	44	44	44	45	45	45	45	45	45	45	45	44	44	44	43	43	43	43	42	42	41	41	40	44
February	40	40	41	41	42	42	42	43	43	42	44	44	44	45	45	45	46	46	47	47	47	46	46	45	45	44	44	44	--	--	--	44
March	44	44	45	45	46	46	46	47	46	48	49	49	49	49	50	50	51	51	51	52	53	53	54	55	55	56	56	57	57	59	59	51
April	61	61	62	62	62	63	63	63	63	63	64	63	64	64	64	64	65	65	65	66	66	66	66	66	67	67	67	67	68	68	--	64
May	69	69	69	69	70	70	70	70	70	71	71	72	73	73	73	73	74	74	74	74	73	73	73	73	72	72	71	71	70	70	70	71
June	70	70	71	71	71	71	72	72	73	73	73	74	75	75	75	75	75	76	76	76	76	77	77	78	77	78	78	78	79	79	--	75
July	80	80	79	79	80	80	80	80	81	81	81	81	82	82	81	82	82	82	83	83	83	84	84	84	84	84	84	84	83	83	83	82
August	83	83	83	83	84	84	83	83	83	82	82	81	80	79	79	80	80	80	81	80	80	80	79	80	80	79	79	79	78	79	79	81
September	79	79	80	79	79	79	78	78	79	78	78	78	78	77	77	76	77	76	76	76	75	75	74	74	74	73	73	73	71	71	--	76

2-1066.37. NORTHEAST CAPE FEAR RIVER NEAR CASTLE HAYNE, N. C.

LOCATION.--At end of county road, 1 mile east of U.S. Highway 421 at Cowpen Landing, and 5.5 miles west of Castle Hayne, New Hanover County.
DRAINAGE AREA.--1,691 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1959 to September 1963.
Water temperatures: October 1959 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 66 ppm Sept. 29-30; minimum, 6.0 ppm Jan. 24-31.
Specific conductance: Maximum daily, 290 micromhos Sept. 30; minimum daily, 46 micromhos Jan. 26, 27, 29.
Water temperatures: Maximum, 84°F Aug. 9-11; minimum, 40°F on several days in December, January, and February.
EXTREMES, 1959-63.--Chloride: Maximum, 1,360 ppm Nov. 10, 1961; minimum, 2.5 ppm June 22-30, 1961.
Specific conductance: Maximum daily, 4,600 micromhos Nov. 10, 1961; minimum daily, 37 micromhos June 27, July 3, 1961.
Water temperatures: Maximum, 84°F on many days each year; minimum, 35°F Mar. 11-15, 1960.
REMARKS.--Salinity station. No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-31, 1962.....		6.7	0.18	5.0	1.8	8.2	1.0	15	6.2	12	0.2	0.8	71	20	7	76	6.2	160
Nov. 1-2.....		7.2	.22	5.9	1.6	11	1.1	17	7.2	17	.2	.4	A60	22	8	95	6.5	--
Nov. 3-7.....		6.9	.24	4.6	2.6	14	1.2	15	6.0	24	.2	.6	91	22	10	115	6.2	160
Nov. 8-17.....		6.1	.24	5.1	1.7	7.0	1.4	16	8.8	11	.1	.5	75	20	6	73	7.2	140
Nov. 18-30.....		5.9	.20	5.1	1.2	5.7	1.5	13	4.6	9.5	.2	.5	55	18	7	63	6.5	140
Dec. 1-31.....		7.2	.18	5.2	1.3	7.7	1.2	15	4.4	13	.2	.6	71	18	6	75	6.4	140
Jan. 1-23, 1963.....		6.0	.14	5.5	1.2	7.0	.7	14	5.4	12	.1	.4	70	18	7	73	6.4	110
Jan. 24-31.....		3.5	.16	3.8	.7	3.5	1.0	9	4.8	6.0	.1	.2	B58	12	5	48	6.1	140
Feb. 1-28.....		4.2	.11	4.8	1.1	5.3	.6	9	6.4	9.5	.1	1.2	53	16	9	61	6.3	100
Mar. 1-31.....		3.0	.15	5.0	1.2	6.1	1.1	12	4.8	10	.2	.8	48	18	8	67	6.8	110
Apr. 1-30.....		3.0	.21	5.1	2.1	8.3	.6	16	5.6	14	.4	.7	61	21	8	85	6.9	130
May 1-20.....		4.5	.18	5.7	1.6	11	.6	18	6.8	17	.1	.9	76	21	6	105	6.9	120
May 21-31.....		4.0	.14	6.7	2.1	11	.8	20	6.0	18	.0	.8	74	26	9	100	6.7	100
June 1-30.....		5.6	.21	5.6	1.2	7.5	.7	14	7.2	11	.1	1.0	71	19	8	86	6.8	120
July 1-31.....		6.1	.11	6.6	1.0	9.9	1.0	14	6.6	14	.1	1.0	77	20	9	97	6.9	120
Aug. 1-31.....		6.0	.17	5.6	1.5	8.3	1.3	18	6.4	12	.2	1.8	73	20	5	82	6.6	120
Sept. 1-5.....		--	.13	--	--	--	--	16	--	11	--	--	--	20	6	81	7.0	--
Sept. 6-10.....		--	--	--	--	--	--	16	--	36	--	--	--	29	16	170	6.9	--
Sept. 11-25.....		7.3	.22	6.3	1.7	7.7	1.0	17	5.8	14	.2	1.6	84	22	8	85	7.0	145
Sept. 27-28.....		--	.25	--	--	--	--	20	--	20	--	--	--	26	9	120	6.9	--
Sept. 29-30.....		--	.25	--	--	--	--	16	--	66	--	--	--	41	28	280	7.0	--
Time-weighted average.....		5.4	0.17	5.4	1.4	7.9	0.9	15	6.0	13	0.2	0.9	68	20	8	83	--	130

A Calculated from determined constituents.
B Organic matter present; sum of mineral constituents 28 parts per million.

CAPE FEAR RIVER BASIN--Continued

2-1086.37. NORTHEAST CAPE FEAR RIVER NEAR CASTLE HAYNE, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
/Once-daily measurement between 0530 and 1845/

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	69	70	70	70	70	70	70	70	71	71	71	72	72	73	74	74	74	72	70	67	67	68	66	64	66	66	60	59	62	62	62	68
November	61	61	60	60	60	52	50	51	52	54	55	57	56	56	56	55	55	55	54	54	54	53	54	53	53	50	51	52	53	54	--	55
December	54	54	55	55	55	54	48	50	--	48	48	40	40	41	41	43	44	45	43	43	43	43	42	42	43	43	43	44	45	46	43	46
January	42	43	41	40	40	40	40	40	40	41	42	44	44	45	44	42	42	44	44	45	45	45	46	44	44	43	43	41	41	43	43	43
February	41	41	--	--	41	40	40	43	43	43	45	46	46	47	46	40	40	40	43	43	44	44	42	42	43	42	42	44	--	--	--	43
March	44	44	46	46	47	48	49	49	50	51	56	58	59	62	63	59	58	61	61	62	62	59	59	60	60	60	63	62	62	60	60	56
April	63	63	65	68	64	64	64	63	64	65	66	64	62	62	59	58	60	63	64	65	65	67	73	71	69	66	64	63	66	67	--	65
May	63	60	61	62	65	66	66	68	71	74	73	73	68	69	70	71	72	72	72	73	73	72	70	70	69	69	69	70	70	69	69	69
June	68	68	69	70	72	75	75	77	77	78	79	79	79	79	80	81	78	76	75	77	78	75	72	74	75	76	76	78	76	76	--	76
July	78	78	77	78	79	79	80	80	79	79	79	78	77	76	75	77	77	76	78	78	79	81	80	78	79	79	78	78	77	77	77	78
August	77	79	79	79	80	80	83	83	84	84	84	83	81	80	79	77	79	79	79	79	78	78	79	79	79	79	79	76	74	74	76	79
September	76	--	77	78	78	78	78	78	76	76	76	76	74	74	73	72	72	72	72	72	73	73	69	68	69	69	66	66	67	67	--	73

CAPE FEAR RIVER BASIN--Continued

2-1086.38. NORTHEAST CAPE FEAR RIVER NEAR WRIGHTSBORO, N. C.

LOCATION.--At boat landing 3 miles above Ness Creek, and 3 miles northwest of Wrightsboro, New Hanover County.
DRAINAGE AREA.--1,697 square miles.
RECORDS AVAILABLE.--Chemical analyses: November 1962 to June 1963 (discontinued).
Water temperatures: November 1962 to June 1963 (discontinued).
EXTREMES, November 1962 to June 1963.--Chloride: Maximum, 2,880 ppm Nov. 1; minimum, 6.2 ppm Jan. 24-31.
Specific conductance: Maximum daily, 9,000 micromhos Nov. 1; minimum daily, 40 micromhos Jan. 28.
REMARKS.--Salinity station. No discharge records available.

Chemical analyses, in parts per million, November 1962 to June 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Nov. 11-30, 1962....		5.8	0.27	5.5	1.4	6.4	1.6	12	7.0	11	0.1	0.5	73	19	9	71	6.2	140
Dec. 1-12.....		6.8	.18	5.6	1.4	8.2	1.4	14	6.8	12	.2	.3	A50	20	8	78	6.1	60
Dec. 13-18.....		7.1	.23	7.1	1.2	11	1.4	15	6.8	19	.3	.2	A61	23	10	105	6.7	100
Dec. 23-31.....		7.1	.17	6.2	1.1	7.5	1.1	15	5.2	14	.1	.2	78	20	8	79	6.2	100
Jan. 1-23, 1963.....		5.6	.17	5.9	1.3	5.9	.8	15	7.6	11	.1	.7	63	20	7	71	6.4	120
Jan. 24-31.....		3.4	.20	3.6	1.3	3.7	1.1	8	5.4	6.2	.2	.7	47	14	8	47	5.7	140
Feb. 1-28.....		4.0	.11	3.6	1.5	4.6	.6	11	5.6	8.5	.1	1.7	51	15	6	58	6.4	110
Mar. 1-31.....		2.9	.17	5.5	1.4	6.1	1.4	13	7.2	9.5	.2	1.0	61	20	9	72	6.6	110
Apr. 1-7.....		2.6	.18	5.3	1.9	7.5	1.3	16	6.6	12	.2	.9	60	21	8	84	6.8	120
Apr. 11-12.....		--	.81	--	--	--	--	19	--	12	--	--	--	22	7	100	7.0	--
Apr. 14-28.....		3.1	.34	6.0	2.0	11	1.5	18	7.8	19	.2	.9	80	23	8	108	6.8	160
June 1-3.....		5.6	--	5.0	2.0	--	--	12	6.8	8.7	--	1.0	--	20	10	73	6.6	--
June 4-5.....		5.7	--	6.9	2.2	--	--	14	11	15	--	1.2	--	26	14	120	6.8	--

A Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-1086.38. NORTHEAST CAPE FEAR RIVER NEAR WRIGHTSBORO, N. C.--Continued

Chloride, in parts per million, November 1962 to June 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1		2880						179				
2		1225						51	8.7			
3		27						--				
4		1000						168	15			
5		1200					12	48				
6		--						550	925			
7		555	12					--	--			
8		1350					--	1450	--			
9		2325					67	585	--			
10		330					--	1455	174			
11							12	22	--			
12				11				24	32			
13							144	21	--			
14								765	300			
15			19		8.5			49	27			
16						9.5		975	900			
17								49	48			
18								365	--			
19			30					27	16			
20			32					--	--			
		11					19					
21			33					365	--			
22			35					--	16			
23								27	300			
24								--	--			
25								16	75			
26								--	600			
27			14	6.2				15	--			
28								19	160			
29					--		67	11	615			
30					--		147	14	80			
31		--			--		--	12	--			

CAPE FEAR RIVER BASIN--Continued

2-1086.38. NORTHEAST CAPE FEAR RIVER NEAR WRIGHTSBORO, N. C.--Continued

Temperature (°F) of water, November 1962 to June 1963
(Once-daily measurement between 0700 and 2100)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
November	73	72	69	68	70	--	66	72	71	68	66	64	75	68	76	64	68	67	75	71	64	--	74	65	74	76	73	69	74	70	--	70
December	70	--	--	56	57	62	57	54	61	52	--	53	43	46	48	50	52	55	48	50	52	55	42	44	48	--	--	--	42	--	41	--
January	--	--	43	45	45	43	44	--	44	--	45	45	45	45	40	--	--	42	44	44	45	44	42	32	41	39	32	37	35	42	40	--
February	40	39	--	41	34	--	--	41	--	--	39	--	41	--	--	40	38	--	38	41	--	40	--	--	39	--	--	40	--	--	--	--
March	40	43	--	51	51	49	--	49	--	--	--	45	--	47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
April	59	58	60	60	60	--	59	--	63	--	68	--	62	61	--	70	62	--	70	--	72	71	--	70	--	69	--	75	68	68	--	--
May	68	69	--	67	72	76	--	73	68	69	72	74	76	71	70	78	69	64	71	--	73	--	--	--	69	--	71	70	73	75	70	--
June	75	81	80	73	71	74	--	--	--	80	--	70	--	83	79	72	70	--	88	--	--	83	82	--	84	82	--	83	86	86	--	--
July	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
August	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
September	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

WACCAMAW RIVER BASIN

2-1095. WACCAMAW RIVER AT FREELAND, N. C.

LOCATION.--Temperature recorder at gaging station 150 feet downstream from New Britton Bridge on State Highway 130, 1 mile southwest of Freeland, Brunswick County, 7 miles downstream from Juniper Creek, and 117 miles upstream from mouth in Winyah Bay.
DRAINAGE AREA.--706 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1950 to September 1951, October 1956 to September 1962.
Water temperatures: October 1950 to September 1951, June 1960 to September 1961, October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 82°F on several days in May, July, and August; minimum, 35°F Dec. 14-18.
EXTREMES, 1950-51, 1960-61, 1962-63.--Water temperatures: Maximum, 96°F June 18, 19, 1960; minimum, 35°F Dec. 14-18, 1962.
REMARKS.--Recorder stopped Oct. 1-23.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 15, 1962.....	114	8.9	0.04	3.2	1.3	4.3	0.7	9	1.6	8.0	0.1	1.3	A73	14	6	48	5.7	200
Feb. 7, 1963.....	2000	3.3	.03	2.3	.9	3.8	.4	5	3.2	5.8	.3	1.2	B23	10	6	48	5.8	90
Sept. 4.....	12	5.1	.41	8.0	.4	6.6	.3	7	13	13	.1	1.1	B51	22	16	72	5.8	110

A Organic matter present; sum of mineral constituents 33 parts per million.
B Calculated from determined constituents.

WACCAMAW RIVER BASIN--Continued

2-1095. WACCAMAW RIVER AT FREELAND, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Continuous ethyl-alcohol actuated thermograph)

Month	Day																												Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	68	67	64	60	57	56	56	56	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	67	64	60	57	56	56	56	56	--
November																																
Maximum	57	57	57	56	56	56	55	54	54	58	58	58	57	57	56	54	55	54	53	53	53	53	53	53	53	52	50	49	49	51	--	54
Minimum	56	57	56	56	56	55	54	53	53	54	58	57	57	56	54	54	54	52	53	53	53	53	53	53	52	50	49	49	49	49	--	54
December																																
Maximum	52	52	53	53	53	53	53	48	45	45	44	42	40	37	35	35	35	36	38	41	42	42	42	42	42	42	42	43	43	43	43	44
Minimum	51	52	52	53	53	53	48	45	45	44	42	40	37	35	35	35	35	35	36	38	41	42	42	42	42	42	42	42	43	43	42	43
January																																
Maximum	42	38	36	36	36	37	38	40	40	40	43	46	49	50	51	50	46	44	45	49	51	51	51	50	47	44	43	43	41	41	42	44
Minimum	38	36	36	36	36	36	37	38	40	40	40	43	46	49	49	46	44	44	44	45	49	51	50	47	44	43	43	41	40	40	41	42
February																																
Maximum	42	42	43	43	43	43	45	46	46	46	46	47	48	48	48	48	46	43	42	45	47	47	47	47	46	46	46	46	--	--	--	45
Minimum	42	41	42	43	43	43	43	45	46	46	46	46	47	48	48	46	43	42	42	42	45	47	47	46	46	46	46	45	--	--	--	45
March																																
Maximum	45	47	49	51	54	57	57	57	57	56	56	59	62	63	63	63	61	62	64	65	65	64	59	56	56	57	59	59	59	61	62	58
Minimum	45	45	47	49	51	54	57	57	56	56	56	56	59	62	63	61	61	61	62	64	64	59	56	55	55	56	57	59	59	59	61	57
April																																
Maximum	64	65	66	67	67	67	65	62	61	62	62	62	62	62	62	61	61	63	67	69	71	74	75	75	74	71	68	66	66	66	--	66
Minimum	62	64	65	66	67	65	62	61	61	61	62	62	62	62	61	60	59	61	63	67	69	71	74	74	71	68	66	66	66	65	--	65
May																																
Maximum	66	66	67	68	69	71	72	74	74	76	78	78	75	72	75	75	78	82	81	79	77	73	73	69	67	64	63	64	65	67	68	72
Minimum	66	65	65	66	67	68	70	70	73	74	76	75	72	72	72	74	75	76	78	77	73	73	69	67	64	63	63	63	64	65	67	70
June																																
Maximum	68	68	68	68	71	73	75	75	77	79	81	81	81	80	81	81	81	79	75	75	77	77	77	75	72	72	73	74	75	77	--	76
Minimum	68	68	68	68	68	71	73	75	75	77	79	80	80	79	80	81	79	75	74	74	75	77	75	72	72	72	72	73	74	75	--	74
July																																
Maximum	80	82	82	82	82	82	82	82	82	81	75	74	74	74	76	78	79	79	78	80	81	82	82	81	80	80	80	80	80	80	80	80
Minimum	77	80	82	82	82	80	81	82	81	75	74	74	74	74	74	76	78	77	77	78	80	81	81	80	80	79	79	80	80	80	79	79
August																																
Maximum	79	79	79	79	80	81	81	82	82	82	82	82	82	82	82	81	80	80	80	81	81	80	80	80	80	80	79	78	78	79	80	80
Minimum	79	79	79	79	79	80	81	81	81	82	82	82	81	81	81	80	78	79	79	80	79	79	79	79	79	79	78	78	78	78	78	80
September																																
Maximum	80	80	80	81	80	80	79	77	77	78	78	79	79	77	76	73	72	72	72	73	76	76	72	70	69	69	72	72	72	72	--	75
Minimum	79	79	79	79	79	79	77	77	76	76	76	76	77	76	73	71	70	71	71	71	73	72	70	69	69	68	69	72	72	71	--	74

PEE DEE RIVER BASIN

2-1120. YADKIN RIVER AT WILKESBORO, N. C.

LOCATION.--Temperature recorder at gaging station 150 feet upstream from bridge on U.S. Highway 421A between North Wilkesboro and Wilkesboro, 150 feet downstream from Reddies River, and 0.5 mile northeast of Wilkesboro, Wilkes County.
DRAINAGE AREA.--493 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1947 to September 1948, October 1961 to September 1962.
Water temperatures: October 1947 to September 1948, October 1957 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 75°F Aug. 5, 8, 23, 24; minimum, 35°F on several days in January and February.
EXTREMES, 1947-48, 1957-63.--Water temperatures: Maximum, 83°F June 24, 25, 1948; minimum, freezing point on several days in 1958, 1960, and 1962.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Dec. 28, 1962.....	465	12	0.02	2.2	0.8	2.3	1.7	17	0.4	1.5	0.1	1.0	A29	9	0	33	6.8	5
July 2, 1963.....	456	12	.04	2.9	.9	2.0	1.5	16	1.8	.8	.1	.1	A30	11	0	36	6.7	5

A Calculated from determined constituents.

PEE DEE RIVER BASIN--Continued

2-1120. YADKIN RIVER AT WILKESBORO, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Continuous ethyl alcohol-actuated thermograph)

Month	Day																												Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	63	61	60	61	63	63	64	65	64	65	65	65	65	65	65	65	65	64	64	65	62	61	61	60	58	58	57	56	54	54	53	62
Minimum	58	59	59	59	61	61	61	62	61	60	61	61	61	63	62	62	62	61	61	61	61	59	57	57	57	55	54	52	52	51	50	59
November																																
Maximum	53	53	53	53	52	52	52	52	51	51	52	51	52	51	51	51	51	52	49	49	49	50	50	51	48	49	49	49	50	49	--	51
Minimum	49	50	51	52	51	49	48	49	49	50	51	50	48	47	47	49	50	49	47	48	49	48	47	47	48	47	47	47	48	46	--	49
December																																
Maximum	49	48	48	49	48	48	46	46	45	43	43	42	41	41	41	42	43	43	43	43	43	43	43	41	40	41	41	42	41	41	40	43
Minimum	45	44	44	47	47	45	45	45	43	42	41	41	40	39	39	40	39	41	41	42	41	41	40	39	38	39	41	40	40	39	38	41
January																																
Maximum	40	40	40	41	41	41	41	41	41	41	44	45	44	42	41	41	40	41	41	43	42	40	40	39	38	37	38	38	38	39	40	41
Minimum	37	37	37	38	39	39	40	39	38	39	41	42	42	39	38	38	37	40	40	41	38	37	38	37	36	37	36	35	35	37	38	38
February																																
Maximum	38	39	40	39	41	41	39	40	39	40	39	40	39	38	39	39	39	39	38	40	39	39	39	40	41	38	40	40	--	--	--	39
Minimum	37	38	38	37	37	37	38	38	38	38	38	39	37	36	36	36	35	36	36	37	37	35	35	36	36	37	35	36	--	--	--	37
March																																
Maximum	39	41	41	43	42	45	42	43	43	46	44	46	46	45	45	44	46	48	47	48	48	49	50	50	50	48	52	52	52	52	53	46
Minimum	38	38	38	40	42	42	41	41	42	43	44	44	45	44	44	43	44	46	46	46	47	46	46	46	47	48	48	48	48	48	49	44
April																																
Maximum	53	54	54	53	50	48	51	51	50	52	53	53	51	50	52	52	53	54	55	57	56	55	57	55	54	56	56	54	54	58	--	53
Minimum	49	49	48	48	47	47	47	47	47	47	47	47	47	47	47	47	49	49	50	51	49	50	51	51	50	50	51	52	53	54	--	49
May																																
Maximum	57	58	58	59	59	60	61	61	62	61	63	59	58	61	63	59	59	61	63	63	61	63	63	62	61	61	61	62	64	66	64	61
Minimum	53	52	53	53	54	54	56	56	57	57	58	57	57	57	57	57	59	59	58	59	59	58	59	58	60	60	61	61	61	62	61	58
June																																
Maximum	65	66	68	63	65	66	66	67	69	69	68	67	69	68	68	64	65	65	68	67	67	67	66	71	70	70	68	69	70	70	--	67
Minimum	61	61	61	62	61	62	62	63	63	63	63	63	63	63	63	63	63	63	64	64	64	64	64	64	64	64	65	65	66	65	--	63
July																																
Maximum	69	71	72	72	72	70	68	72	70	70	71	70	70	70	70	69	73	73	70	69	71	70	71	69	70	71	73	74	72	71	70	71
Minimum	66	66	66	65	65	65	65	66	65	65	64	63	65	66	66	66	67	67	67	67	67	65	66	66	67	68	67	68	68	68	68	66
August																																
Maximum	71	74	73	73	75	74	74	75	74	69	73	73	71	73	73	73	74	74	72	73	71	74	75	75	72	70	70	72	72	74	73	73
Minimum	69	69	67	68	68	67	67	67	67	67	67	66	67	67	67	66	67	67	68	68	68	70	68	68	70	68	69	69	69	70	68	68
September																																
Maximum	74	73	74	71	71	69	72	72	71	72	71	72	69	67	70	71	71	70	71	71	71	69	67	67	68	70	69	65	66	66	--	70
Minimum	68	67	68	69	68	69	68	67	67	66	67	67	67	66	66	65	66	65	65	64	64	66	63	60	60	64	63	62	61	63	--	65

PEE DEE RIVER BASIN--Continued

2-1155. FORBUSH CREEK NEAR YADKINVILLE, N. C.

LOCATION.--At gaging station, 900 feet upstream from highway bridge, 0.8 mile north of Forbush Church, 2.8 miles upstream from Logan Creek, 3.5 miles upstream from mouth, and 6 miles east of Yadkinville, Yadkin County.
DRAINAGE AREA.--21.7 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1963.

Chemical analyses, in parts per million, October 1962 to August 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 3, 1962	12	14	0.12	3.3	1.4	2.8	1.2	22	1.8	2.1	0.0	0.2	38	14	0	42	7.0	30
Oct. 29	11	14	.00	3.6	1.6	2.8	1.0	22	.8	2.9	.0	1.0	A39	16	0	44	6.7	10
Nov. 20	26	12	.08	3.4	1.4	2.3	1.4	20	2.8	3.0	.0	.1	44	14	0	43	6.5	35
Dec. 28	28	12	.02	3.4	1.6	2.9	1.0	19	3.0	2.3	.2	.6	41	15	0	41	7.2	14
Feb. 5, 1963	21	12	.07	2.9	1.5	2.9	1.0	20	1.8	2.5	.1	.4	35	13	0	40	6.8	30
Mar. 1	46	12	.02	3.1	1.3	2.2	.8	20	1.6	2.5	.0	.6	A34	13	0	43	6.6	20
Apr. 12	22	12	.08	3.1	1.5	2.7	.9	22	1.0	2.8	.0	.0	35	14	0	40	7.2	10
May 14	16	14	.01	3.7	1.5	2.9	1.4	23	1.2	2.0	.1	.3	40	15	0	41	7.2	5
June 10	14	14	.05	3.4	1.4	2.5	2.0	22	1.4	1.9	.0	.4	38	14	0	43	7.0	15
July 2	14	14	.04	3.7	1.3	3.2	1.4	22	.6	2.4	.1	.3	42	14	0	52	6.4	6
July 19	8.8	14	.01	3.7	1.5	2.2	.9	22	2.4	1.4	.1	.4	A38	15	0	44	7.2	3
July 26	10	13	.00	2.8	1.3	2.4	1.5	20	1.6	2.3	.0	.1	42	12	0	41	6.5	15
Aug. 26	5.6	13	.02	3.4	1.4	4.4	2.2	23	3.8	1.6	.1	.3	A41	14	0	42	6.8	5

A Calculated from determined constituents.

PEE DEE RIVER BASIN--Continued

2-1165. YADKIN RIVER AT YADKIN COLLEGE, N. C.

LOCATION.--At gaging station at bridge on U.S. Highway 64, 1.5 miles south of Yadkin College, Davidson County, and 6.2 miles downstream from Reedy Creek.
DRAINAGE AREA.--2,280 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1943 to September 1944, October 1950 to September 1951, October 1955 to September 1963.
Water temperatures: October 1943 to September 1944, October 1950 to September 1951, October 1955 to September 1963.
Sediment records: January 1951 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 55 ppm June 1-30 and Sept. 19-30; minimum, 37 ppm Mar. 1-31.
Hardness: Maximum, 18 ppm Aug. 1-31; minimum, 8 ppm Dec. 25.
Specific conductance: Maximum daily, 135 micromhos Sept. 18; minimum daily, 32 micromhos Dec. 25.
Water temperatures: Maximum, 80°F June 11, July 2, 3, 19, 20; minimum, freezing point on several days in December, January, and February.
Sediment concentrations: Maximum daily, 1,390 ppm Mar. 6; minimum daily, 17 ppm Oct. 28.
Sediment loads: Maximum daily, 126,000 tons Mar. 13; minimum daily, 35 tons Sept. 26, 27.
EXTREMES, 1943-44, 1950-63.--Dissolved solids (1943-44, 1950-51, 1955-63): Maximum, 85 ppm Nov. 1-10, 1950; minimum, 32 ppm Mar. 21-31, 1944.
Hardness (1943-44, 1950-51, 1955-63): Maximum, 26 ppm Mar. 6, 1959; minimum, 8 ppm Dec. 25, 1962.
Specific conductance (1955-63): Maximum daily, 136 micromhos Aug. 17, 1956; minimum daily, 28 micromhos Apr. 29, 1958.
Water temperatures (1943-44, 1950-51, 1955-63): Maximum, 88°F Aug. 24, 1959; minimum, freezing point on many days during winter months.
Sediment concentrations (1951-63): Maximum daily, 2,970 ppm May 26, 1952; minimum daily, 1 ppm Dec. 3, 1953.
Sediment loads (1951-63): Maximum daily, 126,000 tons Mar. 13, 1963; minimum daily, 3 tons Dec. 3, 1953.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-31, 1962.....	1805	13	0.07	4.4	1.0	5.5	2.0	24	3.0	3.4	0.0	1.6	52	15	0	55	7.3	18
Nov. 1-30.....	3507	12	.03	4.1	1.1	4.1	1.9	21	3.8	3.9	.0	1.5	A43	14	0	55	6.4	20
Dec. 1-24.....	3157	13	.04	3.9	.9	4.3	1.8	20	3.6	3.3	.2	2.1	47	14	0	52	6.8	17
Dec. 25.....	2220	--	--	1.9	.8	--	--	8	--	.0	--	--	--	8	2	32	6.9	150
Dec. 26-31.....	3973	12	.02	3.6	1.5	3.6	1.5	18	3.6	2.8	.1	1.8	48	15	0	50	6.6	75
Jan. 1-31, 1963.....	2816	13	.04	3.7	1.2	3.8	1.5	18	3.4	3.9	.0	1.4	43	14	0	50	7.1	25
Feb. 1-28.....	2555	12	.05	3.4	1.7	4.3	1.5	19	2.8	3.8	.0	2.1	41	16	0	51	6.8	15
Mar. 1-31.....	8445	11	.04	2.9	1.0	3.4	1.5	15	4.4	2.5	.1	2.7	A37	11	0	44	6.7	6
Apr. 1-30.....	2845	12	.05	3.4	1.4	4.5	1.5	20	3.4	3.0	.0	1.5	A41	14	0	51	6.9	10
May 1-31.....	2711	13	.06	4.2	1.2	4.3	1.2	21	4.4	3.4	.0	2.2	52	16	0	58	7.0	35
June 1-30.....	2033	14	.06	4.2	1.3	4.6	1.5	21	4.0	3.6	.1	2.3	55	16	0	57	7.3	35
July 1-31.....	1566	8.3	.04	4.0	1.2	4.8	1.8	22	3.6	3.6	.0	2.4	48	15	0	62	6.9	10
Aug. 1-31.....	1165	12	.01	4.6	1.6	6.7	2.0	26	4.8	5.4	.1	2.7	53	18	0	68	7.2	23
Sept. 1-17.....	1194	14	.01	4.3	1.3	6.9	2.0	23	5.4	3.7	.2	3.3	54	16	0	67	6.6	19
Sept. 18.....	980	--	--	14	3.4	--	--	72	--	9.6	--	--	--	--	--	135	8.0	--
Sept. 19-30.....	1217	13	.07	4.3	1.5	6.9	2.0	24	6.0	5.5	.2	2.7	A55	17	0	74	6.7	17
Time-weighted average.....	2834	12	0.04	3.9	1.3	4.8	1.7	21	3.9	3.7	0.1	2.1	47	15	0	56	--	21

A Calculated from determined constituents.

PEE DEE RIVER BASIN--Continued

2-1165. YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
/Once-daily measurement between 0630 and 1645/

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	59	62	62	63	64	64	66	68	68	66	66	66	66	69	65	68	66	65	60	65	60	58	58	55	50	49	41	49	49	54	53	60
November	50	50	50	47	48	47	45	46	50	50	53	50	49	48	46	50	50	50	50	50	49	57	50	47	44	43	42	43	46	47	--	48
December	48	47	46	48	48	47	42	41	41	35	32	32	32	32	32	33	33	32	33	37	38	38	38	38	35	35	37	38	--	38	33	38
January	34	34	33	34	34	36	37	40	40	40	43	45	49	45	40	38	35	37	40	45	45	45	38	34	32	32	34	32	32	32	35	38
February	32	32	32	32	33	39	40	40	39	32	33	40	39	33	35	34	34	34	32	32	40	32	35	35	36	38	35	35	--	--	--	35
March	40	40	43	42	50	52	50	47	46	46	45	45	45	48	48	48	46	50	53	54	52	47	45	47	50	58	52	53	53	55	56	49
April	57	59	62	69	60	59	55	55	56	56	55	55	56	55	48	53	55	58	62	66	66	67	67	64	60	60	60	62	61	59	--	59
May	58	56	58	60	62	65	68	68	70	72	73	72	68	60	66	68	68	68	68	67	70	67	69	67	65	65	64	62	64	65	70	66
June	68	69	69	71	70	72	73	74	75	77	80	78	77	77	76	76	76	69	69	72	78	72	72	72	73	73	75	76	76	78	--	74
July	78	80	80	79	78	76	77	75	76	76	73	73	73	74	73	75	76	78	80	80	79	75	76	73	75	73	71	72	--	--	--	76
August	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	74	74	75	76	78	78	78	78	79	78	79	71	70	72	78	79	--
September	74	78	78	75	74	72	69	70	71	73	74	75	75	70	66	65	77	69	70	70	70	71	67	63	62	64	64	66	65	63	--	70

PEE DEE RIVER BASIN--Continued

2-1165. YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	1600	42	181	1600	30	130	1960	41	217
2..	1500	42	170	1600	29	125	1910	40	206
3..	1550	39	163	1730	32	149	1910	32	165
4..	1820	50	246	1910	44	227	3550	244 S	3970
5..	4050	387 S	4390	2040	42	231	14400	820 S	31800
6..	3180	332 S	2890	1780	35	168	7480	355	7170
7..	2450	140	926	1640	29	128	5260	215	3050
8..	2140	79	456	1550	30	126	3750	110	1110
9..	2000	67	362	3480	319 S	6180	3270	84	742
10..	1820	59	290	19900	1160 S	61300	3000	76	616
11..	1680	55	249	13500	490 S	19300	2540	52	357
12..	1600	42	181	4600	270 S	3340	2140	42	243
13..	1550	38	159	3460	176	1640	1500	38	154
14..	1680	108	490	2900	98	767	1680	20	91
15..	2270	128	785	2360	68	433	1960	71	376
16..	1820	100	491	2140	66	381	1960	23	122
17..	1640	75	332	2040	66	364	2360	48	306
18..	1550	50	209	2640	235 S	2020	2270	73	447
19..	1460	30	118	5150	383 S	5360	2360	55	350
20..	1500	27	109	3370	203	1850	2090	35	198
21..	1550	29	121	2630	116	824	2000	31	167
22..	1640	38	168	2900	253 S	2760	2090	30	169
23..	1820	48	236	3850	194 S	2070	2180	31	182
24..	1640	39	173	2900	94	736	2140	41	237
25..	1460	41	162	2540	59	405	2220	47	282
26..	1460	32	126	2360	64	408	2720	148 B	1090
27..	1460	20	79	2270	51	313	3000	100	810
28..	1500	17	69	2270	44	270	3090	50	417
29..	1500	22	89	2090	42	237	3520	235 S	2700
30..	1460	23	91	2000	42	227	6800	449 S	8250
31..	1600	31	134	--	--	--	4710	196 S	2560
Total	55950	--	14645	105200	--	112469	101820	--	68554
	JANUARY			FEBRUARY			MARCH		
1..	3270	94	830	2270	68	417	2330	62 S	396
2..	2720	72	529	2270	43	264	5730	480 S	7520
3..	2540	39	267	3000	119 S	975	4870	400	5260
4..	2270	28	172	3090	78	651	3650	238	2350
5..	2270	28	172	2630	58	412	3370	210	1910
6..	2220	29	174	2450	91	602	14100	1390 S	55600
7..	2220	28	168	2450	97	642	16600	1020 S	46900
8..	2220	30	180	2360	41	261	7070	458 S	9020
9..	2220	50	300	2270	40	245	5480	220	3260
10..	2180	38	224	2630	52	369	4930	190	2530
11..	2090	33	186	2540	64	439	3750	180	1820
12..	3180	246 S	2560	3180	148 S	1390	9960	805 S	37000
13..	4050	272	2970	3950	172	1830	37700	1310 S	126000
14..	3370	108	983	3090	139	1160	42500	465 S	55100
15..	2720	72	529	2630	72	511	14100	330	12600
16..	2450	53	351	2360	68	617	9040	283	6910
17..	2360	32	204	2180	46	271	8780	282	6690
18..	2360	31	198	2180	58	341	8520	280	6440
19..	2540	53	363	2360	57	363	7040	247	4690
20..	5260	766 S	11500	2900	101	791	7520	259 S	5210
21..	6140	448 S	7580	2810	58	440	6800	152	2790
22..	4050	159 S	1790	2450	51	337	5040	122	1660
23..	3180	120	1030	2180	43	253	4160	111	1250
24..	2810	69	524	2220	68	408	3950	72	768
25..	2450	140	926	2360	41	261	3650	77	759
26..	2450	120	794	2270	60	368	3550	95	911
27..	2540	56	384	2270	82	503	3850	90	936
28..	2360	51	325	2180	35	206	3750	85	861
29..	2090	81	457	--	--	--	3370	72	655
30..	2270	40	245	--	--	--	3370	72	655
31..	2450	49	324	--	--	--	3270	66	583
Total	87300	--	37239	71530	--	15327	261800	--	409034

S Computed by subdividing day.

PEE DEE RIVER BASIN--Continued

2-1165. YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	3180	58	498	4050	129	1410	2630	216	1530
2	3090	59	492	3460	89	831	2450	110	728
3	3090	60	501	2630	53	376	2360	96	612
4	3000	61	494	2630	41	291	2540	322	2210
5	2900	60	470	2450	30	198	2360	256	1630
6	2900	83	650	2450	31	205	2180	98	577
7	3550	89	853	2450	40	265	2220	95	569
8	3650	72	710	2360	49	312	2360	161	1030
9	3370	53	482	2270	47	288	2180	132	777
10	3090	50	417	2270	39	239	2040	120	661
11	3000	62	502	2270	37	227	1910	71	366
12	2900	39	305	2180	32	188	1780	60	288
13	2720	52	382	2140	35	202	1640	56	248
14	2720	60	441	2140	33	191	1600	49	212
15	2810	32	243	2180	30	177	1640	58	257
16	2720	46	338	2220	37	222	1680	51	231
17	2630	33	234	2360	38	242	1860	55	276
18	2630	33	234	3000	69	559	2000	55	297
19	2630	39	277	3270	80	706	2040	51	281
20	2720	30	220	2630	78	554	1960	89 S	552
21	2630	30	213	2450	60	397	2450	512 S	3400
22	2540	60	411	2720	309	2270	2270	154	944
23	2810	69	524	2540	200	1370	2040	119	655
24	2630	48	341	2270	147	901	1910	52	268
25	2450	40	265	2180	92	542	1820	58	285
26	2360	30	191	2140	73	422	1600	50	216
27	2360	37	236	2360	70	446	1640	51	226
28	2360	30	191	2810	88	668	1960	155	820
29	2450	102	675	4160	751 S	8930	1960	85	450
30	3460	206 S	1880	5150	724 S	10600	1910	62	320
31	--	--	--	3850	808 S	8670	--	--	--
Total	85350	--	13670	84040	--	42899	60990	--	20916

Day	JULY			AUGUST			SEPTEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	1780	51	245	2180	514	3020	1030	90	250
2	2270	229 S	1440	2360	202	1290	1040	57	160
3	2090	169	954	2270	150	919	964	49	128
4	1640	88	390	1550	82	343	870	49	115
5	1370	80	296	1320	76	271	1140	170	523
6	1320	70	249	1280	61	211	1190	111	357
7	1320	57	203	1070	48	139	2090	135	762
8	1420	52	199	1020	46	127	1780	88	423
9	1460	50	197	912	48	118	1320	67	239
10	1370	45	166	933	52	131	1040	51	143
11	1280	42	145	972	49	129	1050	45	128
12	1190	38	122	1020	42	116	980	39	103
13	1190	39	125	1020	46	127	912	39	96
14	1190	38	122	912	42	103	1190	128	411
15	1420	40	153	870	32	75	1460	117	461
16	1640	53	235	849	33	76	1190	50	161
17	1460	38	150	800	30	65	1050	58	164
18	1320	48	171	800	25	54	980	55	146
19	1280	36	124	821	28	62	948	50	128
20	1240	40	134	800	31	67	905	40	98
21	1370	35	130	926	31	78	884	37	88
22	1370	37	137	898	62	150	856	35	81
23	1320	48	171	1190	46	148	807	30	65
24	1320	82	292	1140	41	126	765	29	60
25	1820	138 S	751	884	35	84	758	18	37
26	2140	434 S	2570	933	40	101	724	18	35
27	1680	160	726	1320	65	232	724	18	35
28	1640	114	505	1320	68	242	814	50	110
29	2900	971 S	7570	1140	60	185	2960	855 S	7150
30	1820	700	3440	1370	150	555	3460	369 S	3610
31	1910	350 S	1890	1240	190	636	--	--	--
Total	48540	--	24002	36120	--	9980	35881	--	16267

Total discharge for year (cfs-days).....1034521
Total load for year (tons).....775002

S Computed by subdividing day.

PEE DEE RIVER BASIN--Continued

.2-1165. YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment										Method of analysis
							Percent finer than size indicated, in millimeters										
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Nov. 10, 1962.....	1140			20600	1280		22	27	41	51	67	77	89	98	100			SBWC
Mar. 13, 1963.....	1815			42600	924		46	53	68	76	82	86	91	96	100			SBWC

2-1180. SOUTH YADKIN RIVER NEAR MOCKSVILLE, N. C.

LOCATION (revised).--At gaging station at bridge on Secondary Road 1972 in Rowan County, 1 mile upstream from Little Creek, 4 miles downstream from Fifth Creek, 4.5 miles upstream from Hunting Creek, and 6.5 miles southwest of Mocksville, Davie County.
DRAINAGE AREA.--313 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1954, October 1960 to September 1963.
Water temperatures: October 1960 to September 1963.
Sediment records: January 1958 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 56 ppm July 1-31; minimum, 39 ppm Mar. 1-31.
Hardness: Maximum, 18 ppm on many days during year; minimum, 14 ppm Mar. 1-31.
Specific conductance: Maximum daily, 79 micromhos May 26; minimum daily, 34 micromhos Mar. 14.
Water temperatures: Maximum, 78°F Aug. 5, 6; minimum, 33°F on several days in January and February.
Sediment concentrations: Maximum daily, 1,260 ppm Mar. 6; minimum daily, 8 ppm Oct. 27-29.
Sediment loads: Maximum daily, 8,190 tons Mar. 6; minimum daily, 4 tons Oct. 24-29.
EXTREMES, 1958-63.--Dissolved solids (1960-63): Maximum, 158 ppm June 3-11, 1961; minimum, 35 ppm on many days in April 1961 and March 1962.
Hardness (1960-63): Maximum, 103 ppm June 3-11, 1961; minimum, 12 ppm Mar. 1-31, 1962.
Specific conductance (1960-63): Maximum daily, 239 micromhos June 7, 1961; minimum daily, 34 micromhos Mar. 14, 1963.
Water temperatures (1960-63): Maximum, 78°F Aug. 15, Sept. 9-12, 1961, and Aug. 5, 6, 1963; minimum, freezing point Feb. 3, 1961.
Sediment concentrations: Maximum daily, 1,500 ppm Aug. 5, 1959; minimum daily, 5 ppm Mar.23, 1958.
Sediment loads: Maximum daily, 8,600 tons Apr. 29, 1958; minimum daily, 2 tons Nov. 23, 1958.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-31, 1962.....	182	17	0.14	4.8	1.5	4.6	1.6	30	0.8	2.0	0.0	0.4	A48	18	0	49	7.4	18
Nov. 1-30.....	392	14	.03	4.1	1.8	2.6	1.7	24	2.2	2.9	.0	.8	A42	18	0	49	6.7	20
Dec. 1-31.....	312	15	.05	4.0	2.0	3.0	1.3	25	2.2	2.1	.1	1.1	47	18	0	50	6.9	15
Jan. 1-31, 1963.....	408	14	.01	4.3	1.3	3.0	1.0	24	1.4	3.1	.0	.6	43	16	0	47	7.2	10
Feb. 1-28.....	334	14	.07	3.4	1.7	3.0	1.2	22	1.8	2.4	.2	1.2	42	16	0	46	7.0	15
Mar. 1-31.....	980	12	.02	3.4	1.2	2.7	1.5	17	4.4	1.6	.1	1.6	39	14	0	43	7.4	17
Apr. 1-30.....	339	14	.09	3.4	1.8	3.5	1.4	24	2.0	2.7	.0	1.1	A42	16	0	50	7.4	15
May 1-31.....	309	16	.01	4.5	1.4	3.1	1.3	25	1.6	2.2	.0	1.4	46	17	0	56	7.3	17
June 1-30.....	250	16	.03	4.2	1.6	3.5	1.3	25	2.0	2.0	.0	2.0	51	17	0	52	6.6	28
July 1-31.....	176	17	.06	4.5	1.4	3.3	1.6	27	1.4	1.6	.0	1.0	56	16	0	55	7.2	20
Aug. 1-31.....	132	17	.04	4.6	1.8	3.8	1.4	28	2.4	2.3	.0	.7	50	18	0	54	7.5	28
Sept. 1-30.....	156	17	.03	4.1	1.8	3.6	1.0	26	3.4	1.8	.2	1.0	A47	18	0	52	7.4	10
Time-weighted average.....	331	15	0.05	4.1	1.6	3.3	1.4	25	2.1	2.2	0.0	1.1	46	17	0	50	--	18

A Calculated from determined constituents.

PEE DEE RIVER BASIN--Continued

2-1180. SOUTH YADKIN RIVER NEAR MOCKSVILLE, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
/Continuous ethyl-alcohol actuated thermograph/

Month	Day																												Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	58	59	60	60	62	62	64	66	66	66	63	63	64	66	66	66	66	66	63	59	57	58	58	56	52	50	47	46	49	52	53	59
Minimum	56	58	59	60	60	62	62	64	66	62	62	62	63	64	66	66	65	63	59	56	56	57	56	52	50	47	45	45	46	49	52	58
November																																
Maximum	52	50	48	48	48	48	46	48	52	52	52	51	50	49	48	48	51	54	54	52	51	52	51	48	47	47	46	46	48	48	--	50
Minimum	50	48	48	48	48	46	46	46	48	52	51	50	49	48	47	47	48	51	52	50	51	51	48	47	47	46	45	45	46	48	--	48
December																																
Maximum	48	48	47	50	49	49	46	43	43	41	38	36	35	34	34	34	34	35	37	41	40	39	39	39	37	35	37	38	39	38	37	40
Minimum	48	46	46	47	49	46	43	43	41	38	36	35	34	34	34	34	34	34	35	37	39	39	38	37	35	35	35	37	38	37	35	39
January																																
Maximum	35	33	34	35	36	40	41	41	42	41	45	50	50	49	43	39	37	40	43	45	45	44	40	39	37	35	36	36	35	36	38	40
Minimum	33	33	33	34	34	36	40	40	41	40	41	45	49	43	39	37	36	37	40	43	44	40	39	37	35	35	35	35	34	35	36	38
February																																
Maximum	36	36	36	36	36	39	39	39	39	38	38	38	38	38	36	35	34	34	35	38	39	38	36	34	37	37	36	36	--	--	--	37
Minimum	36	36	36	35	35	36	38	39	37	36	37	38	38	36	35	34	33	33	34	35	37	36	33	34	34	36	36	34	--	--	--	36
March																																
Maximum	38	40	41	44	50	50	50	48	46	46	47	47	49	50	51	50	50	53	54	54	54	50	48	49	52	53	53	53	54	56	58	50
Minimum	36	38	40	41	44	50	48	46	45	45	46	46	46	49	50	50	49	50	53	54	50	47	46	47	49	52	52	52	52	54	56	48
April																																
Maximum	60	62	65	66	65	60	57	58	58	58	58	59	59	57	54	52	56	60	63	66	66	64	65	65	60	58	58	58	57	57	--	60
Minimum	57	60	62	64	60	57	55	56	58	57	57	57	57	54	52	50	52	56	56	63	62	62	64	60	56	56	56	57	57	57	--	58
May																																
Maximum	57	56	56	58	61	64	65	66	67	67	69	69	66	62	64	64	64	65	64	66	66	66	66	65	62	60	60	60	61	64	65	63
Minimum	55	53	54	56	58	60	63	64	66	66	67	66	62	60	62	64	63	63	63	64	66	65	65	61	60	60	60	60	60	61	64	62
June																																
Maximum	65	65	67	67	67	68	68	70	72	74	73	73	72	72	72	72	69	68	68	69	70	70	70	69	70	69	70	70	71	72	--	70
Minimum	65	64	65	66	66	67	68	68	70	72	73	72	71	71	71	68	68	67	67	68	69	70	69	68	68	68	69	70	70	71	--	69
July																																
Maximum	74	74	76	76	74	73	72	72	72	72	72	69	70	70	71	71	73	76	76	76	75	74	72	70	70	73	74	76	76	74	74	73
Minimum	72	74	74	74	72	72	72	72	72	72	67	68	68	70	70	71	71	73	75	75	74	72	70	70	70	70	72	74	74	74	73	72
August																																
Maximum	76	76	76	76	78	78	77	77	76	76	74	74	74	74	73	71	72	73	73	74	73	73	73	73	73	72	69	69	70	70	71	74
Minimum	74	74	74	75	76	76	74	75	74	74	72	72	74	73	70	69	69	71	72	72	73	72	72	72	72	69	68	68	69	70	70	72
September																																
Maximum	71	70	73	71	71	71	67	69	70	71	71	72	71	72	67	66	68	68	68	68	68	70	66	62	59	62	62	62	61	61	--	68
Minimum	70	68	68	71	71	67	66	67	68	69	70	70	70	67	64	64	66	66	66	66	66	66	62	58	56	58	61	61	61	60	--	65

PEE DEE RIVER BASIN--Continued

2-1180. SOUTH YADKIN RIVER NEAR MOCKSVILLE, N. C.--Continued

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	168	35	16	190	10	5	237	26	17
2	166	39	17	180	11	5	234	27	17
3	168	40	18	201	20	11	228	25	15
4	203	39	21	249	20	13	344	135	125
5	309	37	31	214	10	6	495	189	253
6	237	36	23	190	9	5	465	79	99
7	201	34	18	180	11	5	405	68	74
8	196	38	20	180	10	5	336	36	33
9	193	42	22	788	488 S	1620	306	19	16
10	180	41	20	2050	648 S	3590	279	15	11
11	176	39	19	1160	132 S	524	264	15	11
12	173	25	12	450	67	81	230	13	8
13	173	18	8	354	37	35	160	12	5
14	176	23	11	306	28	23	260	15	11
15	180	35	17	279	27	20	260	17	12
16	178	28	13	264	29	21	260	15	11
17	176	19	9	255	28	19	260	14	10
18	173	25	12	390	167 S	217	252	16	11
19	171	18	8	495	108	144	240	15	10
20	166	15	7	354	68	65	234	17	11
21	168	19	9	321	67	58	237	18	12
22	180	17	8	390	67	71	237	33	21
23	180	11	5	405	62	68	237	45	29
24	171	9	4	333	29	26	228	43	26
25	166	10	4	300	18	15	267	38	27
26	166	9	4	279	19	14	351	37	35
27	166	8	4	264	24	17	363	35	34
28	168	8	4	252	22	15	342	35	32
29	171	8	4	249	20	13	481	140 B	182
30	173	13	6	243	22	14	700	190 B	359
31	178	13	6	--	--	--	495	86	115
Total	5650	--	380	11765	--	6725	9687	--	1632
	JANUARY			FEBRUARY			MARCH		
1	375	39	39	300	27	22	416	142 S	211
2	336	21	19	300	28	23	685	254 S	468
3	321	19	16	480	88	114	560	139 B	210
4	297	15	12	420	37	42	450	98 B	119
5	285	15	12	348	29	27	521	523 S	905
6	279	18	14	333	24	22	2450	1260 S	8190
7	276	21	16	321	22	19	2570	639 S	4370
8	276	18	13	309	19	16	1570	224 S	1120
9	267	15	11	291	16	13	685	134	248
10	255	18	12	282	13	10	560	106	160
11	255	30 B	21	291	50	39	495	260	347
12	650	340 B	597	450	171 S	195	1240	641 S	2330
13	590	240	382	435	55	65	2970	639 S	5140
14	465	45	56	360	28	27	4670	379 S	4830
15	375	25	25	327	13	11	1880	173 S	949
16	339	21	19	300	14	11	775	138	289
17	318	20	17	279	18	14	840	179 S	406
18	333	22	20	291	22	17	715	115	222
19	390	72 S	82	348	122 S	118	590	52	83
20	1060	587 S	1640	405	77	84	775	289 S	611
21	1030	171 S	505	363	30	29	635	129	221
22	668	100	180	324	35	31	525	74	105
23	510	68	94	285	25	19	480	55	71
24	435	40	47	306	20	17	450	55	67
25	351	22	21	315	24	20	435	55	65
26	369	18	18	306	65	54	435	59	69
27	351	20	19	297	77	62	465	79	99
28	309	22	18	297	75	60	405	60	66
29	250	24	16	--	--	--	390	52	55
30	324	42	37	--	--	--	372	50	50
31	309	36	30	--	--	--	366	50	49
Total	12648	--	4008	9363	--	1181	30375	--	32125

S Computed by subdividing day.
B Computed from estimated-concentration graph.

PEE DEE RIVER BASIN--Continued

2-1180. SOUTH YADKIN RIVER NEAR MOCKSVILLE, N. C.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	357	50	48	450	95	115	351	115	109
2	351	42	40	333	50	45	300	98	79
3	342	40	37	306	40	33	279	96	72
4	336	43	39	291	40	31	309	100	83
5	324	45	39	279	43	32	270	105	77
6	336	92	83	270	42	31	255	100	69
7	542	189	S 265	264	32	23	351	844	S 866
8	525	88	125	258	31	22	285	340	262
9	420	65	74	249	39	26	249	150	101
10	390	49	52	246	36	24	231	137	85
11	354	39	37	240	36	23	237	138	88
12	342	29	27	231	30	19	217	129	76
13	333	29	26	228	32	20	198	105	56
14	324	29	25	231	30	19	201	81	44
15	318	25	21	234	26	16	209	105	59
16	312	24	20	246	32	21	198	91	49
17	309	21	18	315	52	44	225	75	46
18	309	21	18	324	67	59	237	78	50
19	300	28	23	270	51	37	220	67	40
20	294	29	23	243	41	27	209	94	53
21	279	30	23	264	69	49	220	82	49
22	276	35	26	342	228	211	240	55	36
23	297	40	32	282	159	121	212	60	34
24	285	40	31	240	72	47	198	58	31
25	264	32	23	234	52	33	188	58	29
26	264	30	21	249	100	67	186	59	30
27	264	22	16	318	130	112	255	281	S 243
28	261	25	18	390	262	276	420	424	S 473
29	285	34	26	685	398	S 704	273	160	118
30	575	181	281	635	375	S 644	270	225	164
31	--	--	--	420	180	204	--	--	--
Total	10168	--	1537	9567	--	3135	7493	--	3571

Day	JULY			AUGUST			SEPTEMBER		
1	212	150	86	181	162	79	133	70	25
2	198	105	56	159	110	47	119	48	15
3	196	100	53	144	75	29	115	45	14
4	178	91	44	135	66	24	115	45	14
5	166	71	32	131	64	23	181	339	S 174
6	162	67	29	125	60	20	157	128	54
7	164	70	31	121	55	18	164	92	41
8	176	73	35	121	53	17	159	200	86
9	183	73	36	115	50	16	144	112	44
10	168	75	34	115	50	16	127	60	21
11	157	67	28	135	73	27	121	48	16
12	152	55	23	133	52	19	117	40	13
13	152	50	21	121	48	16	119	40	13
14	157	50	21	115	40	12	164	102	45
15	171	52	24	110	38	11	171	184	85
16	166	50	22	102	38	10	144	85	33
17	155	42	18	97	30	8	133	52	19
18	150	40	16	101	30	8	127	40	14
19	150	40	16	106	42	12	125	38	13
20	159	44	19	113	43	13	123	31	10
21	157	46	19	119	52	17	119	30	10
22	152	88	36	137	80	30	111	35	10
23	240	180	S 119	153	115	48	108	50	15
24	159	140	60	146	71	28	106	35	10
25	173	108	50	121	50	16	106	42	12
26	201	130	71	115	60	19	106	62	18
27	212	195	112	129	48	17	106	70	20
28	183	228	113	137	64	24	119	73	23
29	234	280	S 195	137	125	46	644	583	S 1050
30	207	265	S 148	251	343	S 239	398	298	S 348
31	159	130	56	167	120	54	--	--	--
Total	5449	--	1623	4092	--	963	4681	--	2265

Total discharge for year (cfs-days).....120938
Total load for year (tons).....59145

S Computed by subdividing day.

PEE DEE RIVER BASIN--Continued

2-1180. SOUTB YADKIN RIVER NEAR MOCKSVILLE, N. C.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment											Method of analysis
							Percent finer than size indicated, in millimeters											
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Nov. 10, 1962.....	1040			2130	635		37	41	55	65	72	77	87	94	98	100		SBWC
Mar. 13, 1963.....	2030			3460	466		67	72	80	81	85	87	92	95	100			SBWC

PEE DEE RIVER BASIN--Continued

2-1256.81. ROCKY RIVER AT GADDY, NEAR NORWOOD, N. C.

LOCATION (revised).--At bridge on Secondary Road 1943, 2 miles upstream from gaging station, 0.5 mile downstream from Cribs Creek, and 5.5 miles southwest of Norwood, Stanly County.
DRAINAGE AREA.--1,231 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1963.
Water temperatures: October 1955 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 399 ppm Aug. 19-21; minimum, 52 ppm Nov. 10-12.
Hardness: Maximum, 58 ppm Aug. 19-21; minimum, 19 ppm July 27-31.
Specific conductance: Maximum daily, 730 micromhos Sept. 26; minimum daily, 68 micromhos Mar. 7.
Water temperatures: Maximum, 88°F June 11; minimum, freezing point Dec. 15.
EXTREMES, 1955-63.--Dissolved solids: Maximum, 506 ppm Sept. 6-8, 1957; minimum, 42 ppm July 8, 10, 1958.
Hardness: Maximum, 60 ppm July 17-18, 1957; minimum, 12 ppm Jan. 31, 1960.
Specific conductance: Maximum daily, 1,000 micromhos Sept. 7, 1957; minimum daily, 38 micromhos Jan. 31, 1960.
Water temperatures: Maximum, 90°F July 24, 1962; minimum, freezing point Dec. 17, 18, 22, 1955, Dec. 15, 1962.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-3, 1962.....		17	--	9.3	4.1	55	4.8	98	19	40	0.2	1.8	A200	40	0	310	7.1	45
Oct. 4-8.....		17	0.06	11	3.9	84	6.0	138	22	60	.3	2.4	A276	43	0	430	7.4	20
Oct. 9-14.....		13	.06	12	3.9	70	5.7	142	21	47	.1	.9	A244	47	0	380	7.4	28
Oct. 15-23.....		15	.08	13	4.9	108	7.8	B189	24	80	.4	3.2	369	54	0	570	8.4	22
Oct. 24-27.....		15	.14	9.9	3.5	42	4.9	95	18	27	.1	2.2	A170	40	0	260	7.2	23
Oct. 28-31.....		17	.10	14	4.4	91	6.9	178	30	61	.1	2.1	A315	53	0	490	7.9	32
Nov. 1-4.....		19	.11	13	4.7	97	6.9	177	24	63	.2	2.4	A319	51	0	550	7.6	25
Nov. 5-9.....		14	.14	9.6	3.9	30	4.3	70	15	21	.2	1.9	A135	40	0	220	6.9	35
Nov. 10-12.....		8.9	.07	5.4	2.0	6.0	3.0	21	8.6	5.0	.1	2.4	A52	22	5	83	6.9	35
Nov. 13-15.....		15	.03	6.8	3.4	15	3.0	40	13	14	.1	3.0	A94	31	0	140	6.7	24
Nov. 16-20.....		17	.18	9.9	3.3	32	3.6	74	17	20	.1	1.8	A141	38	0	220	7.0	30
Nov. 21-28.....		13	.01	7.6	3.5	14	2.6	41	13	12	.1	2.3	96	34	0	140	7.6	25
Nov. 29-30.....		--	--	12	3.5	--	--	68	--	27	--	--	--	44	0	220	6.8	22
Dec. 1-4.....		19	.10	9.6	4.3	44	3.7	98	17	30	.3	2.0	184	42	0	290	7.6	14
Dec. 5-12.....		16	.10	8.5	2.9	20	2.3	53	13	14	.2	2.4	113	33	0	155	6.8	45
Dec. 13.....		--	--	9.9	4.1	--	--	70	--	21	--	--	--	42	0	210	7.8	15
Dec. 14-24.....		17	.09	9.2	4.0	45	3.3	93	17	30	.2	2.9	178	40	0	280	7.1	12
Dec. 25-26.....		9.6	.11	6.6	3.3	11	2.6	32	--	10	.3	5.9	--	30	4	120	6.7	38
Dec. 27-31.....		11	.07	5.9	2.5	7.4	1.7	24	10	7.6	.2	4.0	68	26	6	94	6.7	20
Jan. 1-3, 1963.....		14	.03	6.7	2.5	13	1.7	35	11	10	.1	1.8	A78	28	0	110	7.5	15
Jan. 4-18.....		16	.03	7.4	3.4	22	2.1	54	13	18	.0	1.1	117	32	0	160	7.4	30
Jan. 19-23.....		9.1	.06	6.3	2.0	7.2	1.7	22	8.8	6.2	--	2.2	A55	24	6	85	6.9	30
Jan. 24-31.....		13	.03	6.9	2.6	16	1.7	44	11	13	.1	1.6	A88	28	0	130	7.3	--
Feb. 1-3.....		14	.07	6.1	3.3	23	1.9	48	12	16	.0	1.3	A102	28	0	170	7.0	20

Feb. 4-5, 1963.....	12	.02	5.1	2.4	7.7	1.1	23	8.6	4.6	.0	1.7	A54	23	4	88	6.7	15
Feb. 6-18.....	14	.10	6.4	2.6	14	1.7	37	11	12	.1	3.0	85	26	0	125	7.6	40
Feb. 19-28.....	11	.03	5.4	2.6	13	1.6	33	10	10	.1	2.6	75	24	0	115	6.7	20
Mar. 1-5.....	13	.05	6.4	2.7	12	1.3	36	10	9.7	.0	2.3	91	27	0	115	7.0	38
Mar. 6-19.....	12	.00	5.5	1.8	8.5	1.6	25	8.6	6.9	.1	2.6	A60	21	0	92	7.2	5
Mar. 20-23.....	11	.01	5.6	2.3	9.8	1.2	33	9.8	7.7	.2	1.7	A66	24	0	105	7.0	15
Mar. 24-28.....	13	.04	6.1	2.9	15	1.5	43	10	11	.3	1.7	A83	27	0	130	6.9	15
Mar. 29-31.....	13	.08	6.9	3.2	25	2.1	60	13	19	.1	1.6	A114	30	0	190	7.2	32
Apr. 1-7.....	13	.04	8.3	2.6	28	2.1	60	12	18	.0	.4	A115	32	0	200	7.5	15
Apr. 8-10.....	13	.03	5.8	3.9	13	1.4	44	8.4	10	.0	1.4	A79	30	0	130	7.4	15
Apr. 11-18.....	13	.06	8.0	3.8	28	2.2	72	11	18	.0	.2	A119	36	0	205	7.2	15
Apr. 19-25.....	11	.07	8.6	4.5	40	3.6	98	14	25	.0	.9	A156	40	0	280	7.8	15
Apr. 26-30.....	14	.04	9.3	4.7	48	3.7	104	16	32	.1	1.0	A180	42	0	325	7.2	15
May 1-5.....	18	.06	8.3	4.4	30	2.9	80	13	21	.0	1.9	A139	39	0	250	7.7	15
May 6-11.....	17	.05	11	4.3	50	3.8	114	15	30	.0	1.6	A204	44	0	350	8.0	15
May 12-17.....	19	.04	12	5.0	60	4.8	144	18	42	.1	1.9	A235	50	0	435	8.2	20
May 18-22.....	11	.02	5.9	2.2	14	2.5	36	9.4	8.0	.1	2.8	A74	24	0	140	7.2	20
May 23-28.....	16	.06	9.0	3.5	40	4.0	80	15	27	.0	3.1	A157	37	0	295	7.6	25
May 29-31.....	13	.03	6.6	3.6	22	2.5	54	11	17	.0	2.7	A106	32	0	195	7.7	25
June 1-7.....	21	.06	11	3.9	42	4.0	95	16	28	.2	2.8	177	44	0	290	7.4	30
June 8-9.....	--	.05	13	4.8	--	--	154	--	46	--	--	--	52	0	445	7.7	--
June 10-14.....	20	.03	12	4.0	52	4.5	104	18	37	.3	3.7	209	46	0	314	7.7	30
June 15-21.....	18	.06	13	4.8	78	5.9	149	24	56	.3	3.3	285	52	0	465	7.3	30
June 22-28.....	19	.03	9.8	3.3	35	3.7	77	15	24	.3	3.5	160	38	0	250	7.5	30
June 29.....	--	--	--	--	--	--	C132	--	47	--	--	--	48	0	400	8.3	--
June 30.....	--	--	--	--	--	--	85	--	25	--	--	--	34	0	255	8.1	--
July 1-12.....	15	.13	11	3.8	33	4.0	76	13	26	.3	4.4	161	42	0	247	7.1	22
July 13-15.....	11	.02	14	5.0	78	--	129	--	68	--	--	--	54	0	481	7.4	30
July 16-19.....	--	--	--	--	--	--	83	--	23	--	--	--	38	0	242	8.1	--
July 20-26.....	15	.07	11	4.1	74	7.2	121	24	64	.4	3.5	276	46	0	460	7.2	40

A Calculated from determined constituents.
B Includes equivalent of 3 parts per million of carbonate (CO_3).
C Includes equivalent of 5 parts per million of carbonate (CO_3).

PEE DEE RIVER BASIN--Continued

2-1256.81. ROCKY RIVER AT GADDY, NEAR NORWOOD, N. C.--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
July 27-31, 1963....		9.0	0.00	4.7	1.7	8.9	4.4	26	10	7.8	0.2	3.1	72	19	0	94	6.4	20
Aug. 1-3.....		17	.06	9.0	3.1	32	3.6	68	15	22	.2	1.4	137	36	0	225	7.9	33
Aug. 4-9.....		17	.02	13	3.4	70	5.4	120	22	55	.1	1.6	251	46	0	410	7.7	30
Aug. 10-18.....		9.5	.02	15	4.6	92	6.8	171	25	64	.2	.8	309	56	0	520	7.8	25
Aug. 19-21.....		9.1	.03	16	4.7	125	8.1	208	29	104	.3	1.0	399	58	0	710	8.5	32
Aug. 22.....		21	--	13	4.1	84	6.1	--	--	49	.2	4.1	--	48	0	470	8.4	--
Aug. 23.....		--	--	7.1	1.6	29	3.5	51	--	22	--	--	--	24	0	190	7.4	--
Aug. 24-31.....		14	.03	12	3.0	70	5.7	121	21	52	.1	4.0	248	42	0	405	7.3	30
Sept. 1-2.....		12	.02	5.4	2.0	14	4.4	35	--	11	.2	1.7	--	22	0	125	7.0	35
Sept. 3-5.....		17	.02	8.0	3.9	31	5.5	62	16	23	.2	2.3	A137	36	0	210	7.2	40
Sept. 6-14.....		17	.05	11	3.6	65	6.7	120	23	49	.4	.4	245	42	0	390	7.2	30
Sept. 15-27.....		12	.03	13	3.1	119	8.1	186	28	84	.3	1.6	366	46	0	630	8.2	28
Sept. 28-30.....		8.8	.05	5.2	2.2	12	5.0	29	13	10	.2	2.3	A74	22	0	110	6.8	50
Time-weighted average.....		14	0.06	9.2	3.4	42	3.9	86	16	31	0.2	2.2	168	37	0	273	--	25

A Calculated from determined constituents.

PEE DEE RIVER BASIN--Continued

2-1256.81. ROCKY RIVER AT GADDY, NEAR NORWOOD, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 1700)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	70	72	70	70	71	70	69	72	75	73	73	74	74	74	74	76	75	72	68	66	66	68	66	59	55	53	51	53	56	59	56	67
November	55	53	53	52	52	51	50	51	54	55	54	54	54	53	51	53	55	55	55	54	55	53	53	51	49	47	41	46	50	52	--	52
December	54	54	53	53	54	49	45	45	41	41	39	35	--	35	32	38	40	40	46	42	37	41	45	40	39	40	44	45	42	42	38	43
January	38	38	38	38	37	41	46	43	45	49	50	53	49	45	44	46	45	42	45	48	48	44	46	39	36	33	40	38	36	38	42	43
February	40	40	42	46	44	45	48	40	43	50	45	45	44	46	46	45	40	46	42	46	45	42	46	46	46	44	40	44	--	--	--	44
March	43	48	50	50	55	56	55	53	50	54	50	51	56	56	56	52	58	60	60	61	55	53	52	54	57	57	59	62	63	66	66	55
April	68	69	72	73	76	64	64	60	60	64	63	64	63	60	60	61	64	69	74	75	76	76	77	70	65	66	68	64	65	65	--	67
May	64	64	65	78	70	73	76	76	79	79	80	76	68	72	76	76	76	71	--	74	76	76	72	71	69	68	68	68	72	73	75	73
June	72	72	74	78	78	80	82	82	85	86	88	84	82	82	82	76	74	74	78	79	78	78	76	75	77	78	79	84	82	80	--	79
July	83	70	85	85	87	87	86	84	80	78	79	79	79	79	83	83	81	84	85	80	80	81	81	78	82	82	84	86	80	82	82	82
August	86	86	86	86	86	86	87	87	87	86	85	84	86	84	81	81	83	83	84	84	--	82	82	82	80	75	74	77	77	77	--	83
September	76	77	79	79	79	76	76	76	76	78	79	79	79	71	73	73	75	--	77	77	78	74	69	67	67	72	71	69	69	66	--	74

PEE DEE RIVER BASIN--Continued

2-1290. PEE DEE RIVER NEAR ROCKINGHAM, N. C.

LOCATION.--At gaging station at bridge on U.S. Higbway 74, 2.5 miles upstream from Falling Creek, 3.3 miles downstream from Blewett Falls hydroelectric plant, 6 miles west of Rockingham, Richmond County, and 192 miles upstream from moutb in Winyah Bay.
DRAINAGE AREA.--6,870 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1946 to September 1948, October 1957 to September 1963.
Water temperatures: October 1946 to September 1948, October 1957 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 75 ppm Oct. 28-31, Nov. 1-11; minimum, 52 ppm Jan. 1-31.
Hardness: Maximum, 27 ppm Mar. 1-14; minimum, 17 ppm Mar. 15-31, Apr. 1-30.
Specific conductance: Maximum daily, 130 micromhos Nov. 2, 8, 10, 11; minimum daily, 56 micromhos Mar. 31.
Water temperatures: Maximum, 82°F Aug. 9, 11, 13, 14, 17; minimum, 39°F on several days in December and January.
EXTREMES, 1946-48, 1957-63.--Dissolved solids: Maximum, 75 ppm Oct. 28-31, Nov. 1-11, 1962; minimum, 38 ppm Mar. 1-10, 1948.
Hardness: Maximum, 27 ppm Mar. 1-14, 1963; minimum, 11 ppm Feb. 1-10, 1958.
Specific conductance (1957-63): Maximum daily, 152 micromhos Nov. 17, 1959; minimum daily, 46 micromhos Feb. 17-19, 1960.
Water temperatures: Maximum, 85°F Sept. 1, 2, 1962; minimum, freezing point on many days in 1961-62.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-27, 1962.....	3433	12	0.04	5.6	1.5	10	2.0	34	4.6	5.9	0.0	1.5	A60	20	0	81	7.0	15
Oct. 28-31.....	2993	11	.01	5.6	2.0	15	2.5	43	7.2	9.0	.1	1.0	A75	22	0	110	6.7	7
Nov. 1-11.....	7971	12	.01	5.8	1.6	15	2.4	44	5.4	10	.2	.9	A75	21	0	120	6.9	10
Nov. 12-30.....	6942	12	.08	5.6	1.5	7.3	2.6	27	6.0	6.7	.0	1.5	63	20	0	83	7.0	50
Dec. 1-31.....	8413	12	.05	4.8	1.7	9.2	3.4	29	5.8	7.5	.2	3.6	68	19	0	92	7.4	22
Jan. 1-31, 1963.....	11060	11	.01	5.0	1.6	6.7	2.1	24	5.6	6.0	.0	1.4	52	19	0	71	7.0	35
Feb. 1-28.....	11170	14	.06	5.4	1.9	6.6	1.6	25	7.2	5.6	.1	2.8	A57	22	1	75	7.4	15
Mar. 1-14.....	26004	20	.11	7.3	2.2	5.3	1.3	36	5.6	3.5	.2	2.2	68	27	0	85	7.0	28
Mar. 15-31.....	19088	10	.03	4.4	1.4	4.9	1.5	20	5.2	4.6	.0	2.8	54	17	0	66	7.2	28
Apr. 1-30.....	6265	9.8	.06	4.2	1.6	7.0	2.0	21	5.4	5.6	.1	3.3	55	17	0	74	7.1	30
May 1-31.....	5234	9.9	.18	4.5	2.1	7.9	2.3	24	5.4	6.8	.0	1.5	55	20	0	88	6.9	35
June 1-30.....	3768	10	.01	5.5	1.8	8.2	1.5	32	5.2	6.4	.0	1.7	62	21	0	83	6.9	20
July 1-31.....	3278	11	.06	5.5	1.9	8.3	2.1	32	5.6	5.8	.1	1.8	60	22	0	89	7.1	15
Aug. 1-31.....	2799	12	.00	6.4	2.0	10	2.0	36	7.0	7.5	.0	1.7	67	24	0	95	7.4	7
Sept. 1-30.....	2757	12	.07	5.6	1.9	9.7	1.7	37	6.4	7.1	.2	1.7	A64	22	0	95	7.2	10
Time-weighted average.....	7297	12	0.05	5.3	1.8	8.3	2.1	30	5.8	6.4	0.1	2.1	61	21	0	85	--	22

A Calculated from determined constituents.

PEE DEE RIVER BASIN--Continued

2-1290. PEE DEE RIVER NEAR ROCKINGHAM, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0700)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	69	69	71	71	71	70	69	74	73	73	72	71	70	71	72	72	70	71	71	69	70	69	68	70	69	67	68	68	66	64	62	70
November	59	58	58	57	58	57	58	58	57	56	57	55	54	54	53	53	52	56	53	55	54	55	54	56	56	54	54	53	53	52	--	55
December	51	51	51	52	50	50	51	49	--	--	--	--	--	--	39	41	40	40	41	40	42	44	44	44	43	43	44	45	45	44	44	--
January	42	40	41	39	39	40	40	40	41	41	42	42	41	42	41	41	43	43	44	44	44	42	40	41	39	39	39	39	39	40	40	41
February	41	40	41	41	41	40	42	42	41	42	42	41	43	43	43	43	42	42	43	42	41	42	42	43	42	43	44	44	--	--	--	42
March	45	46	47	45	46	47	48	49	48	49	49	49	48	50	50	51	52	52	53	53	54	54	54	53	54	54	55	55	55	55	55	51
April	56	56	56	56	57	57	57	57	57	57	57	56	56	56	57	57	58	58	58	59	59	60	60	60	61	61	62	62	62	63	--	58
May	63	63	64	64	65	65	65	65	65	65	66	66	67	67	67	66	67	68	68	69	69	69	70	70	70	70	71	71	71	72	72	67
June	72	73	73	73	74	74	74	75	75	75	76	76	76	77	77	77	76	76	76	76	77	77	77	77	78	78	78	79	79	79	--	76
July	80	80	80	79	79	80	79	80	80	79	78	79	78	78	79	80	80	79	80	80	80	80	81	80	81	81	81	81	81	80	80	80
August	81	80	81	81	81	81	81	81	82	81	82	81	82	82	81	81	82	81	81	81	81	79	80	79	79	78	79	78	78	79	79	80
September	79	80	80	80	80	80	80	81	81	81	81	81	81	80	80	80	80	--	79	79	78	76	75	73	73	73	72	72	71	71	--	78

PEE DEE RIVER BASIN--Continued

2-1310. PEE DEE RIVER AT PEEDEE, S. C.

LOCATION.--At gaging station at bridge on U.S. Highway 76 at Peedee, Marion County, 0.2 mile downstream from Atlantic Coast Line Railroad bridge, and 8.5 miles downstream from Black Creek.
DRAINAGE AREA.--8,830 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1948 to September 1949, October 1961 to September 1963.

Chemical analyses, in parts per million, October 1962 to August 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 10, 1962.....	3130	8.9	0.11	4.3	2.2	9.0	2.0	30	6.0	7.1	0.1	0.8	A56	20	0	79	6.6	30
Oct. 17.....	3730	9.2	.00	4.3	1.6	10	2.0	32	6.0	7.8	.1	.3	61	18	0	86	6.6	9
Nov. 29.....	8170	9.6	.06	4.1	1.7	7.5	1.9	26	5.8	6.7	.1	.4	56	17	0	76	6.6	33
Dec. 31.....	13100	9.2	.01	4.6	2.0	6.1	2.0	23	6.8	6.2	.2	1.3	57	20	0	73	6.5	18
Jan. 23, 1963.....	20300	7.4	.02	3.8	1.4	4.5	1.8	17	6.4	4.9	.3	1.1	48	16	2	58	6.2	30
Mar. 13.....	31300	9.2	.03	4.0	1.7	4.9	2.3	20	5.8	3.8	.0	1.3	49	17	0	64	6.3	30
Apr. 1.....	14100	7.3	.07	3.3	1.6	4.5	2.0	18	5.2	2.3	.0	2.1	45	14	0	57	6.5	35
May 3.....	8710	8.9	.01	3.3	1.6	6.4	1.9	23	5.6	5.3	.1	.2	A44	14	0	63	6.9	40
June 28.....	4990	6.4	.06	4.1	1.6	8.9	1.8	28	6.0	7.2	.1	.5	51	16	0	72	6.6	33
July 18.....	3660	7.0	.00	4.4	1.4	9.5	2.1	30	5.4	8.0	.2	.3	54	17	0	75	6.7	15
July 31.....	6750	8.0	.01	4.1	1.4	9.9	2.1	31	5.2	7.1	.2	.3	A53	16	0	84	6.4	20
Aug. 27.....	2220	9.1	.03	4.3	1.8	10	1.9	32	5.6	6.8	.1	.3	58	18	0	89	6.9	30

A Calculated from determined constituents.

2-1320. LYNCHES RIVER AT EFFINGHAM, S. C.

LOCATION.--Temperature recorder at gaging station at bridge on U.S. Highway 52, 75 feet upstream from Atlantic Coast Line Railroad bridge, and 1 mile south of Effingham, Florence County.
DRAINAGE AREA.--1,030 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1951 to September 1952, October 1960 to September 1963.
Water temperatures: October 1954 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 89°F Aug. 7, 8; minimum, 35°F Dec. 13-15.
EXTREMES, 1954-63.--Water temperatures: Maximum, 89°F on several days in 1960, 1961, and 1963; minimum, 33°F Mar. 12, 1960.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1, 1962.....	834	8.5	0.27	2.2	1.1	6.2	1.0	12	4.2	7.5	0.1	0.7	50	10	0	51	6.3	80
Oct. 31.....	277	7.6	.07	2.2	.3	12	1.0	20	4.0	12	.1	.3	53	7	0	76	6.7	26
Nov. 30.....	1190	8.6	.16	2.1	.8	4.7	1.0	8	4.4	7.0	.1	.2	53	8	2	48	6.0	90
Dec. 31.....	955	7.6	.19	2.6	1.1	4.8	1.0	11	4.6	7.5	.0	1 .6	39	11	2	52	6.2	23
Jan. 30, 1963.....	3520	6.1	.07	2.1	.8	3.7	1.0	6	5.8	5.8	.1	.3	46	8	3	40	5.9	70
Feb. 28.....	2730	5.0	.00	2.6	.6	4.6	1.0	8	5.4	4.8	.0	1.2	36	9	2	44	6.5	45
Apr. 1.....	1140	3.3	.17	3.0	.8	6.2	1.3	16	3.2	5.5	.0	1.4	47	10	0	57	6.5	80
Apr. 30.....	478	6.4	.10	2.2	.9	7.9	.9	19	2.8	5.2	.0	.4	38	9	0	55	6.5	35
May 31.....	811	6.3	.16	3.1	1.1	7.0	.8	14	4.6	8.9	.2	.9	50	12	1	60	6.3	55
June 28.....	1000	6.9	.09	2.6	1.0	4.5	1.2	12	3.0	5.5	.1	.4	43	10	0	41	6.5	65
July 31.....	362	7.2	.14	2.3	1.0	9.9	1.3	19	7.4	6.5	.1	.4	A45	10	0	68	6.5	50
Aug. 30.....	235	7.1	.17	1.9	.7	5.5	1.3	15	4.2	3.9	.1	.4	34	8	0	47	6.8	70
Sept. 30.....	325	6.3	.02	2.1	.4	11	2.0	18	3.8	10	.2	.6	A45	7	0	68	6.2	15

A Calculated from determined constituents.

PEE DEE RIVER BASIN--Continued

2-1320. LYNCHES RIVER AT EFFINGHAM, S. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
/Water-stage recorder with temperature attachment/

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	66	67	69	69	71	72	74	77	77	75	74	74	75	75	74	75	74	74	70	68	67	67	68	67	61	58	55	55	57	58	58	68
Minimum	63	66	67	69	69	69	71	72	74	71	70	70	70	71	72	71	71	70	66	64	64	66	64	61	57	55	52	50	52	54	56	65
November																																
Maximum	57	55	53	54	54	53	52	53	55	57	57	57	56	55	53	54	57	59	59	56	57	59	58	54	53	51	50	49	51	53	-	55
Minimum	54	53	53	52	53	50	49	50	53	54	54	54	54	52	50	51	54	57	56	54	54	57	54	51	51	49	48	48	49	51	--	52
December																																
Maximum	55	55	55	55	56	56	50	47	47	46	43	41	38	37	38	40	42	44	46	47	47	45	47	47	46	46	47	48	48	47	45	47
Minimum	52	53	54	55	54	50	47	46	46	43	41	38	35	35	35	38	39	41	42	45	45	44	45	45	44	44	45	46	47	44	42	45
January																																
Maximum	42	41	40	40	40	42	44	44	45	46	50	52	54	54	49	46	44	45	49	53	53	51	49	49	43	42	42	41	39	39	42	45
Minimum	39	38	38	38	38	40	42	44	42	43	46	50	52	49	46	43	42	43	45	49	51	47	45	43	40	41	41	38	37	38	39	43
February																																
Maximum	42	42	44	44	43	46	50	50	49	46	49	50	50	49	49	47	44	44	47	50	50	50	46	46	48	49	47	46	--	--	--	47
Minimum	42	41	42	41	42	43	46	49	45	43	45	49	48	46	46	43	42	40	44	47	49	46	43	44	44	47	43	42	--	--	--	44
March																																
Maximum	49	54	55	56	61	64	63	61	59	61	60	64	66	67	67	64	66	70	70	71	70	62	57	59	61	61	64	64	66	67	69	63
Minimum	46	49	52	53	56	61	59	57	56	56	57	58	62	63	64	62	62	65	67	69	62	57	54	53	56	60	60	60	60	61	63	59
April																																
Maximum	69	70	72	74	72	68	62	64	66	68	66	63	63	62	60	60	64	68	70	70	74	76	77	76	71	66	67	67	65	67	--	68
Minimum	65	65	67	69	67	62	60	59	62	64	63	60	60	58	56	55	58	62	65	68	68	71	73	70	65	63	63	64	64	64	--	64
May																																
Maximum	67	66	65	67	68	70	70	72	76	78	80	77	70	70	76	77	79	82	80	79	78	79	77	70	69	67	69	70	73	75	75	73
Minimum	64	60	60	61	62	64	66	66	70	72	74	70	67	67	68	72	74	75	75	76	74	74	70	67	67	67	67	68	69	71	72	69
June																																
Maximum	75	74	74	76	77	78	79	82	85	88	87	86	85	85	86	85	80	76	74	77	79	79	75	72	72	73	76	77	78	79	--	79
Minimum	71	71	70	72	73	74	75	77	79	81	83	82	80	79	81	80	76	74	73	74	75	75	72	71	71	72	73	74	75	76	--	75
July																																
Maximum	81	81	83	83	81	81	81	81	79	76	75	76	77	76	79	81	81	81	84	87	86	86	84	81	84	86	87	86	86	85	82	82
Minimum	77	78	79	79	77	77	78	77	76	73	71	71	73	74	75	76	77	79	77	81	81	80	80	79	78	79	81	83	80	81	80	78
August																																
Maximum	84	86	86	87	88	87	89	89	88	88	87	85	87	87	85	83	82	84	84	83	82	82	83	86	86	83	78	80	80	79	84	85
Minimum	79	80	80	82	83	85	84	86	83	83	82	82	82	83	79	77	75	77	79	79	77	79	78	79	81	78	76	75	75	77	78	80
September																																
Maximum	83	82	83	83	81	80	80	81	80	81	80	82	82	80	73	71	73	72	75	78	77	76	73	68	67	71	70	70	70	71	--	76
Minimum	78	78	78	78	79	77	75	75	74	76	77	76	78	73	70	68	68	70	69	71	75	73	68	65	65	66	67	69	69	69	--	72

PEE DEE RIVER BASIN--Continued

2-1335. DROWNING CREEK NEAR HOFFMAN, N. C.

LOCATION.--Temperature recorder at gaging station 10 feet downstream from bridge on U.S. Highway 1, 0.8 mile downstream from Deep Creek, 1 mile upstream from Seaboard Air Line Railroad bridge, and 4 miles northeast of Hoffman, Richmond County.
DRAINAGE AREA.--178 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1954 to September 1955.
Water temperatures: October 1953 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 77°F July 4, 20, 21, Aug. 8; minimum, 34°F Jan. 29.
EXTREMES, 1953-63.--Water temperatures: Maximum, 77°F on several days in 1955, 1958, 1961, and 1963; minimum, 33°F on several days in March 1960.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Mar. 12, 1963.....	340	2.3	0.03	0.8	0.4	1.9	0.5	3	0.4	1.1	0.2	0.4	A9	4	1	18	5.7	45
Aug. 28.....	159	6.5	.07	.6	.5	2.0	.4	4	2.4	3.5	.1	.8	A19	4	0	22	5.3	50

A Calculated from determined constituents.

PEE DEE RIVER BASIN--Continued

2-1335. DROWNING CREEK NEAR HOFFMAN, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Continuous ethyl-alcohol actuated thermograph)

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	61	62	64	66	66	66	66	68	68	68	66	65	65	66	66	66	66	66	64	62	60	61	61	61	58	54	51	49	50	53	54	62
Minimum	60	61	62	64	65	65	65	66	68	65	64	63	64	65	65	65	65	64	62	59	59	60	60	58	54	51	49	47	48	50	53	60
November																																
Maximum	54	53	51	52	52	52	50	48	54	54	54	54	53	53	50	50	52	54	54	53	52	56	54	51	50	48	46	47	49	50	--	52
Minimum	53	51	51	51	52	50	48	48	48	54	54	53	53	50	48	49	50	52	52	52	52	52	51	49	48	46	46	46	47	49	--	50
December																																
Maximum	51	51	52	52	52	52	48	45	44	44	42	40	37	36	35	36	37	39	41	42	42	42	42	41	40	40	42	43	43	42	40	43
Minimum	50	50	50	51	52	48	45	44	44	42	40	37	36	35	35	35	36	37	39	41	42	42	41	40	40	40	40	42	42	40	38	42
January																																
Maximum	38	36	36	36	37	39	40	41	41	42	45	48	51	51	46	42	40	42	44	48	48	45	42	42	37	36	38	38	35	37	41	41
Minimum	36	35	35	35	36	37	39	40	40	41	42	45	48	46	42	39	38	39	42	44	45	42	41	37	35	35	36	35	34	35	37	39
February																																
Maximum	41	40	42	42	41	44	46	46	44	44	43	44	44	43	43	40	38	39	40	43	44	44	40	40	41	41	38	40	--	--	--	42
Minimum	40	40	40	39	39	41	44	44	41	41	41	43	43	41	40	37	37	36	38	40	42	40	36	38	38	38	36	36	--	--	--	40
March																																
Maximum	42	45	44	49	52	56	54	52	50	52	52	55	59	59	58	55	56	59	61	62	59	52	51	54	56	56	59	58	60	61	62	55
Minimum	39	42	42	44	49	52	51	48	48	48	48	49	55	55	55	53	53	54	57	59	52	49	47	48	51	54	54	54	54	55	57	51
April																																
Maximum	63	64	67	68	66	62	60	61	60	62	61	60	60	59	57	55	57	62	66	68	69	69	69	68	64	60	60	60	60	62	--	63
Minimum	58	60	62	64	61	58	57	55	59	58	58	57	57	56	54	51	55	57	61	66	66	67	67	64	60	59	58	59	59	59	--	59
May																																
Maximum	62	59	59	60	62	63	64	65	68	68	70	70	67	63	65	66	67	69	68	68	69	69	69	65	63	61	62	63	66	67	68	65
Minimum	59	55	56	58	59	61	63	63	65	67	68	67	63	62	63	65	66	66	66	66	66	67	65	62	61	61	61	62	63	65	66	63
June																																
Maximum	68	67	67	68	68	70	71	72	73	75	75	75	73	73	74	73	70	68	68	70	71	71	68	67	68	69	70	71	71	72	--	71
Minimum	66	66	66	66	67	68	69	70	71	72	74	73	71	70	71	70	68	67	67	68	70	68	67	66	67	67	69	70	71	71	--	69
July																																
Maximum	74	75	76	77	74	72	72	72	72	70	68	67	68	68	71	73	73	75	76	77	77	75	74	73	71	73	75	76	75	75	76	73
Minimum	71	73	74	74	71	70	71	71	70	68	66	66	67	68	68	71	72	72	74	75	75	73	73	71	71	71	73	74	74	74	74	71
August																																
Maximum	76	76	76	76	76	76	76	77	76	76	75	74	75	76	74	72	71	72	74	73	73	74	74	74	74	72	70	70	70	70	72	74
Minimum	75	74	74	75	75	75	74	75	75	75	73	72	73	74	72	70	69	70	71	73	72	72	73	73	72	70	69	69	69	70	70	72
September																																
Maximum	71	71	70	70	71	70	69	68	68	68	69	70	71	70	66	64	65	65	66	66	67	67	66	62	60	62	62	62	65	65	--	67
Minimum	70	69	69	70	70	69	68	67	67	67	67	68	69	66	64	63	63	64	64	65	66	66	62	60	60	60	61	62	62	63	--	65

PEE DEE RIVER BASIN--Continued

2-1360. BLACK RIVER AT KINGSTREE, S. C.

LOCATION.--At gaging station at bridge on U.S. Highway 52 at Kingstree, Williamsburg County, and 1 mile downstream from Kingstree Swamp Canal.
DRAINAGE AREA.--1,260 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1962 to September 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 10, 1962.....	141	11	0.37	3.6	1.2	6.6	1.6	15	2.0	8.0	0.2	1.7	81	14	2	61	6.5	240
Nov. 20.....	653	11	.12	2.9	1.5	6.3	2.1	9	7.0	10	.2	.3	75	13	6	69	5.7	150
Dec. 27.....	510	9.1	.14	2.8	.8	5.2	1.4	10	3.6	8.8	.2	.5	48	10	2	54	6.1	90
Jan. 20, 1963.....	1100	6.8	.01	2.7	1.0	5.4	1.2	8	5.2	8.1	.2	.2	52	11	4	50	6.0	80
Mar. 21.....	1970	1.9	.16	3.3	.5	5.7	1.7	10	7.4	6.0	.0	1.0	A56	10	2	54	5.9	180
Apr. 21.....	544	3.9	.10	2.9	.8	5.8	1.5	13	1.0	7.7	.1	.3	B68	10	0	51	6.0	140
May 19.....	90	6.9	.24	3.1	1.0	6.2	.9	15	3.2	6.8	.1	.5	63	12	0	53	6.2	140
June 20.....	128	7.0	.11	3.4	.8	5.9	1.4	13	5.6	5.8	.2	.3	40	12	2	56	6.5	110
July 21.....	342	9.2	.26	2.6	1.0	5.8	1.0	10	4.8	7.1	.2	.4	C68	10	2	49	6.4	160
Aug. 22.....	27	11	.37	5.5	1.1	9.2	1.5	24	5.8	8.1	.2	.8	D56	18	0	81	6.3	110
Sept. 20.....	144	10	.06	6.3	1.4	8.1	2.4	10	22	6.8	.2	.9	83	22	14	91	6.6	85

A Organic matter present; sum of mineral constituents 33 parts per million.
B Organic matter present; sum of mineral constituents 30 parts per million.
C Organic matter present; sum of mineral constituents 37 parts per million.
D Calculated from determined constituents.

PEE DEE RIVER BASIN--*Continued*

2-1360.7. BLACK RIVER NEAR RHEMS, S. C.

LOCATION.--At bridge on State Highway 51, 0.7 mile upstream from Black Mingo Creek, and 3.8 miles southeast of Rhems, Georgetown County.
DRAINAGE AREA.--1,680 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1962 to September 1963.
Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 77 ppm July 1-31; minimum, 49 ppm Feb. 1-28.
Hardness: Maximum, 21 ppm Nov. 1-30, Dec. 1-31; minimum, 14 ppm Jan. 1-31, Feb. 1-28, and Mar. 1-31.
Specific conductance: Maximum daily, 97 micromhos Nov. 4, June 10, and Sept. 26; minimum daily, 50 micromhos Feb. 2.
Water temperatures: Maximum, 87°F Aug. 13; minimum, 38°F on several days in December.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 22-31, 1962....		10	0.20	5.5	1.5	6.5	1.1	18	8.8	7.5	0.0	0.2	72	20	5	74	6.2	160
Nov. 1-30.....		8.6	.18	5.2	1.9	7.2	1.3	20	6.6	8.5	.0	.4	63	21	4	73	6.8	140
Dec. 1-31.....		10	.09	6.0	1.4	8.2	1.5	16	4.8	12	.3	1.7	72	21	8	74	6.8	120
Jan. 1-31, 1963.....		7.5	.10	4.9	.6	6.6	.8	14	4.6	9.2	.1	1.1	56	14	3	61	6.7	70
Feb. 1-28.....		5.0	.09	3.8	.9	5.5	.9	11	7.2	7.8	.1	1.6	49	14	4	56	6.4	90
Mar. 1-31.....		2.3	.19	4.4	.9	6.4	.8	15	2.6	9.3	.1	.5	A69	14	2	64	6.9	110
Apr. 1-30.....		3.5	.19	4.3	1.3	6.8	1.0	18	4.2	8.5	.3	1.0	59	16	1	65	7.1	140
May 1-31.....		5.3	.17	4.7	1.1	6.7	1.0	20	3.6	8.2	.1	1.0	62	16	0	71	6.6	140
June 1-30.....		7.3	.16	6.0	1.2	7.6	.8	22	5.0	7.3	.1	1.0	68	20	2	81	7.2	120
July 1-31.....		9.8	.19	6.4	1.0	6.3	.9	19	6.0	5.8	.2	.9	77	20	4	74	6.3	120
Aug. 1-31.....		10	.12	5.2	1.0	7.3	1.9	19	3.2	10	.2	2.2	69	17	2	70	7.1	120
Sept. 1-30.....		9.1	.13	5.5	1.3	8.2	2.0	20	4.4	12	.2	1.8	72	20	3	78	6.9	120
Time-weighted average.....		7.2	0.15	5.1	1.2	7.0	1.2	18	4.8	8.9	0.2	1.2	65	18	3	70	--	120

A Organic matter present; sum of mineral constituents 35 parts per million.

PEE DEE RIVER BASIN--Continued

2-1360.7. BLACK RIVER NEAR RHEMS, S. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0530 and 2030)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	68	66	66	65	65	62	64	63	63	63	--
November	62	60	59	58	58	58	57	57	59	60	58	58	57	55	55	55	54	57	54	54	56	60	54	56	54	52	53	52	53	53	--	56
December	53	53	52	54	54	51	51	--	--	44	44	43	42	42	40	40	40	38	38	38	38	38	38	38	40	40	42	43	43	44	43	44
January	43	44	44	42	42	42	41	42	40	40	41	44	45	46	45	47	46	48	48	49	50	50	50	46	44	45	47	43	43	43	42	45
February	41	46	43	42	42	46	44	46	46	44	46	47	--	47	45	45	44	43	45	--	46	48	46	48	46	47	45	--	--	--	--	45
March	45	48	50	50	50	55	57	--	--	58	60	60	62	64	63	63	63	64	65	65	65	63	62	61	59	60	59	63	62	62	62	59
April	60	--	66	66	63	66	65	--	66	63	66	--	66	64	62	63	66	64	65	67	68	70	71	71	70	68	68	68	68	68	--	66
May	67	67	--	68	69	69	70	71	71	73	73	72	73	74	73	75	73	74	75	76	75	74	74	73	73	71	70	71	72	73	74	72
June	74	75	75	75	78	78	79	80	80	81	81	82	83	83	83	80	81	80	78	80	80	80	80	78	80	78	78	79	80	80	--	79
July	80	80	81	81	80	81	81	80	80	80	80	81	81	80	80	80	80	82	83	82	83	83	82	80	81	82	81	82	81	83	83	81
August	83	84	84	84	85	86	86	86	85	86	86	86	87	86	86	84	84	84	83	83	83	83	84	83	83	82	83	81	82	83	82	84
September	81	80	80	78	76	77	76	76	--	--	--	--	--	--	--	78	76	--	--	--	76	73	72	72	71	70	72	72	71	72	--	--

PEE DEE RIVER BASIN--Continued

2-1363. BLACK RIVER NEAR PLANTERSVILLE, S. C.

LOCATION.--At bridge on U.S. Highway 701, 0.7 mile upstream from Sixmile Creek, and 6.1 miles southwest of Plantersville, Georgetown County.
DRAINAGE AREA.--2,010 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1962 to September 1963.
Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Chloride: Maximum, 2,850 ppm Sept. 9; minimum, 7.5 ppm Oct. 23-26.
Specific conductance: Maximum daily, 9,000 micromhos Sept. 9; minimum daily, 51 micromhos Feb. 4, 6.
Water temperatures: Maximum, 86°F Aug. 10; minimum, 42°F on several days in December, January, and February.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, October 1962 to August 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 23-26, 1962....		6.8	0.16	5.6	1.4	6.0	1.1	18	7.4	7.5	0.0	0.0	66	20	4	70	6.7	120
Oct. 27-31.....		6.8	.18	5.8	1.6	8.2	1.2	19	9.4	12	.0	.0	71	21	6	83	6.9	120
Nov. 5-8.....		--	--	--	--	--	--	18	--	10	--	--	--	21	6	78	6.8	--
Nov. 10-30.....		7.4	.23	5.4	1.3	6.2	1.4	16	6.2	9.0	.0	.3	71	18	6	68	6.8	140
Dec. 1-31.....		9.8	.17	5.9	1.1	7.2	1.6	15	5.0	10	.2	.6	77	20	7	71	6.6	140
Jan. 1-31, 1963.....		8.2	.11	5.0	1.2	6.0	.9	13	4.4	10	.1	1.2	59	18	7	64	6.8	80
Feb. 1-28.....		5.4	.10	4.4	.7	5.0	.8	11	7.0	8.0	.1	1.8	48	14	5	55	6.4	90
Mar. 1-31.....		2.5	.14	4.6	.9	6.1	.7	16	2.4	8.5	.1	.5	54	15	2	62	6.8	110
Apr. 1-30.....		2.8	.23	4.7	1.0	7.0	1.2	17	2.2	8.9	.1	.5	A66	16	2	65	6.5	130
May 1-5.....		3.9	.17	5.5	1.6	8.8	1.0	19	2.8	12	.0	.6	64	20	5	78	6.6	140
May 6-11.....		4.5	.31	5.4	2.6	18	1.7	19	5.8	28	.2	.8	105	24	9	150	7.1	130
May 15-16.....		6.9	--	5.1	2.4	--	--	B--	4.6	33	--	.3	--	23	0	490	9.3	--
May 22-24.....		3.9	.19	5.1	2.6	18	1.1	18	6.2	28	.0	.8	C75	24	8	140	6.6	--
May 26.....		--	--	--	--	20	1.2	18	7.6	30	--	--	--	26	10	165	7.2	140
May 27-31.....		4.3	--	4.5	2.4	--	--	19	5.0	16	--	.4	--	21	6	90	6.2	--
June 1-19.....		5.9	.21	4.7	2.0	12	1.1	20	6.0	18	.1	1.4	82	20	4	115	6.7	140
June 20-30.....		5.9	.27	5.3	1.4	8.3	.9	20	4.4	11	.1	.4	69	19	2	86	6.8	130
July 1-23.....		7.7	.31	6.6	1.2	7.7	.9	19	6.4	8.5	.1	.9	74	22	6	83	7.4	120
July 24-25.....		8.7	.13	6.1	2.1	11	1.8	22	--	17	.2	1.5	--	24	6	114	6.6	65
July 26-31.....		8.5	.11	6.1	1.6	7.4	1.4	22	7.2	9.8	.2	1.6	69	22	4	85	6.3	100
Aug. 1-8.....		9.4	.11	6.3	1.6	9.4	2.2	21	7.2	14	.2	1.9	77	22	6	93	6.7	120
Aug. 11.....		--	.16	--	--	--	--	20	--	16	--	--	--	24	7	110	7.4	--

A Organic matter present; sum of mineral constituents 37 parts per million.
B OH 1 part per million; CO_3 37 parts per million.
C Calculated from determined constituents.

PEE DEE RIVER BASIN--Continued

2-1363. BLACK RIVER NEAR PLANTERSVILLE, S. C.--Continued

Chloride, in parts per million, water year October 1962 to September 1963

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	--	24										390
2	--	72										835
3	--	135						12				1420
4	--	19										1100
5	--										14	750
6	--	10										900
7	--											1500
8	--											1220
9	--	75						28			45	2850
10	--								18		43	1900
11	--										16	1480
12	--							92		8.5	95	1750
13	--							135			--	850
14	--							52			--	850
15	--				8.0						85	1480
16	--		10	10		8.5	8.9	33			105	1000
17	--							51			195	2300
18	--							51			115	1480
19	--							52			88	1600
20	--	9.0						104			108	1080
21	--							55			--	2250
22	--										--	1310
23								28			146	1440
24											136	1800
25	7.5							50	11	17	148	2050
26								30			480	2450
27											470	1750
28											410	1700
29	12				--			16		9.8	330	1020
30					--						300	1320
31		--			--		--		--		245	--

PEE DEE RIVER BASIN--Continued

2-1363. BLACK RIVER NEAR PLANTERSVILLE, S. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
/Once-daily measurement between 0545 and 1830/

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	71	69	65	66	62	63	64	67	66	--
November	62	61	60	62	59	60	60	58	62	58	59	58	58	57	58	58	59	59	57	56	59	58	54	54	55	53	53	54	54	55	--	58
December	55	56	56	55	55	51	52	51	50	48	48	45	44	44	45	47	47	47	48	46	45	44	44	44	--	44	45	--	--	--	42	48
January	44	43	43	44	44	42	43	43	42	43	44	47	48	43	45	45	46	47	48	50	48	47	48	46	46	46	45	42	42	43	43	45
February	43	47	44	43	42	44	44	45	43	45	48	49	46	48	48	46	44	46	48	45	46	44	44	48	47	49	42	--	--	--	--	45
March	48	49	48	50	52	52	52	53	54	54	57	60	62	62	59	62	65	66	66	66	60	58	57	60	61	63	62	63	64	65	65	59
April	66	--	68	65	62	64	--	64	65	65	64	64	64	64	63	67	67	69	69	67	69	70	70	66	67	67	69	70	69	70	--	67
May	67	61	66	66	67	69	70	71	72	74	67	71	69	71	74	74	76	76	72	73	74	74	72	72	72	73	73	74	74	74	74	71
June	74	--	72	74	75	74	77	79	79	80	80	80	80	81	81	82	80	78	77	79	80	80	79	77	78	79	79	80	80	81	--	78
July	80	80	80	80	81	81	82	82	82	81	80	81	81	81	82	82	83	80	82	83	81	82	83	82	82	83	84	84	84	83	84	82
August	83	83	84	84	84	85	85	85	85	86	84	85	83	85	84	82	80	82	83	83	83	82	83	84	84	81	81	81	82	82	80	83
September	79	79	79	80	81	79	79	79	74	80	80	80	79	78	76	74	74	75	75	76	77	76	73	73	72	73	72	71	71	70	--	76

SANTEE RIVER BASIN

2-1424.41. CATAWBA RIVER AT LOOKOUT SHOALS DAM, N. C.

LOCATION.--At Lookout Shoals Dam, 4.5 miles north of Catawba, Catawba County.
DRAINAGE AREA.--1,452 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1963.
Water temperatures: October 1961 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 47 ppm July 1-31; minimum, 32 ppm Apr. 1-30.
Hardness: Maximum, 14 ppm Aug. 1-31, Sept. 1-30; minimum, 9 ppm Apr. 1-30.
Specific conductance: Maximum daily, 97 micromhos Dec. 8; minimum daily, 36 micromhos Apr. 5-7, 10, 11.
Water temperatures: Maximum, 79°F Aug. 10; minimum, 38°F on several days during January and February.
EXTREMES, 1961-63.--Dissolved solids: Maximum, 47 ppm July 1-31, 1963; minimum, 32 ppm Apr. 1-30, 1963.
Hardness: Maximum, 16 ppm Nov. 7, 1961; minimum, 9 ppm Apr. 1-30, 1963.
Specific conductance: Maximum daily, 108 micromhos Nov. 7, 1961; minimum daily, 36 micromhos Apr. 5-7, 10, 11, 1963.
Water temperatures: Maximum, 79°F July 23, 1962, Aug. 10, 1963; minimum, 35°F Dec. 29, 1961.
REMARKS.--Records of discharge are given for Catawba River at Catawba. No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff. Gaging station discontinued in 1963 due to inundation by Lake Norman.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-31, 1962.....	2073	11	0.04	3.5	0.9	4.9	1.2	21	2.8	3.5	0.0	1.0	A39	12	0	48	6.6	13
Nov. 1-30.....	2727	11	.01	3.1	1.1	5.1	1.4	20	3.0	5.3	.0	.7	A41	12	0	54	7.0	10
Dec. 1-31.....	2212	10	.00	3.4	1.0	5.4	1.4	20	4.2	4.2	.2	1.4	42	12	0	54	6.8	5
Jan. 1-31, 1963.....	--	9.6	.01	3.4	1.1	5.4	1.4	19	2.8	5.8	.0	1.0	A40	13	0	53	7.0	10
Feb. 1-28.....	--	10	.04	3.0	1.1	5.5	1.2	19	3.2	3.6	.0	1.4	A38	12	0	50	6.7	10
Mar. 1-31.....	--	10	.03	3.1	.8	4.6	1.4	15	3.6	4.4	.0	1.9	38	12	0	49	7.4	22
Apr. 1-30.....	--	8.0	.04	2.5	.7	3.1	1.5	12	3.2	3.2	.0	1.9	32	9	0	38	6.8	15
May 1-31.....	--	8.5	.04	2.9	1.2	4.5	1.2	17	3.2	3.8	.0	1.0	34	12	0	47	6.9	20
June 1-30.....	--	10	.06	3.4	.8	4.9	1.2	19	3.4	4.4	.1	1.3	A39	12	0	50	7.2	7
July 1-31.....	--	11	.03	3.5	.8	4.7	1.2	20	3.2	3.3	.0	.9	47	12	0	52	7.0	15
Aug. 1-31.....	--	11	.00	3.7	1.2	6.4	1.1	22	2.8	5.6	.0	.7	44	14	0	56	7.5	10
Sept. 1-30.....	--	11	.02	3.4	1.2	6.2	.8	22	4.6	5.2	.2	1.5	A45	14	0	57	6.9	5
Time-weighted average.....	--	10	0.03	3.2	1.0	5.1	1.3	19	3.3	4.4	0.0	1.2	40	12	0	51	--	12

A Calculated from determined constituents.

SANTEE RIVER BASIN--Continued

2-1424.41. CATAWBA RIVER AT LOOKOUT SHOALS DAM, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement at approximately 0800)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	69	69	69	69	69	69	69	71	70	70	69	69	69	69	70	70	70	69	69	68	67	67	67	66	65	64	62	60	61	63	62	67
November	62	61	60	60	58	59	58	58	58	57	57	57	56	56	56	55	--	56	56	55	55	55	54	53	53	52	52	52	52	51	--	56
December	51	50	51	51	51	49	48	48	46	47	46	44	43	43	42	42	--	42	42	43	43	42	43	43	43	42	42	42	42	42	41	45
January	--	40	41	40	40	40	40	40	40	41	43	43	43	42	41	41	41	41	42	42	41	41	41	40	39	40	40	39	38	38	38	41
February	38	38	39	38	39	39	39	39	39	39	40	40	40	40	40	39	39	39	39	39	--	39	39	39	39	40	39	40	--	--	--	39
March	40	40	40	41	42	45	44	44	45	44	43	43	46	46	45	46	46	47	48	48	48	48	48	49	48	50	50	51	51	51	52	46
April	53	54	55	56	56	56	56	56	56	50	50	55	55	55	55	56	56	56	58	59	57	59	60	59	59	60	58	58	61	60	--	56
May	60	60	60	60	60	61	62	62	62	63	61	64	64	64	65	65	65	66	65	65	67	67	68	67	65	66	66	66	65	66	66	64
June	67	67	68	68	68	69	68	69	69	71	73	72	70	72	72	69	72	71	72	72	71	72	71	72	72	72	72	72	72	72	--	71
July	73	74	74	73	75	73	73	75	75	74	75	75	74	74	75	75	75	75	76	75	75	76	76	76	76	75	76	75	76	75	77	75
August	77	77	76	77	78	78	--	78	78	79	78	78	78	78	78	78	77	78	77	78	78	78	78	78	78	78	78	76	76	76	76	78
September	75	76	76	77	76	76	75	74	75	75	75	76	75	75	75	74	--	--	74	73	73	73	73	72	71	71	71	71	71	70	--	74

SANTEE RIVER BASIN--Continued

2-1435. INDIAN CREEK NEAR LABORATORY, N. C.

LOCATION (revised).--Temperature recorder at gaging station 250 feet upstream from remains of Rudisill Mill dam, 0.5 mile upstream from bridge on Secondary Road 1252, 1.5 miles upstream from mouth, 1.5 miles south of Laboratory, Lincoln County, and 3.5 miles south of Lincolnton.
DRAINAGE AREA.--68.4 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1951 to September 1952.
Water temperatures: January 1953 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 76°F on several days in July and August; minimum, freezing point Dec. 14-16.
EXTREMES, 1953-63.--Water temperatures: Maximum, 84°F Aug. 1, 2, 5, 1953; minimum, freezing point Dec. 14-16, 1962.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Jan. 23, 1963.....	125	11	0.01	1.9	2.3	2.5	2.4	15	4.6	0.4	0.1	1.7	A34	14	2	49	6.7	5
July 3.....	60.3	13	.00	3.7	1.5	2.5	1.1	19	5.6	1.0	.0	.8	A38	15	0	42	6.8	15

A Calculated from determined constituents.

SANTEE RIVER BASIN--Continued

2-1435. INDIAN CREEK NEAR LABORATORY, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Continuous ethyl-alcohol actuated thermograph)

Month	Day																												Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	58	62	62	62	64	64	66	67	67	65	64	64	64	67	66	66	66	66	62	59	59	61	60	58	51	49	47	48	52	56	56	61
Minimum	57	58	61	62	62	63	64	65	65	62	62	62	62	64	64	64	64	62	59	56	58	59	58	51	49	47	44	45	48	52	52	58
November																																
Maximum	52	50	50	49	50	48	46	48	50	50	50	50	48	48	48	51	54	56	55	50	51	53	51	47	47	47	45	47	50	50	--	50
Minimum	49	48	49	48	48	45	44	45	48	50	48	48	47	45	45	48	51	54	50	49	50	51	47	45	47	43	42	45	47	48	--	47
December																																
Maximum	48	47	47	49	49	49	41	41	41	38	36	35	33	33	33	33	36	39	40	42	42	39	42	41	38	39	41	42	42	40	39	40
Minimum	47	44	44	47	48	41	38	39	38	36	34	33	33	32	32	32	33	36	38	40	39	38	39	38	35	36	39	41	40	39	37	38
January																																
Maximum	37	36	36	36	38	41	41	43	43	44	49	50	50	49	41	38	39	42	44	47	47	41	40	40	36	37	39	38	35	39	44	41
Minimum	35	34	36	36	36	38	40	41	40	41	44	49	49	41	38	36	36	39	42	44	41	38	39	36	34	35	37	35	34	35	39	39
February																																
Maximum	44	41	42	41	42	46	46	45	44	41	43	43	43	41	40	39	37	40	40	44	44	43	38	40	44	44	39	43	--	--	--	42
Minimum	41	39	40	38	38	42	43	43	40	39	41	43	41	39	37	36	35	35	39	39	43	37	35	37	38	39	35	37	--	--	--	39
March																																
Maximum	43	46	46	50	53	53	52	49	49	51	51	49	55	55	54	52	54	57	58	58	55	51	52	55	57	57	57	57	58	60	61	53
Minimum	43	43	42	44	50	52	49	45	47	47	47	47	49	50	49	50	50	52	55	55	50	47	47	49	52	55	52	54	52	54	56	49
April																																
Maximum	63	64	66	66	64	57	58	59	59	61	61	60	60	56	55	56	59	65	67	68	68	67	69	66	61	59	59	59	57	60	--	62
Minimum	58	59	61	63	57	53	52	54	57	57	57	57	55	52	51	51	56	59	63	65	63	64	66	60	56	56	56	57	57	57	--	58
May																																
Maximum	60	57	59	60	62	65	65	67	68	68	70	70	66	64	66	66	65	66	66	66	67	67	67	64	61	59	59	61	66	65	65	64
Minimum	55	52	54	55	57	60	61	63	65	65	67	66	61	60	62	64	65	64	63	64	65	65	64	59	59	59	59	59	61	63	63	61
June																																
Maximum	65	65	67	67	67	67	68	70	72	74	74	74	71	73	73	72	67	65	67	69	70	69	67	68	68	69	69	70	71	73	--	69
Minimum	63	62	65	65	64	65	66	68	69	72	73	71	69	70	71	67	65	65	65	67	69	67	66	66	67	67	67	68	69	70	--	67
July																																
Maximum	74	74	74	74	72	72	70	73	73	72	70	69	69	70	72	72	73	75	76	76	74	73	71	71	71	72	74	76	76	75	73	73
Minimum	71	72	72	71	70	69	70	70	72	69	66	67	68	69	69	71	71	72	74	74	71	70	69	70	70	70	71	73	75	72	72	71
August																																
Maximum	75	75	75	75	75	75	76	76	75	73	72	72	73	73	70	69	71	72	73	73	74	73	74	75	74	73	68	69	71	72	73	73
Minimum	72	72	72	73	74	73	73	74	72	70	69	69	70	69	68	68	67	69	71	71	71	72	71	72	72	68	67	67	69	71	70	71
September																																
Maximum	72	70	72	71	73	72	68	71	71	70	71	72	72	70	62	65	67	65	66	67	67	68	65	59	58	63	63	63	61	61	--	67
Minimum	69	67	69	70	71	68	66	68	69	68	69	70	70	62	61	62	63	63	63	63	64	65	59	56	56	58	61	61	60	60	--	64

SANTEE RIVER BASIN--Continued

2-1439.08. SOUTH FORK CATAWBA RIVER NEAR STANLEY, N. C.

LOCATION.--At bridge on State Highway 275, 0.1 mile below Hoyle Creek, and 3 miles southwest of Stanley, Gaston County.
DRAINAGE AREA.--559 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1963.
REMARKS.--Records of discbarge are given for Soutb Fork Catawba River at Lowell. No appreciable inflow between sampling point and gaging station except during periods of heavy local runoff.

Cbemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 18, 1962.....	365	13	0.01	4.2	1.7	8.6	2.0	30	3.6	8.3	0.0	0.5	A57	18	0	79	6.4	8
Nov. 17.....	463	13	.17	3.5	1.7	6.3	1.8	26	3.8	5.8	.0	1.0	A50	16	0	66	6.5	10
Dec. 15.....	507	13	.01	3.8	1.6	7.2	1.3	24	3.2	7.4	.1	.5	51	16	0	69	6.3	6
Jan. 15, 1963.....	780	11	.01	3.4	1.7	4.6	1.4	18	2.4	5.4	.1	.8	41	16	0	50	6.7	5
Feb. 18.....	610	12	.01	3.5	1.5	3.9	1.2	22	2.4	4.0	.1	.8	40	15	0	45	6.6	5
Mar. 20.....	3130	6.1	.02	2.9	1.1	2.2	2.1	12	4.8	2.8	.0	.7	33	12	2	42	6.2	20
Apr. 17.....	653	11	.00	3.6	1.8	6.0	2.1	21	4.4	5.4	.1	.1	A44	16	0	55	6.5	5
May 16.....	529	12	.03	3.4	1.9	6.4	1.5	25	2.4	6.8	.1	.8	A47	16	0	63	6.9	10
June 22.....	1360	7.4	.04	3.4	.9	3.3	2.9	16	4.0	3.6	.1	1.1	37	12	0	49	6.3	20
July 14.....	374	13	.03	4.3	1.6	7.6	2.9	27	3.8	7.7	.0	.3	A54	18	0	76	6.4	10
Aug. 16.....	245	14	.00	4.6	1.5	11	2.1	29	4.0	12	.1	.6	A64	18	0	92	6.3	5
Sept. 15.....	229	14	.01	4.5	2.4	11	3.2	30	3.8	12	.2	1.2	67	21	0	93	6.5	10

A Calculated from determined constituents.

SANTEE RIVER BASIN--Continued

2-1515. BROAD RIVER NEAR BOILING SPRINGS, N. C.

LOCATION (revised).--At gaging station at bridge on Secondary Road 1186, 3 miles downstream from Second Broad River, and 3.5 miles southwest of Boiling Springs, Cleveland County.
DRAINAGE AREA.--864 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1945 to September 1946, October 1956 to September 1963.
Water temperatures: October 1945 to September 1946, October 1956 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 46 ppm June 1-30; minimum, 31 ppm Mar. 1-31.
Hardness: Maximum, 14 ppm Oct. 11-31, Aug. 1-31; minimum, 8 ppm Mar. 1-31.
Specific conductance: Maximum daily, 72 micromhos Sept. 25; minimum daily, 24 micromhos Mar. 13.
Water temperatures: Maximum, 75°F June 13; minimum, freezing point Dec. 14-16.
EXTREMES, 1945-46, 1956-63.--Dissolved solids: Maximum, 57 ppm June 1-10, 1957; minimum, 26 ppm Apr. 21-30, 1958, Mar. 1-10, 1962.
Hardness: Maximum, 22 ppm Mar. 11, 1962; minimum, 8 ppm on many days in 1946, 1957-58, and 1960-63.
Specific conductance (1956-63): Maximum daily, 1,000 micromhos Mar. 12, 1962; minimum daily, 22 micromhos Mar. 30, 1960.
Water temperatures: Maximum, 85°F Aug. 7, 1958; minimum, freezing point on many days in 1946, 1958, 1960 and 1962.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-10, 1962.....	1616	13	0.00	2.6	0.8	2.8	1.1	17	1.2	1.0	0.0	0.9	35	10	0	32	7.2	50
Oct. 11-31.....	860	15	.06	3.6	1.3	3.7	1.2	22	2.0	1.4	.0	.5	A40	14	0	42	7.4	15
Nov. 1-30.....	1418	15	.03	3.4	1.1	3.5	1.1	22	1.6	1.3	.0	.7	A39	13	0	42	6.4	10
Dec. 1-31.....	1105	14	.01	3.2	.7	3.8	1.0	20	1.6	2.1	.2	1.1	39	11	0	42	7.1	6
Jan. 1-31, 1963.....	1458	13	.01	2.8	1.2	3.1	2.0	17	1.4	3.2	.0	1.0	A36	12	0	37	6.9	20
Feb. 1-28.....	1192	14	.00	3.0	.8	3.1	1.0	18	2.8	2.2	.0	1.3	A37	10	0	37	7.2	4
Mar. 1-31.....	3530	12	.05	2.6	.5	2.7	1.0	14	2.8	2.0	.1	.7	A31	8	0	32	6.8	8
Apr. 1-30.....	1479	12	.02	2.6	1.1	3.2	1.0	17	1.8	2.2	.0	1.0	A33	11	0	38	7.2	5
May 1-31.....	1457	14	.00	3.0	1.0	3.0	.7	17	2.4	2.5	.0	.9	40	12	0	42	7.2	17
June 1-30.....	1186	14	.00	4.2	.6	3.5	1.1	20	2.6	2.2	.0	1.0	46	13	0	44	6.9	18
July 1-31.....	1051	14	.06	2.9	.9	2.9	.9	17	1.8	1.7	.1	1.1	40	10	0	39	6.7	30
Aug. 1-31.....	686	15	.01	3.8	1.0	4.8	1.0	21	3.0	3.6	.0	.8	43	14	0	47	7.3	11
Sept. 1-30.....	697	15	.05	3.2	1.0	4.9	.7	21	3.2	3.0	.1	1.5	A43	12	0	46	7.4	10
Time-weighted average.....	1366	14	0.02	3.2	1.7	3.5	1.1	19	2.2	2.3	0.0	1.0	39	12	0	40	--	14

A Calculated from determined constituents.

SANTEE RIVER BASIN--Continued

2-1515. BROAD RIVER NEAR BOILING SPRINGS, N. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Once-daily measurement between 0700 and 1900)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	58	60	62	63	64	64	65	66	66	65	64	64	65	65	66	65	65	64	62	60	58	57	58	55	52	50	48	46	46	44	46	59
November	48	48	48	49	48	46	46	47	46	47	47	48	48	46	46	47	50	50	49	48	48	48	47	48	47	--	45	--	47	48	--	48
December	47	47	47	48	47	46	46	45	44	42	--	--	--	32	32	32	33	35	38	42	42	43	44	44	45	45	44	44	43	42	41	42
January	41	40	40	39	38	38	39	41	43	--	--	43	44	44	43	43	43	43	42	43	44	45	43	--	42	41	39	37	36	39	40	41
February	42	41	40	40	41	42	44	45	44	43	41	43	--	--	43	41	42	43	43	44	45	45	46	45	45	44	45	45	--	--	--	43
March	46	45	44	45	44	45	46	47	48	48	46	46	48	49	48	49	48	49	53	54	53	52	52	51	54	56	53	53	52	52	56	49
April	55	55	54	55	54	54	55	56	56	57	57	58	58	58	56	57	56	59	60	62	64	66	68	65	64	64	63	62	60	60	--	59
May	57	56	57	58	60	61	63	64	65	67	68	68	67	65	65	64	66	66	67	68	68	68	69	68	67	66	64	62	63	64	65	64
June	66	67	68	69	70	71	71	72	73	73	74	74	75	73	74	70	68	67	65	67	68	69	67	65	66	66	65	65	64	63	--	69
July	62	65	64	65	66	66	67	67	68	70	68	67	66	65	67	68	69	69	69	70	70	69	68	66	65	66	67	68	69	70	70	67
August	71	72	73	72	72	71	70	70	70	69	68	69	67	65	62	63	64	64	65	66	65	64	63	63	64	64	65	65	64	64	64	67
September	63	64	64	63	63	62	62	63	63	64	65	65	65	56	56	53	56	54	55	56	57	58	56	53	56	58	51	50	48	46	--	58

SANTEE RIVER BASIN--Continued

2-1565. BROAD RIVER NEAR CARLISLE, S. C.

LOCATION.--At gaging station at bridge on State Highway 72, 2 miles upstream from Sandy River, 2 miles downstream from Seaboard Air Line Railroad bridge, 2.5 miles east of Carlisle, Union County, and 5 miles downstream from Neals Shoals Dam.
DRAINAGE AREA.--2,790 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1947 to September 1948, October 1962 to September 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 16, 1962	2320	13	0.05	4.5	1.3	6.9	1.9	32	1.2	5.4	0.0	0.3	A47	16	0	68	6.9	20
Nov. 23	4840	13	.02	4.3	1.6	4.6	1.8	28	3.2	4.1	.1	.3	50	17	0	62	6.6	14
Dec. 19	2790	13	.00	4.0	1.3	8.7	1.5	32	4.2	4.4	.1	.7	A54	15	0	71	6.6	8
Jan. 9, 1963	3140	13	.06	4.6	1.1	4.9	1.3	25	3.0	3.4	.1	.9	47	16	0	56	6.7	8
Feb. 19	5120	12	.02	3.4	1.8	6.0	1.3	28	3.6	4.5	.0	.2	48	16	0	61	6.5	10
Mar. 22	6940	12	.04	3.5	1.5	3.4	1.9	21	3.4	2.9	.0	1.5	45	15	0	47	6.6	23
Apr. 17	3140	12	.02	4.0	1.6	4.6	1.9	26	3.6	3.0	.0	1.0	49	16	0	60	6.8	15
May 8	3640	12	.01	3.7	1.6	4.8	1.6	24	2.4	4.2	.1	1.3	A44	16	0	53	6.5	6
June 19	2860	13	.00	4.1	1.5	5.6	1.3	25	2.8	5.1	.1	.6	A46	16	0	62	6.5	10
July 11	2090	12	.01	4.0	1.2	4.1	2.0	22	3.4	3.7	.1	.2	43	15	0	52	6.7	7
Aug. 7	1340	13	.03	3.8	1.6	5.4	1.9	24	2.8	4.6	.1	.5	53	16	0	59	6.5	10
Sept. 11	1330	13	.00	4.6	1.2	10	4.1	36	3.8	6.0	.1	.2	A61	16	0	84	6.3	10

A Calculated from determined constituents.

2-1630. SALUDA RIVER NEAR PELZER, S. C.

LOCATION.--At gaging station 0.4 mile downstream from Hurricane Creek and 1.9 miles north of Pelzer, Anderson County.
DRAINAGE AREA.--405 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1954, October 1962 to September 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 17, 1962.....	351	12	0.14	2.6	1.2	2.7	2.1	19	3.0	3.0	0.0	0.3	A36	12	0	39	6.6	25
Nov. 19.....	718	12	.00	3.0	.4	3.0	1.6	17	1.2	3.0	.1	.7	37	10	0	40	6.2	5
Jan. 8, 1963.....	498	12	.07	2.2	.8	3.2	1.0	16	2.0	2.2	.2	.2	A32	8	0	32	6.4	10
Feb. 14.....	624	11	.01	2.2	.8	2.3	1.0	14	1.4	2.6	.1	.4	30	9	0	30	6.3	5
Mar. 25.....	1120	9.3	.03	1.9	1.0	2.0	1.2	13	2.2	1.1	.0	1.0	27	9	0	28	6.4	15
Apr. 11.....	679	11	.02	2.6	.8	2.6	1.8	16	1.2	1.1	.0	1.9	39	10	0	36	6.4	12
May 2.....	2800	6.8	.11	1.3	.6	2.0	1.3	10	2.6	2.3	.0	1.1	23	6	0	26	6.1	7
June 17.....	617	13	.03	2.3	.7	2.8	1.5	15	.6	2.3	.1	.7	32	9	0	34	6.1	10
July 11.....	587	11	.00	2.4	.7	2.9	1.5	15	1.6	2.6	.0	.8	33	9	0	33	6.4	5
Aug. 6.....	531	12	.05	2.0	1.1	2.8	2.1	17	1.0	2.2	.1	.5	36	10	0	34	6.1	15
Sept. 9.....	312	14	.03	3.0	.6	3.6	3.2	16	1.4	2.6	.0	3.3	A40	10	0	45	6.3	15

A Calculated from determined constituents.

EDISTO RIVER BASIN

2-1730. SOUTH FORK EDISTO RIVER NEAR DENMARK, S. C.

LOCATION.--Temperature recorder at gaging station at bridge on U.S. Highway 321, 360 (revised) feet downstream from Seaboard Air Line Railroad bridge, 1.8 miles downstream from Little River, and 4.8 miles north of Denmark, Bamberg County.
DRAINAGE AREA.--720 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1950 to September 1951, October 1961 to September 1963.
Water temperatures: November 1956 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 78°F on several days in August; minimum, 36°F Dec. 14-16.
EXTREMES, 1956-63.--Water temperatures: Maximum, 79°F on many days in 1957, 1958, 1961, and 1962; minimum, 34°F Feb. 19-21, 1958.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 16, 1962.....	541	7.4	0.05	1.8	0.8	2.2	0.6	8	0.6	3.8	0.1	0.4	29	8	1	24	6.1	30
Oct. 30.....	487	6.9	.07	1.4	.3	2.1	.3	8	.4	3.8	.0	.3	28	4	0	24	6.1	17
Dec. 6.....	622	7.0	.26	1.8	.4	2.5	.6	8	1.0	4.2	.1	.5	23	6	0	26	6.0	45
Jan. 22, 1963.....	2710	4.3	.00	1.8	.7	1.9	.8	6	1.8	3.4	.2	.2	33	8	2	24	5.7	70
Mar. 4.....	1060	.8	.02	1.6	.5	2.4	.4	7	1.4	2.9	.0	.7	21	6	0	26	5.9	40
Apr. 9.....	1050	3.8	.27	2.1	.5	2.5	.6	8	1.4	2.9	.0	1.2	31	7	0	29	6.1	50
May 21.....	528	5.8	.12	1.6	.3	2.3	.5	8	1.2	3.3	.2	.2	A20	5	0	24	6.6	50
June 4.....	585	6.6	.06	1.7	.5	2.7	.4	7	2.0	3.1	.1	.4	30	6	0	26	6.3	50
July 3.....	856	6.6	.24	1.9	.8	2.4	.7	7	1.6	4.0	.1	.3	36	8	3	27	6.2	90
Aug. 16.....	279	5.8	.12	1.6	.2	2.3	.5	7	1.6	3.2	.2	.1	A19	5	0	21	6.2	40
Sept. 18.....	622	11	.04	3.7	.6	2.6	1.1	5	10	3.6	.1	.6	46	12	8	44	5.6	30

A Caluclated from determined constituents.

EDISTO RIVER BASIN--Continued

2-1730. SOUTH FORK EDISTO RIVER NEAR DENMARK, S. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Water-stage recorder with temperature attachment)

Month	Day																												Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	66	67	68	68	68	68	69	70	71	71	70	69	69	69	69	69	69	69	69	66	65	65	66	66	64	59	57	55	54	56	58	66
Minimum	66	66	67	68	68	68	68	69	70	70	69	69	69	68	68	69	69	69	66	65	64	64	65	64	59	57	55	54	54	54	56	65
November																																
Maximum	58	57	56	56	56	56	54	53	57	58	58	56	57	57	55	55	57	59	59	58	58	59	59	56	53	52	50	49	52	53	--	56
Minimum	57	56	56	56	56	54	52	52	53	57	56	56	56	55	54	54	55	57	58	56	56	58	56	53	52	50	48	48	49	52	--	54
December																																
Maximum	53	53	54	56	56	55	48	45	45	45	45	44	44	43	36	38	42	43	44	47	48	48	46	46	45	44	45	46	46	46	46	47
Minimum	53	53	53	54	55	48	45	45	45	45	44	44	43	36	36	36	38	42	43	44	47	46	45	45	44	43	43	45	46	46	44	45
January																																
Maximum	44	42	41	41	41	41	42	43	43	44	48	52	53	52	47	44	42	42	46	50	50	48	45	44	42	40	40	40	39	38	41	44
Minimum	42	41	41	40	40	40	41	42	43	43	44	48	52	47	44	42	41	41	42	46	48	45	44	42	40	40	40	39	38	38	38	42
February																																
Maximum	41	41	42	42	42	44	47	47	47	45	46	47	47	44	43	43	42	42	45	47	48	48	45	44	46	47	47	46	--	--	--	45
Minimum	41	41	41	41	42	42	44	47	45	43	44	46	44	42	43	42	41	40	42	45	47	45	42	43	44	46	45	43	--	--	--	43
March																																
Maximum	47	50	51	54	58	60	59	57	55	57	57	60	63	63	63	62	61	63	64	65	65	61	56	57	59	59	60	60	60	62	63	59
Minimum	46	47	49	51	54	58	56	54	54	54	55	56	60	61	62	60	60	61	63	64	61	55	54	54	56	59	59	59	59	60	61	57
April																																
Maximum	64	64	65	67	67	65	65	65	65	64	64	63	62	62	60	59	61	64	65	66	68	69	70	70	68	64	63	63	63	65	--	65
Minimum	63	63	64	65	65	59	59	59	59	62	63	62	62	60	58	58	58	61	64	65	66	68	69	68	64	63	62	63	63	63	--	63
May																																
Maximum	65	64	61	61	62	64	65	66	69	69	70	70	70	68	69	70	71	72	72	72	72	72	72	71	69	68	68	69	71	71	70	68
Minimum	64	61	60	60	61	62	64	65	66	69	69	70	68	68	68	69	70	71	72	72	72	72	71	69	68	68	68	68	69	70	70	68
June																																
Maximum	70	70	69	69	70	70	70	71	72	73	74	74	74	74	74	74	74	75	75	74	74	74	74	74	74	74	74	75	75	76	--	73
Minimum	70	69	69	69	69	70	70	70	71	72	72	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	74	75	75	--	73
July																																
Maximum	76	76	76	76	76	76	76	76	76	76	75	74	74	74	75	75	76	76	76	76	76	77	77	77	76	77	77	77	77	77	77	76
Minimum	75	76	76	76	76	76	76	76	76	75	74	74	74	74	74	75	75	76	76	76	76	76	77	76	76	76	76	77	77	77	77	76
August																																
Maximum	77	77	77	77	78	78	78	78	78	78	78	78	78	78	78	78	78	77	77	77	77	77	76	77	77	77	77	76	75	74	75	77
Minimum	77	77	77	77	77	78	78	78	78	78	78	78	78	78	78	78	77	77	77	77	77	76	76	76	77	77	77	75	74	74	74	77
September																																
Maximum	75	75	74	73	74	74	73	72	72	72	72	72	71	71	71	69	68	67	67	67	67	67	66	63	63	64	64	65	66	66	--	69
Minimum	75	74	73	73	73	73	72	72	72	71	71	71	71	71	69	68	67	67	67	67	67	66	63	62	62	63	64	64	65	66	--	69

SAVANNAH RIVER BASIN

2-1850. KEOWEE RIVER NEAR JOCASSEE, S. C.

LOCATION.--Temperature recorder at gaging station 0.6 mile downstream from bridge on State Highway 11, 1.8 miles southeast of Jocassee, Oconee County, and 2.6 miles upstream from Eastatoe Creek.
DRAINAGE AREA.--148 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1961 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 80°F June 10, Aug. 6-9; minimum, freezing point on several days in December and January.
EXTREMES, 1961-63.--Water temperatures: Maximum, 82°F July 24, 1962; minimum, freezing point on several days in 1962-63.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
June 5, 1963.....	273	7.9	0.02	0.9	0.4	1.3	0.6	10	1.4	2.0	0.0	0.5	A19	4	0	17	6.5	8

A Calculated from determined constituents.

SAVANNAH RIVER BASIN--Continued

2-1850. KEOWEE RIVER NEAR JOCASSEE, S. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Water-stage recorder with temperature attachment)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	62	62	61	64	64	64	65	68	67	66	66	66	66	68	68	68	69	68	66	61	61	63	62	59	53	50	47	48	51	54	55	62
Minimum	58	60	60	61	62	62	63	65	65	62	63	63	63	65	65	65	66	65	61	58	59	60	59	53	50	47	46	45	48	51	54	59
November																																
Maximum	54	50	49	48	47	45	44	48	49	49	48	47	48	--	--	--	--	--	--	--	--	50	47	44	46	46	43	48	51	51	--	--
Minimum	49	47	47	46	45	43	42	44	48	48	46	46	46	--	--	--	--	--	--	--	--	47	43	43	44	42	41	43	48	49	--	--
December																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	33	32	32	32	32	34	37	40	40	40	39	37	37	39	41	41	41	41	38	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	32	32	32	32	32	32	34	37	40	39	37	36	36	37	39	40	41	38	36	--
January																																
Maximum	36	36	36	36	37	38	39	40	39	38	42	46	46	44	37	34	34	38	41	44	44	37	37	36	32	34	36	35	32	34	39	38
Minimum	35	34	34	34	35	36	38	38	37	37	38	42	44	37	34	32	32	34	38	41	37	34	35	32	32	32	34	32	32	32	34	35
February																																
Maximum	39	39	40	38	38	40	41	41	41	39	41	42	41	38	37	36	36	36	38	41	42	40	37	40	41	42	41	40	--	--	--	39
Minimum	39	38	38	36	36	37	39	40	39	37	38	41	38	36	35	34	34	34	36	37	40	36	35	36	37	41	38	36	--	--	--	37
March																																
Maximum	42	45	45	44	49	49	47	45	45	48	48	50	53	53	53	50	54	55	58	58	53	48	48	50	52	53	55	55	55	56	58	51
Minimum	39	42	42	43	43	47	43	42	44	45	45	46	50	49	48	49	49	51	55	53	48	46	46	46	49	52	51	52	50	52	53	47
April																																
Maximum	60	61	63	63	61	55	58	58	58	61	61	61	60	57	56	55	60	64	66	68	67	69	68	66	63	63	61	61	58	60	--	61
Minimum	56	57	58	60	55	52	52	54	56	56	58	57	56	54	52	52	53	58	61	64	63	64	66	62	59	57	59	58	57	57	--	57
May																																
Maximum	59	56	59	61	62	64	66	70	70	70	74	72	68	68	70	71	70	72	70	69	70	71	69	67	66	61	60	65	--	--	--	67
Minimum	54	52	54	55	58	60	62	64	65	66	68	68	62	61	64	66	68	67	66	66	65	66	66	62	61	60	60	60	--	--	--	62
June																																
Maximum	--	--	--	--	--	69	72	74	77	80	78	76	76	78	78	77	70	67	68	69	70	70	67	70	70	69	69	71	72	72	--	--
Mintmum	--	--	--	--	--	67	66	69	70	73	74	72	70	72	72	70	67	66	66	68	67	67	66	66	68	68	67	67	69	68	--	--
July																																
Maximum	70	72	75	75	76	76	74	75	75	72	72	71	72	72	77	75	72	73	74	76	75	74	74	70	70	72	72	74	71	70	74	73
Minimum	67	69	69	71	71	72	70	69	71	68	67	67	67	70	70	72	71	71	70	73	70	70	70	68	69	68	69	68	68	68	69	69
August																																
Maximum	75	76	77	78	79	80	80	80	80	78	73	75	75	76	74	73	74	76	76	76	75	76	76	78	77	75	71	73	73	74	74	76
Minimum	70	71	72	73	74	75	75	75	74	72	68	70	71	70	69	68	68	70	71	72	72	70	71	72	73	71	69	69	71	70	71	71
September																																
Maximum	75	75	75	75	76	74	72	74	74	74	75	75	72	72	67	70	71	71	70	70	70	70	68	65	63	67	65	65	62	64	--	71
Minimum	71	71	70	71	71	72	71	69	70	70	70	70	69	67	65	65	67	67	66	66	66	67	64	60	59	62	63	61	60	61	--	67

SAVANNAH RIVER BASIN--Continued

2-1875. SAVANNAH RIVER NEAR IVA, S. C.

LOCATION.--Temperature recorder at gaging station at downstream side of bridge on State Highway 184, 0.5 mile upstream from Little Generostee Creek, and 5.8 miles southwest of Iva, Anderson County.
DRAINAGE AREA.--2,231 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 81°F June 9; minimum, 40°F Jan. 28, 29.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
June 3, 1963.....	4270	9.5	0.03	2.6	1.0	4.7	2.1	18	2.4	3.6	0.2	1.0	37	10	0	46	6.8	10

SAVANNAH RIVER BASIN--Continued

2-1875. SAVANNAH RIVER NEAR IVA, S. C.--Continued

Temperature (°F) of water, water year October 1962 to September 1963
(Water-stage recorder with temperature attachment)

Month	Day																												Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	--	--	--	--	--	--	--	--	59	59	64	68	68	60	60	59	58	62	62	62	60	59	58	58	59	58	58	60	60	--
Minimum	--	--	--	--	--	--	--	--	--	--	57	57	57	62	59	58	58	58	56	56	60	58	56	56	56	56	56	53	54	57	59	--
November																																
Maximum	59	59	58	58	57	57	58	58	58	58	58	57	59	58	57	58	60	63	62	58	57	58	57	56	56	56	56	56	57	56	--	58
Minimum	56	56	57	56	54	56	56	57	57	56	54	54	57	56	56	57	58	60	57	57	57	55	51	54	52	49	53	55	56	55	--	55
December																																
Maximum	56	56	55	55	55	55	54	54	53	52	51	50	50	50	50	51	50	49	49	49	49	50	49	48	48	49	48	48	48	48	48	51
Minimum	55	53	51	55	55	51	51	53	47	43	50	46	46	46	46	49	48	48	48	49	49	49	46	46	46	46	48	48	48	46	44	49
January																																
Maximum	48	48	48	48	48	47	48	48	48	48	48	53	53	50	47	47	46	46	47	48	48	46	46	46	46	45	44	44	44	43	46	47
Minimum	46	43	46	46	46	46	44	46	46	47	48	48	50	46	46	44	44	46	46	47	46	44	45	41	42	44	43	40	40	42	43	45
February																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	45	45	45	44	45	45	45	45	46	46	49	47	47	47	45	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	42	42	42	41	41	44	43	44	41	42	45	46	47	43	43	--	--	--	--
March																																
Maximum	45	50	53	52	50	54	52	47	48	54	52	48	53	49	48	49	57	57	51	51	51	51	51	52	51	50	50	50	51	52	53	51
Minimum	44	44	47	48	48	49	47	45	45	47	45	45	47	47	47	48	49	49	49	49	50	49	49	50	50	50	50	50	49	50	50	48
April																																
Maximum	52	51	52	51	50	50	58	58	51	51	51	50	57	61	59	52	54	54	54	60	71	73	58	54	51	55	56	57	57	60	--	56
Minimum	50	50	50	50	50	49	49	51	50	50	50	50	49	53	50	49	50	50	50	50	59	52	50	50	50	50	50	56	52	54	--	51
May																																
Maximum	54	51	51	61	69	68	54	54	54	54	53	53	52	52	52	52	52	64	71	70	56	57	56	56	55	57	59	59	55	54	54	57
Minimum	50	50	50	50	59	51	51	51	51	51	51	51	51	51	51	51	51	51	62	52	52	52	52	52	52	55	54	54	53	53	53	52
June																																
Maximum	64	72	72	58	61	61	61	69	81	80	63	61	61	63	69	71	71	57	57	60	58	60	65	68	64	62	67	67	68	77	--	66
Minimum	53	62	54	54	55	55	56	56	68	59	56	55	55	55	56	68	56	56	55	55	55	55	60	58	58	58	58	57	57	68	--	57
July																																
Maximum	75	61	61	68	71	67	76	76	76	76	54	55	65	71	74	61	60	60	61	70	78	77	60	61	57	57	67	79	77	60	59	67
Minimum	56	55	55	56	54	54	54	54	54	54	54	54	54	64	58	57	57	55	55	55	68	55	55	56	56	56	56	66	57	57	57	56
August																																
Maximum	58	58	70	79	78	66	69	61	60	68	77	76	63	62	60	61	68	76	75	62	62	63	63	70	78	76	63	64	64	66	72	67
Minimum	57	57	57	68	57	57	57	57	57	57	66	59	58	58	58	58	58	67	59	59	59	59	59	59	68	62	62	62	61	62	61	60
September																																
Maximum	76	80	76	65	66	64	68	75	75	63	63	63	63	61	63	65	63	63	63	63	70	70	68	61	62	64	65	63	65	66	--	66
Minimum	68	72	62	62	62	62	62	67	61	61	61	61	61	61	61	61	61	61	61	60	60	66	61	58	60	61	60	61	63	61	--	62

239-654 O - 67 - 24

SAVANNAH RIVER BASIN--Continued

2-1975. SAVANNAH RIVER AT BURTONS FERRY BRIDGE, NEAR MILLHAVEN, GA.

LOCATION.--Temperature recorder at gaging station at bridge on U.S. Highway 301, 2 miles downstream from Rocky Creek, and 9 miles east of Millhaven, Screven County.
DRAINAGE AREA.--8,650 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: January 1956 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 81°F July 23, 24, 29, 30; minimum, 44°F Jan. 29-31.
EXTREMES, 1956-63.--Water temperatures: Maximum, 86°F Aug. 25, 1959; minimum, 39°F Feb. 19, 20, 1958.

Temperature (°F) of water, water year October 1962 to September 1963
(Water-stage recorder with temperature attachment)

Month	Day																												Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	71	72	73	73	73	72	73	73	74	74	74	74	73	72	72	72	72	72	71	70	68	68	68	68	66	64	63	61	61	61	63	70
Minimum	70	71	72	73	72	72	72	73	73	73	73	73	72	72	72	72	72	71	70	68	67	67	67	66	64	63	61	60	60	61	61	69
November																																
Maximum	63	62	62	62	62	61	60	60	61	61	61	61	60	59	59	59	60	61	61	60	60	60	60	58	57	57	56	56	57	57	--	60
Minimum	62	62	62	61	61	60	59	59	60	61	60	60	59	59	58	58	59	60	60	60	60	60	58	57	57	56	56	56	56	57	--	59
December																																
Maximum	58	58	59	60	60	60	57	55	55	52	51	50	49	47	46	48	50	51	51	52	53	53	52	52	52	51	51	51	51	51	51	53
Minimum	57	58	58	59	60	57	55	55	52	51	50	49	47	46	46	46	48	50	51	51	52	52	52	52	51	51	51	51	51	51	51	52
January																																
Maximum	51	50	49	49	49	49	50	51	51	51	53	54	55	55	53	52	50	49	50	51	51	50	48	48	47	45	45	45	45	44	45	50
Minimum	50	49	49	49	49	49	49	50	51	51	51	53	54	53	52	50	49	49	49	50	50	48	48	47	45	45	45	45	44	44	44	49
February																																
Maximum	46	46	47	47	47	47	48	49	49	50	51	52	51	49	48	47	48	49	49	49	48	48	47	48	49	50	50	50	--	--	--	49
Minimum	45	46	46	47	47	47	47	48	49	49	50	51	49	48	47	47	47	48	48	48	48	47	47	47	48	49	50	49	--	--	--	48
March																																
Maximum	49	50	52	54	56	56	56	55	54	52	54	55	55	53	55	57	57	57	58	58	58	57	56	56	57	58	58	58	58	59	59	56
Minimum	49	49	50	52	54	56	55	54	52	52	52	54	53	53	53	55	56	56	57	58	57	56	55	55	56	57	58	58	58	58	58	55
April																																
Maximum	61	62	62	62	62	61	60	58	60	62	64	64	64	64	63	62	63	64	67	67	69	71	72	72	71	68	68	67	67	67	--	65
Minimum	59	61	62	61	61	60	58	58	58	60	62	63	63	63	62	61	62	63	64	67	67	69	71	71	68	67	67	67	66	67	--	64
May																																
Maximum	67	65	62	62	62	63	64	64	65	66	66	66	66	65	65	66	67	68	68	70	71	71	71	68	68	67	68	68	70	70	69	67
Minimum	65	62	61	61	61	62	63	64	64	65	65	65	65	65	64	65	66	66	67	68	70	70	68	67	67	67	67	68	68	69	68	66
June																																
Maximum	69	69	70	70	70	70	70	70	71	74	76	77	78	78	78	78	78	77	76	75	74	74	74	73	72	72	70	68	70	71	--	73
Minimum	68	67	69	69	70	70	69	69	70	71	74	76	77	78	77	78	77	76	75	74	73	74	73	72	72	70	68	68	68	70	--	72
July																																
Maximum	72	73	73	73	73	73	73	73	73	73	72	72	71	71	73	76	77	78	79	80	80	80	81	81	80	80	80	80	81	81	80	76
Minimum	71	72	73	73	72	72	72	72	72	72	71	71	71	71	71	73	76	77	78	79	80	80	80	80	79	79	79	79	80	80	79	75
August																																
Maximum	79	77	77	77	79	80	80	80	79	78	78	80	80	80	80	79	78	77	79	78	78	78	77	77	78	78	78	78	78	78	78	78
Minimum	77	75	76	76	77	79	80	79	78	78	78	78	79	80	79	78	77	76	77	78	78	77	76	77	77	78	78	77	77	77	77	78
September																																
Maximum	78	78	79	79	79	78	77	76	76	77	77	77	76	76	74	73	72	72	72	74	74	75	74	72	70	71	70	70	71	71	--	75
Minimum	77	77	78	78	78	77	76	75	75	76	76	76	76	74	73	72	71	72	72	72	74	74	72	70	70	70	70	70	70	71	--	74

ST. JOHNS RIVER BASIN

2-2324. ST. JOHNS RIVER NEAR COCOA, FLA.

LOCATION.--Conductance recorder at gaging station on downstream side of bridge on State Highway 520, 0.7 mile downstream from outlet of Lake Poinsett, and 8.8 miles west of Cocoa, Brevard County.
DRAINAGE AREA.--1,237 square miles.
RECORDS AVAILABLE.--Chemical analyses, October 1953 to September 1960 (Specific conductance 1953 to September 1963.
Water temperatures: October 1953 to September 1960.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 2,850 micromhos June 30; minimum daily, 280 micromhos Dec. 12.
EXTREMES, 1953-63.--Specific conductance: Maximum daily, 3,500 micromhos June 27, 30, July 2, 1962; minimum daily, 107 micromhos Oct. 10, 1953.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
Oct. 24, 1962 (time 1200)	1870	--	--	--	--	--	--	--	--	65	--	--		---	--	--	--	314	--	--
July 22, 1963	283	1.0	0.06	60	32	157	3.7	74	81	295	0.3	0.0		820	666	280	220	1200	6.7	50
Aug. 27.....	308	.0	.15	42	20	100	2.8	62	53	204	.3	.0		612	453	188	137	852	6.7	200
Sept. 15.....	201	4.7	.05	56	18	111	14	68	62	190	.4	.0		586	510	212	186	868	6.5	70

ST. JOHNS RIVER BASIN--Continued

2-2324. ST. JOHNS RIVER NEAR COCOA, FLA.--Continued

Specific conductance (micromhos at 25°C) water year October 1962 to September 1963

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	450	360	380	550	750	690	520	461	890	2200	710	930
2	425	380	380	550	750	680	508	463	840	1850	535	940
3	415	380	345	560	750	670	500	550	820	1460	638	955
4	405	380	420	570	750	640	500	1110	810	1210	830	965
5	405	370	420	565	750	620	500	620	830	1200	810	970
6	400	360	400	560	750	610	515	570	830	1220	890	950
7	400	350	420	580	750	600	520	575	815	1240	1010	980
8	400	350	400	583	750	610	520	620	810	1260	1020	950
9	400	360	400	575	750	605	515	630	820	1270	1020	905
10	400	370	410	575	750	600	510	550	815	1300	1030	900
11	400	380	420	475	750	560	515	550	845	1330	1000	905
12	390	350	280	495	750	530	520	555	860	1300	1010	920
13	390	350	570	510	750	580	530	562	890	1170	1030	925
14	390	360	535	520	750	600	530	620	970	1120	1020	1040
15	380	370	500	520	750	600	530	650	965	1070	1020	998
16	360	400	420	545	750	600	470	670	940	1000	1030	915
17	380	400	420	595	750	570	408	710	930	920	1050	920
18	390	400	400	600	750	580	415	730	950	870	1060	960
19	450	380	400	590	750	570	430	680	990	845	990	1500
20	430	380	400	590	750	570	433	710	1000	845	910	675
21	400	390	495	620	750	560	435	725	1050	860	860	440
22	400	390	500	660	750	560	445	750	1110	1030	887	420
23	400	395	508	635	750	550	460	760	1120	1310	670	450
24	400	395	510	640	750	550	440	880	1110	1380	430	425
25	350	395	510	645	750	545	445	960	1150	1240	360	427
26	360	400	509	675	750	530	465	880	1150	1100	370	485
27	360	400	515	700	728	530	457	995	1210	1120	678	610
28	370	410	523	685	700	520	450	1120	1310	1150	880	710
29	370	410	525	750	--	510	450	1150	2030	1010	940	775
30	370	420	545	750	--	520	460	1060	2850	955	920	790
31	370	--	550	750	--	520	--	1020	--	930	920	--
Average	393	381	451	600	747	580	479	738	1060	1190	855	824

2-2725. KISSIMMEE RIVER NEAR BASINGER, FLA.
(Formerly published as Kissimmee River near Cornwell)

LOCATION.--At gaging station on upstream side of bridge on U.S. Highway 98, 2 miles southwest of Basinger post office, Okeechobee County, and 10.5 miles downstream from Istokpoga Canal.
DRAINAGE AREA.--2,703 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1962 to September 1963.
Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 120 ppm May 21-31; minimum, 44 ppm Oct. 11-20.
Hardness: Maximum, 40 ppm Jan. 21-31, Feb. 1-10; minimum, 22 ppm Oct. 11-20.
Specific conductance: Maximum daily, 142 micromhos Feb. 21; minimum daily, 60 micromhos July 6.
Water temperatures: Maximum, 88°F Aug. 10; minimum, 50°F Dec. 13-16.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^+	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 11-20,1962	1220	3.8		0.13		6.4	1.6	6.3	0.7	16	6.4	11	--	0.0	A 44	22	9		80	7.0	200
Oct. 21-31.....	584	2.3		.06		6.6	2.2	8.8	.8	16	9.2	12	--	0.	A 50	26	13		94	6.4	85
Nov. 1-10.....	415	2.5		.01		7.6	1.9	9.8	1.0	18	10	14	--	.0	A 56	27	12		100	6.6	60
Nov. 11-20.....	631	2.9		.05		7.2	1.9	9.3	1.2	16	11	15	--	.1	A 57	26	13		105	6.6	75
Nov. 21-30.....	415	2.8		.03		7.6	2.7	10	.9	20	10	15	--	0.	A 59	30	14		110	6.6	50
Dec. 1-10.....	350	1.8		.02		8.0	2.4	11	.9	20	12	15	--	.1	A 61	30	14		110	6.8	50
Dec. 11-20.....	321	2.2		.02		8.8	2.2	11	1.0	20	12	16	--	.2	A 63	31	15		115	6.8	50
Dec. 21-31.....	288	1.8		.03		8.8	2.7	11	1.4	22	13	16	--	.2	A 66	33	15		120	6.8	50
Jan. 1-10, 1963	294	1.8		.07		10	2.2	10	1.5	20	14	16	.0	.0	104	34	18		119	6.3	50
Jan. 11-20.....	268	2.2		.06		10	3.2	11	1.5	26	14	16	.0	.0	106	38	17		128	6.8	50
Jan. 21-31.....	269	1.8		.05		11	3.0	11	1.8	28	14	17	.0	.0	100	40	17		133	6.9	60
Feb. 1-10.....	262	1.9		.04		12	2.4	12	1.9	28	14	17	.0	.0	114	40	17		139	6.8	50
Feb. 11-20.....	396	2.7		.08		9.6	3.4	11	3.1	26	14	18	.0	.0	104	38	17		134	6.7	80
Feb. 21-28.....	658	3.4		.16		10	2.2	12	4.4	20	14	19	.0	.3	108	34	18		137	6.5	120
Mar. 1-10.....	1060	2.4		.14		8.0	2.9	8.7	5.1	8	12	18	.2	.1	86	32	25		120	6.8	160

A Calculated from determined constituents.

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2725. KISSIMMEE RIVER NEAR BASINGER, FLA.--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Mar. 11-20,1963	845	0.8		0.16		8.8	2.4	8.7	2.5	29	10	14	0.2	0.0	66	32	8		114	6.9	140
Mar. 21-31.....	658	.8		.07		8.8	2.7	8.2	1.3	21	11	14	.2	.1	70	33	16		113	6.9	95
Apr. 1-10.....	596	1.1		.04		8.8	3.2	8.2	1.4	17	10	14	.2	.0	66	35	21		116	6.8	75
Apr. 11-20.....	488	1.3		.05		9.6	3.2	9.0	1.3	25	14	14	.1	.0	74	37	16		123	6.8	70
Apr. 21-30.....	446	1.3		.05		10	3.4	9.0	1.2	22	15	16	.2	.0	74	39	21		126	6.9	70
May 1-10.....	442	16		.06		9.6	3.4	8.0	.9	28	15	16	.2	.5	118	38	15		125	7.1	70
May 11-20.....	386	1.6		.06		10	3.2	9.2	1.1	24	15	16	.2	.4	118	38	18		130	6.9	60
May 21-31.....	426	2.2		.06		10	3.4	8.7	1.1	24	15	16	.2	.4	120	39	19		128	6.9	50
June 1-10.....	534	2.6		.08		8.0	3.4	8.6	1.0	21	14	14	.2	.2	96	34	17		110	7.0	90
June 11-20.....	527	3.1		.09		7.6	3.4	8.6	.9	19	13	16	.2	.1	86	33	17		108	6.7	90
June 21-30.....	547	4.1		.16		9.2	2.4	8.8	1.0	20	14	16	.2	.1	92	33	17		109	6.7	80
July 1-10.....	669	4.6		.15		8.0	1.9	5.0	.9	15	11	9.5	.2	.0	82	28	16		75	6.7	140
July 11-20.....	524	2.5		.09		8.0	1.7	7.1	.8	16	11	12	.4	.0	88	27	14		88	6.6	80
July 21-31.....	508	2.3		.06		9.2	1.7	7.8	.9	17	13	14	.2	.0	90	30	16		100	6.5	60
Aug. 1-10.....	451	2.1		.04		8.0	4.4	9.0	1.3	18	13	14	.2	.0	90	38	23		109	6.6	50
Aug. 11-20.....	440	5.1		.04		10	2.7	9.0	1.3	20	15	15	.3	.0	90	36	20		112	6.5	45
Aug. 21-31.....	486	2.8		.10		9.2	2.7	9.0	1.3	20	14	15	.3	.0	88	34	18		110	6.5	55
Sept. 1-10.....	431	2.7		.03		8.0	3.4	10	1.6	20	15	15	.3	.0	100	34	18		113	6.5	50
Sept. 11-20....	414	2.6		.03		7.2	3.4	9.7	1.2	18	14	15	.2	.0	68	32	17		109	6.6	50
Sept. 21-30....	985	4.5		.19		7.2	2.9	7.7	1.6	18	15	13	.3	.0	104	30	15		96	6.3	100
Weighted average....	--	2.9		0.09		8.5	2.5	8.8	1.6	20	12	15	--	0.1	82	32	16		109	6.6	90
Time-weighted average....	519	2.8		0.07		8.8	2.5	9.2	1.5	20	13	15	--	0.01	84	33	16		112	6.6	75
Tons per day.	--	4.1		0.12		12	3.5	12	2.2	27	17	20	--	0.01	115	--	--		--	--	--

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2725. KISSIMMEE RIVER NEAR BASINGER, FLA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	--	--	--	--	--	--	--	--	--	--	83	80	80	80	83	80	80	78	75	75	78	79	79	76	74	70	70	70	74	70	72	--
November	71	70	70	70	--	--	--	68	68	75	65	65	65	65	64	65	68	68	70	70	74	74	68	68	68	65	62	61	65	62	--	68
December	63	65	65	64	67	62	60	58	58	55	66	55	50	50	50	50	55	55	58	58	60	63	65	67	70	70	70	70	70	67	60	61
January	60	60	57	56	60	62	60	57	55	55	60	67	65	65	62	60	62	68	67	70	67	63	64	65	57	63	65	62	59	62	65	62
February	68	70	70	67	63	60	50	61	61	62	63	67	61	61	60	59	65	60	65	62	61	63	60	64	64	66	59	68	--	--	--	63
March	61	66	70	72	73	74	68	65	60	68	69	72	74	76	77	77	78	78	78	78	74	68	67	68	68	69	71	72	73	73	72	71
April	71	72	73	74	76	77	76	74	76	76	77	77	77	74	72	73	74	73	75	78	78	79	75	80	79	80	80	78	76	75	--	76
May	77	73	72	71	71	72	75	77	78	79	80	80	81	80	79	82	83	84	84	83	84	84	83	84	82	83	84	83	82	82	81	80
June	81	82	82	82	82	83	82	84	82	83	84	85	84	85	83	85	85	85	87	87	87	87	87	87	87	83	82	81	82	84	--	84
July	84	85	86	86	85	86	87	87	87	85	84	83	84	84	85	86	85	85	86	87	87	84	83	83	84	85	86	81	87	86	85	85
August	87	87	83	83	87	87	87	84	87	88	87	86	87	87	86	87	87	87	86	84	84	81	81	83	85	87	87	87	87	86	86	86
September	86	86	85	85	86	87	86	85	84	84	83	83	84	83	81	80	81	80	78	78	76	77	74	75	72	73	76	76	76	74	--	80

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2827.5. MIDDLE RIVER CANAL NEAR FORT LAUDERDALE, FLA.

LOCATION.--Conductance recorder on downstream side of bridge on N. W. 31st Street intersection of Seaboard Airline Railroad Bridge.
RECORDS AVAILABLE.--Chemical analyses (Specific conductance): May 1962 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 23,100 micromhos Jan. 13; minimum daily, 695 micromhos Oct. 4.
EXTREMES, 1961-63.--Specific conductance: Maximum daily, 26,700 micromhos June 4, 1962; minimum daily, 680 micromhos Sept. 2, 3, 1962.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
July 17, 1963.		5.7	0.04	124	97	838	31	272	214	1450	0.4	2.0		3260	2900	710	487	5110	7.4	50

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2827.5. MIDDLE RIVER CANAL NEAR FORT LAUDERDALE, FLA.--Continued

Specific conductance (micromhos at 25°C) water year October 1962 to September 1963

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	--	90	90	109	97	46	98	113	67	44	37	57
2	49	91	92	102	96	46	100	111	78	49	38	58
3	51	88	91	102	76	47	100	110	76	21	33	37
4	23	91	93	102	73	47	101	103	45	24	47	41
5	41	89	97	105	79	52	103	110	55	42	41	49
6	52	89	95	95	86	57	103	110	62	45	58	52
7	61	89	95	94	86	60	106	123	68	50	50	45
8	60	88	96	92	88	60	104	121	59	58	49	55
9	65	60	95	100	93	62	103	119	62	62	56	61
10	67	67	97	100	93	64	104	121	72	67	53	62
11	71	76	97	100	94	58	105	--	77	60	53	67
12	66	80	98	100	37	65	105	--	82	53	54	71
13	73	75	98	101	45	64	110	120	54	56	102	73
14	86	77	98	101	58	66	109	123	58	67	60	76
15	78	78	98	93	59	71	109	119	71	60	73	77
16	90	79	99	89	67	74	110	117	78	37	65	77
17	83	82	97	95	67	82	111	119	79	34	--	19
18	85	84	95	96	67	75	111	120	85	42	--	34
19	88	85	98	95	47	77	112	122	88	51	82	--
20	88	86	101	100	62	80	112	126	90	62	29	24
21	88	86	99	100	58	82	112	125	91	68	33	33
22	89	86	100	100	63	84	112	125	96	74	37	25
23	80	87	99	--	66	85	111	119	--	28	58	25
24	76	88	100	97	73	88	112	120	68	35	47	27
25	80	90	100	96	44	88	113	105	68	38	47	33
26	83	90	102	93	47	89	115	96	43	37	53	37
27	90	92	101	87	35	89	117	99	43	44	54	37
28	--	92	100	81	39	92	119	66	40	46	41	40
29	91	93	102	88	--	92	119	74	41	48	42	46
30	98	93	101	90	--	94	119	56	43	51	55	46
31	94	--	106	97	--	94	--	63	--	31	33	--
Average	74	84	97	96	67	71	108	108	66	47	51	47

2-2872. MIAMI CANAL EAST OF LEVEE 30, NEAR MIAMI, FLA.

LOCATION.--Approximately 200 feet downstream from Levee 30, 100 feet downstream from control structure 32, 0.5 mile upstream from gaging station at broken dam near Miami, 20 miles upstream from mouth, and 18 miles northwest of Miami, Dade County.
RECORDS AVAILABLE.--Chemical analyses: November 1958 to September 1963.
WATER TEMPERATURES: November 1958 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 348 ppm Aug. 17-31; minimum, 274 ppm Jan. 11-20.
Maximum, 248 ppm Aug. 1-8, 17-31; minimum, 154 ppm Jan. 11-20.
Specific conductance: Maximum daily, 559 micromhos Aug. 18; minimum daily, 389 micromhos Mar. 1.
Water temperatures: Maximum, 98°F June 24; minimum, 64°F Mar. 23.
EXTREMES, 1958-63.--Dissolved solids: Maximum, 469 ppm Jan. 21-31, 1961; minimum, 250 ppm July 1-10, 1959.
Hardness: Maximum, 266 ppm Feb. 22, 24, 27-28, 1962; minimum, 154 ppm Jan. 11-20, 1963.
Specific conductance: Maximum daily, 669 micromhos May 5, 1962; minimum daily, 389 micromhos Mar. 1, 1963.
Water temperatures: Maximum, 98°F June 24, 1963; minimum, 60°F Jan. 30, 1961.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Oct. 1-10, 1962		5.8		0.05		71	8.0	20	1.0	248	6.8	26	0.2	0.2	290	210	7		441	8.1	100
Oct. 11-17, 19, 20		5.5		.05		70	8.1	19	.9	240	1.6	26	.2	.3	276	208	11		438	8.0	90
Oct. 21-24, 26-30		5.4		.06		70	7.7	19	.9	240	.4	25	.2	.4	284	206	9		435	8.0	90
Nov. 1-10		4.9		.05		72	6.9	20	.7	246	.4	28	.3	.2	294	208	6		435	8.1	80
Nov. 11-15, 17-20		4.7		.04		72	7.4	20	.7	250	.0	29	.3	.0	302	210	5		450	7.9	80
Nov. 21-30		4.3		.05		74	6.7	19	.7	248	.8	28	.3	.0	302	212	9		453	7.8	80
Dec. 1		--		--		--	--	20	1.0	232	--	--	--	--	--	216	9		428	8.5	--
Dec. 2-7, 9, 10		9.4		.04		75	7.1	19	.8	256	.0	24	.3	.0	292	216	6		450	8.1	80
Dec. 11-20		4.2		.04		77	6.3	20	.8	258	.0	25	.3	.0	298	218	6		460	8.0	70
Dec. 21-23, 28-31		3.8		.04		77	6.8	19	.8	258	.0	23	.3	.0	296	220	8		460	8.0	70
Jan. 1-10, 1963		4.5		.01		74	8.1	18	1.2	248	4.4	26	.3	.1	280	218	8		443	8.4	90
Jan. 11-20		4.5		.01		50	7.1	20	1.0	174	4.0	25	.4	.2	274	154	1		414	8.4	75

Jan. 21-31,1963		3.2		.01		75	6.6	20	1.0	250	.4	25	.3	.1	290	214	2		448	8.4	80
Feb. 1-10.....		3.3		.03		70	6.2	20	1.0	258	3.2	25	.3	.2	286	200	0		442	8.2	78
Feb. 11-20.....		3.7		.01		74	2.8	20	1.0	248	3.6	25	.3	.0	312	196	0		441	8.3	80
Feb. 21-28.....		4.0		.04		74	5.7	20	1.0	250	.4	26	.3	.1	320	208	0		441	8.3	78
Mar. 1-10.....		5.0		.04		74	6.2	21	1.0	252	.0	25	.3	.1	286	210	3		447	8.1	80
Mar. 11-20.....		3.2		.01		74	7.7	21	1.0	252	.4	25	.3	.1	320	216	6		442	8.3	80
Mar. 21-31.....		3.8		.03		69	11	21	1.0	250	3.2	25	.3	.0	308	216	4		448	8.4	80
Apr. 1-10.....		4.2		.02		86	.9	22	1.0	256	.4	25	.2	.1	310	218	5		455	8.3	80
Apr. 11-20.....		3.5		.01		78	6.2	20	1.0	268	.0	28	.3	.1	320	220	0		466	8.1	80
Apr. 21-30.....		4.5		.01		79	3.6	21	1.0	266	.4	24	.3	.9	304	212	0		470	8.0	80
May 1-10.....		4.0		.04		78	10	19	.6	270	.0	25	.3	1.0	282	230	9		467	8.1	70
May 11-20.....		3.9		.05		79	8.0	19	.6	274	.0	26	.3	.5	304	230	5		477	7.9	70
May 21-31.....		4.3		.06		80	7.9	19	.6	278	.0	25	.3	1.0	312	232	4		482	7.9	70
June 1-10.....		4.6		.02		82	6.2	20	1.2	280	2.8	25	.3	.4	320	230	0		470	8.1	70
June 11-20.....		5.1		.02		82	6.7	21	1.2	274	1.2	26	.3	.2	330	232	7		480	7.8	80
June 21-30.....		4.6		.03		86	4.3	22	1.2	280	2.0	27	.3	.1	336	232	2		488	7.8	70
July 1-10.....		4.5		.03		80	8.8	21	.5	276	3.2	26	.4	.3	322	236	10		472	8.0	60
July 11-20.....		4.5		.03		80	10	21	.6	284	.8	26	.3	.5	326	242	9		478	8.1	70
Aug. 1-8.....		5.1		.03		80	12	21	.9	276	5.2	28	.3	.0	330	248	22		490	7.4	65
Aug. 9-16.....		5.0		.03		80	11	21	.9	276	4.0	27	.3	.0	288	244	18		495	7.8	65
Aug. 17-31.....		3.2		.04		82	11	21	1.0	280	7.2	33	.3	.1	348	248	18		520	7.7	70
Sept. 1-10.....		5.8		.04		78	9.1	23	1.3	268	8.6	30	.4	.4	338	232	12		480	7.5	80
Sept. 11-20....		5.6		.04		80	7.9	23	1.0	268	7.4	34	.3	.6	344	232	12		457	7.7	80
Sept. 21-30....		5.8		.06		75	9.0	23	.3	260	6.4	32	.4	.3	318	224	11		469	7.3	80
Time-weighted average....		4.6		0.03		76	7.4	20	0.9	259	2.4	27	0.3	0.2	307	220	7		460	7.9	75

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2872. MIAMI CANAL EAST OF LEVEE 30, NEAR MIAMI, FLA.--Continued

Specific conductance (micromhos at 25°C) water year October 1962 to September 1963

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	458	429	439	450	450	389	458	466	450	509	486	509
2	457	442	451	450	450	390	461	471	470	491	496	471
3	450	435	455	451	450	390	454	471	460	490	493	508
4	442	440	450	449	455	391	460	466	460	498	493	501
5	455	442	451	448	449	400	458	466	465	504	497	501
6	457	435	455	450	450	409	463	466	455	499	464	500
7	442	445	451	450	451	400	455	472	465	496	480	500
8	451	437	--	449	450	401	462	466	460	513	482	498
9	460	444	455	448	451	398	464	478	460	512	453	488
10	449	452	458	449	451	395	463	455	475	518	501	496
11	448	441	457	448	450	410	465	472	450	491	497	494
12	448	441	464	443	449	408	465	475	470	499	470	500
13	450	451	461	445	440	404	461	462	440	512	492	500
14	449	445	468	445	440	398	461	468	460	514	500	481
15	443	448	463	451	441	399	463	470	470	507	500	488
16	447	--	459	450	441	399	462	470	465	508	489	498
17	444	465	460	443	451	398	472	472	470	509	552	498
18	--	452	462	453	441	395	465	474	465	504	559	499
19	431	462	448	453	440	400	469	474	475	516	552	490
20	446	448	457	450	445	410	468	474	475	504	484	480
21	439	458	453	449	449	412	470	470	470	511	506	488
22	440	450	460	448	449	405	463	471	475	527	501	490
23	444	446	455	451	450	402	466	475	470	519	503	488
24	446	451	--	451	440	402	477	477	525	520	500	482
25	--	458	--	450	445	405	474	481	480	528	502	480
26	446	446	--	452	446	409	467	482	470	512	502	470
27	443	453	--	454	450	398	472	476	470	517	505	476
28	441	450	458	450	445	399	488	483	472	514	496	481
29	441	442	456	451	--	397	474	485	468	530	504	479
30	444	448	456	460	--	398	475	484	480	522	502	488
31	--	--	458	460	--	400	--	482	--	529	510	--
Average	446	446	456	450	447	400	465	472	468	510	499	490

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2872. MIAMI CANAL EAST OF LEVEE 30, NEAR MIAMI, FLA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	80	82	81	82	82	84	82	84	81	82	82	82	82	80	82	82	82	--	80	80	80	80	80	78	--	78	75	78	77	80	--	81
November	79	79	76	78	78	78	76	76	74	76	78	74	76	70	78	--	76	74	78	78	76	74	70	70	75	70	70	70	68	72	--	75
December	72	73	72	72	76	70	70	--	70	68	68	66	65	66	70	70	70	72	70	68	69	74	72	--	--	--	--	75	78	72	72	71
January	78	74	70	72	70	70	68	70	70	72	78	77	78	74	74	70	70	74	72	74	70	70	74	70	70	72	72	70	70	72	72	72
February	74	72	76	70	68	72	72	72	72	72	71	70	72	68	71	72	68	68	72	70	68	70	70	73	73	77	70	70	--	--	--	71
March	78	76	72	72	72	74	70	72	78	78	71	85	74	76	75	75	86	86	77	77	72	72	64	68	72	76	76	74	74	74	73	75
April	73	72	74	72	74	80	78	78	78	80	84	76	76	75	84	74	76	76	76	77	75	74	76	77	79	76	78	96	73	72	--	77
May	73	72	72	72	74	74	74	75	74	76	78	75	74	74	76	76	76	74	76	76	76	76	74	76	76	76	77	76	78	80	76	75
June	76	76	78	80	80	76	76	76	78	78	78	80	78	78	82	78	78	80	80	78	84	80	88	98	77	75	78	76	78	78	--	79
July	76	78	78	78	79	76	82	81	78	78	86	76	78	78	78	80	78	76	78	88	84	80	79	78	80	78	78	78	78	76	79	79
August	80	78	79	80	75	76	78	80	80	75	80	78	80	80	80	78	80	80	80	78	78	76	79	80	80	83	86	88	87	87	86	80
September	78	84	78	78	78	80	80	80	80	80	78	82	81	79	78	80	79	80	80	80	79	79	78	78	78	80	81	80	80	82	--	80

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2886. MIAMI CANAL AT N. W. 36th STREET, MIAMI, FLA. (BELOW CONTROL)

LOCATION.--Conductance recorder just below dam, 300 feet downstream from N. W. 36th Street Bridge in Miami, Dade County, 1.4 miles upstream from Tamiami Canal, and 5.7 miles upstream from mouth.
RECORDS AVAILABLE.--Specific conductance: April 1959 to September 1963.
EXTREMES, 1962-63.--Specific conductance: Maximum daily, 23,100 micromhos May 3; minimum daily, 412 micromhos Oct. 3, 4.
EXTREMES, 1959-63.--Specific conductance: Maximum daily, 42,800 micromhos June 10, 1962; minimum daily, 395 micromhos June 30, 1959.
REMARKS.--Canal is tidal at low flow.

Specific conductance (micromhos at 25°C) water year October 1962 to September 1963

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	430	1740	13100	5080	1850	440	20500	20300	18600	--	--	7990
2.....	412	1150	13100	6870	2780	470	19300	22400	18500	--	--	7280
3.....	412	1100	13300	8200	3210	465	18100	23100	18000	--	--	5790
4.....	420	1120	12300	7750	2440	440	17400	18700	18200	--	--	1390
5.....	420	1450	10700	9100	642	485	17700	18300	17500	--	--	1160
6.....	425	1700	6400	8340	1210	645	19200	17300	15600	--	--	858
7.....	420	2120	3940	9120	2060	710	21500	15300	8900	--	--	480
8.....	425	2130	3330	5730	3440	870	20200	13600	4610	--	--	480
9.....	428	1400	3920	2850	3880	997	18200	12200	4670	--	--	480
10.....	425	1100	2660	2450	4330	2380	18100	7900	3640	--	--	480
11.....	424	1100	1420	2860	5210	2050	19500	12300	1820	--	--	475
12.....	423	1080	1150	3230	4750	2720	20000	14600	2020	--	--	475
13.....	420	1050	1050	3240	3400	3320	19400	16700	--	--	--	475
14.....	430	1010	1400	1140	2000	3410	20300	16900	--	--	--	475
15.....	433	1010	2300	1100	1200	4090	20900	17500	--	--	--	480
16.....	435	1000	2750	1030	450	4790	22600	17500	--	--	--	475
17.....	622	1010	2600	1100	450	4770	21800	18100	--	--	--	470
18.....	2620	1070	2250	1220	450	5000	21400	18200	--	--	--	465
19.....	13000	1040	2250	1130	450	6000	19900	17100	--	--	--	470
20.....	8620	1050	2850	1400	450	7200	20000	15100	--	--	--	460
21.....	14600	1030	2600	1100	450	8400	17600	15600	--	--	2950	485
22.....	11200	1040	3600	1000	445	10000	16200	15200	--	--	1970	495
23.....	12000	1030	4750	1020	455	11400	15300	14600	--	--	1150	495
24.....	12000	1030	5300	1050	455	12900	14600	15600	--	--	2310	510
25.....	18000	1030	3200	990	455	14300	16200	15200	--	--	5290	502
26.....	10200	1300	2950	1440	455	16100	17600	16200	--	--	5750	500
27.....	10000	2150	2350	2110	455	17400	18400	17900	--	--	1380	492
28.....	9100	8460	1850	1880	440	19000	16800	18500	--	--	600	495
29.....	10000	12400	1200	1090	--	20500	15600	20100	--	--	568	505
30.....	9200	12400	1450	1690	--	22000	18200	19100	--	--	2450	505
31.....	6550	--	2890	2090	--	21300	--	17900	--	--	7580	--
Average	5000	2200	4400	3200	1700	7200	18800	16700	--	--	--	1200

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2908. TAYLOR SLOUGH NEAR HOMESTEAD, FLA.

LOCATION.--Temperature recorder at gaging station at upstream side (north) of bridge on State Highway 27, in Everglades National Park, 1.5 miles north of Royal Palm Ranger Station, 9 miles southwest of Homestead, Dade County, and 12 miles north of indefinite mouth at Florida Bay.
RECORDS AVAILABLE.--Water temperatures: January 1961 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Minimum, 50°F Dec. 15.
EXTREMES, 1961-63.--Water temperatures: Maximum, 104°F July 22, 23, 1961; minimum, 50°F Dec. 15, 1962.
REMARKS.--No record Mar. 16 to June 8, 1963.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
Oct. 29, 1962.	6.5	3.2	0.01	63	4.1	10	0.6	202	0.8	16	0.0	0.0		198	198	174	8	348	7.7	3
Nov. 8.....	5	2.7	.01	66	2.3	9.1	.2	208	.4	16	.2	.4		210	199	174	4	363	7.9	7

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2908. TAYLOR SLOUGH NEAR HOMESTEAD, FLA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	84	86	86	87	88	90	89	88	88	88	86	86	84	84	84	84	81	81	79	81	81	81	81	79	79	77	74	75	75	76	76	83
Minimum	84	82	85	86	85	86	86	84	84	85	82	82	81	81	82	80	78	78	78	77	77	78	78	77	74	74	72	72	73	74	74	80
November																																
Maximum	78	78	76	76	73	71	70	72	76	76	73	74	73	72	70	72	74	74	77	78	78	79	78	73	72	72	70	66	66	69	--	74
Minimum	73	74	72	73	68	68	69	66	72	71	68	66	69	67	68	69	72	73	74	76	76	78	73	71	72	70	64	66	65	65	--	70
December																																
Maximum	69	69	69	68	68	68	64	66	67	66	60	64	60	56	59	61	64	63	64	64	63	68	68	67	69	69	70	69	68	68	66	66
Minimum	68	65	65	64	64	64	59	62	65	60	56	56	52	51	50	51	57	59	61	61	61	62	66	66	67	69	68	68	68	66	63	62
January																																
Maximum	63	60	59	59	58	58	58	59	58	60	64	71	71	71	71	71	70	70	70	72	72	68	69	69	70	70	70	70	69	68	68	66
Minimum	60	59	59	54	56	58	58	58	55	58	60	64	70	70	71	70	68	68	70	69	68	63	63	65	62	64	70	69	68	67	66	64
February																																
Maximum	68	69	69	69	68	64	64	64	65	66	70	72	74	70	66	61	65	77	77	74	72	68	66	71	72	72	70	61	--	--	--	69
Minimum	65	66	66	68	64	64	62	62	64	63	66	70	70	66	61	61	61	65	63	63	62	66	63	64	68	70	61	59	--	--	--	64
March																																
Maximum	67	71	71	71	71	71	70	69	67	68	70	72	72	71	70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	60	67	71	71	71	70	69	64	64	66	68	70	70	70	67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
April																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
May																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
June																																
Maximum	--	--	--	--	--	--	--	83	84	84	87	89	89	99	98	88	98	97	97	95	93	93	92	95	88	82	94	93	96	97	--	--
Minimum	--	--	--	--	--	--	--	75	75	79	81	80	84	85	79	79	85	87	87	86	83	83	82	82	81	84	78	82	82	90	--	--
July																																
Maximum	94	94	91	91	91	91	91	91	97	91	88	86	84	86	86	83	84	85	85	87	87	86	84	84	84	84	86	85	82	86	84	87
Minimum	85	86	86	81	84	82	85	84	83	83	83	79	79	79	79	78	78	78	81	78	81	80	77	77	78	78	78	79	77	73	77	80
August																																
Maximum	87	88	86	83	--	--	90	87	87	88	88	86	87	91	90	94	86	81	83	85	89	84	--	93	95	95	93	92	97	95	92	89
Minimum	77	77	78	77	--	--	84	84	83	83	83	83	82	81	81	82	81	81	80	79	80	82	--	84	83	84	84	85	85	85	84	82
September																																
Maximum	88	--	--	--	88	90	86	88	92	90	86	85	89	85	84	89	84	80	80	79	82	84	84	82	81	82	88	89	87	87	--	86
Minimum	84	--	--	--	84	83	85	84	82	82	82	80	80	81	81	81	80	79	79	78	79	81	82	81	81	81	81	87	85	85	--	82

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2908.2. EVERGLADES P-33 NEAR HOMESTEAD, FLA.

LOCATION.--Temperature recorder in sec. 11, T.56 S., R.36 E., in the Everglades, 13 miles southeast of the 40-mile bend of U.S. Highway 41, and 16 miles northwest of Homestead, Dade County.
RECORDS AVAILABLE.--Water temperatures: April 1960 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 110°F Aug. 10; minimum, 45°F Dec. 14.
EXTREMES, 1960-63.--Water temperatures: Maximum, 110°F Aug. 10, 1963; minimum, 45°F Dec. 14, 1962.

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	87	87	83	88	90	92	91	90	90	88	85	84	85	85	85	83	81	76	78	81	82	81	76	78	77	71	72	73	73	69	74	82
Minimum	75	78	79	77	79	80	80	78	78	78	75	74	73	73	74	72	71	70	70	68	69	70	73	69	66	67	62	64	66	66	66	72
November																																
Maximum	77	71	76	72	72	75	73	72	75	74	72	73	72	71	69	72	71	72	76	76	77	76	72	69	72	72	66	64	64	69	--	72
Minimum	67	67	66	66	61	62	67	68	70	66	63	62	64	62	64	64	66	66	68	71	70	72	64	67	67	63	56	60	63	60	--	65
December																																
Maximum	67	69	68	67	89	68	63	64	67	64	63	64	58	58	60	64	68	70	69	67	67	76	76	72	75	76	76	75	72	70	67	68
Minimum	64	62	62	63	82	62	58	60	61	57	51	53	48	45	48	50	55	58	60	60	60	64	64	64	67	65	65	66	66	62	57	59
January																																
Maximum	66	66	65	64	64	64	64	63	64	65	68	74	74	77	75	68	73	73	72	76	71	63	72	69	65	74	74	70	71	71	73	69
Minimum	54	56	56	50	58	58	60	57	50	51	55	65	66	67	68	64	62	63	64	67	61	55	61	62	58	65	65	65	62	63	63	60
February																																
Maximum	75	73	73	69	65	66	68	69	68	70	70	72	69	68	67	63	65	66	79	74	77	71	68	78	85	84	72	74	--	--	--	71
Minimum	64	64	62	65	61	60	57	60	60	58	63	64	58	55	58	59	59	59	66	60	58	64	61	64	70	70	59	60	--	--	--	61
March																																
Maximum	81	85	85	82	84	86	80	78	81	84	85	84	85	84	86	84	85	85	85	84	82	79	77	77	78	80	80	81	79	80	78	82
Minimum	66	72	72	73	74	74	72	69	69	74	75	75	77	78	80	80	80	80	79	79	79	73	71	71	72	74	75	75	76	73	76	75
April																																
Maximum	78	79	80	80	80	80	77	80	77	79	81	80	80	77	76	77	78	79	79	81	81	81	81	83	80	80	80	77	74	76	--	79
Minimum	76	77	76	76	74	74	75	72	73	71	73	74	74	70	67	66	68	69	69	71	71	71	71	71	72	73	74	73	71	70	--	72
May																																
Maximum	77	74	74	76	77	77	78	79	78	77	80	80	78	79	79	81	81	80	81	80	77	79	76	75	82	81	80	82	78	78	77	78
Minimum	70	71	72	70	68	65	69	69	67	67	70	70	70	72	89	69	69	69	71	72	73	73	73	71	73	74	74	74	74	74	73	71
June																																
Maximum	80	80	82	90	98	101	93	93	94	92	95	98	93	94	92	99	99	100	100	97	96	91	94	100	90	86	97	93	101	103	--	94
Minimum	74	76	74	74	74	77	76	76	76	78	79	79	80	82	82	80	81	80	81	81	80	79	78	80	81	79	79	77	79	81	--	78
July																																
Maximum	101	100	104	103	104	106	105	102	100	100	101	103	99	108	107	101	103	104	103	104	104	104	104	104	102	101	102	104	105	109	106	103
Minimum	82	82	82	82	82	82	85	84	85	84	85	82	82	83	84	85	83	84	85	84	86	87	86	86	85	84	84	84	85	83	84	84
August																																
Maximum	109	109	105	105	103	109	108	109	104	110	109	107	100	105	108	104	96	100	97	96	92	102	107	105	107	107	102	100	106	103	95	104
Minimum	86	87	84	86	87	87	86	85	87	86	88	88	86	85	86	88	84	83	83	82	84	83	87	89	90	91	88	88	87	87	87	86
September																																
Maximum	104	93	102	100	103	105	104	103	104	97	100	103	106	102	96	102	96	97	86	83	90	94	84	84	81	88	96	94	92	92	--	96
Minimum	86	86	86	88	87	86	86	86	85	85	84	84	85	85	85	83	83	84	82	80	79	84	83	81	80	80	86	88	86	84	--	84

239-654 O - 67 - 25

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2908.3. EVERGLADES STATION P-35 NEAR HOMESTEAD, FLA.

LOCATION.--Temperature recorder in SE¼ sec.36, T.57 S., R. 34 E., in the Everglades, 100 feet north of Rookery Branch, 8 miles upstream from Shark River, 17 miles northwest of Royal Palm Ranger Station, and 24 miles west of Homestead, Dade County.
RECORDS AVAILABLE.--Water temperatures: March 1960 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 105°F June 1, 3; minimum, 61°F Nov. 27.
EXTREMES, 1960-63.--Water temperatures: Maximum, 105°F June 1, 3, 1963; minimum, 60°F on several days in April and December 1960, January 1961.

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
Nov. 13, 1962	2.17	0.9	0.02	39	3.5	21	0.8	118	1.2	42	0.2	0.0		194	167	112	16	312	7.7	30
Apr. 23, 1963	1.30	20	.81	619	393	3870	103	439	754	7050	.4	5.7		14900	13000	3160	2800	19800	7.4	160
June 26.....	1.74	5.8	.08	68	24	218	7.0	196	36	350	.0	.6		944	806	270	110	1410	7.6	110
Sept. 12.....	2.13	7.3	.05	50	51	23	1.4	156	6.8	39	.0	.5	0.3	236	210	146	28	365	7.2	60

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2908.3. EVERGLADES STATION P-35, NEAR HOMESTEAD, FLA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	81	80	83	84	84	85	85	84	82	82	80	78	78	79	80	78	76	76	75	74	72	72	72	73	72	72	70	72	73	69	69	77
Minimum	77	78	78	80	80	80	81	80	79	79	78	77	76	76	76	76	74	73	72	71	70	70	72	72	70	70	67	67	68	67	68	74
November																																
Maximum	70	69	69	68	67	65	66	67	70	68	--	--	67	66	66	66	67	69	71	73	81	77	74	71	76	75	69	67	65	66	--	69
Minimum	68	67	67	67	65	64	64	64	67	65	--	--	66	64	64	64	64	65	67	68	69	72	67	66	67	66	61	62	65	62	--	66
December																																
Maximum	66	67	66	66	68	66	65	65	66	65	64	63	63	63	64	65	70	74	72	68	68	73	74	72	75	76	77	76	78	77	71	69
Minimum	64	64	64	64	64	65	63	64	64	64	63	63	63	63	63	63	63	64	65	65	66	67	68	68	71	70	70	72	73	71	67	66
January																																
Maximum	71	70	70	69	69	69	74	71	69	70	73	78	80	83	81	76	76	77	76	79	80	79	73	77	75	73	77	79	77	75	77	75
Minimum	67	67	67	65	67	67	67	67	66	66	66	69	71	71	74	72	70	70	71	72	73	73	69	71	73	70	72	72	73	72	71	70
February																																
Maximum	78	79	78	77	76	78	80	79	80	80	80	82	80	76	73	72	73	75	81	83	81	77	74	80	85	84	80	73	--	--	--	78
Minimum	71	71	72	75	72	72	69	69	70	69	71	77	69	68	69	71	71	72	75	73	70	73	72	72	75	77	72	71	--	--	--	72
March																																
Maximum	80	84	84	81	83	84	82	78	81	84	83	83	83	84	85	83	86	85	85	86	82	77	76	76	79	82	89	94	89	93	86	83
Minimum	72	77	77	78	77	78	76	75	74	76	76	76	77	79	78	77	77	78	77	77	77	73	73	73	72	73	75	78	80	76	80	76
April																																
Maximum	83	83	83	84	85	88	88	96	98	97	--	--	--	--	--	--	--	--	--	--	--	--	96	98	98	98	98	93	86	84	--	--
Minimum	80	81	77	77	76	77	80	78	82	90	--	--	--	--	--	--	--	--	--	--	--	--	88	91	92	94	93	90	82	80	--	--
May																																
Maximum	86	85	83	85	85	85	89	88	86	88	94	97	95	90	88	93	95	93	96	95	92	94	98	95	96	97	97	04	103	95	92	92
Minimum	81	83	82	80	83	81	81	84	83	81	84	88	88	84	84	82	85	86	86	88	84	84	86	89	86	86	86	87	95	90	88	85
June																																
Maximum	105	98	105	103	99	99	97	98	96	96	98	102	100	95	90	91	98	100	102	102	99	96	99	97	95	93	97	95	94	100	--	98
Minimum	87	87	87	97	93	93	91	86	87	82	86	90	94	89	86	86	91	92	94	93	93	90	88	90	87	86	82	89	86	88	--	89
July																																
Maximum	101	100	104	100	98	102	100	02	102	100	98	98	94	104	96	89	98	101	100	101	100	103	101	97	99	97	93	91	91	87	90	98
Minimum	89	86	86	89	90	90	90	89	89	88	88	85	84	84	86	87	86	85	86	86	85	84	87	86	83	83	84	84	82	81	81	86
August																																
Maximum	91	92	92	96	91	100	99	103	95	100	101	98	91	96	99	96	92	86	89	91	97	94	94	98	97	98	95	95	99	97	93	95
Minimum	83	84	82	81	84	82	83	82	84	82	84	82	82	81	82	82	82	80	80	79	80	80	81	82	82	83	81	82	82	84	83	82
September																																
Maximum	90	88	90	92	92	92	91	92	89	89	88	92	91	91	91	93	89	90	85	81	85	87	84	82	81	89	93	93	90	90	--	89
Minimum	83	83	85	87	87	87	87	85	81	82	81	84	86	86	86	84	85	85	81	80	79	81	82	81	79	79	93	95	35	35	--	34

PEACE RIVER BASIN

2-2970. PEACE RIVER AT ARCADIA, FLA.

LOCATION.--At gaging station on left bank, 500 feet upstream from bridge on State Highway 70, 1 mile west of post office in Arcadia, De Soto County, and 6.1 miles upstream from Joshua Creek.
DRAINAGE AREA (revised).--1,367 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1963.
Water temperatures: February 1962 to September 1963.
EXTREMES, 1962-63.--*Dissolved solids*: Maximum, 316 ppm May 12-21, 27; minimum, 50 ppm Aug. 21-25.
Hardness: Maximum, 180 ppm May 12-21, 27; minimum, 46 ppm Sept. 19-30.
Specific conductance: Maximum daily, 1,750 micromhos Feb. 3; minimum daily, 88 micromhos June 27.
Water temperatures: Maximum, 90°F June 22, Aug. 15; minimum, 53°F Dec. 13.
EXTREMES, 1961-63.--Dissolved solids: Maximum, 316 ppm Nov. 30, 1961, May 12-21, 27, 1963; minimum, 50 ppm Aug. 21-25, 1963.
Hardness: Maximum, 184 ppm Nov. 30, 1961; minimum, 21 ppm Sept. 20-28, 1962.
Specific conductance: Maximum daily, 1,750 micromhos Feb. 3, 1963; minimum daily, 45 micromhos Sept. 23, 1962.
Water temperatures (1962-63): Maximum, 91°F July 30, 1962; minimum, 53°F Dec. 13, 1962.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1962 to September 1963.

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
Oct. 1-10,1962	2067	8.8	0.01	15	4.3	8.4	0.9	28	23	9.5	1.3	0.0	5.00	118	--	55	32	142	7.2	125
Oct. 11-20....	606	13	.00	25	7.7	14	1.0	38	48	12	2.2	.3	11	172	--	94	63	229	7.2	90
Oct. 21-31....	363	14	.00	26	12	15	1.3	45	56	15	2.6	.7	13	194	--	114	77	269	7.6	60
Nov. 1-10.....	369	14	.05	31	12	16	1.5	47	60	39	3.1	1.5	13	228	--	127	88	308	7.1	10
Nov. 11-20....	623	12	.01	25	8.1	14	1.7	29	52	16	2.3	.0	12	184	--	96	72	232	7.6	90
Nov. 21-30....	341	13	.01	31	9.8	16	1.3	50	59	16	2.7	.1	13	204	--	118	77	281	7.5	50
Dec. 1-10.....	286	12	.04	35	12	18	1.6	54	74	20	2.5	.0	15	234	--	136	92	328	7.5	30
Dec. 11-20....	236	11	.04	35	14	18	1.6	54	81	17	2.8	.0	16	240	--	144	100	345	7.5	25
Dec. 21, 23-31	266	8.0	.04	35	13	18	2.4	50	80	18	2.8	.1	19	238	--	142	101	342	7.5	25
Jan. 1-3, 7-10 12, 13, 1963	291	7.5	.03	34	13	18	3.2	51	72	20	2.8	.1	19	230	--	138	96	335	7.6	30
Jan. 14-17, 19-23.....	322	8.4	.04	34	11	18	3.2	48	69	18	3.0	.1	18	224	--	132	93	326	7.6	30
Jan. 24-31....	367	8.9	.04	33	10	18	2.9	51	61	20	2.7	.1	14	214	--	124	82	305	7.6	50
Feb. 1, 2,4-13	502	9.7	.03	29	8.6	18	2.6	45	46	19	2.2	.0	9.80	210	--	108	71	262	7.7	60
Feb. 3.....	320	--	--	--	--	--	--	--	--	--	2.2	--	7.30	--	--	132	--	1750	2.4	--
Feb. 14-20....	2032	6.0	.09	16	4.4	9.7	2.2	23	27	15.	1.1	.0	5.40	110	--	58	39	161	7.1	110
Feb. 21-27....	2090	5.7	.13	15	4.3	9.6	1.8	20	25	14.	1.5	.0	5.00	120	--	55	39	150	7.2	130

Feb. 28, 1963.	3820	--	--	--	--	--	--	16	--	--	.8	--	2.50	--	--	56	43	120	7.0	--
Mar. 1.....	4320	--	--	--	--	--	--	--	--	--	.9	--	3.30	--	--	--	--	110	3.8	--
Mar. 2, 3.....	4565	--	--	--	--	7.3	1.3	20	--	--	1.0	--	3.50	--	--	64	48	115	7.4	--
Mar. 4.....	4020	--	--	--	--	--	--	--	--	--	1.3	--	20	--	--	--	--	151	--	--
Mar. 5-7, 9-14	1947	6.8	.18	18	4.6	10	1.6	24	26	14	1.7	.0	8.00	158	--	64	44	166	7.3	140
Mar. 8.....	2000	--	--	--	--	--	--	--	--	--	1.8	--	52	--	--	--	--	--	--	--
Mar. 15-21....	926	9.1	.10	23	7.9	15	1.6	37	34	15	2.4	.0	9.70	--	136	90	60	219	7.6	120
Mar. 22-31....	519	12	.08	29	12.	18	1.6	31	60	40	2.8	.0	29	244	--	120	95	300	7.0	85
Apr. 1-9.....	339	17	.01	37	9.6	19	1.4	60	71	22	2.8	2.3	8.30	258	--	132	83	355	7.9	40
Apr. 10-20....	224	24	.01	38	15	23	1.4	26	102	20	4.4	.4	35	300	--	158	137	400	7.7	20
Apr. 21-30....	144	18	.00	38	18	22	1.5	32	90	20	6.8	.9	27	286	--	170	144	395	7.8	20
May 1-11.....	185	16	.00	38	15	21	1.4	50	95	51	5.2	1.5	--	288	--	156	115	400	7.1	20
May 12-21, 27.	149	20	.00	45	16	23	1.3	27	120	18	5.0	.6	36	316	--	180	158	420	7.3	20
May 22, 28, 29, 31.....	853	7.0	.08	20	7.8	8.7	1.2	21	38	18	1.6	5.8	6.7	--	125	82	65	190	7.1	100
May 23-26.....	205	13.	.01	34	15.	18.	1.3	13	102	19	2.9	4.1	27	--	242	148	137	350	6.7	30
June 1, 5-17..	870	8.6	.14	20	6.8	13.	.8	35	30	13	.3	2.4	6.60	170	--	78	49	200	7.4	180
June 2-4,18-25	1116	7.8	.16	16	5.4	8.6	.8	23	31	13	1.2	1.9	6.00	138	--	62	43	160	7.2	180
June 26-30....	4382	6.2	.17	14	4.1	4.9	.8	31	11	9.0	.9	3.5	3.10	106	--	52	27	110	7.4	200
July 1-6, 25-27.....	2067	8.0	.26	13	4.3	8.3	.9	23	20	13	1.2	.0	4.60	126	--	50	31	125	6.8	150
July 7-11, 16-23, 28,29	985	11	.17	20	4.4	11	1.0	25	34	12	2.5	.0	5.50	168	--	68	47	168	6.7	120
July 12-15,24, 30, 31.....	738	14	.14	20	9.7	13	1.0	29	51	14	3.1	.3	4.58	210	--	90	66	218	7.1	95
Aug. 1, 2, 4-8 20, 26-29...	1253	10	.08	17	6.7	11	1.3	25	30	14	1.7	.0	10	128	--	70	49	171	6.9	100
Aug. 3, 9-19, 31.....	729	13	.14	22	10.	15	1.3	32	44	14	4.5	.4	16	168	--	96	70	241	6.9	100
Aug. 21-25....	2106	8.3	.16	17	4.3	9.0	1.4	28	25	14	1.5	.0	--	50	--	60	37	151	6.9	150

PEACE RIVER BASIN--Continued

2-2970. PEACE RIVER AT ARCADIA, FLA.--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$)		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
Aug. 30, 1963.	963	11.	--	26.	4.6	--	--	36	--	18	--	0.0	--	--	73	84	54	115	7.0	--
Sept. 1-3, 15-18.....	526	12.	0.05	26.	7.1	15.	0.8	32	48	16	2.1	.0	15	142	--	94	68	247	6.7	100
Sept. 4-10, 12-14.....	799	10.	.05	20.	7.3	13.	8.5	34	34	14	2.1	.0	13	156	--	80	52	203	6.6	100
Sept. 19-30...	2543	6.6	.18	13.	3.3	7.0	1.1	22	17	14	1.0	.0	5.00	128	--	46	28	120	6.5	150
Weighted average...	--	9.1	0.12	20	0.4	11	1.5	29	34	15	2.0	0.6	8.80	151	--	75	51	185	5.2	120
Time-weighted average...	913	11	0.09	26	0.5	15	1.7	35	53	18	3.0	0.6	13.40	192	--	103	74	256	4.9	85
Tons per day	--	23	0.30	49	1.0	27	3.7	72	85	37	4.0	1.5	21.70	372	--	--	--	--	--	--

PEACE RIVER BASIN--Continued

2-2970. PEACE RIVER AT ARCADIA, FLA.--Continued

Specific conductance (micromhos at 25°C) water year October 1962 to September 1963

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	98	328	308	301	315	110	351	426	217	111	198	228
2.....	111	330	318	327	319	105	351	423	175	119	198	245
3.....	122	323	323	322	1750	109	354	383	173	118	250	239
4.....	130	341	337	339	300	151	352	364	176	116	178	211
5.....	146	353	338	342	295	131	366	407	192	127	178	210
6.....	153	351	336	328	270	134	374	377	197	139	180	194
7.....	165	345	331	335	259	151	371	355	203	158	181	202
8.....	175	241	333	326	268	180	376	362	200	161	181	219
9.....	190	242	339	327	280	172	376	381	223	188	221	216
10.....	195	300	345	310	280	175	370	397	240	173	229	216
11.....	207	226	351	319	291	180	394	396	192	194	249	--
12.....	208	242	335	333	229	179	397	424	189	219	260	189
13.....	224	242	338	338	229	180	418	424	196	232	260	211
14.....	234	241	337	339	149	182	418	440	192	220	263	211
15.....	232	255	339	329	152	200	426	438	191	257	259	232
16.....	237	250	338	324	170	208	429	474	207	199	250	250
17.....	251	268	348	321	179	219	429	427	221	153	248	269
18.....	243	258	348	318	185	229	424	421	171	172	260	254
19.....	256	260	369	315	171	231	402	429	171	172	268	121
20.....	263	270	365	318	155	238	409	445	171	168	179	108
21.....	273	271	369	318	141	248	416	437	161	171	160	100
22.....	277	285	432	322	149	261	404	131	179	189	159	109
23.....	274	285	361	322	152	269	398	399	141	181	149	119
24.....	280	310	375	304	160	277	419	355	142	219	155	128
25.....	283	310	355	313	165	287	398	314	156	142	169	111
26.....	295	320	355	314	170	291	384	363	94	132	180	112
27.....	295	324	351	318	130	292	398	416	88	140	180	118
28.....	308	330	348	311	102	321	420	217	90	169	192	120
29.....	312	330	348	307	--	295	419	269	97	172	198	134
30.....	318	327	326	301	--	300	410	--	106	216	115	142
31.....	313	--	323	312	--	322	--	157	--	21	230	--
Average	228	291	345	321	264	213	395	375	171	166	205	180

PEACE RIVER BASIN--Continued

2-2970. PEACE RIVER AT ARCADIA, FLA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	85	80	84	81	84	86	83	84	80	85	85	85	86	87	84	86	86	88	88	80	--	76	84	79	77	74	74	74	70	76	74	82
November	74	73	71	70	65	70	72	74	70	70	72	68	66	76	65	70	74	74	72	75	76	68	69	72	72	68	66	67	65	65	--	70
December	65	67	69	73	72	72	70	74	70	64	66	58	53	55	58	58	60	60	70	70	72	74	76	78	84	82	84	82	72	70	65	69
January	67	66	64	68	67	68	66	70	68	68	67	65	70	68	65	64	68	68	73	74	67	67	66	64	64	66	65	65	68	66	68	67
February	70	70	70	60	60	60	67	67	65	65	70	70	64	65	61	57	60	63	65	64	63	64	64	65	65	63	66	60	--	--	--	64
March	66	72	68	72	70	69	68	67	68	69	70	70	76	79	76	78	78	82	86	80	72	72	70	70	70	74	75	72	78	78	79	73
April	77	80	80	78	81	79	79	76	80	85	79	85	79	74	78	78	78	79	79	84	83	86	84	84	88	85	84	80	77	78	--	81
May	78	77	75	70	80	73	80	85	--	84	85	85	86	87	86	86	87	86	88	85	86	85	86	87	87	87	86	80	79	--	87	83
June	87	84	80	83	84	81	80	81	84	86	86	85	84	88	86	85	88	89	87	86	88	90	85	85	84	80	80	80	81	83	--	84
July	85	87	85	88	86	86	87	87	87	85	86	85	85	85	83	84	85	85	87	86	86	83	85	87	85	80	86	87	83	89	89	86
August	88	87	87	87	88	87	88	89	87	87	88	88	88	87	90	87	85	84	87	79	82	84	85	85	89	84	84	89	86	85	88	86
September	81	83	88	85	86	87	86	86	88	86	--	87	87	89	85	87	84	86	80	84	83	82	80	78	78	80	83	82	82	82	--	84

MYAKKA RIVER BASIN

2-2990. MYAKKA RIVER NEAR SARASOTA, FLA.

LOCATION.--At bridge on State Highway 72, 2 miles upstream from Lower Myakka Lake, and 14 miles southeast of Sarasota, Sarasota County.
DRAINAGE AREA.--235 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1962 to September 1963.
Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 146 ppm May 22-25, 27-31; minimum, 43 ppm Oct. 2-10.
Hardness: Maximum, 48 ppm Feb. 1-10; minimum, 14 ppm Oct. 2-10, 11-20.
Specific conductance: Maximum daily, 249 micromhos Mar. 17; minimum daily, 35 micromhos Oct. 3.
Water temperatures: Maximum, 95°F July 17; minimum, 45°F Dec. 14.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$)		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
Oct. 2-10,1962	725	3.8	0.19	4.4	0.7	3.0	0.4	10	2.8	5.0	0.4	0.0	0.06	43		14	6	41	6.8	160
Oct. 11-20....	160	4.6	.19	5.0	.4	3.3	.2	9	3.2	5.5	.2	.0	.61	53		14	7	45	6.7	150
Oct. 21-31....	55	3.7	.18	5.0	1.3	3.7	.3	12	5.2	6.5	.2	.0	.47	55		18	8	53	6.7	150
Nov. 3-11.....	31	1.5	.15	5.2	1.9	3.8	.4	13	5.6	6.5	.4	.1	.34	56		21	10	60	6.9	130
Nov. 12-20....	69	1.3	.15	6.8	2.4	4.6	.7	15	10	8.5	.3	.0	.38	68		27	15	78	6.7	100
Nov. 22-30....	45	1.3	.13	7.8	3.0	5.2	.4	16	14	9.5	.3	.1	.31	82		32	19	92	6.5	100
Dec. 1, 3-11..	19	.8	.14	9.0	3.8	5.8	.6	19	18	10	.3	.0	.30	86		38	22	109	6.5	100
Dec. 12-21....	15	1.2	.14	11	4.5	6.0	.6	20	21	12	.3	.1	.25	96		46	30	121	6.4	100
Dec. 22-31....	14	1.4	.14	8.8	3.9	5.7	.7	20	16	11	.4	.1	.25	88		38	22	110	6.4	110
Jan. 1-10,1963	18	.5	.15	9.6	4.4	6.6	.9	21	18	13	.4	.0	.50	94		42	25	120	6.6	100
Jan. 11-19, 21	18	.5	.14	11	4.5	6.6	1.1	26	20	13	.4	.0	.36	98		46	25	127	6.7	95
Jan. 22-31....	30	.8	.15	11	4.5	6.8	1.4	24	19	14	.4	.1	.41	100		46	26	130	6.7	100
Feb. 1-10.....	40	1.0	.08	12	4.4	7.7	1.3	25	20	14	.4	1.3	.68	100		48	27	135	6.8	85
Feb. 11-18, 21-22.....	188	1.2	.11	10	4.6	7.5	1.7	22	18	16	.3	.1	.45	122		44	26	125	6.7	110
Feb. 19, 20, 23-38.....	430	2.3	.11	6.4	3.2	8.9	1.6	14	10	15	.4	.2	.60	100		29	18	100	6.8	150
Mar. 1-10.....	550	1.8	.12	4.2	2.8	6.8	1.1	9	8.4	12	.4	.3	.75	88		22	15	77	7.2	225
Mar. 11-16, 18-20.....	182	1.6	.15	5.6	3.2	6.3	.9	13	5.6	14	.4	.2	.91	95		27	16	80	7.0	200

MYAKKA RIVER BASIN--Continued

2-2990. MYAKKA RIVER NEAR SARASOTA, FLA.--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
Mar. 21-31, 1963.....	52	0.5	0.19	6.4	3.6	6.8	0.6	17	8.0	16	0.4	1.7	0.80	104		31	17	92	6.6	200
Apr. 1-10.....	10.5	.2	.15	6.6	3.3	8.2	.6	15	8.4	15	.3	.8	.66	102		30	18	93	6.8	200
Apr. 11-13, 15-20.....	1.3	.8	.16	6.0	2.7	9.1	.8	18	9.2	15	.3	.3	.60	100		26	11	103	6.4	200
Apr. 21-30.....	.1	.6	.21	7.2	3.4	9.2	.9	16	10	17	.4	.7	.95	112		32	19	111	6.3	180
May 1-10.....	.7	.5	.18	8.0	3.9	9.8	1.0	20	11	18	.3	.9	.66	118		36	20	117	6.4	120
May 11-18, 20-21.....	.1	.8	.26	8.8	4.9	10	1.1	19	13	20	.4	1.5	.95	126		42	26	126	6.6	120
May 22-25, 27-31.....	.1	.3	.30	8.8	3.9	10	1.2	19	13	20	.4	2.0	.93	146		38	22	128	6.6	100
June 1, 2, 4,5	6	2.0	.08	12.0	2.4	9.4	1.0	19	19	17	.3	.4	.94	--	74	40	24	130	6.9	70
June 6-15, 17.	87	2.3	.15	6.0	3.9	7.8	.7	16	12	13	.5	.6	.61	84		31	18	97	6.0	120
June 18-30....	98	2.9	.13	9.6	3.4	7.0	.5	26	11	11	.3	.0	.61	92		38	17	99	6.8	160
July 1-10.....	280	3.7	.15	6.8	2.7	5.6	.6	15	10	9.0	.3	.1	.85	86		28	16	76	6.6	220
July 11-20....	171	4.0	.21	6.0	2.7	5.0	.6	15	8.4	8.0	.4	.2	.82	86		26	14	69	6.6	180
July 21-31....	142	3.7	.13	4.8	2.9	4.6	.6	15	8.0	7.5	.3	.1	.64	80		24	12	65	6.3	200
Aug. 1-10.....	289	3.7	.22	4.8	2.2	4.1	.0	11	6.4	6.5	.3	.1	11	76		21	12	56	6.3	200
Aug. 11-20....	226	2.9	.21	5.6	1.2	3.8	.0	13	5.6	6.0	.3	.1	.53	66		19	8	50	6.6	200
Aug. 21-29, 31	520	3.8	.22	4.0	2.9	3.7	.0	15	6.4	6.0	.3	.0	.71	72		22	10	56	6.5	200
Aug. 30.....	500	--	--	--	--	--	--	36	--	5.0	--	--	--	--		38	8	880	7.5	--
Sept. 1-10....	289	4.4	.26	4.4	2.7	3.6	.4	12	7.2	8.0	.3	.0	.70	66		22	12	56	6.2	200
Sept. 11-20...	192	4.2	.26	4.0	3.4	4.0	.7	10	8.6	9.5	.3	.0	.50	88		24	16	58	6.3	200
Sept. 21-30...	1270	3.6	.25	3.6	2.7	3.2	1.1	6	6.6	7.0	.3	.1	.62	52		20	15	47	6.1	200
Weighted average...	--	3.2	0.19	5.1	2.6	4.7	0.9	12	7.6	8.7	0.3	0.1	0.61	72	--	23	14	71	6.4	180
Time-weighted average...	174.0	2.1	0.17	7.1	2.6	6.1	0.8	16	11.0	11.0	0.3	0.3	0.60	88	--	31	17	91	6.5	150
Tons per day	--	1.5	0.09	2.4	1.2	2.2	0.4	6	3.6	4.1	0.2	0.1	0.28	34	--	--	--	--	--	--

MYAKKA RIVER BASIN--Continued

2-2990. MYAKKA RIVER NEAR SARASOTA, FLA.--Continued

Specific conductance (micromhos at 25°C) water year October 1962 to September 1963

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	--	--	102	118	132	78	89	112	121	82	66	54
2	37	--	--	115	135	85	89	113	120	81	68	52
3	35	59	110	120	150	82	91	112	--	76	53	52
4	37	59	112	122	148	73	90	113	121	76	54	52
5	38	59	113	125	130	75	92	114	135	74	52	53
6	41	58	117	128	142	69	92	117	103	72	51	55
7	41	60	116	126	148	76	97	115	99	76	49	58
8	42	65	116	126	139	83	93	117	98	74	50	63
9	47	61	122	124	142	73	96	117	100	72	48	57
10	45	68	126	135	149	68	97	118	96	66	51	58
11	47	71	119	141	139	71	98	119	94	70	48	58
12	43	78	120	137	129	82	100	121	93	66	50	57
13	44	72	130	134	130	73	100	122	92	66	50	57
14	42	82	130	138	132	79	--	123	86	67	55	57
15	43	78	124	128	150	80	101	125	85	76	47	58
16	47	79	131	127	139	78	102	125	--	66	47	63
17	44	77	133	129	139	249	102	126	84	69	45	60
18	45	77	129	126	129	79	104	130	83	66	45	59
19	46	84	122	142	120	82	103	--	81	62	46	59
20	48	86	117	--	102	82	104	129	78	63	48	61
21	52	--	122	122	130	85	105	131	83	63	52	60
22	53	91	116	128	116	91	107	130	84	63	53	59
23	51	87	118	134	111	97	106	131	86	61	46	50
24	52	112	114	131	--	--	108	132	85	63	49	49
25	54	97	113	130	92	85	109	120	84	63	55	41
26	52	91	115	138	84	84	110	--	87	61	59	43
27	54	90	112	136	100	85	111	124	87	63	53	41
28	52	90	112	133	96	85	112	125	85	61	67	42
29	55	90	112	135	--	87	113	131	78	62	62	42
30	55	93	111	133	--	92	114	121	82	69	85	41
31	56	--	112	136	--	88	--	123	--	64	53	--
Average	46	78	118	129	127	86	101	121	93	68	53	54

MYAKKA RIVER BASIN--Continued

2-2990. MYAKKA RIVER NEAR SARASOTA, FLA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	--	82	80	81	82	82	82	81	82	81	80	80	79	79	79	79	78	78	75	74	82	76	75	75	70	68	71	71	69	75	70	77
November	--	--	67	67	65	65	66	67	68	65	64	60	65	64	62	63	65	71	70	71	--	73	68	65	68	66	60	61	62	64	--	66
December	63	--	65	65	66	65	59	57	57	59	56	57	48	45	48	51	53	56	58	60	62	64	66	66	70	71	71	71	72	67	61	61
January	59	58	56	56	61	59	61	61	57	57	59	68	69	69	66	62	61	64	69	--	72	62	68	64	57	59	63	61	59	61	65	62
February	67	69	69	64	58	56	56	68	61	61	63	68	61	59	59	58	56	60	65	61	61	63	59	--	64	66	58	57	--	--	--	62
March	67	70	70	71	73	73	68	64	65	69	70	74	75	77	77	78	79	78	80	79	74	66	64	--	68	71	74	74	73	72	73	72
April	72	72	73	74	74	74	76	79	73	75	76	76	78	--	70	69	75	72	74	75	78	77	78	78	78	77	80	76	76	75	--	75
May	76	77	72	69	73	76	75	76	78	78	78	80	79	79	80	81	81	80	--	82	82	80	81	81	80	--	83	82	80	80	80	78
June	82	82	--	82	88	88	88	83	82	82	85	80	86	83	86	--	84	86	87	82	80	80	81	81	83	82	82	81	80	82	--	83
July	92	91	93	90	90	91	92	91	91	90	85	91	92	92	91	94	95	92	92	93	86	91	91	82	91	84	84	85	94	93	92	90
August	86	85	84	84	85	85	95	87	85	87	86	86	86	86	86	86	85	84	83	85	86	85	84	86	86	87	84	85	86	85	86	85
September	86	85	83	84	85	85	84	83	84	83	83	84	85	85	85	82	83	81	80	80	81	80	79	78	75	77	78	79	82	86	--	82

MANATEE RIVER BASIN

2-3000. MANATEE RIVER NEAR BRADENTON, FLA.

LOCATION.--At bridge on State Highway 675, 800 feet upstream from Craig Branch, 6.2 miles northwest of Verna, and 17 miles east of Bradenton, Manatee County.
DRAINAGE AREA.--90 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1962 to September 1963.
Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 92 ppm May 13-24; minimum, 38 ppm Sept. 21-30.
Hardness: Maximum, 50 ppm May 13-24; minimum, 6 ppm Oct. 4.
Specific conductance: Maximum daily, 126 micromhos May 20; minimum daily, 19 micromhos Sept. 16.
Water temperatures: Maximum, 88°F Sept. 8; minimum, 49°F Dec. 13.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
Oct. 2, 3, 5-11, 1962..	104	6.5	0.13	5.6	1.5	4.2	0.7	17	2.8	7.0	0.3	0.0	1.0	54		20	6	66	6.9	120
Oct. 4.....	678	--	--	--	--	1.7	.7	4	--	--	--	--	.--	--		6	3	24	6.5	--
Oct. 14-21....	27	8.6	.12	8.2	2.3	5.0	.7	29	4.4	7.5	.3	.0	1.31	66		30	6	86	7.0	80
Oct. 22-31....	25	9.0	.15	8.4	2.3	5.1	.8	27	4.8	8.5	.3	.1	1.4	65		30	8	87	7.0	80
Dec. 1-10.....	16	8.2	.05	7.8	3.5	4.9	.6	34	4.8	8.0	.4	.0	1.5	64		34	6	93	6.9	40
Dec. 11-20....	15	8.1	.03	8.4	3.6	4.9	.6	36	4.0	8.0	.4	.0	1.4	66		36	6	99	6.8	30
Dec. 21-31....	14	8.0	.07	8.4	4.1	5.0	.7	37	4.4	8.0	.4	.0	1.7	68		38	8	100	7.2	45
Jan. 1-10,1963	18	7.8	.08	7.6	4.1	5.2	.8	35	4.8	9.0	.4	.0	1.5	68		36	7	96	7.0	50
Jan. 11-20....	23	7.1	.09	7.2	3.6	5.3	.8	30	5.6	10	.4	.0	1.4	68		33	8	93	6.9	60
Jan. 21, 22, 24-31.....	29	6.6	.12	7.0	3.5	5.4	.8	27	3.6	10	.4	.1	1.3	68		32	10	90	6.8	80
Feb. 1, 2,6-11	47	6.5	.10	8.0	1.9	6.2	.6	20	6.0	13	.3	.5	.97	70		28	12	90	7.2	120
Feb. 3-5,14-18	191	4.0	.11	4.8	1.5	5.5	.5	11	5.4	10	.3	.3	1.0	60		18	9	65	6.3	120
Feb. 12, 13, 19, 25, 28..	497	2.2	.11	3.2	.7	3.4	.5	6	0.0	6.5	.5	.4	1.2	42		11	6	41	6.5	100
Mar. 1-10.....	216	3.6	.12	3.4	1.8	4.7	.6	10	4.0	8.0	.4	.3	1.0	68		16	8	56	6.8	220
Mar. 11-19....	50	5.8	.12	5.0	2.8	5.4	.6	19	3.6	10.	.4	.2	1.4	74		24	8	72	7.4	200
Mar. 20-31....	20	8.1	.08	7.4	3.8	5.8	.6	32	4.0	9.5	.4	.2	1.7	78		34	8	91	7.3	75

MANATEE RIVER BASIN--Continued

2-3000. MANATEE RIVER NEAR BRADENTON, FLA.--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
Apr. 1-10,1963	11	7.5	0.05	10	4.6	5.2	0.6	38	3.6	10	0.4	0.0	2.4	76		44	13	103	7.1	30
Apr. 11-20....	8.1	6.4	.02	10	5.1	5.2	.5	44	3.6	10	.4	.0	1.9	80		46	10	110	7.3	30
Apr. 21-30....	6.5	5.0	.03	10	5.6	5.5	.5	46	6.4	8.0	.4	.2	1.9	82		48	10	116	7.1	20
May 1-10.....	7.5	4.8	.03	11	4.5	5.5	.6	42	5.6	10.	.4	.0	1.8	86		46	12	114	7.3	30
May 13-24.....	5.5	5.1	.02	12	4.9	5.5	.6	48	6.8	8.0	.4	.2	1.9	92		50	11	122	7.2	20
May 25-31.....	82	4.8	.13	8.4	1.7	5.6	.6	75	8.4	12	.4	.0	1.4	84		28	0	80	7.0	120
June 1-10.....	65	5.3	.03	5.4	2.6	3.8	.4	12	8.4	8.0	.4	.2	1.1	82		24	14	66	6.8	140
June 11-20....	29	7.1	.12	6.4	3.4	3.9	.8	24	6.4	9.5	.4	.1	1.3	90		30	10	80	6.6	100
June 21, 22, 24-30.....	278	5.2	.15	5.6	2.4	3.9	.8	15	5.6	7.5	.3	.1	1.1	74		24	12	60	6.7	160
July 1, 2, 5-8 12, 13, 18, 19, 27-30...	191	5.3	.09	3.4	2.3	4.0	.5	12	4.0	7.0	.4	.1	.83	66		18	8	50	6.3	180
July 3, 4, 16, 17, 23-26,31	640	3.3	.03	2.4	1.2	2.8	.5	6	3.2	5.0	.3	.1	.62	48		11	6	34	5.9	160
July 9, 11, 14 15, 20-27...	46	7.4	.03	5.4	2.8	4.8	.6	20	4.8	8.5	.4	.2	1.2	60		25	9	66	7.1	120
Aug. 1-10.....	206	4.5	.10	3.6	1.9	4.0	.5	11	4.0	2.0	.3	.1	1.1	66		17	8	47	6.4	190
Aug. 11, 12, 14-16.....	51	6.7	.15	4.8	2.7	4.9	.3	18	4.0	7.0	.3	.1	1.7	74		23	8	61	7.0	150
Aug. 13.....	54	--	--	--	--	--	--	44	--	12	--	--	--	--		43	7	109	7.3	--
Aug. 20-31....	208	4.4	.18	4.8	1.7	3.4	.3	14	3.2	6.0	.3	.1	.87	58		19	8	48	6.6	170
Sept. 1-10....	125	5.5	.15	4.0	1.9	3.7	.7	14	8.6	5.2	.4	.0	1.0	68		18	7	51	6.3	100
Sept. 11-18,20	249	6.5	.15	4.8	2.9	3.8	.8	17	7.4	7.0	.4	.0	1.1	86		24	10	56	6.3	100
Sept. 21-30...	601	3.5	.26	2.4	1.2	2.8	.5	6	7.4	5.5	.3	.0	.73	38		11	6	35	6.0	150
Weighted average...	--	4.5	0.13	4.1	1.7	3.8	0.6	13	4.8	6.7	0.3	0.1	0.96	59		17	8	50	6.2	140
Time-weighted average...	121.1	6.0	0.10	6.6	2.8	4.7	0.6	25	5.0	8.2	0.4	0.1	1.30	69		28	9	77	6.6	100
Tons per day	--	1.5	0.04	1.3	0.6	1.2	0.2	4	1.6	2.2	0.1	0.0	0.31	19		--	--	--	--	--

MANATEE RIVER BASIN--Continued

2-3000. MANATEE RIVER NEAR BRADENTON, FLA.--Continued

Specific conductance (micromhos at 25°C) water year October 1962 to September 1963

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	--	90	90	109	97	46	98	113	67	44	37	57
2	49	91	92	102	96	46	100	111	78	49	38	58
3	51	88	91	102	76	47	100	110	76	21	33	37
4	23	91	93	102	73	47	101	103	45	24	47	41
5	41	89	97	105	79	52	103	110	55	42	41	49
6	52	89	95	95	86	57	103	110	62	45	58	52
7	61	89	95	94	86	60	106	123	68	50	50	45
8	60	88	96	92	88	60	104	121	59	58	49	55
9	65	60	95	100	93	62	103	119	62	62	56	61
10	67	67	97	100	93	64	104	121	72	67	53	62
11	71	76	97	100	94	58	105	--	77	60	53	67
12	66	80	98	100	37	65	105	--	82	53	54	71
13	73	75	98	101	45	64	110	120	54	56	102	73
14	86	77	98	101	58	66	109	123	58	67	60	76
15	78	78	98	93	59	71	109	119	71	60	73	77
16	90	79	99	89	67	74	110	117	78	37	65	77
17	83	82	97	95	67	82	111	119	79	34	--	19
18	85	84	95	96	67	75	111	120	85	42	--	34
19	88	85	98	95	47	77	112	122	88	51	82	--
20	88	86	101	100	62	80	112	126	90	62	29	24
21	88	86	99	100	58	82	112	125	91	68	33	33
22	89	86	100	100	63	84	112	125	96	74	37	25
23	80	87	99	--	66	85	111	119	--	28	58	25
24	76	88	100	97	73	88	112	120	68	35	47	27
25	80	90	100	96	44	88	113	105	68	38	47	33
26	83	90	102	93	47	89	115	96	43	37	53	37
27	90	92	101	87	35	89	117	99	43	44	54	37
28	--	92	100	81	39	92	119	66	40	46	41	40
29	91	93	102	88	--	92	119	74	41	48	42	46
30	98	93	101	90	--	94	119	56	43	51	55	46
31	94	--	106	97	--	94	--	63	--	31	33	--
Average	74	34	97	96	67	71	108	108	66	47	51	47

MANATEE RIVER BASIN--Continued

2-3000. MANATEE RIVER NEAR BRADENTON, FLA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	--	78	79	78	83	79	81	78	78	78	77	77	78	82	78	80	76	74	77	76	76	74	77	73	71	66	69	--	72	71	73	76
November	72	69	70	67	66	67	70	67	69	67	64	64	65	65	66	62	68	71	72	73	73	72	63	63	70	64	63	63	64	64	--	67
December	66	67	67	68	68	62	59	59	61	58	58	54	49	51	53	55	60	61	62	63	64	65	68	70	72	73	72	72	71	66	58	63
January	62	59	59	57	61	61	61	60	59	60	63	63	69	67	65	61	66	69	71	74	67	63	--	63	60	64	67	63	66	66	62	64
February	70	65	61	59	59	59	60	72	66	63	62	63	68	76	74	66	52	70	66	62	62	63	68	76	74	66	52	70	--	--	--	65
March	63	61	69	72	75	71	67	62	67	70	72	78	76	76	76	77	78	69	77	77	72	68	69	70	72	78	80	76	74	72	74	72
April	76	76	77	77	78	77	75	76	77	78	78	81	79	74	73	69	76	78	80	80	80	81	81	80	81	81	80	80	79	79	--	78
May	75	76	70	76	79	81	81	82	83	82	--	--	83	82	84	83	84	85	85	83	82	84	82	84	84	84	85	78	71	74	75	81
June	79	83	80	77	78	78	78	76	81	80	83	86	81	84	86	86	87	83	83	82	86	87	--	80	78	76	77	78	79	79	--	81
July	82	83	79	81	83	84	83	85	84	80	80	80	84	86	85	80	80	83	84	85	85	85	76	80	81	82	84	82	84	82	79	82
August	81	81	80	82	82	84	82	83	83	86	83	85	82	84	85	87	--	--	76	78	78	79	82	82	83	83	84	81	84	84	80	82
September	82	80	80	78	80	82	80	88	84	82	83	83	85	84	82	83	77	79	--	80	80	79	79	76	75	78	79	80	79	80	--	81

239-654 O - 67 - 26

SUWANNEE RIVER BASIN

2-3215. SANTA FE RIVER AT WORTHINGTON, FLA.

LOCATION.--Temperature recorder at gaging station at bridge on State Highway 23, 0.5 mile south of Worthington, Union County, and 0.8 mile downstream from New River.
DRAINAGE AREA.--630 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: July 1957 to September 1960.
Water temperatures: July 1957 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 83°F Aug. 7-9.
EXTREMES, 1957-63.--Water temperatures: Maximum, 90°F July 7, 1962; minimum, 40°F Feb. 19, 1958.
REMARKS.--No record Oct. 17 to Nov. 29, Dec. 8-27, 1962; Jan. 2-6, Apr. 13 to June 25, 1963.

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	72	74	75	75	75	75	74	73	75	75	73	71	71	72	73	73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	69	72	73	75	74	73	71	71	73	71	69	69	69	71	71	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
November																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	55	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	54	--	--
December																																
Maximum	55	55	54	53	56	55	51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	57	59	59	55	--
Minimum	55	53	53	53	53	51	47	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	57	57	55	51	--
January																																
Maximum	51	--	--	--	--	--	51	51	49	47	51	53	57	57	51	50	51	58	60	62	62	56	52	52	47	48	52	53	51	55	57	53
Minimum	48	--	--	--	--	--	49	49	45	45	47	51	53	51	49	48	48	51	58	59	56	50	49	47	44	46	48	47	47	51	53	50
February																																
Maximum	58	60	61	55	50	50	54	54	54	54	58	58	57	51	50	50	51	53	57	57	55	55	53	55	55	55	56	54	--	--	--	55
Minimum	57	56	55	50	49	49	50	54	53	51	54	57	51	49	49	49	49	49	53	55	53	53	51	53	53	55	52	50	--	--	--	52
March																																
Maximum	58	61	62	64	67	68	69	73	69	61	65	67	69	71	71	68	69	71	71	71	69	65	61	61	61	63	65	65	65	65	67	66
Minimum	54	58	60	62	64	67	63	69	57	57	61	65	67	69	68	66	67	69	69	69	65	61	57	57	59	60	63	63	63	63	65	63
April																																
Maximum	67	69	69	69	71	71	71	68	69	69	73	73	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	66	65	67	67	68	69	68	65	65	67	68	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
May																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
June																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	75	76	76	75	78	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	73	74	74	73	74	--	--
July																																
Maximum	76	76	76	76	77	78	78	78	76	77	77	76	77	77	77	77	77	78	79	79	77	77	77	77	78	79	79	81	81	81	81	78
Minimum	74	75	74	74	76	76	78	76	76	76	75	75	75	75	77	76	77	76	77	77	77	77	76	77	77	78	79	79	79	79	79	77
August																																
Maximum	81	81	81	81	81	82	83	83	83	81	81	81	81	81	81	79	77	76	76	78	76	76	76	78	78	78	78	78	80	80	80	80
Minimum	79	79	79	79	80	80	81	81	81	79	79	79	81	81	79	77	76	76	76	76	75	76	76	76	77	77	78	78	78	80	79	78
September																																
Maximum	80	78	79	78	79	79	78	78	78	76	75	75	77	77	77	77	77	77	77	77	77	78	77	74	71	71	73	74	75	74	--	76
Minimum	78	78	78	78	78	78	78	78	76	74	73	74	75	75	77	77	75	75	75	75	75	76	74	71	69	69	71	73	74	72	--	75

APALACHICOLA RIVER BASIN

2-3475. FLINT RIVER NEAR CULLODEN, GA.

LOCATION.--Temperature recorder at gaging station on left bank underneath bridge on U.S. Highway 19, 4 miles upstream from Auchumpkee Creek, 5 miles downstream from Swift Creek, 13 miles southwest of Culloden, Monroe County, and at mile 238.4.
DRAINAGE AREA.--1,850 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1961 to September 1962.
Water temperatures: June 1960 to September 1963.
Sediment records: October 1961 to September 1962.
EXTREMES, 1962-63.--Water temperatures: Maximum, 87°F Aug. 7-9, 14, 26, Sept. 1-4, 12, 13; minimum, 34°F Dec. 15.
EXTREMES, 1960-63.--Water temperatures: Maximum, 88°F July 30, 31, Aug. 1, 2, 1961; minimum, 34°F Dec. 15, 1962.

Temperature °F of water, water year October 1962 to September 1963
[Continuous ethyl alcohol-actuated thermograph]

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	73	75	77	79	78	78	81	80	80	78	77	77	77	77	77	77	78	77	76	74	73	73	72	69	65	63	60	60	61	62	64	73
Minimum	69	72	75	73	74	73	74	75	76	73	72	72	72	73	73	73	73	74	71	69	70	69	67	64	60	58	56	56	57	59	62	69
November																																
Maximum	62	60	59	59	58	56	54	56	56	56	56	56	58	58	56	56	59	61	61	60	58	59	58	56	55	54	52	52	53	55	--	57
Minimum	58	57	57	56	56	52	52	54	56	54	53	54	56	54	52	53	55	59	58	58	58	58	56	55	52	52	51	51	52	53	--	55
December																																
Maximum	55	55	53	54	54	53	47	46	46	45	43	41	38	35	37	41	43	44	45	47	48	49	49	49	46	45	44	46	48	48	47	46
Minimum	53	52	51	52	53	47	42	45	45	43	41	38	35	35	34	37	40	41	42	44	47	48	48	46	45	43	43	44	46	47	45	44
January																																
Maximum	45	44	43	42	42	43	44	44	44	45	48	51	51	49	45	44	41	41	44	47	47	46	43	42	38	37	38	38	37	37	43	43
Minimum	43	42	41	41	42	42	42	43	41	42	44	48	49	45	44	41	40	40	41	44	46	43	42	38	36	36	37	37	37	37	37	41
February																																
Maximum	43	44	46	46	45	45	46	47	47	47	47	47	47	43	42	42	41	41	41	42	43	43	42	43	44	45	44	45	--	--	--	44
Minimum	43	43	44	44	45	45	45	46	47	45	45	47	43	42	42	41	41	41	41	41	42	42	41	41	43	44	42	43	--	--	--	43
March																																
Maximum	47	49	49	49	51	53	53	53	52	52	53	58	59	60	60	59	60	60	63	63	63	59	57	56	58	58	59	59	60	61	63	57
Minimum	45	47	48	49	49	51	53	51	51	51	52	53	58	59	59	58	58	59	60	63	59	57	55	55	56	58	58	58	59	60	61	55
April																																
Maximum	64	66	68	69	66	66	62	62	63	65	65	66	66	64	64	64	66	69	69	70	70	71	71	71	71	71	67	66	66	65	65	--	67
Minimum	62	63	64	66	65	62	60	59	61	61	64	65	63	62	60	60	62	65	66	68	68	68	70	67	65	64	64	65	65	63	--	64
May																																
Maximum	63	63	61	62	63	67	71	73	74	75	77	77	72	69	69	71	73	76	76	75	77	77	76	74	74	74	74	74	70	71	71	72
Minimum	63	60	60	60	61	63	67	68	70	71	72	72	69	68	67	69	71	72	72	72	73	73	73	70	69	71	70	69	69	70	70	69
June																																
Maximum	71	72	74	76	77	79	81	82	84	84	84	84	85	85	85	85	83	81	78	75	73	72	71	71	71	70	71	71	72	73	--	77
Minimum	70	70	70	71	72	73	75	76	77	78	80	79	78	79	80	80	80	78	75	73	72	71	71	71	70	70	70	70	70	71	--	74
July																																
Maximum	75	76	77	79	81	82	82	81	80	78	78	78	78	78	78	79	79	79	79	79	79	79	78	78	73	75	77	79	79	80	79	78
Minimum	73	75	76	77	78	78	78	79	78	76	75	74	74	75	75	76	76	76	76	78	78	77	77	73	72	73	75	77	77	78	77	76
August																																
Maximum	82	83	84	84	86	86	87	87	87	85	86	85	86	87	85	85	84	85	86	85	84	83	83	85	86	87	86	83	83	85	86	85
Minimum	78	79	79	80	80	81	82	82	82	81	82	82	82	82	82	80	80	80	81	81	79	79	81	81	81	82	82	81	81	81	81	81
September																																
Maximum	87	87	87	87	86	85	86	85	86	86	86	87	87	85	78	76	78	77	80	80	80	82	81	74	75	78	76	74	72	72	--	81
Minimum	83	82	81	82	83	82	81	80	80	80	81	81	82	78	75	74	74	74	74	75	76	78	74	70	69	72	74	72	71	72	--	77

ECONFINA CREEK BASIN

2-3595. ECONFINA CREEK NEAR BENNETT, FLA.

LOCATION.--At gaging station near left bank on downstream side of bridge on State Highway 388, 0.5 mile downstream from Old Mill Branch, and 1.6 1.6 miles southwest of Bennett, Bay County.
DRAINAGE AREA.--122 square miles (revised).
RECORDS AVAILABLE.--Chemical analyses: April 1962 to September 1963.
Water temperatures: January 1962 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 80 ppm Jan. 23-31; minimum, 24 ppm Sept. 28-30.
Hardness: Maximum, 52 ppm Mar. 16; minimum, 21 ppm Sept. 28-30.
Specific conductance: Maximum daily, 107 micromhos May 26; minimum daily, 43 micromhos July 27.
Water temperatures: Maximum, 77°F Aug. 5-7, 11, 13; minimum, 57°F Jan. 22.
EXTREMES, January 1962 to September 1963.--Dissolved solids (April 1962 to September 1963): Maximum, 80 ppm Jan. 23-31, 1963; minimum, 24 ppm Sept. 28-30.
Hardness (April 1962 to September 1963: Maximum, 52 ppm Mar. 16, 1963; minimum, 21 ppm Sept. 28-30, 1963.
Specific conductance (April 1962 to September 1963: Maximum daily, 127 micromhos May 24, 1962; minimum daily, 43 micromhos July 27, 1963.
Water temperatures: Maximum, 77°F July 10, 11, 1962; Aug. 5-7, 11, 13, 1963; minimum, 57°F Jan. 22, 1963.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1-10, 1962.....	489	4.8	--	--	--	--		46	--	1.8	--	--	54	40	2	83	7.3	7
Oct. 11-20.....	419	5.0	--	--	--	--		52	--	2.0	--	--	58	44	1	92	7.8	7
Oct. 21-31.....	384	4.9	--	--	--	--		55	--	1.8	--	--	57	46	1	95	7.6	7
Nov. 1-10.....	411	5.0	--	--	--	--		54	--	1.8	--	--	57	44	0	100	7.3	8
Nov. 11-20.....	418	4.8	--	--	--	--		51	--	2.0	--	--	56	44	2	89	7.5	7
Nov. 21-30.....	427	4.8	--	--	--	--		52	--	1.8	--	--	56	44	1	92	7.2	7
Dec. 1-10.....	430	4.3	0.02	12	1.7	1.2	0.1	44	0.4	2.0	0.1	0.0	44	37	1	80	7.4	10
Dec. 11-20.....	393	5.2	.00	14	2.4	1.5	.2	54	.4	2.8	.1	.0	54	45	1	96	7.5	10
Dec. 21-31.....	453	5.5	.02	14	1.6	1.7	.2	49	1.6	2.8	.1	.0	52	42	2	89	7.6	20
Jan. 1-11, 1963.....	409	5.0	--	14	2.4	1.1	.0	51	.8	2.5	.1	.0	78	45	3	92	7.3	15
Jan. 12, 14-20.....	514	4.8	--	13	1.8	1.1	.0	44	.8	2.5	.1	.3	76	40	4	82	7.5	15
Jan. 13, 21, 22.....	761	4.6	--	7.6	1.2	1.1	.0	24	--	5.0	.1	.0	76	24	4	52	7.0	90
Jan. 23-31.....	484	6.8	--	13	1.8	1.0	.0	45	2.4	2.5	.1	.0	90	40	3	93	7.3	10
Feb. 1-10.....	439	5.2	.00	13	2.1	1.6	.2	48	2.0	3.0	.0	.0	68	41	2	86	7.6	20
Feb. 11-20.....	465	7.2	.00	12	1.9	1.6	.2	46	2.4	3.0	.0	.0	68	38	0	85	7.6	25

ECONFINA CREEK BASIN--Continued

2-3595. ECONFINA CREEK NEAR BENNETT, FLA.--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Feb. 21-28, 1963....	485	5.0	0.07	13	1.6	1.6	0.2	45	3.6	2.0	0.0	0.0	68	39	2	83	7.9	30
Mar. 1-10.....	454	5.0	.00	13	1.8	1.6	.1	48	1.6	2.5	.0	.0	68	40	1	86	7.5	20
Mar. 11-15, 17-20...	442	4.9	.00	14	1.2	1.5	.1	49	.8	2.8	.1	.0	70	40	0	87	7.4	20
Mar. 16.....	446	--	.03	--	--	--	--	82	--	1.0	.1	--	--	52	0	106	7.8	--
Mar. 21-31.....	402	5.0	.00	14	2.2	1.6	.2	52	1.2	2.5	.0	.0	74	44	1	93	7.6	20
Apr. 1-10.....	413	2.3	.01	14	2.2	1.8	.3	49	.4	2.5	.3	.0	48	44	4	92	7.4	20
Apr. 11-20.....	381	3.0	.02	15	2.1	1.6	.2	54	.0	2.5	.1	.0	52	46	2	92	7.5	15
Apr. 21-30.....	369	2.8	.01	15	2.3	2.1	.2	55	.4	2.5	.2	.0	53	47	2	100	7.3	10
May 1-12.....	379	4.9	.01	15	1.8	2.2	.1	54	2.0	2.5	.0	.2	56	45	1	100	7.6	5
May 13-21.....	391	4.7	.02	14	2.4	2.2	.1	54	.8	2.0	.1	.0	53	45	1	95	7.5	10
May 22-31.....	373	5.1	.01	16	1.5	2.2	.1	56	.8	2.5	.1	.0	56	46	0	97	7.4	5
June 1-10.....	353	6.0	.01	16	1.9	2.0	.4	59	.8	2.5	.1	.4	62	48	0	92	7.5	10
June 11-17.....	358	5.5	.01	16	1.5	1.9	.4	55	1.6	3.0	.1	.1	62	46	1	98	7.8	10
June 18-30.....	490	6.4	.07	13	1.8	1.9	.4	44	2.8	4.0	.3	.2	56	40	4	81	7.4	30
July 1-8.....	403	5.0	.01	14	2.4	1.7	.1	54	1.6	1.5	.1	.1	66	45	1	92	7.2	15
July 9-11.....	580	--	.08	12	1.0	2.0	.4	37	--	--	--	--	--	34	4	72	7.1	70
July 12-22.....	437	4.8	.01	16	.5	1.8	.1	51	2.0	3.0	.0	.2	66	42	0	89	7.1	20
July 23-25, 28-31...	488	4.7	.07	12	1.0	1.8	.1	40	2.4	3.5	.1	.0	64	34	1	71	7.1	60
July 26-27.....	1030	--	.13	--	--	1.8	.4	21	--	--	--	--	--	22	5	46	7.0	120
Aug. 1, 2, 4-10.....	519	4.9	.03	15	1.6	1.5	.4	52	2.4	3.0	.1	.0	56	44	1	98	6.8	22
Aug. 11-20.....	635	5.4	.06	12	1.5	1.8	.4	40	2.8	3.0	.1	.0	54	36	3	77	6.9	45
Aug. 21-31.....	523	5.2	.02	14	1.5	1.8	.4	48	2.0	3.0	.1	.0	54	41	2	85	7.3	25
Sept. 1-13.....	462	4.9	.08	14	2.7	1.9	3.4	50	2.4	3.0	1.5	.0	57	46	5	81	6.9	10
Sept. 14-27.....	434	4.8	.02	14	2.7	1.9	.4	52	2.4	5.0	.1	.0	64	46	3	85	7.2	10
Sept. 28-30.....	1103	5.0	--	8.0	.2	1.9	.3	--	.8	7.0	.4	.0	24	21	--	43	3.1	100
Weighted average..	--	5.0	0.03	14	1.7	1.7	0.4	49	1.6	2.8	0.2	0.0	60	42	2	86	4.7	21
Time-weighted average.....	450	5.0	0.03	14	1.7	1.7	0.4	50	1.6	2.7	0.2	0.1	60	42	2	88	5.1	18
Tons per day.....	--	6.1	0.04	17	2.1	2.1	0.5	59	2.0	3.4	0.2	0.1	73	--	--	--	--	--

ECONFINA CREEK BASIN--Continued

2-3595. ECONFINA CREEK NEAR BENNETT, FLA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	72	72	73	73	73	73	73	73	74	73	73	72	73	73	73	73	73	73	72	71	71	71	71	70	68	67	67	68	69	69	69	71
Minimum	70	71	71	72	71	71	71	71	72	71	71	71	71	71	71	71	71	71	71	69	70	71	69	68	67	66	65	65	67	69	67	70
November																																
Maximum	67	67	67	67	67	66	67	68	67	65	67	67	67	67	66	68	69	70	69	69	69	69	67	67	67	67	66	66	67	67	--	67
Minimum	65	65	66	66	65	65	65	67	65	65	65	66	67	66	65	66	67	69	67	68	69	67	65	65	65	65	65	66	66	66	--	66
December																																
Maximum	66	67	66	67	67	65	65	65	65	64	65	64	61	63	63	65	66	65	65	67	68	68	67	67	67	66	64	65	66	66	--	66
Minimum	65	65	65	65	65	64	63	65	64	63	63	61	61	61	61	63	65	65	65	65	67	67	67	65	65	63	63	63	65	64	--	64
January																																
Maximum	64	63	63	64	65	65	64	63	64	65	67	67	66	61	62	61	62	64	65	66	64	59	62	61	60	61	62	61	63	63	65	63
Minimum	63	62	62	62	63	64	63	63	63	63	65	65	61	60	61	61	61	62	64	64	59	57	59	59	59	59	61	60	61	63	63	62
February																																
Maximum	66	67	67	65	64	65	65	65	64	65	65	65	63	62	63	63	63	63	63	61	63	63	63	63	63	63	63	63	--	--	--	64
Minimum	65	66	65	63	63	63	63	63	63	63	65	63	60	60	61	61	61	63	60	59	60	61	61	62	60	61	61	61	--	--	--	62
March																																
Maximum	63	63	64	66	68	68	66	66	65	67	69	71	71	71	70	69	71	72	72	71	69	67	67	67	67	69	69	69	69	69	69	68
Minimum	63	61	62	64	66	66	64	63	64	65	66	68	69	69	67	68	69	69	70	69	67	65	64	65	65	67	67	65	65	65	67	66
April																																
Maximum	70	71	71	71	71	71	68	69	69	71	73	71	71	71	69	71	71	71	72	73	73	73	73	72	71	72	71	71	72	71	--	71
Minimum	67	67	68	68	69	68	67	65	66	69	70	70	69	67	67	67	69	69	69	71	71	71	71	71	69	69	70	69	71	71	--	69
May																																
Maximum	71	69	70	72	73	73	73	74	74	73	74	74	73	73	73	74	75	73	73	73	73	73	73	73	73	74	74	73	73	74	73	73
Minimum	69	67	68	69	69	69	70	71	71	71	71	71	71	71	71	71	71	72	71	71	71	71	71	71	71	71	71	71	71	71	71	71
June																																
Maximum	74	74	74	73	73	74	74	75	74	74	75	74	75	76	75	76	75	73	73	74	75	73	73	73	73	74	74	73	73	73	--	74
Minimum	71	71	71	71	71	71	71	71	72	72	72	73	73	73	73	73	73	73	73	72	72	73	72	72	72	71	71	72	72	72	--	72
July																																
Maximum	75	75	75	75	75	75	76	74	73	75	74	74	74	73	73	75	75	75	76	76	75	76	75	75	73	73	75	75	75	76	75	75
Minimum	72	72	73	73	73	73	73	73	73	73	71	71	71	72	72	71	73	73	73	74	74	74	75	73	73	73	73	74	73	73	74	73
August																																
Maximum	75	75	76	75	77	77	77	75	76	76	77	75	77	75	75	75	75	75	75	75	75	75	75	75	75	76	75	75	75	75	75	75
Minimum	73	74	74	75	74	74	74	75	75	75	75	75	74	75	75	75	74	73	73	73	73	73	73	73	74	74	74	73	73	73	74	74
September																																
Maximum	75	75	75	76	75	75	75	75	75	75	75	75	75	75	74	73	73	73	74	76	73	74	73	73	73	73	72	72	73	72	--	74
Minimum	73	74	74	74	74	73	73	73	73	73	73	73	73	73	73	73	73	73	72	72	73	73	72	71	71	72	72	72	72	71	--	73

MOBILE RIVER BASIN

2-3835. COOSAWATTEE RIVER AT PINE CHAPEL, GA.

LOCATION.--Midstream on upstream side of gaging station at Pine Chapel, Gordon County, 4 miles downstream from Sallacoa Creek, 5 miles east of Resaca, and 6 miles upstream from confluence with Conasauga River.
DRAINAGE AREA.--856 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1962 to September 1963 (discontinued).
Water temperatures: October 1962 to September 1963 (discontinued).
Sediment records: October 1960 to September 1963 (discontinued).
EXTREMES, 1962-63.--Dissolved solids: Maximum, 108 ppm May 1-2, minimum, 33 ppm May 3-10, 11-20.
Hardness: Maximum, 90 ppm Aug. 26; minimum, 14 ppm May 12.
Specific conductance: Maximum daily, 175 micromhos Aug. 26; minimum daily, 29 micromhos Mar. 6, 7, and May 1.
Water temperatures: Maximum, 88°F Aug. 5; minimum, 34°F Dec. 14 and Jan. 25.
Sediment concentrations: Maximum daily, 815 ppm Mar. 6; minimum daily, 5 ppm Nov. 4-7.
Sediment loads: Maximum daily, 26,300 tons Mar. 6; minimum daily, 6 tons Nov. 4-7.
EXTREMES, 1960-63.--Dissolved solids (1962-63): Maximum, 108 ppm May 1-2, 1963; minimum, 33 ppm May 3-10, 11-20, 1963.
Hardness (1962-63): Maximum, 90 ppm Aug. 26, 1963; minimum, 14 ppm May 1-2, 1963.
Specific conductance (1962-63): Maximum daily, 175 micromhos Aug. 26; minimum daily, 29 micromhos Mar. 6, 7, and May 1, 1963.
Water temperatures (1962-63): Maximum, 88°F Aug. 5, 1963; minimum, 34°F Dec. 14, 1962 and Jan. 25, 1963.
Sediment concentrations: Maximum daily, 1,350 ppm Feb. 26, 1961; minimum daily, 5 ppm Nov. 4-7, 1962.
Sediment loads: Maximum daily, 60,500 tons Feb. 26, 1961; minimum daily, 5.6 tons Oct. 28, 1961.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-10, 1962.....		8.4	0.01	6.0	1.7	2.3	1.5	28	2.8	1.8	0.1	0.0	39	22	0	59	6.9	5
Oct. 22-31.....		9.7	.01	6.4	1.7	2.5	1.3	31	1.2	2.2	.1	.0	42	23	0	62	6.9	5
Oct. 11, 12, 14-21..		10	.01	6.6	1.8	2.4	1.2	33	1.6	1.8	.1	.0	42	24	0	65	6.9	5
Oct. 13.....		--	--	--	--	3.2	1.4	51	--	--	--	--	--	42	0	90	7.3	--
Nov. 1-10.....		9.0	.02	6.6	1.8	2.8	1.4	32	2.4	2.2	.1	.0	44	24	0	66	7.0	5
Nov. 11-20.....		8.1	.02	6.0	1.7	2.4	1.6	26	4.0	1.8	.2	.0	40	22	1	59	6.8	7
Nov. 21-30.....		8.6	.01	6.2	1.6	1.9	1.2	26	3.2	1.2	.1	.1	37	22	1	56	6.8	5
Dec. 1-10.....		9.0	.00	6.4	1.7	2.0	.7	31	2.0	1.8	.1	.0	39	23	0	60	7.5	5
Dec. 11-20.....		9.4	.00	6.4	1.7	1.8	.7	30	2.0	1.5	.1	.0	42	23	0	58	7.0	5
Dec. 21-31.....		7.9	.02	7.2	1.5	2.0	.8	30	3.2	2.0	.1	.0	44	24	0	63	6.8	5
Jan. 1-10, 1963.....		8.5	.01	7.4	1.8	2.0	.8	32	2.4	1.5	.2	.0	46	26	0	61	7.0	5
Jan. 11-20.....		7.5	.01	7.0	1.6	1.6	1.0	28	5.6	2.0	.2	.3	44	24	1	59	6.9	45
Jan. 21-31.....		7.6	.00	6.2	1.3	1.6	.8	26	2.8	1.5	.2	.1	36	21	0	52	6.9	20
Feb. 1-10.....		7.5	.00	5.8	1.3	1.7	.8	25	3.6	1.8	.1	.0	56	20	0	52	7.0	10
Feb. 11-20.....		8.2	.00	6.6	1.8	1.8	.8	29	2.8	2.0	.0	.0	60	24	0	57	7.6	10
Feb. 21-28.....		11	.00	6.4	1.7	1.6	.8	29	2.0	1.8	.1	.0	54	23	0	56	7.6	10
Mar. 1-5, 9-12.....		7.8	.02	6.4	1.5	2.2	.8	26	3.6	.5	.1	.0	46	22	1	55	7.4	20
Mar. 6-8, 13-14.....		5.1	.00	2.0	2.7	.1	1.0	14	3.6	.2	.0	.2	36	16	5	33	7.0	--

Mar. 15-31, 1963	8.2	.00	6.0	1.9	.6	1.0	22	2.8	1.0	.0	.1	40	23	5	47	7.1	15
Apr. 1-10	7.1	.00	6.2	1.6	1.7	1.0	25	2.0	1.0	.1	.0	40	22	1	50	7.2	10
Apr. 11-20	8.4	.01	5.6	1.2	2.2	.8	26	.4	1.2	.1	.0	34	19	0	48	7.3	5
Apr. 21-30	7.6	.05	6.4	.5	2.4	1.0	23	.0	1.2	.1	.5	44	18	0	48	7.2	30
May 1-2	5.6	--	--	--	2.6	1.0	14	4.4	±	±	±	108	14	3	35	7.3	--
May 3-10	8.1	.00	5.4	1.1	2.2	.7	24	2.0	1.2	.1	.0	33	18	0	46	7.3	5
May 11-20	8.4	.00	5.2	1.2	2.5	.7	26	1.2	1.0	.1	.1	33	18	0	47	7.1	5
May 21-31	8.5	.02	5.4	1.1	2.5	.7	24	1.2	1.5	.1	.0	36	18	0	48	7.0	5
June 1-10	8.4	.01	4.4	1.7	2.0	.7	23	1.2	1.5	.1	.0	34	18	0	45	7.1	5
June 11-20	8.9	.01	4.8	1.7	2.0	.7	24	1.2	1.0	.1	.1	34	19	0	45	6.9	5
June 21-30	9.2	.03	6.4	1.2	2.0	.8	26	2.8	1.5	.1	.2	40	21	0	52	7.0	20
July 1-10	8.4	.00	5.8	1.3	2.0	.6	24	2.8	1.0	.0	.1	38	20	0	51	7.0	5
July 11-20	8.6	.00	6.6	1.1	2.3	.6	28	1.2	1.5	.1	.0	36	21	0	51	7.0	5
July 21-31	8.9	.03	7.6	1.0	2.0	.7	30	2.8	1.0	.1	.0	44	23	0	57	7.0	20
Aug. 1-10	9.4	.00	6.4	2.4	2.6	1.3	32	3.2	2.0	.1	.0	43	26	0	65	6.6	7
Aug. 11-20	9.2	.00	7.2	1.9	2.3	1.3	33	2.4	1.2	.1	.0	42	26	0	61	6.9	6
Aug. 21-25, 27-31	9.0	.00	6.2	2.1	2.5	1.3	31	3.2	1.8	.1	.0	41	24	0	59	6.9	6
Aug. 26	±	--	--	--	--	--	104	--	--	±	±	--	90	5	175	7.3	--
Sept. 1-10	9.3	--	5.6	2.4	2.1	1.3	18	1.8	2.0	.1	.0	48	24	9	56	6.4	10
Sept. 11-20	9.0	.00	5.6	2.9	1.9	1.2	28	1.4	2.0	.1	.0	46	26	3	54	6.5	10
Sept. 21-30	8.9	.01	6.0	2.2	2.3	1.6	28	2.4	2.0	.1	.1	52	24	1	56	6.5	20
Time-weighted average	8.6	0.02	6.1	1.7	2.0	1.0	27	2.4	1.5	0.1	0.1	42	22	1	54	6.9	10

MOBILE RIVER BASIN--Continued

2-3835. COOSAWATTEE RIVER AT PINE CHAPEL, GA.--Continued

Specific conductance (micromhos at 25°C) water year October 1962 to September 1963

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	55	56	58	59	52	50	48	29	42	41	85	55
2.....	54	60	59	79	53	56	47	36	43	43	59	55
3.....	52	62	58	57	48	52	49	48	43	49	60	60
4.....	54	58	57	65	48	52	49	45	42	47	78	56
5.....	49	65	61	58	45	60	49	45	42	46	57	47
6.....	51	58	69	59	46	29	52	46	43	47	53	51
7.....	55	63	59	59	48	29	53	44	43	48	56	52
8.....	61	55	59	58	51	33	50	45	42	53	57	52
9.....	62	85	55	59	51	54	47	45	44	50	68	54
10.....	64	55	56	66	53	47	48	46	43	49	56	53
11.....	60	58	55	61	53	50	48	46	44	50	63	53
12.....	59	54	58	51	53	46	48	49	43	49	56	52
13.....	89	58	60	57	54	34	47	49	43	50	55	45
14.....	63	55	67	56	54	33	49	46	44	54	60	62
15.....	60	55	57	64	54	45	47	47	44	47	54	63
16.....	62	58	51	59	54	43	46	47	43	51	54	50
17.....	64	61	60	59	54	47	46	47	44	52	54	50
18.....	60	63	53	63	53	44	47	43	44	47	55	51
19.....	60	51	53	63	54	44	47	47	44	50	70	55
20.....	64	49	58	62	66	43	48	46	42	44	69	55
21.....	61	60	63	42	60	49	48	45	44	59	68	55
22.....	58	56	58	50	57	45	47	46	44	45	71	56
23.....	59	45	57	52	55	45	49	47	51	46	57	56
24.....	63	45	61	50	55	45	48	48	57	44	53	57
25.....	60	50	80	54	55	45	48	48	53	74	52	59
26.....	63	51	54	53	55	46	52	45	50	53	139	57
27.....	61	52	53	58	55	51	48	59	62	60	53	57
28.....	58	55	55	55	55	46	49	49	58	51	59	58
29.....	60	56	72	55	--	46	54	42	52	52	55	66
30.....	60	56	54	63	--	46	36	44	46	62	54	48
31.....	60	--	66	54	--	47	--	44	--	60	50	--
Average	60	56	59	58	53	45	48	45	45	50	62	54

MOBILE RIVER BASIN--Continued

2-3835. COOSAWATTEE RIVER AT PINE CHAPEL, GA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	64	64	68	68	68	69	69	70	70	68	68	69	68	68	69	68	68	67	65	64	64	63	61	51	52	50	49	50	52	53	54	63
November	54	50	51	50	49	48	48	48	49	51	50	50	50	51	49	50	53	54	53	52	53	54	52	50	50	49	48	53	51	55	--	51
December	54	51	48	63	49	44	40	41	41	44	37	36	36	34	37	36	37	40	45	47	46	46	45	43	44	46	45	47	48	48	44	44
January	41	40	42	41	42	42	43	44	43	44	47	52	48	41	41	39	39	41	46	49	43	40	42	36	34	36	41	36	36	39	40	42
February	41	44	44	42	43	44	46	46	45	43	45	43	41	43	38	39	43	40	40	44	43	39	38	41	43	44	41	41	--	--	--	42
March	44	46	47	51	54	53	52	52	49	50	50	53	56	56	54	54	56	56	61	58	52	48	51	52	55	56	57	67	59	59	68	54
April	61	63	69	65	61	56	57	58	59	60	62	62	61	58	57	57	61	64	64	66	68	70	69	64	60	59	61	61	68	61	--	62
May	58	59	59	58	63	65	65	68	68	69	71	70	68	63	64	70	74	69	69	68	68	69	67	67	65	61	62	64	78	70	71	66
June	70	70	70	71	71	73	74	75	74	77	77	76	76	78	76	74	70	69	70	71	70	69	67	68	68	67	68	70	70	68	--	72
July	70	71	72	73	74	75	72	71	74	74	71	72	73	71	72	73	72	74	76	75	73	74	75	72	71	72	75	65	73	74	73	73
August	73	76	76	76	88	86	79	79	78	78	76	76	78	74	74	75	74	75	76	76	74	75	76	77	74	77	76	75	75	75	73	76
September	74	75	75	76	75	75	73	73	73	73	74	75	75	72	69	70	72	72	71	71	71	71	71	67	65	66	71	64	69	65	--	71

MOBILE RIVER BASIN--Continued

2-3835. COOSAWATTEE RIVER AT PINE CHAPEL, GA.--Continued

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	363	19	19	420	7	8	830	14	31
2..	381	20	21	405	7	8	770	10	21
3..	2630	565	S 6730	405	7	8	735	8	16
4..	4240	375	4290	405	5	8	718	8	16
5..	1070	150	433	405	5	6	735	8	16
6..	700	58	110	390	5	6	752	8	16
7..	578	45	70	390	5	6	735	8	16
8..	718	55	107	405	8	9	700	8	15
9..	870	40	94	1770	150	S 840	735	8	16
10..	630	27	46	3160	140	1190	682	7	13
11..	560	27	41	1740	55	258	648	6	10
12..	525	26	38	1250	30	101	578	6	9
13..	490	26	36	1420	25	96	420	6	7
14..	472	25	32	1090	12	35	612	10	17
15..	455	24	29	870	10	23	700	17	32
16..	438	22	26	752	10	20	718	12	23
17..	438	22	26	735	10	20	665	8	14
18..	420	21	24	2520	130	885	595	7	11
19..	420	20	22	2800	100	756	578	7	11
20..	405	18	20	1660	35	157	560	7	11
21..	405	15	16	1910	78	402	578	7	11
22..	595	20	32	3650	154	S 1630	648	8	14
23..	560	18	27	2460	70	465	718	12	23
24..	455	10	12	1670	31	140	630	12	20
25..	420	10	11	1340	19	69	1110	52	156
26..	405	8	9	1160	15	47	2400	178	S 1230
27..	405	8	9	1050	14	40	1440	46	179
28..	405	7	8	970	14	37	1130	24	73
29..	405	7	8	970	14	37	1530	70	S 340
30..	405	7	8	890	14	34	2460	90	598
31..	405	7	8	--	--	--	1680	37	168
Total	21668	--	12362	39062	--	7339	27790	--	3133
	JANUARY			FEBRUARY			MARCH		
1..	1310	25	88	2100	40	227	1250	45	S 175
2..	1160	22	69	1960	31	164	2250	115	S 730
3..	1050	19	54	4080	210	2310	1650	46	205
4..	950	15	38	4120	122	1360	1420	26	100
5..	890	11	26	2770	49	366	2370	393	S 4660
6..	850	8	18	2130	35	201	13100	815	S 26300
7..	810	7	15	1860	28	141	17700	262	12500
8..	830	7	16	1700	24	110	9330	96	2420
9..	752	7	14	1540	21	87	4940	44	587
10..	718	7	14	1420	18	69	2870	35	271
11..	890	121	S 368	1380	17	63	3300	37	330
12..	3760	322	S 3380	1390	16	60	4910	280	S 4200
13..	2640	103	734	1380	15	56	9370	280	7080
14..	1900	46	236	1270	13	44	9310	85	2140
15..	1440	23	89	1210	11	36	5570	43	647
16..	1230	15	50	1130	10	31	3020	30	245
17..	1130	14	43	1090	10	29	4220	17	194
18..	1240	18	60	1090	10	29	4390	40	S 601
19..	2000	200	1080	1580	50	213	3200	141	1220
20..	8360	530	12000	1950	62	326	4790	230	2970
21..	8420	170	3860	1520	38	156	3380	100	913
22..	3560	60	570	1310	20	71	2670	55	396
23..	2150	25	145	1200	13	42	2390	48	310
24..	1880	23	117	1200	10	32	2220	38	228
25..	1510	22	90	1210	10	33	2100	35	198
26..	1540	22	91	1130	10	31	2160	35	204
27..	1550	22	92	1090	9	26	2210	36	215
28..	1360	22	81	1050	9	26	1970	37	197
29..	1250	22	74	--	--	--	1860	35	176
30..	1620	55	241	--	--	--	1780	34	163
31..	2490	70	471	--	--	--	1710	34	157
Total	61240	--	24224	46860	--	6339	133410	--	70732

S Computed by subdividing day.

MOBILE RIVER BASIN--Continued

2-3835. COOSAWATTEE RIVER AT PINE CHAPEL, GA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	1680	30	136	15800	260	11100	1230	39	130
2	1610	29	126	9280	60	1500	1160	35	110
3	1540	28	116	4140	45	503	1120	33	100
4	1540	25	104	2180	35	206	1090	31	91
5	1460	21	83	2010	60	326	1090	30	88
6	1550	20	84	2140	48	277	1050	29	82
7	1970	47	250	1980	43	230	1010	31	85
8	1730	36	168	1820	41	201	990	33	88
9	1530	30	124	1740	39	183	990	32	86
10	1500	28	113	1620	37	162	950	31	80
11	1420	27	104	1700	35	161	910	29	71
12	1380	26	97	1660	34	152	870	27	63
13	1310	24	85	1500	34	138	830	25	56
14	1310	22	78	1940	34	178	810	24	52
15	1280	20	69	1750	33	156	810	24	52
16	1240	18	60	1530	33	136	850	26	60
17	1240	16	54	1420	32	123	1570	85	360
18	1210	15	49	1540	37	154	1390	85	319
19	1210	15	49	1380	30	112	1050	50	142
20	1210	15	49	1310	30	106	1060	61	175
21	1250	18	61	1270	29	99	3250	298	2610
22	1130	20	61	1240	29	97	2390	195	1260
23	1130	20	61	1200	29	94	1980	93	497
24	1090	20	59	1160	28	88	1950	63	332
25	1050	20	57	1130	28	85	1470	55	218
26	1050	20	57	1310	28	99	1640	56	248
27	1010	20	55	2050	192	S 1180	2030	65	356
28	1130	24	73	2400	192	1240	2020	50	273
29	3750	242	S 2940	1820	90	442	2130	150	863
30	12300	578	S 20000	1500	57	231	4150	385	4310
31	--	--	--	1330	45	162	--	--	--
Total	53810	--	25422	74850	--	19921	43840	--	13257

Day	JULY			AUGUST			SEPTEMBER		
1	2670	130	937	1770	142	679	525	18	26
2	1930	75	391	1240	54	181	490	17	22
3	1620	60	262	1010	40	110	472	17	22
4	1420	45	173	930	37	93	490	19	25
5	1290	38	132	870	35	82	770	36	75
6	1290	111	387	870	33	78	630	35	60
7	2440	293	1930	810	31	68	525	30	43
8	1670	94	424	770	30	62	490	28	37
9	1350	61	222	735	28	56	472	23	29
10	1170	46	145	700	25	47	455	20	25
11	1090	39	115	682	24	44	438	18	21
12	1010	35	95	665	20	36	420	16	18
13	970	30	79	648	18	31	525	18	26
14	1050	29	82	735	20	40	630	68	116
15	1210	40	131	718	20	39	870	94	221
16	1090	38	112	648	18	31	578	49	76
17	1290	69	240	612	18	30	508	36	49
18	1170	70	221	595	18	29	472	28	36
19	1050	38	108	578	18	28	455	23	28
20	1130	30	92	560	18	27	438	20	24
21	1910	208	1070	595	22	35	405	18	20
22	1360	113	415	700	27	51	405	16	17
23	1090	50	147	648	21	37	357	14	13
24	1050	38	108	578	18	28	366	12	12
25	1290	119	414	542	18	26	351	10	9
26	1700	160	734	542	17	25	354	9	9
27	1400	193	730	542	17	25	351	9	8
28	1170	194	613	595	18	29	876	116	274
29	2140	280	1620	560	18	27	3690	353	3520
30	2060	84	467	630	20	34	1330	138	496
31	2470	179	1190	612	19	31	--	--	--
Total	45550	--	13786	22690	--	2139	19138	--	5357

Total discharge for year (cfs days)..... 589908
Total load for year (tons)..... 204011

S Computed by subdividing day.

MOBILE RIVER BASIN--Continued

2-3835. COOSAWATTEE RIVER AT PINE CHAPEL, GA.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment											Method of analysis
							Percent finer than size indicated, in millimeters											
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Oct. 3, 1962.....	1410			2440	789		26	32	43	53	68	86	95	99	100			BSWC
Oct. 3.....	1532			3560	1250		27	31	43	57	71	89	97	100	--			BSWC
Oct. 3.....	1720			4660	1600		22	27	39	61	77	94	99	100	--			BSWC
Oct. 3.....	2045			5870	1110		23	30	43	57	76	92	99	100	--			BSWC
Oct. 4.....	0625			6970	435		25	36	49	70	83	92	98	100	--			BSWC
Oct. 4.....	1235			5430	362		51	59	67	81	92	97	99	100	--			BSWC
Mar. 5, 1963.....	1940			3360	939		31	43	58	72	87	96	99	100	--			BSWC
Mar. 5.....	2030			7370	1440		34	40	58	75	88	96	99	100	--			BSWC
Mar. 6.....	1325			12600	742		53	61	74	82	90	92	96	99	100			BSWC
Mar. 7.....	0655			25000	331		60	71	91	98	100	--	--	--	--			BSWC
Mar. 10.....	1415			7170	47		66	70	79	86	93	95	100	--	--			BSWC
Apr. 29.....	1610			4890	301		34	39	47	56	68	76	87	95	100			BSWC
Apr. 30.....	0825			11100	519		33	40	51	63	72	74	93	97	99	100		BSWC
May 1.....	0645			23400	317		56	66	79	86	90	93	97	100	--			BSWC
May 3.....	0630			10600	46		70	74	81	87	91	94	--	--	--			BSWC

MOBILE RIVER BASIN--Continued

2-3870. CONASAUGA RIVER AT TILTON, GA.

LOCATION.--At highway bridge, 0.2 mile downstream from Swamp Creek, 0.5 mile northeast of Tilton, Whitfield County, and 12 miles upstream from confluence with Coosawattee River.
DRAINAGE AREA.--682 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1942 to September 1943, October 1962 to September 1963 (discontinued).
Water temperatures: October 1942 to September 1943, October 1962 to September 1963 (discontinued).
Sediment records: October 1962 to September 1963 (discontinued).
EXTREMES, 1962-63.--Dissolved solids: Maximum, 218 ppm Sept. 1, 12-15, 21-23, 25-29; minimum, 28 ppm May 1-3.
Hardness: Maximum, 92 ppm Sept. 1, 12-15, 21-23, 25-29; minimum, 22 ppm May 1-3.
Specific conductance: Maximum daily, 352 micromhos Nov. 4; minimum daily, 46 micromhos May 1.
Water temperatures: Maximum, 80°F Aug. 9, 10; minimum, 33°F Dec. 12, 14, 15.
Sediment concentrations: Maximum daily, 2,020 ppm Dec. 4; minimum daily, 4 ppm Dec. 15.
Sediment loads: Maximum daily, 23,800 tons Oct. 4; minimum daily, 3 tons Dec. 15.
EXTREMES, 1942-43; 1962-63.--Dissolved solids: Maximum, 218 ppm Sept. 1, 12-15, 21-23. 25-29, 1963; minimum, 28 ppm May 1-3, 1963.
Hardness: Maximum, 92 ppm Sept. 1, 12-15, 21-23, 25-29, 1963; minimum, 22 ppm May 1-3, 1963.
Specific conductance: Maximum daily, 352 micromhos Nov. 4, 1962; minimum daily, 46 micromhos May 1, 1963.
Water temperatures: Maximum, 89°F Aug. 31, 1943; minimum, 33°F Dec. 12, 14, 15, 1962.
Sediment concentrations (1962-63): Maximum daily, 2,020 ppm Dec. 4, 1962; minimum daily, 4 ppm Dec. 15, 1962.
Sediment loads (1962-63): Maximum daily, 23,800 tons Oct. 4, 1962; minimum daily, 3 tons Dec. 15, 1962.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
Oct. 1, 6-10, 1962		6.3		0.03		16	2.4	10	2.0	59	7.6	14	0.1	0.0	87	50	2		151	7.5	15
Oct. 2, 11-20		7.7		.01		21	5.2	26	2.4	90	8.4	34	.2	.6	152	74	0		274	7.3	7
Oct. 3-5		4.0		.04		9.6	1.5	4.2	2.2	35	--	5.0	.1	.2	44	30	1		89	7.1	15
Oct. 21-31		7.6		.02		22	5.6	30	2.4	96	8.4	40	.2	.8	166	78	0		292	7.4	5
Nov. 1-9		7.0		.01		22	6.6	34	2.4	100	10	46	.2	.0	177	82	0		320	7.3	5
Nov. 10-20		6.8		.03		14	2.2	6.5	1.9	48	7.6	9.5	.1	.1	76	44	5		129	7.3	10
Nov. 21-30		7.3		.01		14	2.2	6.5	1.2	50	6.4	9.0	.1	.0	72	44	3		128	7.0	5
Dec. 1-10		7.3		.01		19	4.0	13	1.0	76	6.4	16	.1	.0	106	64	2		180	7.3	5
Dec. 11-20		7.3		.00		19	5.2	15	.8	82	6.8	18	.1	.6	113	69	2		200	7.3	5
Dec. 21-31		6.5		.01		18	4.1	6.5	.9	71	6.8	9.0	.1	.2	87	62	4		150	7.9	5
Jan. 1-11, 1963		6.2		.00		17	4.0	8.0	.9	70	6.4	11	.2	.6	88	59	2		151	7.2	5
Jan. 12-21		6.9		.01		13	3.5	5.0	1.2	50	4.0	7.5	.1	.0	90	47	6		116	7.0	25

MOBILE RIVER BASIN--Continued

2-3870. CONASAUGA RIVER AT TILTON, GA.--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Aluminum (Al)	Iron (Fe)	Manganese (Mn)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Total acidity as H^+	Specific conductance (micromhos at 25°C)	pH	Color
																Calcium, magnesium	Noncarbonate				
Jan. 22-31,1963		7.0		0.00		16	1.9	5.6	0.9	54	6.0	8.5	0.1	0.1	94	48	4		123	7.4	20
Feb. 1-3, 6, 7.		6.4		.00		14	1.9	4.9	1.0	48	5.6	7.5	.1	.1	88	43	4		111	7.4	20
Feb. 4, 5.....		--		.10		--	--	--	--	32	--	2.5	--	--	--	29	3		74	7.6	--
Feb. 8-10,20-25		6.6		.01		15	3.8	5.8	1.0	59	5.6	7.0	.1	.0	78	53	5		131	7.7	10
Feb. 11-19, 26-28.....		6.8		.01		18	4.9	8.1	.8	65	5.2	11	.1	.0	94	65	12		158	7.2	10
Mar. 1-5, 26-31		6.6		.01		18	2.9	6.8	1.2	67	5.2	9.5	.1	.0	88	57	2		146	7.5	15
Mar. 6-18.....		4.8		.05		8.2	1.6	2.2	1.8	29	5.6	5.5	.1	.6	60	27	3		65	7.0	80
Mar. 19-25.....		7.0		.03		14	2.7	4.4	.8	55	4.4	5.0	.1	.0	74	46	1		113	7.6	10
Apr. 1-10, 29..		6.7		.02		16	5.1	6.6	1.0	63	6.0	9.0	.1	.7	88	61	9		140	7.6	20
Apr. 11-20.....		6.3		.01		17	4.3	8.4	.8	71	4.8	10	.1	.0	94	60	2		157	7.6	10
Apr. 21-28.....		6.3		.01		19	4.5	12	1.2	79	5.2	14	.1	.8	106	66	1		182	7.8	20
Apr. 30.....		--		.71		--	--	--	--	26	--	--	--	--	--	42	21		57	7.4	--
May 1-3.....		4.3		.06		--	--	2.6	1.2	24	3.6	1.0	.1	.2	28	22	2		56	7.1	5
May 4-13.....		6.7		.00		15	2.6	6.4	.7	60	4.8	8.0	.1	.0	74	48	0		129	7.4	5
May 14.....		--		.10		--	--	--	--	66	--	36	.2	--	--	82	28		207	7.5	--
May 15-26.....		7.2		.01		16	3.6	7.6	.9	66	4.0	10	.1	.2	83	55	1		149	7.3	5
May 27-31.....		5.6		.02		10	2.9	4.3	.9	40	4.8	4.5	.1	.7	62	37	4		94	7.5	15
June 1-4.....		8.0		.00		15	3.0	5.6	.9	50	5.6	6.5	.1	.4	74	50	9		122	7.3	5
June 5-12.....		7.1		.01		18	3.9	9.9	.9	75	6.0	12	.2	.2	96	61	0		161	7.5	10
June 13-20.....		7.5		.01		18	4.1	17	1.2	74	6.8	20	.1	.1	116	62	1		190	7.3	10
June 21.....		--		.13		--	--	--	--	68	--	41	.1	--	--	58	2		270	7.5	--
June 22-30.....		7.8		.03		15	2.8	6.8	1.0	57	5.6	8.0	.2	.1	88	49	2		127	7.2	10
July 1-9.....		7.0		.00		14	3.6	4.0	.6	58	4.4	4.0	.1	.1	76	50	2		112	7.1	5
July 10-15.....		7.4		.00		18	3.6	16	.9	70	6.8	19	.1	.4	118	60	3		170	7.3	10
July 16-21.....		6.5		.01		14	4.1	7.0	.9	59	6.0	8.0	.1	.3	96	52	4		129	7.2	20
July 24-28.....		7.0		.01		18	3.6	9.6	.8	66	6.4	12	.1	.1	106	60	6		150	7.6	15
July 22, 23, 29-31.....		5.5		.03		14	2.2	3.1	.9	50	4.8	4.5	.1	.0	72	44	3		96	7.0	30
Aug. 1-6.....		6.0		.05		18	5.6	5.4	1.5	76	6.0	6.5	.2	.0	98	68	6		125	7.4	15
Aug. 7-13.....		9.1		.00		21	5.7	19	1.6	90	9.8	21	.1	.0	128	76	2		211	7.4	7
Aug. 14-19.....		7.7		.02		22	5.6	23	1.7	91	6.0	28	.1	.2	148	78	3		245	7.4	8

Aug. 20, 1963..		--		--		--	--	--	--	92	--	--	--	--	--	79	4		211	7.1	--
Aug. 21-31.....		7.5		.00		23	7.2	29	1.9	100	6.8	34	.2	.4	159	87	5		275	7.2	8
Sept. 1, 12-15, 21-23, 25-29.		7.3		.01		24	7.8	45	2.6	112	8.4	60	.2	1.8	218	92	0		366	--	10
Sept. 2-11.....		7.3		.01		21	5.7	26	2.6	96	6.8	32	.4	.3	160	76	0		237	7.6	10
Sept. 16-20, 24		7.9		.00		22	7.1	31	2.1	104	8.0	40	.2	1.1	188	84	0		281	7.4	10
Sept. 30.....		--		--		--	--	--	--	80	--	--	--	--	--	60	0		180	6.8	--
Time-weighted average....		6.9		0.02		17.0	4.1	13.0	1.3	69	6.2	17	0.1	0.3	106	60	3		171	7.3	13

Specific conductance (micromhos at 25°C) water year October 1962 to September 1963

Day	October	November	December	January	February	March	April	May	June	July	August	September
1.....	189	330	180	133	113	161	124	46	121	85	86	320
2.....	221	327	178	138	108	130	145	54	120	94	133	250
3.....	96	350	158	135	94	131	166	63	111	82	158	248
4.....	68	352	173	145	68	120	166	93	120	116	158	296
5.....	83	281	179	157	77	129	163	94	150	129	158	262
6.....	126	266	231	153	111	70	121	119	158	126	152	259
7.....	139	348	200	145	109	51	138	118	160	127	200	264
8.....	120	342	190	141	129	41	116	139	171	123	214	240
9.....	147	245	172	191	123	61	126	152	170	130	215	227
10.....	194	130	161	177	121	76	152	152	140	151	226	221
11.....	237	83	184	182	140	86	151	152	140	179	229	227
12.....	248	81	182	110	140	76	160	139	160	180	190	351
13.....	292	110	197	99	160	50	160	123	217	202	201	350
14.....	268	140	230	89	155	43	126	205	205	199	237	342
15.....	225	159	227	107	160	47	128	149	218	166	241	380
16.....	225	158	220	121	160	61	144	149	219	129	239	259
17.....	297	172	184	137	155	79	161	147	150	119	233	239
18.....	311	138	181	146	130	76	167	139	132	112	233	276
19.....	331	92	185	152	150	94	178	135	157	128	236	239
20.....	346	71	200	85	120	110	178	129	191	140	203	232
21.....	346	100	212	67	121	110	167	128	265	140	261	348
22.....	274	118	200	74	122	111	167	164	144	74	280	349
23.....	247	102	165	94	131	112	167	161	92	109	263	333
24.....	247	82	161	113	119	110	169	161	97	131	280	279
25.....	267	92	150	123	119	110	194	159	119	140	226	362
26.....	317	100	150	125	149	130	194	160	160	143	229	371
27.....	339	131	149	146	161	130	194	95	155	180	216	361
28.....	350	155	134	115	163	141	194	79	100	141	260	403
29.....	272	177	120	144	--	142	110	80	132	78	269	410
30.....	246	177	120	146	--	142	58	94	91	115	322	180
31.....	335	--	138	130	--	142	--	113	--	99	317	--
Average	238	180	177	129	128	99	153	125	152	131	221	295

MOBILE RIVER BASIN--Continued

2-3870. CONASAUGA RIVER AT TILTON, GA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	64	65	65	68	68	68	68	70	69	65	66	68	66	69	69	66	67	65	61	61	63	65	60	55	52	46	52	49	46	46	42	61
November	48	47	45	50	47	47	46	46	46	48	44	45	42	42	52	52	52	56	50	50	50	50	52	46	46	46	46	46	50	48	--	48
December	48	48	48	48	50	48	43	42	42	38	36	33	34	33	33	37	36	36	38	47	44	48	38	38	37	38	40	43	40	40	38	41
January	38	38	38	37	37	38	38	38	46	41	48	40	52	43	38	38	43	43	48	45	43	40	35	36	35	35	36	38	37	36	35	40
February	40	42	40	43	45	45	45	46	45	46	45	43	40	40	40	40	40	40	42	45	45	40	40	45	45	44	42	45	--	--	--	43
March	45	45	45	46	50	50	54	55	55	52	58	60	60	62	58	56	57	54	60	58	58	58	50	53	52	55	55	58	59	59	65	55
April	65	65	65	65	63	56	58	60	60	60	60	64	64	57	55	60	62	67	65	65	68	67	67	63	62	60	62	62	60	62	--	62
May	60	60	60	62	60	65	67	68	68	68	69	70	70	70	72	72	72	68	68	68	68	68	68	68	65	65	65	65	70	70	70	67
June	70	70	70	70	70	72	72	72	73	75	76	76	75	76	76	75	72	72	72	75	75	72	70	70	70	70	70	72	72	72	--	72
July	73	73	73	72	72	72	72	74	72	72	72	72	72	72	73	73	72	72	72	75	74	74	74	72	72	75	74	75	72	73	73	73
August	72	73	74	75	77	74	75	75	80	80	75	75	75	74	72	72	75	75	75	76	77	77	78	77	77	77	78	77	77	78	76	76
September	74	75	74	75	75	76	75	74	74	72	75	75	75	70	70	75	70	72	79	78	79	68	68	66	62	65	78	78	68	65	--	73

MOBILE RIVER BASIN--Continued

2-3870. CONASAUGA RIVER AT TILTON, GA.--Continued

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	141	52	20	164	15	7	502	18	24
2..	138	52	19	166	12	5	456	15	18
3..	1870	1800	9080	167	11	5	427	12	14
4..	4370	2020	23800	159	11	5	406	12	13
5..	3270	180	1590	158	11	5	405	12	13
6..	764	112	231	157	11	5	468	12	15
7..	451	90	110	149	11	4	480	12	16
8..	370	64	64	176	82	39	422	12	14
9..	322	50	43	1120	232	702	410	14	15
10..	282	40	30	2900	195	1530	395	16	17
11..	241	33	21	3180	115	987	359	14	14
12..	218	26	15	1630	72	S 321	327	11	10
13..	203	26	14	1080	65	190	259	9	6
14..	187	25	13	794	12	26	281	6	4
15..	183	23	11	621	12	20	297	4	3
16..	181	20	10	514	12	17	310	5	4
17..	177	18	9	464	14	18	323	5	4
18..	169	16	7	1790	158	856	318	5	4
19..	164	15	7	3600	180	S 1720	296	5	4
20..	162	15	7	3360	84	762	289	6	5
21..	172	16	7	1670	39	176	285	6	5
22..	232	34	21	1710	114	526	305	5	4
23..	285	53	41	2450	123	814	337	5	4
24..	251	49	33	1940	42	220	344	6	6
25..	193	45	23	1130	51	156	489	49	65
26..	174	40	19	949	50	128	1060	60	172
27..	166	35	16	789	35	75	968	35	91
28..	159	25	11	678	26	48	716	15	29
29..	161	23	10	608	22	36	716	18	35
30..	168	20	9	555	20	30	1710	126	582
31..	165	18	8	--	--	--	1540	56	233
Total	15989	--	35299	34828	--	9433	15900	--	1384
	JANUARY			FEBRUARY			MARCH		
1..	1050	30	85	2120	39	223	699	23	43
2..	821	15	33	1760	72	342	1330	80	287
3..	695	14	26	3020	121	987	1430	64	247
4..	611	13	21	4250	95	1090	1000	43	116
5..	550	12	18	3680	63	626	1660	132	S 898
6..	493	11	15	2020	35	191	6910	402	S 7280
7..	470	10	13	1580	28	115	9490	230	5890
8..	442	9	11	1350	25	91	12300	110	3650
9..	420	7	8	1150	19	58	10800	48	1400
10..	399	5	5	985	16	43	5500	35	520
11..	633	66	11	904	14	34	2180	448	S 2560
12..	2700	228	1660	915	12	30	5550	385	S 4450
13..	3340	200	1800	917	11	27	8820	170	4050
14..	2380	50	321	828	11	24	13600	140	5140
15..	1410	17	65	771	10	21	15500	60	2020
16..	1050	16	45	674	10	18	9650	35	912
17..	884	16	38	597	10	16	4660	50	629
18..	842	16	36	591	10	16	3010	64	520
19..	1220	16	53	1030	70	195	2070	15	84
20..	4400	148	1760	2210	69	412	2020	35	300
21..	5090	105	1440	1670	37	167	1880	60	305
22..	4910	55	729	1170	38	120	1570	50	212
23..	2180	27	159	925	32	80	1260	42	143
24..	1980	15	80	851	25	57	1130	29	88
25..	1540	14	58	855	18	42	1040	29	81
26..	1270	13	45	774	13	27	1090	50	147
27..	1360	12	44	701	12	22	1420	60	230
28..	1360	11	40	628	12	20	1150	39	221
29..	968	16	42	--	--	--	963	38	99
30..	1050	30	85	--	--	--	868	38	89
31..	1980	43	230	--	--	--	798	38	48
Total	48498	--	8976	38926	--	5094	131348	--	42659

S Computed by subdividing day.

MOBILE RIVER BASIN--Continued

2-3870. CONASAUGA RIVER AT TILTON, GA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	APRIL			MAY			JUNE		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	753	37	75	9220	90	2240	819	91	201
2	712	37	71	10000	50	1350	669	90	163
3	674	37	67	7810	40	843	571	88	136
4	639	40	69	2870	50	387	504	87	118
5	596	44	71	1190	60	193	456	86	106
6	639	54	93	1090	55	162	430	84	98
7	1450	70	274	1040	52	146	404	82	89
8	2010	109	592	907	50	122	384	76	79
9	1260	57	194	805	50	109	424	68	78
10	1010	32	87	726	50	98	388	62	65
11	869	30	70	759	70	143	342	60	55
12	763	28	58	794	105	225	312	56	47
13	709	26	50	668	64	91	289	51	40
14	646	24	42	860	62	144	271	36	34
15	618	22	37	1220	138	455	259	44	31
16	586	22	35	810	105	230	274	45	33
17	561	22	33	732	78	154	806	158	344
18	542	22	32	842	132	300	847	187	428
19	523	22	31	758	125	256	495	92	123
20	511	22	30	605	118	193	418	75	85
21	494	20	27	666	120	216	813	94	206
22	480	20	26	616	120	200	1430	204	788
23	458	20	25	516	95	132	1670	242	1090
24	432	20	23	453	85	104	1300	159	558
25	408	20	22	438	77	91	994	158	424
26	403	20	22	570	150	230	971	143	375
27	398	20	21	1020	966 S	1580	1320	157	560
28	476	155	199	2950	510	4060	1320	135	481
29	2800	514 S	2540	3560	250	2400	1600	128	552
30	8350	200 S	4510	1770	115	550	1400	129	488
31	--	--	--	1080	102	297	--	--	--
Total	30770	--	9426	57345	--	17701	22180	--	7875

Day	JULY			AUGUST			SEPTEMBER		
1	1290	115	401	2390	312	2110	176	36	17
2	1330	145	5537	1020	150	413	169	33	15
3	1440	227	883	717	108	209	168	30	14
4	924	115	287	558	103	155	182	28	13
5	695	96	180	478	98	126	261	26	18
6	534	96	138	429	95	110	280	26	19
7	617	111	185	388	92	96	231	26	16
8	945	210	536	359	87	84	189	26	13
9	1110	204	611	347	85	80	180	26	13
10	598	124	200	329	74	65	179	26	13
11	449	80	97	300	63	51	171	22	10
12	378	64	65	285	60	46	166	18	8
13	346	48	51	285	60	46	170	16	7
14	358	42	31	281	60	46	171	10	5
15	950	348 S	789	312	58	49	175	8	8
16	1040	138	388	282	57	43	182	8	4
17	1880	279 S	1450	252	52	35	188	10	5
18	1630	184	810	237	47	30	174	14	7
19	1140	119	366	232	45	28	166	16	7
20	949	110	282	224	43	26	157	16	7
21	1740	140	658	213	40	23	153	17	7
22	2930	235	1860	209	35	20	142	18	7
23	1520	218	895	209	34	19	141	19	7
24	860	86	200	217	34	19	141	20	8
25	828	82	183	193	34	18	134	22	8
26	1080	158	461	186	34	17	132	19	7
27	945	116	295	185	34	17	139	16	6
28	1030	190	528	189	38	19	206	19	11
29	1790	303	1460	191	43	22	475	45	58
30	1880	253	1280	186	40	20	448	44	53
31	2240	280	1690	184	37	18	--	--	--
Total	35446	--	17797	11867	--	4060	5846	--	391

Total discharge for year (cfs days)..... 448943
Total load for year (tons)..... 160095

S Computed by subdividing day.

MOBILE RIVER BASIN--Continued

2-3870. CONASAUGA RIVER AT TILTON, GA.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment											Method of analysis
							Percent finer than size indicated, in millimeters											
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Nov. 9, 1962	1440			1290	269		68	70	85	93	98	99	100					BSWC
Nov. 13	0730			1130	95		86	87	90	95	97	99	100					BSWC
Nov. 18	1725			2120	86		82	87	92	94	96	99	100					BSWC
Nov. 20	0730			4010	87		58	64	74	84	92	97	100					BSWC
Nov. 23	0730			2480	113		72	77	83	90	93	99	100					BSWC
Nov. 25	0730			1270	55		63	72	87	95	96	99	100					BSWC
Mar. 11, 1963	0730			2430	65		23	32	74	90	95	99	100					BSWC
Mar. 13	0730			8450	185		83	86	92	96	98	99	100					BSWC
Mar. 14	1200			13900	142		75	80	93	96	98	99	100					BSWC
Mar. 17	0730			6870	58		78	83	92	98	99	100	--					BSWC
Mar. 19	0730			2560	13		43	54	70	86	91	95	100					BSWC
Apr. 29	1140			4300	253		67	74	86	94	98	100	--					BSWC
Apr. 30	0730			8360	242		69	77	88	95	97	99	100					BSWC
May 4	1230			6540	96		85	88	92	95	97	98	100					BSWC

MOBILE RIVER BASIN--Continued

2-3920. ETOWAH RIVER AT CANTON, GA.

LOCATION.--Center of stream on bridge on State Highway 5 spur and 140 at Canton, Cherokee County, 0.8 mile upstream from Canton Creek, and 1.8 miles downstream from Hickory Log Creek.
DRAINAGE AREA.--605 square miles.
RECORDS AVAILABLE.--Chemical analyses: July 1958 to September 1960.
Water temperatures: July 1958 to September 1960.
Sediment records: October 1962 to September 1963.
EXTREMES, 1962-63.--Sediment concentrations: Maximum daily, 1,540 ppm Mar. 6; minimum daily, 7 ppm Dec. 21.
Sediment loads: Maximum daily, 42,000 tons Mar. 13; minimum daily, 10 tons Dec. 21.
EXTREMES, 1958-60, 1962-63.--Dissolved solids (1958-60): Maximum, 52 ppm Feb. 11-20, 21-28, 1959; minimum, 28 ppm June 21-30, 1960.
Hardness (1958-60): Maximum, 58 ppm Sept. 13, 1959; minimum, 12 ppm Dec. 21-31, 1959 and May 1-10, 11-20, 1960.
Specific conductance (1958-60): Maximum daily, 252 micromhos May 16, 1959; minimum daily, 30 micromhos Jan. 25 and June 9, 1960.
Water temperatures (1958-60): Maximum, 80°F Aug. 23, 1959 and July 25, 1960; minimum, freezing point Jan. 5, 6, 1959.
Sediment concentrations (1962-63): Maximum daily, 1,540 ppm Mar. 6, 1963; minimum daily, 7 ppm Dec. 21, 1962.
Sediment loads (1962-63): Maximum daily, 42,000 tons Mar. 13, 1963; minimum daily, 10 tons Dec. 21, 1962.

Suspended sediment, water year October 1962 to September 1963

Day	OCTOBER			NOVEMBER			DECEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	422	25	28	386	15	16	676	20	36
2..	494	29	39	382	14	14	661	20	36
3..	703	35	66	383	14	14	638	20	34
4..	948	42	108	388	14	15	620	19	32
5..	646	50	87	374	14	14	638	17	29
6..	513	52	72	366	14	14	638	15	26
7..	475	52	67	367	14	14	620	17	28
8..	474	50	64	379	14	14	586	20	31
9..	571	50	77	657	30	53	586	23	36
10..	490	45	60	1220	51	S 194	586	25	40
11..	442	35	42	810	50	109	570	25	38
12..	426	32	37	718	50	97	520	25	35
13..	422	32	36	1070	48	139	520	25	35
14..	410	30	33	795	45	97	500	23	31
15..	409	30	33	630	38	65	520	20	28
16..	400	30	32	570	35	54	550	17	25
17..	398	28	30	552	34	51	565	16	24
18..	397	26	28	763	34	70	533	12	17
19..	386	24	25	1060	34	97	522	10	14
20..	381	22	23	833	34	76	518	8	11
21..	372	22	22	1370	268	S 1360	532	7	10
22..	417	20	22	3560	446	S 4380	628	8	14
23..	414	20	22	1690	200	913	752	9	18
24..	381	20	20	1170	108	341	627	8	14
25..	364	20	20	975	63	166	1180	132	421
26..	366	20	20	865	45	105	2300	223	S 1440
27..	367	19	19	788	36	76	1410	42	S 160
28..	372	19	19	749	30	61	1090	25	74
29..	377	19	19	741	24	48	1300	73	S 279
30..	379	18	18	710	20	38	2220	209	S 1270
31..	385	18	19	--	--	--	1490	80	322
Total	14001	--	1207	25321	--	8705	25096	--	4608

S Computed by subdividing day.

MOBILE RIVER BASIN--Continued

2-3920. ETOWAH RIVER AT CANTON, GA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	JANUARY			FEBRUARY			MARCH		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1	1170	43	136	1330	50	180	966	51	S 167
2	1020	33	91	1280	48	166	1460	92	S 358
3	932	30	75	2390	45	290	1220	57	188
4	868	25	59	2100	42	238	1090	40	118
5	831	20	45	1630	40	176	1300	276	S 1440
6	807	20	44	1420	38	146	7920	1540	S 32300
7	785	20	42	1290	37	129	6060	518	8480
8	768	21	44	1200	37	120	2400	125	810
9	720	20	39	1120	36	109	1860	50	251
10	701	18	34	1060	36	103	1610	45	196
11	739	70	40	1040	33	93	1470	45	179
12	2240	229	S 1420	1110	28	84	5580	962	S 21100
13	1690	103	470	1120	25	76	16200	1014	S 42000
14	1200	53	S 174	1020	23	63	10400	694	19500
15	1030	45	125	978	22	58	3230	528	4600
16	946	40	102	945	22	56	2670	488	3520
17	894	42	101	921	20	50	3030	420	3440
18	937	58	147	907	20	49	3200	298	2580
19	1320	189	S 870	1220	38	S 128	2640	180	1280
20	5330	759	S 10800	1470	68	270	2620	122	863
21	2970	286	2290	1200	60	194	2470	100	667
22	1860	156	783	1080	49	143	2100	80	454
23	1530	100	413	1020	42	116	1920	72	373
24	1380	65	242	1010	35	95	1810	70	342
25	1180	50	159	990	30	80	1730	50	234
26	1140	50	154	962	30	78	1870	41	207
27	1140	50	154	926	30	75	1900	45	231
28	1060	50	143	901	30	73	1670	67	302
29	976	51	134	--	--	--	1570	69	292
30	1100	52	154	--	--	--	1510	63	257
31	1520	52	213	--	--	--	1470	60	238
Total	40784	--	19697	33640	--	3438	96946	--	146967

Day	APRIL			MAY			JUNE		
1	1430	53	205	14900	290	S 9600	1220	61	201
2	1390	52	195	5000	200	2700	1170	59	186
3	1370	52	192	3200	100	864	1120	58	175
4	1350	53	193	2600	75	526	1100	57	169
5	1310	53	187	2200	60	356	1100	55	163
6	1350	53	193	2000	50	270	1040	51	143
7	1490	52	209	1800	48	233	1030	48	133
8	1390	50	188	1700	46	211	1020	44	121
9	1300	49	172	1700	48	220	982	40	106
10	1260	49	167	1600	50	216	953	36	93
11	1220	49	161	1600	53	229	921	36	90
12	1190	45	145	1600	54	233	895	36	87
13	1160	41	128	1580	62	264	869	36	84
14	1140	40	123	2290	337	2080	854	41	95
15	1110	39	117	2050	257	1420	879	50	119
16	1090	38	112	1620	98	429	899	54	131
17	1080	38	111	1480	45	180	1440	90	350
18	1080	39	114	1440	40	156	1360	127	466
19	1090	45	132	1350	40	146	1160	108	338
20	1140	44	135	1320	40	143	1100	110	327
21	1160	44	138	1270	40	137	2110	267	S 1590
22	1070	44	127	1240	39	131	2600	269	1900
23	1030	44	122	1190	39	125	2260	193	S 1210
24	990	44	118	1160	38	119	2530	176	1200
25	952	40	103	1140	37	114	1670	86	388
26	952	40	103	1210	40	131	1580	103	S 443
27	952	45	116	1390	48	180	2570	262	S 1840
28	1140	130	400	1720	63	293	2680	189	1370
29	6430	745	S 16500	2010	70	380	2260	206	1260
30	19700	418	S 20000	1570	70	297	2220	195	1160
31	--	--	--	1320	65	232	--	--	--
Total	59316	--	40906	68250	--	22615	43572	--	15938

S Computed by subdividing day.

MOBILE RIVER BASIN--Continued

2-3920. ETOWAH RIVER AT CANTON, GA.--Continued

Suspended sediment, water year October 1962 to September 1963--Continued

Day	JULY			AUGUST			SEPTEMBER		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1..	2100	183	1040	1270	190	652	588	55	87
2..	1670	170	766	1090	128	377	559	45	68
3..	1480	157	627	990	88	235	545	35	51
4..	1300	142	498	914	72	178	549	30	44
5..	1220	125	412	857	70	162	580	32	50
6..	1220	110	362	836	70	158	566	34	52
7..	1400	95	359	800	85	184	534	32	46
8..	1300	82	287	764	98	202	562	32	49
9..	1100	70	208	746	58	117	526	27	38
10..	1030	60	167	710	48	92	505	23	31
11..	990	58	155	692	48	90	495	23	31
12..	990	57	152	674	48	87	488	23	30
13..	1020	56	154	679	48	88	646	40	70
14..	1100	53	157	748	48	97	807	75 S	173
15..	1070	52	150	712	48	92	1140	221 S	683
16..	972	51	134	655	49	87	753	103	209
17..	1050	51	145	648	47	82	627	55	93
18..	1080	51	149	633	42	72	584	40	63
19..	978	82	217	613	36	60	569	38	58
20..	990	90	241	604	35	57	544	33	48
21..	1350	93	339	623	36	61	525	31	44
22..	1400	96	363	775	68	142	511	30	41
23..	952	100	257	697	65	122	498	29	39
24..	1480	123	492	614	37	61	478	29	37
25..	1180	133	424	585	31	49	464	29	36
26..	1480	114	456	570	33	51	461	30	37
27..	1180	90	287	667	39	70	458	38	47
28..	1030	72	200	667	41	74	1630	304	1340
29..	1400	160 S	832	674	45	82	5290	355 S	4190
30..	1280	135	467	796	53	114	1640	154	682
31..	1580	262 S	1120	656	56	99	--	--	--
Total	38372	--	11617	22959	--	4094	24122	--	8467

Total discharge for year (cfs)..... 492379
Total load for year (tons)..... 288259

S Computed by subdividing day.

MOBILE RIVER BASIN--Continued

2-3920. ETOWAH RIVER AT CANTON, GA.--Continued

Particle-size analyses of suspended sediment, water year October 1962 to September 1963
(Methods of analysis: B, bottom withdrawal tube; C, chemically dispersed; D, decantation; N, in native water; P, pipet; S, sieve; V, visual accumulation tube; W, in distilled water)

Date of collection	Time (24 hour)	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Suspended sediment											Method of analysis
							Percent finer than size indicated, in millimeters											
							0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500	1.000	2.000	
Nov. 21, 1962.....	2100			2400	419		21	27	36	44	52	59	--	--	--			BCW
Nov. 22.....	0045			4280	795		14	21	28	38	45	46	--	--	--			BCW
Mar. 12, 1963.....	1645			9490	2340		22	28	37	48	56	70	76	80	87			BSWC
Apr. 29.....	0715			4430	528		20	23	29	36	46	56	69	87	97			BSWC
Apr. 29.....	1650			7340	668		17	20	25	33	43	54	65	76	90			BSWC
Apr. 29.....	2215			11400	839		19	21	26	32	36	41	47	54	70			BSWC
Apr. 30.....	1645			23500	270		49	56	67	76	79	81	82	85	93			BSWC
May 1.....	0950			17300	159		46	49	58	62	63	65	68	73	93			BSWC
May 2.....	1715			4950	153		36	41	50	59	67	74	83	88	96			BSWC

MOBILE RIVER BASIN--Continued

2-3970. COOSA RIVER NEAR ROME, GA.

LOCATION.--At gaging station on left bank at Mayo Bar lock and dam, 1.5 miles upstream from Webb Creek, 6 miles southwest of Rome, Floyd County, and 7.5 miles downstream from confluence of Dostanaula and Etowah Rivers, and at mile 279.
DRAINAGE AREA.--4,040 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1962 to September 1963 (discontinued)
Water temperatures: October 1962 to September 1963 (discontinued).
EXTREMES, 1962-63.--Dissolved solids: Maximum, 108 ppm Sept. 1-10, 11-17, 22-24; minimum, 33 ppm Dec. 1, 3-9.
Hardness: Maximum, 60 ppm Aug. 23-31; minimum, 14 ppm Jan. 20.
Specific conductance: Maximum daily, 196 micromhos Oct. 1; minimum daily, 21 micromhos Jan. 20.
Water temperatures: Maximum, 78°F Aug. 26; minimum, 35°F Jan. 28.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (residue at 180°C)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 1-3, 8-18, 1962	2085	8.3	0.00	14	2.7	8.8	1.5	54	16	7.0	0.2	0.0	86	46	2	150	7.2	3
Oct. 4-7	7170	4.9	.02	9.0	1.8	3.6	2.0	34	7.2	3.2	.2	.1	A 49	30	2	87	7.1	12
Oct. 19-31	1961	8.8	.00	13	4.0	12	1.4	54	15	6.5	.4	.0	90	49	5	153	7.2	5
Nov. 1-11	2795	8.1	.01	14	3.2	12	1.5	52	15	9.0	.2	.0	89	48	5	151	7.0	3
Nov. 12-19	4220	7.4	.01	14	1.7	5.0	1.3	47	9.6	5.5	.2	.1	72	42	3	115	7.6	5
Nov. 20-30	7446	7.5	.00	9.6	2.2	3.5	1.0	38	6.4	3.0	.1	.0	54	33	2	87	7.0	5
Dec. 1, 3-9	5818	7.4	.03	6.0	1.0	1.5	.4	24	3.2	.5	.1	.0	33	19	0	49	7.2	5
Dec. 2, 10	2645	8.6	.00	--	--	7.2	1.0	52	--	7.0	.0	.1	--	46	3	129	7.7	--
Dec. 11-15	5562	8.2	.00	8.0	1.5	2.5	.8	33	4.0	2.0	.1	.0	A 43	26	0	67	7.5	5
Dec. 16-31	4348	7.7	.02	12	3.4	5.3	1.1	50	9.2	4.5	.2	.3	70	44	3	110	7.2	10
Jan. 9-12, 18, 27-31, 1963	5467	8.5	.00	12	3.9	3.6	.9	50	7.2	3.5	.1	.0	84	46	5	107	7.6	10
Jan. 13-17, 19, 21-26	11160	6.4	.00	8.4	2.4	2.6	1.1	34	6.4	3.0	.1	.0	66	31	3	76	7.2	30
Jan. 20	18100	--	.--	--	--	.5	1.0	10	--	--	--	--	--	14	6	20	6.9	--
Feb. 1, 2, 10-17	6035	7.9	.00	12	3.9	4.2	.8	52	7.2	3.8	.1	.0	82	46	3	110	7.7	15
Feb. 3-9	--	7.2	.01	9.4	2.6	2.9	.9	39	6.0	4.0	.1	.0	80	34	2	86	7.7	30
Feb. 18-28	5328	9.2	.00	13	3.8	4.4	.8	54	8.4	3.8	.1	.0	84	48	4	117	7.0	10
Mar. 1-5	5424	7.8	.03	14	4.4	5.3	.9	56	10	4.0	.2	.0	92	53	7	126	7.8	5
Mar. 6-20	25400	4.8	.03	6.8	2.2	2.4	1.1	24	5.2	1.0	.2	.2	38	26	6	59	7.4	15

Mar. 21-31, 1963....	13400	7.5	.01	8.2	3.0	2.7	.9	34	5.2	2.0	.1	.1	60	33	5	75	7.0	10
Apr. 1, 7, 10-13, 17-20, 29.....	5210	8.9	.02	12	3.6	4.7	1.0	54	7.6	3.5	.1	.1	78	45	1	115	7.4	20
Apr. 2-6, 30.....	12500	6.8	.05	7.8	1.3	2.8	1.2	30	2.4	3.0	.1	.6	52	25	0	67	7.2	60
Apr. 8, 9, 14-16, 21-28.....	3670	7.3	.00	15	3.5	5.7	1.0	58	9.2	4.5	.1	.2	84	52	4	130	7.5	10
May 1-4.....	30000	4.7	.02	6.0	.7	1.6	1.0	22	4.0	.5	.1	.5	34	18	0	42	7.4	--
May 5-18.....	13300	6.9	.02	7.6	1.7	3.4	1.0	30	3.6	2.0	.1	.1	A 41	26	1	67	7.2	10
May 19-31.....	6160	7.1	.05	12	2.7	4.4	.9	48	6.8	2.5	.1	.1	A 61	41	2	101	7.3	20
June 1-11.....	3990	7.8	.01	12	3.4	4.7	.8	52	8.4	3.0	.1	.1	70	44	1	106	7.7	10
June 12-20.....	--	8.1	.03	9.6	4.6	4.7	.8	44	7.6	3.5	.1	.4	64	43	7	96	7.4	20
June 21-30.....	8620	9.1	.08	9.6	3.4	4.0	.8	42	8.4	4.5	.1	.1	64	38	4	90	7.4	40
July 1-7.....	7390	8.7	.00	10	2.7	3.8	.8	42	7.6	2.0	.0	.2	64	36	2	76	7.3	10
July 8-14.....	5360	8.6	.00	12	3.4	4.9	.7	52	6.8	2.0	.1	.3	68	44	1	102	7.4	10
July 15-23.....	4970	8.2	.01	13	3.8	4.7	.7	56	7.6	3.0	.1	.4	70	48	2	109	7.5	10
July 24-31.....	7110	8.1	.05	11	3.0	4.0	.8	44	6.0	3.5	.1	.1	A 59	40	4	94	7.0	40
Aug. 1-4, 7-10,14-17	5020	8.9	.00	10	4.1	3.0	1.3	47	6.0	2.0	.1	.0	A 60	42	3	96	6.7	15
Aug. 5, 11-13, 18-22	2670	8.8	.00	14	5.1	8.6	1.3	62	14	6.0	.2	.0	98	56	5	145	6.9	15
Aug. 23-31.....	2310	9.0	.00	14	6.1	9.8	1.5	62	16	8.0	.1	.0	A 96	60	9	156	7.1	7
Sept. 1-10.....	2060	8.2	.00	15	5.0	12	1.3	60	20	8.0	.1	.0	108	58	9	158	6.6	10
Sept. 11-17, 22-24..	2260	8.1	.00	15	4.5	12	1.6	60	17	7.0	.2	.3	108	56	7	149	6.6	10
Sept. 18-21, 25-30..	4630	7.5	.02	8.8	3.4	3.9	1.6	40	6.4	3.0	.1	.0	64	36	3	84	6.5	20
Weighted average..	--	7.8	0.03	9.7	2.5	3.9	1.0	39	6.8	2.9	0.1	0.1	59	35	3	86	7.1	16
Time-weighted average.....	6879	7.8	0.03	11	3.3	5.4	1.1	46	8.8	4.0	0.1	0.1	71	41	4	105	7.1	14
Tons per day.....	--	132	0.53	179	46	73	19	720	126	53	2.0	2.6	1100	--	--	--	--	--

A Calculated from determined constituents.

MOBILE RIVER BASIN--Continued

2-3970. COOSA RIVER NEAR ROME, GA.--Continued

Temperature (°F) of water, water year October 1962 to September 1963

Month	Day																													Aver-age
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October	65	66	68	69	67	68	69	69	71	70	69	69	71	69	70	70	69	68	68	66	68	66	65	64	60	58	57	57	57	55	58	66
November	50	57	56	57	54	52	52	54	53	51	51	53	52	52	50	53	53	55	54	55	54	54	52	52	52	50	52	55	55	56	--	53
December	54	51	50	55	55	53	50	52	46	44	45	42	40	40	42	40	40	44	43	46	48	46	45	43	44	43	44	45	47	46	44	46
January	--	--	--	--	--	--	--	--	45	45	47	49	49	46	42	39	40	41	43	46	45	43	43	37	36	39	38	35	37	39	39	--
February	42	42	42	41	42	40	44	45	45	45	47	44	40	40	41	40	40	40	44	42	42	39	39	41	43	45	42	43	--	--	--	42
March	45	47	45	46	53	55	51	49	50	49	52	53	55	56	55	55	56	56	58	58	52	49	48	49	52	54	54	54	55	54	56	52
April	58	59	57	58	57	54	58	57	58	59	60	60	60	60	59	60	60	61	62	65	68	67	71	67	64	62	61	62	62	62	--	61
May	61	58	61	65	62	64	62	62	63	64	65	64	63	63	65	65	65	65	68	70	68	66	66	65	65	64	64	65	66	68	66	64
June	66	70	71	71	68	69	70	72	73	76	77	72	71	72	71	74	75	71	69	69	70	70	69	69	68	66	67	68	69	72	--	70
July	72	72	70	71	74	73	74	75	75	72	71	71	71	72	74	74	74	73	73	75	76	76	75	73	71	72	72	75	74	75	73	73
August	73	74	75	75	76	77	76	76	75	76	76	77	76	74	72	72	72	75	77	76	75	75	76	77	77	78	77	76	76	76	75	75
September	75	76	75	76	76	75	75	73	72	73	74	75	74	74	71	70	70	70	69	69	70	73	70	67	66	69	70	69	65	64	--	72

MOBILE RIVER BASIN--Continued

2-4005. COOSA RIVER AT GADSDEN, ALA.

LOCATION.--Temperature recorder at gaging station at Etowah County Memorial Bridge on U.S. Highway 431 in Gadsden, Etowah County, 450 feet downstream from Louisville and Nashville Railroad bridge, and 1.5 miles upstream from Big Wills Creek.
DRAINAGE AREA.--5,800 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 88°F Aug. 12, minimum, 37°F Jan. 28 to Feb. 1.

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	70	69	68	68	69	69	69	70	70	70	70	70	70	70	71	71	71	71	70	70	69	69	68	66	65	63	61	61	60	60	60	68
Minimum	69	68	68	67	68	69	69	69	70	70	70	70	70	70	70	71	71	70	70	69	69	68	66	65	63	61	60	60	60	60	60	67
November																																
Maximum	61	59	59	57	57	56	55	54	54	53	53	52	52	52	52	52	52	52	52	52	52	52	53	53	53	53	53	53	53	53	--	54
Minimum	59	59	57	57	56	55	54	54	53	53	52	52	52	52	52	52	52	52	52	52	52	52	52	53	53	53	53	53	53	53	--	53
December																																
Maximum	53	53	53	53	53	53	50	49	49	48	46	45	42	41	40	40	40	40	40	41	42	43	43	43	43	43	43	43	44	44	44	45
Minimum	53	53	53	53	53	50	49	49	48	45	45	42	41	40	40	40	40	40	40	40	41	42	43	43	43	43	43	43	43	44	44	45
January																																
Maximum	44	44	44	44	44	44	44	44	44	44	45	46	46	45	44	42	42	42	42	42	43	43	42	42	41	39	38	38	37	37	37	42
Minimum	44	44	44	44	44	44	44	44	44	44	44	45	45	44	42	42	42	42	42	42	42	42	42	41	39	38	38	37	37	37	37	42
February																																
Maximum	40	39	39	40	40	41	42	44	44	44	44	44	43	42	42	42	42	41	41	41	41	41	41	41	42	43	43	43	--	--	--	42
Minimum	37	38	38	39	40	40	41	42	44	44	44	43	42	42	42	42	41	41	41	41	41	41	40	41	41	42	42	43	--	--	--	41
March																																
Maximum	44	44	45	47	50	50	50	50	50	51	51	52	53	55	55	55	55	56	57	58	58	58	57	56	55	55	55	56	56	57	60	53
Minimum	43	44	44	45	47	49	49	50	50	50	51	51	52	52	55	55	55	55	56	57	58	57	56	55	55	55	55	55	56	56	57	52
April																																
Maximum	61	61	63	64	63	63	60	60	61	62	63	63	64	64	64	63	65	65	65	65	68	69	70	68	68	67	67	67	65	65	--	64
Minimum	60	61	61	63	63	60	60	60	60	61	62	63	63	64	63	63	63	64	64	65	65	67	68	66	67	65	67	65	65	65	--	63
May																																
Maximum	65	65	64	64	64	64	65	66	67	68	70	72	72	70	71	71	71	71	71	72	72	72	72	72	72	71	70	70	70	71	--	69
Minimum	65	64	64	64	64	64	64	65	66	67	68	70	70	70	70	70	70	70	71	71	72	72	72	71	71	70	70	70	70	70	--	68
June																																
Maximum	71	72	74	75	77	78	78	78	79	82	81	82	81	80	82	81	78	78	78	78	78	77	77	77	76	75	75	76	76	77	--	78
Minimum	71	71	72	74	75	76	76	77	77	78	79	79	79	78	80	78	78	78	78	77	77	77	77	76	74	74	75	75	76	76	--	76
July																																
Maximum	76	78	78	79	80	80	81	81	81	81	80	80	80	80	80	80	80	80	80	81	81	83	83	82	80	81	81	81	82	82	82	80
Minimum	76	76	77	78	78	80	80	81	80	80	79	79	80	80	79	79	76	79	80	80	80	81	82	80	80	80	80	81	77	81	80	79
August																																
Maximum	81	82	82	83	84	86	86	85	86	86	86	88	87	84	83	83	84	84	85	84	83	84	84	85	85	87	87	86	84	84	84	85
Minimum	81	81	81	82	83	84	85	84	84	84	84	84	84	83	82	82	82	82	83	76	81	82	82	83	84	84	85	84	83	82	82	83
September																																
Maximum	84	84	84	84	84	84	83	82	83	82	83	83	82	82	80	79	79	79	78	78	78	79	79	78	76	74	73	73	70	70	--	80
Minimum	83	83	82	83	82	82	82	80	80	80	81	81	81	80	79	78	78	78	78	78	78	78	78	76	73	73	73	70	70	69	--	78

MOBILE RIVER BASIN--Continued

2-4070. COOSA RIVER AT CHILDERSBURG, ALA.

LOCATION.--Temperature recorder at gaging station at Central of Georgia Railway bridge, 700 feet upstream from bridge on State Highway 38, 0.5 mile downstream from Tallaseehatchee Creek, and 1 mile northwest of Childersburg, Talladega County.
DRAINAGE AREA.--8,390 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 86°F Aug. 12, 13; minimum, 38°F Jan. 28-30.
REMARKS.--Recorder stopped Aug. 14-27; range in temperature 82°F to 85°F.

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	64	64	64	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	63	63	64	--
November																																
Maximum	64	63	62	62	62	60	59	59	58	57	55	56	56	55	55	55	57	57	57	57	56	56	56	55	54	54	53	53	53	54	--	57
Minimum	63	62	62	62	60	59	58	58	57	54	54	55	55	54	54	55	55	56	56	56	56	56	55	54	54	53	52	52	53	53	--	56
December																																
Maximum	54	54	54	54	54	54	51	51	51	50	48	47	44	41	41	41	42	42	43	45	45	46	47	46	45	45	45	45	46	46	45	47
Minimum	54	54	53	53	54	51	50	50	50	48	47	44	41	41	41	41	41	41	41	43	45	45	46	45	45	45	45	45	45	45	45	46
January																																
Maximum	45	44	44	44	44	44	44	44	45	46	48	48	48	48	45	44	42	42	43	45	45	43	42	42	41	40	39	39	38	39	43	
Minimum	44	44	44	44	44	44	44	44	44	44	46	48	48	45	44	42	41	41	42	43	43	42	42	41	40	39	39	38	38	38	39	43
February																																
Maximum	39	41	41	41	41	41	43	43	43	43	44	44	43	43	43	43	43	43	43	43	43	42	41	42	43	44	44	44	--	--	--	43
Minimum	39	39	41	41	40	41	41	43	43	43	43	43	43	43	43	42	42	42	42	42	42	41	41	41	42	43	43	43	--	--	--	42
March																																
Maximum	46	47	49	49	53	53	59	52	51	51	53	54	55	56	56	55	56	56	59	60	60	59	58	58	57	57	58	58	59	60	60	55
Minimum	44	46	48	49	49	52	52	51	51	51	51	53	54	55	55	55	55	56	56	59	59	58	58	57	56	56	57	58	58	59	59	54
April																																
Maximum	61	63	64	66	67	66	65	65	64	65	66	66	66	66	65	66	67	67	68	68	68	70	71	71	69	68	68	68	67	67	--	67
Minimum	60	61	63	64	66	65	64	64	64	64	65	66	66	65	65	65	66	66	67	68	68	68	70	69	68	68	68	67	67	65	--	66
May																																
Maximum	65	64	63	63	63	64	65	65	67	67	68	69	70	69	69	70	70	70	70	70	71	72	72	71	71	70	70	70	70	70	71	68
Minimum	64	63	63	63	63	63	63	63	65	66	66	68	69	69	69	69	70	70	70	70	70	71	71	70	70	70	70	70	70	70	70	68
June																																
Maximum	72	72	72	72	73	75	77	78	79	80	80	81	80	82	82	82	82	80	78	77	76	74	74	72	73	74	75	75	75	75	--	77
Minimum	71	71	72	72	72	73	74	76	78	78	80	80	80	80	82	82	80	78	77	76	74	74	72	72	72	72	74	75	75	75	--	76
July																																
Maximum	76	76	78	78	78	80	80	80	80	80	80	80	80	79	78	79	79	80	81	81	81	82	83	83	81	80	81	82	82	81	80	80
Minimum	75	76	76	78	78	78	80	80	79	79	79	79	79	78	78	78	79	79	80	81	81	81	82	81	80	80	80	81	81	80	80	79
August																																
Maximum	80	81	81	82	82	83	84	85	85	85	85	86	86	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	85	84	83	83	--
Minimum	80	80	80	81	82	82	83	84	85	85	85	85	85	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	84	82	82	82	--
September																																
Maximum	83	82	82	82	82	82	82	82	82	82	82	82	82	82	80	78	77	77	78	78	78	78	78	76	74	72	72	72	71	70	--	79
Minimum	82	82	82	82	81	81	81	81	81	81	81	81	81	80	78	76	76	77	77	77	78	78	76	74	72	71	71	71	70	70	--	78

MOBILE RIVER BASIN--Continued

2-4116. COOSA RIVER AT WETUMPKA, ALA.

LOCATION.--Temperature recorder at gaging station at abandoned lock, 782 feet downstream from bridge on State Highway 14 at Wetumpka, Elmore County, and 5.5 miles downstream from discharge gaging station at Jordan Dam.
DRAINAGE AREA.--10,200 square miles, approximately, upstream from gaging station.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 87°F on several days during August and September; minimum, 43°F Jan. 30 to Feb. 2.
REMARKS.--Streamflow regulated by several upstream reservoirs and hydroelectric plants.

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	77	78	78	78	78	78	78	78	78	79	77	77	77	77	77	77	77	76	76	75	75	75	75	74	72	72	72	72	72	71	71	76
Minimum	76	76	77	77	77	77	77	77	77	76	76	76	76	75	76	75	75	75	74	74	74	74	73	72	71	70	70	70	70	70	70	74
November																																
Maximum	70	68	68	68	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	57	57	57	--	--
Minimum	68	67	67	67	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	57	57	57	--	--
December																																
Maximum	57	57	57	57	57	57	56	56	56	54	54	53	52	51	51	51	50	50	50	50	51	50	50	50	50	50	49	49	49	49	48	52
Minimum	57	57	56	57	57	56	56	56	54	54	53	52	51	50	50	50	50	50	50	50	50	50	50	50	49	49	49	48	48	48	48	52
January																																
Maximum	48	48	48	48	48	49	48	48	48	48	49	49	49	49	49	48	48	48	49	49	49	48	47	47	47	46	45	45	44	44	43	48
Minimum	48	48	48	48	48	48	48	48	48	48	48	49	49	49	48	48	48	48	48	49	48	47	47	47	46	45	45	44	44	43	43	47
February																																
Maximum	43	44	44	44	45	45	46	46	46	46	46	46	46	46	46	46	46	46	46	47	47	47	47	47	48	48	48	48	--	--	--	46
Minimum	43	43	44	44	44	45	45	46	46	46	46	46	46	46	46	46	46	46	46	46	46	47	47	47	47	48	47	47	--	--	--	46
March																																
Maximum	48	48	48	48	49	50	51	53	54	55	55	55	56	57	58	59	59	59	60	60	60	60	60	60	60	60	60	60	61	61	61	56
Minimum	48	48	48	48	48	49	50	51	53	54	55	55	55	56	57	58	59	59	59	60	60	60	60	60	60	60	60	60	60	60	60	56
April																																
Maximum	61	62	62	63	63	62	63	63	63	64	64	65	65	65	66	66	66	66	66	66	67	68	68	68	68	68	68	69	68	70	--	65
Minimum	61	61	61	61	62	62	62	62	63	63	63	63	64	64	65	64	65	65	66	66	66	67	67	68	67	67	67	67	68	68	--	64
May																																
Maximum	70	70	69	68	67	67	67	68	69	70	70	71	70	72	72	73	74	75	75	75	76	77	77	76	76	77	77	77	78	78	78	73
Minimum	70	69	68	67	66	66	67	67	68	69	70	70	70	70	71	72	72	73	74	74	75	75	75	75	76	75	76	76	76	76	76	72
June																																
Maximum	78	78	78	78	78	78	79	80	80	80	81	80	80	80	81	80	80	80	80	81	81	80	81	80	80	79	78	77	77	76	--	79
Minimum	76	76	76	76	76	76	77	77	77	77	78	78	78	78	78	78	78	79	79	79	80	80	80	80	79	78	77	76	76	76	--	78
July																																
Maximum	77	77	78	78	79	79	80	80	80	81	81	81	81	81	81	82	82	83	83	83	84	85	85	84	84	84	85	85	85	85	85	82
Minimum	76	76	76	77	78	78	78	79	79	79	79	79	80	79	79	80	80	80	81	81	82	83	83	83	83	83	83	83	83	83	84	80
August																																
Maximum	95	95	95	95	95	95	95	96	96	85	95	86	86	86	86	86	86	87	86	85	86	86	86	87	86	87	86	86	86	87	87	86
Minimum	84	84	83	83	83	84	84	84	84	84	84	84	84	84	83	84	84	84	84	84	83	84	84	84	84	84	85	84	84	85	84	84
September																																
Maximum	86	87	86	85	86	86	85	85	86	85	85	85	86	84	82	82	82	82	83	82	82	83	82	80	80	79	79	78	78	77	--	83
Minimum	84	83	84	83	84	84	83	83	83	83	83	83	83	82	81	81	80	80	80	80	80	81	80	78	78	78	77	77	77	77	--	81

MOBILE RIVER BASIN--Continued

2-4230. ALABAMA RIVER AT SELMA, ALA.

LOCATION.--Temperature recorder at gaging station on Edmund Pettus Bridge on U.S. Highway 80 in Selma, Dallas County, 1 mile upstream from Valley Creek.
DRAINAGE AREA.--17,100 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: June to September 1962, unpublished; October 1962 to September 1963.
EXTRMES, 1962-63.--Water temperatures: Maximum, 86°F Aug. 6; minimum, 43°F Jan. 29 to Feb. 1.
REMARKS.--No temperature record available Sept. 18-24.

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	73	73	73	74	74	74	74	74	75	75	75	75	74	74	74	74	74	74	74	74	72	72	72	70	68	67	65	63	62	62	63	72
Minimum	73	72	72	73	74	74	74	74	74	75	75	74	73	73	74	74	73	74	74	72	72	72	70	68	67	65	63	62	62	62	62	71
November																																
Maximum	63	63	62	62	62	60	58	58	59	59	58	58	59	59	59	59	60	60	60	60	59	59	59	59	59	58	58	56	56	56	--	59
Minimum	63	62	62	62	60	58	58	58	58	58	58	58	58	59	59	59	59	60	60	59	59	59	59	58	58	58	56	56	56	56	--	59
December																																
Maximum	56	56	56	56	56	56	54	54	54	53	52	50	48	46	46	47	48	49	49	49	50	51	51	51	50	50	50	50	50	50	50	51
Minimum	56	56	56	56	56	54	54	54	53	52	50	48	46	46	46	46	47	48	49	49	49	50	51	50	50	50	50	50	50	50	50	51
January																																
Maximum	50	49	48	48	48	48	48	48	48	48	50	50	50	50	49	47	46	45	45	46	47	48	47	47	46	45	44	44	44	43	43	47
Minimum	49	48	48	48	48	48	48	48	48	48	48	50	50	49	47	46	45	45	45	45	46	47	47	46	45	44	44	44	43	43	43	47
February																																
Maximum	44	45	46	46	46	45	45	45	46	46	46	46	46	46	46	45	45	45	44	44	44	44	44	45	45	46	46	46	--	--	--	45
Minimum	43	44	45	46	45	45	45	45	45	46	46	46	46	46	45	45	45	44	44	44	44	44	44	44	45	45	46	45	--	--	--	45
March																																
Maximum	45	46	46	47	48	49	49	49	49	49	50	51	53	53	53	53	54	54	55	55	55	55	55	55	55	56	56	56	56	57	57	52
Minimum	45	45	46	46	47	48	49	49	49	49	49	50	51	53	53	53	53	54	54	55	55	55	55	55	55	55	56	56	56	56	57	52
April																																
Maximum	57	58	58	58	58	58	58	58	59	61	61	61	61	61	60	62	63	65	65	65	65	65	66	68	68	67	66	66	66	67	--	62
Minimum	57	57	58	58	58	58	58	58	58	59	61	61	61	60	60	60	62	63	64	65	64	64	65	66	67	66	66	66	65	65	--	62
May																																
Maximum	67	67	66	66	66	66	66	66	66	66	66	67	68	69	69	70	70	70	71	71	71	73	73	73	73	74	74	74	74	74	74	70
Minimum	67	66	66	66	66	66	66	66	66	66	66	66	67	68	69	69	70	70	70	71	71	71	73	73	73	73	74	74	74	74	74	69
June																																
Maximum	74	74	74	75	76	77	78	78	79	79	81	81	81	81	81	80	80	80	79	79	79	79	78	78	78	78	78	78	--	--	--	78
Minimum	74	74	74	74	75	76	77	77	78	79	79	81	81	81	79	79	79	79	79	79	79	78	78	78	78	78	78	78	--	--	--	78
July																																
Maximum	--	77	78	78	78	77	77	78	79	79	79	79	78	78	79	80	80	81	81	82	82	82	82	82	82	82	80	81	81	82	82	80
Minimum	--	77	77	78	77	77	77	77	78	79	79	78	78	78	78	79	79	80	81	80	82	82	82	82	82	82	80	80	81	81	82	79
August																																
Maximum	83	83	82	83	84	86	85	85	85	85	84	85	84	84	84	84	84	84	84	84	83	83	83	83	83	84	83	84	84	84	83	84
Minimum	82	82	82	82	83	84	85	85	85	84	84	84	84	84	84	84	84	83	84	83	83	83	83	83	83	83	83	83	84	83	82	83
September																																
Maximum	82	82	82	83	82	80	80	80	79	79	79	81	81	81	80	79	78	--	--	--	--	--	--	--	75	74	74	74	73	--	--	--
Minimum	82	82	82	82	80	80	80	78	78	79	79	79	81	80	79	78	78	--	--	--	--	--	--	--	74	74	74	73	73	--	--	--

MOBILE RIVER BASIN--Continued

2-4255. CEDAR CREEK AT MINTER, ALA.

LOCATION.--Temperature recorder at gaging station at bridge on county road, 0.2 mile downstream from Snake Creek, 0.5 mile east of Minter, Dallas County, and 4 miles upstream from Dry Cedar Creek.
DRAINAGE AREA.--217 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 92°F June 9, 13, 15; minimum, 34°F Dec. 13-16.

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	72	74	77	78	77	78	79	80	80	79	77	77	80	78	79	80	79	78	77	75	75	75	74	70	64	62	60	61	61	63	64	74
Minimum	69	69	73	71	69	70	73	78	75	71	69	70	72	75	75	76	75	74	71	68	74	71	66	63	58	57	56	56	57	59	60	68
November																																
Maximum	60	55	56	56	55	52	52	54	54	52	55	55	57	55	54	58	62	62	59	58	60	60	58	54	53	53	52	52	53	57	--	56
Minimum	55	52	54	55	51	48	49	52	51	48	48	54	52	49	48	51	58	59	54	56	56	58	54	50	51	50	47	50	51	53	--	52
December																																
Maximum	57	56	55	54	54	49	46	49	48	44	41	38	35	34	34	40	44	45	47	52	52	52	52	50	45	44	46	49	53	52	48	47
Minimum	53	55	49	51	49	45	42	46	44	40	38	35	34	34	34	34	40	40	43	47	50	52	47	45	44	44	44	45	49	48	43	44
January																																
Maximum	45	43	42	43	44	45	45	46	45	52	54	55	54	44	38	41	40	43	51	53	50	45	45	44	40	40	42	42	41	45	49	45
Minimum	40	39	38	39	43	44	45	42	41	45	52	54	44	38	37	38	38	39	43	50	45	44	44	40	38	38	40	40	40	41	45	42
February																																
Maximum	53	58	58	50	48	49	51	51	51	51	53	50	45	46	46	45	45	45	44	45	48	47	45	47	47	47	46	48	--	--	--	49
Minimum	49	43	50	47	46	46	47	49	46	48	50	45	42	42	43	42	42	44	42	42	45	43	41	44	46	46	42	43	--	--	--	45
March																																
Maximum	52	55	55	58	59	59	56	54	54	57	60	66	69	69	64	62	68	72	73	72	66	61	60	60	62	67	67	67	68	69	70	63
Minimum	48	51	51	52	57	54	53	52	53	53	57	60	65	64	60	61	62	68	69	66	60	55	54	55	56	61	61	60	60	61	62	58
April																																
Maximum	72	72	74	74	74	69	62	66	66	71	74	74	70	68	67	70	74	75	75	74	75	78	78	75	69	71	70	74	74	77	--	72
Minimum	63	64	66	68	65	62	61	60	63	64	69	70	63	61	59	61	65	68	69	70	70	71	72	67	64	63	65	67	71	70	--	66
May																																
Maximum	76	71	73	76	76	79	81	81	83	83	83	83	82	81	85	84	84	83	82	77	82	82	80	77	78	80	80	78	80	81	82	80
Minimum	67	62	63	66	67	71	72	72	75	76	77	78	76	74	77	78	78	79	75	75	74	74	72	71	72	76	76	72	72	74	73	73
June																																
Maximum	81	80	81	82	84	86	88	90	92	90	91	90	92	91	92	90	86	81	79	81	79	76	73	75	77	79	80	79	78	78	--	83
Minimum	75	74	74	75	77	78	81	83	86	86	86	85	84	83	83	83	81	78	76	75	75	69	69	70	72	72	73	73	73	72	--	77
July																																
Maximum	84	86	86	87	89	89	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	74	76	78	77	79	83	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
August																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	87	84	85	89	88	88	89	89	88	87	87	88	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	81	76	78	78	82	83	80	81	83	82	81	83	--
September																																
Maximum	88	88	89	86	86	87	86	87	87	88	87	87	89	85	81	76	78	77	81	82	80	85	81	81	80	73	72	67	72	71	--	82
Minimum	80	81	81	82	80	80	78	78	78	78	78	79	79	80	73	73	73	75	71	72	74	75	73	69	68	69	67	66	65	67	--	75

MOBILE RIVER BASIN--Continued

2-4290. LIMESTONE CREEK NEAR MONROEVILLE, ALA.

LOCATION.--Temperature recorder at gaging station at bridge on State Highway 41, 3 miles northwest of Monroeville, Monroe County, and 10 miles upstream from mouth.
DRAINAGE AREA.--117 square miles.
RECORDS AVAILABLE.--Water temperatures: February to September 1963.
EXTREMES, February to September 1963.--Water temperatures: Maximum, 81°F June 15.

Temperature (°F) of water, February to September 1963
(Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
February																																
Maximum	--	--	--	--	--	--	--	47	46	47	50	47	44	42	42	42	41	43	43	46	48	48	43	48	48	48	47	46	--	--	--	--
Minimum	--	--	--	--	--	--	--	46	43	44	47	44	40	39	41	39	39	41	42	43	46	43	41	42	46	47	42	43	--	--	--	--
March																																
Maximum	51	51	53	58	61	60	55	52	52	58	62	66	68	68	62	62	67	69	69	69	65	59	56	56	59	63	63	61	61	62	63	61
Minimum	46	50	50	53	58	54	51	50	52	52	58	62	66	62	58	62	62	67	69	65	59	55	53	54	56	59	59	58	58	59	60	57
April																																
Maximum	64	66	68	69	69	66	64	63	64	69	70	70	68	64	63	65	69	70	71	71	72	73	73	73	68	67	67	69	71	74	--	68
Minimum	61	63	65	67	65	64	62	60	63	64	69	68	64	61	60	62	65	68	70	71	71	72	73	68	66	66	66	67	69	71	--	66
May																																
Maximum	74	68	67	68	69	70	72	73	75	76	77	78	78	76	77	77	78	78	76	73	73	74	74	72	72	74	75	75	75	75	73	74
Minimum	68	64	65	67	68	69	70	72	73	75	76	77	76	74	75	77	77	76	73	72	70	73	72	70	71	72	74	75	75	72	71	72
June																																
Maximum	74	74	72	72	73	74	76	77	78	78	80	80	80	80	81	80	79	79	77	76	76	75	73	73	73	73	73	73	73	74	--	76
Minimum	73	71	70	70	71	72	73	75	76	77	78	79	77	77	80	78	79	77	76	75	75	71	71	73	73	73	73	72	72	73	--	74
July																																
Maximum	75	76	76	76	77	78	79	78	76	75	75	74	74	75	76	77	77	78	78	79	80	80	80	78	74	74	76	77	77	77	77	77
Minimum	74	75	76	75	76	77	78	76	75	74	72	73	74	74	75	76	76	77	78	77	79	79	78	74	72	73	73	76	76	76	76	75
August																																
Maximum	76	78	78	78	78	80	80	80	80	80	80	80	80	80	76	75	75	76	76	75	74	75	76	76	77	78	79	79	78	78	79	78
Minimum	75	76	77	77	77	78	79	80	78	79	79	79	80	76	75	73	74	75	75	74	73	74	75	75	76	76	78	78	77	77	78	77
September																																
Maximum	79	77	77	77	78	78	77	75	74	74	74	75	75	75	75	73	72	72	72	70	70	73	73	70	68	66	66	66	67	67	--	73
Minimum	76	76	76	76	77	76	74	72	72	72	73	74	74	75	73	72	71	72	70	69	69	70	70	67	66	66	66	65	65	65	--	71

239-654 O - 67 - 28

MOBILE RIVER BASIN--Continued

2-4490. TOMBIGBEE RIVER AT GAINESVILLE, ALA.

LOCATION.--Temperature recorder at gaging station at bridge on State Highway 39 at Gainesville, Sumter County, 2 miles downstream from Noxubee River.
DRAINAGE AREA.--8,700 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 88°F June 16, 17; minimum, 38°F Jan. 25, 26, 28-31.

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	72	70	68	66	63	62	62	63	63	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	70	68	66	63	62	62	61	62	63	--
November																																
Maximum	63	62	62	61	60	58	57	56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	62	62	61	60	58	57	56	56	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
December																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	42	43	45	46	46	46	46	46	46	46	46	46	46	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	42	42	43	45	46	46	46	46	46	46	46	46	45	--
January																																
Maximum	45	45	44	44	44	44	44	44	44	45	48	51	50	47	45	43	42	42	48	48	46	43	42	42	40	39	39	39	38	38	39	44
Minimum	45	44	44	44	44	44	44	44	44	44	45	48	47	45	43	42	42	42	42	46	43	42	42	40	38	38	39	38	38	38	38	42
February																																
Maximum	39	43	45	45	44	44	45	45	45	45	46	46	45	44	44	44	44	43	43	42	43	43	42	42	43	44	44	45	--	--	--	44
Minimum	39	39	43	44	44	44	44	45	45	45	45	45	44	44	44	44	43	43	42	42	42	42	41	41	42	43	44	44	--	--	--	43
March																																
Maximum	47	49	50	53	54	55	55	55	55	55	55	56	62	63	63	63	62	62	63	63	63	63	62	61	60	60	61	61	62	64	65	59
Minimum	45	47	49	50	53	54	55	55	55	54	54	55	58	62	63	62	62	62	62	62	63	62	61	60	60	60	60	61	61	62	64	58
April																																
Maximum	66	68	69	69	68	67	66	66	66	66	67	67	67	67	66	66	67	68	69	69	70	72	72	72	70	68	68	68	68	69	--	68
Minimum	65	66	67	68	67	66	65	65	66	66	66	67	66	66	65	65	66	67	68	69	69	70	72	70	68	67	68	68	68	68	--	67
May																																
Maximum	69	68	68	68	67	67	69	70	72	73	74	75	76	77	78	79	80	81	80	79	79	79	79	78	77	77	77	76	72	71	71	74
Minimum	67	68	68	67	66	66	67	69	70	72	73	74	75	76	77	78	79	80	79	78	78	78	78	77	77	77	76	72	71	71	71	73
June																																
Maximum	71	71	72	72	73	74	76	78	80	81	83	84	85	86	87	88	88	86	85	85	83	80	78	77	76	76	76	75	75	76	--	79
Minimum	71	71	71	72	72	73	74	76	78	80	81	83	83	85	86	86	86	85	84	83	80	78	77	76	76	76	75	75	75	75	--	78
July																																
Maximum	78	79	80	81	81	83	84	84	84	83	83	82	81	81	81	77	76	75	75	76	77	78	78	78	78	78	78	78	78	78	78	79
Minimum	76	78	79	80	81	81	83	83	83	83	82	81	81	81	77	76	75	75	75	75	76	77	78	78	78	77	78	78	78	78	78	79
August																																
Maximum	79	80	81	82	83	84	85	85	86	86	86	86	86	85	84	82	82	82	82	82	82	82	83	83	84	85	85	85	85	85	85	84
Minimum	78	79	80	81	82	83	84	85	85	85	86	86	85	84	82	81	81	82	82	82	81	81	92	83	83	84	85	84	85	84	84	83
September																																
Maximum	85	84	84	84	84	84	83	82	81	84	82	81	81	80	81	79	78	78	79	80	80	80	79	78	76	75	74	73	72	71	--	80
Minimum	84	83	83	84	83	83	82	81	80	79	79	80	80	80	79	78	77	77	78	79	79	79	78	76	75	74	73	72	71	70	--	79

MOBILE RIVER BASIN--Continued

2-4650. BLACK WARRIOR RIVER AT TUSCALOOSA, ALA.

LOCATION.--Temperature recorder at gaging station at bridge on U.S. Highway 82 at Tuscaloosa, Tuscaloosa County, 0.2 mile upstream from Gulf, Mobile and Ohio Railroad bridge, and 0.8 mile upstream from Oliver Lock and Dam.
DRAINAGE AREA.--4,828 square miles.
RECORDS AVAILABLE.--Water temperatures: November 1960 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 95°F Aug. 6; minimum, 41°F Jan. 30, 31.
EXTREMES, 1961-63.--Water temperatures: Maximum, 95°F Aug. 6, 1963; minimum, 41°F Jan. 30, 31, 1963.
REMARKS.--Daily maximum temperatures usually caused by release of waste from industrial plants upstream.

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	77	77	78	77	80	78	78	77	79	79	78	78	78	79	79	78	77	78	77	77	76	76	75	74	72	71	71	70	68	70	68	76
Minimum	76	76	76	75	75	76	76	76	76	76	76	76	76	76	76	76	76	76	76	75	75	74	74	72	71	70	69	68	67	67	67	74
November																																
Maximum	67	66	65	64	64	63	63	62	61	61	62	60	60	62	60	60	60	60	59	58	58	58	58	58	57	58	58	58	57	58	--	60
Minimum	66	65	64	63	63	62	62	61	60	59	59	60	59	59	59	59	59	59	58	58	47	58	57	57	57	57	57	57	57	57	--	60
December																																
Maximum	58	59	58	59	58	57	57	56	55	55	54	54	52	51	50	49	50	50	51	49	50	50	49	49	49	49	49	48	49	49	50	52
Minimum	57	58	58	58	57	57	56	55	55	54	53	52	51	50	49	49	49	49	49	48	49	49	49	49	49	49	48	48	48	49	49	52
January																																
Maximum	50	49	49	48	48	48	48	50	49	49	50	49	49	49	46	45	45	44	46	47	46	45	45	45	43	43	43	43	43	43	43	46
Minimum	49	48	48	48	48	48	48	48	48	48	49	49	48	46	45	45	44	44	44	46	45	44	44	43	43	43	43	42	42	41	41	46
February																																
Maximum	43	44	44	44	43	44	45	46	46	46	46	46	46	45	45	45	44	44	44	43	44	44	43	44	44	45	45	45	--	--	--	45
Minimum	42	43	44	43	43	43	44	45	46	46	46	46	45	45	44	44	43	43	43	43	43	43	43	43	44	44	44	45	--	--	--	44
March																																
Maximum	45	46	47	48	49	49	48	49	50	50	52	53	54	55	55	55	57	58	59	60	60	58	58	59	59	58	59	59	59	61	65	55
Minimum	45	45	46	47	48	47	47	48	49	50	50	52	53	54	55	55	55	57	58	59	58	47	57	57	58	58	58	59	59	59	61	54
April																																
Maximum	63	67	66	66	66	64	63	63	63	63	64	64	66	68	68	69	69	71	71	71	73	73	73	72	71	71	70	68	69	67	--	68
Minimum	61	62	63	63	64	63	63	62	62	62	63	63	63	64	65	66	67	67	69	70	70	71	71	71	69	68	68	67	67	65	--	66
May																																
Maximum	67	67	67	66	66	67	69	70	75	74	75	75	74	75	78	78	76	76	77	78	77	76	76	77	77	77	74	72	72	73	73	73
Minimum	65	67	65	65	65	66	66	67	68	71	71	72	72	72	73	74	65	74	75	74	74	74	74	74	74	74	72	70	70	71	73	71
June																																
Maximum	74	73	79	80	78	80	79	82	85	86	83	81	84	83	86	83	81	82	80	80	78	76	76	75	75	75	78	78	80	82	--	80
Minimum	72	72	72	74	75	75	76	77	79	80	79	79	77	79	79	81	78	78	77	78	76	76	75	74	74	74	74	74	75	77	--	76
July																																
Maximum	81	85	85	84	85	87	88	86	85	87	89	87	85	83	85	83	79	79	82	83	85	85	85	84	84	85	86	87	87	87	87	85
Minimum	78	79	80	81	81	83	84	84	84	83	83	83	83	82	83	79	76	77	78	79	81	82	82	83	83	83	82	84	83	85	85	82
August																																
Maximum	86	89	91	91	92	95	93	92	92	93	93	91	89	89	88	88	91	91	88	85	88	89	89	91	88	88	88	86	86	86	87	90
Minimum	85	85	86	87	89	89	90	90	89	89	90	89	89	88	87	86	86	87	86	85	85	85	85	85	86	85	85	85	84	84	84	87
September																																
Maximum	86	87	87	83	82	81	82	84	83	84	83	83	82	81	80	80	79	81	81	81	80	79	78	77	77	77	76	75	74	74	--	81
Minimum	83	84	83	81	80	80	79	80	80	80	79	79	80	80	79	78	77	78	78	78	77	77	77	76	75	76	75	74	73	73	--	78

MOBILE RIVER BASIN--Continued

2-4700.4. TOMBIGBEE RIVER NEAR JACKSON, ALA.

LOCATION.--Temperature recorder at auxiliary gage at bridge on U.S. Highway 43, 1.5 miles west of Jackson, Clarke County, 4.3 miles downstream from Jackson Creek, and 8.3 miles downstream from gaging station.
DRAINAGE AREA.--19,000 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 86°F Sept. 2-13; minimum, 46°F Jan. 25 to Feb. 3.

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	77	76	76	75	74	72	71	70	70	70	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	76	76	75	74	72	71	70	70	70	70	--
November																																
Maximum	70	70	70	70	69	68	67	66	66	66	65	65	64	64	62	62	62	62	62	62	61	61	60	59	59	59	58	58	58	58	--	63
Minimum	70	70	70	69	68	67	66	66	66	65	65	64	64	62	62	62	62	62	62	61	61	60	59	59	59	58	58	58	58	58	--	63
December																																
Maximum	58	58	58	59	59	59	57	56	56	55	54	54	53	51	50	49	50	50	51	51	52	52	53	53	52	52	52	52	52	52	52	54
Minimum	58	58	58	58	59	57	56	56	55	54	53	53	51	50	49	49	49	50	50	51	51	52	52	52	52	52	52	52	52	51	52	53
January																																
Maximum	52	52	52	52	52	52	52	52	52	52	52	52	52	52	52	50	50	50	50	49	49	48	48	48	48	46	46	46	46	46	46	50
Minimum	52	52	52	52	52	52	52	52	52	52	52	52	52	52	50	50	50	50	49	49	48	48	48	47	46	46	46	46	46	46	46	50
February																																
Maximum	46	46	48	48	48	48	48	48	48	48	48	48	49	49	49	49	49	49	49	48	48	48	48	48	48	48	48	48	--	--	--	48
Minimum	46	46	46	48	48	48	48	48	48	48	48	48	48	49	49	49	49	49	48	48	48	48	48	48	48	48	48	48	--	--	--	48
March																																
Maximum	48	48	49	50	51	53	53	54	54	55	55	56	57	58	58	59	60	60	62	62	62	62	62	62	62	62	62	62	62	62	62	58
Minimum	48	48	48	49	50	51	53	53	54	54	54	55	56	57	58	58	59	60	60	62	62	62	62	62	62	62	62	62	62	62	62	57
April																																
Maximum	62	64	65	66	66	66	66	66	66	67	68	68	68	68	68	68	70	70	70	70	71	72	72	72	72	72	72	72	72	72	--	69
Minimum	62	62	64	65	66	66	66	66	66	66	67	67	67	68	68	68	68	70	70	70	70	71	72	72	72	72	72	72	72	72	--	68
May																																
Maximum	72	72	72	72	72	71	71	71	71	71	72	71	71	73	74	75	75	76	75	75	76	76	76	76	77	77	76	76	76	76	76	74
Minimum	72	72	72	72	71	71	71	71	71	71	71	71	71	71	73	74	74	75	75	75	75	76	76	76	76	76	76	76	76	76	76	74
June																																
Maximum	76	75	74	74	74	74	73	74	75	76	76	77	77	78	79	79	79	79	78	79	79	79	80	80	80	80	80	80	80	81	--	78
Minimum	75	74	74	74	74	72	72	73	74	75	76	76	77	77	78	79	79	78	78	78	79	79	79	80	80	80	80	80	80	80	--	77
July																																
Maximum	82	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	80	80	80	80	80	81	81	81	82	81
Minimum	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	81	80	80	80	80	80	80	80	80	81	81	81	81
August																																
Maximum	82	82	82	82	82	83	83	83	83	84	84	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	84
Minimum	81	82	82	82	82	82	83	83	83	83	84	84	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	85	84
September																																
Maximum	85	86	86	86	86	86	86	86	86	86	86	86	86	84	84	84	83	83	82	82	82	82	81	81	81	80	80	79	78	77	--	83
Minimum	85	85	86	86	86	86	86	86	86	86	86	86	84	84	84	83	83	82	81	81	81	81	81	81	80	80	79	78	77	76	--	83

PEARL RIVER BASIN

2-4860. PEARL RIVER AT JACKSON, MISS.

LOCATION.--Temperature recorder at gaging station on left bank of bridge on U.S. Highway 80 (old) at eastern city limits of Jackson, Hinds County, 0.2 mile upstream from Illinois Central Railroad bridge, 0.2 mile upstream from Town Creek, and 4.5 miles upstream from Richland Creek.
DRAINAGE AREA.--3,100 square miles (approximately).
RECORDS AVAILABLE.--Water temperatures: January 1954 to September 1956, October 1961 to September 1962, unpublished; October 1962 to September 1963.
EXTREMES, 1962-63.--Water temperatures: Maximum, 96°F June 15, 16; minimum, not determined.
EXTREMES, 1954-56, 1962-63.--Water temperatures: Maximum, 96°F June 15, 16, 1963; minimum, 40°F Jan. 14, 1956.
REMARKS.--Recorder not operating Dec. 8 to Mar. 11; instantaneous temperature observation of 48°F recorded on Feb. 11.

Temperature (°F) of water, water year October 1962 to September 1963
(Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph)

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
October																																
Maximum	74	75	74	74	75	75	77	77	78	79	79	79	78	78	78	78	78	76	75	72	72	72	70	68	65	62	62	61	61	62	62	72
Minimum	72	73	71	71	72	73	75	76	76	76	77	77	77	76	76	77	76	74	72	70	71	70	68	65	62	62	60	59	60	60	60	70
November																																
Maximum	60	60	60	58	58	57	56	56	56	56	58	58	56	57	57	59	59	58	58	58	57	56	56	55	55	56	56	56	55	58	--	57
Minimum	59	59	58	57	56	55	56	56	54	53	54	56	54	54	54	57	58	58	57	57	56	55	53	53	53	54	55	55	55	55	--	56
December																																
Maximum	57	59	59	60	59	57	55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	55	56	56	58	57	54	54	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
January																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
February																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
March																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	60	61	61	61	61	63	64	66	66	64	63	61	61	62	63	63	63	64	65	66	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	57	60	61	60	60	61	63	64	64	63	61	61	61	61	62	63	63	63	64	65	--
April																																
Maximum	67	68	70	71	71	68	67	70	70	71	71	74	73	73	74	75	76	78	77	76	77	81	77	75	73	73	73	74	76	76	--	73
Minimum	66	66	68	68	68	66	65	65	67	68	70	71	72	70	70	72	72	73	74	75	75	75	75	73	71	70	71	72	73	73	--	70
May																																
Maximum	74	70	70	73	76	76	78	80	79	77	77	78	79	80	82	82	81	81	81	78	78	78	76	78	78	80	80	80	80	80	79	78
Minimum	70	69	69	70	71	72	72	76	73	73	74	75	77	77	77	77	79	78	76	74	74	74	71	72	74	75	76	76	75	75	74	74
June																																
Maximum	82	82	82	83	85	87	88	90	91	91	92	92	94	94	96	96	82	85	87	83	78	83	83	83	83	83	81	83	82	85	--	86
Minimum	78	76	77	77	78	79	80	82	83	83	82	82	83	84	84	82	81	80	81	78	75	77	77	77	79	79	76	78	79	79	--	80
July																																
Maximum	87	87	87	87	89	89	89	88	78	81	84	86	85	86	86	86	88	90	90	88	89	89	88	84	85	85	86	85	87	88	86	87
Minimum	80	81	82	81	81	83	82	74	72	78	80	80	81	82	82	82	82	83	84	85	86	86	83	83	83	83	83	83	83	84	85	82
August																																
Maximum	87	91	91	90	91	92	91	91	91	90	90	91	90	88	86	86	87	87	88	86	87	88	89	89	89	91	92	90	89	87	88	89
Minimum	83	83	86	86	87	87	87	87	86	87	87	87	87	85	83	81	81	83	84	84	83	83	84	84	86	86	87	86	86	84	84	85
September																																
Maximum	88	89	88	88	88	88	87	88	88	88	87	87	87	86	84	82	80	78	93	91	89	88	79	77	79	79	77	74	73	73	--	84
Minimum	82	82	84	84	84	84	83	82	82	82	82	83	83	82	82	80	76	73	69	72	74	76	75	67	69	74	74	72	72	68	--	78

PEARL RIVER BASIN--Continued

2-4895. PEARL RIVER NEAR BOGALUSA, LA.

LOCATION.--At bridge on State Highway 10, 2 miles east of Bogalusa, Washington Parish, and 2 miles upstream from Bogue Lusa Creek.
DRAINAGE AREA.--6,630 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: November 1962 to September 1963.
Water temperatures: November 1962 to September 1963.
EXTREMES, 1962-63.--Dissolved solids: Maximum, 58 ppm Apr. 11-20; minimum, 34 ppm Sept. 9-15.
Hardness: Maximum, 20 ppm July 11-20; minimum, 5 ppm Sept. 9-15.
Specific conductance: Maximum daily, 125 micromhos Aug. 31; minimum daily, 32 micromhos Jan. 22.
Water temperatures: Maximum, 90°F June 9; minimum, 40°F Dec. 13.
REMARKS.--Records of specific conductance of daily samples available in district office at Baton Rouge, La.

Chemical analyses, in parts per million, November 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Strontium (Sr)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (calculated)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH	Color
															Parts per million	Tons per acre-foot	Tons per day	Calcium, magnesium	Noncarbonate				
Nov. 15-20,1962	1890	8.3	0.00	4.3	0.8		6.7	1.3	12	2.6	12	0.1	0.7		43	0.06		14	4	0.8	71	6.2	5
Nov. 21-30.....	2280	8.3	.00	4.0	.7		7.8	1.4	13	2.4	13	.1	.7		44	.06		13	2	.9	75	6.2	5
Dec. 1-10.....	1990	8.7	.01	4.6	.4		9.0	1.2	15	2.8	12	.1	.8		47	.06		13	1	1.1	74	6.3	5
Dec. 11-20.....	1940	8.7	.06	4.4	.5		8.5	1.3	15	.2	14	.1	.7		45	.06		13	1	1.0	77	6.5	5
Dec. 21-31.....	2490	8.0	.02	4.2	.6		7.4	1.2	12	.0	14	.1	.7		42	.06		13	3	.9	75	6.2	5
Jan. 1-10, 1963	2630	9.1	.19	3.4	.9		7.8	1.6	13	3.2	11	.3	1.4		45	.06		12	1	.7	71	6.6	20
Jan. 11-20.....	3540	8.3	.25	4.8	.2		7.6	1.8	11	4.0	12	.3	1.3		46	.06		13	4	.9	72	6.3	50
Jan. 21-31.....	11400	5.8	.23	4.1	.7		5.8	1.8	5	8.0	9.7	.1	1.0		39	.05		13	9	.7	63	5.8	50
Feb. 1-10.....	8170	6.9	.25	5.0	.6		4.6	1.7	6	9.6	7.8	.1	.9		40	.05		15	10	.5	68	6.4	100
Feb. 11-20.....	5720	7.3	.20	4.8	.5		6.2	1.6	5	12	8.7	.1	.7		44	.06		14	10	.7	72	5.8	50
Feb. 21-28.....	9380	6.2	.19	4.6	.6		5.1	1.7	6	11	7.7	.1	.7		41	.06		14	9	.6	68	6.0	50
Mar. 1-10.....	8620	6.5	.24	4.4	.5		6.4	1.4	6	12	7.2	.1	.6		42	.06		13	8	.8	66	6.4	60
Mar. 11-20.....	11400	5.1	.21	3.1	1.8		5.1	1.4	6	11	6.4	.4	1.0		39	.05		15	10	.6	66	6.2	80
Mar. 21-31.....	7180	5.1	.22	3.9	1.3		5.3	2.0	8	12	6.4	.4	.9		42	.06		15	8	.6	69	6.4	70
Apr. 1-10.....	3940	6.2	.08	4.0	1.5		7.1	1.4	12	10	8.4	.4	.5		46	.06		16	6	.8	75	6.7	20
Apr. 11-20.....	3120	9.4	.03	4.6	1.6		9.2	1.8	14	14	10	.1	.7		A58	.08		18	7	.9	81	6.9	10
Apr. 21-30.....	2590	9.1	.04	4.5	1.6		7.4	1.4	12	11	9.8	.1	.9		52	.07		18	8	.8	84	6.3	5
May 1-9.....	2250	8.7	.03	4.0	2.2		7.4	1.4	15	8.0	10	.1	.9		A54	.07		19	6	.7	81	6.4	5
May 10-19.....	1920	8.7	.00	5.0	1.3		8.0	1.3	13	11	11	.1	.6		53	.07		18	7	.8	84	6.6	5
May 20-29.....	1720	8.7	.01	4.0	1.2		7.4	1.2	13	7.0	10	.4	.4		46	.06		15	4	.8	73	6.7	10
May 30-June 5..	1550	9.4	.03	3.5	1.0		6.9	1.2	12	5.4	10	.1	.2		44	.06		13	3	.8	66	6.8	5
June 6-10.....	1470	10	.01	2.6	2.3		6.4	1.1	11	4.2	12	.1	.4		44	.06		16	7	.7	70	6.8	5
June 11-20.....	1390	11	.00	3.0	1.1		7.4	1.2	10	6.0	11	.1	.4		46	.06		12	4	.9	68	6.4	0
June 21-30.....	2060	8.8	.01	2.0	1.5		6.9	1.2	10	4.2	10	.1	.5		40	.05		11	3	.9	65	6.4	5

A Residue at 180°C.

PEARL RIVER BASIN--Continued

2-4895. PEARL RIVER NEAR BOGALUSA, LA.--Continued

Chemical analyses, in parts per million, November 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Strontium (Sr)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (calculated)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH	Color
															Parts per million	Tons per acre-foot	Tons per day	Calcium, magnesium	Noncarbonate				
July 1-10, 1963	1950	8.4	0.02	2.7	2.0		6.7	1.4	10	4.4	12	0.1	0.9		44	0.06		15	7	0.7	72	6.6	10
July 11-20.....	2540	8.8	.05	3.8	2.6		8.3	1.4	10	10	13	.2	1.3		54	.07		20	12	.8	85	6.6	30
July 21-31.....	2210	7.9	.02	3.2	1.9		6.4	1.4	10	6.4	11	.1	.4		44	.06		16	8	.7	71	6.4	10
Aug. 1-10.....	2150	9.2	.02	2.5	1.6		7.8	1.4	6	11	10	.1	.7		A50	.06		13	8	.9	68	6.5	15
Aug. 11-20.....	1860	9.7	.02	2.0	2.2		5.8	1.3	4	11	8.3	.1	.9		A45	.06		14	11	.7	62	6.3	10
Aug. 21-30.....	1760	9.7	.04	1.6	1.5		6.9	1.4	4	8.2	9.9	.1	.5		42	.06		10	7	.9	60	6.1	10
Aug. 31.....	1700	--	--	--	--		--	--	--	--	--	--	--		--	--		--	--	--	125	--	--
Sept. 1-3.....	2080	9.2	.01	2.8	.7		9.0	1.6	2	10	13	.0	1.2		49	.07		10	8	1.2	75	5.7	10
Sept. 4-8.....	1660	10	.01	2.0	.2		7.8	1.6	4	6.4	10	.0	.4		40	.05		6	3	1.4	58	5.9	5
Sept. 9-15.....	1420	9.7	.00	1.2	.5		6.4	1.2	4	4.0	9.0	.0	.5		34	.05		5	2	1.3	52	5.9	15
Sept. 16-20....	1370	10	.00	2.0	.7		7.1	1.2	6	4.8	10	.1	.5		39	.05		8	3	1.1	57	6.4	15
Sept. 21-30....	1240	10	.01	1.6	.7		7.1	.8	6	4.0	9.8	.0	.4		37	.05		7	2	1.2	58	6.1	5
Weighted average....	3620	7.3	0.14	3.9	1.1		6.4	1.5	8	8.7	9.2	0.2	0.8		43	0.06		14	7	0.7	70	6.2	41
Time-weighted average....	--	8.3	0.08	3.6	1.2		7.0	1.4	9	7.3	10	0.1	0.7		45	--		14	6	0.8	71	6.3	23
Tons per day.	--	71	1.4	38	11		63	15	80	85	90	2.0	7.9		424	--		--	--	--	--	--	--

A Residue at 180°C.

PEARL RIVER BASIN--Continued

2-4895. PEARL RIVER NEAR BOGALUSA, LA.--Continued

Temperature (°F) of water, November 1962 to September 1963

Month	Day																													Average
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	
November	--	--	--	--	--	--	--	--	--	--	--	--	--	--	61	64	64	60	61	60	61	60	59	60	62	61	58	60	57	59	--	--
December	60	62	62	62	57	56	57	55	53	52	49	42	40	46	49	53	54	54	55	59	59	57	60	51	54	53	53	54	52	--	55	54
January	57	54	56	55	55	54	55	55	56	61	60	56	50	46	48	49	42	50	50	48	49	51	45	41	42	50	43	44	44	46	54	51
February	52	62	49	51	53	54	53	50	52	51	50	47	50	51	49	50	51	52	50	52	49	45	49	55	52	51	49	53	--	--	--	51
March	53	58	60	64	55	59	60	62	65	62	65	67	67	68	60	70	74	71	70	68	65	67	65	67	67	69	67	61	62	69	72	65
April	70	74	75	71	65	71	68	67	71	71	69	72	74	73	75	76	76	76	77	76	75	77	76	76	75	75	76	77	78	79	--	74
May	75	74	75	77	78	79	80	81	81	82	82	83	83	84	83	82	83	80	75	72	75	77	78	--	87	82	85	80	--	84	82	80
June	80	80	84	86	87	85	86	88	90	86	87	85	82	85	88	87	83	81	75	76	76	76	75	75	83	76	75	75	75	82	--	82
July	78	77	76	77	77	78	79	82	79	76	77	83	80	85	85	84	79	83	84	81	81	82	81	--	80	80	78	79	80	80	80	80
August	78	78	79	79	79	80	83	80	79	79	79	80	81	81	84	79	80	79	81	74	80	75	83	83	79	83	80	85	79	80	--	80
September	83	80	84	80	79	80	79	79	80	78	78	77	78	80	79	77	77	78	78	78	76	76	77	70	71	69	72	70	67	73	--	77

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (calculated)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
CHOWAN RIVER BASIN																		
2-532. POTECASI CREEK NEAR UNION, N. C.																		
Mar. 1, 1963	470	6.0	0.28	2.7	1.2	4.4	1.9	8	7.6	5.4	0.1	0.8	34	12	6	55	5.9	65
Sept. 4	3.5	16	.01	6.2	2.4	17	1.1	53	4.0	15	.2	.1	88	26	0	139	7.4	10
2-535. AHOSKIE CREEK AT AHOSKIE, N. C.																		
Mar. 1, 1963	135	5.7	0.18	3.8	0.3	3.8	1.2	6	9.0	5.0	0.0	0.5	32	14	10	53	6.3	45
Sept. 3	3.5	26	.02	5.8	2.4	11	1.3	38	3.6	9.0	.3	.2	79	24	0	92	6.9	15
ROANOKE RIVER BASIN																		
2-685. DAN RIVER NEAR FRANCISCO, N. C.																		
Feb. 7, 1963	118	10	0.00	3.0	0.9	2.2	0.9	12	3.2	1.8	0.3	1.8	30	11	1	36	6.2	5
July 19	97.0	9.7	.01	3.0	.6	2.7	.8	14	3.0	1.5	.0	.3	29	10	0	32	6.4	5
2-705. MAYO RIVER NEAR PRICE, N. C.																		
Feb. 5, 1963	245	12	0.00	3.4	1.3	4.4	0.8	23	0.8	2.2	0.0	0.1	36	14	0	40	7.1	5
Sept. 4	98	16	.01	3.7	1.2	4.2	1.1	27	2.4	2.0	.1	.1	44	14	0	49	7.4	5
2-710. DAN RIVER NEAR WENTWORTH, N. C.																		
Feb. 5, 1963	1130	13	0.00	3.2	1.4	2.9	1.2	22	3.2	2.0	0.1	0.4	38	14	0	48	6.7	5
Sept. 4	340	16	.01	4.1	1.6	5.4	1.6	30	3.0	2.4	.1	.1	49	16	0	62	6.7	5
2-740. SMITH RIVER AT SPRAY, N. C.																		
Feb. 5, 1963	542	14	0.01	6.6	2.3	5.7	1.6	30	4.8	7.4	0.0	0.0	57	26	2	83	7.3	5
Sept. 4	267	13	.01	6.7	2.6	6.9	1.2	34	5.2	5.0	.2	.7	59	28	0	76	7.3	5
2-751.6. MOON CREEK NEAR VANCEYVILLE, N. C.																		
Feb. 6, 1963	36.5	15	0.02	3.4	2.5	4.1	1.1	28	2.8	1.5	0.2	0.4	45	18	0	67	7.1	5
Sept. 3	2.8	18	.01	9.3	2.7	5.5	1.3	49	4.0	2.4	.3	.2	68	34	0	82	7.6	5

2-805. ROANOKE RIVER AT ROANOKE RAPIDS, N. C.

Mar. 4, 1963.....	A5660	12	0.17	6.7	2.5	5.9	1.8	36	6.4	4.1	0.2	1.0	59	28	0	87	6.9	17
Sept. 3.....	5120	8.6	.01	8.8	2.7	5.8	1.5	40	6.2	4.0	.0	.3	58	33	0	90	7.1	5

PAMLICO RIVER BASIN

2-815. TAR RIVER NEAR TAR RIVER, N. C.

Feb. 19, 1963.....	105	12	0.04	4.6	1.8	4.7	.6	22	6.0	6.0	0.0	0.2	B53	19	1	68	6.7	25
Aug. 7.....	18	7.4	.01	4.8	1.7	3.2	2.4	26	5.2	2.8	.2	.6	41	19	0	54	7.4	20

2-818. CEDAR CREEK NEAR LOUISBURG, N. C.

Feb. 19, 1963.....	55	8.0	0.09	3.4	1.1	5.6	1.2	22	3.6	3.8	0.1	0.9	39	13	0	52	6.4	12
Sept. 2.....	6.6	22	.05	5.6	2.0	7.4	1.4	36	11	3.0	.0	.1	71	22	0	71	6.9	10

2-820. TAR RIVER NEAR NASHVILLE, N. C.

Feb. 28, 1963.....	882	13	0.06	3.7	1.5	4.7	1.0	21	5.4	4.3	0.1	0.3	44	15	0	57	6.7	17
Sept. 3.....	55	14	.03	7.2	1.3	5.2	1.8	27	7.2	3.0	.1	.2	53	23	1	65	7.0	10

2-825. SAPONY CREEK NEAR NASHVILLE, N. C.

Feb. 28, 1963.....	105	6.5	0.09	3.0	2.9	4.4	0.6	17	5.0	7.6	0.2	0.7	39	20	6	64	6.6	45
Sept. 3.....	.04	15	.01	7.1	3.5	6.3	1.1	45	3.2	4.6	.1	.1	63	32	0	90	7.2	10

2-829.5. LITTLE FISHING CREEK NEAR WHITE OAK, N. C.

Mar. 4, 1963.....	250	13	0.19	3.2	1.6	4.5	1.0	20	4.4	3.4	0.1	0.5	42	14	0	50	6.8	45
Sept. 3.....	9.3	16	.02	4.8	1.8	4.7	1.8	31	5.2	3.0	.0	.0	52	20	0	66	7.0	10

2-838. CONETOE CREEK NEAR BETHEL, N. C.

Feb. 28, 1963.....	152	6.8	0.03	5.1	1.6	4.6	1.0	6	13	7.6	0.1	4.1	47	20	14	83	6.0	10
Sept. 3.....	4.5	6.9	.04	10	2.2	5.2	1.1	18	23	7.0	.1	1.6	66	34	20	110	6.4	5

A Daily mean discharge.
B Residue at 180°C.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (calculated)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
PAMLICO RIVER BASIN--Continued																		
2-840. TAR RIVER AT GREENVILLE, N. C.																		
Oct. 19, 1962		13	0.04	6.9	1.7	9.0	2.5	30	7.2	10	0.1	0.2	B72	25	0	105	6.4	19
Mar. 1, 1963		9.3	.05	3.8	1.2	5.1	1.9	14	6.4	6.0	.2	.3	41	14	3	67	6.6	20
Aug. 16		7.9	.03	5.1	1.2	5.8	2.2	14	11	6.8	.2	1.1	48	18	6	76	6.0	30
2-845. HERRING RUN NEAR WASHINGTON, N. C.																		
Feb. 28, 1963	38.5	7.6	0.02	1.8	0.9	3.9	0.6	2	8.6	5.0	0.2	0.9	31	8	6	48	4.8	45
Aug. 15	4.3	12	.03	2.2	1.2	3.7	1.0	4	9.4	5.5	.1	1.9	39	10	7	45	5.4	20
NEUSE RIVER BASIN																		
2-850. ENO RIVER AT HILLSBORO, N. C.																		
Feb. 21, 1963	116	11	0.05	4.4	1.8	4.0	0.6	19	6.2	3.6	0.1	0.9	42	18	3	54	6.5	27
Sept. 3	1.7	11	.00	8.7	2.0	11	2.8	30	14	11	.3	.7	79	30	5	128	6.8	15
2-850.7. ENO RIVER NEAR DURHAM, N. C.																		
Oct. 18, 1962	14.3	13	0.00	7.2	2.6	6.2	2.1	41	4.8	7.0	0.1	0.2	63	29	0	92	7.1	10
Aug. 5, 1963		9.7	.01	6.6	1.5	4.4	1.6	29	4.6	3.2	.1	.1	46	22	0	61	7.2	20
2-860. DIAL CREEK NEAR BAHAMA, N. C.																		
Feb. 19, 1963	47	8.4	0.08	2.8	1.3	3.9	1.2	10	6.4	3.0	0.0	1.1	33	12	4	40	6.0	27
Aug. 6	.3	19	.02	3.2	1.0	5.4	1.3	28	3.4	3.6	.1	.2	51	12	0	56	7.5	15
2-865. FLAT RIVER, AT DAM, NEAR BAHAMA, N. C.																		
Feb. 19, 1963	191	11	0.04	4.1	1.6	4.5	0.9	17	6.2	4.5	0.1	1.1	42	16	2	56	7.0	20
Feb. 20	307	8.0	.06	3.7	1.3	3.9	.8	13	7.2	3.0	.1	.8	35	14	4	48	6.2	32
Aug. 6	15	11	.02	4.8	2.8	5.2	1.2	33	3.4	2.6	.1	.0	47	24	0	67	7.3	15
2-870. NEUSE RIVER NEAR NORTHSIDE, N. C.																		
Feb. 19, 1963	555	11	0.01	4.6	1.9	5.9	1.1	24	6.4	6.7	0.0	0.1	B55	20	0	76	6.6	15
Aug. 6	88			11	1.4	14	3.5	34		11				32	4	141	6.9	80

2-875. NEUSE RIVER NEAR CLAYTON, N. C.

Mar. 1, 1963.....	2110	11	0.06	4.6	1.8	8.8	1.3	24	6.8	11	0.2	1.1	59	19	0	93	6.6	10
Sept. 1.....	154	15	.02	9.0	3.4	32	3.1	54	12	37	.5	.3	141	36	0	212	6.3	20

2-880. MIDDLE CREEK NEAR CLAYTON, N. C.

Mar. 1, 1963.....	224	7.8	0.11	2.1	1.0	3.9	1.1	14	4.0	4.0	0.0	0.4	31	9	0	44	6.5	25
Sept. 1.....	10	13	.01	3.8	1.8	4.4	1.1	25	2.2	3.2	3.2	.0	42	17	0	53	6.6	10

2-885. LITTLE RIVER NEAR PRINCETON, N. C.

Feb. 26, 1963.....	462	7.7	0.07	1.6	1.1	4.5	0.9	13	3.4	3.6	0.0	0.5	29	8	0	47	6.6	25
Aug. 12.....	15	7.8	.01	3.4	1.2	6.0	2.6	19	2.4	5.4	.2	3.1	41	14	0	65	6.5	7

2-910. NAHUNTA SWAMP NEAR SHINE, N. C.

Feb. 26, 1963.....	A167	7.0	0.04	3.7	1.2	5.5	1.3	8	6.8	7.5	0.2	2.4	40	14	8	62	6.1	22
Aug. 13.....	34.2	12	.26	5.3	.8	6.0	1.4	11	8.4	6.9	.1	3.1	49	16	7	69	6.0	28

2-915. CONTENTNEA CREEK AT HOOKERTOWN, N. C.

Mar. 1, 1963.....	1500	5.8	0.04	2.2	1.5	5.8	1.1	9	7.0	7.8	0.2	1.6	37	12	4	67	6.6	20
Aug. 13.....	A1690	5.5	.16	3.5	1.1	3.8	2.1	8	7.6	6.5	.2	2.1	37	14	7	58	5.6	60

2-917. LITTLE CONTENTNEA CREEK NEAR FARMVILLE, N. C.

Mar. 1, 1963.....	245	5.1	0.03	4.8	1.1	5.6	1.4	9	10	8.0	0.2	1.5	42	16	9	71	6.1	28
Aug. 16.....	220	7.4	.19	4.7	.7	3.6	1.9	10	6.8	4.8	.2	.8	36	15	7	55	5.8	110

NEW RIVER BASIN

2-930. NEW RIVER NEAR GUM BRANCH, N. C.

Feb. 28, 1963.....	232	4.1	0.10	13	0.9	3.9	0.7	33	6.2	6.2	0.3	0.9	52	34	8	98	7.3	48
Aug. 15.....	23.2	8.1	.32	28	1.4	4.9	1.0	80	5.2	6.5	.1	4.3	99	76	11	170	7.0	95

A Daily mean discharge.
B Residue at 180°C.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (calculated)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
CAPE FEAR RIVER BASIN																		
2-938. REEDY FORK NEAR OAK RIDGE, N. C.																		
Feb. 4, 1963	25.5	14	0.04	4.3	2.0	3.2	1.4	24	3.6	2.0	0.2	0.2	43	20	0	59	7.0	10
Sept. 4	7.0	19	.01	7.1	1.8	5.1	1.4	36	3.6	2.8	.2	.4	59	24	0	64	7.5	5
2-945. REEDY FORK NEAR GIBSONVILLE, N. C.																		
Feb. 6, 1963	121	11	0.05	3.7	2.2	3.4	1.6	27	3.4	2.4	0.1	0.3	41	18	0	64	7.2	10
Sept. 5	46.4	12	.04	4.9	2.4	4.3	1.8	32	3.4	2.6	.2	.1	48	22	0	63	6.8	25
2-955. NORTH BUFFALO CREEK NEAR GREENSBORO, N. C.																		
Feb. 6, 1963	38	19	0.09	16	6.1	81	10	145	55	37	0.4	18	318	66	0	538	8.0	15
Sept. 5	93	9.2	.03	13	3.3	31	5.1	82	25	13	.1	1.7	143	46	0	242	6.6	15
2-965. HAW RIVER AT HAW RIVER, N. C.																		
Feb. 6, 1963	792	13	0.07	6.3	3.4	7.4	2.3	40	9.0	5.6	0.1	0.4	68	30	0	99	7.2	10
Sept. 3	101	14	.03	9.3	2.6	68	5.1	110	21	56	.7	2.0	235	34	0	385	7.4	20
2-967. ALAMANCE CREEK NEAR ELON COLLEGE, N. C.																		
Feb. 7, 1963	113	16	0.09	5.8	3.6	5.6	1.1	32	7.8	4.0	0.0	1.2	61	30	4	86	7.0	10
Sept. 5	17	13	.01	8.3	3.6	6.8	1.4	49	10	3.2	.1	.1	71	36	0	103	7.1	10
2-968.5. CANE CREEK NEAR TEER, N. C.																		
Feb. 7, 1963	32.3	13	0.06	3.8	2.1	4.4	0.7	22	2.8	3.4	0.1	0.3	42	18	0	59	7.2	20
Sept. 3	.9	15	.01	7.7	2.4	4.4	1.9	39	4.6	4.4	.2	.4	60	29	0	71	7.0	5
2-970. HAW RIVER NEAR PITTSBORO, N. C.																		
Mar. 14, 1963	5150	9.3	0.04	4.0	2.0	5.9	1.3	28	8.0	4.4	0.3	0.7	50	18	0	78	6.6	22
Aug. 26	415	8.1	.02	5.0	2.0	14	3.3	30	9.6	12	.4	5.3	76	20	0	130	6.3	30
2-990. EAST FORK DEEP RIVER NEAR HIGH POINT, N. C.																		
Feb. 4, 1963	16.5	17	0.05	6.8	3.1	4.0	1.4	36	7.0	3.4	0.2	0.5	62	30	0	81	6.9	28
Sept. 5	10	17	.05	5.8	3.5	3.6	2.5	31	8.0	2.0	.1	.7	58	29	4	75	7.1	30

2-995. DEEP RIVER NEAR RANDLEMAN, N. C.

Feb. 4, 1963.....	209	11	0.04	6.3	2.9	6.3	1.3	31	11	5.0	0.1	1.3	61	28	2	109	7.1	13
Sept. 5.....	97	16	.02	12	5.3	44	4.5	49	31	51	.2	18	209	53	13	340	6.5	15

2-1005. DEEP RIVER AT RAMSEUR, N. C.

Mar. 14, 1963.....	1150	9.7	0.15	4.6	1.8	3.8	1.4	20	7.2	3.4	0.3	1.4	44	19	2	64	6.7	25
Aug. 29.....	65	14	.01	12	3.5	41	4.2	61	14	47	.3	6.7	175	44	0	299	6.7	18

2-1010. BEAR CREEK AT ROBBINS, N. C.

Mar. 14, 1963.....	335	7.7	0.14	2.2	1.2	3.2	0.8	10	4.6	2.0	0.0	0.6	27	10	2	38	6.5	40
Aug. 27.....	16	7.3	.25	4.9	1.4	7.6	1.6	24	7.8	5.0	.1	1.7	50	18	0	73	7.4	30

2-1055. CAPE FEAR RIVER, AT LOCK 3, NEAR TARHEEL, N. C.

Nov. 13, 1962.....	31700	6.9	0.02	3.5	1.5	4.9	2.6	15	7.2	5.7	0.1	0.3	40	15	2	64	6.0	35
Feb. 8, 1963.....	7000	8.5	.04	3.4	1.5	4.9	1.0	15	7.2	4.9	.2	1.0	40	14	2	57	6.4	22

2-1059. HOOD CREEK NEAR LELAND, N. C.

Feb. 7, 1963.....	47.4	5.6	0.06	5.1	1.0	2.7	0.1	14	3.8	5.0	0.2	0.8	32	17	6	57	6.9	70
Sept. 3.....	.2	7.9	.06	16	1.6	5.3	.3	54	3.8	6.0	.0	.2	68	48	3	108	7.4	30

2-1060. LITTLE COHARIE CREEK NEAR ROSEBORO, N. C.

Feb. 5, 1963.....	259	3.9	0.01	1.9	0.4	3.7	0.8	6	4.4	5.4	0.2	0.5	24	6	2	37	5.7	40
Sept. 3.....	13.4	8.8	.06	1.9	.7	6.4	1.0	7	6.4	5.0	.0	.6	34	8	2	48	6.1	70

2-1065. BLACK RIVER NEAR TOMAHAWK, N. C.

Feb. 6, 1963.....	2210	4.6	0.04	1.4	1.2	3.7	0.7	5	5.2	5.2	0.2	0.7	25	8	4	45	6.0	40
Sept. 3.....	139	9.3	.08	5.1	1.0	6.4	1.3	14	11	6.0	.0	.4	48	17	6	66	6.6	35

2-1075. COLLY CREEK NEAR KELLY, N. C.

Feb. 7, 1963.....	277	4.4	0.21	1.0	0.6	2.0	0.5	Co.3	5.2	1.0	0.3	0.5	16	5	5	42	4.4	200
Sept. 3.....	.1	7.2	.56	2.2	.5	4.4	.7	0	6.4	3.0	.1	2.4	28	8	8	49	4.5	250

C Acidity as H^{+1}.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (calculated)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
CAPE FEAR RIVER BASIN--Continued																		
2-1076. NORTHEAST CAPE FEAR RIVER NEAR SEVEN SPRINGS, N. C.																		
Feb. 26, 1963	149	3.0	0.07	2.9	0.4	13	1.1	4	8.0	19	0.1	1.8	51	8	5	95	5.9	40
Aug. 14	86.7	6.3	.30	2.1	.8	31	1.6	5	6.4	46	.2	2.8	100	8	4	180	5.2	120
2-1080. NORTHEAST CAPE FEAR RIVER NEAR CHINQUAPIN, N. C.																		
Aug. 14, 1963	412	7.9	0.31	5.0	1.0	9.1	1.7	8	8.6	15	0.1	6.6	59	16	10	88	6.7	120
Sept. 25	97.9	8.6	.18	6.1	1.8	15	1.2	22	4.8	26	.2	1.2	76	22	4	128	6.6	40
2-1085. ROCKFISH CREEK NEAR WALLACE, N. C.																		
Feb. 6, 1963	314	4.1	0.04	3.4	0.8	3.9	1.3	6	8.6	4.4	0.2	1.5	31	12	6	52	6.1	60
Sept. 25	13.1	12	.32	3.6	1.4	4.4	.5	9	11	5.2	.2	.7	43	15	8	53	5.9	60
WACCAMAW RIVER BASIN																		
WACCAMAW RIVER AT CONWAY, S. C.																		
Aug. 22, 1963D		6.5	0.51	6.9	1.2	5.9	0.8	18	12	6.0	0.4	0.8	95	23	8	70	6.5	275
Aug. 22E		6.5	.51	7.1	.8	7.2	1.1	20	10	6.4	.3	.9	101	22	5	76	6.4	250
PEE DEE RIVER BASIN																		
2-1110. YADKIN RIVER AT PATTERSON, N. C.																		
Jan. 4, 1963	32.7	10	0.01	2.7	1.3	2.6	1.2	16	5.2	2.2		0.7	34	12	0	42	6.6	5
July 2	23.9	12	.00	3.2	.5	3.3	.7	19	1.6	1.7	0.1	.6	33	10	0	33	6.9	5
2-1115. REDDIES RIVER AT NORTH WILKESBORO, N. C.																		
Dec. 28, 1962	141	11	0.07	2.1	0.9	2.4	0.9	14	1.4	0.4	0.0	0.3	26	8	0	26	6.9	5
June 12, 1963	A84	11	.00	2.2	.7	2.3	.9	15	1.0	1.6	.0	.1	B29	9	0	31	6.9	13

2-1130. FISHER RIVER NEAR COPELAND, N. C.

Dec. 28, 1962.....	225	8.3	0.03	1.8	0.9	1.6	1.0	13	0.4	1.6	0.2	0.0	22	8	0	28	7.1	10
July 19, 1963.....	80.5	8.1	.01	2.1	.3	2.8	1.1	11	2.8	1.7	.0	.7	25	6	0	27	6.5	5

2-1144.5. LITTLE YADKIN RIVER AT DALTON, N. C.

Dec. 28, 1962.....	60.6	13	0.02	3.0	1.3	3.0	2.2	19	4.0	3.5	0.2	0.4	40	13	0	50	7.1	10
July 19, 1963.....	11.4	15	.03	4.1	1.3	4.3	1.6	27	3.8	3.1	.1	.2	47	15	0	51	6.9	10

2-1175. ROCKY CREEK AT TURNERSBURG, N. C.

Jan. 2, 1963.....	111	15	0.07	2.7	1.6	2.6	1.6	19	0.8	0.8		0.6	35	14	0	44	7.1	25
July 1.....	75.9	13	.05	3.0	1.4	1.9	.9	19	2.4	.6	0.1	.1	32	14	0	37	7.0	10

2-1185. HUNTING CREEK NEAR HARMONY, N. C.

Jan. 3, 1963.....	168	11	0.08	1.3	0.2	1.9	1.5	14	0.8	0.4		0.9	25	4	0	31	6.8	15
July 19.....	86.3	12	.06	2.4	1.3	2.3	1.0	16	2.4	1.0	0.0	.1	31	11	0	33	6.9	5

2-1189.1. BEAR CREEK AT MOCKSVILLE, N. C.

Mar. 26, 1963.....		17	0.13	6.7	2.7	4.2	0.9	39	1.6	2.0	0.1	0.0	B62	28	0	78	7.2	12
Aug. 13.....	2.72	22	.03	9.3	4.1	6.0	1.6	80	2.6	2.8	.3	.3	79	40	0	110	7.0	5

2-1190. SOUTH YADKIN RIVER AT COOLEEMEE, N. C.

July 22, 1963.....	326	13	0.04	3.5	1.6	2.7	1.4	22	3.0	1.4	0.1	2.0	40	16	0	53	6.8	5
Aug. 14.....	213	15	.01	4.2	1.4	36	1.6	110	6.4	2.2	.0	.0	121	16	0	198	7.5	22

2-1194. THIRD CREEK SUBWATERSHED NO. 7A NEAR STONY POINT, N. C. (OUTFLOW)

Jan. 3, 1963.....	4.71	9.7	0.02	1.9	1.3	2.8	2.7	11	3.2	1.2		5.6	33	10	1	44	6.5	15
Aug. 9.....	2.0	13	.01	2.6	1.4	4.0	2.5	18	3.2	3.6	0.0	1.9	41	12	0	53	6.9	5

2-1205. THIRD CREEK AT CLEVELAND, N. C.

Jan. 3, 1963.....	94.2	22	0.02	5.3	4.0	4.8	2.6	36	7.2	4.0		2.0	70	30	0	93	6.9	15
July 1.....	60.7	21	.00	6.2	2.6	4.1	1.5	38	3.2	1.4	0.1	0.1	59	26	0	74	7.3	10

A Daily mean discharge.
B Residue at 180°C.
D Collected at 1110.
E Collected at 1735.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (calculated)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
PEE DEE RIVER BASIN--Continued																		
2-1205.8. FOURTH CREEK AT STATESVILLE, N. C.																		
Oct. 15, 1962		20	0.01	5.4	3.0	3.6	1.7	37	1.0	2.5	0.2	0.3	B58	26	0	67	7.0	10
Aug. 13, 1963	7.35	21	.03	5.8	2.7	2.5	1.6	36	2.0	2.0	.1	.5	56	26	0	72	7.5	5
2-1235. UWHARRIE RIVER NEAR ELDORADO, N. C.																		
Mar. 13, 1963	4200	8.3	0.03	3.4	2.1	3.1	0.5	22	4.0	2.0	0.2	1.0	36	17	0	56	6.4	25
Aug. 27	13.5	13	.03	8.0	3.3	5.8	1.6	47	4.0	3.2	.1	1.1	63	34	0	95	6.4	10
2-1250. YADKIN RIVER AT ALBEMARLE, N. C.																		
Oct. 18, 1962		11	0.03	4.3	1.9	7.0	2.1	30	4.0	4.9	0.1	0.9	B53	20	0	73	6.9	10
Jan. 15, 1963	38.0	8.4	.05	4.8	2.9	4.7	1.3	16	12	7.0	--	2.7	52	24	11	86	7.3	30
July 24	.4	8.1	.01	7.9	1.8	5.1	2.0	37	6.8	4.8	.2	.1	55	27	0	79	7.1	15
2-1280. LITTLE RIVER NEAR STAR, N. C.																		
Mar. 13, 1963	688	7.6	0.08	2.0	1.2	2.9	0.7	12	3.6	2.0	0.2	1.2	28	10	0	39	6.4	45
Aug. 27	9.0	12	.11	4.5	1.6	3.8	1.4	27	.4	3.4	.1	.6	41	18	0	61	6.4	50
2-1304.9. THOMPSON CREEK NEAR CHERAW, S. C.																		
May 16, 1963	25.0	5.1	0.14	2.4	1.4	4.9	1.2	14	1.6	5.9	0.1	0.8	34	12	0	47	6.8	40
2-1306. CEDAR CREEK AT SOCIETY HILL, S. C.																		
May 16, 1963	43.0	4.7	0.10	0.6	0.7	2.1	0.6	4	0.8	3.5	0.1	0.3	16	4	0	20	5.6	30
PEE DEE RIVER NEAR SOCIETY HILL, S. C.																		
Apr. 23, 1963	4600	8.2	0.02	3.5	1.4	5.7	1.5	22	4.2	5.4	0.0	1.2	B50	15	0	56	7.0	70
2-1309. BIG BLACK CREEK NEAR MCBEE, S. C.																		
May 1, 1963	163	4.6	0.07	0.7	0.3	1.7	0.4	3	1.4	3.7	0.0	0.9	B25	4	1	21	5.7	55
2-1314.4. LYNCHES RIVER NEAR BETHUNE, S. C.																		
Apr. 17, 1963	312	6.7	0.08	2.1	0.9	9.6	1.2	24	2.4	5.4	0.0	1.0	B46	9	0	66	7.1	30

2-1314.8. LITTLE LYNCHES RIVER NEAR BETHUNE, S. C.

April 17, 1963.....	165	7.1	0.06	1.6	0.9	3.4	0.8	7	4.4	3.7	0.0	0.2	B29	8	2	35	6.3	20

2-1315. LYNCHES RIVER NEAR BISHOPVILLE, S. C.

May 1, 1963.....	1060	6.6	0.16	1.8	0.6	4.2	0.8	9	3.6	3.6	0.1	0.4	B27	8	0	35	6.2	55

2-1325. LITTLE PEE DEE RIVER NEAR DILLON, S. C.

May 2, 1963.....	253	3.6	0.14	1.2	0.6	6.0	0.9	8	1.6	8.2	0.1	0.8	B41	6	0	45	5.8	110

2-1345. LUMBER RIVER AT BOARDMAN, N. C.

Feb. 7, 1963.....	3120	3.3	0.04	1.8	0.9	3.6	1.3	4	5.6	4.4	0.1	1.1	24	8	4	40	6.2	50
Sept. 4.....	321	6.9	.12	1.8	.7	4.4	.8	6	5.2	6.2	.1	1.5	31	8	2	42	5.7	40

2-1350. LITTLE PEE DEE RIVER AT GALIVANTS FERRY, S. C.

May 2, 1963.....	1070	3.5	0.04	1.7	0.3	4.9	0.9	8	1.6	7.2	0.0	0.6	B37	6	0	40	5.9	90

2-1355. BLACK RIVER NEAR GABLE, S. C.

Apr. 1, 1963.....	418	0.7	0.27	3.4	0.9	5.8	1.2	14	2.0	8.3	0.0	0.8	B50	12	1	57	6.1	150

SANTEE RIVER BASIN

2-1370. MILL CREEK AT OLD FORT, N. C.

Jan. 19, 1963.....	30.7	8.5	0.00	1.9	0.7	1.3	0.7	11	3.4	0.2	0.1	0.2	22	8	0	28	7.0	5
July 11.....	16.8	11	.02	3.4	1.4	1.4	.3	14	4.8	1.5	.0	.0	31	14	2	34	7.0	10

2-1380. CATAWBA RIVER NEAR MARION, N. C.

Jan. 19, 1963.....	237	13	0.03	3.2	0.7	12	1.0	26	2.0	7.2	0.1	1.5	54	11	0	85	6.7	5
July 10.....	155	12	.02	3.7	1.4	2.6	.5	19	4.0	.6	.0	.1	34	14	0	37	6.9	5

B Residue at 180°C.

239-654 O - 67 - 29

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (calculated)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
SANTEE RIVER BASIN--Continued																		
2-1385. LINVILLE RIVER AT BRANCH, N. C.																		
Jan. 19, 1963.....	113	6.8	0.01	1.4	0.9	1.3	0.6	10	2.0	0.2	0.1	0.3	19	7	0	25	6.8	10
July 9.....	45.0	7.3	.01	3.0	1.1	1.6	.6	13	4.2	.6	.0	.0	25	12	2	25	6.9	5
2-1420. LOWER LITTLE RIVER NEAR ALL HEALING SPRINGS, N. C.																		
Dec. 21, 1962.....	21.1	11	0.03	2.3	0.7	1.7	1.5	14	0.4	2.0	0.2	0.0	27	9	0	32	6.9	5
Aug. 12, 1963.....	7.8	12	.01	3.4	.8	2.3	.9	16	4.2	1.2	.1	.0	33	12	0	33	7.0	5
2-1430. HENRY FORK NEAR HENRY RIVER, N. C.																		
Jan. 4, 1963.....	74.9	8.5	0.02	2.6	0.6	1.8	1.3	12	2.8	0.8		0.5	25	9	0	28	7.0	5
July 23.....	67.8	9.7	.01	1.8	.8	1.7	1.0	6	3.6	2.4	0.0	0.1	24	8	2	26	6.9	10
2-1430.4. JACOB FORK AT RAMSEY, N. C.																		
July 16, 1963.....	16.9	9.5	0.00	1.3	0.8	1.4	0.6	10	0.4	2.2	0.1	0.2	22	5	0	21	7.2	7
Aug. 19.....	10.4	9.5	.01	1.7	.6	1.5	.8	10	2.2	1.8	.2	.2	24	6	0	23	6.3	5
2-1440. LONG CREEK NEAR BESSEMER CITY, N. C.																		
Jan. 23, 1963.....	48.1	13	0.03	4.6	1.8	3.0	2.1	23	5.2	2.0	0.1	0.3	43	19	0	59	7.3	15
July 5.....	13.7	17	.01	6.2	2.8	4.1	1.0	34	6.0	2.0	.1	.0	56	27	0	63	7.3	5
2-1450. SOUTH FORK CATAWBA RIVER AT LOWELL, N. C.																		
Jan. 23, 1963.....	1170	11	0.05	3.4	1.8	4.4	2.5	16	5.6	4.6	0.1	2.3	44	16	3	67	6.9	25
July 8.....	515	14	.01	5.9	2.0	5.9	1.3	26	7.4	5.0	.0	.1	55	24	2	65	6.8	5
2-1460. CATAWBA RIVER NEAR ROCK HILL, S. C.																		
Apr. 23, 1963.....	A1980	9.3	0.07	4.8	2.3	6.9	1.7	25	7.4	5.2	0.2	0.6	B51	22	1	76	6.6	30
CATAWBA RIVER NEAR CATAWBA, S. C.																		
Apr. 17, 1963.....	1280	9.9	0.02	4.9	2.2	7.8	3.0	27	9.4	5.0	0.0	2.0	57	21	0	91	6.7	18

2-1463. SUGAR IRWIN CREEK AT CHARLOTTE, N. C.

Dec. 22, 1962.....	25.3	16	0.03	18	5.8	17	4.6	78	24	14	0.9	0.7	139	70	6	230	7.0	5
July 1, 1963.....	11	18	.01	21	5.9	24	2.6	90	16	31	.9	.2	164	78	4	271	7.6	40

2-1465. LITTLE SUGAR CREEK NEAR CHARLOTTE, N. C.

Dec. 22, 1962.....	24.1	20	0.01	20	4.8	14	4.3	78	20	15	0.3	0.1	137	70	6	220	6.9	5
Jan. 23, 1963.....	35.8	30	.09	15	6.3	9.1	3.4	66	18	6.4	--	3.1	124	63	9	180	7.1	30
July 1.....	7.9	14	.03	21	5.3	16	2.9	103	13	13	.4	.0	137	74	0	212	7.8	25

2-1466. McALPHINE CREEK, AT SARDIS ROAD, NEAR CHARLOTTE, N. C.

Dec. 22, 1962.....	10.5	24	0.03	10	3.9	7.7	1.5	61	3.2	6.0	0.2	0.0	87	42	0	120	7.4	5
July 1, 1963.....	5.9	21	.01	13	4.7	8.7	1.5	74	4.8	5.4	.2	.0	95	51	0	129	7.9	35

2-1467. McMULLIN CREEK, AT SHARON VIEW ROAD, NEAR CHARLOTTE, N. C.

Dec. 22, 1962.....	2.06	20	0.11	14	5.8	9.2	2.9	77	6.2	8.9	0.2	0.1	105	58	0	170	7.2	5
July 1, 1963.....	.4	17	.04	17	5.4	11	2.6	92	8.4	8.0	.2	.0	115	65	0	171	7.4	30

2-1469. TWELVE MILE CREEK NEAR WAXHAW, N. C.

Dec. 20, 1962.....	11	19	0.18	6.8	3.9	6.8	1.9	45	4.4	7.0	0.2	0.0	72	33	0	100	7.7	20
July 24, 1963.....	3.3	17	.00	8.2	3.7	6.7	1.9	53	4.0	4.6	.1	.1	72	36	0	99	7.6	60

2-1480. WATEREE RIVER NEAR CAMDEN, S. C.

Mar. 1, 1963.....	A3790	9.1	0.02	4.2	1.8	7.6	1.8	23	7.2	5.4	0.0	1.4	B54	18	0	77	6.7	30

WATEREE RIVER NEAR EASTOVER, S. C.

May 17, 1963.....	1720	10	0.03	5.3	2.1	9.8	2.1	29	10	6.0	0.1	2.7	B77	22	0	97	6.6	16

2-1490. COVE CREEK NEAR LAKE LURE, N. C.

Dec. 29, 1962.....	136	13	0.02	1.8	1.0	2.3	1.1	17	1.6	1.5	0.1	0.0	30	8	0	32	6.9	5
July 23, 1963.....	73.6	14	.02	3.0	.6	3.0	.9	19	3.4	2.3	.0	.3	37	10	0	34	7.0	10

A Daily mean discharge.
B Residue at 180°C.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (calculated)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
SANTEE RIVER BASIN--Continued																		
2-1510. SECOND BROAD RIVER AT CLIFFSIDE, N. C.																		
Dec. 29, 1962.....	194	13	0.02	3.0	1.4	7.9	2.3	25	4.4	7.1	0.2	1.2	53	14	0	74	7.1	5
July 23, 1963.....	233	11	.00	3.8	1.6	6.1	1.4	28	3.2	5.4	.1	.0	47	16	0	61	7.2	20
2-1521. FIRST BROAD RIVER NEAR CASAR, N. C.																		
Jan. 11, 1963.....	42.8	12	0.04	1.6	1.8	2.3	1.3	18	3.2	0.8	--	0.2	32	11	0	36	7.0	10
July 17.....	33.1	14	.01	2.6	1.4	2.8	.7	18	2.2	.4	0.1	.0	33	12	0	36	7.1	10
Aug. 19.....	21	13	.04	2.1	1.6	1.9	1.0	19	1.2	.8	.0	.1	31	12	0	37	6.7	9
2-1525. FIRST BROAD RIVER NEAR LAWNDALE, N. C.																		
Jan. 11, 1963.....	170	12	0.05			2.7	1.9	19	2.4	2.0		1.0				52	7.0	15
July 23.....	154	11	.06	3.4	0.8	4.3	1.4	16	1.4	3.9	0.1	1.1	35	12	0	45	6.3	4
2-1534.8. BUFFALO CREEK NEAR BLACKSBURG, S. C.																		
Apr. 18, 1963.....	81.5	13	0.06	3.6	1.4	8.0	2.8	23	3.6	9.5	0.0	1.5	B56	15	0	78	6.9	18
2-1535. BROAD RIVER NEAR GAFFNEY, S. C.																		
Apr. 15, 1963.....	2040	11	0.00	3.2	1.2	3.2	1.7	19	2.4	3.0	0.0	1.1	36	13	0	50	6.9	12
2-1536. KINGS CREEK AT KINGS CREEK, S. C.																		
Apr. 18, 1963.....	32.6	11	0.02	13	3.8	3.9	2.1	56	7.8	2.5	0.0	0.7	B74	48	2	117	7.5	12
2-1537.05. THICKETTY CREEK AT THICKETTY, S. C.																		
Apr. 22, 1963.....	38.0	9.8	0.00	2.8	1.8	3.6	1.5	18	2.6	3.9	0.1	0.8	36	14	0	49	6.3	5
2-1538. BULLOCK CREEK NEAR SHARON, S. C.																		
Apr. 18, 1963.....	41.8	19	0.10	7.1	2.3	6.0	1.8	41	4.8	3.3	0.0	0.6	B67	27	0	90	7.2	18
2-1545. NORTH PACOLET RIVER AT FINGERVILLE, S. C.																		
Mar. 5, 1963.....	238	12	0.01	2.9	0.8	7.4	1.7	28	2.8	2.0	0.0	1.1	45	10	0	59	6.6	12

2-1555. PACOLET RIVER NEAR FINGERVILLE, S. C.																		
Mar. 5, 1963.....	279	12	0.00	3.1	1.0	4.6	2.0	22	3.6	2.3	0.0	1.1	41	12	0	51	6.5	10
2-1560. PACOLET RIVER NEAR CLIFTON, S. C.																		
Apr. 23, 1963.....	A382	9.7	0.02	2.7	1.1	2.8	1.2	18	1.6	3.0	0.0	1.0	B35	12	0	37	6.6	8
2-1570. NORTH TYGER RIVER NEAR FAIRMONT, S. C.																		
Mar. 28, 1963.....	64	10	0.02	2.4	1.4	2.7	1.0	18	1.0	3.0	0.0	0.1	31	12	0	40	6.5	5
2-1575. MIDDLE TYGER RIVER AT LYMAN, S. C.																		
Mar. 27, 1963.....	125	8.0	0.05	1.8	0.9	2.1	1.1	11	1.8	2.1	0.0	0.2	B24	8	0	30	6.2	10
2-1580. NORTH TYGER RIVER NEAR MOORE, S. C.																		
Nov. 19, 1962.....	175	12	0.02	3.5	1.2	30	2.7	75	8.8	11	0.2	0.1	B113	14	0	168	6.6	10
Feb. 18, 1963.....	168	12	.03	3.3	1.0	30	3.3	64	8.8	9.6	.1	.8	101	12	0	158	6.5	18
2-1585. SOUTH TYGER RIVER NEAR REIDVILLE, S. C.																		
Mar. 27, 1963.....	308	10	0.01	2.2	0.5	3.1	1.2	14	1.8	2.6	0.0	0.1	29	7	0	36	6.1	5
2-1590. SOUTH TYGER RIVER NEAR WOODRUFF, S. C.																		
Mar. 27, 1963.....	A426	11	0.01	2.4	1.1	3.2	1.2	15	2.0	2.4	0.1	0.5	31	10	0	38	6.3	5
2-1600. FAIRFOREST CREEK NEAR UNION, S. C.																		
Mar. 28, 1963.....	172	12	0.03	7.1	3.2	7.4	2.0	38	5.8	6.4	0.4	0.0	64	30	0	97	6.4	5
TYGER RIVER NEAR DELTA, S. C.																		
Apr. 22, 1963.....	551	14	0.02	5.3	2.1	23	2.4	63	9.2	7.9	0.5	0.0	95	22	0	150	6.6	5

A Daily mean discharge.
B Residue at 180°C.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (calculated)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
SANTEE RIVER BASIN--Continued																		
2-1605. ENOREE RIVER NEAR ENOREE, S. C.																		
Mar. 28, 1963.....	382	11	0.02	2.2	1.5	13	1.8	35	5.6	5.0	0.1	0.7	B58	12	0	87	6.6	10
2-1605.2. WARRIOR CREEK AT LANFORD, S. C.																		
Apr. 22, 1963.....	15.7	20	0.03	3.5	1.9	5.2	2.1	28	0.6	4.2	0.1	2.5	B58	17	0	59	7.1	3
2-1615. BROAD RIVER AT RICHTEX, S. C.																		
Dec. 3, 1962.....	2600	13	0.01	4.2	1.6	6.8	1.5	30	3.8	4.4	0.1	0.6	B53	17	0	66	7.1	4
2-1625. SALUDA RIVER NEAR GREENVILLE, S. C.																		
Jan. 8, 1963.....	410	12	0.16	2.4	0.5	2.7	0.8	12	2.0	1.8	0.1	0.4	B36	8	0	29	6.8	28
2-1635. SALUDA RIVER NEAR WARE SHOALS, S. C.																		
Jan. 7, 1963.....	772	12	0.14	2.6	0.9	4.5	1.2	18	3.4	2.5	0.1	0.6	B40	10	0	43	6.7	18
2-1650. REEDY RIVER NEAR WARE SHOALS, S. C.																		
Nov. 19, 1962.....	133	11	0.01	3.4	1.4	22	3.9	46	11	11	0.3	3.1	B94	14	0	140	6.5	17
2-1669. WILSON CREEK NEAR NINETY SIX, S. C.																		
Apr. 22, 1963.....	27.2	20	0.02	5.8	2.8	9.6	2.1	40	4.2	8.4	0.1	2.0	B82	26	0	97	6.5	10
2-1670. SALUDA RIVER AT CHAPPELLS, S. C.																		
Mar. 27, 1963.....	3830	7.7	0.04	2.0	0.8	4.5	1.9	16	4.6	3.1	0.0	0.1	B33	8	0	45	6.2	10
2-1674.5. LITTLE RIVER NEAR SILVERSTREET, S. C.																		
Apr. 22, 1963.....	93.5	21	0.07	5.5	2.3	5.8	1.8	36	2.6	4.4	0.1	0.7	B65	24	0	72	6.6	7
2-1690. SALUDA RIVER NEAR COLUMBIA, S. C.																		
Feb. 27, 1963.....	A1590	7.8	0.00	3.1	1.4	7.0	2.7	25	5.0	4.1	0.0	0.9	44	14	0	70	6.6	12

2-1695. CONGAREE RIVER AT COLUMBIA, S. C.

Nov. 19, 1962.....	A5000	6.5	0.01	4.0	1.3	8.3	1.6	25	4.2	8.2	0.2	0.1	B50	16	0	77	6.5	8
Mar. 25, 1963.....	A11900	11	.01	4.0	1.4	6.0	2.5	24	5.4	3.0	.1	1.3	47	16	0	65	7.1	8

2-1695.5. CONGAREE CREEK AT CAYCE, S. C.

May 3, 1963.....	204	3.2	0.09	0.7	0.2	1.6	0.3	4	0.2	2.0	0.1	0.6	B22	4	0	14	5.6	30

COOPER RIVER BASIN

BUSHY PARK DIVERSION CANAL NEAR MONCKS CORNER, S. C.

Jan. 23, 1963.....		6.5	0.04	5.6	1.3	8.7	1.7	26	6.4	8.8	0.1	0.4	B61	19	0	85	6.5	5
Mar. 5.....		5.4	.02	6.0	1.2	10	1.8	26	7.6	12	.1	.6	B63	20	0	96	6.9	30
Apr. 10.....		6.1	.03	4.5	1.8	6.5	2.5	22	6.6	5.2	.0	1.6	B53	18	0	72	6.8	28

EDISTO RIVER BASIN

2-1725.2. SHAW CREEK NEAR EUREKA, S. C.

May 8, 1963.....	42.2	5.2	0.10	1.4	0.7	4.3	0.8	8	1.2	5.4	0.0	0.8	B24	6	0	34	6.6	30

2-1731.5. LIGHTWOOD KNOT CREEK NEAR LEESVILLE, S. C.

Apr. 22, 1963.....	8.35	2.2	0.04	0.8	0.4	2.5	0.9	6	1.0	3.4	0.1	1.0	B18	4	0	26	5.8	30

2-1733. NORTH FORK EDISTO RIVER NEAR NORTH, S. C.

May 13, 1963.....	345	4.3	0.10	0.9	0.1	1.7	0.3	4	0.4	3.3	0.2	0.9	B17	2	0	17	6.1	28

2-1735. NORTH FORK EDISTO RIVER AT ORANGEBURG, S. C.

Mar. 4, 1963.....	1060	0.5	0.04	1.8	0.5	2.2	0.3	7	2.0	2.7	0.0	0.9	B18	6	1	24	6.1	45

2-1740. EDISTO RIVER NEAR BRANCHVILLE, S. C.

Oct. 17, 1962.....	1660	7.8	0.06	2.2	0.8	2.3	0.6	8	1.8	4.4	0.1	0.2	B36	8	2	29	6.1	70
May 27, 1963.....	1470	5.6	.14	1.8	.6	3.4	.5	7	1.6	5.0	.1	.6	B28	7	2	31	6.4	60

A Daily mean discharge.
B Residue at 180°C.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Dissolved solids (calculated)	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
EDISTO RIVER BASIN--Continued																		
2-1750. EDISTO RIVER NEAR GIVHANS, S. C.																		
Mar. 5, 1963.....	4590	0.9	0.03	4.6	0.7	3.7	0.9	14	3.6	4.5	0.0	1.5	B30	14	3	51	6.6	75
2-1750.3. EDISTO RIVER (UPPER STATION) NEAR JACKSONBORO, S. C.																		
Oct. 1-31, 1962.....	A2432	7.1	0.23	3.5	2.0	2.8	0.6	12	3.8	5.0	0.1	2.4	B51	18	8	42	6.3	100
2-1750.4. EDISTO RIVER (LOWER STATION) NEAR JACKSONBORO, S. C.																		
Oct. 1, 1962.....	A2530	--	--	4.1	1.7	--	--	11	--	8.4	--	--	--	17	8	61	6.8	--
Oct. 2.....	A2650	--	--	3.7	2.7	--	--	12	--	22	--	--	--	20	10	100	6.9	--
Oct. 3-5.....	A4340	6.1	0.13	4.2	1.8	4.4	0.6	12	7.4	7.0	0.0	3.1	41	18	8	54	6.3	60
Oct. 6.....	A4990	--	--	4.2	2.1	--	--	13	--	23	--	--	--	20	9	110	7.0	--
Oct. 7-24.....	A2511	7.5	.31	4.1	2.0	4.5	.7	14	2.4	8.5	.1	2.4	B65	18	7	59	6.4	100
COMBAHEE RIVER BASIN																		
2-1755. SALKEHATCHIE RIVER NEAR MILEY, S. C.																		
Apr. 3, 1963.....	236	4.4	0.06	8.6	0.7	4.6	0.9	30	3.2	4.8	0.1	0.2	B53	24	0	78	6.5	50
SAVANNAH RIVER BASIN																		
2-1834.9. CHAUGA RIVER NEAR WESTMINISTER, S. C.																		
June 6, 1963.....	122	11	0.01	2.0	0.7	2.0	0.7	16	0.8	2.2	0.0	0.4	B31	8	0	26	6.8	7
2-1845. WHITEWATER RIVER AT JOCASSEE, S. C.																		
June 5, 1963.....	90	7.9	0.01	0.6	0.4	1.1	0.4	8	0.4	1.2	0.0	0.5	B19	3	0	14	6.6	7
2-1866. CONNEROSS CREEK AT RICHLAND, S. C.																		
June 6, 1963.....	53.6	13	0.02	2.5	1.2	6.8	1.0	21	0.4	7.1	0.0	1.2	B45	11	0	54	6.6	5

2-1873. BIG GENEROSTEE CREEK NEAR STARR, S. C.																		
June 3, 1963.....	66.8	13	0.01	3.1	1.3	5.2	1.9	21	1.8	4.1	0.5	1.6	43	13	0	56	6.4	5
2-1880. ROCKY RIVER NEAR CALHOUN FALLS, S. C.																		
Jan. 9, 1963.....	268	13	0.17	4.2	1.0	5.0	2.1	23	2.8	3.3	0.1	1.6	44	14	0	55	6.8	27
2-1890. SAVANNAH RIVER NEAR CALHOUN FALLS, S. C.																		
Jan. 9, 1963.....	5660	8.2	0.02	3.7	0.7	4.3	1.8	21	3.6	2.9	0.2	0.7	B36	12	0	46	6.6	8
2-1970. SAVANNAH RIVER AT AUGUSTA, GA.																		
Jan. 8, 1963.....	5460	9.5	0.01	3.8	1.1	3.6	1.6	22	2.8	3.0	0.1	0.6	37	14	0	50	6.6	8
2-1985. SAVANNAH RIVER NEAR CLYO, GA.																		
Feb. 26, 1963.....	14700	7.8	0.04	4.3	2.2	3.0	1.2	21	3.6	4.2	0.1	0.4	B51	20	3	53	6.9	50

A Daily mean discharge.
B Residue at 180°C.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$)		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
ST. JOHNS RIVER BASIN																				
2-2331. ECONLOCKHATCHEE RIVER NEAR BITHLO, FLA.																				
Dec. 13, 1962.		6.9	0.29	10	2.2	10	1.0	28	0.0	18	0.2	0.2		128	63	34	11	113	6.7	200
Jan. 24, 1963.		5.5	.22	8.4	1.7	8.7	1.5	17	4.4	18	.3	.1		108	57	28	14	104	6.5	150
July 22.....		.0	.33	10	.2	7.6	.2	18	2.4	15	.3	.0		126	45	26	11	71	5.9	350
2-2332. LITTLE ECONLOCKHATCHEE RIVER NEAR UNION PARK, FLA.																				
Nov. 1, 1962..	5.7	6.4	0.21	8.8	1.7	12	0.7	27	4.0	18	0.3	0.0		69	65	29	7	119	6.7	70
Jan. 24, 1963.	18	5.4	.11	8.8	3.6	10	1.9	20	5.2	19	.4	.0		116	64	37	20	109	7.0	120
July 23.....	11	6.3	.77	7.2	2.4	9.4	1.1	17	5.2	14	.0	.2	1.0		55	28	14	90	6.2	175
2-2362.1. LAKE LOWERY NEAR HAINES CITY, FLA.																				
Nov. 1, 1962..		0.1	0.00	3.2	1.7	12	1.8	4	6.0	21	0.4	2.8		72	51	15	12	100	5.6	10
Nov. 2.....		.2	.00	3.2	1.7	12	1.8	5	5.6	20	.4	.6		64	48	15	11	98	5.7	10
LAKE APOPKA AT WINTER GARDENS, FLA.																				
Feb. 28, 1963.		15	0.03	38	13	17	4.8	156	20	23	0.6	0.9		250	209	150	22	346	7.0	30
July 24.....		7.9	.27	28	8.8	12	3.3	104	16	20	.5	1.5		88	149	106	21	252	7.0	20

INDIAN RIVER BASIN

2-2525. NORTH CANAL NEAR VERO BEACH, FLA.

Oct. 17, 1962	9.4	8.6	0.00	58	12	51	2.3	132	54	94		0.0			345	194	86	605	7.5	30
Nov. 20.....	8.0	8.8	.02	66	13	55	2.6	178	38	102		.0			373	218	72	660	7.7	40
Jan. 11, 1963	5.8	8.7	.03	74	13	66	2.5	196	38	122		.3			422	236	76	713	8.1	50
Mar. 13.....	A8.0	7.8	.01	56	15	55	2.4	154	37	103		.0			352	200	74	550	8.0	50
July 29.....	A9.8	7.9	2.7	69	15	54	2.3	194	38	107		.3			390	234	75	688	7.3	30
Sept. 15.....	A9.4	8.8	.04	64	14	60	2.9	169	34	108		.0			375	224	85	689	7.0	40
2-2530. MAIN CANAL AT VERO BEACH, FLA.																				
Oct. 17, 1962	34	12	0.00	100	17	91	3.6	228	65	170		0.2			571	320	132	1050	7.5	50
Nov. 20.....	45	11	.12	98	21	90	3.9	236	72	180		.0			592	330	136	1020	7.8	45
Jan. 11, 1963	A59	10	.01	96	34	135	5.3	234	88	260		.7			744	380	188	1250	7.7	40
Mar. 10.....	A84	8.6	.00	99	21	88	3.8	236	71	176		.0			583	332	138	870	8.0	60
July 27.....	A54	11	1.1	89	25	107	3.8	204	73	214		1.8			625	325	158	1080	7.4	45
Sept. 15.....	A64	11	.03	82	20	86	4.7	192	63	170		.0			533	288	130	1000	7.4	50
2-2535. SOUTH CANAL NEAR VERO BEACH, FLA.																				
Oct. 17, 1962	A9.1	7.2	0.02	59	7.1	42	2.0	164	24	76		0.0			298	176	42	540	7.6	50
Nov. 21.....	10	7.6	.14	64	7.9	44	2.5	178	29	80		.0			323	192	46	565	7.7	50
Jan. 11, 1963	A4.8	7.6	.03	72	7.9	53	2.2	204	29	86		.1			358	212	45	609	7.7	60
Mar. 9.....	A9.1	6.2	.00	45	17	42	1.8	164	26	84		.9			304	184	50	540	7.1	60
July 28.....	A8.3	9.7	3.2	75	11	58	2.2	228	28	96		.4			392	234	47	679	7.3	45
Sept. 15.....	A54	13	.04	90	21	92	7.4	204	66	186		.0			575	310	143	1000	7.2	60

A Daily mean discharge.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids: Residue at 180°C	Dissolved solids: Calculated	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
LAKE OKEECHOBEE AND THE EVERGLADES BASINS																				
2-2540. NORTH FORK ST. LUCIE RIVER AT WHITE CITY, FLA.																				
Oct. 29, 1962	A0.83	12	0.02	96	20	111	4.2	204	84	220		0.9			648	322	155	1120	7.7	50
Nov. 23.....	A.18	12	.00	116	24	144	5.2	224	121	282		.1			814	388	204	1400	7.5	30
Dec. 26.....	A.18	11	.00	120	38	206	8.1	F224	133	405		.2			1030	456	272	1750	8.4	20
Jan. 23, 1963	A.32	11	.01	116	44	215	8.4	228	136	420		.6			1060	470	283	2000	7.6	25
Mar. 9.....	--	8.9	.00	116	27	135	4.7	236	120	240		.9			768	400	206	1240	7.6	40
July 29.....	.12	9.1	.83	100	25	135	5.0	200	114	250		.5			738	352	188	1260	7.5	40
Sept. 15.....	.53	14	.02	114	26	138	7.1	217	106	275		.0			787	392	214	1140	7.4	40
RIM DITCH (DIVERSION CANAL) S-49, AT ST. LUCIE, FLA.																				
Mar. 12, 1963		6.9	0.07	84	24	96	4.2	220	64	190		0.1			577	310	130	991	7.4	120
July 30.....		9.5	.58	82	16	87	3.2	190	65	158		.0			515	270	114	885	7.6	100
Sept. 15.....		13	.02	99	18	84	4.0	224	69	178		.0			575	320	136	1000	7.5	50
2-2565. FISHEATING CREEK AT PALMDALE, FLA.																				
Oct. 22, 1962	68	2.3	0.14	4.0	1.5	4.0	0.1	12	0.8	8.0		0.0			27	16	6	54	6.1	120
Nov. 26.....	60	1.9	.23	5.2	1.9	9.2	.8	15	2.8	14		.0			43	21	8	85	6.3	180
Jan. 2, 1963.	12	1.5	.23	7.2	3.9	19	2.4	15	7.6	39		.0			88	34	22	173	6.6	120
May 12.....	A142	1.0	.12	6.4	2.4	14	1.2	12	4.8	24		.0			60	26	16	113	6.2	250
July 31.....	A4.2	.8	.33	9.2	5.1	28	.2	12	13	50		.0			112	44	34	217	6.1	120
Sept. 17.....	A33	3.0	.10	6.4	5.4	21	1.0	15	13	40		.0			97	38	26	181	6.4	200
LAKE ISTOPOKA OUTLET AT S-68, NEAR LAKE PLACID, FLA.																				
Feb. 8, 1963.		0.6	0.07	8.0	2.7	6.2	1.3	12	13	11	0.0	0.5		102	50	32	22	94	6.4	94
Mar. 13.....		2.5	.06	4.0	4.4	5.8	1.2	8	16	10		.0			48	28	22	88	6.1	120
July 31.....		1.7	.27	8.4	2.7	8.2	1.2	19	18	12		.0			62	32	16	109	6.2	80
Sept. 17.....		1.8	.04	8.0	2.4	8.1	1.6	8	15	22		.0			63	30	24	111	6.3	50

2-2580. HARNEY POND CANAL AT LAKE OKEECHOBEE, NEAR MOORE HAVEN, FLA.

Oct. 23, 1962		4.1	0.17	19	3.5	7.2	0.6	34	24	25		0.0			89	62	34	155	6.7	170
Nov. 27.....		3.2	.32	25	3.3	13	1.0	60	20	19		.0			115	76	27	205	7.0	160
Jan. 18, 1963		2.8	.09	37	6.7	22	1.8	92	36	32		.2			184	120	44	320	7.1	110
July 31.....		6.4	1.0	42	6.6	23	1.2	102	52	32		.1			213	132	48	329	7.2	280

2-2595. INDIAN PRAIRIE CANAL NEAR OKEECHOBEE, FLA.

Oct. 23, 1962		6.2	0.31	34	5.6	12	0.9	36	66	16		1.6			161	108	78	275	6.8	160
Nov. 22.....		5.6	.56	42	7.1	19	2.0	72	64	27		1.2			203	134	75	341	7.3	120
Jan. 18, 1963		3.9	.03	59	9.0	27	2.4	120	79	40		.0			279	184	86	469	7.2	80
July 3.....		5.1	2.0	56	13	31	2.7	112	64	56		.2			283	192	100	487	7.3	140

2-2608. ALLIGATOR LAKE NEAR ASHTON, FLA.

Dec. 12, 1962		1.4	0.00	2.4	1.5	8.5	0.8	4	6.8	14		0.1			38	12	8	76	6.5	10
Mar. 4, 1963.		1.4	.01	2.4	1.5	8.8	1.0	5	7.2	13		.2			38	12	8	71	5.9	10
Aug. 1.....		1.1	.18	4.8	1.9	8.3	.6	5	11	14		.2			44	20	16	80	6.0	10

2-2622. HART LAKE NEAR NARCOOSSEE, FLA.

Dec. 12, 1962		2.1	0.22	3.6	1.9	9.0	1.0	4	8.4	15		0.1			43	17	14	84	5.9	130
Mar. 4, 1963.		4.1	.04	3.2	2.9	10	1.4	4	12	16		.0			52	20	16	93	5.4	80
July 7.....		1.4	.27	8.8	2.2	8.6	1.2	13	16	16	0.2	.0			--	31	20	110	6.3	60

2-2629. BOGGY CREEK NEAR TAFT, FLA.

Oct. 16, 1962	20.8	8.9	0.25	6.4	1.2	8.5	1.8	13	2.8	13	0.2	0.0		97	49	21	10	85	6.2	200
Dec. 14.....	A 9.1	8.5	.09	5.6	2.2	11	1.8	18	6.4	16	.2	.1		76	61	23	8	101	6.8	100
July 23, 1963	A 20	8.8	.15	5.6	4.3	10	2.3	20	4.8	17	.2	.0		48	63	30	14	92	6.2	150

A Daily mean discharge.
F Includes equivalents 8 parts per million of carbonate (CO_3).

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
LAKE OKEECHOBEE AND THE EVERGLADES BASINS--Continued																				
2-2634. EAST TOHOPEKALIGA LAKE AT ST. CLOUD, FLA.																				
Dec. 12, 1962.		3.5	0.16	6.0	2.2	10	1.6	8	16	16		0.1			59	24	18	112	6.4	20
Mar. 4, 1963..		1.3	.00	5.6	1.7	9.5	1.4	10	11	14		.0			49	21	13	97	6.1	40
Aug. 1.....		1.6	.60	5.6	2.2	9.5	1.2	8	12	16		1.1			53	23	16	101	6.1	30
2-2637. SHINGLE CREEK NEAR VINELAND, FLA.																				
Dec. 13, 1962.		7.5	0.04	21	3.3	28	4.7	62	13	37	0.5	3.7		168	150	66	15	265	7.0	50
Dec. 16.....		8.8	.14	10	1.5	16	1.8	29	4.4	23	.3	.2		106	80	31	7	139	6.5	100
July 24, 1963.		4.7	.73	14	2.4	20	2.1	36	12	24	.5	.0		142	98	45	16	165	6.4	120
2-2649. LAKE TOHOPEKALIGA AT KISSIMMEE, FLA.																				
Dec. 13, 1962.		8.9	0.00	27	6.0	6.2	1.1	102	6.8	9.0		0.8			116	92	8	195	8.1	15
Mar. 4, 1963..		5.5	.09	18	5.6	8.7	2.2	71	12	13		1.0			100	68	10	160	7.4	90
Aug. 1,.....		3.9	.41	14	5.1	12	.6	38	13	18		.2			86	56	25	141	6.8	60
2-2652. CYPRESS LAKE NEAR ST. CLOUD, FLA.																				
Mar. 13, 1963.		2.2	0.11	5.6	1.9	12	1.2	7	9.6	18		0.3			54	22	16	100	6.0	120
Aug. 1.....		1.5	.53	7.2	2.9	9.6	1.2	9	13	18		.0			58	30	22	113	6.1	60
2-2655. LAKE GENTRY NEAR ST. CLOUD, FLA.																				
Dec. 12, 1962.		1.0	0.14	2.0	1.0	8.8	0.6	2	4.0	16		0.0			35	9	8	74	5.4	60
Mar. 4, 1963..		2.1	.03	2.4	1.0	8.8	.6	3	4.0	14		.0			34	10	8	67	5.5	60
Sept. 19.....		1.0	.25	1.6	1.9	8.1	.3	4	.8	18		.1			34	12	8	66	5.7	40
2-2674. LAKE HATCHINEHA NEAR LAKE WALES, FLA.																				
Mar. 13, 1963.		2.9	0.19	12	3.4	7 1	1.6	24	14	15		0.3			68	44	24	120	6.4	200
Aug. 1.....		5.7	.68	11	4.5	8.9	.4	22	14	15		.2			74	46	34	118	6.4	200

2-2685. WEOHYAKAPKA CREEK NEAR LAKE WALES, FLA.

Mar. 12, 1963.		5.4	0.15	6.8	1.0	6.5	0.7	10	8.0	11		0.1			45	21	13	77	6.3	100
Sept. 1.....		7.1	1.2	6.0	2.2	6.7	.2	15	6.4	10		.2			46	24	12	74	6.4	100

2-2689. LAKE KISSIMMEE NEAR LAKE WALES, FLA.

Mar. 13, 1963		3.8	0.30	12	3.9	7.6	1.8	24	17	16		0.0			74	46	26	130	6.5	220
Aug. 1.....		5.1	1.3	15	3.5	9.9	.4	32	15	16		.0			81	52	26	132	6.6	190

2-2720. ISTOKPOGA CANAL NEAR CORNWELL, FLA.

Oct. 17, 1962	154	1.8	0.20	5.6	2.2	5.4	1.0	9	12	8.2		0.1			41	23	16	80	6.0	130
Dec. 19.....	177	.9	.11	5.6	2.9	4.8	.7	10	11	10		.1			41	26	18	79	6.4	160
Dec. 22.....	7.1	2.2	.22	6.8	2.2	6.8	1.4	12	14	10		.0			50	26	16	94	6.3	100
Feb. 1, 1963.	5.7	2.7	.13	8.8	2.4	8.0	2.0	16	13	13		.0			58	32	19	103	6.5	120
Feb. 8.....	6.5	2.3	.06	8.8	2.4	9.0	2.4	14	13	15	0.0	.0		92	60	32	20	109	6.0	120
Mar. 13.....	28	2.8	.50	8.0	3.4	10	2.6	14	16	17		1.3			68	34	22	120	6.2	200

2-2725. KISSIMMEE RIVER NEAR BASINGER, FLA.

Aug.1-10,1963		2.1	0.04	8.0	4.4	9.0	1.3	18	13	14	0.2	0.0		90	61	38	23	109	6.6	50
Aug. 11-20...		5.1	.04	10	2.7	9.0	1.3	20	15	15	.3	.0		90	68	36	20	112	6.5	45
Aug. 21-31...		2.8	.10	9.2	2.8	9.0	1.3	20	14	15	.3	.0		88	64	34	18	110	6.5	555

2-2745. TAYLOR CREEK ABOVE OKEECHOBEE, FLA.

Oct. 19, 1962	A10	3.5	0.09	18	4.6	22	0.1	46	6.8	41		0.0			119	64	26	223	6.9	90
Nov. 21.....	A9.6	3.4	.19	21	5.7	28	3.1	46	16	58		.0			158	76	38	300	7.0	110
Jan. 18, 1963	A8.8	5.2	.02	148	90	520	26	136	288	1050		2.6			2200	740	628	3600	7.1	50
Jan. 22.....	A10	3.1	.01	164	99	700	30	108	328	1350		2.8			2730	815	726	4360	7.1	50
Mar. 12 (time 1630)	A14	2.7	.11	27	11	43	55	80	17	81		.1			226	112	46	385	7.1	160
Mar. 12 (time 1645)	A14	3.2	.11	56	22	109	6.4	116	68	207		.0			529	232	139	850	7.1	160
July 30.....	A3.8	6.4	.80	36	10	50	4.0	96	32	88		.7			274	132	54	483	7.3	130
Sept. 17.....	A15	9.6	.06	114	57	360	11	113	174	710		1.1			1490	520	9	2720	6.9	90

A Daily mean discharge.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$)		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
LAKE OKEECHOBEE AND THE EVERGLADES BASINS--Continued																				
2-2765. ST. LUCIE CANAL AT LAKE OKEECHOBEE, FLA.																				
Nov. 2, 1962.		8.7	0.02	58	18	44	2.8	200	54	61		0.6			346	218	54	585	7.6	55
Dec. 3.....		4.1	.05	48	13	33	2.3	156	38	47		.9			263	174	46	460	7.7	40
Jan. 3, 1963.		4.1	.03	50	10	31	2.2	158	36	45		.9			257	168	38	460	8.1	45
Feb. 5.....		4.9	.02	54	13	35	2.5	170	40	53		4.0			290	186	46	460	7.4	30
Mar. 12.....		5.1	.00	48	16	35	2.2	168	38	50		.7			278	184	46	435	7.6	50
July 29.....		4.0	.21	50	14	38	2.2	168	44	54		.0			289	181	44	490	7.7	20
2-2770. ST. LUCIE CANAL AT LOCK, NEAR STUART, FLA.																				
Oct. 29, 1962	10	7.8	0.11	51	4.1	26	2.7	148	16	44		0.0			225	144	22	390	7.8	95
Nov. 23.....	10	7.7	.16	68	34	280	12	184	76	460		5.2			1030	310	159	1750	7.7	90
Dec. 26.....	10	3.1	.03	77	9.2	55	3.0	228	31	88		.0			378	230	43	640	7.9	50
Jan. 23, 1963	10	4.4	.02	74	13	65	3.4	228	40	100		.3			412	240	53	640	7.4	50
Mar. 9.....	10	4.1	.00	69	14	52	3.1	216	38	82		.0			368	228	51	570	7.8	50
July 29.....	10	6.8	.22	78	9.1	50	2.8	240	33	77		.0			375	232	36	633	7.7	45
Sept. 15.....	10	6.0	.02	66	12	62	4.0	207	36	94		.2			382	212	42	652	7.4	30

2-2777. SOUTHWEST FORK LOXAHATCHEE RIVER NEAR JUPITER, FLA.

Oct. 29, 1962.		7.0	0.04	62	3.8	23	0.8	184	15	36		0.0			239	170	19	412	7.7	55
Nov. 23.....		5.5	.12	238	629	5160	203	196	1200	9020		38			16600	3180	3020	22600	7.7	35
Dec. 26.....		1.8	.01	393	885	9690	372	165	2220	16900		1.3			30500	4620	4480	37000	7.9	10
Jan. 23, 1963.		2.6	.00	371	1160	9860	350	170	2310	16600		3.2			30700	5680	5540	32000	7.2	20
Mar. 9.....		8.9	.02	98	8.6	38	1.2	302	26	60		.0			390	280	32	575	8.0	40
July 30.....		10	.15	72	4.0	28	.5	208	25	46		.0			288	196	26	482	7.8	40
Sept. 15.....		7.5	.05	46	6.1	17	1.0	144	16	26		.2			191	140	22	326	7.8	50

2-2778. LEVEE 8 CANAL AT S-76, NEAR CANAL POINT, FLA.

Mar. 12, 1963.		5.1	0.02	46	18	39	2.3	170	39	52		0.0			285	188	48	450	7.5	50
July 31.....		3.8	.13	50	15	38	2.2	174	50	52		.4			297	186	44	507	7.6	20
Sept. 17.....		7.1	.05	69	12	41	2.7	220	32	74		.9			347	220	40	611	7.2	70

2-2780. WEST PALM BEACH CANAL AT HGS-5, AT CANAL POINT, FLA.

Oct. 2, 1962..	--	8.6	0.15	63	21	50	3.0	204	61	67		6.6			380	242	75	642	7.6	80
Nov. 1.....	--	9.6	.03	42	8.0	22	1.4	138	16	33		.2			200	.138	25	368	7.4	30
Nov. 2.....	--	7.5	.03	54	15	38	3.6	182	51	50		.7			315	196	47	536	7.6	45
Dec. 4.....	214	7.5	.13	53	19	40	2.7	186	45	58		.0			317	212	60	537	7.6	55
Jan. 3, 1963..	161	4.3	.02	51	15	33	2.3	164	38	46		.4			271	188	54	470	8.2	40
Mar. 12.....	75	5.9	.07	64	4.0	35	2.2	164	38	48		1.1			279	176	42	472	7.4	50
July 30.....	360	3.3	.23	50	15	30	2.2	172	45	53		.3			284	188	47	507	7.7	20
Sept. 17.....	--	2.3	.00	51	15	33	2.6	172	40	54		.3			283	188	47	512	7.2	20

2-2784.5. WEST PALM BEACH CANAL ABOVE S-5A NEAR LOXAHATCHEE, FLA.

Oct. 1, 1962..	1310	28	0.10	89	35	210	7.1	390	92	265		2.3			920	366	46	1510	7.9	320
Oct. 31.....	--	23	.16	83	30	204	6.7	380	67	270		6.1			877	330	19	1470	7.7	280
Dec. 3.....	--	11	.22	66	27	146	5.1	304	42	200		.1			647	275	26	1100	8.0	220
Jan. 2, 1963..	--	5.4	.15	54	16	77	3.5	212	35	105		1.4			401	202	28	710	8.3	130
Mar. 9.....	--	29	.11	104	37	170	6.8	432	92	220		2.1			874	410	56	1410	8.2	250
July 30.....	400	6.2	.26	60	19	57	3.5	212	48	73		..0			377	226	52	628	7.5	35
Sept. 17.....	51	14	.04	74	21	95	4.6	280	39	128		2.2			516	68	38	850	7.8	100

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
LAKE OKEECHOBEE AND THE EVERGLADES BASINS--Continued																				
2-2785.5. LEVEE 8 CANAL AT WEST PALM BEACH CANAL, NEAR LOXAHATCHEE, FLA.																				
Oct. 1, 1962..	319	3.8	0.05	23	2.6	17	0.5	72	5.6	28		0.3			116	68	9	211	7.2	55
Oct. 31.....	170	8.1	.08	66	13	52	2.8	210	43	78		.5			366	218	46	639	7.6	80
Dec. 3.....	199	7.2	.13	58	21	54	2.8	198	62	215		5.9			525	230	68	999	7.8	65
Jan. 2, 1963..	166	4.0	.03	56	10	36	2.2	176	34	52		.0			281	182	38	490	8.1	50
July 30.....	98	2.4	.17	54	16	46	2.5	182	46	61		.1			318	194	69	549	7.6	30
Sept. 17.....	-51	9.8	.03	64	12	64	2.6	212	30	100		.1			387	208	34	669	7.2	70
2-2805. HILLSBORO CANAL BELOW HGS-4, NEAR SOUTH BAY, FLA.																				
Oct. 2, 1962..	-274	36	0.20	142	65	127	7.4	484	196	200		15			1030	620	224	1400	8.2	260
Nov. 1.....	-193	20	.10	92	31	122	6.0	382	40	178		54			682	357	34	1120	7.9	200
Dec. 3.....	-101	17	.20	88	34	119	5.4	384	42	160		2.7			657	360	46	1040	7.9	160
Jan. 2, 1963..	-82	18	.10	91	31	122	6.5	376	59	160		.0			673	354	46	1100	8.1	140
Feb. 5.....	-275	31	.09	120	54	218	9.6	504	109	290		2.0			1080	520	107	1380	7.8	200
Sept. 16.....	103	4.6	.02	48	19	49	3.2	176	51	70		.7			333	199	55	591	7.0	40
2-2813. HILLSBORO CANAL AT S-39, NEAR DEERFIELD BEACH, FLA.																				
Nov. 2, 1962.. (above control).....		17	0.11	70	27	128	5.8	318	44	170		0.3		--	619	286	25	1060	7.7	240
Dec. 4 (above control)....	74	11	.12	58	21	107	4.8	264	28	152	0.8	.2		610	513	231	14	900	8.0	160
July 17, 1963 (above control).....		9.4	.06	96	8.4	76	3.4	308	25	104	.6	.2		486	475	274	22	806	7.4	80
(below control).....		9.7	.06	96	8.4	71	3.2	304	24	98	.6	1.2		478	462	274	25	790	7.6	85
July 30 (above control).....		6.4	.15	29	8.6	49	1.7	118	8.8	58	--	.1		--	220	108	12	403	7.5	90
Sept. 17..... (above control).....		10	.03	38	13	64	2.6	156	21	90	--	.0		--	316	148	20	541	7.4	80

2-2817. POMPANO CANAL BELOW CONTROL S-38, NEAR POMPANO BEACH, FLA.

Apr. 4, 1963.		9.3	0.05	70	10	62	1.7	220	6.4	102	0.3	0.8		456	372	216	36	694	7.7	90
July 16.....		8.9	.07	71		75	2.6	260	17	106	.6	.7		454	421	224	11	746	7.7	100

2-2835. NORTH NEW RIVER CANAL BELOW CONTROL HGS-4, NEAR SOUTH BAY, FLA.

Oct. 1, 1962.	-266	25	0.13	154	53	96	4.8	498	179	130		4.5			891	602	194	1380	8.0	240
Nov. 1.....	193	19	.11	88	30	122	5.7	370	45	175		4.1			669	343	26	1120	7.6	200
Dec. 3.....	101	16	.19	84	29	120	5.3	376	44	160		.2			644	330	22	1050	7.4	160
Jan. 2, 1963.	170	10	.05	69	18	67	4.3	252	52	92		1.8			438	248	42	750	8.4	90
Feb. 5.....	-12	24	.07	104	46	183	8.4	466	87	238		2.7			923	450	68	1420	7.9	200
Mar. 11.....	62	24	.06	92	44	173	7.0	434	76	225		.5			860	410	54	1200	8.0	180
July 31.....	442	10	.12	42	17	46	2.2	150	91	39		.3			322	176	53	501	7.6	40
Sept. 16.....	199	6.2	.02	59	21	58	3.6	216	45	80		1.0			379	232	55	689	7.2	50

2-2848. NORTH NEW RIVER CANAL AT HOLLOWAY LATERAL, NEAR FT. LAUDERDALE, FLA.

Nov. 8, 1962.		8.6	0.04	75	11	46	1.9	264	12	68		0.1			353	232	16	612	7.8	70
Jan. 10, 1963		7.2	.03	78	13	51	2.1	282	10	72		4.3			373	248	17	520	7.8	70
July 30.....		7.9	1.6	85	12	53	1.4	303	8.2	76	0.0	1.0			394	260	12	673	7.6	60

2-2861. SOUTH NEW RIVER CANAL AT S-13, NEAR DAVIE, FLA.

Oct. 10, 1962	--	9.1	0.05	94	6.2	54	1.5	312	24	62		0.7			406	260	4	679	7.9	80
Nov. 8.....	188	9.2	.37	94	12	47	2.1	320	20	68		2.0			413	284	22	700	7.7	85
Dec. 6.....	--	7.4	.05	93	13	45	1.2	320	19	63		.8			400	286	24	690	8.2	80
Jan. 10, 1963	--	35	.06	96	12	45	1.8	320	17	66		5.5			436	288	26	635	8.0	100
Mar. 9.....	--	7.3	.04	88	14	43	1.4	318	12	58		.9			382	276	16	580	7.9	80
July 17.....	251	8.6	.04	85	19	21	1.0	296	16	54	0.4	1.0		426	352	291	48	606	7.6	60
July 30.....	--	7.5	2.1	89	14	48	1.0	324	12	70		1.1			403	280	15	689	7.5	80

SNAKE CREEK CANAL AT HIGHWAY 7, NEAR NORTH MIAMI BEACH, FLA.

June 3, 1963.		4.8	0.03	84	8.6	35	0.8	286	10	48	0.5	0.0		344	333	245	10	565	7.8	55
July 15.....		5.8	.04	88	7.9	33	1.2	284	16	46	.4	.1		386	338	252	20	565	7.4	70
Sept. 15.....		7.6	.02	88	8.4	31	1.8	288	14	43	.4	1.3		374	338	254	18	577	7.6	70

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids: Residue at 180°C	Dissolved solids: Calculated	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
LAKE OKEECHOBEE AND THE EVERGLADES BASINS--Continued																				
2-2863.2. BISCAYNE CANAL AT RED ROAD, NEAR OPA-LOCKA, FLA.																				
Oct. 1, 1962.		6.3	0.04	92	7.4	16	2.4	290	14	24	0.2	0.7		346	306	260	22	505	7.7	45
Nov. 1.....		5.9	.05	92	6.9	16	1.3	278	6.8	24	.2	.8		324	291	258	30	477	7.7	35
Dec. 3.....		6.4	.04	91	6.1	20	1.2	286	10	28	.5	.1		354	304	252	18	500	7.6	50
June 27, 1963		6.2	.03	90	4.7	13	1.0	275	12	24	.5	1.1		318	288	244	18	480	7.8	50
July 15.....		5.9	.03	88	11	46	2.2	282	19	78	.4	.1		460	390	264	33	653	7.5	50
Sept. 15.....		7.0	.02	88	6.0	14	1.6	280	12	23	.4	.5		314	291	244	14	488	7.7	50
OPA-LOCKA CANAL AT 27th AVENUE, MIAMI, FLA.																				
July 15, 1963		6.1	0.02	83	8.0	26	2.5	260	18	37	0.1	0.1		346	309	240	27	530	7.6	50
Sept. 14.....		15	.00	58	7.7	46	2.9	226	14	49	.9	.0		332	304	176	0	505	7.1	35
2-2863.8. LITTLE RIVER CANAL AT S-27, AT MIAMI, FLA.																				
July 15, 1963	6.0	7.0	0.03	88	7.9	20	2.2	278	18	30	0.4	1.1		356	312	252	24	512	7.5	45
Sept. 14.....	44	7.3	.02	92	7.4	18	3.1	288	16	26	.3	.0		348	312	260	24	530	7.1	50
2-2864. MIAMI CANAL AT HGS-3 AND S-3, AT LAKE HARBOR, FLA.																				
Oct. 1, 1962..	-606	8.4	0.15	102	17	40	2.0	310	57	59		0.2			439	324	70	730	7.3	320
Feb. 4, 1963..	-215	--	--	--	--	--	--	--	--	--		--			--	--	--	500	--	60
July 31.....	297	1.6	.08	42	12	46	2.6	139	48	62	0.4	.1			--	156	42	500	7.7	30
Sept. 16.....	291	2.4	.01	48	17	44	3.1	160	45	64		.0			302	188	57	528	7.0	30
GOLDEN GLADES CANAL AT MIAMI CANAL, FLA.																				
July 15, 1963.		6.8	0.05	77	6.8	22	0.3	257	5.2	35	0.4	0.4		334	281	220	10	470	7.3	60
Sept. 16.....		5.4	.02	82	6.2	21	1.1	272	4.4	30	.4	.0		326	285	230	7	482	7.4	70
2-2880. MIAMI CANAL LATERAL, AT PENNSUCO, FLA.																				
July 15, 1963.		7.5	0.03	101	6.3	18	1.4	320	4.8	29	0.3	2.6		396	329	278	16	553	7.2	50
Sept.16 (above control)....		7.3	.02	94	12	18	1.8	320	6.4	28	.3	4.6		374	330	284	22	558	7.6	60
(below control).....		7.3	.02	102	2.3	20	1.4	304	9.6	30	.3	1.3		360	324	264	15	533	7.3	70

2-2885. MIAMI CANAL AT WATER PLANT, HIALEAH, FLA.

June 27, 1963	4.6	0.04	80	6.4	17	0.1	266	6.4	26	0.4	0.0	310	272	226	8	463	7.7	30
July 15.....	5.3	.03	83	7.3	17	.6	274	9.2	25	.3	.0	320	283	237	12	473	7.9	45
Sept. 14.....	6.2	.03	85	7.3	20	1.3	278	7.2	29	.3	1.3	344	295	242	14	500	7.5	75

RUSSIAN COLONY CANAL AT CORAL GABLES, FLA.

July 15, 1963	4.9	0.04	86	6.7	18	0.3	286	4.4	28	0.3	0.4	324	290	242	8	480	7.8	50
Sept. 16.....	6.0	.02	92	6.0	14	.8	286	9.6	21	.3	2.4	324	293	254	20	488	7.6	65

TAMIAMI CANAL AT BRIDGE 45, NEAR MIAMI, FLA.

Oct. 15, 1962	5.7	0.05	98	6.2	12	0.5	300	5.2	18	0.2	3.1	340	297	270	24	488	7.5	60
Dec. 14.....	3.9	.12	94	1.8	13	.2	278	4.4	24	.3	.5	328	279	242	14	485	7.7	80
Dec. 15.....	4.0	.08	90	4.3	11	.2	270	5.2	20	.3	2.8	322	271	242	20	468	7.7	80
July 15, 1963	4.8	.03	93	4.4	18	.1	277	17	28	.4	2.4	354	304	250	23	511	7.5	50
Sept. 14.....	6.1	.02	82	4.3	3.5	.8	252	9.2	19	.3	2.1	298	251	222	16	442	7.5	80

2-2905. TAMIAMI CANAL ABOVE CORAL GABLES CANAL, AT MIAMI, FLA.

Nov. 9, 1962	4.7	0.02	82	5.2	16	0.6	260	10	26	0.3	0.5	290	273	226	13	462	8.2	45
Sept.15,1963	5.8	.01	87	3.6	14	1.5	264	16	23	.3	.1	302	281	232	16	469	7.4	35

2-2907. SNAPPER CREEK CANAL AT MILLER DRIVE, NEAR SOUTH MIAMI, FLA.

Oct. 1, 1962.	4.9	0.03	82	3.8	14	0.7	246	10	20	0.2	1.0	284	258	220	18	438	7.4	25
Nov. 1.....	4.9	.04	80	8.4	16	1.2	252	9.6	24	.2	1.7	290	270	234	28	446	7.2	25
Dec. 4.....	4.8	.03	84	5.0	15	.7	254	10	19	.4	3.0	298	267	230	22	440	7.8	40
June 27, 1963	4.8	.02	80	6.0	15	.3	249	8.3	23	.3	2.5	304	263	224	20	439	7.6	25
July 15.....	4.2	.04	82	8.6	15	.5	261	6.4	24	.4	.9	290	271	240	26	450	7.5	40
Sept. 14.....	5.6	.02	83	5.6	15	.9	280	6.8	22	.3	.9	312	278	230	0	467	7.5	45

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids		Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate			
LAKE OKEECHOBEE AND THE EVERGLADES BASINS--Continued																				
EVERGLADES STATION 1-7, FLA.																				
Nov. 6, 1962..		2.1	0.10	5.6	1.2	11	0.4	12	0.4	17	0.0				44	19	9	88	7.7	110
Dec. 3.....		.7	.09	6.8	1.2	13	.5	12	.4	22	.1				51	22	12	110	6.8	100
Jan. 4, 1963..		.7	.08	6.4	1.9	15	.9	12	.8	26	.2				58	24	14	125	6.7	100
EVERGLADES STATION 1-5, FLA.																				
Jan. 15, 1963.		2.1	0.18	42	10	62	2.6	164	11	87		0.0			298	146	12	472	7.4	300
Jan. 15 (time 1:55 p.m.)..		3.5	.10	66	26	132	5.3	282	35	180		.1			597	270	22	1000	8.6	160
EVERGLADES STATION 1-9, FLA.																				
Oct. 8, 1962..		2.5	0.09	11	0.4	10	1.3	24	--	16		0.0			--	29	10	100	6.8	200
Nov. 6.....		.7	.14	8.0	.7	10	.7	14	0.4	16		.1			44	23	12	89	6.9	150
Dec. 3, ...		.6	.13	7.2	1.2	11	.7	14	.4	18		.2			46	23	12	100	7.0	140
Jan. 4, 1963..		.8	.17	8.0	1.2	13	1.1	14	.8	22		.1			54	25	14	115	6.9	140
Sept. 9.....		2.9	.03	11	.1	11	.4	20	2.6	22		.0			60	28	11	128	7.0	50
EVERGLADES STATION 2-14, FLA.																				
June 10, 1963.		17	0.11	80	24	130	3.4	354	27	167		2.4			625	297	0	1050	7.5	120
Aug. 6.....		23	.19	99	8.0	118	3.5	336	32	140		2.8			592	280	4	1000	7.2	100
Sept. 9.....		22	.11	62	12	104	1.4	244	23	148		2.4			625	297	0	1050	7.5	120
EVERGLADES STATION 2-16, FLA.																				
July 1, 1963..		17	0.17	75	27	119	4.8	332	55	158		0.1			620	300	28	1010	7.3	160
Aug. 6.....		17	.11	90	5.7	118	5.0	295	34	162		1.0			578	248	6	1000	7.5	100
Sept. 9.....		19	.13	94	4.3	162	8.2	304	33	218		4.6			693	252	3	1200	7.3	100
EVERGLADES STATION 2-15, FLA.																				
Aug. 6, 1963		34	2.0	118	9.1	115	2.3	399	27	188		0.0			672	332	54	1120	7.1	100
Sept. 9.....		29	1.1	120	9.8	100	4.9	384	38	150		2.0			643	340	26	1100	7.3	100

EVERGLADES STATION 2-19, FLA.

Aug. 1, 1963		14	0.14	72	3.8	94	4.2	212	32	132		0.6			457	195	22	752	6.9	100
Sept. 2.....		11	.09	56	3.0	61	3.3	171	18	76		.1			313	152	12	532	7.2	100

EVERGLADES STATION 2-21, FLA.

Aug. 1, 1963		14	0.23	80	2.1	75	2.6	236	8.2	110		0.0			408	208	14	681	8.0	50
Sept. 9.....		21	.09	61	1.9	46	3.4	180	10	68		.0			300	160	12	500	6.9	100

EVERGLADES STATION 2-22, FLA.

June 10,1963		5.8	0.24	53	15	47	2.0	196	27	66		0.2			313	192	32	539	7.6	60
Aug. 1.....		11	.19	70	6.2	66	2.7	196	50	82		.1			385	200	40	628	7.9	70
Sept. 2.....		18	.20	59	4.1	87	3.1	178	11	126		.0			396	164	18	689	6.8	50

2-2908.1. EVERGLADES P-37, NEAR HOMESTEAD, FLA.

Nov.16,1962		1.6	0.01	52	5.0	28	0.6	168	0.4	53	0.2	0.1	--	238	224	150	12	413	7.9	3
July 25,1963		3.4	.01	56	6.0	48	1.0	176	7.2	77	.0	.0	0.03	268	297	164	20	520	7.4	25
Sept. 19....		3.8	.00	39	3.5	14	1.3	132	.4	22	.0	.1	.00	152	149	112	4	274	7.6	15

2-2908.2. EVERGLADES P-38, NEAR HOMESTEAD, FLA.

Nov.16,1962		1.2	0.01	52	5.0	30	1.0	148	0.4	67	0.2	0.2	--	274	230	150	28	428	7.7	5
July 25,1963		3.7	.01	40	4.9	33	.8	106	.0	69	.0	.2	0.60	232	204	120	73	441	7.1	15
Sept. 19....		2.7	.00	40	1.9	13	.6	118	.0	26	.1	.0	.00	156	142	108	12	264	7.1	10

2-2908.4. ROOKERY BRANCH NEAR HOMESTEAD, FLA.

Feb. 4, 1963		3.8	0.08	224	219	2060	75	303	439	3540	0.3	14		7600	6720	1460	1210	10900	8.1	65
Feb. 4.....		1.9	.02	180	105	1050	33	266	186	1800	.1	8.9		3950	3510	880	640	580	8.4	65
Sept. 11....		7.4	.05	46	7.1	47	1.9	144	10	81	.0	.0	0.13	304	272	144	86	485	7.5	65

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids: Residue at 180°C	Dissolved solids: Calculated	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
LAKE OKEECHOBEE AND THE EVERGLADES BASINS--Continued																				
2-2908.42. TARPON BAY NEAR HOMESTEAD, FLA.																				
Feb. 4, 1963.		2.1	0.02	294	532	4810	131	300	1010	7890	0.5	29		6100	4800	2920	2670	21300	8.0	70
Sept. 11.....		7.0	.08	48	19	188	6.5	160	32	300	.7	.2	0.05	710	681	200	149	1200	7.4	90
2-2908.5. SHARK RIVER NEAR HOMESTEAD, FLA.																				
Feb. 6, 1963.	0.84	3.2	0.02	410	858	7740	298	272	1770	13200	0.9	172		26300	24600	4550	4330	33000	7.9	60
Sept. 11.....	1.09	5.0	.09	203	462	4140	149	216	933	6850	.2	2.2	0.07	13600	12900	2420	2240	19100	7.8	100
2-2908.6. HARNEY RIVER NEAR HOMESTEAD, FLA.																				
Feb. 4, 1963.	0.84	4.1	0.02	66	967	7060	247	288	1560	11700	0.8	155		23100	21900	4140	3900	29100	7.8	65
Sept. 11.....	1.16	5.7	.07	136	245	2080	75	206	453	3690	.1	.8	0.11	7200	6200	1350	1180	11500	7.8	100
2-2908.7. EVERGLADES P-34, NEAR HOMESTEAD, FLA.																				
Nov. 13, 1962.		1.0	0.01	54	2.3	9.9	0.8	168	0.8	18	0.0	0.0	--	182	170	144	6	304	7.9	5
July 26, 1963.		3.9	.15	64	4.0	12	.4	184	14	20	.1	.1	0.00	264	210	176	69	360	7.7	40
Sept. 17.....		4.7	.04	48	1.0	9.6	.4	140	1.2	17	.6	.1	.01	164	151	124	10	273	7.5	40
2-2909.75. TAMIAMI CANAL AT BRIDGE 86, NEAR OCHOPEE, FLA.																				
Nov. 15, 1962.		0.5	0.03	66	2.8	8.7	0.7	208	0.4	16	0.2	1.5		214	199	176	6	365	7.6	35
Dec. 14.....		.5	.01	75	2.7	7.8	.3	238	.4	15	.1	.0		330	219	198	3	398	7.3	25
Mar. 14, 1963.		2.3	.01	64	3.5	9.1	.3	200	2.0	16	.0	.1		214	196	174	10	340	7.8	30
Apr. 29.....		11	.01	74	3.8	8.1	1.0	224	2.0	17	.0	3.5		238	230	200	16	371	7.5	10
June 14.....		3.5	.02	75	4.6	6.4	.5	234	4.0	15	.0	.3		256	224	206	64	540	7.6	50
Aug. 16.....		3.8	.00	82	1.3	6.8	.2	254	1.6	12	.1	.0		258	233	210	2	418	7.8	30

2-2920. CALOOSAHATCHEE CANAL AT MOORE HAVEN, FLA.

Oct. 22, 1962.	10	7.7	0.10	62	9.6	26	2.0	196	28	40		0.0			272	194	34	472	7.4	30
Nov. 27.....	10	5.0	.07	58	13	33	2.5	186	39	48		.0			291	198	46	500	7.7	80
Jan. 2, 1963..	10	4.3	.02	59	14	36	2.7	194	37	50		.0			299	204	45	497	7.6	80
Mar. 12.....	10	4.2	.05	58	13	42	2.4	192	39	58		.2			312	200	42	534	7.7	100
July 31.....	10	1.5	.40	31	12	28	1.2	104	28	43		.0			196	128	43	352	7.4	60
Sept. 16.....	10	2.7	.02	43	13	36	2.4	136	41	52		.0			257	161	50	462	7.2	50

2-2924. CALOOSAHATCHEE CANAL AT ORTONA LOCK, NEAR LA BELLE, FLA.

Oct. 22, 1962..		5.2	0.18	42	3.6	14	0.8	132	8.0	20		0.0			159	120	12	280	7.5	120
Nov. 27.....		4.7	.10	58	4.3	17	1.5	174	15	26		.0			213	162	20	365	7.9	75
Jan. 2, 1963..		4.0	.04	69	14	28	2.7	236	30	44		.0			305	228	40	521	7.3	80
July 31.....		6.3	.19	72	9.4	31	1.3	224	23	42		.0			298	218	34	500	7.8	70
Sept. 17.....		7.7	.03	64	8.9	30	1.9	199	28	44		.1			283	196	33	480	7.1	50

2-2930. ORANGE RIVER AT BUCKINGHAM, NEAR FORT MYERS, FLA.

Oct. 1, 1962..		6.0	0.01	62	5.2	24	0.8	172	29	38	--	0.0		--	250	176	35	430	7.6	50
Dec. 31,.....		7.2	.00	110	14	50	1.5	300	56	92	0.0	.0		558	479	332	86	802	7.8	50
Apr. 2, 1963..		7.3	.05	100	12	46	1.2	276	52	75	.4	.0		470	430	300	74	643	7.7	50
July 1.....		7.8	.02	87	9.5	43	1.2	240	39	73	.3	.0		--	370	256	60	650	7.7	40

MYAKKA RIVER BASIN

2-2982. MYAKKA RIVER AT MYAKKA CITY, FLA.

Feb. 18, 1963..	A 247	1.6	0.15	4.8	1.2	6.1	0.2	6	5.6	12	0.4	0.0	0.66	72	34	17	12	67	6.1	120
Sept. 20.....	1940	4.4	.04	2.0	1.2	2.0	.7	6	1.6	3.0	.1	.0	.31	56	18	10	5	35	6.1	150

2-2990. MYAKKA RIVER NEAR SARASOTA, FLA.

May 11-18, 20-21, 1963..	0.1	0.8	0.26	8.8	4.9	10	1.1	19	13	20	0.4	1.5	0.95	126	71	42	26	126	6.6	120
May 22-25, 27-31.....	.1	.3	0.3	8.8	3.9	10	1.2	19	13	20	.4	2.0	.93	146	70	38	22	128	6.6	100

A Daily mean discharge.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids: Residue at 180°C	Dissolved solids: Calculated	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
SHAKETT CREEK BASIN																				
2-2997. COW PEN SLOUGH NEAR BEE BRIDGE, FLA.																				
Feb. 20, 1963.	A 102	3.0	0.06	21	4.5	10	0.9	28	40	17	0.3	1.1	0.10	148	112	71	48	188	7.0	80
Sept. 20.....	35	5.8	.07	16	3.2	6.1	.4	35	20	11	.1	.0	.00	114	80	53	24	140	6.8	90
PHILLIPPI CREEK BASIN																				
2-2997.5. PHILLIPPI CREEK NEAR SARASOTA, FLA.																				
Feb. 19, 1963.	A 177	6.6	0.04	71	17	6.4	6.4	81	163	22	0.8	6.1	1.4	426	349	238	172	496	7.2	65
Sept. 20.....	50	9.5	.13	14	39	17	5.3	87	112	26	.7	.0	1.9	330	269	196	124	440	6.6	100
COASTAL BASINS BETWEEN MYAKKA RIVER AND ALAFIA RIVER																				
MAIN B CANAL AT SARASOTA, FLA.																				
Feb. 19, 1963.		4.6	0.11	28	13	10	2.8	61	25	13	0.4	1.5	1.2	138	119	78	28	193	7.2	60
Sept. 20.....		5.8	.22	16	5.4	8.1	1.7	40	14	20	.5	.0	1.9	82	94	62	29	142	6.5	150
ALAFIA RIVER BASIN																				
2-3015. ALAFIA RIVER AT LITHIA, FLA.																				
Oct. 2, 1962..	A 568	23	0.09	23	11	15	1.6	G 5	54	20	9.4	3.1	47	230	210	102	98	359	5.9	100
Oct. 5.....	A 451	27	.17	28	9.2	17	1.8	G 2	64	21	10	7.7	50	266	237	108	106	318	5.4	90
Nov. 27.....	A 205	34	.03	44	14	24	1.4	G 28	103	34	12	1.2	66	362	336	168	164	455	6.4	35
Jan. 22, 1963.	A 236	25	.05	52	11	23	2.7	G 0	101	28	9.9	7.4	72	334	332	174	174	428	6.3	25
Aug. 26.....	A 731	23	.09	46	9.0	38	3.4	16	65	88	3.4	.0	--	330	280	152	139	482	5.9	100
2-3017.3. ALAFIA RIVER AT RIVERVIEW, FLA.																				
Oct. 1, 1962 (time 1055)		18	0.06	226	12	19	1.8	13	51	32	6.6	1.8	33	216	208	114	104	376	6.6	80
Oct. 1, (time 1630)		19	.12	27	11	21	1.6	12	50	34	6.6	2.4	30	226	209	112	102	343	6.7	100

2-3017.6. ALAFIA RIVER AT GIBSONTON, FLA.

Oct. 1, 1962..																				
(time 1025).		9.5	0.02	188	380	3430	118	52	856	5950	5.1	0.3	21	11300	10800	2030	1990	15800	7.1	60
(time 1600).		5.5	.02	232	572	4780	178	78	1230	8500	3.9	1.9	14	16700	15500	2930	2870	22000	7.3	50

HILLSBOROUGH RIVER BASIN

2-3030. HILLSBOROUGH RIVER NEAR ZEPHYRHILLS, FLA.

Oct. 3, 1962..	211	8.6	0.14	34	3.6	5.3	0.9	106	6.4	9.0	0.3	0.1		166	120	100	13	212	7.2	130
Nov. 2.....	102	11	.01	54	5.2	6.1	1.0	178	8.4	10	.2	1.0		202	185	156	10	315	7.5	15
Dec. 20.....	103	11	.01	53	4.9	7.8	2.0	176	8.0	11	.3	1.1		210	186	152	8	316	7.6	5
Aug. 26, 1963.	343	6.8	.12	26	2.7	5.4	1.3	73	8.0	12	.4	.0	1.6	108	100	76	22	165	7.2	10

COASTAL BASINS BETWEEN HILLSBOROUGH RIVER AND WITHLACOOCHEE RIVER

2-3100. ANCLOTE RIVER NEAR ELFERS, FLA.

Oct. 16-21, 25,																				
1962.....	A15	6.9	0.22	32	1.5	5.7	0.7	91	6.4	112	0.3	0.0	0.00	147	111	86	112	190	7.5	140
Oct. 26-31.....	A7.7	8.5	.15	50	1.5	5.9	.7	141	10	12	.3	.0	.10	183	158	131	16	269	7.5	140

2-3107.5. CRYSTAL RIVER NEAR CRYSTAL RIVER, FLA.

Feb. 15, 1963																				
Site 1.....		6.6		36	7.1	27	0.8	112	16	45	0.2	0.3		204	194	119	27	335	7.5	
2.....		--		31	5.0	--	--	104	--	15	--	.0		--	--	98	13	223	7.6	
3.....		--		36	7.8	--	--	117	--	73	--	.0		--	--	122	26	425	7.7	
4.....		6.9		56	41	340	11	140	74	550	.1	1.3		1240	1150	308	194	2000	7.9	
5.....		--		40	15	--	--	128	---	134	--	.0		--	--	160	55	650	8.0	
7.....		--		51	34	--	--	134	--	400	--	1.3		--	--	266	156	1550	7.9	
8.....		6.9		48	30	208	6.8	130	51	350	.1	1.2		824	766	234	136	1330	8.8	

A Daily mean discharge.

G Adjusted for phosphate (PO_4) value.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963--Continued

Date of collection	Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Phosphate (PO_4)	Dissolved solids: Residue at 180°C	Dissolved solids: Calculated	Hardness as $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Specific conductance (micromhos at 25°C)	pH	Color
COASTAL BASINS BETWEEN HILLSBOROUGH RIVER AND WITHLACOOCHEE RIVER--Continued																				
2-3107.6. LAKE MATTIE NEAR POLK CITY, FLA.																				
Nov. 1, 1962																				
Site 2....		2.1	0.10	5.6	1.0	13	4.3	4	17	19	0.3	0.1		84	64	18	14	115	5.5	150
13...		2.3	.15	4.8	1.5	12	4.2	3	16	19	.3	.1		78	62	18	16	115	5.5	150
WITHLACOOCHEE RIVER NEAR INGLIS, FLA.																				
Mar. 21, 1963																				
Above dam..		4.7	0.07	44	2.7	5.3	0.6	110	22	10	0.3	0.7	0.17	180	144	121	31	252	7.2	90
Below dam..		4.7	1.10	43	2.8	5.2	.4	112	19	10	.3	.6	.02	180	62	119	27	246	7.3	100
APALACHICOLA RIVER BASIN																				
2-3570. SPRING CREEK NEAR IRON CITY, GA.																				
Oct. 12, 1962	122							109								91	2	185	7.6	
Oct. 12, 1962	225							108								92	4	185	7.4	
COASTAL BASINS BETWEEN APALACHICOLA RIVER AND ECONFINA CREEK																				
2-3593.2. NORTH BAY AT LYNN HAVEN, FLA.																				
Nov. 29, 1962										12400								28300		8
Jan. 17, 1963		1.4	0.01	256	745	6240	246	96	1530	11300	0.8	183		21400	20500	3700	3620	27000	7.5	20
WETAPPO CREEK NEAR WEWAHITCHKA, FLA.																				
Nov. 25, 1962	44.3	5.7						2		4.0				37		6	4	29	5.3	45
May 14, 1963.	10.5	4.1	0.17	2.8	0.5	2.8	0.5	9	0.0	4.5	0.0	0.7		22	20	9	2	32	6.6	50

ECONFINA CREEK BASIN

2-3594.5. ECONFINA CREEK AT WALSINGHAM BRIDGE NEAR FOUNTAIN, FLA.

Oct. 31, 1962.	86.4	4.9						26		1.2				32		22	1	53	6.9	10
May 12, 1963..	75	2.8	0.04	8.0	1.5	1.8	0.4	30	0.0	3.2	0.0	0.5		36	33	26	2	56	7.1	30

2-3595.5. BEAR CREEK NEAR YOUNGSTOWN, FLA.

Oct. 30, 1962.	46	4.7						12		2.0				20		10	0	28	6.9	15
Dec. 17.....	65	4.8						9		2.8				22		9	2	27	6.3	40
May 13, 1963..	52	1.7	0.10	2.8	0.5	2.0	0.3	9	0.4	3.0				14	16	9	2	29	6.8	40

2-3596. LITTLE BEAR CREEK AT YOUNGSTOWN, FLA.

Oct. 30, 1962.	27.4	3.3						5		1.5				11		4	0	17	6.1	6
Dec. 19.....	31.4	3.6						4		1.8				13		4	0	17	6.2	20

2-3596.1. WHITE OAK CREEK NEAR GREENHEAD, FLA.

Nov. 29, 1962.	4.9	4.5						2		2.5				15		2	0	14	5.2	35
Jan. 17, 1963.	8.1	4.8	0.12	2.8	0.4	1.7	0.0	8	0.4	3.5	0.2	0.0		24	18	8	2	28	6.3	200

2-3596.5. BIG CEDAR CREEK NEAR BENNETT, FLA.

Nov. 28, 1962.	5.9	4.0	--	--	--	--	--	14	--	2.0	--	--		25	--	12	1	32	6.7	25
Jan. 16, 1963.	9.9	4.9	0.10	0.8	0.1	1.4	0.1	2	0.0	3.0	0.1	0.0		12	12	2	1	19	5.0	40
May 13.....	3.0	2.3	.05	5.4	.1	1.7	.2	19	.0	.5	.1	2.1		8	22	14	0	35	7.2	30

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1962 to September 1963

Date of collection	Mean discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Strontium (Sr)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (calculated)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH	Color
															Parts per million	Tons per acre-foot	Tons per day	Calcium, magnesium	Noncarbonate				
MOBILE RIVER BASIN																							
2-4365. WEST FORK TOMBIGBEE RIVER NEAR NETTLETON, MISS.																							
Feb. 5, 1963...		1.1	0.06	41	2.3		7.8	1.8	106	27	9.5	0.3	1.3		A151	0.21		112	25	0.3	264	7.1	30
Sept. 8.....		8.4	.01	54	3.7		26	3.5	152	29	36	.5	4.8		A243	.33		150	25	.2	419	7.7	5
2-4415. TOMBIGBEE RIVER AT COLUMBUS, MISS.																							
Sept. 12, 1963.		6.6	0.02	12	1.5		2.5	1.4	40	4.6	3.0	0.2	0.1		A62	0.08		36	3	0.2	89	6.6	5
Sept. 17.....		7.5	.02	15	1.6		3.9	1.6	50	4.4	4.9	.1	.1		A64	.09		44	3	.3	108	6.7	10
2-4710. CHICKASAW CREEK NEAR WHISTLER, ALA.																							
Nov. 6, 1962...		5.8	0.14	1.0	0.1		2.8	0.6	6	0.0	3.1	0.1	0.2		17	0.14		3	0	0.7	19	6.3	10
Sept. 11, 1963.		7.0	.05	1.0	.4		2.1	.4	5	.0	3.3	.0	.2		16	.02		4	0	.4	20	6.6	20
PASCAGOULA RIVER BASIN																							
2-4730. LEAF RIVER AT HATTIESBURG, MISS.																							
Nov. 26, 1962..		10	0.10	3.2	1.0		4.6	1.3	8	0.0	11	0.4	0.2		36	0.05		12	5	0.6	63	5.8	30
May 22, 1963...		5.9	.00	6.0	2.4		184	3.1	8	8.0	290	.1	.2		A518	.70		25	18	16	996	6.3	15
2-4785. CHICKASAWHAY RIVER AT LEAKSVILLE, MISS.																							
Nov. 27, 1962..		8.7	0.02	1.5	1.8		4.8	1.6	18	5.2	95	0.1	0.2		185	0.25		45	30	3.1	364	6.2	20
July 3, 1963...		26	.01	11	5.5		26	1.6	30	7.2	52	.0	.4		145	.20		50	25	1.6	240	7.2	15
2-4795. ESCATAWPA RIVER NEAR WILMER, ALA.																							
Nov. 6, 1962...		8.0	0.12	2.4	0.5		3.4	0.4	3	0.0	9.6	0.0	0.3		26	0.04		8	6	0.5	37	5.8	5
Sept. 12, 1963.		7.5	.13	1.2	1.7		2.1	.3	3	3.0	6.3	.0	.2		23	.03		10	8	.3	31	5.8	20
PEARL RIVER BASIN																							
2-4860. PEARL RIVER AT JACKSON, MISS.																							
Jan. 11, 1963..		8.0	0.36	2.1	1.4		4.6	1.6	12	4.2	6.0	0.0	0.4		35	0.05		11	1	0.6	51	6.0	100
May 13.....		4.4	.08	5.3	1.9		3.5	1.3	22	4.4	5.0	.3	.3		37	.05		21	3	.3	69	6.0	30

2-4885. PEARL RIVER AT MONTICELLO, MISS.

Jan. 3, 1963...		9.8	0.25	3.6	0.7		7.6	2.1	17	5.8	7.8	0.1	1.4		47	0.06		12	0	1.0	76	6.1	80
May 20.....		9.8	.00	6.1	2.1		8.3	1.7	14	19	8.0	.2	.2		62	.08		24	13	.7	98	6.1	5
Aug. 20.....		7.0	.01	5.6	1.0		6.2	2.1	11	14	5.8	.1	1.8		49	.07		18	9	.6	80	6.2	5
2-4892.25. HALF MOON CREEK NEAR BAXTERVILLE, MISS.																							
Nov. 20, 1962..		7.3	0.05	0.0	0.7		2.3	0.8	7	0.0	2.1	0.0	0.2		16	0.02		3	0	0.6	18	6.7	20
July 17, 1963..		9.7	.03	1.0	.6		2.5	.7	6	.0	4.6	.0	.3		22	.03		5	0	.5	24	6.3	20
2-4892.30. HURRICANE CREEK NEAR BAXTERVILLE, MISS.																							
Nov. 20, 1962..		7.6	0.13	0.9	0.4		2.3	0.8	6	0.0	3.6	0.0	0.3		19	0.03		4	0	0.5	17	6.8	40
July 17, 1963..		9.2	.06	1.0	1.1		.2	.3	4	.0	3.2	.0	.3		A17	.02		7	4	.0	18	6.3	30
2-4892.35. BAY CREEK NEAR BAXTERVILLE, MISS.																							
Nov. 20, 1962..		8.3	0.14	0.7	0.5		2.5	0.8	7	0.0	3.5	0.0	0.3		20	0.03		4	0	0.6	20	6.5	40
July 17, 1963..		8.4	.03	.9	.7		2.9	.5	6	.0	4.7	.0	.3		A20	.03		5	0	.6	21	6.4	30
2-4892.37. LOWER LITTLE CREEK NEAR BAXTERVILLE, MISS.																							
Nov. 20, 1962..		6.9	0.09	0.7	0.3		2.5	0.8	7	0.0	2.8	0.0	0.2		17	0.02		3	0	0.6	19	6.8	30
July 17, 1963..		9.2	.05	1.0	.4		2.3	.5	5	.0	3.7	.0	.2		19	.03		4	0	.5	20	6.4	20
2-4892.39. GULLY CREEK NEAR BAXTERVILLE, MISS.																							
Nov. 20, 1962..		6.9	0.07	0.8	0.5		2.3	0.9	7	0.0	3.0	0.0	0.2		18	0.02		4	0	0.5	20	7.0	20
July 17, 1963..		7.0	.02	.6	.6		2.8	.4	5	.8	3.8	.0	.2		A17	.02		4	0	.6	18	6.6	15

A Residue at 180°C.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1961 to September 1962

Date of collection	Mean Discharge (cfs)	Silica (SiO_2)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Strontium (Sr)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO_3)	Sulfate (SO_4)	Chloride (Cl)	Fluoride (F)	Nitrate (NO_3)	Boron (B)	Dissolved solids (residue at 180°C)			Hardness as $CaCO_3$		Sodium adsorption ratio	Specific conductance (micromhos at 25°C)	pH	Color
															Parts per million	Tons per acre-foot	Tons per day	Calcium, magnesium	Noncarbonate				
PASCAGOULA RIVER BASIN																							
2-4730. LEAF RIVER AT HATTIESBURG, MISS.																							
Oct. 23, 1961.	610	8.7	0.00	3.4	0.1		51	1.2	12	1.2	78	0.1	0.0		161	0.22	265	.9	0	7.3	286	6.1	20
Aug. 13, 1962.	766	8.0	.00	4.2	.9		102	1.9	12	4.4	159	.0	.0		292	.40	604	14	4	12	547	6.1	5
2-4790. PASCAGOULA RIVER AT MERRILL, MISS.																							
Mar. 28, 1962.	9300	7.1	0.16	5.5	0.7		21	0.9	14	2.8	34	0.0	0.0		A79	0.11	1980	17	5	2.2	143	6.3	20
Aug. 15.....	1910	7.3	.00	6.8	1.2		54	1.7	19	3.4	90	.0	.0		190	.26	980	22	6	5.0	337	6.3	5
2-4793.3. PASCAGOULA RIVER AT CUMBEST BLUFF, MISS.																							
Mar. 29, 1962.		7.1	0.15	4.9	0.4		13	0.9	7	2.4	25	0.1	0.1		A58	0.08		14	8	1.5	110	6.5	20
Aug. 16.....		7.3	.01	6.0	1.7		31	1.3	16	1.2	54	.0	.0		133	.18		22	9	2.9	211	6.4	5
PEARL RIVER BASIN																							
2-4860. PEARL RIVER AT JACKSON, MISS.																							
Oct. 2, 1961..	282	9.8	0.00	6.0	2.9		4.1	1.4	33	4.6	4.2	0.1	0.0		A49	0.07	37.3	27	0	0.3	78	6.7	20
May 22, 1962..	740	9.1	.20	7.8	.9		4.6	1.1	29	5.8	3.1	.1	.3		47	.06	93.9	23	0	.4	74	6.8	40
Sept. 4.....	204	9.4	.10	5.0	1.3		3.4	1.3	21	3.4	4.4	.0	.3		A40	.05	22.0	18	1	.4	64	6.1	0

A Calculated from determined constituents.

INDEX

U.S. GOVERNMENT PRINTING OFFICE: 1967 O - 239-654