Quality of Surface Waters of the United States 1961

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

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GEOLOGICAL SURVEY WATER-SUPPLY PAPER 1881

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

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

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PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Alabama, Connecticut, Delaware, District of Columbia, Florida, Georgia, Maryland, New Jersey, New York, North Carolina, Pennsylvania, 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 and prepared for publication under the supervision of the following district engineers or district chemists:

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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, 1961

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, 1960, to September 30, 1961. 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.

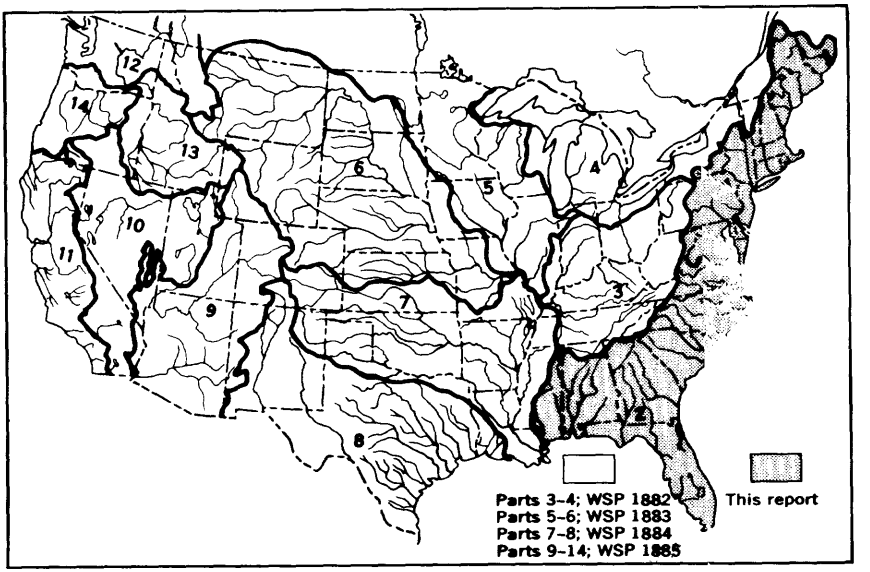

Figure 1.—Map of the conterminous United States showing basins covered by the five water-supply papers on quality of surface waters in 1961. The shaded portion represents the section of the country covered by this volume; the unshaded portion represents the section of the country covered by other water-supply 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, 1961, the Geological Survey maintained 181 stations on 121 streams for the study of chemical and physical characteristics of surface water. Samples were collected daily and monthly at 108 of these locations for chemical-quality studies. Samples were also collected less frequently at many other points. Water temperatures were measured daily at 116 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 31.

Quantities of suspended sediment are reported for 53 stations during the year ending September 30, 1961. 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 32 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 con-

centration 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 transverse 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

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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 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).

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

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

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 waters 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, C H)

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 of 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. Amourts 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

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).

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 or 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.

as an industrial coolant. Temperature is also important, but perhaps 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 measurable 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.

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

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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 considerable 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
New Hampshire		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 1941–61, are listed below:

Numbers of water-supply papers containing records for Parts 1 and 2, 1941–61

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

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 preliminary 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 Geological Survey, State Geologist, W. B. Jones succeeded by P. E. LaMoreaux.	South Atlantic slope and eastern Gulf of Mexico	Room 244 Federal Bldg. Ocala, Fla. 32670
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 Engineering, David Y. Auld, director.		724 York Road Towson, Md. 21204
Florida	Florida Geological Survey, Dr. R. O. Vernon, director. Central and Southern Florida Flood Control District, G. E. Dail Jr., executive director. Dade County, E. A. Anderson, County Engineer. Hillsborough County, County Commission, E. G. Simmons, chairman. Orange County, Board of County Commissioners, Jack W.	South Atlantic slope and eastern Gulf of Mexico	Room 244 Federal Bldg. Ocala, Fla. 32670

	McDowall, succeeded by F. B. Surguine, Jr., chairman. City of Miami, Department of Water and Sewers, C. F. Wertz, director. City of Miami Beach, M. N. Lipp, City Manager.		
Georgia	Department of Mines, Mining and Geology, Captain Garland Peyton, director.		
Maryland	Department of Geology, Mines, and Water Resources, Dr. J. T. Singewald, Jr., director. Natural Resources Institute, University of Maryland, Dr. L. Eugene Cronin, director.	North Atlantic slope	724 York Road Towson, Md. 21204
New Jersey	Department of Conservation and Economic Developement, H. Matt Adams, Commissioner. Division of Water Policy and Supply, George R. Shanklin, acting director and chief engineer. Division of Fish and Game, Dr. A Heaton Underhill, director.		Room 1302 U. S. Custon 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.	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, Dr. William L. Henning, secretary. Pennsylvania Department of Forests and Waters, Maurice K. Goddard, secretary. Soil conservation Commission, David Unger, director. City of Philadelphia, Richardson Dilworth, Mayor. Department of Water, Samuel S. Baxter, Water Commissioner.	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, district chemist or project chiefs as follows: In Delaware, New Jersey, and Pennsylvania, N. H. Beamer; North Carolina, South Carolina, and Virginia, G. A. Billingsley; Florida and Georgia, J. W. Geurin, succeeded by K. A. MacKichan; New York and New England, F. H. Pauszek; and in 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.

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CHEMICAL ANALYSES, WATER TEMPERATURES, AND SEDIMENT
PART 1. NORTH ATLANTIC SLOPE BASINS
ST. CROIX RIVER BASIN

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

LOCATION.--Temperature recorder at gaging station on right bank 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F July 23; minimum, freezing point on many days during December, January, and February.
EXTREMES, 1959-61.--Water temperatures: Maximum, 80°F July 23, 1961; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	63	59	60	60	60	58	58	56	55	55	55	54	54	52	53	54	54	55	54	53	53	50	50	51	51	50	49	49	49	49	49	54
Minimum	59	56	58	58	58	57	55	53	52	52	54	53	52	51	52	53	53	54	51	53	50	49	48	50	50	49	48	48	48	48	48	52
November																																
Maximum	48	49	49	48	48	47	45	45	44	44	44	43	42	42	42	42	43	43	43	42	41	41	41	40	40	40	39	39	39	39	--	43
Minimum	48	48	48	48	47	45	44	43	44	44	42	42	42	42	41	41	42	42	42	41	40	40	40	39	39	39	39	38	38	38	--	42
December																																
Maximum	38	37	36	36	36	36	36	36	34	34	33	33	33	33	33	33	33	33	32	33	33	33	33	32	32	32	32	32	32	32	32	34
Minimum	37	36	36	35	36	36	36	34	33	33	33	33	33	33	33	33	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	33	33	33	33	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	33	33	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	33	33	33	33	33	33	33	34	33	33	33	34	33	--	--	--	33
Minimum	32	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	33	33	--	--	--	32
March																																
Maximum	33	33	33	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	34	33	33	34	34	33	33	34	34	34	33	33	34	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	33	33	33	33	33
April																																
Maximum	34	34	34	33	33	33	33	33	33	33	33	34	33	33	33	34	33	34	34	35	36	36	36	36	35	35	36	36	38	37	--	34
Minimum	33	34	33	33	33	33	33	33	33	33	33	33	32	32	32	33	33	33	33	33	34	35	35	35	35	34	34	35	36	37	--	34
May																																
Maximum	39	38	38	39	40	42	43	44	44	45	47	48	51	54	54	53	57	56	55	54	54	54	54	54	55	55	54	54	53	53	53	49
Minimum	37	37	37	38	38	39	41	43	43	44	44	45	47	49	52	52	53	54	54	52	52	51	52	52	52	53	54	53	53	53	53	48
June																																
Maximum	54	54	55	56	57	58	59	60	61	60	63	63	64	63	64	65	65	67	66	67	66	65	66	66	68	66	67	70	69	70	--	63
Minimum	53	53	54	55	56	57	57	58	59	60	60	60	61	62	61	61	62	62	62	63	64	65	64	64	65	64	65	65	66	67	--	61
July																																
Maximum	70	69	67	69	68	69	69	68	68	67	68	70	71	71	72	70	69	69	72	73	74	76	80	77	74	78	78	76	75	73	73	72
Minimum	67	67	65	65	65	66	66	66	66	66	66	66	67	68	68	67	66	68	68	69	69	70	72	71	73	73	73	73	73	71	67	68
August																																
Maximum	75	75	71	74	75	77	75	76	76	77	78	79	78	74	75	74	74	75	75	75	71	70	73	74	73	73	74	72	73	73	74	74
Minimum	69	68	68	69	69	69	68	70	71	71	73	73	73	68	70	70	69	69	69	69	68	68	67	68	69	70	70	67	69	70	70	69
September																																
Maximum	74	71	70	71	71	73	72	72	73	74	73	73	71	70	70	70	70	69	69	69	66	66	68	70	68	67	70	68	67	66	--	70
Minimum	70	70	68	68	69	68	67	68	68	68	68	70	69	69	69	67	65	60	65	64	65	66	66	65	66	66	65	66	64	63	--	67

1-212. DENNYS RIVER AT DENNYSVILLE, MAINE

LOCATION.--Temperature recorder at gaging station on right bank 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 78°F Aug. 12; minimum, freezing point Dec. 4 to Apr. 2.
EXTREMES, 1958-61.--Water temperatures: Maximum, 82°F July 29, 1959; minimum, freezing point during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	58	56	55	56	54	52	52	52	51	50	50	49	49	47	46	48	49	51	49	50	50	46	44	45	46	46	46	46	43	44	44	49
Minimum	56	55	54	53	52	52	51	49	48	48	48	48	47	46	46	46	48	49	48	48	46	44	43	43	45	46	44	43	43	43	43	48
November																																
Maximum	45	49	49	49	47	45	44	42	39	41	41	41	40	39	40	44	45	45	44	41	40	40	40	38	37	37	37	37	38	39	--	42
Minimum	44	45	49	47	45	44	42	39	39	39	41	40	39	39	39	40	44	44	41	40	40	40	38	37	37	37	37	37	37	38	--	41
December																																
Maximum	39	37	34	33	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	37	34	33	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
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
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
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	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
April																																
Maximum	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	34	37	38	38	37	36	37	37	39	42	43	43	--	35
Minimum	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	34	37	37	36	36	36	37	37	39	40	41	--	34
May																																
Maximum	43	43	40	42	45	47	47	47	46	47	51	53	55	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	53	--
Minimum	41	40	38	39	42	43	45	46	45	45	44	49	52	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	52	--
June																																
Maximum	55	55	55	59	59	58	58	59	60	60	60	62	65	65	62	61	63	65	67	67	67	66	65	63	67	67	67	68	70	72	--	63
Minimum	51	52	51	55	57	57	55	57	58	58	57	59	61	62	61	59	60	63	65	66	65	65	63	62	63	66	66	67	68	69	--	61
July																																
Maximum	71	69	66	70	69	69	71	68	68	67	68	71	73	72	73	71	69	68	71	72	74	77	77	75	73	77	74	73	72	71	72	71
Minimum	68	66	64	65	67	65	65	66	67	67	66	66	70	70	70	68	68	65	66	67	69	72	71	71	70	70	71	70	69	68	68	68
August																																
Maximum	74	70	68	70	71	73	75	77	76	77	76	78	77	74	73	71	70	71	72	74	70	70	70	71	72	77	74	73	71	70	75	73
Minimum	68	68	67	67	67	68	69	70	71	71	72	72	72	70	69	68	68	68	69	69	70	69	68	68	68	70	72	71	68	68	69	69
September																																
Maximum	73	72	69	68	68	71	70	69	70	72	74	75	73	71	70	69	67	65	64	64	64	64	67	67	68	67	66	65	63	62	--	68
Minimum	71	69	68	67	67	68	68	67	67	68	70	71	71	69	68	67	65	63	61	61	62	63	64	64	65	66	64	63	62	60	--	66

SHEEPSCOT RIVER BASIN

1-380. SHEEPSCOT RIVER AT NORTH WHITEFIELD, MAINE

LOCATION.--Temperature recorder at gaging station on left bank 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 1961.
EXTREMES, 1960-61.--Water temperatures: Minimum, freezing point on many days during December, January, and February.
EXTREMES, 1957-61.--Water temperatures: Minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	60	60	60	58	55	54	54	54	53	52	52	50	47	47	48	49	52	49	49	48	45	43	45	45	45	43	43	44	43	46	50
Minimum	59	57	56	54	52	52	50	50	49	48	48	49	46	45	46	47	48	49	46	48	44	42	42	43	44	43	42	42	42	42	43	47
November																																
Maximum	46	47	47	45	43	42	40	38	38	39	39	37	38	39	40	43	43	42	41	39	37	37	37	37	35	36	37	37	38	39	--	40
Minimum	44	46	45	43	42	40	38	36	37	38	37	37	37	38	39	40	42	41	39	37	36	36	37	35	34	34	35	36	36	38	--	38
December																																
Maximum	38	34	33	34	34	36	36	36	34	34	33	33	33	33	33	34	33	33	33	33	33	32	33	33	33	33	33	33	33	33	34	34
Minimum	34	33	32	33	33	34	36	34	33	33	33	33	33	33	33	33	32	32	33	33	32	32	32	33	33	33	33	33	33	33	33	33
January																																
Maximum	33	32	32	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	33	33	33	32
Minimum	32	32	32	32	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	33	33	32
February																																
Maximum	33	33	33	33	33	32	32	32	32	32	32	32	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33	--	--	--	33
Minimum	33	33	33	33	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	--	--	--	33
March																																
Maximum	33	33	33	33	33	33	34	34	34	34	34	34	34	33	34	35	34	34	34	35	35	36	36	34	35	36	36	35	34	34	35	34
Minimum	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	34	33	33	33	34	34	34	34	34	34	34	34	34	33
April																																
Maximum	34	34	34	35	35	35	35	37	36	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	34	34	34	34	34	34	34	34	35	35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
May																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
June																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
August																																
Maximum	74	74	73	75	76	75	75	76	83	79	81	79	78	75	74	75	74	74	75	75	73	73	73	72	74	82	76	76	73	80	77	76
Minimum	72	68	68	68	74	73	73	74	74	76	76	75	74	73	72	72	72	71	71	72	72	71	71	71	70	72	74	73	72	71	73	72
September																																
Maximum	80	77	74	77	80	81	76	76	78	79	80	80	78	76	76	73	71	70	71	71	70	70	73	76	78	73	72	72	71	68	--	75
Minimum	73	74	73	72	75	73	73	72	73	74	74	75	74	72	73	70	69	68	66	66	69	68	70	72	66	71	71	70	68	67	--	71

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

LOCATION.--Temperature recorder at gaging station on left bank 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, 1,000 feet downstream from railroad bridge, and at mile 6.1.
DRAINAGE AREA.--711 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1958 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 83°F July 26, 27; minimum, 34°F on many days in December, January and February.
EXTREMES, 1958-61.--Water temperatures: Maximum, 83°F July 26, 27, 1961; minimum, freezing point Jan. 21, 1956.

Temperature (°F) of water, water year October 1960 to September 1961
[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	62	60	61	59	59	57	57	56	57	56	56	57	57	57	59	59	61	59	58	57	56	54	52	51	49	48	47	48	49	48	48	55
Minimum	60	59	59	57	56	56	55	55	54	54	54	54	54	55	56	58	59	58	57	56	54	52	51	49	48	47	47	47	48	48	48	54
November																																
Maximum	50	51	51	50	49	47	46	46	44	44	44	44	43	43	43	45	46	47	47	46	45	45	44	44	43	43	42	42	44	44	--	45
Minimum	48	50	50	49	47	46	45	44	43	43	43	43	43	43	43	43	45	46	46	45	44	44	44	43	42	42	42	42	42	43	--	44
December																																
Maximum	44	42	40	39	38	38	38	38	37	37	36	35	35	35	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	36
Minimum	42	40	39	38	37	37	37	37	37	36	35	34	34	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	35	35	35	35	35	34	34	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
Minimum	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
February																																
Maximum	34	34	34	34	34	34	34	34	34	34	35	35	35	35	35	35	35	35	35	34	34	34	34	34	34	34	35	36	--	--	--	34
Minimum	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34	35	34	34	34	34	34	34	34	34	34	35	--	--	--	34
March																																
Maximum	36	36	37	38	38	38	38	38	38	37	36	36	36	37	37	38	38	37	37	37	38	39	40	41	41	42	43	44	46	47	47	39
Minimum	36	36	36	37	38	38	38	38	37	36	35	36	36	36	37	37	37	37	36	36	37	38	38	40	41	41	41	42	44	46	45	38
April																																
Maximum	45	44	43	42	43	43	44	44	46	46	46	46	46	45	45	46	46	46	46	47	48	51	54	54	54	56	57	57	57	55	--	48
Minimum	44	43	42	41	42	43	43	44	44	45	45	45	45	44	44	45	45	46	46	46	47	48	51	54	54	54	56	56	55	54	--	47
May																																
Maximum	54	54	53	52	54	55	55	55	56	57	59	60	60	63	66	67	67	66	64	62	60	60	61	62	62	62	62	60	60	61	61	60
Minimum	54	53	51	51	52	53	55	55	55	56	57	59	60	60	63	66	66	64	62	60	59	60	59	60	61	62	60	58	58	59	61	58
June																																
Maximum	62	64	66	68	68	68	71	69	69	70	70	72	73	76	74	74	72	72	72	73	72	72	72	72	72	73	73	73	74	74	--	71
Minimum	61	62	64	66	67	68	68	69	69	69	69	70	71	73	73	71	70	70	70	71	72	71	71	71	71	71	72	72	72	73	--	70
July																																
Maximum	77	76	76	77	76	75	75	75	74	74	74	75	76	74	74	74	74	76	77	76	77	81	81	78	80	83	83	82	78	80	81	77
Minimum	74	73	74	74	74	73	73	72	72	71	70	71	72	74	73	73	73	72	73	74	75	75	78	77	77	78	79	77	77	76	76	74
August																																
Maximum	80	77	75	74	73	75	75	77	78	78	78	80	79	77	75	76	77	76	75	75	73	75	73	73	73	74	76	78	77	78	78	76
Minimum	77	75	74	74	73	72	71	71	73	74	75	76	75	73	72	73	72	71	71	71	70	71	72	72	72	72	74	75	76	75	75	73
September																																
Maximum	79	79	78	78	81	81	78	77	78	79	79	80	78	79	77	75	74	72	71	70	70	66	68	71	71	70	70	69	69	67	--	74
Minimum	75	76	77	76	76	78	76	75	74	74	75	76	77	77	75	72	70	68	68	69	66	65	66	68	70	70	69	69	67	65	--	72

270-946 O - 67- 4

CONNECTICUT RIVER BASIN

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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 76°F Aug. 13; minimum, freezing point on many days during December, January, and February.
EXTREMES, 1954-61.--Water temperatures: Maximum, 85°F Aug. 5, 6, 1955, July 29, Aug. 17, 1959; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	59	56	56	55	54	54	54	53	53	54	54	53	52	55	55	56	56	54	50	49	47	45	44	44	44	44	44	44	45	45	51
Minimum	59	54	55	54	53	53	52	52	52	52	53	52	51	51	52	55	55	54	50	49	47	44	43	43	44	43	44	44	44	44	45	50
November																																
Maximum	46	46	46	45	44	43	42	40	38	39	40	40	38	38	40	43	43	43	42	40	39	39	39	39	37	36	36	37	37	38	--	40
Minimum	45	46	45	44	43	42	40	37	37	38	39	38	38	38	38	40	43	42	40	39	38	38	39	37	36	35	35	36	37	37	--	39
December																																
Maximum	38	35	34	34	34	34	35	35	34	34	33	33	--	--	--	--	--	33	33	33	33	33	33	33	33	33	33	33	33	33	33	34
Minimum	35	34	34	33	34	34	34	34	34	33	33	33	--	--	--	--	--	33	33	33	33	33	33	33	33	33	33	33	33	33	32	33
January																																
Maximum	32	32	32	32	32	32	32	32	32	32	33	32	32	32	32	32	32	32	32	32	33	33	33	33	33	33	33	33	33	33	33	32
Minimum	32	32	32	32	32	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	33	32
February																																
Maximum	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	34	33	33	--	--	--	33
Minimum	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	32	33	33	--	--	--	33
March																																
Maximum	33	33	34	34	34	34	35	35	34	33	33	33	33	34	33	34	34	34	34	34	35	35	35	36	36	37	38	38	38	37	36	35
Minimum	33	33	33	34	34	34	34	34	33	33	33	33	33	33	33	33	34	34	33	33	34	34	35	35	36	36	37	37	37	36	35	34
April																																
Maximum	36	36	36	36	36	37	37	37	39	39	36	37	38	36	39	39	37	37	37	39	41	41	40	39	39	39	40	41	41	41	--	38
Minimum	36	36	36	36	36	36	37	37	37	36	35	35	36	35	36	37	36	37	37	37	39	40	39	39	39	39	39	40	41	40	--	37
May																																
Maximum	42	42	41	42	43	44	44	46	48	48	49	49	51	55	58	58	58	56	54	53	52	52	52	52	54	55	55	53	54	54	54	51
Minimum	41	41	40	41	42	43	44	44	46	48	48	49	49	51	55	58	56	54	53	52	52	52	52	52	52	54	52	51	53	53	53	49
June																																
Maximum	54	57	59	59	62	65	65	65	64	63	64	66	69	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	53	54	57	59	59	62	64	64	63	63	63	64	66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	71	71	71	72	72	73	73	74	74	73	73	73	73	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	70	70	70	71	72	72	73	73	73	73	73	72	73	--
August																																
Maximum	73	73	69	68	70	72	73	73	72	73	72	73	76	72	72	73	72	71	71	70	69	68	67	67	68	70	69	68	68	67	67	71
Minimum	72	69	67	67	68	70	72	72	72	72	72	72	69	66	65	69	66	65	67	68	66	66	67	66	66	68	66	67	67	65	65	68
September																																
Maximum	69	70	70	72	72	74	74	72	71	72	72	73	73	72	71	71	67	65	64	64	65	65	66	68	69	70	70	69	67	63	--	69
Minimum	67	69	70	70	72	72	72	71	71	71	71	72	72	71	71	67	65	64	63	63	64	65	65	66	68	69	69	67	63	62	--	68

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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 83°F July 24, 25, Sept. 5; minimum, freezing point on many days during December, January, and February.
EXTREMES, 1954-61.--Water temperatures: Maximum, 86°F Aug. 5, 1955, Aug. 1, 1959; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	59	55	56	54	54	53	53	53	53	52	55	53	52	54	57	56	57	54	51	51	50	48	46	46	46	45	45	46	46	46	46	51
Minimum	54	52	52	50	48	51	49	47	48	48	50	49	47	51	54	56	53	51	49	50	48	44	45	46	45	45	44	45	45	45	46	49
November																																
Maximum	49	49	49	47	46	45	43	40	40	43	43	41	40	40	43	46	46	44	43	41	39	39	39	37	37	36	38	38	41	41	--	42
Minimum	46	49	47	46	45	43	40	38	39	40	41	39	39	39	40	43	44	43	41	39	38	37	37	36	36	35	36	38	38	40	--	40
December																																
Maximum	40	37	36	36	36	37	37	37	40	35	38	35	35	35	35	33	33	34	34	34	34	34	34	35	34	34	32	33	33	33	32	35
Minimum	37	34	36	33	35	36	37	33	33	33	32	32	32	33	33	33	32	32	32	34	32	32	34	34	32	32	32	32	33	32	32	33
January																																
Maximum	33	33	32	34	32	32	32	34	32	32	32	32	32	34	33	33	33	33	33	33	33	32	33	32	32	32	32	32	32	32	32	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	32	32	32
February																																
Maximum	33	33	33	32	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34	34	34	35	--	--	--	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	--	--	--	32
March																																
Maximum	35	35	36	35	35	35	36	36	35	35	37	37	37	34	35	35	37	37	35	36	37	38	37	37	36	38	38	38	37	36	39	36
Minimum	34	35	35	35	35	35	35	35	34	34	34	34	34	33	34	33	34	33	33	33	34	33	35	36	35	35	35	36	36	35	35	34
April																																
Maximum	39	37	36	37	38	38	38	38	41	41	36	40	40	37	41	41	41	41	40	43	46	46	47	47	45	47	47	49	48	48	--	42
Minimum	36	36	36	36	36	37	38	38	36	35	36	36	37	36	37	38	37	39	40	38	41	45	44	45	45	45	44	46	46	45	--	39
May																																
Maximum	49	48	45	47	50	52	52	56	55	56	56	56	62	68	70	66	65	61	57	56	56	58	59	60	64	62	58	57	59	59	58	57
Minimum	45	45	43	43	46	47	51	50	52	53	53	53	55	62	62	56	55	55	54	53	53	54	55	54	57	58	54	52	57	56	54	53
June																																
Maximum	61	65	69	67	72	73	72	67	66	66	65	72	76	70	69	69	69	69	68	67	65	67	68	69	70	67	68	68	71	71	--	69
Minimum	55	56	58	59	60	62	62	63	65	65	62	64	66	64	62	59	59	59	60	61	62	62	65	66	63	63	62	62	63	66	--	62
July																																
Maximum	71	76	69	65	66	69	69	65	66	71	68	71	69	67	64	65	66	67	69	67	70	81	73	83	83	78	75	76	73	78	81	71
Minimum	64	63	63	63	61	61	63	63	63	62	62	63	64	64	63	61	62	64	65	66	66	67	67	67	70	70	69	69	71	71	71	65
August																																
Maximum	80	71	70	75	73	80	74	76	79	78	79	80	76	74	76	78	75	77	78	79	75	73	72	73	78	78	80	80	76	77	74	76
Minimum	71	69	68	69	69	70	70	69	70	71	73	73	70	67	66	70	66	66	67	70	72	71	69	70	72	74	75	71	71	71	73	70
September																																
Maximum	77	75	78	82	83	81	74	78	79	79	80	81	76	78	77	71	67	66	66	69	68	67	69	70	71	74	69	65	62	61	--	73
Minimum	71	73	73	75	74	73	71	71	72	70	71	73	73	72	70	65	60	57	57	63	64	64	66	66	68	69	65	60	58	54	--	67

CONNECTICUT RIVER BASIN--Continued

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 6.0 miles downstream from Salmon Brook.
DRAINAGE AREA.--591 square miles (revised).
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1958.
Water temperatures: October 1957 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 78°F July 26, 30, 31; minimum, freezing point on many days during December to March.
EXTREMES, 1957-61.--Water temperatures: Maximum, 82°F July 2, 1958; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	62	61	62	61	60	58	58	58	60	58	60	60	60	58	59	58	61	62	59	58	58	52	48	50	48	48	50	50	49	49	50	56
November	51	50	51	50	49	48	48	44	44	46	44	44	43	44	44	45	45	43	44	45	44	44	44	42	42	43	43	41	43	41	--	45
December	40	40	38	37	39	38	38	38	38	38	37	36	36	34	32	32	33	33	33	33	33	33	33	33	33	34	33	33	33	33	33	35
January	33	34	33	33	33	33	34	34	32	32	32	32	32	33	33	32	32	32	32	32	33	32	33	33	32	33	33	32	32	33	32	33
February	33	32	32	33	32	33	33	32	32	33	34	33	34	35	34	34	33	34	34	33	33	32	32	32	32	32	32	33	--	--	--	33
March	34	33	34	36	36	36	36	36	34	32	32	33	34	36	33	35	36	36	33	33	34	37	37	38	39	39	41	42	44	43	40	36
April	40	39	38	39	40	41	42	43	44	44	40	40	41	39	38	42	40	40	41	41	43	44	46	38	42	48	48	52	53	49	--	42
May	48	48	47	47	49	51	52	48	52	53	54	56	54	56	62	64	64	62	60	58	56	56	54	58	62	60	60	56	54	56	56	55
June	57	60	59	61	64	67	66	66	67	68	64	64	70	72	70	68	68	65	64	69	69	69	69	69	69	64	64	64	65	66	--	66
July	72	72	74	74	72	72	72	72	70	72	68	68	69	73	72	69	70	69	71	69	70	75	76	75	74	78	76	76	77	78	78	73
August	75	76	74	74	70	69	70	71	72	74	72	73	72	72	71	71	70	70	69	68	70	70	68	70	71	72	68	68	68	70	71	71
September	72	72	72	73	73	74	74	75	73	72	72	75	72	73	74	70	70	68	65	58	66	64	66	64	68	68	69	67	65	64	--	70

1-1925. HOCKANUM RIVER NEAR EAST HARTFORD, CONN.

LOCATION.--At dam of Case Bros. Inc. Paper Mill, 700 feet upstream from U.S.G.S. gage and 2.8 miles east of East Hartford, Hartford County.
DRAINAGE AREA.--74.5 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 178 ppm Sept. 16, 18-21; minimum, 106 ppm Apr. 13-30.
Hardness: Maximum, 151 ppm July 16; minimum, 41 ppm Mar. 1-19.
Specific conductance: Maximum daily, 348 micromhos July 16; minimum daily, 115 micromhos Feb. 27.
Water temperatures: Maximum, 82°F July 24, Aug. 10; minimum, freezing point on several days during January and February.
REMARKS.--Samples taken a.m. and p.m. Records of specific conductance and pH of daily samples available in district office in Albany, N. Y.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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	Oxygen consumed: Filtered	Oxygen consumed: Unfiltered
Oct.1-4,1960	66	--		0.34		--	--	a 11	--		46	0	20	15	--	14		--	68	30		217	6.5	8	--	--
Oct. 5.....	70	--		.40		--	--	a 29	--		110	8	26	15	--	9.3		--	96	0		333	8.4	7	--	--
Oct. 6-10...	71	--		.34		--	--	a 13	--		46	0	27	17	--	16		--	74	36		237	6.6	6	--	--
Oct. 11-20..	73	21		.42		22	4.3	18	2.8		58	0	28	17	0.3	14		166	73	25		248	6.4	7	--	--
Oct. 21-31..	104	12		.43		19	3.4	12	2.7		40	0	26	14	.2	13		126	62	29		203	6.4	8	2	2
Nov. 1-30...	112	13		.40		18	3.6	12	2.2		38	0	28	12	2	13		128	60	29		197	6.5	11	5	9
Dec. 1-11, 14-31.....	117	12		.31		19	3.1	12	1.8		32	0	32	14	2	13		121	60	34		189	6.3	5	3	5
Jan. 1-13,17 21, 26, 29 30-31,1961	283	18		.30		17	3.2	12	2.0		32	0	24	17	0	13		126	56	30		193	6.5	5	3	5
Feb. 1-3....	91	--		.43		--	--	a 12	--		32	6	24	13	--	17		--	58	22		187	6.4	--	--	--
Feb. 7-11...	102	16		.51		17	3.4	14	1.8		35	0	25	16	2	17		141	57	28		206	6.4	6	--	--
Feb. 12.....	95	--		.52		--	--	a 20	--		69	0	27	22	--	16		--	85	28		282	6.5	--	--	--
Feb. 13-19..	116	14		.56		19	3.8	17	1.9		40	0	28	21	1	18		160	63	30		240	6.4	6	3	9
Feb. 20-26..	341	16		.52		14	2.8	10	2.2		28	0	22	13	2	11		117	47	24		164	6.4	7	--	--
Feb. 27-28..	416	--		.41		--	--	a 6.4	--		16	0	19	7.2	--	8.8		--	36	23		115	6.1	--	--	--
Mar. 1-19...	288	13		.23		12	2.6	9.2	1.5		25	0	20	11	3	7.6		96	41	20		140	6.5	9	3	4
Mar. 20-31..	186	16		.32		19	3.3	10	1.7		37	0	24	14	2	11		125	61	31		184	6.5	6	--	--
Apr. 1-7....	198	16		.29		15	2.9	9.8	1.4		32	0	24	10	1	9.0		109	50	24		157	6.4	3	--	--
Apr. 8-12...	175	21		.35		19	3.0	12	1.7		38	0	28	13	0	11		131	60	29		187	6.5	5	--	--
Apr. 13-30..	211	15		.39		15	2.7	10	1.6		32	3	24	11	0	7.8		106	49	23		159	6.5	4	4	6
May 1, 3-31.	160	13		.42		15	4.0	9.8	1.7		32	0	26	12	0	9.6		111	54	28		170	6.4	9	3	6

[a] Calculated Na plus K, reported as Na.

1-1925. HOCKANUM RIVER NEAR EAST HARTFORD, CONN.--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--Continued

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	Oxygen consumed	
																			Calcium, magnesium	Noncarbonate					Filtered	Unfiltered
June 1-2, 1961.....	140	--		0.54		--	--	a 7.6	--		28	0	20	11	--	8.9		--	50	27		150	6.7	--	--	--
June 4-20, 22-30.....	89	15		.47		18	3.5	14	1.8		39	0	25	14	.2	13		127	60	28		205	6.5	8	8	8
July 1-14, 16-21, 23-28, 30-31.	61	15		.31		22	3.6	15	2.2		48	0	28	16	.1	14		146	70	31		232	6.3	12	3	8
Aug.1-8, 10-11, 13-14, 16-18, 20-22, 24-25, 27-31.....	58	14		.27		22	3.5	17	2.4		44	0	31	22	.0	13		154	70	34		242	6.3	11	4	10
Sept. 1-8, 11-13.....	46	15		.31		23	4.4	18	2.6		57	0	31	18	.3	16		169	76	29		265	6.4	8	1	4
Sept. 14-15.	66			.28		--	--	a 23	--		74	0	32	20	--	17		--	85	24		305	6.4	7	--	
Sept. 16, 18-21.....	70	18		.37		23	4.2	20	2 5		61	0	32	18	.3	14		178	75	25		270	6.4	9	--	--
Sept. 22....	131			.22		--	--	a 13	--		41	0	26	12	--	9.2		--	56	22		194	6.4	--	--	--
Sept. 24-28.	53	16		.31		22	3.7	17	2.5		53	0	30	16	.2	11		62	70	27		245	6.3	6	--	--
Weighted average.	--	15		0.36		17	3.3	12	1.9		35	0	25	14	0.1	11		121	56	27		185	6.4		--	--
Time-weighted average.	137.3	15		0.36		18	3.4	13	2.0		39	0	27	15	0.1	12		129	60	29		201	6.4	7	--	--
Tons per day.....	--	5.5		0.13		6.2	1.2	4.3	0.7		13	0	9.4	5.1	0.0	4.2		45	--	--		--	--	--	--	--
Analyses of additional samples																										
Dec.31,1960..				0.36				a22			31		32	28		15			63	38		245	6.2			
July 16,1961.				.78				a9.7			137		28	12		17			151	39		348	6.2			
Sept.1-5,8... 12-15,17-18, 20,24,26-29		14		.26		23	3.0	17	2.6		49		31	18	0.2	16		164	70	30		253	6.3	8	1	1

a Calculated Na plus K, reported as Na.

CONNECTICUT RIVER BASIN--Continued

1-1925. HOCKANUM RIVER NEAR EAST HARTFORD, CONN.--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	61	59	58	58	57	54	56	57	58	59	57	57	61	61	60	60	59	60	55	55	53	52	50	48	49	50	53	54	50	56
Minimum	65	62	--	--	--	--	--	58	58	--	--	--	--	--	65	62	--	--	--	--	--	56	51	--	--	--	--	--	56	51	--	--	--
November																																
Maximum	52	53	53	53	53	51	48	44	46	48	47	50	49	46	45	49	52	50	51	49	46	45	48	45	45	46	46	47	47	47	--	48
Minimum	--	54	--	--	54	50	--	--	--	--	--	45	46	45	49	50	50	--	48	48	47	47	--	45	45	44	45	--	--	--	--	--
December																																
Maximum	43	40	45	44	43	41	44	42	38	42	40	--	--	35	34	34	34	35	33	32	35	34	34	35	35	40	35	35	36	35	36	38
Minimum	--	--	42	42	--	--	41	--	--	38	39	--	--	--	--	--	34	35	--	35	35	34	--	35	35	38	34	34	35	--	36	--
January																																
Maximum	36	37	35	35	35	35	38	41	37	36	36	35	37	--	39	35	35	--	34	--	32	--	--	--	--	--	--	--	--	32	33	--
Minimum	37	37	35	--	--	--	40	38	--	--	--	36	--	--	--	--	36	--	--	--	--	--	--	--	--	--	--	--	34	32	33	--
February																																
Maximum	32	32	32	--	--	--	32	34	32	36	37	38	32	35	38	37	39	40	40	36	35	37	37	38	40	39	38	39	--	--	--	36
Minimum	32	--	32	--	--	--	34	--	32	35	36	37	36	36	37	--	--	40	40	--	--	--	--	40	40	40	--	--	--	--	--	--
March																																
Maximum	39	38	38	43	44	41	42	39	35	36	35	38	39	--	38	39	39	36	40	38	40	41	45	45	45	47	47	49	51	51	48	42
Minimum	--	40	--	45	44	--	--	--	--	--	40	42	--	--	--	42	--	42	42	--	--	--	--	46	--	42	--	--	--	--	46	--
April																																
Maximum	48	43	42	43	46	49	47	48	48	50	46	46	46	44	45	54	46	48	48	47	51	56	55	57	55	58	57	59	57	58	--	50
Minimum	46	45	--	--	--	--	--	49	54	--	--	--	62	--	50	48	--	--	--	--	--	54	57	--	--	--	--	--	55	55	--	--
May																																
Maximum	54	--	50	52	53	56	57	56	58	60	59	61	60	62	65	70	65	64	62	61	56	59	60	61	63	65	60	56	60	58	60	59
Minimum	--	--	--	--	57	55	--	--	--	--	--	--	--	65	68	68	--	--	--	58	58	--	--	--	--	--	60	61	61	60	--	--
June																																
Maximum	63	65	--	--	66	69	66	67	69	--	70	70	72	74	72	68	--	68	69	70	--	69	68	74	74	68	69	69	70	72	--	69
Minimum	--	--	--	67	--	--	--	--	--	70	72	72	74	73	--	--	72	71	72	74	--	--	71	73	73	--	70	71	73	--	--	--
July																																
Maximum	72	74	75	72	71	71	72	73	71	72	70	72	74	75	--	69	68	70	72	74	73	--	74	79	78	79	78	77	--	76	76	73
Minimum	76	78	--	74	74	--	75	74	73	72	72	76	76	74	--	69	72	74	75	74	74	--	78	82	81	81	80	81	--	78	78	76
August																																
Maximum	76	74	71	70	70	70	72	73	--	74	76	--	75	72	--	72	70	69	--	73	71	70	--	69	70	--	74	74	74	73	72	72
Minimum	76	--	--	--	75	73	76	74	--	82	78	--	75	73	76	80	--	74	--	76	--	--	--	70	--	--	76	75	75	74	74	--
September																																
Maximum	74	76	75	--	75	76	76	73	--	--	73	76	75	77	74	70	--	65	64	65	66	64	--	70	72	71	68	67	--	--	--	--
Minimum	80	76	76	77	76	--	--	75	--	--	--	78	80	79	75	1/	68	68	--	68	--	--	--	75	--	76	70	67	65	--	--	--

1-1935. SALMON RIVER NEAR EAST HAMPTON, CONN.

LOCATION.--At old Comstock Bridge, 0.6 mile downstream from Dickinson Creek, and 3.5 miles southeast of East Hampton, Middlesex County.
DRAINAGE AREA.--105 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 65 ppm Dec. 7-16; minimum, 41 ppm May 1-5.
Hardness: Maximum, 44 ppm Apr. 13; minimum, 17 ppm Feb. 15-28, Apr. 1-12, 14-17.
Specific conductance: Maximum daily, 143 micromhos Oct. 18; minimum daily, 49 micromhos Feb. 24.
Water temperatures: Maximum, 78°F July 19; minimum, 33°F on many days during December, January, and February.
REMARKS.--Records of specific conductance and pH of daily samples available in district office in Albany, N. Y. Records of discharge for water year October 1960 to September 1961 given in surface water records of Connecticut for 1961. Stream frozen Feb. 4-8.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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	Oxygen consumed: Filtered	Oxygen consumed: Unfiltered
Oct. 1-10, 1960.....	71	11		0.20		5.0	1.6	4.5	1.6		17	0	8.0	5.3	0.1	0.7		54	19	5		72	6.7	18	4	5
Oct. 11-17..	48	13		.25		6.2	1.6	5.4	1.8		22	0	8.7	5.8	.1	.7		58	22	4		79	6.8	12	--	--
Oct. 18.....	51	--		.27		--	--	a 19	--		45	11	9.1	5.8	--	.3		--	32	0		143	8.9	23	--	--
Oct. 19-31..	128	11		.27		5.1	1.7	4.4	2.0		15	0	9.2	6.0	.1	1.1		56	20	8		73	6.4	22	--	--
Nov. 1-17...	157	12		.20		5.6	1.7	3.9	1.4		13	0	12	5.1	.1	.9		52	21	10		68	6.4	17	5	7
Nov. 18-27..	88	12		.18		5.6	2.0	5.0	1.1		18	0	12	5.8	.1	1.1		54	22	7		76	6.7	12	--	--
Nov. 28.....	80	--		--		--	--	a 12	--		34	8	12	4.0	--	.2		--	33	0		116	8.5	--	--	--
Nov. 29-30..	160	--		.15		--	--	a 6.9	--		18	0	12	10	--	.5		--	27	12		75	6.7	--	--	--
Dec. 1-6....	112	11		.12		5.8	2.2	4.1	1.0		12	0	14	5.2	.1	1.0		50	24	14		66	6.7	8	--	--
Dec. 7-16...	76	19		.13		7.6	1.7	5.8	1.2		21	0	13	6.4	.1	1.2		65	26	9		83	6.6	8	--	--
Dec. 17-30..	202	11		.13		5.4	1.8	4.3	1.1		12	0	12	6.1	.1	1.5		52	21	11		68	6.1	8	4	4
Dec. 31.....	180	--		.10		--	--	a 5.8	--		35	0	12	7.5	--	1.5		--	40	11		108	6.8	--	--	--
Jan. 1-31, 1961.....	149	9.2		.12		6.6	1.1	4.1	1.4		12	0	11	5.7	.1	1.8		52	21	11		68	6.3	7	3	4
Feb. 1-3....	93	--		.18		--	--	a 6.0	--		22	0	11	6.7	--	2.4		--	28	10		87	6.2	--	--	--
Feb. 9-10...	120	--		.15		--	--	a 4.4	--		9	0	9.5	5.9	--	3.4		--	19	12		70	5.8	--	--	--
Feb. 11-14..	122	--		.18		--	--	a 6.7	--		21	0	12	6.0	--	4.5		--	27	10		89	6.3	--	--	--
Feb. 15-28..	572	8.5		.15		4.2	1.4	3.6	1.2		9	0	12	4.7	.1	3.1		49	17	10		59	6.3	7	5	12
Mar. 1-31...	330	8.5		.07		5.0	1.2	3.3	1.3		10	0	8.8	5.5	.2	1.2		45	18	10		60	6.3	14	3	3

Apr. 1-12, 1961.....	255	10		.12		4.2	1.5	3.4	.9		10	0	9.3		5.0	.0	0.8		43	17	9		57	6.3	9	3	4
Apr. 13.....	315	--		.21		--	--	2.1	--		38	0	10		4.5	--	.8		--	44	13		100	7.6	8	--	--
Apr. 14-17..	466	--		.10		--	--	2.8	--		9	0	9.0		4.0	--	.8		--	17	10		53	6.5	9	--	--
Apr. 18.....	426	--		.15		--	--	5.3	--		25	0	13		6.5	--	.8		--	32	11		92	6.8	7	--	--
Apr. 19-30..	311	12		.13		5.0	1.8	5.2	1.0		22	0	6.0		5.0	.1	.5		53	20	2		71	6.6	8	--	--
May 1-5.....	264	5.8		.16		3.7	2.3	3.2	1.1		10	0	11		4.7	.0	.9		41	19	11		57	6.3	6	--	--
May 6.....	195	--		.17		--	--	3.9	--		29	0	10		5.8	--	.6		--	34	10		92	6.6	10	--	--
May 7-31....	304	7.5		.21		3.5	2.6	3.5	1.0		12	0	11		4.0	.0	.8		44	19	9		57	6.4	19	4	5
June 1-4....	238	--		.32		--	--	3.9	--		16	0	7.1		3.8	--	.5		--	18	5		62	6.5	--	--	--
June 5.....	188	--		.32		--	--	3.7	--		34	0	10		2.0	--	.5		--	34	6		91	6.9	--	--	--
June 6-30...	121	11		.42		4.2	2.1	5.1	1.0		16	0	8.5		5.0	.1	.8		50	19	6		63	6.6	17	5	9
July 1-20...	62	13		.30		4.0	2.5	4.0	1.3		16	0	8.7		5.1	.1	1.5		52	21	8		69	6.2	17	4	8
July 21-31..	23	13		.19		5.0	2.6	4.6	1.3		18	0	8.7		4.8	.1	1.1		56	23	8		77	6.8	7	--	--
Aug. 1-31...	34	11		.21		5.4	1.8	4.8	1.4		18	0	9.5		5.0	.0	.9		55	21	6		74	6.4	7	2	2
Sept. 1-30..	52	10		.21		5.9	1.9	4.8	1.8		24	0	10		4.1	.1	1.0		56	23	3		78	6.1	12	1	1
Weighted average.	--	9.7		0.17		4.8	1.7	4.0	1.2		13	0	10		5.1	0.1	1.3		49	20	9		64	6.3	12	--	--
Time-weighted average.	171.7	11		0.19		5.1	1.8	4.4	1.3		16	0	10		5.2	0.1	1.2		52	21	8		69	6.3	12	--	--
Tons per day.....	--	4.5		0.08		2.2	0.8	1.9	0.6		6	0	4.7		2.3	0.0	0.6		23	--	--		--	--	--	--	--

Temperature (°F) of water, water year October 1960 to September 1961

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	56	62	56	55	57	55	55	56	57	59	57	55	60	59	60	62	57	52	56	51	46	46	50	47	--	46	52	52	53	52	55
November.....	56	54	50	51	46	41	40	38	38	49	44	41	43	42	48	46	51	46	47	44	43	46	44	40	41	40	44	41	40	46	--	45
December.....	36	41	42	38	37	36	38	36	36	38	37	35	34	33	33	33	33	33	35	34	36	33	34	33	33	34	35	33	38	39	36	36
January.....	35	34	34	34	35	34	33	34	35	34	34	34	34	35	35	34	33	34	34	35	36	33	33	33	33	34	33	33	33	34	34	34
February.....	33	34	34	--	--	--	--	--	34	33	34	33	33	34	33	33	34	33	34	34	33	35	34	35	36	35	37	39	--	--	--	34
March.....	37	39	39	38	40	40	41	42	39	38	38	39	40	--	43	38	41	40	39	41	40	41	40	--	38	39	40	38	40	41	41	40
April.....	39	41	43	46	48	48	47	49	44	39	45	44	41	40	52	48	50	48	49	52	51	52	54	53	50	50	53	55	54	55	--	48
May.....	50	49	51	56	52	51	54	54	63	60	61	61	62	60	59	61	59	62	59	61	61	62	61	61	61	63	64	61	63	62	62	59
June	64	64	61	63	64	62	65	62	65	62	67	66	68	72	68	67	73	72	70	73	72	73	70	72	71	73	74	74	75	75	--	69
July.....	75	75	74	75	76	73	72	74	75	74	68	69	70	73	69	74	73	77	78	76	74	75	73	75	76	74	73	76	73	75	74	74
August.....	76	76	75	77	76	75	74	76	70	69	--	69	69	70	70	68	69	70	70	69	68	69	69	71	68	69	70	69	71	69	70	71
September.....	70	69	71	71	70	71	71	71	72	72	70	72	69	70	68	68	--	66	69	65	68	67	69	67	65	64	63	60	60	58	--	68

HOUSATONIC RIVER BASIN

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

LOCATION.--At dam upstream from powerplant of Connecticut Power Co., and about 1.1 miles upstream from gaging station at Falls Village, Litchfield County.
DRAINAGE AREA.--632 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.
Water temperatures: October 1955 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 77°F July 26-30; minimum, freezing point on many days during December, January, and February.
EXTREMES, 1955-61.--Water temperatures: Maximum, 81°F June 20, 1957; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961

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	58	57	56	55	55	54	53	53	55	55	54	53	53	53	56	55	56	55	54	50	48	48	46	45	46	46	45	45	44	43	52
November	45	45	47	46	41	41	43	39	39	40	40	40	37	40	42	43	45	43	42	41	42	41	42	40	40	40	41	40	41	41	--	42
December	39	37	37	36	35	35	36	36	34	34	32	32	32	32	32	32	32	32	32	32	33	32	32	32	32	32	32	32	32	32	32	33
January	32	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	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	34	34	34	34	34	34	34	34	34	34	--	--	--	33
March	34	34	34	34	34	37	37	37	34	33	33	33	34	35	35	36	34	34	34	35	36	36	39	39	39	39	40	42	43	42	42	36
April	42	39	39	39	40	40	40	40	40	43	42	40	42	39	40	40	40	43	43	47	49	50	50	50	50	50	51	52	52	49	--	44
May	48	48	46	46	47	46	45	52	56	58	58	59	59	61	60	67	64	62	62	62	62	56	56	58	58	58	56	50	55	54	54	56
June	57	59	59	59	62	69	67	66	65	65	64	67	69	69	67	67	65	65	65	67	68	66	65	66	65	65	66	67	68	69	--	65
July	70	70	69	69	70	69	68	68	69	69	69	69	71	72	71	70	69	71	71	72	72	73	72	72	75	77	77	77	77	77	76	72
August	76	75	73	71	71	71	72	73	73	74	74	74	72	73	70	70	70	70	70	71	71	70	70	69	70	70	70	70	70	70	70	71
September	--	74	72	72	75	75	76	76	76	76	74	75	75	75	75	74	68	66	65	65	65	64	65	66	69	69	69	67	65	65	--	71

1-2040. POMPERAUG RIVER AT SOUTHBURY, CONN.

LOCATION.--At highway bridge, 200 feet downstream from gaging station, 1,000 feet downstream from Bullet Hill Brook, 0.6 mile west of Southbury, New Haven County, and 5.8 miles upstream from mouth.
DRAINAGE AREA.--75.3 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 83 ppm June 4-10; minimum, 54 ppm Apr. 10-30, May 21-31.
Hardness: Maximum, 56 ppm Oct. 23, Nov. 1; minimum, 26 ppm Mar. 3-24.
Specific conductance: Maximum daily, 156 micromhos Nov. 5; minimum daily, 63 micromhos Apr. 25.
Water temperatures: Maximum, 80°F on several days during July and August; minimum, freezing point on many days in December and January.
REMARKS.--Records of specific conductacne and pH of daily samples available in district office in Albany, N.Y. Records of discharge for water year October 1960 to September 1961 given in surface water records of Connecticut. River frozen Nov. 17-22, 24-28, Dec. 2-3, 6-7, Jan. 23-31.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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	Oxygen consumed: Filtered	Oxygen consumed: Unfiltered
Oct. 1-10, 1960.....	62	9.4		0.11		9.4	2.8	4.0	1.3		30	0	10	5.0	0.1	1.2		62	35	10		100	7.0	6	2	3
Oct. 11-22..	67	9.0		.15		9.6	2.6	4.1	1.8		30	0	11	5.5	.1	1.1		64	35	10		102	6.9	3	--	--
Oct. 23.....	82	--		.23		--	--	3.4	--		46	0	16	6.4	--	.8		--	56	18		140	7.1	3	--	--
Oct. 24-31..	74	11		.17		9.0	2.2	4.1	1.6		29	0	11	5.0	.1	1.1		62	32	8		97	6.8	4	--	--
Nov. 1.....	197	--		.21		--	--	2.3	--		54	0	12	2.0	--	1.0		--	56	12		130	6.8	--	--	--
Nov. 2-4....	136	--		.19		--	--	3.2	--		32	0	15	4.8	--	.8		--	42	16		103	6.8	--	--	--
Nov. 5-6....	88	--		.22		--	--	20	--		68	0	15	4.0	--	.8		--	32	0		152	6.9	--	--	--
Nov. 7-15...	138	17		.16		9.5	2.5	5.1	1.5		32	0	14	4.0	.1	1.3		73	34	8		105	7.0	6	4	5
Nov. 16.....	102	--		.14		--	--	8.5	--		64	0	14	2.8	--	.5		--	53	0		147	7.9	--	--	--
Nov. 23.....	75	--		.17		--	--	3.0	--		24	0	14	4.5	--	1.5		--	35	15		89	7.0	--	--	--
Nov. 29-30..	177	--		.26		--	--	5.3	--		43	0	16	6.1	--	3.7		--	51	16		135	6.2	--	--	--
Dec. 1, 4-5, 8-31.....	98	10		.13		9.8	2.3	4.2	1.0		26	0	14	5.1	.1	1.8		60	34	13		90	6.8	4	2	3
Jan. 1-22, 1961.....	84	9.1		.16		10	2.0	3.7	1.1		24	0	13	5.2	.0	2.2		61	33	13		92	6.7	2	1	1
Feb. 11-28..	359	11		.22		7.6	2.2	3.9	1.3		20	0	14	4.8	.1	3.9		65	28	12		86	7.1	7	5	12
Mar. 1.....	479	--		.11		--	--	3.2	--		22	0	10	5.0	--	2.0		--	30	12		82	6.8	5	--	--
Mar. 2.....	430	--		.10		--	--	7.6	--		41	0	13	4.5	--	1.4		--	38	6		114	7.9	6	--	--
Mar. 3-24...	316	9.4		.11		7.6	1.6	3.4	1.1		20	0	11	4.0	.1	1.9		56	26	10		78	6.7	6	2	1
Mar. 25-31..	275	15		.13		8.0	3.3	4.6	.9		26	0	12	4.4	.1	1.6		67	34	13		91	7.0	4	--	--

HOUSATONIC RIVER BASIN--Continued

1-2040. POMPERAUG RIVER AT SOUTHBURY, CONN.--Continued

Chemical analyses, in part per million, water year October 1960 to September 1961--Continued

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	Oxygen consumed: Filtered	Oxygen consumed: Unfiltered
Apr. 1-8, 1961.....	178	15		0.11		8.8	2.0	4.2	1.0		24	0	12	5.0	0.0	1.7		61	30	10		89	6.6	4	--	--
Apr. 9.....	121	--		.09		--	--	8.7	--		33	10	13	5.2	--	.7		--	46	3		135	8.9	3	--	--
Apr. 10-30..	307	8.2		.12		7.4	1.9	3.4	.8		19	0	12	4.0	.0	1.2		54	27	11		78	6.9	3	3	4
May 1-10....	221	11		.14		6.2	4.3	3.2	1.0		22	0	15	4.0	.0	1.2		57	33	15		81	6.7	5	--	--
May 11-22...	153	19		.15		7.2	4.0	5.0	1.1		30	0	14	4.8	.0	1.2		70	35	10		97	6.9	5	2	2
May 23-31...	184	9.2		.17		6.1	4.2	3.2	1.0		22	0	16	3.3	.0	1.3		54	33	15		80	6.8	5	--	--
June 1-3....	117	--		.21		--	--	3.0	--		24	0	13	4.4	--	1.8		--	34	15		85	6.9	--	--	--
June 4-10...	91	19		.27		10	2.7	5.8	1.0		42	0	12	4.5	.1	1.1		83	36	3		114	7.1	3	--	--
June 11-30..	70	12		.30		9.6	2.7	4.8	1.1		28	0	12	5.0	.2	2.3		66	35	12		98	6.8	7	3	7
July 1-31...	36	14		.16		10	3.0	4.0	1.2		32	0	14	5.0	.1	2.5		73	38	12		108	6.7	6	2	5
Aug. 1-31...	37	10		.16		11	3.0	4.4	1.4		35	0	15	5.0	.2	2.0		72	40	12		115	6.7	9	1	3
Sept. 1-21..	24	9.2		.14		12	3.3	4.6	1.3		40	0	14	5.0	.2	1.7		73	44	11		117	6.7	4	1	2
Sept. 22....	126	--		.19		--	--	4.4	--		22	0	15	3.8	--	2.0		--	31	13		84	7.3	--	--	--
Sept. 23-30.	32	11		.14		12	3.1	4.2	1.2		38	0	14	4.7	.2	1.6		76	43	12		114	6.6	5	--	--
Weighted average.	--	11		0.16		8.2	2.5	4.0	1.1		25	--	13	4.5	0.1	1.9		62	32	11		89	6.8	5	--	--
Time-weighted average.	a 128	11		0.16		9.3	2.7	4.2	1.2		29	--	13	4.7	0.2	1.8		65	35	11		97	6.7	5	--	--
Tons per day.....	--	4.0		0.06		3.0	0.9	1.5	0.4		9	--	4.7	1.6	0.0	0.7		22	--	--		--	--	--	--	--

a Mean discharge based on 365 days; mean discharge for 332 days of chemical analyses, 135 cfs.

HOUSATONIC RIVER BASIN--Continued

1-2040. POMPERAUG RIVER AT SOUTHBURY, CONN.--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	58	57	57	57	57	57	59	60	57	55	58	62	70	60	60	55	55	50	49	48	49	48	51	50	51	53	51	50	56
November	59	52	49	45	49	48	45	43	48	47	44	42	--	46	47	51	--	--	--	--	--	--	45	--	--	--	--	--	46	43	--	--
December	39	--	--	38	41	--	--	40	35	35	35	35	34	32	32	32	32	32	32	32	32	32	32	32	33	34	34	33	32	32	32	34
January	33	33	33	32	32	33	33	32	32	34	34	34	32	33	32	32	32	32	32	32	32	32	--	--	--	--	--	--	--	--	--	--
February	--	--	--	--	--	--	--	--	--	--	35	35	34	35	.4	34	34	34	36	34	35	40	37	40	37	37	40	37	--	--	--	--
March	37	41	43	41	42	41	41	37	--	37	37	40	38	38	40	37	37	40	38	39	41	40	41	41	42	42	40	41	41	43	45	40
April	47	45	45	45	48	47	45	--	50	47	45	48	48	46	49	48	48	45	--	49	52	53	51	51	51	52	56	56	51	49	--	49
May	49	49	48	51	54	54	54	57	56	59	59	57	61	68	69	63	63	59	--	59	--	--	62	61	64	62	51	56	56	57	58	58
June	60	66	65	68	68	73	71	67	68	67	--	71	--	73	67	67	70	72	73	71	67	65	70	68	66	70	67	71	72	72	--	69
July	75	74	74	68	71	71	72	71	70	71	72	75	73	73	66	68	74	75	77	74	74	78	77	80	78	80	80	77	71	75	78	74
August	78	68	69	68	70	70	68	69	71	74	75	80	80	80	73	74	66	68	67	68	68	70	72	73	75	73	71	75	75	--	75	72
September	76	76	75	75	77	75	73	70	71	73	72	72	74	73	70	65	62	62	62	66	63	68	71	70	68	68	68	68	65	63	--	70

HOUSATONIC RIVER BASIN--Continued

1-2050. LAKE ZOAR AT STEVENSON, CONN.

LOCATION.--On Housatonic River at Stevenson, Fairfield County.
DRAINAGE AREA.--1,545 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 84°F Sept. 1, 5; minimum, freezing point on many days during December, January, and February.
REMARKS.--Records furnished by the Connecticut Light and Power Co.

Temperature (°F) of water, water year October 1960 to September 1961
[Daily measurement at 1300]

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	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	55	55	54	53	53	--
November	53	54	52	54	53	52	52	49	48	48	47	47	47	47	47	47	47	47	47	47	46	45	44	46	43	45	48	45	45	45	--	48
December	45	42	42	42	43	42	41	41	40	40	39	38	37	32	33	34	34	34	34	33	33	36	32	32	34	32	35	35	34	34	34	37
January	35	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	34	32	32	32	32	32	32	32	32	32	32	32	32	33
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34	34	34	32	33	34	34	34	35	35	--	--	--	33
March	34	33	33	33	33	33	37	33	33	34	33	35	36	36	36	36	34	36	36	36	36	36	36	36	36	36	37	38	42	40	40	36
April	41	42	42	43	49	45	45	45	45	45	45	43	42	43	43	43	45	45	44	44	44	45	47	47	53	49	49	53	53	53	--	46
May	51	51	51	51	51	51	51	51	51	51	53	53	53	58	60	58	61	58	58	59	65	61	61	60	61	61	60	60	60	59	58	56
June	58	58	58	58	61	65	64	66	68	65	63	65	70	70	69	69	69	70	72	72	70	69	69	69	71	71	71	71	72	74	--	67
July	74	74	74	74	74	74	74	74	75	75	75	75	74	74	73	73	73	74	78	78	79	79	79	76	78	78	81	81	77	79	83	76
August	79	79	75	73	75	75	77	78	78	79	82	80	76	75	77	77	77	76	76	76	75	75	75	75	75	75	77	77	77	79	81	77
September	84	83	80	81	84	83	82	82	81	81	81	81	81	77	75	74	74	74	72	72	71	72	72	72	72	72	72	74	72	71	--	77

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

LOCATION.--West shore of river at Arkell and Smith Manufactures, Hudson Falls, Saratoga County.
DRAINAGE AREA.--3,491 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: November 1957 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 77°F July 26, 27, 29; minimum, freezing point on many days in December, January and February.
EXTREMES, 1957-61.--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. River frozen Dec. 12 to Feb. 24.

Temperature (°F) of water, water year October 1960 to September 1961
[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	67	62	64	62	61	63	61	61	61	59	60	59	58	60	61	61	60	59	59	59	57	56	54	57	55	53	53	54	52	53	53	59
November	54	53	53	56	56	50	48	46	48	46	46	45	45	46	46	48	48	47	47	46	45	46	46	44	43	42	44	45	44	44	--	47
December	41	39	43	43	41	41	40	39	36	38	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	35
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	39	38	37	37	--	--	--	33
March	37	38	37	37	38	36	37	36	33	--	--	--	--	--	--	35	--	35	38	37	38	38	38	38	41	39	40	41	40	39	--	--
April	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	44	42	41	41	42	47	43	51	48	45	45	43	46	44	--	--
May	45	45	43	45	46	45	46	50	56	55	56	56	55	56	58	60	58	60	59	58	56	56	56	56	57	59	55	54	55	54	54	54
June	55	57	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	68	--	--	--	--	66	66	68	68	69	--	--
July	72	71	72	72	70	69	71	70	70	71	71	72	71	72	72	72	72	73	72	73	72	71	72	76	76	77	77	--	77	76	76	73
August	76	75	73	74	74	75	75	74	75	76	75	74	74	72	71	74	71	71	70	70	73	72	72	72	73	72	72	72	72	71	72	73
September	73	73	74	75	75	75	75	76	75	75	76	76	74	74	74	72	71	70	69	70	68	69	70	71	71	70	70	70	--	66	--	72

HUDSON RIVER BASIN--Continued

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

LOCATION.--Temperature recorder at gaging station at upstream side of highway bridge, 0.5 mile south of West Milton, Saratoga County, 1.5 miles upstream from Kayaderosseras Creek, 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 82°F July 24; minimum, freezing point on many days during December to March.
EXTREMES, 1953-61.--Water temperatures: Maximum, 82°F July 24, 1961; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	60	54	53	51	51	51	50	52	53	53	55	52	51	52	56	54	53	51	49	49	48	46	44	46	45	45	46	47	48	47	48	50
Minimum	54	50	51	50	49	48	48	48	49	50	50	50	48	49	50	53	50	49	47	46	44	42	42	44	42	41	42	43	45	45	44	47
November																																
Maximum	49	49	48	47	45	44	42	40	41	44	43	41	42	43	45	45	45	44	42	41	42	42	42	41	39	37	39	41	42	42	--	43
Minimum	47	47	46	44	43	41	39	38	36	41	41	39	39	41	43	45	43	41	39	39	40	40	40	38	36	34	35	38	39	37	--	40
December																																
Maximum	37	34	34	34	35	35	37	36	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	33	34	34	34	33
Minimum	32	32	32	32	32	33	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33	33	33	33	34	34	32
January																																
Maximum	34	34	34	35	35	35	35	34	33	33	32	32	32	32	32	32	32	32	32	32	32	33	33	33	32	32	32	32	32	32	32	33
Minimum	34	34	34	34	35	35	34	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
February																																
Maximum	32	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	34	33	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	33	33	33	33	33	33	32	32	32	32	32	32	33	32	32	32	34	32	32	34	35	35	35	36	36	36	36	36	33
Minimum	32	32	32	32	33	33	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34	33	32	33	34	36	34	33	33
April																																
Maximum	36	36	36	38	38	39	39	40	42	42	36	38	38	38	41	41	40	41	41	44	48	49	49	48	46	44	45	46	46	41	--	42
Minimum	36	35	34	35	37	37	38	37	36	33	33	35	37	37	37	39	38	40	40	38	41	47	44	46	44	42	42	44	41	40	--	39
May																																
Maximum	42	42	39	40	44	45	45	47	54	54	50	51	56	62	65	63	57	55	54	50	56	54	53	57	65	60	53	56	55	56	57	53
Minimum	40	39	38	38	39	41	40	40	47	42	43	48	49	54	57	57	51	50	49	47	48	51	48	50	54	53	47	47	52	50	49	47
June																																
Maximum	58	63	64	64	71	71	70	66	63	64	67	72	77	69	59	63	68	71	70	72	69	64	71	72	72	65	71	75	77	77	--	68
Minimum	54	57	60	56	58	63	59	62	59	61	60	64	67	59	57	56	57	59	60	62	64	60	61	67	62	62	60	62	65	69	--	61
July																																
Maximum	74	72	76	70	67	66	70	69	69	70	70	74	73	72	67	65	71	72	75	75	79	78	81	82	78	80	79	78	77	76	76	74
Minimum	66	65	68	65	62	61	62	63	64	62	62	64	67	67	65	64	64	67	68	69	70	70	71	73	73	73	69	69	71	71	72	67
August																																
Maximum	76	72	69	75	74	73	73	72	70	72	73	73	73	67	65	68	68	64	65	66	66	71	70	67	71	71	70	69	67	69	72	70
Minimum	68	65	65	65	67	68	69	67	68	69	69	70	66	63	62	64	63	62	64	65	66	65	66	65	66	68	65	65	65	63	67	66
September																																
Maximum	75	74	77	76	76	74	72	70	70	70	69	68	68	69	70	65	64	62	60	60	63	67	67	67	67	68	68	65	63	61	--	68
Minimum	68	68	68	70	72	69	67	67	66	66	67	68	67	67	65	59	60	60	60	60	60	62	63	66	66	66	65	62	61	60	--	65

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

LOCATION.--Temperature recorder at gaging station on left 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 1961.
Sediment records: February 1953 to June 1955.
EXTREMES, 1960-61.--Water temperatures: Maximum, 78°F July 23, 24, 27, 28, 30; minimum, freezing point on many days during January, February and March.
EXTREMES, 1952-61.--Water temperatures: Maximum, 83°F July 10, 1955; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	60	54	54	53	52	53	51	51	53	53	55	53	52	53	56	56	56	53	50	48	48	45	44	45	45	46	46	48	50	48	48	51
Minimum	54	51	51	50	49	50	49	49	49	49	50	50	48	50	51	56	51	49	47	48	45	43	43	43	45	44	45	46	48	46	46	48
November																																
Maximum	49	48	48	47	46	45	43	40	41	43	43	41	41	43	44	44	44	43	41	40	40	40	41	40	38	36	38	39	41	41	--	42
Minimum	48	48	47	46	45	43	40	38	37	41	41	40	40	41	42	44	43	40	40	38	39	39	40	38	36	35	36	38	39	39	--	41
December																																
Maximum	39	34	34	34	36	38	39	39	35	34	34	34	34	34	34	34	33	33	34	34	34	34	34	34	34	34	34	34	34	34	34	35
Minimum	34	34	34	34	34	36	38	35	34	34	34	34	34	34	34	33	33	33	33	33	34	33	34	34	34	34	34	34	34	34	34	34
January																																
Maximum	34	34	34	34	34	34	34	34	33	34	34	33	33	33	32	32	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	33
Minimum	34	34	34	34	34	34	34	33	33	33	33	32	33	32	32	32	32	32	32	33	33	33	33	33	33	33	33	33	32	33	33	33
February																																
Maximum	33	33	33	33	33	33	33	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33	--	--	--	32
Minimum	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	33	--	--	--	32
March																																
Maximum	33	34	38	38	37	37	37	37	33	33	33	34	35	34	35	35	34	34	33	35	35	34	35	36	36	36	37	38	38	37	36	35
Minimum	33	33	34	37	37	36	36	33	33	33	32	32	34	32	32	34	33	33	32	32	33	33	33	35	35	33	35	35	37	34	34	34
April																																
Maximum	36	36	37	39	40	39	40	42	44	42	38	42	42	40	43	43	43	43	44	47	50	51	53	53	49	51	54	54	53	49	--	45
Minimum	36	35	36	37	39	39	39	39	39	38	37	37	40	38	39	43	41	43	43	42	45	50	51	48	48	49	49	51	49	47	--	42
May																																
Maximum	51	49	48	50	55	55	54	57	62	62	59	59	62	68	70	66	62	59	56	53	57	56	55	57	62	61	54	55	55	56	56	57
Minimum	47	48	44	48	48	50	53	53	57	59	54	58	55	60	62	61	58	56	52	51	51	53	51	52	55	54	49	47	53	50	50	53
June																																
Maximum	56	60	62	61	66	66	66	62	61	61	64	69	69	67	60	61	63	66	65	66	66	64	67	67	67	65	66	70	72	74	--	65
Minimum	53	55	59	56	56	60	57	60	60	60	60	63	65	60	56	55	56	58	60	62	64	63	63	65	63	61	60	62	65	68	--	60
July																																
Maximum	73	72	73	71	69	69	70	70	68	68	68	72	72	72	68	66	68	71	74	73	75	75	78	78	77	77	78	78	77	78	77	73
Minimum	66	66	68	67	62	61	64	64	64	63	64	64	68	68	66	65	65	68	68	69	69	69	71	73	73	72	71	71	73	72	72	68
August																																
Maximum	75	71	68	74	74	74	74	73	77	75	74	77	74	68	70	72	70	70	71	70	70	69	69	65	69	69	68	67	67	67	69	71
Minimum	69	66	66	67	68	69	70	68	69	71	71	71	68	63	63	68	63	64	64	67	67	66	65	65	65	67	66	64	65	62	65	67
September																																
Maximum	71	73	73	74	73	73	71	71	71	71	71	71	71	72	71	65	61	59	59	63	62	65	67	69	68	68	66	63	58	57	--	68
Minimum	65	69	69	70	70	70	68	67	67	67	67	68	68	68	64	60	56	54	54	59	62	61	62	65	65	66	63	58	55	53	--	64

HUDSON RIVER BASIN--Continued

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

LOCATION.--At west shore of Hudson River at West Virginia Pulp and Paper Co., at Mechanicville, Saratoga County.
DRAINAGE AREA.--4,500 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1954 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F July 31, Aug. 1; minimum, freezing point on many days during December to March.
EXTREMES, 1959-61.--Water temperatures: Maximum, 82°F Aug. 5-7, 1955; minimum, freezing point on many days during winter months.
REMARKS.--Reported by West Virginia Pulp and Paper Co., taken from their recorder. No discharge records available.

Temperature (°F) of water, water year October 1960 to September 1961
[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																																
Maximum	63	62	60	60	59	59	58	58	59	58	57	56	57	57	58	59	59	57	57	55	53	52	52	51	49	48	48	48	49	48	48	55
Minimum	62	60	60	59	58	58	56	57	57	56	56	54	54	56	57	56	57	56	55	53	52	51	48	48	48	47	47	47	48	47	48	54
November																																
Maximum	48	49	48	47	47	46	45	45	42	42	42	42	43	42	42	43	43	42	43	44	44	42	41	41	40	40	41	41	40	39	--	43
Minimum	48	48	47	47	46	45	44	42	42	41	41	41	41	42	41	42	42	42	42	42	42	41	40	40	40	40	40	39	39	39	--	42
December																																
Maximum	39	38	37	36	36	36	36	36	35	35	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
Minimum	38	37	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	32	32	33
January																																
Maximum	33	34	34	32	32	32	32	33	34	32	32	32	32	32	33	34	32	32	32	32	32	32	32	34	33	33	34	34	34	34	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	32	32	33	32
February																																
Maximum	34	34	34	34	34	34	33	32	32	32	32	34	34	32	33	32	32	32	35	32	32	32	32	32	32	32	32	32	--	--	--	33
Minimum	33	33	32	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	--	--	--	32
March																																
Maximum	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	32	33	33	34	35	36	36	37	38	43	40	39	34
Minimum	33	33	32	32	32	32	34	33	34	32	32	32	34	33	34	33	34	34	33	34	34	33	35	38	37	40	40	42	42	41	40	35
April																																
Maximum	40	39	39	39	39	40	40	40	39	42	40	40	40	40	40	42	41	42	42	41	42	44	45	46	46	45	43	44	45	44	--	42
Minimum	40	39	40	40	40	40	40	40	41	40	40	40	40	41	43	41	43	43	42	42	45	46	48	46	46	45	45	45	45	45	--	42
May																																
Maximum	45	45	45	44	45	47	48	48	49	52	56	56	58	56	58	60	60	60	60	57	58	57	57	57	56	60	57	57	56	55	56	54
Minimum	45	45	45	45	48	49	49	50	54	58	56	57	58	59	62	61	62	61	58	58	59	58	58	60	60	58	57	58	55	57	59	55
June																																
Maximum	58	58	61	61	62	64	64	67	68	69	68	67	68	70	70	70	67	67	67	68	68	68	67	69	68	68	66	68	69	71	--	67
Minimum	58	61	61	62	64	64	67	69	70	70	70	69	70	70	70	70	70	70	70	70	68	68	69	69	70	68	68	71	72	73	--	68
July																																
Maximum	76	72	74	72	72	73	72	72	72	72	72	72	72	72	72	72	73	72	73	73	74	74	74	77	78	77	78	78	78	76	78	74
Minimum	74	73	73	72	72	72	73	72	73	72	71	72	73	72	72	73	73	74	74	74	75	75	76	78	76	78	78	79	78	78	80	74
August																																
Maximum	80	75	78	73	74	76	78	74	76	75	76	75	76	75	73	73	72	72	73	74	78	72	72	72	72	73	72	72	72	71	71	74
Minimum	78	75	74	75	76	78	78	76	77	76	76	77	75	76	75	73	72	72	75	74	75	72	72	--	73	72	72	72	72	71	72	74
September																																
Maximum	73	73	74	76	76	76	76	76	75	75	78	76	76	76	75	72	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	73	75	76	76	78	76	76	76	76	77	78	78	76	76	74	71	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

1-3360. MOHAWK RIVER BELOW DELTA DAM, NEAR ROME, N. Y.

LOCATION.--At Delta dam, 1 mile upstream from gage and 5 miles north of Rome, Oneida County.
DRAINAGE AREA.--150 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 75°F Sept. 14, 15, 18; minimum, freezing point on many days during December to April.
REMARKS.--River frozen Dec. 10 to Apr. 19.

Temperature (°F) of water, water year October 1960 to September 1961
[Daily measurement at 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	--	--	63	62	61	60	60	--	--	59	58	58	58	57	--	--	57	57	56	55	55	--	--	52	51	49	49	48	--	--	48	--
November	48	48	48	48	--	--	46	45	45	44	44	--	--	43	43	42	42	42	--	--	43	43	42	42	42	--	--	42	42	41	--	--
December	40	39	38	38	38	38	37	36	35	32	32	32	32	32	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	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	32	32	32	32	32	39	39	--	--	43	43	43	43	43	--	--	--	35
May	46	45	46	46	47	--	--	48	48	49	49	49	--	--	49	49	50	52	54	--	--	58	56	56	57	57	--	--	56	55	55	--
June	56	55	--	--	57	58	59	59	60	--	--	61	59	58	57	56	--	--	64	64	63	65	61	--	--	65	62	63	65	63	--	--
July	--	--	61	--	68	68	68	--	--	68	68	68	68	68	--	--	68	68	66	65	65	--	--	65	69	68	68	68	--	--	70	--
August	68	69	70	70	--	--	72	72	72	72	73	--	--	73	73	73	73	72	--	--	72	72	72	72	--	--	--	72	72	72	72	--
September	72	--	--	72	72	72	72	--	--	--	74	74	74	75	75	--	--	75	73	70	69	70	--	--	70	70	70	69	68	--	--	--

HUDSON RIVER BASIN--Continued

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

LOCATION.--At intake of Skenandoa Rayon Corp., Broad Street, Route 5S in Utica, Oneida County.
RECORDS AVAILABLE.--Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 77°F July 23-25; minimum, 33°F Feb. 2.

Temperature (°F) of water, water year October 1960 to September 1961

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	59	58	60	60	58	58	57	56	58	57	57	58	56	57	59	58	56	54	52	51	--	49	47	46	47	48	49	50	--	55
November	50	51	50	48	46	47	45	45	44	44	44	43	43	44	45	47	48	46	45	44	44	45	46	47	45	43	41	41	46	44	--	45
December	42	39	38	39	41	43	40	39	38	37	37	36	36	36	35	36	34	35	35	35	36	35	36	34	35	34	34	34	34	35	34	37
January	34	34	34	34	35	36	37	35	35	35	34	34	34	34	35	35	35	34	34	34	34	34	34	34	34	34	34	34	34	34	34	34
February	34	33	34	34	34	34	34	34	34	35	34	34	34	34	34	35	35	36	36	36	34	35	35	35	35	35	35	35	--	--	--	35
March	34	35	35	36	37	37	37	35	34	34	34	35	35	35	35	35	34	35	36	37	36	37	39	39	39	39	39	40	41	40	40	37
April	40	39	40	39	39	41	42	41	42	41	41	42	44	40	42	42	42	42	42	42	43	48	49	48	47	47	47	49	49	49	--	43
May	48	48	48	49	51	52	54	56	60	59	56	59	59	66	68	67	62	60	58	58	58	56	56	57	59	61	58	57	56	57	57	57
June	57	58	59	64	67	69	68	71	75	72	68	74	73	70	69	66	65	66	68	69	68	68	65	68	66	66	67	70	70	71	--	68
July	72	72	72	70	68	67	67	68	67	67	68	69	71	72	70	68	69	71	72	73	76	76	77	77	77	76	75	76	76	76	76	72
August	74	74	74	72	70	71	72	70	72	72	73	72	71	70	68	69	70	70	70	71	72	71	69	69	70	71	71	71	70	69	70	71
September	72	73	74	74	76	76	76	75	76	76	76	76	75	76	73	69	66	65	65	66	67	68	68	70	72	72	70	68	65	64	--	71

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

LOCATION.--At bridge crossing headrace of Vischer Ferry Plant, 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F Sept. 10; minimum, freezing point on many days during December to March.
EXTREMES, 1951-61.--Water temperatures: Maximum, 85°F Aug. 5, 1955; minimum, freezing point on many days during winter months.
REMARKS.--No discharge available.

Temperature (°F) of water, water year October 1960 to September 1961
[Twice-daily measurements at 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																																
Maximum	65	64	64	61	61	62	61	61	60	60	60	60	58	57	58	58	58	59	58	55	55	54	52	52	52	52	47	47	47	47	--	57
Minimum	66	64	54	62	62	61	61	60	60	60	60	58	57	57	58	59	58	58	57	56	54	53	52	54	52	52	47	47	47	49	--	56
November																																
Maximum	47	48	47	47	47	45	44	45	45	44	43	41	41	41	41	42	42	42	42	42	42	42	42	41	41	40	41	41	41	41	--	43
Minimum	47	47	47	47	45	44	44	45	43	43	42	42	42	42	42	42	42	42	43	43	43	42	43	42	42	41	41	41	41	41	--	43
December																																
Maximum	40	38	38	38	38	38	38	36	35	34	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34
Minimum	39	38	38	39	38	38	37	36	35	34	33	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34
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	33	33	--	--	--	32
March																																
Maximum	32	32	32	32	32	32	34	36	35	35	32	32	32	32	34	33	33	32	33	33	32	33	32	35	35	37	38	37	40	41	40	34
Minimum	33	33	36	36	35	35	36	34	33	34	32	32	33	33	34	33	32	32	32	33	34	36	32	35	35	37	38	40	42	40	39	35
April																																
Maximum	40	39	38	38	38	40	40	40	39	40	40	40	40	40	40	40	40	42	41	42	42	45	46	48	50	48	49	49	49	47	--	42
Minimum	39	39	38	38	38	40	40	40	40	40	40	41	40	42	42	42	44	43	44	44	44	45	46	49	49	51	49	49	49	49	--	43
May																																
Maximum	47	47	47	47	47	48	49	50	54	54	56	56	58	58	59	63	64	65	62	62	61	62	59	58	60	60	60	60	60	58	59	56
Minimum	47	47	47	47	47	48	51	52	56	58	58	58	59	59	62	64	64	64	63	62	62	62	60	60	61	61	59	60	60	60	59	57
June																																
Maximum	59	60	60	61	62	65	65	68	68	68	69	69	70	72	69	72	69	68	68	69	69	69	69	68	67	67	68	69	70	71	--	67
Minimum	59	60	60	60	65	68	68	68	68	68	69	70	70	72	70	69	70	71	71	70	70	70	71	70	67	69	69	68	70	71	--	68
July																																
Maximum	72	72	72	72	72	72	72	75	75	74	73	72	73	73	72	72	72	72	72	73	73	74	74	76	76	78	76	76	79	76	77	74
Minimum	71	72	72	72	74	74	75	74	73	74	74	74	74	74	73	73	72	72	72	73	74	75	75	77	76	77	76	76	79	78	77	74
August																																
Maximum	78	77	78	77	77	77	77	76	77	78	77	77	77	77	75	74	74	74	74	74	77	74	75	76	76	75	73	74	74	73	73	76
Minimum	78	78	78	77	77	77	77	77	78	77	78	79	77	75	75	75	75	75	76	76	77	75	76	76	76	74	74	74	74	73	73	76
September																																
Maximum	74	74	74	75	77	77	77	77	77	77	78	77	77	78	75	73	72	72	72	72	73	71	73	73	75	74	73	73	73	71	--	74
Minimum	73	74	74	76	79	77	77	79	79	80	78	78	78	78	75	75	75	72	72	72	71	71	71	71	74	74	74	73	72	71	--	75

HUDSON RIVER BASIN--Continued

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

LOCATION.--At gage at Troy lock and dam, at Green Island, Albany County, 0.5 mile downstream from 5th branch Mohawk River.
DRAINAGE AREA.--8,090 square miles, approximately (including that above site of auxiliary gage).
RECORDS AVAILABLE.--Water temperatures: October 1954 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F July 29-31.
EXTREMES, 1954-61.--Water temperatures: Maximum, 81°F July 31, Aug. 1, 1959; minimum, freezing point on many days during winter months.
REMARKS.--Prior to Nov. 15, 1960 measurements taken at Ford Motor Co. Hydro Plant.

Temperature (°F) of water, water year October 1860 to September 1961
[Daily measurement at 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	65	64	64	63	63	62	60	60	61	60	60	59	58	58	59	59	58	58	57	56	55	55	54	52	50	49	49	49	49	48	48	57
November	49	49	48	47	47	47	46	46	45	45	44	44	44	44	44	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
December	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
January	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
February	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
March	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	35	35	37	36	36	32	38	38	38	38	42	43	43	44	43	--
April	43	41	41	41	43	43	42	45	43	45	41	43	45	42	45	44	45	45	45	44	45	45	44	48	48	48	47	47	48	48	--	44
May	47	48	48	47	47	45	46	53	54	58	59	58	60	60	62	65	64	65	65	64	60	60	60	60	60	60	59	57	59	58	58	57
June	58	59	63	64	59	66	68	68	68	68	68	70	70	72	68	67	69	69	70	71	71	70	69	73	71	70	70	71	72	74	--	68
July	74	74	75	75	73	73	74	73	73	74	74	74	74	74	73	73	74	74	75	76	75	77	77	79	79	79	79	79	80	80	80	76
August	79	78	76	77	77	77	77	77	77	79	79	76	76	75	75	75	75	71	75	76	76	75	75	74	74	75	75	75	75	74	75	76
September	76	77	78	79	78	78	78	77	78	77	79	79	79	78	78	75	74	72	72	71	71	70	71	72	73	73	73	71	69	68	--	75

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

LOCATION.--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.
RECORDS AVAILABLE.--Water temperatures: June 1959 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 75°F on many days during July, August and September; minimum, 33°F on several days during January and February.
EXTREMES, 1959-61.--Water temperatures: Maximum, 80°F Aug. 29, 1959; minimum, 33°F on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	--	60	60	60	60	60	59	--	59	59	59	58	58	57	--	58	58	58	58	58	56	--	56	56	56	55	53	53	--	53	58
November	53	53	53	51	50	--	50	48	48	47	47	47	--	46	46	46	45	45	45	--	45	45	45	44	44	44	--	43	43	43	--	47
December	43	42	43	--	42	42	42	41	41	40	--	38	37	36	37	37	36	--	37	37	37	37	37	37	--	36	35	35	36	35	36	38
January	--	36	36	36	36	35	35	--	35	35	35	35	35	36	--	36	36	36	36	--	35	--	34	34	34	33	34	34	--	34	33	35
February	34	33	33	33	--	33	33	34	33	33	33	--	33	33	34	34	34	34	--	34	33	34	33	34	34	--	34	34	--	--	--	34
March	34	35	35	35	--	34	34	35	35	35	35	--	35	35	36	36	36	36	--	36	37	37	37	37	37	--	38	38	38	38	39	36
April	40	--	40	41	41	42	42	42	--	42	43	43	44	43	43	--	43	43	43	43	43	44	--	45	45	46	47	48	48	--	--	43
May	49	49	49	49	49	49	--	50	50	51	51	52	52	--	53	55	56	57	58	59	--	59	59	60	60	60	60	--	60	--	59	54
June	59	60	60	--	60	61	61	61	62	63	--	63	64	65	66	66	67	--	67	68	69	70	69	69	--	70	70	70	70	71	--	65
July	70	--	70	70	70	70	70	70	--	70	72	72	72	72	72	--	72	72	73	73	74	74	--	74	75	75	75	75	75	--	75	72
August	75	75	75	75	75	--	75	75	75	75	75	75	--	74	74	74	74	74	74	--	74	73	73	73	73	73	--	73	73	74	74	74
September	74	73	--	74	74	75	75	75	75	--	75	75	75	75	75	74	--	73	73	73	73	71	71	--	71	71	71	70	69	69	--	73

HUDSON RIVER BASIN--Continued

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

LOCATION.--At Charles Point on Lent Cove at Peekskill, Westchester County.
RECORDS AVAILABLE.--Water temperatures: October 1959 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F Sept. 15; minimum, freezing point on many days during January, February, and March.
EXTREMES, 1959-61.--Water temperatures: Maximum, 80°F Sept. 15, 1961; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[Daily measurement at 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	66	66	66	65	65	65	64	64	64	64	64	64	64	64	64	64	64	63	62	62	61	61	60	60	59	59	59	59	59	58	63
November	57	56	56	56	56	56	55	54	53	53	52	52	52	52	52	52	52	51	51	51	50	50	50	50	50	49	49	48	48	47	--	52
December	47	47	46	46	47	46	45	45	44	44	44	42	42	41	40	38	35	35	38	37	36	35	35	35	35	35	35	34	34	33	33	40
January	33	33	33	33	33	33	33	33	32	32	33	33	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	33	33	33	33	33	33	32	--	--	--	32
March	32	32	32	33	33	33	34	34	34	34	34	34	35	34	34	34	34	34	34	34	35	35	36	36	36	37	39	39	39	40	41	35
April	40	40	40	40	40	41	41	41	41	42	42	42	43	43	43	44	45	44	45	44	45	45	47	47	47	48	48	48	49	49	--	44
May	50	50	50	51	51	51	52	53	53	54	54	54	54	55	55	56	56	57	57	57	57	59	58	58	59	60	60	60	60	60	60	56
June	60	61	61	61	62	63	64	64	65	65	66	66	67	68	68	68	68	69	69	69	69	70	70	70	70	70	70	70	70	70	--	67
July	71	72	73	73	73	73	73	74	74	74	74	74	74	74	74	74	73	73	74	74	76	76	77	78	77	77	78	78	78	78	78	75
August	78	78	78	78	78	78	78	78	79	77	78	78	77	77	77	77	77	77	77	77	77	76	76	76	76	76	76	77	77	76	76	77
September	76	78	78	78	79	79	79	79	78	78	79	79	79	79	80	79	78	76	76	76	76	74	73	73	74	74	74	74	74	73	--	77

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

LOCATION.--Temperature recorder at gaging station 1 mile northwest 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 78°F July 2, 23; minimum, freezing point on many days in December, January, and February.
REMARKS.--Records of pH and specific conductance for miscellaneous sediment samples are available at the subdistrict office in Harrisburg, Pa.

Temperature (°F) of water, water year October 1960 to September 1961

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	53	49	47	47	46	45	46	48	48	48	48	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	54	53	49	47	45	46	44	43	45	46	48	47	48	--
November																																
Maximum	50	50	49	46	45	45	44	40	41	45	45	42	41	43	45	47	47	46	44	43	42	43	44	43	41	41	42	44	48	48	--	44
Minimum	48	49	46	45	45	44	40	39	39	41	42	40	40	41	43	45	46	44	43	41	41	41	42	40	40	39	40	42	44	40	--	42
December																																
Maximum	40	35	36	36	38	40	41	40	36	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34
Minimum	35	34	34	35	36	38	40	35	33	33	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	35	35	33	33	34	33	34	34	34	34	34	34	32	32	32	32	32	32	32	32	32	32	32	32	33
Minimum	32	32	32	32	32	32	32	32	33	33	33	33	32	33	34	34	33	33	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	37	37	38	37	37	37	39	39	38	38	37	38	39	--	--	--	35
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	36	37	37	37	36	37	38	37	37	37	37	38	--	--	--	34
March																																
Maximum	39	40	41	41	43	43	43	43	38	38	38	40	40	39	40	40	39	37	37	38	40	40	40	40	41	42	44	46	47	47	46	41
Minimum	39	39	40	41	40	42	42	38	38	38	37	38	39	39	39	39	36	36	37	37	38	40	38	38	40	41	42	44	46	46	44	40
April																																
Maximum	44	43	42	44	46	47	48	49	49	49	44	44	44	44	46	46	45	45	45	47	48	51	53	54	56	56	56	55	53	51	--	48
Minimum	43	42	41	42	43	45	47	46	44	43	43	42	42	44	45	45	45	45	45	45	47	48	51	53	54	56	54	53	51	49	--	46
May																																
Maximum	51	50	52	53	56	55	54	57	60	57	56	55	57	66	65	64	60	60	58	58	59	58	57	60	63	61	57	56	57	59	60	58
Minimum	49	49	49	49	50	52	52	53	57	56	55	54	55	57	63	59	57	58	56	55	55	56	54	55	57	57	52	51	56	54	54	54
June																																
Maximum	63	69	67	65	68	70	68	64	64	69	73	74	76	73	68	68	69	69	70	71	69	67	70	70	67	67	67	71	74	74	--	69
Minimum	58	62	62	59	60	62	64	63	63	64	66	69	69	66	63	61	61	61	63	65	66	66	65	66	64	63	65	65	66	70	--	64
July																																
Maximum	75	78	74	72	71	71	70	72	71	71	72	72	71	71	70	67	73	75	75	72	73	77	78	76	72	74	74	75	73	72	73	73
Minimum	68	69	72	68	65	65	65	67	65	64	64	66	68	67	67	66	67	69	70	69	68	70	72	71	69	71	71	70	68	67	70	68
August																																
Maximum	72	71	68	69	69	70	73	72	74	74	73	73	72	70	71	73	72	72	70	69	68	68	67	68	71	72	73	74	74	74	75	71
Minimum	69	68	67	67	68	67	69	68	68	69	71	70	68	65	64	67	66	66	66	67	66	66	66	66	68	71	71	71	71	70	70	68
September																																
Maximum	75	77	75	76	77	75	74	72	70	72	73	72	72	71	71	64	62	60	60	62	63	67	69	70	70	69	65	64	62	59	--	69
Minimum	71	72	72	71	72	72	72	69	68	68	68	68	69	69	64	61	58	56	59	60	62	63	65	66	67	65	62	60	57	55	--	65

RARITAN RIVER BASIN--Continued

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

Periodic determinations of suspended-sediment discharge and particle-size analyses of suspended sediment, December 1959 to March 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)	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	
Dec. 13, 1959	0615		48	882	176	--	13	18	37	50	68	70	86	92	96	--		SWBC
July 30, 1960	1900		68	900	215	--	8	14	32	45	69	86	87	95	98	100		SWBC
Sept. 12	2305		61	1380	232	--	3	11	23	38	61	77	79	88	93	100		SWBC
Jan. 15, 1961	--		--	77	4	1	--	--	--	--	--	--	--	--	--	--		
Feb. 25	--		--	641	63	S 127	--	--	--	--	--	--	--	--	--	--		
Feb. 26	--		--	910	88	261	--	--	--	--	--	--	--	--	--	--		
Feb. 26	1230		39	1190	235	--	2	8	17	33	67	83	87	95	98	--		SBN
Feb. 26	1230		39	1190	240	--	14	19	35	51	72	83	85	92	96	--		SWBC
Mar. 19	--		--	235	3	2	--	--	--	--	--	--	--	--	--	--		
Mar. 20	--		--	224	1	1	--	--	--	--	--	--	--	--	--	--		
Mar. 23	--		--	410	16	S 30	--	--	--	--	--	--	--	--	--	--		
Mar. 24	--		--	430	7	9	--	--	--	--	--	--	--	--	--	--		

S Computed by subdividing day.

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

LOCATION.--At gaging station on 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 September 1961.
Sediment records: December 1959 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum daily, 84°F July 2; minimum daily, freezing point on many days in December, January and February.
Sediment concentrations: Maximum daily, 166 ppm Feb. 26; minimum daily, 1 ppm on many days in October and November.
Sediment loads: Maximum daily, 1,030 tons Feb. 26; minimum daily, less than 0.50 ton on many days in October, November and September.
EXTREMES, 1959-61.--Water temperatures: Maximum daily, 84°F July 2, 1961; minimum daily, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 280 ppm Sept. 12, 1960; minimum daily, 1 ppm on many days.
Sediment loads: Maximum daily, 2,250 tons Sept. 12, 1960; minimum daily, less than 0.50 ton on many days.
REMARKS.--Flow affected by ice Dec. 10 to Feb. 19.

Chemical analyses in parts per million, water year October 1960 to September 1961

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
Feb. 26, 1961.....	1930	11	0.00	8.6	4.3	3.3	2.0	21	21	4.0	0.1	4.9	--	39	22	104	6.9	3
Mar. 14.....	1030	11	.02	11	4.3	3.3	1.5	26	21	5.0	.1	4.0	--	45	24	118	6.9	3
June 7.....	132	11	.05	17	7.7	6.1	1.5	74	16	4.2	.3	3.1	107	74	14	169	8.0	5
July 11.....	55	11	.04	20	8.0	4.6	1.5	88	14	5.4	.2	3.1	110	83	11	187	7.3	5
July 12-31.....	166	15	.02	16	8.2	6.1	1.2	72	16	5.2	.1	4.1	115	74	15	167	7.5	3
Aug. 1.....	414	14	.10	13	5.7	4.1	1.8	50	16	4.5	.3	3.6	85	56	15	130	6.9	5
Aug. 31.....	130	12	.00	17	7.7	6.2	1.5	76	14	5.2	.1	3.1	107	74	12	163	7.2	3
Sept. 7.....	67	11	.02	19	8.5	6.1	1.8	91	13	6.5	.1	3.0	124	83	8	189	7.4	3

Temperature (°F) of water, water year October 1960 to September 1961

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.....	58	53	55	51	51	56	50	55	50	50	54	54	51	53	56	59	56	54	53	59	46	45	44	47	45	40	45	48	50	50	50	51
November.....	53	49	48	45	46	44	41	36	37	43	--	41	46	40	44	45	48	41	42	41	47	40	45	39	40	39	40	44	49	44	--	43
December.....	--	36	35	44	38	38	44	38	35	32	33	42	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	42	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	34	36	49	39	39	41	40	39	41	--	--	--	34
March.....	37	38	39	42	50	49	45	43	36	35	33	43	40	39	41	40	34	34	40	38	38	39	39	39	42	45	45	48	49	47	42	41
April.....	41	41	39	39	40	45	44	42	44	42	41	42	39	40	44	46	43	45	45	43	46	52	55	55	56	60	54	54	50	48	--	46
May.....	49	49	49	48	48	48	52	56	58	61	59	56	58	60	64	65	58	57	56	55	69	58	55	55	58	62	53	50	58	54	54	56
June.....	60	66	69	60	61	67	68	66	67	68	69	71	72	75	67	62	61	65	65	66	69	68	66	68	68	65	65	65	68	70	--	67
July.....	70	84	75	69	67	67	67	69	67	65	65	69	70	69	71	68	70	73	72	72	70	74	78	78	74	74	74	74	73	71	74	71
August.....	71	70	71	69	72	70	71	70	71	73	73	73	70	74	65	69	68	65	66	70	66	65	69	70	70	76	75	72	74	71	72	70
September.....	73	76	79	76	76	75	75	73	75	76	74	73	75	74	72	62	62	58	64	65	66	65	68	74	70	70	62	62	57	54	--	69

RARITAN RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961

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	195	C 5	3	166	C 3	1	165	4	2
2	165	C 5	2	155	C 3	1	130	C 3	1
3	158	C 5	2	121	C 3	1	121	C 3	1
4	145	C 2	1	107	C 3	1	114	C 3	1
5	138	C 2	1	105	C 3	1	112	C 3	1
6	138	C 2	1	128	C 1	T	112	C 3	1
7	138	C 2	1	116	C 1	T	109	C 3	1
8	128	C 1	T	103	C 1	T	103	C 3	1
9	123	C 1	T	99	C 1	T	101	C 3	1
10	121	C 1	T	294	15	S 16	95	C 3	1
11	114	C 1	T	230	4	2	95	C 3	1
12	109	C 1	T	152	C 2	1	80	--	1
13	107	C 1	T	132	C 2	1	130	--	2
14	105	C 1	T	123	C 2	1	110	--	1
15	105	C 1	T	116	C 2	1	100	--	1
16	105	C 2	1	112	C 2	1	105	--	1
17	105	C 2	1	107	C 2	1	110	--	1
18	103	C 2	1	103	C 2	1	95	--	1
19	99	C 2	1	101	C 2	1	90	--	1
20	257	14	S 11	101	C 2	1	90	--	1
21	196	4	2	99	C 2	1	210	--	5
22	135	C 1	T	95	C 1	T	260	--	6
23	123	C 1	T	95	C 1	T	140	--	2
24	118	C 1	T	93	C 1	T	135	--	1
25	114	C 1	T	91	C 1	T	130	--	1
26	107	C 1	T	89	C 2	T	125	--	1
27	105	C 1	T	89	C 2	T	120	--	1
28	105	C 1	T	89	C 2	T	100	--	1
29	114	C 1	T	113	5	S 2	110	--	1
30	109	C 1	T	326	23	S 20	120	--	1
31	101	C 1	T	--	--	--	100	--	1
Total	3985	--	34	3848	--	58	3717	--	43

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	350	--	15	110	--	1	700	C 9	17
2	400	--	20	105	--	1	652	C 9	16
3	180	--	5	100	--	1	595	C 9	14
4	150	--	2	95	--	1	540	C 9	13
5	140	--	2	90	--	1	520	C 9	13
6	145	--	2	100	--	1	510	12	17
7	150	--	2	110	--	1	535	18	26
8	150	--	2	110	--	1	495	14	19
9	135	--	2	110	--	1	605	17	28
10	125	--	2	115	--	1	540	11	16
11	125	--	2	115	--	1	424	8	9
12	130	--	2	115	--	1	451	10	12
13	120	--	2	110	--	1	485	11	14
14	130	--	2	130	--	1	1030	162	S 544
15	150	--	2	150	--	2	738	25	50
16	160	--	2	140	--	2	616	C 8	13
17	150	--	2	130	--	1	470	C 8	10
18	140	--	2	140	--	2	420	C 8	9
19	85	4	1	375	53	A 55	545	10	15
20	105	--	1	750	58	S 134	495	C 6	8
21	135	--	2	457	16	20	406	C 6	7
22	140	--	2	480	30	S 47	374	C 6	6
23	135	--	2	854	55	127	919	68	S 280
24	130	--	2	888	45	S 130	989	52	S 159
25	125	--	2	1530	131	S 654	634	17	29
26	120	--	2	1930	166	S 1030	515	C 6	8
27	120	--	2	1040	27	76	465	C 6	8
28	120	--	2	870	15	35	438	C 6	7
29	120	--	2	--	--	--	456	C 6	7
30	120	--	2	--	--	--	384	C 6	6
31	115	--	2	--	--	--	354	C 6	6
Total	4600	--	94	11249	--	2327	17300	--	1386

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

RARITAN RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961--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	460	C 4		5	384	9		9	172	C 7		3
2	433	C 4		5	420	13		15	163	C 7		3
3	350	C 4		4	362	C 7		7	160	C 7		3
4	322	C 4		3	326	C 7		6	163	C 7		3
5	298	C 4		3	306	C 7		6	144	C 7		3
6	286	C 4		3	283	C 7		5	137	9		3
7	272	C 4		3	362	C 7		7	132	C 11		4
8	255	C 4		3	362	C 7		7	127	C 11		4
9	241	10		7	342	14		13	132	C 11		4
10	797	165	S	528	513	71	S	105	142	C 11		4
11	593	26	S	46	342	14		13	134	C 11		4
12	406	9		10	397	22		24	122	C 11		4
13	1090	112	S	448	366	19		19	115	C 11		3
14	1060	35	S	114	322	14		12	110	C 8		2
15	800	19		41	290	14		11	115	C 8		2
16	964	47	S	150	679	65	S	142	104	C 8		2
17	865	22		51	417	30		34	95	C 8		2
18	658	9		16	330	15		13	91	C 8		2
19	680	14		26	322	12		10	89	C 8		2
20	540	C 6		9	302	10		8	87	C 8		2
21	480	C 6		8	280	C 7		5	105	12	S	4
22	446	C 6		7	266	C 7		5	218	26		15
23	540	28		41	255	C 7		5	144	12		5
24	428	8		9	235	C 7		4	110	6		2
25	434	14	S	18	218	C 7		4	106	5		1
26	520	24		34	218	8		5	150	13		5
27	379	8		8	314	13		11	124	C 10		3
28	379	9	S	11	266	8		6	110	C 10		3
29	717	52	S	108	218	C 6		4	93	C 10		3
30	433	7		8	211	C 6		3	85	C 10		2
31	--	--		--	183	C 6		3	--	--		--
Total	16126	--		1727	10091	--		521	3779	--		102
	JULY				AUGUST				SEPTEMBER			
1	78	C 7		1	414	61	S	76	89	C 3		1
2	76	C 7		1	160	24		10	78	C 3		1
3	76	C 7		1	227	24	S	18	74	C 3		1
4	72	C 7		1	239	29		19	72	C 3		1
5	67	C 7		1	139	14		5	70	C 3		1
6	63	C 7		1	122	7		2	68	C 3		1
7	63	C 5		1	117	10		3	67	C 6		1
8	68	C 5		1	106	8		2	67	C 6		1
9	65	C 5		1	91	8		2	68	C 6		1
10	58	C 5		1	85	C 6		1	67	C 6		1
11	55	C 5		1	89	C 6		1	65	C 6		1
12	55	C 6		1	93	C 6		2	62	C 2		T
13	65	C 6		1	89	C 6		1	60	C 2		T
14	74	C 6		1	78	C 3		1	62	C 2		T
15	194	34	S	39	74	C 3		1	70	C 2		T
16	232	48	S	35	74	C 3		1	67	C 2		T
17	106	16		5	68	C 3		1	56	C 2		T
18	80	11		2	67	C 3		1	52	C 2		T
19	77	14	S	3	65	C 3		1	55	C 2		T
20	427	114	S	174	67	C 3		1	68	C 2		T
21	216	48		28	302	92	S	80	173	38	S	20
22	110	17		5	180	22		11	115	31		10
23	85	10		2	150	15	S	7	81	4		1
24	152	33	S	32	235	20		13	74	C 2		T
25	468	108	S	138	174	16		8	68	C 2		T
26	183	28		14	177	11		5	65	C 2		T
27	122	18		6	177	9		4	60	C 2		T
28	97	15		4	127	7		2	55	6		1
29	183	22	S	13	112	6		2	52	7		1
30	222	28	S	17	124	9		3	47	9		1
31	169	21	S	13	106	5		1	--	--		--
Total	4058	--		544	4328	--		285	2127	--		49

Total discharge for year (cfs-days)..... 85208
Total load for year (tons)..... 7170

S Computed by subdividing day.
T Less than 0.50 ton.
C Composite period.

RARITAN RIVER BASIN--Continued

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

Particle-size analyses of suspended sediment, 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)	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	
Feb. 26, 1961.....	1455		40	2810	347		4	10	20	34	63	81	83	92	96			BSN
Feb. 26.....	1455		40	2810	347		6	23	34	49	69	78	82	91	94			BSWC
Mar. 14.....	0800		39	1200	160		21	31	48	62	80	88	91	97	99			BSWC
Mar. 14.....	1340		38	1340	280		6	16	34	58	87	93	94	98	100			BSN
Mar. 14.....	1340		38	1340	280		16	34	50	72	87	92	93	98	99			BSWC
Apr. 10.....	1605		42	1420	493		23	40	56	72	88	95	96	98	99			BSWC
May 10.....	0650		61	652	225		32	54	76	91	98	99	100	--	--			BSWC
July 20.....	1130		73	283	104		60	79	90	94	97	99	100	--	--			BSWC

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

LOCATION.--At gaging station at Lawrenceville Road Bridge on U.S. Highway 206, 1.6 miles southwest of Princeton, Mercer County, and 4 miles upstream from Lake Carnegie.
DRAINAGE AREA.--44.5 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1956 to September 1961.
Sediment records: January 1956 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum daily, 85°F July 24-27; minimum daily, freezing point on many days in December, January and February.
Sediment concentrations: Maximum daily, 532 ppm Mar. 23; minimum daily, 1 ppm on many days in October and November 1960, August 1961.
Sediment loads: Maximum daily, 3,060 tons Mar. 23; minimum daily, less than 0.05 ton on many days during year.
EXTREMES, 1956-61.--Water temperatures: Maximum daily, 89°F July 3, 1958, June 30, 1959; minimum daily, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 939 ppm Mar. 6, 1959; minimum daily, no flow on many days.
Sediment loads: Maximum daily, 6,800 tons Feb. 28, 1958; minimum daily, 0 tons on several days.
REMARKS.--Records of specific conductance and pH sampled on a periodic basis available in subdistrict office at Harrisburg, Pa. Flow affected by ice Dec. 18-20, 23-26, Jan. 1, 21.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 6, 1960.....	17	8.2	0.00	16	7.7	12	2.0	50	37	9.6	0.1	1.8	117	72	31	198	7.0	3
Feb. 15, 1961.....	63	16	.00	15	6.7	10	1.5	38	30	13	.1	4.0	122	65	34	189	7.5	7
Mar. 9.....	416	13	.04	10	4.7	6.3	2.0	18	32	7.6	.6	3.6	103	45	30	136	6.5	20
Mar. 23.....	1140	7.3	.02	6.5	2.6	4.0	2.0	6	20	4.0	--	5.8	76	27	22	92	6.4	7

Temperature (°F) of water, water year October 1960 to September 1961

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.....	--	--	68	--	67	67	68	69	79	79	64	67	72	67	65	71	68	63	60	62	58	56	57	52	52	51	52	56	56	52	56	63
November.....	58	52	46	46	50	54	43	53	49	42	42	46	47	49	52	52	52	48	--	54	52	47	47	46	45	47	47	46	58	43	--	49
December.....	33	36	32	47	46	43	35	32	32	33	33	32	32	33	32	32	35	32	32	32	37	32	33	32	35	35	31	32	32	32	33	34
January.....	33	32	34	32	32	32	32	34	32	32	32	--	33	34	33	34	34	33	33	33	--	32	32	32	32	32	32	32	32	32	32	33
February.....	32	32	32	32	32	--	--	--	--	33	39	33	32	35	--	--	34	34	34	34	33	34	37	32	38	36	46	41	--	--	--	--
March.....	--	--	--	47	46	44	52	37	40	38	43	47	41	39	39	39	33	41	38	41	37	40	40	40	42	44	45	--	46	46	42	42
April.....	40	46	46	50	41	53	42	41	41	40	43	46	43	46	48	--	44	46	46	49	--	52	--	--	48	57	60	--	--	--	--	--
May.....	54	--	48	48	56	54	58	56	79	68	--	62	64	68	66	70	68	69	68	71	70	65	58	--	--	--	69	61	59	69	--	--
June.....	75	72	70	77	76	74	76	72	77	69	78	79	--	82	70	--	--	--	--	70	70	74	75	76	76	77	77	77	80	83	--	75
July.....	76	79	77	74	76	75	79	77	76	76	71	--	70	81	79	77	75	82	82	72	79	81	82	85	85	85	85	--	72	71	71	77
August.....	--	--	68	83	--	71	72	82	81	79	80	78	68	74	75	75	76	75	75	75	65	77	76	76	79	78	81	83	79	78	81	76
September.....	84	84	78	82	84	81	77	75	81	81	81	--	82	81	69	68	69	70	69	68	66	65	73	74	76	--	70	71	68	69	--	75

RARITAN RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961

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	41	C 1	0.1	84	9	S 2.6	44	15	1.8
2	26	C 1	.1	63	6	1.0	30	12	1.0
3	24	C 1	.1	44	C 1	.1	26	4	.3
4	20	C 1	.1	35	C 1	.1	25	23	1.6
5	18	C 1	T	30	C 1	.1	23	22	1.4
6	17	C 1	T	36	C 1	.1	22	17	1.0
7	17	C 1	T	32	C 1	.1	22	C 5	.3
8	15	C 1	T	26	C 1	.1	20	C 5	.3
9	14	C 1	T	23	2	.1	14	20	.8
10	14	C 1	T	308	71	S 94	17	10	.5
11	12	C 2	.1	146	17	S 7.6	13	C 5	.2
12	12	C 2	.1	78	8	1.7	7.1	C 5	.1
13	10	C 2	.1	60	4	.6	21	C 5	.3
14	9.8	C 2	.1	51	4	.6	25	C 5	.3
15	9.8	C 2	.1	45	4	.5	26	C 5	.4
16	11	C 2	.1	42	4	.5	26	C 5	.4
17	18	C 2	.1	37	2	.2	26	4	.3
18	9.8	2	.1	31	2	.2	24	3	.2
19	9.8	2	.1	30	2	.2	22	3	.2
20	176	76	S 51	26	2	.1	24	5	.3
21	69	8	1.5	25	2	.1	183	74	S 81
22	35	C 2	.2	23	21	1.3	328	107	S 116
23	28	C 2	.2	22	22	1.3	86	19	4.4
24	27	C 2	.1	20	6	.3	57	16	2.5
25	23	C 2	.1	20	6	.3	50	39	5.3
26	19	C 2	.1	18	6	.3	47	58	7.4
27	18	C 2	.1	18	2	.1	52	55	7.7
28	17	C 2	.1	17	2	.1	42	23	2.6
29	42	C 3	.3	26	16	S 1.7	42	18	2.0
30	38	C 3	.3	110	43	S 14	74	15	3.0
31	27	C 3	.2	--	--	--	68	26	4.8
Total	827.2	--	55.8	1526	--	130.0	1486.1	--	248.4

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	950	248	S 724	25	15	1.0	135	4	1.5
2	509	74	S 117	23	C 8	.5	196	15	7.9
3	182	22	S 11	22	C 8	.5	110	9	2.7
4	115	C 6	1.9	25	C 8	.5	88	C 8	1.9
5	82	C 6	1.3	31	C 8	.7	86	C 8	1.9
6	72	C 6	1.2	30	C 8	.6	78	C 8	1.7
7	80	C 6	1.3	28	C 8	.6	90	C 8	1.9
8	132	C 6	2.1	27	C 8	.6	242	48	S 63
9	96	C 6	1.6	26	C 8	.6	416	65	S 99
10	57	C 18	2.8	30	C 9	.7	154	15	6.2
11	50	C 18	2.4	38	C 9	.9	92	C 7	1.7
12	50	C 18	2.4	37	C 9	.9	80	C 7	1.5
13	46	C 18	2.2	32	C 9	.8	68	C 7	1.3
14	57	15	2.3	32	C 9	.8	657	234	S 602
15	172	61	S 32	63	C 12	2.0	206	21	12
16	130	22	S 8.0	76	C 12	2.5	120	C 12	3.9
17	90	8	1.9	60	C 12	1.9	82	C 12	2.7
18	101	15	4.1	84	18	S 4.9	65	21	3.7
19	84	31	7.0	1110	421	S 1470	313	69	S 65
20	34	23	2.1	826	110	S 250	172	32	S 16
21	45	15	1.8	295	35	S 29	101	41	11
22	40	C 3	.3	310	41	S 50	82	29	6.4
23	37	C 3	.3	537	82	S 132	1140	532	S 3060
24	35	C 3	.3	358	52	S 57	387	53	S 72
25	33	C 16	1.4	645	177	S 443	170	11	5.0
26	32	C 16	1.4	520	68	S 134	113	C 8	2.4
27	31	C 16	1.3	168	10	4.5	92	C 8	2.0
28	31	C 16	1.3	129	5	1.7	80	C 8	1.7
29	29	18	1.4	--	--	--	106	59	17
30	27	20	1.5	--	--	--	71	49	9.4
31	26	20	1.4	--	--	--	58	36	S 5.6
Total	3455	--	941.0	5587	--	2592.2	5850	--	4090.0

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

RARITAN RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961--Continued

Day	APRIL			MAY			JUNE		
	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	200	78 S	46	48	C 7	0.9	13	C 4	0.1
2	112	7	2.1	90	C 7	1.7	12	C 4	.1
3	71	C 8	1.5	60	C 7	1.1	12	C 4	.1
4	59	C 8	1.3	45	C 7	.8	11	C 3	.1
5	51	C 8	1.1	37	C 7	.7	9.4	C 3	.1
6	46	C 8	1.0	34	C 6	.6	8.3	C 3	.1
7	42	C 8	.9	50	C 6	.8	7.2	C 3	.1
8	36	C 8	.8	61	24 S	4.4	6.6	C 3	.1
9	32	15	1.3	110	24 S	8.0	7.2	C 3	.1
10	252	72 S	79	219	75 S	49	8.6	C 3	.1
11	129	21 S	7.8	86	19	4.4	7.6	C 3	.1
12	71	11	2.1	337	65 S	74	6.3	C 2	T
13	1210	266 S	1000	147	C 5	2.0	5.5	C 2	T
14	496	40 S	75	98	C 5	1.3	18	12 S	1.3
15	164	10	4.4	71	C 5	1.0	34	12 S	1.4
16	400	34 S	61	83	C 5	1.1	11	4	.1
17	224	21 S	15	64	C 5	.9	7.2	4	.1
18	132	5	1.8	44	C 5	.6	5.2	3	T
19	123	10	3.3	36	C 5	.5	4.5	C 8	.1
20	90	8	1.9	34	C 5	.5	3.8	C 8	.1
21	71	5	1.0	90	C 5	.4	5.0	C 8	.1
22	63	6	1.0	33	C 5	.4	18	C 8	.4
23	84	12	2.7	26	C 5	.4	13	C 8	.3
24	62	5	.8	21	4	.2	9.0	C 7	.2
25	84	12 S	4.6	17	4	.2	6.6	C 7	.1
26	249	33 S	24	23	6 S	.5	5.7	C 7	.1
27	86	9	2.1	70	18	3.4	15	C 7	.3
28	68	3	.6	40	C 5	.5	14	C 7	.3
29	101	18	4.9	23	C 5	.3	7.6	C 7	.1
30	59	6	1.0	19	C 5	.3	5.5	C 7	.1
31	--	--	--	15	C 5	.2	--	--	--
Total	4867	--	1350.0	2071	--	161.1	297.8	--	6.3

Day	JULY			AUGUST			SEPTEMBER		
	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	4.0	7	0.1	346	75 A	70	13	C 3	0.1
2	3.4	C 6	.1	80	30 A	6.5	12	C 3	.1
3	3.4	C 6	.1	271	68 S	82	10	C 3	.1
4	3.1	C 6	.1	108	13	3.8	9.0	C 3	.1
5	2.7	C 6	T	60	8	1.3	12	C 3	.1
6	2.5	C 6	T	45	C 4	.5	7.9	C 3	.1
7	2.5	C 6	T	37	C 4	.4	5.7	C 3	T
8	4.3	C 6	.1	28	C 3	.2	5.2	C 3	T
9	3.4	C 6	.1	22	C 3	.2	5.2	C 7	.1
10	2.5	C 6	T	18	C 3	.1	4.7	C 7	.1
11	2.2	C 6	T	17	C 3	.1	4.2	C 7	.1
12	2.1	5	T	18	C 3	.1	3.8	C 7	.1
13	4.4	C 9	.1	14	C 3	.1	3.4	C 7	.1
14	3.2	C 9	.1	11	C 1	T	4.2	C 7	.1
15	38	161 S	43	9.0	C 1	T	16	C 4	.2
16	44	68 S	10	8.3	C 1	T	13	C 4	.1
17	14	22	.8	9.0	C 1	T	5.7	C 4	.1
18	8.3	14	.3	7.2	C 1	T	4.0	C 4	T
19	5.5	10	.1	6.6	C 1	T	3.4	6	.1
20	43	40 S	5.2	7.0	5	.1	3.8	6	.1
21	22	6	.4	59	25 S	4.3	159	160 S	126
22	9.8	5	.1	26	7	.5	44	47 S	7.0
23	6.3	5	.1	58	11	1.7	18	9	.4
24	8.0	13 S	.4	59	12	1.9	12	C 5	.2
25	19	40 S	2.2	64	41 S	12	10	C 5	.1
26	8.3	9	.2	93	27 S	7.0	8.6	C 4	.1
27	5.0	9	.1	90	20	4.9	6.9	C 4	.1
28	4.0	9	.1	37	C 7	.7	6.0	C 4	.1
29	1150	218 S	1200	26	C 7	.5	6.6	C 4	.1
30	148	17 S	8.5	20	C 7	.4	5.2	C 4	.1
31	223	94 S	154	17	C 7	.3	--	--	--
Total	1799.9	--	1426.5	1671.1	--	199.7	422.5	--	136.1

Total discharge for year (cfs-days)..... 29860.6
Total load for year (tons)..... 11337.1

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, 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)	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. 10, 1960	1500		47	726	126		22	35	59	75	89	94	95	98	99			BSWC
Jan. 1, 1961	1815		33	2200	279		20	35	55	66	87	95	96	98	99			BSWC
Feb. 19	2150		34	2430	379		14	29	42	57	77	88	89	95	99			BSWC
Feb. 25	1800		42	1310	585		4	10	20	35	65	92	94	98	99			BSN
Feb. 25	1800		42	1310	585		16	30	40	60	72	95	96	98	99			BSWC
Mar. 14	0935		38	1510	538		26	39	55	67	89	97	98	99	100			BSWC
Mar. 23	1635		--	3040	1390		11	24	39	55	78	95	97	98	99			BSWC
Mar. 23	1635		--	3040	1390		4	11	18	31	52	95	--	--	--			BN
Apr. 13	1630		44	2230	222		20	36	50	67	86	94	96	97	99			BSWC
July 29	1540		73	3480	437		27	42	62	76	91	96	97	98	99			BSWC

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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 71°F June 13-15, July 26, 27, Aug. 28-30.

Temperature (°F) of water, water year October 1960 to September 1961

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																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	48	50	50	50	51	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	47	48	50	50	50	--
November																																
Maximum	53	53	[illegible]	[illegible]	[illegible]	48	47	45	43	47	47	45	42	43	45	49	50	49	47	47	45	45	46	46	45	45	45	45	48	48	--	47
Minimum	51	52	[illegible]	40	40	47	45	42	42	43	45	42	41	41	45	45	49	46	46	45	45	44	45	44	44	44	42	43	45	43	--	45
December																																
Maximum	43	38	36	[illegible]	[illegible]	[illegible]	42	42	41	37	37	36	34	34	34	35	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	38	36	[illegible]	[illegible]	36	[illegible]	[illegible]	41	37	36	36	34	34	34	34	34	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
January																																
Maximum	--	--	--	32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	34	34	33	33	33	34	34	34	34	34	34	34	--
Minimum	--	--	--	32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	34	33	33	33	33	33	34	34	34	34	34	34	--
February																																
Maximum	35	35	[illegible]	35	[illegible]	[illegible]	35	35	35	35	[illegible]	[illegible]	[illegible]	36	36	36	38	[illegible]	44	43	42	41	44	45	48	48	48	47	--	--	--	39
Minimum	34	35	35	35	35	[illegible]	35	35	35	35	[illegible]	35	[illegible]	35	36	37	37	37	40	42	41	41	41	43	45	48	46	47	--	--	--	38
March																																
Maximum	47	46	[illegible]	[illegible]	53	[illegible]	[illegible]	[illegible]	49	47	44	[illegible]	45	46	46	47	45	42	42	44	44	44	44	46	47	48	51	54	56	56	53	48
Minimum	[illegible]	[illegible]	[illegible]	46	[illegible]	[illegible]	[illegible]	44	47	44	42	42	44	45	46	45	42	39	42	42	43	43	43	44	46	46	48	51	54	53	48	46
April																																
Maximum	49	46	[illegible]	40	46	[illegible]	[illegible]	[illegible]	48	48	48	47	45	46	48	50	51	50	48	48	48	53	55	57	59	59	57	59	59	57	--	51
Minimum	47	46	[illegible]	[illegible]	46	46	47	46	46	48	47	45	44	44	46	48	49	48	47	45	45	48	53	54	57	57	53	51	57	54	--	49
May																																
Maximum	56	57	57	57	55	58	60	[illegible]	67	67	66	[illegible]	63	65	67	67	67	65	62	61	60	61	61	61	62	63	63	58	59	59	60	62
Minimum	55	55	54	53	55	57	57	60	63	65	[illegible]	[illegible]	63	63	[illegible]	67	65	61	61	59	59	60	60	59	60	62	57	56	58	59	58	60
June																																
Maximum	[illegible]	66	66	66	66	65	[illegible]	[illegible]	66	67	68	69	71	71	71	67	65	64	65	66	66	65	66	66	66	66	66	65	64	66	--	66
Minimum	[illegible]	63	66	65	64	[illegible]	[illegible]	[illegible]	[illegible]	66	67	68	[illegible]	71	67	[illegible]	62	63	63	65	65	65	65	66	65	65	65	64	64	63	--	65
July																																
Maximum	[illegible]	68	68	68	[illegible]	[illegible]	[illegible]	64	[illegible]	64	[illegible]	[illegible]	[illegible]	66	67	66	68	69	70	70	70	70	70	70	70	71	71	70	70	70	70	68
Minimum	66	67	[illegible]	[illegible]	66	[illegible]	[illegible]	64	64	[illegible]	62	[illegible]	[illegible]	[illegible]	66	65	66	68	69	70	70	70	70	70	70	70	70	69	68	68	70	67
August																																
Maximum	70	70	68	67	67	67	67	67	66	68	69	--	--	--	--	--	--	--	65	65	65	67	67	67	69	69	70	71	71	71	70	--
Minimum	70	63	67	66	[illegible]	[illegible]	66	67	67	67	68	--	--	--	--	--	--	--	64	64	64	65	67	66	67	69	69	70	71	70	69	--
September																																
Maximum	69	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	69	68	66	66	66	66	65	66	66	64	61	[illegible]	60	62	64	66	66	67	67	67	66	63	63	60	--	66
Minimum	68	68	[illegible]	[illegible]	[illegible]	[illegible]	68	66	66	66	65	65	66	66	64	61	59	59	60	[illegible]	62	64	66	66	66	66	63	63	60	58	--	65

DELAWARE RIVER BASIN

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

LOCATION.--At center of toll bridge at Montague, Sussex County, N.J., 0.4 mile downstream from gaging station and approximately 1.2 miles downstream from Saw Kill.
DRAINAGE AREA.--3,480 square miles.
RECORDS AVAILABEL.--Chemical analyses: October 1956 to September 1961.
Water temperatures: October 1956 to December 1957.
REMARKS.--Records of specific conductance and temperatures of daily samples available in district office at Philadelphia, Pa.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 12, 1960	3440	2.0		0.00	0.00	8.6	0.6	1.8	1.0	19	9.6	2.2	0.1	0.2	45	24	9		60	6.4	6
Nov. 23.....	2150	1.0		.03	.01	6.9	1.3	2.6	1.5	18	8.2	2.5	.1	.9	41	23	8		60	6.0	3
Dec. 14.....	2100	2.1		.00	.00	7.8	1.1	3.5	1.0	17	12	2.4	.1	.7	41	24	10		65	6.6	7
Jan. 11, 1961	2160	--		--	--	--	--	.9	--	18	9.9	1.0	--	1.5	--	26	11		68	6.9	15
Jan. 25.....	2650	3.0		.01	.00	8.2	1.6	3.1	1.0	21	10	2.9	.1	2.3	45	27	10		73	6.6	7
Feb. 15.....	1910	3.4		.01	.00	6.5	1.3	3.5	1.0	16	9.2	3.1	.1	2.1	40	22	9		60	6.6	7
Mar. 15.....	6980	3.4		.01	.00	6.5	1.3	2.0	.8	14	11	2.8	.1	1.5	42	22	10		58	6.2	4
Apr. 19.....	19800	3.2		.02	.01	4.9	1.2	2.0	.8	11	10	1.8	.1	.1	37	17	8		49	6.2	3
May 17.....	9850	2.2		.02	.01	5.7	1.2	2.0	.8	13	9.7	1.7	.1	.8	37	19	9		50	6.4	5
June 15.....	3880	2.4		.04	.03	6.9	1.1	2.0	.8	18	9.2	1.8	.1	.2	43	22	7		58	6.4	7
July 19.....	1780	1.8		.01	.01	7.8	1.3	2.0	.8	21	8.8	3.2	.1	.8	43	25	8		66	6.8	4
Aug. 16.....	1410	1.0		.00	.01	6.5	1.8	2.0	.8	19	9.7	3.0	.1	.4	43	24	8		62	6.7	4
Sept. 15.....	2280	1.4		.00	.00	7.8	1.1	2.4	1.0	18	9.4	3.0	.1	.9	38	24	9		60	6.2	5

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

LOCATION.--At Calhoun Street Bridge, Morrisville, Pa., Bucks County, 450 feet downstream from gaging station, which is 0.5 mile upstream from Assunpink Creek.
DRAINAGE AREA.--6,780 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1944 to September 1961.
Water temperatures: October 1944 to September 1961.
Sediment records: September 1949 to September 1961.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 243 micromhos Feb. 10; minimum daily, 67 micromhos Apr. 27.
Water temperatures: Maximum, 90°F July 23; minimum, freezing point Dec. 17, 18.
Sediment concentrations: Maximum daily, 609 ppm Feb. 27; minimum daily, 1 ppm Oct. 24-26.
Sediment loads: Maximum daily, 151,000 tons Feb. 27; minimum daily, 16 tons Oct. 25.
EXTREMES, 1944-61.--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 (1949-61): Maximum daily, 1,720 ppm Nov. 26, 1950; minimum daily, 0 ppm Oct. 21, 1952.
Sediment loads (1949-61): Maximum daily, 1,087,000 tons Aug. 20, 1955; minimum daily, 0 tons Oct. 21, 1952.
REMARKS.--Records of specific conductance of daily samples available in district office at Philadelphia, Pa. Temperature recorder is located at the intake of the Trenton Water Co.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-3, 1960	12267	--	--	--	--	--	--	3.9	--	42	21	4.2	--	2.2	87	56	22		136	6.2	2
Oct. 11.....	6220	1.4	0.1	0.01	0.00	17	4.1	3.5	1.3	49	24	3.5	0.2	2.0	82	60	20		141	7.7	5
Nov. 1-10.....	6851	8.3	--	.02	.00	17	5.2	5.5	1.7	53	20	5.6	.2	3.3	104	64	21		157	7.5	6
Dec. 1-10.....	6592	3.4	--	.00	.00	15	4.7	6.5	1.1	44	25	5.2	.0	3.6	86	57	21		145	7.0	2
Jan. 1-10,1961	5090	5.8	--	.02	.01	17	6.2	7.0	2.1	48	28	7.7	.1	5.6	103	68	29		171	6.9	3
Feb. 1-10.....	3835	9.8	--	.03	.02	18	6.6	9.2	1.8	58	26	7.6	.1	5.9	114	72	25		192	7.5	2
Mar. 1-10.....	33860	6.4	--	.05	.03	9.4	3.0	4.0	1.0	22	16	4.6	.1	2.9	61	36	18		99	7.2	2
Mar. 24.....	20000	7.2	.1	.08	.00	13	5.4	3.5	1.6	34	24	5.5	.1	4.7	83	55	27		131	6.9	0
Apr. 1-10.....	18830	4.9	--	.04	.00	9.8	3.8	3.3	1.3	28	18	3.7	.1	2.9	62	40	17		104	7.0	2
May 1-10.....	17760	4.9	--	.00	.00	11	4.3	3.5	1.0	32	18	4.2	.1	2.9	80	45	19		111	7.3	2
June 1-10.....	6615	2.2	--	.00	.04	16	6.2	5.0	1.5	52	23	5.6	.1	2.9	100	66	23		153	7.5	3
July 1-10.....	4363	4.5	--	.05	.00	16	6.0	7.0	1.5	54	25	6.0	.1	2.9	100	65	20		168	7.4	5
Aug. 1-10.....	5421	8.1	--	.00	.02	19	7.1	7.5	1.8	60	29	6.6	.1	3.8	118	77	28		187	7.5	3
Sept. 1-3,6-10	5022	3.2	--	.02	.00	16	6.2	8.3	1.5	52	28	6.6	.1	2.9	105	66	23		171	7.2	3

DELAWARE RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1960 to September 1961

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	64	64	62	62	61	61	61	62	63	63	63	63	65	65	66	65	62	61	58	57	55	53	50	51	51	51	52	52	53	54	59
Minimum	64	62	62	61	60	59	58	58	58	59	60	60	60	61	62	62	61	60	58	56	55	53	50	48	48	49	50	51	50	52	52	57
November																																
Maximum	55	54	52	51	50	48	46	46	47	46	46	46	45	46	48	50	51	50	50	49	49	49	49	48	47	47	48	48	52	49	--	49
Minimum	53	52	50	50	48	45	44	44	45	44	45	44	43	44	45	46	49	48	48	46	46	45	46	44	44	43	44	45	47	43	--	46
December																																
Maximum	43	42	41	41	42	43	44	42	38	38	36	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	36
Minimum	40	39	39	38	39	40	41	38	35	34	33	33	33	33	33	33	32	32	33	33	33	33	33	33	33	33	33	33	33	33	33	35
January																																
Maximum	33	33	33	33	33	34	34	36	36	34	35	38	38	39	39	38	39	41	37	34	33	33	33	33	33	33	33	33	33	33	33	35
Minimum	33	33	33	33	33	33	33	33	33	33	33	33	34	36	36	35	35	37	33	33	33	33	33	33	33	33	33	33	33	33	33	33
February																																
Maximum	33	33	33	33	33	33	33	33	33	33	33	33	33	34	34	33	33	--	--	38	38	38	38	39	--	37	38	40	--	--	--	35
Minimum	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	--	--	37	37	37	36	37	--	34	35	38	--	--	--	34
March																																
Maximum	39	39	41	42	44	45	46	--	--	--	--	--	--	--	--	--	--	--	--	--	43	43	42	43	45	46	48	51	53	52	49	--
Minimum	38	38	39	41	42	44	43	--	--	--	--	--	--	--	--	--	--	--	--	--	40	42	40	40	42	43	45	48	50	49	45	--
April																																
Maximum	45	43	43	44	45	47	47	48	48	47	46	45	45	45	--	47	47	47	46	48	50	53	56	58	60	58	54	55	53	54	--	49
Minimum	42	42	41	41	43	45	45	45	45	45	44	44	41	40	--	46	46	46	45	45	46	49	52	55	57	53	52	53	52	51	--	47
May																																
Maximum	53	55	53	54	56	55	56	59	63	62	62	60	60	64	67	68	68	67	65	63	62	63	63	64	67	67	63	64	62	64	67	62
Minimum	51	52	52	51	52	54	54	55	58	61	60	59	59	59	62	66	65	65	63	61	60	61	60	60	61	63	59	58	60	59	61	59
June																																
Maximum	69	73	72	73	77	78	78	80	76	79	80	81	82	82	78	78	80	80	80	82	75	76	79	77	76	75	74	79	81	82	--	78
Minimum	63	67	68	67	69	71	71	72	73	73	74	77	78	78	74	72	71	71	72	72	72	71	72	74	73	72	71	71	73	74	--	72
July																																
Maximum	84	87	84	83	82	82	81	80	83	83	83	82	77	83	77	76	83	86	87	83	84	87	90	85	88	87	86	87	80	83	84	81
Minimum	76	78	79	77	75	74	75	74	73	73	73	75	73	74	73	73	74	77	78	78	78	79	81	81	81	81	80	80	75	75	78	76
August																																
Maximum	83	79	76	79	79	81	85	85	87	87	82	85	82	81	82	83	84	84	81	76	76	79	76	79	80	81	82	82	81	81	82	81
Minimum	78	75	74	74	75	75	76	78	78	80	79	78	74	74	75	75	74	73	74	70	71	72	73	73	76	77	78	78	78	77	77	75
September																																
Maximum	84	86	87	87	89	87	83	82	84	85	87	88	87	83	80	78	76	75	71	71	73	77	80	81	81	80	78	77	74	73	--	81
Minimum	78	79	80	79	81	81	80	79	78	78	80	81	80	79	73	71	70	68	69	69	68	69	72	73	75	74	71	70	67	64	--	75

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 1961.
Water temperatures: October 1949 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 84°F July 27; minimum, freezing point on many days during winter months.
EXTREMES, 1954-61.--Water temperatures: Maximum, 84°F July 1-6, Aug. 21, 22, 1959, July 27, 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.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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	Biochemical oxygen demand [a]	Dissolved oxygen [a]
Oct. 3, 1960...	11300	4.6	0.02	15	5.0	4.5	1.5	40	23	4.0	0.2	4.3	88	58	25	137	6.8	7	0.1	7.9
Dec. 5.....	6140	3.6	.03	16	6.2	5.5	1.5	48	27	6.4	.1	4.9	103	66	26	163	7.2	6	1.0	11.1
Jan. 3, 1961...	6000	4.7	.07	16	4.7	8.0	1.8	38	26	9.6	.2	6.4	111	60	29	163	6.6	7	2.2	11.4
Mar. 1.....	46100	4.5	.07	9.0	2.1	3.1	1.4	16	17	2.9	.1	2.9	54	31	18	84	6.4	18	1.2	12
Apr. 3.....	22900	4.4	.10	9.8	3.0	3.2	1.1	23	17	4.0	.1	3.1	70	37	18	95	6.9	8	2.7	11.2
May 1.....	23600	3.8	.04	9.8	3.3	3.3	1.3	24	17	3.2	.1	2.7	56	38	19	93	6.9	5	.0	9.0
June 5.....	6750	.4	.00	15	6.4	4.0	2.0	48	26	6.0	.1	3.2	100	64	25	154	6.8	5	.9	6.7
July 6.....	4210	4.5	.04	14	5.1	6.8	2.0	42	24	8.0	.3	5.6	101	56	22	154	6.7	5	1.0	4.4
Aug. 2.....	6700	6.0	.06	16	4.5	5.2	2.2	34	25	9.2	.2	4.9	101	59	31	154	6.6	20	.2	5.0
Sept. 6.....	3930	3.4	.00	13	6.2	6.0	2.0	40	24	7.4	.1	4.9	88	58	25	150	6.7	3	2.1	5.6

a Collected 3 feet below surface.

DELAWARE RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1960 to September 1961
[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	65	65	63	63	62	61	61	60	60	61	61	61	62	62	62	63	63	63	63	61	60	58	57	54	53	52	52	51	51	51	60
Minimum	64	64	63	62	61	60	60	60	59	59	60	60	60	60	61	61	61	62	62	61	59	57	56	54	53	52	51	51	51	50	50	58
November																																
Maximum	52	52	52	52	52	51	50	49	48	48	47	47	46	46	46	47	47	48	48	48	48	48	48	48	48	47	47	47	47	47	--	48
Minimum	51	51	52	52	51	50	49	48	48	47	46	46	45	45	45	45	47	47	47	48	48	47	48	48	47	47	47	46	47	46	--	48
December																																
Maximum	46	45	44	42	41	41	41	41	40	40	39	37	35	33	33	33	33	33	33	33	33	33	33	32	33	33	33	33	33	33	33	36
Minimum	45	43	42	41	40	40	40	40	39	39	37	35	33	33	33	33	33	33	33	33	33	33	32	32	32	32	32	32	32	33	33	36
January																																
Maximum	34	34	34	33	33	34	34	35	35	34	34	34	34	34	34	35	37	37	37	35	35	34	33	33	33	33	33	33	33	33	32	34
Minimum	33	33	33	33	33	33	33	34	34	33	33	33	33	34	34	34	34	36	35	34	34	33	33	33	32	32	32	32	32	32	32	33
February																																
Maximum	32	32	32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	32	32	32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
March																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	41	41	42	42	41	41	42	43	43	43	43	44	45	47	48	52	52	49	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	39	40	40	40	39	40	40	40	41	42	42	42	43	44	46	48	49	46	--
April																																
Maximum	46	43	43	43	44	47	48	48	48	48	47	46	45	44	46	48	48	48	48	48	50	52	55	58	59	60	56	55	54	54	--	49
Minimum	43	41	41	41	41	44	46	47	46	46	46	45	44	43	43	45	47	47	47	47	47	49	51	54	56	56	54	54	53	52	--	47
May																																
Maximum	54	54	54	55	56	56	56	57	60	63	62	62	61	62	65	66	68	68	66	65	64	63	64	64	64	65	64	63	63	63	64	62
Minimum	52	53	53	53	53	54	55	56	57	60	62	60	60	60	61	64	65	66	65	63	62	62	62	62	62	63	63	62	61	61	62	60
June																																
Maximum	65	68	70	72	73	74	74	75	76	76	77	77	79	80	79	78	77	77	77	77	76	77	77	76	76	75	74	74	75	75	--	75
Minimum	63	65	67	68	70	72	73	73	74	74	75	76	77	78	77	77	76	75	75	74	75	75	75	74	74	74	73	73	73	73	--	73
July																																
Maximum	76	78	78	79	79	79	79	78	78	78	78	78	77	78	77	76	78	78	79	78	81	82	82	82	83	83	84	83	82	81	80	79
Minimum	74	75	76	77	77	77	77	77	77	77	77	76	76	76	75	76	76	76	76	77	77	79	81	81	81	81	82	82	79	78	77	78
August																																
Maximum	78	77	77	77	77	77	77	78	79	81	81	--	81	81	81	80	79	79	78	77	77	77	77	77	77	77	78	79	80	79	79	78
Minimum	77	77	76	76	76	75	76	76	77	78	79	--	79	79	78	78	77	77	77	76	76	76	76	76	76	76	76	77	78	77	77	77
September																																
Maximum	80	80	80	81	82	83	82	82	83	82	82	82	83	82	81	80	78	77	77	75	74	74	74	74	75	76	76	77	76	75	--	79
Minimum	77	78	79	79	80	81	81	81	81	81	80	80	80	80	79	78	77	75	75	74	72	72	73	73	74	74	74	75	74	74	--	77

1-4665. McDONALD 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 66°F Aug. 24-29; minimum, 33°F Jan. 2, 3.

Temperature (°F) of water, water year October 1960 to September 1961

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	57	56	56	55	54	54	54	53	53	53	53	53	53	54	54	55	54	54	54	54	52	51	51	50	50	50	50	50	51	51	53
Minimum	57	56	56	55	54	54	54	53	53	52	53	53	52	52	53	54	54	54	53	54	52	51	50	50	50	50	50	50	50	50	51	53
November																																
Maximum	52	52	51	51	51	51	50	49	48	49	49	48	48	48	48	49	50	49	49	49	48	48	48	48	47	47	47	47	48	48	--	49
Minimum	51	51	51	51	51	50	49	48	48	48	48	48	47	47	48	48	49	49	49	48	48	48	48	47	47	47	47	47	47	47	--	48
December																																
Maximum	47	46	45	45	45	45	46	46	45	44	44	43	42	42	43	43	43	43	42	42	41	40	39	39	39	38	38	38	39	39	39	42
Minimum	46	45	45	44	44	45	45	45	44	44	43	42	42	42	42	43	43	42	42	41	40	39	39	39	38	38	38	38	38	39	38	42
January																																
Maximum	39	35	34	34	34	35	36	36	36	36	36	37	37	38	38	37	37	37	37	36	36	36	36	36	36	36	36	36	36	36	37	36
Minimum	35	33	33	34	34	34	35	36	36	36	36	36	37	37	37	37	37	37	36	36	36	36	36	36	36	36	36	36	36	36	36	36
February																																
Maximum	37	37	37	37	36	36	37	37	--	--	--	--	--	--	--	--	--	--	--	35	36	37	37	38	42	42	41	41	--	--	--	--
Minimum	37	37	37	36	36	36	36	37	37	--	--	--	--	--	--	--	--	--	--	34	35	36	37	36	38	41	40	41	--	--	--	--
March																																
Maximum	41	40	41	42	44	45	45	45	43	42	39	40	40	41	41	42	41	39	38	39	38	38	38	41	42	42	44	47	48	48	47	42
Minimum	40	40	40	41	42	44	45	43	42	39	38	39	40	40	41	41	39	38	38	38	38	38	38	38	41	41	42	44	47	47	45	41
April																																
Maximum	45	44	44	43	43	44	44	44	44	44	44	44	44	45	46	48	48	47	47	47	47	50	52	53	55	56	55	53	52	51	--	47
Minimum	44	44	43	42	43	43	44	44	43	44	44	44	43	42	44	46	46	47	46	46	46	47	50	52	53	55	53	52	51	50	--	46
May																																
Maximum	50	50	50	49	49	49	51	53	56	56	56	55	56	58	60	60	60	59	57	56	55	54	54	54	55	56	56	54	54	54	54	55
Minimum	50	50	49	48	48	48	49	51	53	55	55	55	55	56	58	60	59	57	56	55	54	54	53	54	54	55	53	52	54	54	53	53
June																																
Maximum	56	58	60	59	58	58	59	59	60	63	63	63	64	64	64	61	59	59	59	59	59	60	61	61	61	60	60	60	59	60	--	60
Minimum	54	56	58	58	58	58	58	58	59	60	62	63	63	64	61	59	58	58	58	58	59	59	60	61	60	60	60	59	59	59	--	59
July																																
Maximum	61	62	62	62	61	61	60	60	60	60	60	59	60	61	61	61	62	62	62	63	63	63	63	63	64	63	63	62	62	63	63	62
Minimum	60	61	62	61	61	60	60	60	60	59	59	59	59	60	61	61	61	62	62	62	63	63	63	63	63	63	62	62	62	62	62	61
August																																
Maximum	63	63	62	62	61	61	61	61	61	61	62	62	61	60	60	60	59	59	58	59	60	64	66	66	66	66	66	66	65	64	64	62
Minimum	63	62	61	61	61	61	60	60	61	61	61	61	61	60	59	59	59	59	58	58	58	59	60	64	66	66	66	66	65	65	64	61
September																																
Maximum	64	64	64	65	64	64	64	63	63	62	61	62	62	62	62	61	59	58	57	59	62	62	62	62	62	62	61	60	59	57	--	62
Minimum	64	64	64	64	64	64	63	63	62	62	62	62	62	62	61	59	58	57	57	57	59	62	62	62	62	61	60	59	57	56	--	61

DELAWARE RIVER BASIN--Continued

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

LOCATION.--In river opposite the intake building of the Torresdale Filter Plant.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1961.
Water temperatures: October 1955 to September 1957, October 1960 to September 1961.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 355 micromhos Dec. 30; minimum daily, 83 micromhos Mar. 1.
Dissolved oxygen (1961): Maximum daily, 13.3 ppm Jan. 10, 11; minimum daily, 1.8 ppm June 30.
Water temperatures: Maximum, 83°F July 28, Sept. 13.
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 are given for Delaware River at Trenton, N.J.

Chemical analyses, in parts per million, water year October 1960 to September 1961

Date of collection	Mean discharge (cfs)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	pH	Biochemical oxygen demand	Dissolved oxygen
Oct. 3, 1960	11,300	4.0	132	6.7	0.7	6.8
Nov. 1	6,100	--	176	6.8	2.0	8.0
Dec. 5	6,140	--	254	10.1	.6	9.9
Jan. 3, 1961	6,000	--	159	6.8	1.6	9.8
Mar. 1	46,100	--	83	7.1	3.2	12.2
Apr. 3	22,900	--	93	7.2	2.1	10.8
May 1	23,600	--	92	6.6	.9	10.8
June 5	6,750	--	146	6.6	1.1	7.0
July 6	4,210	7.5	158	6.8	1.1	3.5
Aug. 2	6,700	7.5	159	6.9	.1	4.5
Sept. 6	3,930	7.0	150	6.7	2.6	4.7

DELAWARE RIVER BASIN--Continued

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

Dissolved oxygen of water, January to September 1961
[Continuous dissolved oxygen recorder]

Day	January				February				March			
	Dissolved oxygen				Dissolved oxygen				Dissolved oxygen			
	Parts per million		Percent saturation		Parts per million		Percent saturation		Parts per million		Percent saturation	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	--	--	--	--					--	--	--	--
2	--	--	--	--					--	--	--	--
3	--	--	--	--					13.1	12.2	104	95
4	--	--	--	--					12.6	12.3	100	98
5	--	--	--	--					12.4	12.0	98	96
6	--	--	--	--					12.0	11.6	98	94
7	--	--	--	--					11.9	11.5	98	94
8	--	--	--	--					11.6	11.1	97	93
9	--	--	--	--					11.8	11.4	96	92
10	13.3	12.2	96	87					12.3	11.7	96	91
11	13.3	12.1	95	86					12.4	11.9	97	90
12	13.1	12.1	93	86					12.4	12.0	97	92
13	12.7	11.9	91	86					13.0	12.3	102	96
14	12.4	11.7	91	85					12.6	11.9	98	93
15	12.5	11.8	92	87					12.2	11.7	95	93
16	12.5	11.3	92	83					11.8	11.6	94	92
17	12.8	11.5	94	85					12.0	11.5	95	90
18	13.0	12.2	97	90					11.9	11.4	95	89
19	13.0	12.1	96	89					11.9	11.5	94	91
20	--	--	--	--					12.3	11.6	98	91
21	--	--	--	--					12.8	11.9	102	94
22	--	--	--	--					12.3	11.7	99	94
23	--	--	--	--					12.2	11.7	97	93
24	--	--	--	--					12.7	11.6	101	93
25	--	--	--	--					12.3	11.7	101	95
26	--	--	--	--					12.1	11.4	101	93
27	--	--	--	--					11.6	10.8	102	91
28	--	--	--	--					11.3	10.8	98	93
29	--	--	--	--					11.1	10.1	98	89
30	--	--	--	--					10.7	10.3	96	92
31	--	--	--	--					11.3	10.2	98	91
Average	--	--	--	--					12.1	11.5	98	93

Day	April				May				June			
1	11.3	10.4	96	90	10.5	9.9	97	92	8.0	6.5	84	67
2	11.7	10.9	98	91	10.3	9.8	97	91	7.8	6.5	81	68
3	12.0	11.5	101	93	10.5	9.9	100	92	7.4	5.7	79	61
4	12.0	11.5	102	93	10.5	10.0	101	92	7.2	5.8	79	61
5	11.9	11.5	100	93	10.1	9.5	96	90	7.2	6.1	81	66
6	11.8	11.4	102	94	10.7	9.3	103	89	6.7	5.1	74	57
7	11.6	11.2	97	93	9.7	9.0	95	87	6.5	4.8	74	54
8	11.6	11.0	100	93	9.4	8.7	92	84	6.4	4.2	73	47
9	11.6	10.7	101	92	9.3	8.6	96	84	5.7	4.2	65	48
10	11.4	10.7	97	91	8.8	7.9	88	81	6.1	4.3	69	49
11	11.3	10.9	96	92	8.5	8.0	87	80	5.1	4.0	60	46
12	11.5	10.7	97	91	8.4	7.8	86	80	4.7	3.7	55	43
13	12.1	10.7	98	91	8.4	7.7	86	79	4.5	3.5	52	41
14	11.9	11.0	98	91	8.2	7.6	85	78	4.7	3.0	55	35
15	11.8	11.0	99	92	8.4	7.7	88	79	5.1	3.0	61	35
16	11.5	10.8	99	94	8.3	7.7	88	81	5.0	3.0	60	35
17	11.2	10.7	98	91	7.8	7.4	84	79	4.8	3.1	58	36
18	11.0	10.6	97	94	7.7	7.1	84	75	4.9	3.1	58	36
19	11.2	10.5	98	91	7.6	6.9	81	73	5.3	3.6	62	42
20	11.8	10.8	106	94	8.0	6.7	85	71	5.7	3.6	69	42
21	11.7	10.9	104	95	8.1	6.7	86	71	6.1	2.7	71	32
22	11.4	10.1	107	90	7.9	6.7	83	70	5.7	3.8	66	45
23	11.1	10.3	101	95	8.5	7.0	89	73	5.7	3.6	67	41
24	10.8	9.9	104	93	8.4	7.1	88	74	5.3	3.3	62	38
25	10.3	9.6	99	93	--	--	--	--	5.5	3.5	65	41
26	9.7	9.1	96	90	--	--	--	--	4.5	3.2	52	37
27	10.3	9.3	99	90	--	--	--	--	4.6	2.8	53	33
28	10.4	9.6	99	92	--	--	--	--	4.7	2.1	55	24
29	10.2	9.6	97	91	--	--	--	--	4.9	2.1	57	24
30	10.5	9.8	97	92	--	--	--	--	4.9	1.8	58	21
31	--	--	--	--	--	--	--	--	--	--	--	--
Average	11.3	10.6	99	92	--	--	--	--	5.7	3.9	65	44

DELAWARE ...VER BASIN--Continued

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

Dissolved oxygen of water, January to September 1961--Continued

Day	July				August				September			
	Dissolved oxygen				Dissolved oxygen				Dissolved oxygen			
	Parts per million		Percent saturation		Parts per million		Percent saturation		Parts per million		Percent saturation	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	4.4	2.5	52	29	--	--	--	--	6.3	3.6	78	44
2	5.0	2.3	60	27	--	--	--	--	7.0	4.1	86	51
3	6.0	3.1	72	36	--	--	--	--	6.1	3.5	75	43
4	6.0	2.9	71	34	4.6	2.4	55	29	5.8	3.7	72	46
5	5.7	3.3	69	39	4.3	2.3	51	27	5.8	3.5	73	43
6	4.9	3.0	58	35	4.7	2.5	56	29	6.1	3.4	76	42
7	5.1	2.7	61	32	5.1	2.8	61	33	5.9	2.5	74	31
8	4.6	2.6	55	31	5.8	2.5	70	30	5.4	2.8	67	55
9	4.9	2.7	58	32	5.3	2.3	65	28	5.3	3.0	66	37
10	5.1	2.4	61	28	6.0	2.1	73	26	5.5	3.0	69	37
11	5.3	2.3	64	27	4.9	2.3	60	28	5.4	3.3	68	41
12	5.7	2.8	68	33	4.7	1.9	58	23	5.2	2.8	65	35
13	5.4	3.2	64	38	5.0	2.3	61	28	5.2	3.0	66	37
14	5.1	2.7	61	32	5.2	2.5	63	30	4.6	2.4	57	30
15	5.1	2.5	60	29	6.0	2.6	73	31	4.8	2.9	58	36
16	5.5	3.2	65	37	6.2	4.0	77	48	5.1	2.8	62	34
17	5.0	3.3	60	39	6.3	3.9	78	47	5.4	2.7	65	33
18	4.6	2.7	55	32	6.0	3.4	74	40	6.6	3.1	79	40
19	5.5	3.0	67	35	6.3	3.1	77	37	5.7	3.8	66	44
20	4.9	2.7	59	32	5.7	3.4	69	40	6.5	3.6	75	42
21	4.7	2.8	58	33	6.4	4.1	76	48	7.0	4.2	76	48
22	4.4	2.7	54	33	6.0	3.5	71	41	6.2	4.3	70	49
23	4.7	2.4	58	29	5.7	3.7	67	43	5.7	3.8	65	44
24	4.3	1.9	53	23	5.3	2.7	62	32	5.8	3.8	67	43
25	4.6	1.9	58	23	5.4	2.9	64	34	5.2	3.6	60	41
26	4.4	2.3	55	28	5.3	2.9	64	35	5.8	3.4	68	40
27	4.5	2.3	56	28	5.0	2.9	60	35	6.0	3.8	71	45
28	4.9	1.9	62	23	5.4	3.2	66	39	5.9	3.2	69	37
29	5.3	1.9	66	23	6.0	3.7	74	45	5.8	3.7	67	43
30	4.8	3.3	59	40	5.8	4.1	72	49	6.0	3.1	69	35
31	--	--	--	--	6.0	3.9	74	48	--	--	--	--
Average	5.0	2.6	61	31	5.5	3.0	67	36	5.8	3.3	69	41

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

Temperature (°F) of water, water year October 1960 to September 1961
[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	
November																																
Maximum	--	--	52	52	52	52	51	51	50	50	50	49	48	48	48	48	48	48	48	48	49	49	49	49	49	--	--	--	50	50	--	53
Minimum	--	--	52	52	51	51	51	50	49	49	48	48	47	47	47	47	48	48	48	48	48	48	48	48	48	--	--	--	50	46	--	45
December																																
Maximum	46	46	44	44	41	44	44	43	42	40	40	38	37	36	36	36	35	35	35	34	35	34	34	34	36	36	--	--	--	--	--	39
Minimum	43	42	41	43	44	44	43	42	39	37	38	36	35	35	34	35	34	34	34	34	34	34	34	34	34	34	--	--	--	--	--	38
January																																
Maximum	--	--	--	--	--	--	--	--	36	36	35	35	35	37	38	38	37	38	38	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	35	34	34	35	35	35	37	37	37	37	37	--	--	--	--	--	--	--	--	--	--	--	--	--
February																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
March																																
Maximum	--	--	42	42	44	44	46	46	46	43	41	41	41	41	42	42	42	43	42	42	42	44	43	45	45	46	50	50	51	52	51	44
Minimum	--	--	41	42	42	44	44	46	43	41	39	40	41	41	41	41	41	41	42	41	42	42	42	42	43	44	45	47	48	50	49	43
April																																
Maximum	47	46	46	47	47	48	48	48	50	48	47	47	47	47	49	49	50	51	50	52	55	55	56	59	59	61	59	57	56	55	--	51
Minimum	45	44	44	44	44	45	45	46	47	47	46	47	44	45	45	46	47	49	49	49	49	50	52	53	56	58	57	56	55	54	--	49
May																																
Maximum	55	56	56	57	57	57	59	59	63	63	62	62	62	63	65	67	67	68	66	66	67	65	64	65	--	--	--	--	--	--	--	--
Minimum	54	54	54	53	55	56	56	57	58	60	61	61	62	62	63	64	64	65	65	64	64	64	63	63	--	--	--	--	--	--	--	--
June																																
Maximum	65	67	67	69	71	72	73	72	72	73	75	75	78	78	77	78	78	77	77	77	75	75	76	75	75	75	74	75	76	76	--	74
Minimum	63	64	66	65	67	69	70	71	71	72	73	75	75	75	75	75	75	75	74	74	74	73	73	74	75	74	73	74	74	74	--	72
July																																
Maximum	77	78	78	77	77	77	77	77	77	77	78	77	76	77	76	77	77	78	79	78	80	80	81	81	82	82	82	83	82	80	--	79
Minimum	75	76	76	76	76	75	74	76	76	76	76	76	75	75	75	74	75	76	76	76	77	78	79	80	80	81	81	81	77	78	--	77
August																																
Maximum	--	--	--	78	77	77	78	78	79	79	79	80	79	79	79	80	80	80	79	78	77	76	76	76	77	78	78	79	80	80	80	78
Minimum	--	--	--	77	76	75	77	77	78	77	78	78	78	78	78	77	76	77	77	77	75	75	74	75	76	77	78	78	78	78	79	77
September																																
Maximum	81	81	81	82	82	82	82	81	82	82	82	82	83	82	82	79	78	78	76	74	73	72	73	74	73	75	75	74	74	74	--	78
Minimum	79	80	80	81	81	80	81	81	81	81	81	81	81	81	79	77	76	75	73	73	68	72	72	72	73	74	74	73	72	71	--	77

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 1961.
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 are given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1960 to September 1961

Date of collection	Mean discharge (cfs)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	pH	Biochemical oxygen demand [a]	Dissolved oxygen [a]
Oct. 3, 1960	11300	4.5	132	6.5	0.4	6.4
Nov. 1	6100	--	208	6.5	4.1	5.0
Dec. 5	6140	--	174	6.9	1.2	9.4
Jan. 3, 1961	6000	--	176	6.7	1.7	9.2
Mar. 1	46100	--	87	7.3	1.6	12.1
Apr. 3	22900	--	89	7.2	2.5	11.0
May 1	23600	--	87	6.9	2.5	10.5
June 5	6750	--	158	6.7	.1	4.1
July 6	4210	12	210	6.8	1.0	1.9
Aug. 2	6700	8.5	222	7.6	.8	3.1
Sept. 6	3930	--	208	6.8	2.0	2.0

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, which is 100 feet south of Vine Street and Delaware Avenue, Philadelphia.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1961.
Dissolved oxygen: November 1960 to September 1961.
Water temperatures: November 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved oxygen: Maximum daily, 13 ppm Feb. 28, Mar. 1; minimum daily, 0 ppm on many days during summer months.
Water temperatures: Maximum, 85°F Sept. 5-15; minimum, freezing point Feb. 2.
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 for Delaware River are given at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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	Biochemical oxygen a demand	Dissolved oxygen a
Oct. 3, 1960...	11300	7.0	0.09	13	3.0	5.2	1.5	32	23	4.5	0.2	4.3	88	45	19	131	6.4	14	0.5	6.2
Nov. 1.....	6100	4.6	.01	20	5.6	12	3.2	41	40	12	.2	7.3	135	73	40	211	6.3	7	4.2	4.2
Dec. 5.....	6140	2.4	.04	17	6.0	7.6	2.0	42	30	8.6	.3	6.5	112	67	33	180	6.4	8	.7	8.7
Jan. 3, 1961...	6000	6.6	.10	16	5.5	8.8	2.1	36	30	12	.2	7.3	113	63	33	179	6.5	8	.5	9.0
Mar. 1.....	46100	4.1	.10	9.0	1.6	3.1	1.4	15	16	2.7	.1	3.4	54	29	17	78	6.4	23	1.7	12.2
Apr. 3.....	22900	3.9	.10	9.0	2.8	3.2	1.1	20	16	4.4	.1	3.3	69	34	18	91	6.8	5	2.0	10.5
May 1.....	23600	3.8	.05	8.2	3.3	3.3	1.3	20	17	3.4	.1	2.7	53	34	18	85	6.8	3	1.3	9.3
June 5.....	6750	2.6	.00	13	5.5	8.1	2.2	38	27	7.4	.3	4.1	101	55	24	157	6.7	5	.6	4.1
July 6.....	4210	3.8	.04	16	7.2	12	2.8	40	38	12	.3	7.2	130	70	37	215	6.5	5	.5	1.1
Aug. 2.....	6700	5.2	.02	17	5.2	7.5	2.5	46	30	8.8	.3	4.3	118	64	27	180	6.6	15	.7	2.8
Sept. 6.....	3930	2.8	.00	18	6.6	10	3.0	56	37	12	.2	2.0	120	72	26	214	6.7	3	1.2	1.2

a Samples taken approximately 3 feet from surface.

DELAWARE RIVER BASIN--Continued

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

Dissolved oxygen of water, water year October 1960 to September 1961
[Data from continuous dissolved-oxygen recorder]

Day	October				November				December			
	Dissolved oxygen				Dissolved oxygen				Dissolved oxygen			
	Parts per million		Percent saturation		Parts per million		Percent saturation		Parts per million		Percent saturation	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1					--	--	--	--	7.0	3.5	60	31
2					--	--	--	--	7.1	4.0	61	35
3					--	--	--	--	6.5	3.4	56	29
4					--	--	--	--	6.5	3.3	55	28
5					--	--	--	--	6.5	3.2	56	28
6					--	--	--	--	6.6	3.0	57	26
7					--	--	--	--	6.2	3.4	53	30
8					--	--	--	--	7.0	4.5	59	38
9					--	--	--	--	7.6	4.4	63	37
10					6.8	4.2	62	39	7.3	4.7	60	39
11					7.9	3.5	65	32	7.9	4.5	64	36
12					6.6	3.0	60	28	7.8	5.6	61	44
13					6.3	3.2	57	29	9.4	6.9	70	53
14					6.6	3.4	59	31	9.1	6.3	68	48
15					6.4	3.3	57	33	9.0	5.6	67	43
16					6.2	2.9	55	26	8.1	5.3	61	40
17					5.9	3.0	50	29	8.7	5.6	65	43
18					5.8	3.0	52	27	9.5	5.8	70	43
19					5.7	2.6	51	24	9.3	5.5	68	41
20					5.9	2.8	53	25	9.2	5.2	67	38
21					5.6	2.8	50	25	8.5	5.4	63	40
22					5.8	2.9	52	26	10.2	6.4	74	47
23					5.9	2.7	53	24	--	--	--	--
24					5.1	2.2	46	20	--	--	--	--
25					4.6	2.1	41	19	--	--	--	--
26					4.8	1.9	43	17	--	--	--	--
27					4.9	1.9	44	17	11.7	8.9	82	64
28					5.0	1.3	45	12	11.0	7.7	78	55
29					3.9	.9	35	8	10.1	7.0	71	50
30					5.1	1.1	45	10	9.0	6.8	65	49
31					--	--	--	--	9.1	6.4	65	46
Average					--	--	--	--	8.4	5.3	64	41

Day	January				February				March			
1	9.3	6.4	68	46	10.5	7.3	73	51	13.0	12.5	96	92
2	11.1	8.1	80	59	10.8	7.5	74	52	12.5	12.0	96	93
3	12.3	9.3	88	67	9.7	6.7	67	47	12.3	11.7	96	91
4	12.4	10.4	89	76	9.5	6.4	66	44	12.5	11.5	98	90
5	12.1	9.9	87	72	8.8	6.3	61	44	12.3	10.9	96	87
6	11.9	9.5	86	69	8.3	5.7	58	40	11.9	10.6	95	85
7	11.1	8.7	81	64	8.6	5.9	61	42	11.9	10.5	95	87
8	10.8	8.6	78	63	8.3	5.4	58	38	11.8	10.8	98	89
9	11.6	9.1	84	66	8.0	5.1	57	36	11.2	10.5	93	87
10	10.9	8.4	78	61	8.0	4.5	57	32	11.7	10.8	94	86
11	10.0	7.9	72	57	7.8	4.5	56	32	11.3	10.2	88	82
12	9.9	7.6	72	56	7.9	4.7	56	34	11.4	9.7	89	77
13	9.7	7.2	71	53	8.3	4.7	58	34	11.7	10.0	90	78
14	10.5	7.2	77	54	8.1	4.6	58	33	11.5	9.8	90	77
15	9.8	7.3	72	54	8.4	4.6	61	33	11.5	10.2	90	80
16	9.1	7.3	67	54	8.6	4.7	62	34	11.6	10.4	92	83
17	10.1	7.1	74	53	8.5	4.3	62	32	11.4	10.5	89	82
18	10.3	7.5	76	56	7.6	4.2	57	31	11.0	9.9	86	77
19	11.1	8.2	82	60	8.2	3.7	62	28	11.1	9.7	87	75
20	10.9	8.5	78	62	11.3	6.5	86	49	10.7	9.9	85	77
21	10.9	8.1	78	58	12.5	9.2	95	70	11.0	9.7	87	78
22	10.2	8.1	73	58	--	--	--	--	10.9	9.2	86	73
23	10.9	8.3	77	59	--	--	--	--	11.6	8.9	92	71
24	10.6	9.0	76	64	11.5	10.3	90	80	10.6	9.3	84	74
25	12.3	9.1	85	64	12.0	10.1	94	79	10.8	9.9	88	79
26	11.4	8.4	79	58	12.4	10.7	97	84	10.5	9.4	85	78
27	10.7	7.9	74	56	12.3	11.8	93	88	10.3	8.8	84	74
28	10.8	7.8	75	54	13.0	12.0	96	90	10.0	8.2	84	69
29	10.4	7.9	72	55	--	--	--	--	9.1	7.9	79	69
30	10.7	7.9	74	55	--	--	--	--	9.4	7.9	82	69
31	10.2	7.5	71	53	--	--	--	--	9.3	8.3	83	73
Average	10.8	8.2	77	59	9.6	6.6	70	48	11.2	10.0	90	80

DELAWARE RIVER BASIN--Continued

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

Dissolved oxygen of water, water year October 1960 to September 1961--Continued

Day	April				May				June			
	Dissolved oxygen				Dissolved oxygen				Dissolved oxygen			
	Parts per million		Percent saturation		Parts per million		Percent saturation		Parts per million		Percent saturation	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
1	9.4	8.0	82	71	8.3	7.5	77	70	--	--	--	--
2	10.4	8.5	87	74	--	--	--	--	3.3	2.2	35	23
3	10.4	9.6	87	81	--	--	--	--	3.5	1.3	37	14
4	10.7	9.5	89	80	--	--	--	--	2.6	1.0	28	11
5	10.5	9.1	87	76	--	--	--	--	2.6	.7	28	8
6	10.2	8.7	85	73	--	--	--	--	2.0	.2	22	2
7	10.3	8.8	85	74	--	--	--	--	--	--	--	--
8	10.3	8.9	87	74	--	--	--	--	--	--	--	--
9	10.0	8.3	84	70	6.9	5.3	66	51	--	--	--	--
10	9.9	7.9	84	67	6.5	4.9	64	48	--	--	--	--
11	9.0	8.6	86	73	6.6	4.9	65	48	1.2	.0	14	0
12	9.5	7.7	82	66	6.6	4.9	66	49	1.1	.1	13	1
13	9.6	7.6	81	64	6.1	4.7	62	48	1.1	.1	13	1
14	10.3	8.9	86	75	6.0	4.4	61	45	.7	.1	--	--
15	10.5	9.5	88	80	5.9	4.6	61	47	.3	.1	4	1
16	10.5	9.3	88	79	5.7	4.4	59	45	.2	.1	2	1
17	10.6	9.7	91	82	5.7	4.3	59	44	.3	.1	4	1
18	10.4	9.9	90	86	5.1	3.7	54	39	.3	.1	4	1
19	10.3	9.6	89	83	4.6	3.1	48	32	.3	.1	4	1
20	10.3	9.4	89	82	4.2	2.8	44	29	--	--	--	--
21	10.1	9.1	88	81	4.1	2.6	43	27	--	--	--	--
22	9.7	9.0	86	80	4.5	2.8	48	29	--	--	--	--
23	9.4	8.7	84	78	4.5	2.8	47	29	--	--	--	--
24	9.2	8.2	83	76	4.4	2.7	45	28	--	--	--	--
25	8.8	7.3	81	70	4.3	2.2	45	23	1.2	.0	14	0
26	8.0	6.8	78	65	4.1	2.6	43	25	1.1	.0	13	0
27	8.0	7.2	78	71	4.4	2.1	45	22	.5	.0	6	0
28	8.0	7.4	75	70	5.0	2.9	52	30	.1	.0	1	0
29	8.3	7.2	78	69	4.8	3.3	49	34	.0	.0	0	0
30	8.4	7.7	79	73	4.4	3.2	45	33	.0	.0	0	0
31	--	--	--	--	--	--	--	--	--	--	--	--
Average	9.7	8.5	85	75	--	--	--	--	--	--	--	--

Day	July				August				September			
1	0.0	0.0	0	0	0.2	0.0	2	0	0.4	0.0	5	0
2	.0	.0	0	0	.0	.0	0	0	.0	.0	0	0
3	.1	.0	1	0	.0	.0	0	0	.0	.0	0	0
4	.3	.0	4	0	.0	.0	0	0	.5	.0	6	0
5	.3	.0	4	0	.0	.0	0	0	.4	.0	5	0
6	.1	.0	1	0	.0	.0	0	0	.0	.0	0	0
7	.1	.0	1	0	.0	.0	0	0	.0	.0	0	0
8	.0	.0	0	0	.0	.0	0	0	.0	.0	0	0
9	.2	.0	2	0	.0	.0	0	0	.0	.0	0	0
10	.2	.0	2	0	.0	.0	0	0	.0	.0	0	0
11	.2	.0	2	0	.0	.0	0	0	.0	.0	0	0
12	.2	.0	2	0	.0	.0	0	0	.0	.0	0	0
13	--	--	0	0	.0	.0	0	0	.0	.0	0	0
14	.0	.0	0	0	.2	.0	2	0	.0	.0	0	0
15	.0	.0	0	0	.3	.0	4	0	.0	.0	0	0
16	.0	.0	0	0	.3	.0	4	0	.0	.0	0	0
17	.3	.0	4	0	.3	.0	4	0	.7	.0	9	0
18	.3	.0	4	0	.3	.0	4	0	1.2	.2	14	1
19	.2	.0	2	0	.2	.0	2	0	.8	.1	9	1
20	.0	.0	0	0	.0	.0	0	0	1.0	.0	12	0
21	.0	.0	0	0	.0	.0	0	0	1.7	.1	20	1
22	.0	.0	0	0	.0	.0	0	0	2.0	.2	24	2
23	.0	.0	0	0	.0	.0	0	0	1.0	.2	12	2
24	.0	.0	0	0	.0	.0	0	0	--	--	--	--
25	.0	.0	0	0	.0	.0	0	0	--	--	--	--
26	.0	.0	0	0	.4	.0	5	0	--	--	--	--
27	.0	.0	0	0	.6	.0	7	0	.7	.0	8	0
28	.0	.0	0	0	1.0	.0	12	0	.3	.0	4	0
29	.2	.0	2	0	1.2	.0	15	0	.5	.0	6	0
30	.5	.0	6	0	.8	.0	10	0	.3	.0	3	0
31	.2	.0	2	0	.5	.0	6	0	--	--	--	--
Average	.1	.0	0.1	0.0	0.2	0.0	2	0	0.4	0.0	5	0

DELAWARE RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1960 to September 1961
[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	--	--	--	--	--	--	--	--	--	53	53	53	53	52	52	53	53	53	52	52	52	52	52	51	51	52	52	52	53	52	--	--
Minimum	--	--	--	--	--	--	--	--	--	53	52	52	52	51	51	51	51	51	51	51	51	51	51	50	50	51	51	51	52	50	--	--
December																																
Maximum	50	49	48	48	48	48	48	47	46	45	44	42	41	39	39	39	39	38	38	37	38	37	--	--	--	--	36	35	35	36	36	42
Minimum	48	48	48	47	47	48	47	46	45	44	42	41	38	38	38	38	38	37	36	36	37	36	--	--	--	--	34	34	34	35	35	41
January																																
Maximum	36	36	36	36	36	36	37	37	36	37	37	37	37	38	38	38	38	38	37	36	36	35	35	35	34	34	34	33	34	34	34	36
Minimum	36	35	35	35	35	35	36	36	36	35	36	36	36	37	37	37	37	37	36	35	35	35	34	34	33	33	33	33	33	33	33	35
February																																
Maximum	34	33	33	33	34	34	34	34	35	36	35	35	35	36	36	36	37	38	39	39	39	--	--	41	41	41	40	38	--	--	--	36
Minimum	33	32	33	33	33	33	34	33	34	35	35	34	34	35	36	36	36	37	38	39	39	--	--	41	41	40	38	37	--	--	--	36
March																																
Maximum	39	40	41	41	43	43	45	45	45	45	43	42	41	41	42	42	42	41	41	42	43	42	42	43	44	45	46	47	49	49	51	43
Minimum	37	39	40	41	41	43	43	45	45	42	41	41	40	41	41	42	41	41	41	41	42	42	42	42	43	44	44	46	47	48	49	42
April																																
Maximum	50	49	47	46	46	46	46	46	47	47	48	49	48	47	47	47	48	49	49	49	50	51	52	54	56	59	59	57	56	55	--	50
Minimum	49	46	45	45	45	45	45	45	46	47	47	48	47	46	46	46	46	48	48	48	49	50	51	52	54	56	57	56	55	55	--	49
May																																
Maximum	55	--	--	--	--	--	--	--	59	59	60	61	62	63	63	64	64	65	65	65	66	66	66	66	66	66	64	63	63	63	--	--
Minimum	54	--	--	--	--	--	--	--	57	59	59	60	61	62	62	63	63	63	64	64	65	65	64	64	65	64	63	62	63	63	--	--
June																																
Maximum	--	66	66	66	68	69	--	--	--	--	73	76	78	79	77	77	77	77	77	--	--	--	--	77	77	76	75	76	77	77	--	--
Minimum	--	65	65	65	66	68	--	--	--	--	72	73	76	77	77	77	76	75	76	--	--	--	--	76	76	75	75	75	75	76	--	--
July																																
Maximum	77	78	78	78	77	77	77	77	77	77	78	78	78	78	77	78	78	80	80	80	81	82	83	82	83	83	83	83	82	82	82	79
Minimum	77	77	77	77	77	76	76	76	76	76	77	77	77	77	77	77	77	78	79	79	79	80	81	81	81	82	82	82	81	81	81	78
August																																
Maximum	82	81	81	80	80	80	80	81	81	82	82	82	81	80	80	80	80	80	80	79	78	78	77	78	79	79	79	81	82	81	82	80
Minimum	81	81	80	79	79	79	79	80	80	81	81	81	79	79	79	79	79	79	79	77	77	77	77	77	78	79	79	79	81	81	81	79
September																																
Maximum	83	83	84	84	85	85	85	85	85	85	85	85	85	85	85	82	80	78	77	75	75	76	76	--	--	77	77	76	75	75	--	81
Minimum	82	83	83	83	84	85	84	84	84	84	84	84	85	85	82	80	78	77	75	75	74	75	75	--	--	76	76	75	74	73	--	80

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.
RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1961.
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 are given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1960 to September 1961

Date of collection	Mean discharge (cfs)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	pH	Biochemical oxygen demand [a]	Dissolved oxygen [a]
Oct. 4, 1960	10000	6.5	157	6.5	1.2	3.1
Nov. 2	7450	--	229	6.7	3.5	3.0
Dec. 6	5780	--	218	6.5	4.1	5.0
Jan. 5, 1961	5000	--	217	6.0	2.0	8.0
Mar. 2	37000	--	90	6.6	3.6	11.2
Apr. 4	20000	--	103	7.0	2.5	10.5
May 2	17000	--	93	6.9	.2	8.0
June 6	5860	--	202	6.4	2.1	1.5
July 5	4140	14	231	6.6	.1	1.1
Aug. 1	6140	8.5	182	6.7	.1	2.4
Sept. 5	4240	13	228	6.8	.6	.7

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 1961.
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 are given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1960 to September 1961

Date of collection	Mean discharge (cfs)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	pH	Biochemical oxygen demand [a]	Dissolved oxygen [a]
Oct. 4, 1960	10000	6.5	154	6.6	1.5	3.2
Nov. 2	7450	--	239	6.6	3.4	4.4
Dec. 6	5780	--	247	6.4	2.4	3.0
Jan. 5, 1961	5000	--	237	6.0	2.3	7.9
Mar. 2	37000	--	100	6.8	3.5	11.0
Apr. 4	20000	--	111	6.8	2.1	9.8
May 2	20700	--	93	6.8	1.8	7.4
June 6	5860	--	205	6.5	.0	2.1
July 5	4140	13	234	6.4	.0	1.9
Aug. 1	6140	12	207	6.9	.7	1.4
Sept. 5	4240	16	272	6.6	1.5	1.5

a Obtained from surface samples.

DELAWARE RIVER BASIN--Continued

1-4705. SCHUYLKILL RIVER AT BERNE, PA.

LOCATION.--At gaging station on right bank at highway bridge 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: December 1947 to February 1953, December 1956 to September 1961.
Sediment records: October 1947 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 85°F July 2; minimum, freezing point Dec. 10 to Feb. 19.
Sediment concentrations: Maximum daily, 240 ppm Feb. 26; minimum daily, 1 ppm on many days during year.
Sediment loads: Maximum daily, 6,060 tons Feb. 26; minimum daily, less than 0.50 ton Sept. 27-29.
EXTREMES, 1947-61.--Dissolved solids (1947-53, 1956-61): Maximum, 755 ppm Sept. 11-20, 1948; minimum, 155 ppm Dec. 11-14, 1952.
Hardness (1947-53, 1956-61): Maximum, 501 ppm Sept. 11-20, 1948; minimum, 56 ppm Mar. 11-12, 1952.
Specific conductance (1947-53, 1956-60): Maximum daily, 1,040 micromhos Oct. 23, 1951; minimum daily, 130 micromhos Apr. 1, 1960, Feb. 26, 1961.
Water temperatures (1947-53, 1956-61): 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, no flow 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.--Flow affected by ice Dec. 10 to Feb. 20.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 3, 1960.	519	11	3.5	0.02	2.5	33	19	9.1	1.1	0	184	1.5	0.2	2.4	284	161	161	0.4	408	4.4	2
Nov. 1.....	435	11	2.2	.03	3.5	47	30	12	2.5	0	265	4.5	.2	5.0	391	241	241	.6	548	4.0	1
Feb. 20, 1961	2500	7.1	--	.04	.77	19	11	5.0	1.8	6	83	5.1	.1	5.0	153	93	88	--	235	5.6	5
Mar. 21.....	982	9.0	--	.03	2.2	32	21	7.1	1.2	0	171	2.0	.1	3.9	275	167	167	.3	411	4.2	2
Apr. 1-30....	1310	8.2	.5	.00	1.4	20	14	5.2	1.2	1	113	3.0	.1	2.0	198	108	107	.1	276	4.7	3
May 1-31.....	751	9.6	2.1	.04	2.7	37	31	8.3	1.2	0	229	4.5	.1	1.8	345	220	220	.4	503	4.2	3
June 20.....	216	10	1.4	.00	2.6	39	25	11	2.0	2	212	5.0	.1	1.4	338	201	199	.2	468	4.7	3
July 1-31....	422	9.9	1.5	.00	2.5	33	26	10	1.8	0	202	6.0	.0	3.4	307	190	190	.2	444	4.5	3
Aug. 1-31....	668	9.9	1.8	.02	2.7	49	31	9.8	2.0	0	256	5.2	.1	3.1	400	250	250	.4	560	4.2	3
Sept. 1-30...	308	12	1.9	.00	2.2	42	28	12	2.0	0	245	4.5	.1	4.2	376	220	220	.3	533	4.2	2

DELAWARE RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1960 to September 1961

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	59	60	62	61	59	59	60	62	64	64	63	64	60	65	65	67	65	58	57	56	53	50	48	48	50	50	49	53	56	51	58
November	52	50	49	50	48	45	45	40	39	44	42	40	42	45	48	48	46	43	43	47	48	43	44	45	41	40	42	47	47	46	--	45
December	37	38	37	37	44	44	40	39	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	2	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	36	35	38	40	38	42	40	44	42	--	--	--	34
March	40	46	45	45	48	47	50	43	40	40	41	46	41	41	43	41	39	40	40	43	39	41	40	44	45	47	52	54	54	49	49	44
April	42	43	42	44	44	46	46	48	47	43	45	41	46	42	52	50	46	45	45	45	47	58	58	56	60	55	55	57	56	55	--	49
May	52	56	53	49	52	53	57	57	61	60	58	52	60	67	65	65	60	59	57	61	61	58	56	57	61	64	57	62	62	60	58	58
June	62	72	70	72	67	70	72	75	72	72	80	78	80	76	70	72	78	78	77	80	71	66	72	72	74	68	56	68	70	73	--	73
July	82	85	78	77	70	66	69	79	77	66	66	69	73	72	72	73	72	75	74	76	74	81	84	80	76	72	77	74	74	78	74	75
August	73	73	68	70	72	72	68	70	72	73	74	76	75	67	67	70	70	68	77	75	68	66	69	71	73	73	73	75	75	70	70	71
September	71	79	77	79	75	77	74	76	77	80	78	74	75	76	73	74	72	66	64	65	71	68	79	80	79	70	64	62	61	67	--	73

DELAWARE RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961

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	663	C	1	2	435	C	2	2	351	C	2	2
2	552	C	1	1	399	C	2	2	301	C	2	2
3	519	C	1	1	313	C	2	2	301	C	2	2
4	480	C	1	1	288	C	2	2	294	C	2	2
5	442	C	1	1	277	C	2	1	294	C	2	2
6	428	C	1	1	294	C	2	2	294	C	2	2
7	420	C	1	1	294	C	2	2	301	C	2	2
8	386	C	1	1	271	C	2	1	294	C	2	2
9	365	C	1	1	265	C	2	1	271	C	2	1
10	358	C	1	1	368	C	2	2	240	C	2	1
11	338	C	1	1	399	C	2	2	220	C	2	1
12	313	C	1	1	338	C	2	2	180		2	1
13	307	C	1	1	326	C	2	2	210		2	1
14	301	C	1	1	320	C	2	2	230		2	1
15	301	C	1	1	313	C	2	2	250		2	1
16	301	C	1	1	313	C	1	1	240		2	1
17	294	C	1	1	307	C	1	1	250		2	1
18	282	C	1	1	294	C	1	1	240		2	1
19	277	C	1	1	288	C	1	1	230		2	1
20	450		4	5	282	C	1	1	230		2	1
21	379	C	1	1	277	C	1	1	250		2	1
22	294	C	1	1	265	C	1	1	270		2	1
23	277	C	1	1	265	C	1	1	250		2	1
24	288	C	1	1	271	C	1	1	220		2	1
25	282	C	1	1	265	C	1	1	210		2	1
26	265	C	1	1	248	C	1	1	220		2	1
27	254	C	1	1	248	C	1	1	230		2	1
28	260	C	1	1	248	C	1	1	210		2	1
29	248	C	1	1	270	C	1	1	210		2	1
30	237	C	1	1	523		5	7	200		2	1
31	237	C	1	1	--		--	--	220		2	1
Total	10798		--	36	9264		--	48	7711		--	39

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	500	2		3	290	1		1	2410	11		72
2	800	5	A	11	270	1		1	1970	9		48
3	620	3	A	5	290	1		1	1690	9		41
4	520	2		3	300	1		1	1530	9		37
5	470	2		3	330	1		1	1610	12		52
6	430	2		2	360	2		2	1570	16		68
7	420	2		2	350	2		2	1900	19		97
8	440	2		2	340	2		2	1820	12		59
9	410	2		2	330	2		2	1900	16		82
10	380	2		2	340	2		2	1900	16		82
11	360	2		2	360	2		2	1600	12		52
12	350	2		2	340	2		2	1470	10		40
13	340	2		2	330	2		2	1340	9		33
14	330	2		2	360	2		2	1550	12		50
15	350	2		2	410	2		2	1460	10		39
16	480	2		3	470	2		3	1390	10		38
17	420	2		2	520	2		3	1270	9		31
18	370	2		2	640	3	A	5	1160	10		31
19	340	2		2	1500	12		49	1240	8		27
20	320	2		2	2500	33	S	248	1140	6		18
21	310	2		2	1800	23		112	982	4		11
22	330	2		2	1510	9		37	918	3		7
23	360	2		2	1900	16		82	1030	8		22
24	450	2		2	2040	19		105	1100	6		18
25	520	3	A	4	3660	100	S	1410	1160	6		19
26	430	2		2	8450	240	S	6060	1140	3		9
27	380	2		2	4480	39		472	1100	2		6
28	350	2		2	3150	19		162	1050	2		6
29	320	2		2	--	--		--	1140	3		9
30	310	2		2	--	--		--	939	2		5
31	300	2		2	--	--		--	876	2		5
Total	.12710	--		80	37620	--		8773	43355	--		1114

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 1960 to September 1961--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	928	4	10	719	C 3	6	392	1	1
2	939	5	13	928	C 3	8	379	1	1
3	845	2	5	786	C 3	6	386	2	2
4	815	3	7	737	C 3	6	399	2	2
5	776	C 2	4	691	C 3	6	326	C 2	2
6	747	C 2	4	663	C 3	5	313	C 2	2
7	700	C 2	4	710	C 3	6	288	C 2	2
8	637	C 2	3	710	C 3	6	277	C 2	1
9	593	C 2	3	835	C 3	7	326	7	6
10	941	5	13	1030	C 3	8	613	28	S 50
11	1170	9	28	897	C 3	7	413	C 9	10
12	1260	3	10	1040	C 3	8	326	C 9	8
13	2130	28	S 177	1030	C 2	6	294	C 9	7
14	2560	34	235	982	C 2	5	282	C 9	7
15	2340	16	101	918	C 2	5	313	C 9	8
16	2730	23	S 196	1070	C 2	6	265	C 9	6
17	2800	17	129	918	C 2	5	248	C 2	1
18	2410	10	65	835	C 2	5	231	C 2	1
19	1900	7	36	815	C 2	4	221	C 2	1
20	1590	6	26	756	C 2	4	216	C 2	1
21	1370	C 3	11	700	C 2	4	246	4	3
22	1200	C 3	10	663	C 2	4	1140	42	S 147
23	1380	C 3	11	620	C 2	3	628	C 3	5
24	1080	C 3	9	611	C 2	3	628	C 3	5
25	1030	C 3	8	568	C 2	3	527	C 3	4
26	1080	C 2	6	593	C 2	3	495	C 3	4
27	918	C 2	5	585	C 2	3	442	C 2	2
28	845	C 2	5	503	C 2	3	406	C 2	2
29	825	C 2	4	465	C 2	3	365	C 2	2
30	747	C 2	4	480	C 2	3	345	C 2	2
31	--	--	--	435	C 2	2	--	--	--
Total	39286	--	1142	23293	--	153	11730	--	295

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	345	C 2	2	576	6	9	620	C 2	3
2	320	C 2	2	503	4	5	576	C 2	3
3	301	C 2	2	672	15	27	544	C 2	3
4	271	C 2	1	1800	71	S 449	495	C 2	3
5	254	C 1	1	1090	2	6	450	C 2	2
6	237	C 1	1	796	C 2	4	413	C 2	2
7	237	C 1	1	710	C 2	4	392	C 2	2
8	226	C 1	1	568	C 2	3	379	C 1	1
9	216	C 1	1	488	C 2	3	351	C 1	1
10	206	C 1	1	435	C 2	2	326	C 1	1
11	200	C 1	1	519	C 2	3	313	C 1	1
12	195	C 1	1	458	C 2	2	301	C 1	1
13	232	C 1	1	386	C 2	2	282	C 1	1
14	277	1	1	351	C 2	2	265	C 1	1
15	489	185	S 375	345	C 2	2	288	C 1	1
16	643	25	S 68	326	C 1	1	260	C 1	1
17	351	C 2	2	307	C 1	1	231	C 1	1
18	282	C 2	2	288	C 1	1	226	C 1	1
19	254	C 2	1	282	C 1	1	221	C 1	1
20	962	C 2	2	254	C 1	1	231	C 1	1
21	352	C 2	2	337	C 1	1	277	C 1	1
22	265	C 2	1	351	C 1	1	248	C 1	1
23	231	C 2	1	354	C 1	1	211	C 1	1
24	718	216	S 799	519	C 1	1	200	C 1	1
25	1460	46	S 228	592	4	6	200	C 1	1
26	730	7	14	1800	37	A 180	200	C 1	1
27	519	C 5	7	1780	22	106	180	C 1	T
28	420	C 5	6	1240	3	10	180	C 1	T
29	973	90	S 309	1030	C 2	6	176	C 1	T
30	896	7	17	866	C 2	5	200	C 1	1
31	628	5	8	700	C 2	4	--	--	--
Total	13090	--	1859	20723	--	849	9236	--	39

Total discharge for year (cfs-days)..... 238,816
Total load for year (tons)..... 14,427

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

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

Particle-size analyses of suspended sediment, 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)	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, 1961.....	0800		40	9950	270		15	27	41	55	71	86	88	96	99			BSWC

1-4730. PERKIOMEN CREEK AT GRATERFORD, PA.

LOCATION.--At highway bridge at Graterford, Montgomery County, 1,650 feet downstream from gaging station, 0.5 mile upstream from Landis Brook, and 2.5 miles north of Collegeville.
DRAINAGE AREA.--279 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1948 to September 1950, October 1958 to September 1961 (discontinued).
Water temperatures: October 1958 to September 1961 (discontinued).
Sediment records: April 1948 to March 1953.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 408 micromhos Feb. 4; minimum daily, 125 micromhos Apr. 14.
Water temperatures: Maximum, 79°F July 26; minimum, freezing point on many days during December and January.
EXTREMES, 1948-61.--Specific conductance (1958-61): Maximum daily, 408 micromhos Feb. 4, 1961; minimum daily, 125 micromhos Apr. 14, 1961.
Water temperatures (1958-61): Maximum, 82°F June 30, July 1, 1959; minimum, 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 1960 to September 1961

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. 1-20, 1960	--	--		--	--	--	--	9.2	--	72	35	12	--	4.5	150	96	37		242	6.7	4
Oct.21-Nov. 10.	--	24		0.03	0.00	23	9.0	12	3.5	76	33	13	0.3	4.5	171	95	32		248	7.4	1
Nov. 11-Dec.10.	--	--		--	--	--	--	6.9	--	60	35	12	--	5.4	140	92	43		229	6.5	4
Nov. 17.....	178	9.2		.01	.00	23	9.0	8.4	3.0	59	40	14	.2	7.0	148	95	46		239	7.3	3
Dec. 11-21.....	--	--		--	--	--	--	11	--	66	38	18	--	8.2	168	102	48		257	7.5	2
Dec. 22-31.....	--	--		--	--	--	--	12	--	60	37	17	--	6.8	166	92	43		246	7.4	3
Jan. 1-7, 1961.	--	--		--	--	--	--	7.6	--	40	35	11	--	5.8	134	73	40		194	7.2	7
Jan. 8-21.....	--	--		--	--	--	--	5.3	--	44	36	12	--	6.4	137	84	48		220	7.1	5
Jan. 22-Feb.3..	--	--		--	--	--	--	8.7	--	53	39	15	--	9.7	151	94	51		248	6.6	3
Feb. 4.....	160	--		--	--	--	--	--	--	101	57	--	--	--	--	--	--		408	6.9	--
Feb. 5-8.....	--	--		--	--	--	--	--	--	60	32	--	--	--	--	--	--		225	7.2	--
Feb. 9-10.....	--	--		--	--	--	--	--	--	72	37	--	--	--	--	--	--		281	7.2	--
Feb. 11-17.....	--	--		--	--	--	--	10	--	55	35	15	--	9.2	168	88	43		236	7.1	7
Feb. 18-27.....	--	--		--	--	--	--	55	--	28	26	6.6	--	8.0	104	54	31		146	7.0	18
Feb.28-Mar. 23.	--	13		.04	.03	15	6.2	6.5	1.9	34	32	7.7	.1	7.7	127	63	35		167	6.8	15
Mar. 27-Apr.10.	--	--		--	--	--	--	6.7	--	40	32	9.3	--	7.6	133	71	38		184	6.9	5
Apr. 11-15.....	--	--		--	--	--	--	5.8	--	30	30	6.8	--	6.9	143	58	34		151	7.1	19
Apr. 16-May 8..	--	--		--	--	--	--	6.9	--	41	31	8.2	--	5.8	158	67	34		176	7.0	10

1-4730. PERKIOMEN CREEK AT GRATERFORD, PA.--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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				
May 9, 1961....	1500	--		--	--	--	--	--	--	34	23	--	--	--	--	--	--		129	6.6	--
May 10-15.....	--	--		--	--	--	--	7.6	--	46	31	8.3	--	5.9	--	70	33		181	7.4	8
May 16-June 14.	--	10		0.00	0.02	20	8.5	6.5	3.0	62	31	11	0.1	4.9	140	85	34		213	7.3	5
June 15-July 14	--	12		.05	.00	23	8.0	7.5	2.2	74	30	12	.3	2.5	137	91	30		223	7.4	5
July 16-18.....	--	--		--	--	--	--	11	--	78	28	17	--	4.8	166	98	34		249	7.0	5
July 19-22, 26-31,Aug.1-6	--	--		--	--	--	--	8.3	--	59	28	12	--	5.8	150	81	33		208	7.0	11
Aug. 7-21.....	--	--		--	--	--	--	8.7	--	74	29	14	--	3.7	159	94	34		232	7.4	3
Aug. 22-31.....	--	11		.00	.00	23	11	13	3.5	82	34	17	.1	5.1	163	103	36		262	7.5	3
Sept. 1-16.....	--	--		--	--	--	--	9.4	--	82	26	14	--	3.5	154	96	29		236	7.6	5
Sept. 17-30....	--	--		--	--	--	--	11	--	80	27	19	--	5.3	166	102	37		258	7.5	5
Time-weighted average....	--	--		--	--	--	--	9.6	--	59	32	12	--	5.7	147	85	37		217	7.0	6

Temperature (°F) of water, water year October 1960 to September 1961

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	65	65	68	54	54	56	56	57	58	56	58	60	61	61	58	58	60	53	50	50	50	47	46	47	50	51	50	51	56
November.....	54	51	51	48	48	44	44	40	40	45	45	41	41	41	46	46	44	45	44	42	41	41	44	40	41	40	42	43	43	40	--	44
December.....	40	36	36	34	37	39	42	41	34	34	34	32	32	32	32	33	32	32	33	32	34	34	32	32	32	32	33	32	32	33	33	34
January.....	33	33	34	33	33	33	34	35	32	32	32	32	--	34	37	34	37	38	34	34	32	32	32	32	32	34	32	32	32	32	32	33
February.....	33	33	33	33	33	33	33	34	36	39	35	35	33	36	36	36	35	35	35	35	34	34	36	36	39	40	38	40	--	--	--	35
March.....	38	38	38	41	43	44	43	42	47	47	45	46	42	41	39	41	37	41	34	38	39	41	39	39	42	45	45	49	51	50	50	41
April.....	44	44	42	42	44	46	46	46	46	46	43	42	42	40	45	42	46	46	46	46	49	57	57	58	62	56	56	56	56	54	--	48
May.....	52	52	52	51	54	56	56	58	56	56	--	68	66	66	66	68	66	63	59	59	59	60	58	59	60	59	56	54	60	59	59	59
June.....	64	68	72	66	66	70	71	71	68	69	71	77	77	77	70	66	66	67	67	71	71	69	69	70	70	71	70	69	69	69	--	70
July.....	75	79	79	74	70	70	68	69	69	69	69	69	72	72	74	73	72	74	74	74	75	75	--	--	--	79	77	77	67	73	75	73
August.....	77	75	72	72	74	72	73	74	75	77	77	77	73	69	70	73	71	70	70	73	68	67	71	70	73	75	75	75	75	74	74	73
September.....	74	77	77	78	76	78	78	76	73	74	76	77	77	77	75	66	62	62	66	65	67	67	70	71	73	72	65	65	62	62	--	71

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.--1,830 square miles.
RECORDS AVAILABLE.--Sediment records: November 1947 to September 1961.
EXTREMES, 1960-61.--Sediment concentrations: Maximum daily, 528 ppm Feb. 26; minimum daily, 5 ppm Dec. 24-31.
Sediment loads: Maximum daily, 29,700 tons Feb. 26; minimum daily, 10 tons Dec. 25, 28, 30, and Sept. 26.
EXTREMES, 1947-61.--Sediment concentrations: Maximum daily, 4,910 ppm Dec. 30, 1948; minimum daily, 1 ppm on several days.
Sediment loads: Maximum daily, 650,000 tons Aug. 19, 1955; minimum daily, 2 tons on several days.
REMARKS.--Records of discharge are given for water year October 1960 to September 1961 based on records for Schuylkill River at Philadelphia (Fairmount Dam) and does not include water diverted by the City of Philadelphia for municipal water supply. Records of specific conductance and pH of random samples available in subdistrict office at Harrisburg, Pa.

Suspended sediment, water year October 1960 to September 1961

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	2340	C 13	82	1160	C 11	34	1630	13	57
2	2100	C 13	74	1730	C 11	51	1330	C 8	29
3	1820	C 13	64	1540	C 11	46	892	C 8	19
4	1630	C 13	57	1160	C 11	34	929	C 8	20
5	1500	C 13	53	1080	C 11	32	929	C 8	20
6	1410	C 13	49	1040	C 11	31	929	C 8	20
7	1370	C 13	48	1000	C 9	24	929	C 6	15
8	1290	C 13	45	966	C 9	23	892	C 6	14
9	1200	C 11	36	929	C 9	23	818	C 6	13
10	1120	C 11	33	1770	19	S 107	800	C 6	13
11	1040	C 11	31	3080	33	S 278	760	C 6	12
12	1120	C 11	33	2100	16	91	710	C 7	13
13	1000	C 12	32	1730	14	65	740	C 7	14
14	966	C 12	31	1450	10	39	800	C 7	15
15	929	C 12	30	1330	C 9	32	880	C 7	17
16	929	C 12	30	1240	C 9	30	880	C 7	17
17	892	C 12	29	1160	C 9	28	900	C 7	17
18	855	C 12	28	1080	C 9	26	890	C 7	17
19	855	C 12	28	1000	C 9	24	810	C 7	15
20	2160	C 12	70	966	C 12	31	740	C 7	14
21	2050	C 12	66	966	C 12	31	1300	C 7	25
22	1540	C 11	46	929	C 12	30	1600	C 7	30
23	1160	C 11	34	929	C 12	30	1330	C 7	25
24	1040	C 11	31	892	C 12	29	1000	C 5	14
25	1000	C 11	30	892	C 8	19	740	C 5	10
26	966	C 11	29	892	C 8	19	800	C 5	11
27	892	C 10	24	855	C 8	18	850	C 5	11
28	929	C 10	25	818	C 8	18	760	C 5	10
29	1450	C 10	39	1010	9	25	800	C 5	11
30	1120	C 10	30	1580	14	60	760	C 5	10
31	929	C 10	25	--	--	--	940	C 5	13
Total	39602	--	1262	37274	--	1328	29068	--	541

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 1960 to September 1961--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	3680	28	S	363	1160	13	A	40	8650	49		1140
2	6400	117	S	2070	1080	C 12		35	7400	37		739
3	4390	34		403	1000	C 12		32	6180	24		400
4	3190	13		112	1040	C 12		34	5340	23		332
5	2490	C 7		47	1000	C 12		32	5340	22		317
6	2050	C 7		39	1120	C 12		36	5220	22		310
7	2010	C 7		38	1530	C 30		124	5580	27		407
8	2440	C 7		46	1770	C 30		143	6270	54		914
9	2290	C 10		62	1730	C 30		140	11000	162	S	4910
10	1860	C 10		50	1370	27		100	8690	67	S	1610
11	1680	C 10		45	1410	17		65	6430	27		469
12	1590	C 10		43	1330	12		43	5640	17		259
13	1500	C 7		28	1200	7		23	5100	14		193
14	1500	C 7		28	1240	C 8		27	7330	86	S	1860
15	1770	C 7		33	1540	C 8		33	7140	80		1540
16	2730	36		265	2050	C 8		44	5700	30		462
17	2200	13		77	2440	20		132	4860	20		262
18	1600	8		35	3030	30		245	4220	21		239
19	1400	12		45	10300	191	S	6860	6490	105		1840
20	1300	C 12		42	13100	378	S	13400	6300	95		1620
21	1250	C 12		40	10200	236	S	6650	4740	50		640
22	1300	C 12		42	7400	83		1660	4100	18		199
23	1800	17		83	10100	153		4170	5160	25	S	425
24	3000	30	A	240	10400	142		3990	7340	103		2040
25	4500	45	A	550	13600	290		10600	5400	30		437
26	2500	23	A	160	20800	528		29700	4740	13		166
27	1700	18	A	80	16000	286	S	12800	4390	C 12		142
28	1550	15	A	60	10800	107		3120	4160	C 12		135
29	1450	14	A	55	--	--		--	4160	11		124
30	1350	14	A	50	--	--		--	4040	11		120
31	1250	14	A	45	--	--		--	3550	9		86
Total	69720	--		5276	149740	--		94278	180660	--		24337

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	4040	12		131	3340	9		81	1500	C 11		45
2	4440	12		144	3440	C 10		93	1370	C 11		41
3	3710	8		80	3710	C 10		100	1500	C 11		45
4	3290	C 9		80	3080	7		58	1370	C 11		41
5	3080	C 9		75	2780	C 8		60	1410	13		49
6	2930	C 9		71	2640	C 8		57	1240	16		54
7	2780	C 8		60	2930	C 9		71	1160	23		72
8	2590	C 8		56	3080	C 9		75	1160	17		53
9	2440	C 8		53	4540	26		319	1730	18		84
10	4570	89	S	1350	4800	53		687	1410	16		61
11	5920	86	S	1460	4390	29		344	1630	24		106
12	4440	16		192	4100	27		299	1450	C 14		55
13	12900	368	S	17300	4330	20		234	1160	C 14		44
14	14600	263	S	11200	3820	18		186	1590	C 14		60
15	9140	95		2340	3390	17		156	1120	21		64
16	8160	80		1760	3880	26		272	1040	20		56
17	9350	88		2220	3440	25		232	966	19		50
18	7600	68		1400	2930	16		127	818	C 19		42
19	6500	30		526	2640	C 15		107	744	C 19		38
20	5580	C 13		196	2590	C 15		105	670	C 19		34
21	4920	C 13		173	2440	C 15		99	855	C 19		44
22	4330	C 8		94	2250	13		79	1290	20		70
23	4440	C 8		96	2100	10		57	1760	32	S	169
24	4440	12		144	1960	11		58	1680	22		100
25	3820	8		83	1860	8		40	1680	21		95
26	5490	33		489	1960	13		69	1450	17		67
27	4620	26		324	2390	14		90	1730	21		98
28	3710	14		140	2200	10		59	1370	19		70
29	5260	38		540	1770	8		38	1160	18		56
30	3930	19		202	1680	10		45	1000	17		46
31	--	--		--	1680	10		45	--	--		--
Total	163020	--		42979	92140	--		4342	39013	--		1909

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 1960 to September 1961--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	892	C 14	34	2590	C 34	238	1590	22	94
2	929	C 14	35	2150	C 34	197	1370	22	81
3	929	C 14	35	1910	C 34	175	1330	20	72
4	855	C 14	32	2200	27	160	1450	22	86
5	744	C 14	28	3260	34	299	1240	21	70
6	670	C 16	29	2540	30	206	1040	20	56
7	638	C 16	28	2200	30	178	1000	20	54
8	638	C 16	28	1820	22	108	1000	23	62
9	606	C 16	26	1500	17	69	892	20	48
10	606	C 11	18	1290	15	52	818	16	35
11	542	C 11	16	1200	14	45	744	14	28
12	510	C 11	15	1500	15	61	707	C 13	25
13	1290	C 21	73	1450	26	102	606	C 13	21
14	1450	C 21	82	1160	24	75	829	C 13	29
15	2050	45 S	381	966	17	44	1030	C 28	78
16	3210	92 S	827	892	20	48	707	C 28	53
17	2640	45	321	855	13	30	606	C 28	46
18	1500	25	101	744	16	32	510	C 22	30
19	1160	30	94	707	14	27	510	C 22	30
20	2800	64 S	544	804	23	50	555	C 22	33
21	3190	65	560	1730	40	187	1160	C 20	63
22	1910	32	165	1240	32	107	781	C 20	42
23	1290	26	91	1910	38	196	606	C 20	33
24	1210	30	98	1910	29	150	510	C 11	15
25	2680	80	579	1860	34	171	414	C 11	12
26	4640	110	1380	1490	23	93	350	C 11	10
27	2680	51	369	3540	38 S	370	325	C 15	13
28	1910	35	180	3440	31	288	325	C 15	13
29	7770	239 S	7860	2540	27	185	300	C 15	12
30	7400	151 S	3270	2100	19	108	300	C 15	12
31	3680	53	527	1910	23	119	--	--	--
Total	63019	--	17826	55408	--	4170	23605	--	1256

Total discharge for year (cfs-days)..... 942269
Total load for year (tons)..... 199504

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 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)	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. 27, 1961.....	1355		50	15100	287		4	9	18	34	64	79	84	92	97			BSN
Feb. 27.....	1355		50	15100	252		35	46	60	74	83	89	92	97	99			BSWC
Mar. 9.....	1210		42	11500	181		15	34	53	68	87	94	--	--	--			BW

1-4745. SCHUYLKILL RIVER AT PHILADELPHIA, PA.

LOCATION.--At Belmont Filter Plant, Philadelphia, Philadelphia County, 1.6 miles upstream from gaging station, and 40 feet upstream from Fairmount Dam.
DRAINAGE AREA.--1,893 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1945 to September 1961.
Water temperatures: October 1945 to September 1961.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 466 micromhos Aug. 27; minimum daily, 154 micromhos Apr. 14.
Water temperatures: Maximum, 85°F July 26; minimum, freezing point on several days during January and February.
EXTREMES, 1945-61.--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, 588 micromhos Oct. 7, 1951; minimum daily, 141 micromhos Sept. 13, 1960.
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 1960 to September 1961

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. 1-10,1960		16		0.01	0.00	33	13	13	1.8	70	77	12	0.2	8.5	217	136	79		327	7.3	2
Nov. 1-10.....		12		.00	.03	38	14	16	2.6	82	84	16	.2	8.3	235	153	86		381	7.1	1
Dec. 1-10.....		9.2		.00	.03	34	14	15	2.3	80	74	16	.3	9.4	221	143	77		358	7.3	3
Jan. 1-10,1961		12		.01	.00	27	10	11	2.9	56	58	15	.2	9.7	185	109	63		283	6.9	4
Feb. 1-10.....		13		.02	.02	31	10	15	2.8	75	57	16	.2	5.4	197	119	57		325	7.2	3
Mar. 1-10.....		15		.04	.00	23	7.8	8.3	2.5	50	56	7.2	.1	.5	145	90	49		225	6.8	3
Apr. 1-10.....		11		.04	.00	27	12	9.1	2.0	56	65	9.6	.2	7.7	180	117	71		275	7.2	3
May 1-10.....		10		.00	.00	27	13	7.2	2.0	60	65	9.6	.1	7.2	187	121	72		278	7.5	3
June 1-10.....		10		.00	.04	33	19	12	2.5	76	91	13	.1	7.7	250	161	98		365	7.6	3
July 1-10.....		11		.01	.02	38	13	14	3.0	84	72	15	.3	6.2	232	149	80		354	7.4	3
Aug. 1-10.....		12		.00	.00	29	13	10	2.5	62	73	11	.1	7.7	195	126	75		301	7.2	3
Sept. 1-10....		9.7		.00	.00	34	16	14	2.5	64	101	13	.1	6.7	237	151	99		363	7.2	3

DELAWARE RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1960 to September 1961

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	67	66	65	64	64	64	63	65	63	64	64	64	65	67	66	67	66	66	66	64	62	59	57	56	53	53	63	57	54	--	63
November	55	56	58	57	55	55	54	51	50	50	51	51	49	49	48	49	51	53	53	52	53	53	52	51	50	50	50	50	51	51	--	52
December	49	47	46	44	44	44	44	44	44	42	41	--	35	34	33	33	33	34	34	35	35	34	34	34	34	33	33	33	33	34	35	38
January	35	35	35	35	35	34	36	36	36	36	35	35	35	35	37	38	38	39	38	37	37	33	32	32	32	32	32	32	33	32	32	35
February	32	32	32	32	32	32	32	32	32	33	35	36	38	37	38	39	40	42	43	41	38	38	39	39	41	41	41	42	--	--	--	37
March	42	42	42	43	44	44	46	47	47	44	41	41	41	42	42	42	42	42	42	41	41	43	43	43	43	43	46	48	51	53	54	44
April	52	49	46	46	46	46	47	48	49	50	49	--	--	--	44	47	49	50	50	49	50	53	56	58	62	63	63	62	61	58	--	52
May	57	55	57	56	56	58	58	60	61	63	65	65	64	63	64	66	67	68	67	67	66	66	66	66	65	67	67	--	64	63	60	63
June	64	64	68	71	72	72	75	76	76	71	77	78	79	81	81	79	77	77	77	76	78	75	76	77	78	76	74	78	75	75	--	75
July	76	78	81	81	81	80	79	78	76	76	76	77	75	77	77	78	78	78	80	81	82	82	84	84	84	85	--	84	83	81	78	80
August	78	79	79	78	79	77	78	76	74	80	82	82	84	83	81	80	80	80	80	79	78	76	76	76	77	78	80	81	82	82	81	79
September	81	82	83	83	84	84	84	83	82	83	83	84	84	84	83	81	77	75	75	73	71	72	75	76	77	78	78	75	74	--	79

DELAWARE RIVER BASIN--Continued

1-4762. DELAWARE RIVER AT EDDYSTONE, PA.

LOCATION.--Between river end at 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 1961.
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 are given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1960 to September 1961

Date of collection	Sampling station	Mean discharge (cfs)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	pH	Biochemical oxygen demand	Dissolved oxygen
Oct. 4, 1960....	Top	10000	--	157	6.3	0.5	2.6
	Bottom	--	6.5	156	6.4	--	--
Nov. 2.....	Top	7450	17	255	6.5	3.1	4.2
	Bottom	--	--	257	6.6	--	--
Dec. 6.....	Top	5780	16	264	6.4	3.4	3.7
	Bottom	--	--	262	6.4	--	--
Jan. 5, 1961....	Top	5000	20	280	6.3	3.8	6.8
	Bottom	--	--	277	6.4	--	--
Mar. 2.....	Top	37000	4.5	109	7.0	3.6	11.2
	Bottom	--	--	113	6.7	--	--
Apr. 4.....	Top	20000	6.0	143	7.1	4.3	11.0
	Bottom	--	--	143	6.9	--	--
May 2.....	Top	20700	4.0	109	6.6	1.4	6.8
	Bottom	--	--	110	6.6	--	--
June 6.....	Top	5860	9.5	206	6.4	.4	2.4
	Bottom	--	--	206	6.4	--	--
July 5.....	Top	4140	--	246	6.6	.6	2.6
	Bottom	--	16	245	6.7	--	--
Aug. 1.....	Top	6140	--	235	6.8	.0	1.7
	Bottom	--	14	230	6.8	--	--
Sept. 5.....	Top	4240	--	305	6.6	2.0	2.2
	Bottom	--	19	300	6.6	--	--

DELAWARE RIVER BASIN--Continued

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 1961.
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.

Chemical analyses, in parts per million, water year October 1960 to September 1961

Date of collection	Sampling station	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	Biochemical oxygen demand	Dissolved oxygen
														Calcium, magnesium	Noncarbonate					
Oct. 4, 1960...	Top															162	6.4		3.1	4.2
	Bottom	7.8	0.03	15	4.5	7.4	1.7	20	37	7.0	0.3	11	104	56	40	162	6.0	8		
Nov. 2.....	Top									68						452	6.4		6 6	5.4
	Bottom	7.2	.01	24	13	50	4.5	17	87	77	.4	8.7	291	114	100	474	6.0	6		
Dec. 6.....	Top									20						287	6.3		2.9	3.8
	Bottom	5.6	.02	21	8.5	17	3.2	32	61	20	.5	12	174	88	62	285	6.4	9		
Jan. 5, 1961...	Top									22						293	6.3		2.6	5.6
	Bottom	5.8	.01	22	8.0	19	3.4	34	53	23	.2	14	183	88	60	294	6.4	5		
Mar. 2.....	Top									5.0						122	6.3		2.2	9.8
	Bottom	5.6	.36	11	3.3	4.0	1.8	11	27	5.4	.1	5.3	74	41	32	118	6.6	20		
Apr. 4.....	Top									7.0						161	6.9		3.0	9.2
	Bottom	5.4	.09	14	5.0	7.2	1.6	28	31	8.4	.1	6.8	103	56	33	161	6.9	5		
May 2.....	Top									5.0						122	6.9			
	Bottom	5.2	.04	11	3.3	5.8	1.5	18	24	6.1	.1	4.3	76	41	26	123	6.7	5	3.1	7.1
June 6.....	Top									13						217	6.3		.8	2.8
	Bottom	4.1	.00	16	6.4	13	2.5	14	54	15	3	6.8	138	67	55	221	6.2	5		
July 5.....	Top															278	6.5		.7	2.6
	Bottom	.8	.04	20	8.0	19	3.0	28	63	22	.5	7.2	170	83	60	286	6.6	5		
Aug. 1.....	Top															236	6.8			
	Bottom	2.1	.01	21	7.3	14	2.5	48	46	15	.4	5.1	151	83	43	253	6.8	25	.9	1.8
Sept. 5.....	Top															364	6.5		3.0	3.2
	Bottom	.5	.00	25	11	36	4.5	30	86	50	.5	5.0	240	108	83	421	6.4	3		

DELAWARE RIVER BASIN--Continued

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

LOCATION.--Temperature recorder at gaging station on right bank 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 83°F Sept. 2, 3; minimum, freezing point Feb. 5, 6, 9, 10.
EXTREMES, 1953-61.--Water temperatures: Maximum, 87°F July 17, Aug. 2, 6, 1955; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961

Month	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																																
Maximum	66	61	61	[illegible]	58	[illegible]	[illegible]	58	57	58	[illegible]	60	59	60	63	63	62	60	59	60	57	53	51	51	50	50	51	53	53	52	53	57
Minimum	61	57	[illegible]	57	56	53	57	56	56	55	56	56	56	55	60	62	60	58	58	57	53	50	49	49	48	48	49	51	51	50	51	55
November																																
Maximum	55	55	[illegible]	51	50	50	47	45	46	47	48	46	44	46	50	52	52	50	49	47	46	46	48	46	45	44	45	47	52	52	--	48
Minimum	53	52	51	49	49	47	45	43	42	46	46	43	42	43	46	46	50	47	47	44	44	44	46	43	43	42	43	45	47	45	--	46
December																																
Maximum	43	37	[illegible]	[illegible]	43	44	46	44	41	36	37	34	34	34	34	33	34	34	34	34	34	34	34	34	34	34	34	34	34	35	36	36
Minimum	39	37	37	37	39	42	44	41	36	34	34	34	[illegible]	33	33	33	33	34	34	34	33	33	34	34	34	34	34	34	34	34	34	35
January																																
Maximum	36	36	38	37	36	37	[illegible]	[illegible]	38	[illegible]	[illegible]	[illegible]	[illegible]	40	40	38	38	41	40	34	33	33	33	33	33	33	33	33	33	33	33	36
Minimum	35	34	36	36	35	35	37	36	34	34	34	[illegible]	[illegible]	36	38	37	36	38	34	33	33	33	33	33	33	33	33	33	33	33	33	35
February																																
Maximum	33	34	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	41	40	42	41	41	40	40	40	42	42	45	46	46	46	46	--	--	--	38
Minimum	33	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	42	42	[illegible]	[illegible]	34	37	38	39	39	40	36	37	40	40	42	41	45	44	42	43	--	--	--	37
March																																
Maximum	43	45	48	48	52	[illegible]	53	52	[illegible]	[illegible]	43	47	47	46	46	48	44	45	43	47	48	46	44	47	50	50	53	58	58	56	52	48
Minimum	40	40	[illegible]	45	47	50	49	43	42	41	[illegible]	41	45	45	45	44	41	39	43	42	44	44	43	43	46	45	48	51	54	52	46	44
April																																
Maximum	46	48	49	[illegible]	[illegible]	[illegible]	53	52	51	50	[illegible]	46	47	[illegible]	56	56	55	54	54	58	58	63	63	66	68	65	61	60	57	58	--	55
Minimum	45	44	44	[illegible]	[illegible]	50	48	47	46	47	47	46	44	44	51	54	51	52	50	50	51	56	59	60	62	61	57	55	54	52	--	51
May																																
Maximum	55	[illegible]	[illegible]	[illegible]	62	[illegible]	[illegible]	64	71	67	62	[illegible]	[illegible]	65	[illegible]	67	[illegible]	64	62	60	62	61	62	64	67	65	60	60	60	60	62	62
Minimum	53	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	57	62	[illegible]	[illegible]	59	61	62	65	56	59	59	56	57	58	56	56	59	60	54	52	57	55	54	57
June																																
Maximum	66	71	70	[illegible]	[illegible]	[illegible]	70	70	[illegible]	71	[illegible]	74	77	76	71	67	67	68	[illegible]	71	71	69	70	70	68	68	67	68	70	73	--	70
Minimum	64	64	[illegible]	61	[illegible]	66	[illegible]	67	68	66	[illegible]	70	72	71	65	61	61	62	[illegible]	66	66	65	65	68	65	66	65	63	65	67	--	65
July																																
Maximum	74	76	75	71	[illegible]	67	[illegible]	[illegible]	[illegible]	[illegible]	71	[illegible]	71	73	73	73	73	77	77	77	79	80	80	78	79	80	79	79	77	77	78	74
Minimum	70	70	71	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	65	67	69	68	72	71	70	71	73	75	73	73	76	75	74	75	75	74	73	72	74	71
August																																
Maximum	[illegible]	77	[illegible]	74	[illegible]	74	77	77	77	80	77	80	77	74	74	77	76	75	72	71	69	71	72	74	76	77	79	80	82	79	79	76
Minimum	76	[illegible]	72	72	[illegible]	71	72	72	75	75	76	76	74	69	68	71	72	70	69	68	67	68	71	70	74	75	75	75	77	76	74	72
September																																
Maximum	80	[illegible]	[illegible]	81	[illegible]	81	80	78	77	74	80	80	81	77	78	72	70	68	67	69	72	75	77	77	75	73	69	69	65	65	--	76
Minimum	73	78	78	77	77	78	78	76	76	[illegible]	77	76	77	77	72	68	65	64	65	67	69	70	71	72	73	69	65	65	60	57	--	72

DELAWARE RIVER BASIN--Continued

1-4815. BRANDYWINE CREEK AT WILMINGTON, DEL.

LOCATION.--At Henry Clay Bridge in Wilmington, New Castle County, 0.2 mile upstream from gaging station and 4.4 miles upstream from mouth.
DRAINAGE AREA.--314 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1947 to September 1950, November 1951 to September 1952, and October 1956 to September 1959.
Water temperatures: November 1956 to September 1961 (discontinued).
Sediment records: December 1946 to September 1961 (discontinued).
EXTREMES, 1960-61.--Water temperatures: Maximum, 82°F July 23; minimum, freezing point on many days in December, January, and February.
Sediment concentrations: Maximum daily, 783 ppm Apr. 13; minimum daily, 2 ppm Jan. 20-21.
Sediment loads: Maximum daily, 12,200 tons Apr. 13; minimum daily, 1 ton Dec. 12.
EXTREMES, 1946-61.--Water temperatures (1956-61): Maximum, 86°F June 17, 1957; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 1,550 ppm Feb. 28, 1958; minimum daily, 1 ppm on many days.
Sediment loads: Maximum daily, 22,900 tons Feb. 28, 1958; minimum daily, less than 0.50 ton on many days.
REMARKS.--Unpublished chemical data is available in district office at Philadelphia, Pa. Flow affected by ice Dec. 12-14, 23, 24, 28, Jan. 21-31, Feb. 1-3.

Temperature (°F) of water, water year October 1960 to September 1961
[Once-daily measurement at 0700]

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	58	56	57	55	60	56	56	57	68	58	59	57	58	65	64	--	60	60	62	53	49	48	49	47	45	44	52	51	50	--	56
November	55	52	52	49	49	46	41	42	42	48	47	40	40	46	47	51	51	48	49	44	48	47	47	44	45	42	43	47	49	46	--	47
December	40	36	38	35	38	41	45	42	36	--	34	34	32	32	34	32	32	32	34	36	--	--	--	--	--	38	38	36	35	35	34	--
January	33	--	33	32	32	32	38	36	33	32	32	34	32	37	40	--	33	35	36	36	38	32	32	32	32	32	32	32	32	32	34	34
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	36	38	40	35	38	38	42	34	46	42	41	45	--	--	--	35
March	38	38	40	44	40	40	48	48	42	38	37	39	43	43	42	42	38	35	41	50	41	43	42	41	44	43	48	52	54	52	47	43
April	43	43	43	42	45	45	47	46	45	48	46	44	44	40	47	53	48	49	48	49	50	55	58	60	63	64	58	56	58	50	--	50
May	54	55	51	52	51	57	55	62	63	66	64	58	60	62	--	68	65	62	--	60	58	60	56	57	64	66	57	55	54	57	58	59
June	63	68	72	64	66	70	70	70	73	70	70	75	77	77	70	65	67	67	69	70	74	70	71	70	70	70	71	68	--	73	--	70
July	76	77	7	73	75	71	71	71	70	71	70	73	73	72	74	75	73	75	77	79	75	78	82	81	79	80	79	80	80	73	76	75
August	78	75	74	74	74	73	74	75	77	79	--	78	77	76	74	73	--	76	74	72	--	69	72	72	75	77	76	78	81	77	76	74
September	75	78	78	78	78	80	80	77	77	76	77	78	--	78	73	68	65	61	66	68	68	76	73	75	73	70	67	67	64	58	--	72

DELAWARE RIVER BASIN--Continued

1-4815. BRANDYWINE CREEK AT WILMINGTON, DEL.--Continued

Suspended sediment, water year October 1960 to September 1961
[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	310	C 5	4	410	12	13	350	12	11
2	305	C 5	4	425	14	16	287	12	9
3	300	C 5	4	365	10	10	268	C 6	4
4	295	C 6	5	329	C 6	5	274	C 6	4
5	294	C 6	5	308	C 6	5	262	C 6	4
6	301	C 6	5	350	C 6	6	268	C 6	4
7	308	C 6	5	329	C 5	4	262	C 6	4
8	301	C 6	5	301	C 5	4	250	C 3	2
9	294	C 20	16	287	C 5	4	238	C 3	2
10	287	C 20	15	638	42	S 100	220	C 3	2
11	274	C 20	15	663	25	S 51	256	C 3	2
12	262	C 20	14	425	8	9	145	C 3	1
13	262	C 20	14	372	C 8	8	215	C 3	2
14	262	C 7	5	343	C 8	7	280	C 3	2
15	256	C 7	5	336	C 8	7	268	C 3	2
16	268	C 7	5	329	C 8	7	280	C 3	2
17	260	C 7	5	315	C 5	4	274	C 3	2
18	256	C 7	5	308	C 5	4	256	C 3	2
19	256	C 7	5	301	C 5	4	226	C 3	2
20	1210	87	S 341	301	C 5	4	232	C 3	2
21	618	35	58	280	C 5	4	431	--	22
22	380	9	9	287	C 5	4	536	--	40
23	336	C 6	5	287	C 5	4	322	--	10
24	329	C 6	5	287	C 5	4	287	--	8
25	308	C 6	5	280	C 6	5	294	--	8
26	294	C 6	5	280	C 6	5	274	--	7
27	287	C 6	5	280	C 6	5	294	--	8
28	294	C 6	5	268	C 6	4	256	--	6
29	622	15	S 24	294	C 6	5	280	--	7
30	395	8	9	502	21	S 31	402	--	19
31	329	4	4	--	--	--	358	--	14
Total	10643	--	616	10480	--	343	8845	--	214

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	1660	291	A 1700	285	C 4	3	1080	C 18	52
2	1510	220	897	269	C 4	3	1080	C 18	52
3	745	105	211	269	C 4	3	895	C 16	39
4	544	47	69	292	C 4	3	824	C 16	36
5	434	18	21	350	C 4	4	976	C 16	42
6	418	7	8	330	C 4	4	859	C 26	60
7	544	15	A 28	324	C 4	3	886	C 26	62
8	527	8	11	324	C 4	3	1400	183	S 977
9	476	7	9	324	C 4	4	2440	222	S 1460
10	388	C 6	6	358	C 4	4	1270	41	141
11	365	C 6	6	388	C 4	4	967	C 12	31
12	358	C 6	6	365	C 6	6	895	C 12	34
13	344	C 6	6	330	C 6	5	808	C 12	26
14	365	C 6	6	350	C 6	6	1510	74	S 333
15	518	C 9	13	476	C 9	12	1120	45	136
16	646	C 9	16	484	C 5	12	895	20	48
17	484	C 9	12	510	C 9	12	774	C 10	21
18	476	C 9	12	892	71	S 246	722	C 10	19
19	510	C 9	12	3630	585	S 7130	1730	134	S 693
20	284	C 2	2	4040	544	S 6920	1340	32	116
21	388	C 2	2	1430	72	S 303	895	27	65
22	402	C 5	5	1080	52	S 156	824	19	42
23	358	C 5	5	1960	80	S 419	1410	74	S 324
24	365	C 5	5	1820	85	S 421	1550	81	339
25	344	C 5	5	2430	132	S 927	1030	27	75
26	306	C 5	4	3440	283	S 2960	868	17	40
27	298	C 5	4	1490	52	209	816	17	37
28	304	C 5	4	1140	36	111	790	22	47
29	285	C 5	4	--	--	--	859	24	56
30	285	C 5	4	--	--	--	765	20	41
31	280	C 5	4	--	--	--	740	12	24
Total	15209	--	3097	29380	--	19892	33018	--	5563

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

DELAWARE RIVER BASIN--Continued

1-4815. BRANDYWINE CREEK AT WILMINGTON, DEL.--Continued

Suspended sediment, water year October 1960 to September 1961--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	1270	21	72	782	18	38	493	12	16
2	940	14	36	859	28	65	484	11	14
3	765	C 9	19	782	37	78	518	16	22
4	722	C 9	18	722	17	33	561	22	33
5	706	C 9	17	697	13	24	484	17	22
6	688	C 9	17	680	16	29	476	C 15	19
7	663	17	30	833	21	47	459	C 15	19
8	638	12	21	782	22	46	459	C 15	19
9	620	22	37	731	18	36	652	51 S	96
10	1470	140 A	700	922	63 S	159	586	32	51
11	1110	80	240	782	35	74	510	10	14
12	765	17	35	877	35	83	442	21	25
13	5120	783 S	12200	790	30	64	425	15	17
14	4260	342 S	5420	740	22	44	811	82 S	196
15	1440	45	175	688	18	33	672	74	134
16	1570	78 S	372	740	44 S	91	459	32	40
17	1460	77 S	327	646	24	42	395	25	27
18	1050	25	71	604	24	39	372	C 21	21
19	1010	C 15	41	604	23	38	337	C 21	19
20	1000	C 15	40	604	20	33	330	C 21	19
21	931	C 15	38	586	15	24	399	27	29
22	895	C 15	36	578	16	25	680	50	92
23	985	30	80	570	16	25	476	27	35
24	868	15	35	552	15	22	425	C 27	31
25	833	17	38	527	24	34	372	C 27	27
26	1210	51 S	177	578	22 S	37	388	C 27	28
27	910	30	74	629	26	44	551	50	74
28	808	17	37	561	15	23	476	28	36
29	1300	56 S	201	527	14	20	380	20	21
30	850	26	60	552	19	28	337	15	14
31	--	--	--	510	18	25	--	--	--
Total	36857	--	20664	21035	--	1403	14409	--	1210

Day	JULY			AUGUST			SEPTEMBER		
1	324	C 15	13	298	34	27	176	C 12	6
2	425	C 15	17	258	20	14	176	C 12	6
3	330	C 15	13	258	C 14	10	242	C 12	8
4	311	C 15	13	269	C 14	10	187	C 12	6
5	298	C 15	12	258	C 14	10	173	C 12	6
6	285	C 15	12	269	C 14	10	162	C 12	5
7	292	C 15	12	330	C 14	12	162	C 12	5
8	317	C 15	13	253	C 14	10	158	C 12	5
9	285	C 15	12	222	C 14	8	165	C 12	5
10	253	C 15	10	218	C 14	8	165	C 12	5
11	247	C 15	10	209	C 14	8	145	C 12	5
12	242	C 15	10	222	C 14	8	148	C 12	5
13	357	20	19	222	C 14	8	148	C 12	5
14	1040	98 S	282	183	C 14	7	420	89 S	197
15	613	90 S	168	183	C 14	7	440	98 S	182
16	844	172 S	399	180	C 14	7	173	C 16	7
17	596	112 S	184	180	C 14	7	158	C 16	7
18	395	49	52	176	C 14	7	139	C 16	6
19	324	26	23	169	C 14	6	145	C 16	6
20	481	--	30	196	C 14	7	151	C 16	7
21	468	C 26	33	358	--	14	285	30	23
22	304	C 26	21	269	15	11	209	C 16	9
23	263	C 26	18	784	91 S	256	162	C 16	7
24	274	C 26	19	445	61 S	82	155	C 16	7
25	292	C 26	20	274	21	16	142	C 16	6
26	231	C 26	16	464	34 S	70	142	C 16	6
27	209	C 20	11	369	31 S	41	134	C 16	6
28	209	C 20	11	231	C 21	13	134	C 16	6
29	1890	--	1000	222	C 21	13	131	C 16	6
30	1100	--	260	209	C 21	12	128	C 16	6
31	395	54	58	183	C 21	10	--	--	--
Total	13894	--	2771	8361	--	729	5455	--	566

Total discharge for year (cfs-days)..... 207,586
Total load for year (tons)..... 57,068

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

DELAWARE RIVER BASIN--Continued

1-4815. BRANDYWINE CREEK AT WILMINGTON, DEL.--Continued

Particle-size analyses of suspended sediment, 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)	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	
Apr. 13, 1961.....	1900		40	6880	922		9	20	35	44	63	85	94	99	100			BSWC

DELAWARE RIVER BASIN--Continued

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

LOCATION.--Center of the navigation channel at the center of the Delaware Memorial Bridge, 1.9 miles downstream from mouth of Christina River.
DRAINAGE AREA.--11,030 square miles.
RECORDS AVAILABLE.--Chemical analyses: July 1955 to September 1961.
Water temperatures: October 1956 to September 1961.
EXTREMES, 1956-61.--Water temperatures: Maximum, 84°F Aug. 17, 20-22, Sept. 10, 11, 1959, Sept. 4, 5, 11-13, 1961; minimum, freezing point on many days during winter months.
REMARKS.--Maximum and minimum daily records of specific conductance taken from continuous conductivity recorder 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 1960 to September 1961

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				
Nov. 17, 1960	6350	6.4		0.00	0.15	29	33	220	9.0	20	123	390	0.5	8.1	870	208	192		1530	6.1	2
Dec. 21.....	4800	6.0		.00	.33	41	51	355	20	16	167	690	.6	8.3	1530	312	299		2550	5.8	7
Jan. 11, 1961	4660	7.8		.04	.17	26	11	66	6.2	22	82	96	.4	11	326	110	92		558	6.1	7
Mar. 1.....	46100	7.5		.18	.03	14	5.0	6.7	2.2	26	33	8.0	.3	7.3	105	56	34		164	6.4	15
Apr. 14.....	30900	6.4		.23	.18	14	4.7	10	2.5	24	39	11	.2	3.2	105	55	35		175	6.6	22
May 19.....	16600	5.2		.12	.21	17	5.7	9.6	2.0	29	46	9.8	.2	6.7	130	66	42		196	6.4	7
June 28.....	6920	4.8		.07	.29	26	17	110	6.2	5	97	178	.5	6.8	535	135	131		819	5.4	10
July 11.....	3820	2.2		.02	.60	30	34	246	15	12	139	420	.6	4.7	954	215	205		1630	6.0	5
Aug. 16.....	3290	.6		.02	.14	32	33	225	7.5	30	118	390	.6	3.3	992	216	191		1570	6.5	20
Sept. 15.....	4070	.4		.05	.29	33	29	177	11	20	125	306	.6	5.0	758	202	185		1290	6.5	10

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

Temperature (°F) of water, water year October 1960 to September 1961
[Recorder with temperature attachment, continuous mercury-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	
November																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	52	52	52	52	51	52	52	52	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	51	51	51	51	50	51	51	50	--	--
December																																
Maximum	50	49	48	47	48	48	48	47	47	45	45	42	41	39	38	38	38	37	37	37	36	36	36	35	34	35	35	35	34	35	35	40
Minimum	48	46	45	45	46	46	46	46	44	43	42	39	38	37	37	36	35	35	35	35	35	34	34	34	33	33	34	33	33	33	33	38
January																																
Maximum	35	36	36	36	35	35	35	35	34	34	34	34	35	35	35	35	35	35	35	34	34	34	32	32	32	32	32	32	32	32	32	34
Minimum	33	34	34	34	34	33	33	34	34	34	33	33	33	33	33	33	34	34	34	34	32	34	32	32	32	32	32	32	32	32	32	33
February																																
Maximum	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	--	--	--	--	--	--	38	38	38	39	39	40	41	42	--	--
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	--	--	--	--	--	--	--	--	--	36	36	37	38	39	39	40	41	--	--
March																																
Maximum	41	40	40	40	41	42	44	43	43	43	43	43	43	44	44	43	42	41	41	42	43	42	42	42	43	43	45	47	47	48	47	43
Minimum	39	38	39	39	39	40	41	42	42	42	41	41	42	43	43	42	41	41	41	41	41	41	41	41	42	42	43	44	45	46	46	42
April																																
Maximum	47	47	46	48	48	49	49	49	48	48	48	47	47	47	47	48	49	49	49	50	50	51	53	54	56	56	56	57	58	58	--	50
Minimum	46	46	46	46	46	47	47	47	47	47	47	46	46	45	46	47	47	48	48	48	49	50	51	52	54	55	55	55	56	55	--	49
May																																
Maximum	58	58	57	57	58	58	57	59	61	60	60	60	61	62	63	64	64	64	64	64	65	64	65	65	65	65	65	64	64	64	64	62
Minimum	56	56	56	56	56	56	56	57	58	59	59	59	60	60	61	62	62	62	63	63	63	63	63	63	64	64	62	62	62	63	63	60
June																																
Maximum	65	66	66	67	69	69	70	70	71	71	73	74	77	76	75	74	75	74	75	76	75	74	75	75	75	75	75	75	76	76	--	73
Minimum	63	64	65	65	66	68	68	69	70	70	71	72	74	75	74	73	72	73	73	74	73	73	73	74	74	74	74	74	74	75	--	71
July																																
Maximum	77	78	78	78	77	77	77	78	77	77	77	77	77	78	77	77	79	80	80	80	80	--	--	--	--	--	--	--	--	--	--	--
Minimum	75	76	77	77	76	76	76	76	75	76	76	76	76	76	76	76	77	78	79	79	80	--	--	--	--	--	--	--	--	--	--	--
August																																
Maximum	--	--	--	--	--	--	82	82	83	82	83	83	82	81	81	81	80	80	80	79	78	79	78	78	79	78	79	81	81	81	81	--
Minimum	--	--	--	--	--	--	80	81	81	81	82	82	81	80	80	79	79	79	79	77	76	77	76	76	78	78	78	78	80	80	79	--
September																																
Maximum	82	82	82	83	84	84	83	83	83	83	84	84	84	83	82	81	79	77	76	75	73	74	75	75	75	76	75	75	74	73	--	79
Minimum	80	81	81	81	82	82	82	82	82	81	82	82	82	82	81	78	76	74	73	72	72	72	73	74	74	74	74	73	73	72	--	78

DELAWARE RIVER BASIN--Continued

1-4827. DELAWARE RIVER AT REEDY POINT, DEL.

LOCATION.--One hundred yards west of buoy "1N", 0.8 mile southeast of the Chesapeake and Delaware Canal and 2.1 miles south of Pea Patch Island.
DRAINAGE AREA.--11,220 square miles.
RECORDS AVAILABLE.--Chemical analyses: July 1955 to August 1961.
Water temperatures: October 1956 to September 1959.
REMARKS.--Records of specific conductance of daily samples available in district office at Philadelphia, Pa. Records of discharge are given for Delaware River at Trenton, N. J.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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				
Dec. 21, 1960	4800	4.5		0.00	0.00	110	310	2410	129	46	699	4430	0.5	14	9000	1550	1510		13700	6.6	6
Apr. 14, 1961	30900	6.9		.23	.28	25	31	229	14	24	103	416	.4	2.1	879	190	171		1580	6.7	15
May 19.....	16600	5.2		.14	.15	18	5.7	15	2.0	20	52	19	.2	6.3	149	69	52		231	6.3	8
June 28.....	6920	3.7		.01	.30	41	66	530	25	13	186	910	.5	3.0	2020	374	364		3290	6.1	8
July 11.....	3820	2.6		.00	.19	64	158	1290	64	24	382	2200	.2	1.4	4680	810	791		7290	6.4	5
Aug. 16.....	3290	.8		.04	.31	53	102	815	31	32	265	1400	.5	.9	3100	552	526		4840	6.5	20

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 Oswago River basin).
RECORDS AVAILABLE.--Chemical analyses: October 1956 to September 1957.
Water temperatures: October 1956 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 66°F July 24, 25; minimum, 33°F on several days during January and February.
EXTREMES, 1956-61.--Water temperatures: Maximum, 74°F July 22, 1957; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	50	54	54	53	54	54	53	54	53	53	52	52	54	54	53	52	52	50	50	50	48	49	48	45	46	47	47	48	48	49	51
November	49	49	47	47	47	45	45	43	43	44	45	45	45	43	46	50	45	44	45	44	43	44	43	44	43	44	45	45	46	45	--	45
December	42	42	42	40	44	45	45	44	38	36	36	36	36	38	40	38	37	37	40	38	38	38	37	35	40	41	36	36	36	38	39	39
January	38	38	39	39	36	37	38	39	39	38	38	38	39	39	40	39	39	37	37	37	35	35	35	34	34	34	33	33	34	34	34	37
February	33	33	33	35	33	34	34	33	33	34	33	34	34	34	34	34	34	35	37	35	34	35	37	35	36	36	34	34	--	--	--	34
March	34	36	36	36	38	40	40	38	38	35	36	36	36	38	38	38	36	36	38	37	38	38	38	40	39	40	43	45	45	45	40	38
April	48	46	40	40	40	42	40	40	40	40	38	40	40	40	38	40	41	40	40	42	44	44	46	49	49	48	46	49	47	46	--	43
May	46	48	48	47	47	47	48	50	50	50	51	50	50	50	58	58	56	54	56	56	57	52	54	56	56	55	54	55	56	54	56	52
June	57	58	58	55	58	60	58	60	60	60	60	61	63	62	56	55	56	56	61	59	59	58	59	57	58	57	57	58	60	62	--	59
July	61	62	62	58	57	57	57	57	57	56	58	58	59	62	61	60	58	61	61	64	65	64	65	66	66	64	64	64	65	63	64	61
August	63	61	60	62	62	64	61	59	61	63	62	62	62	56	57	61	58	57	59	62	62	58	60	61	63	62	62	60	60	59	62	61
September	64	65	64	65	64	64	64	64	64	62	62	63	64	64	62	61	60	55	55	58	58	59	60	59	60	58	56	56	53	53	--	61

SUSQUEHANNA RIVER BASIN--Continued

1-5135. SUSQUEHANNA RIVER AT VESTAL, N.Y.
(Formerly published as Susquehanna River at Johnson City, N.Y.)

LOCATION.--At the New York State Gas and Electric Corp., Goudey Station, Johnson City, N.Y., Broome County, 4.8 miles upstream from gaging station at Vestal.
DRAINAGE AREA.--3,916 square miles; 3,960 square miles, approximately, at the gaging station.
RECORDS AVAILABLE.--Water temperatures: October 1955 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F July 24; minimum, freezing point on several days during December, February, and March.
EXTREMES, 1955-61.--Water temperatures: Maximum, 81°F on several days during 1957 and 1959; 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 1960 to September 1961
[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	61	58	57	56	55	57	56	54	55	56	56	55	55	55	57	60	57	56	54	53	49	48	49	47	44	43	45	46	47	47	48	53
November	48	49	47	46	46	44	42	39	39	40	40	39	38	39	42	45	45	43	43	41	40	40	42	40	38	38	39	42	45	42	--	42
December	36	34	34	34	36	37	38	36	32	33	33	33	33	33	33	33	32	33	33	33	33	34	34	33	33	33	33	33	33	33	33	34
January	33	33	33	33	33	33	33	33	33	33	33	34	33	34	34	34	34	34	34	34	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	34	34	34	34	34	33	33	32	32	32	32	33	33	33	32	32	--	--	--	33
March	32	32	34	37	37	39	39	38	35	33	33	33	34	34	35	36	33	33	35	34	36	38	39	38	38	36	38	41	41	39	36	36
April	39	38	37	38	37	38	39	40	38	40	38	38	40	38	39	44	41	41	40	40	42	46	49	50	50	49	48	48	49	47	--	42
May	47	46	47	47	46	48	49	54	57	60	56	56	58	60	65	66	62	60	57	54	56	56	53	54	58	62	55	51	57	54	55	55
June	59	62	65	63	65	69	69	71	66	66	66	67	69	72	62	59	60	62	64	66	69	66	63	65	64	63	63	65	68	71	--	65
July	71	73	74	71	67	68	68	69	67	68	69	68	71	70	72	70	71	72	73	72	74	77	78	80	79	78	75	76	76	76	76	73
August	74	74	68	68	72	73	72	72	73	75	74	74	73	68	69	72	71	70	72	74	74	70	71	71	72	71	70	70	72	70	72	72
September	74	77	77	77	78	77	78	75	75	75	75	76	76	77	74	67	65	66	65	67	67	70	70	72	73	73	67	65	61	59	--	72

1-5165. COREY CREEK NEAR MAINESBURG, PA.

LOCATION.--At gaging station on right bank 30 feet upstream from township bridge, 500 feet upstream from small tributary, 1.1 miles downstream from Mainesburg, Tioga County, 3.5 miles east of Mansfield, and 4.5 miles upstream from mouth.
DRAINAGE AREA.--12.2 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1958 to September 1961.
Sediment records: May 1954 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Minimum, freezing point on many days in December, January, and February.
Sediment concentrations: Maximum daily, 468 ppm May 9; minimum daily, 1 ppm on many days during year.
Sediment loads: Maximum daily, 1,200 tons May 9; minimum daily, less than 0.05 ton on many days during year.
EXTREMES, 1954-61.--Water temperatures (1958-61): Maximum, 93°F on several days in 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 several days.
Sediment loads: Maximum daily, 1,940 tons Oct. 14, 1955; minimum daily, 0 tons on several days.
REMARKS.--Records of specific conductance and pH of periodic sediment samples available in subdistrict office at Harrisburg, Pa. Flow affected by ice Dec. 2, 3, Dec. 8 to Feb. 23, Feb. 25, Mar. 11, 12, 16-21.

Chemical analyses, in parts per million, June 1961

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				
June 5, 1961.	3.2	1.1		0.02	0.00	16	3.0	3.4	2.0	53	14	2.4	0.2	0.4	77	53	9		126	7.2	4

SUSQUEHANNA RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1960 to September 1961
[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	57	60	54	60	62	59	60	62	61	58	--	--	--	64	56	60	58	48	48	49	52	46	44	46	--	--	--	--	--	--	--
Minimum	50	46	50	46	46	47	49	44	46	45	48	--	--	--	50	54	48	47	46	42	40	41	43	40	38	--	--	--	--	--	--	--
November																																
Maximum	--	--	--	--	44	44	40	40	41	42	44	43	44	46	59	49	--	46	45	44	42	43	46	40	41	43	44	60	48	40	--	45
Minimum	--	--	--	--	40	36	33	32	36	38	34	32	33	36	42	44	--	34	35	33	33	33	35	32	33	32	38	43	40	32	--	36
December																																
Maximum	33	33	35	34	43	41	41	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	33
Minimum	32	32	32	32	34	34	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
January																																
Maximum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	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	34	39	37	42	40	39	43	--	--	--	--	34
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34	35	37	35	34	--	--	--	--	33
March																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	41	48	52	52	51	44	42	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	32	32	35	40	40	36	32	--
April																																
Maximum	--	--	--	--	--	--	42	43	46	38	42	42	--	--	--	43	45	42	43	52	50	55	60	74	64	61	55	51	--	--	--	--
Minimum	--	--	--	--	--	--	36	34	32	32	36	33	--	--	--	36	35	37	37	34	37	44	44	46	50	45	42	44	--	--	--	--
May																																
Maximum	--	--	48	52	56	47	72	58	67	58	59	62	69	72	70	61	62	59	53	61	59	54	--	--	66	60	51	62	59	59	64	60
Minimum	--	--	42	40	40	42	46	52	52	50	44	51	54	54	55	56	50	51	51	50	52	49	--	--	54	50	48	47	54	49	51	49
June																																
Maximum	69	72	--	--	--	75	76	74	67	71	73	74	--	--	--	--	--	74	72	75	70	74	73	--	--	--	75	76	78	76	--	--
Minimum	57	62	--	--	--	62	62	66	65	64	64	67	--	--	--	--	--	61	62	64	66	64	63	--	--	--	63	64	65	68	--	--
July																																
Maximum	80	--	--	--	77	76	73	69	74	74	70	77	72	75	72	72	74	76	--	--	--	--	--	--	--	--	78	78	80	81	77	--
Minimum	68	--	--	--	64	63	64	69	63	61	62	64	68	68	67	67	67	67	--	--	--	--	--	--	--	--	67	68	70	71	71	--
August																																
Maximum	78	70	75	78	80	77	77	78	73	74	74	79	71	74	78	78	--	--	--	--	--	72	73	74	70	72	--	--	--	--	--	--
Minimum	67	68	67	64	66	69	67	66	69	64	67	69	65	60	62	67	--	--	--	--	--	65	66	68	68	68	--	--	--	--	--	--
September																																
Maximum	--	80	81	79	79	--	--	--	80	80	80	81	80	78	--	67	68	67	66	68	71	73	75	77	76	68	67	--	--	--	--	--
Minimum	--	71	71	70	71	--	--	--	69	69	67	70	70	68	--	57	56	55	56	54	54	62	64	65	65	64	57	--	--	--	--	--

SUSQUEHANNA RIVER BASIN--Continued

1-5065. COREY CREEK NEAR MAINESBURG, PA.--Continued

Suspended sediment, water year October 1960 to September 1961
[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	2.2	C	1	T	2.5	C	1	T	2.2	C	1	T
2	1.7	C	1	T	2.2	C	1	T	2.0	C	1	T
3	1.6	C	1	T	2.2	C	1	T	1.8	C	1	T
4	1.6	C	1	T	2.2	C	1	T	2.0		5	T
5	1.6	C	1	T	2.1	C	1	T	2.2	C	1	T
6	1.6	C	1	T	2.8	C	1	T	2.2	C	1	T
7	1.5	C	1	T	2.6	C	1	T	2.1	C	1	T
8	1.4	C	1	T	2.6	C	1	T	1.5	C	1	T
9	1.4	C	1	T	2.5	C	1	T	1.2	C	2	T
10	1.3	C	1	T	3.0	C	1	T	1.1	C	2	T
11	1.2	C	1	T	2.8	C	1	T	1.0	C	2	T
12	1.2	C	1	T	2.5	C	1	T	1.1	C	2	T
13	1.1	C	1	T	2.5	C	1	T	1.3	C	2	T
14	1.0	C	1	T	2.5	C	1	T	1.6	C	2	T
15	1.0	C	1	T	2.5	C	1	T	1.9	C	2	T
16	1.0	C	1	T	2.4	C	1	T	1.6	C	2	T
17	1.0	C	1	T	2.2	C	1	T	1.4	C	2	T
18	1.0	C	1	T	2.1	C	1	T	1.3	C	2	T
19	1.4	C	1	T	2.1		3	T	1.2	C	2	T
20	4.6		4	T	2.1	C	1	T	1.5	C	2	T
21	2.4	C	1	T	2.0	C	1	T	1.3	C	1	T
22	2.0	C	1	T	2.0	C	1	T	1.1	C	1	T
23	1.7	C	1	T	2.4	C	1	T	1.1	C	1	T
24	2.0	C	1	T	2.1	C	1	T	1.2	C	1	T
25	2.1	C	1	T	2.0	C	1	T	1.4	C	1	T
26	2.0	C	1	T	2.0	C	1	T	1.4	C	1	T
27	1.7	C	1	T	2.1	C	1	T	1.2	C	1	T
28	1.6	C	1	T	2.2	C	1	T	1.1	C	1	T
29	1.5	C	1	T	2.5	C	1	T	1.0	C	1	T
30	1.4	C	1	T	2.6	C	1	T	1.1	C	1	T
31	1.4	C	1	T	--		--	--	1.1	C	1	T
Total	50.2		--	0.2	70.3		--	0.3	45.2		--	0.3

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	1.2	C	2	T	.5	C	1	T	28	--		0.2
2	1.3	C	2	T	.4	C	1	T	24	--		.2
3	1.1	C	2	T	.6	C	1	T	20	--		.2
4	1.0	C	2	T	.6	C	1	T	17	--		.2
5	.9	C	2	T	.7	C	1	T	23	--		.2
6	.8	C	2	T	.7	C	1	T	38	7	B	.7
7	.7	C	2	T	.7	C	1	T	29	--		.2
8	.8	C	2	T	.7	C	1	T	32	--		.2
9	.8		7	T	.6	C	1	T	37	--		.7
10	.7		7	T	.6	C	1	T	24	--		.2
11	.8		4	T	.6	C	1	T	21	--		.2
12	.8	C	2	T	.6	C	1	T	18	--		.2
13	.8	C	2	T	.6	C	1	T	17	--		.2
14	.7	C	2	T	.6	C	1	T	42	19	S	2.6
15	.7	C	2	T	.7		12	T	30	14		1.1
16	.7	C	2	T	.8		15	T	17	12		.6
17	.8	C	2	T	1.0		15	T	14	C	4	.1
18	.8	C	2	T	1.3		20	A 0.1	13	C	4	.1
19	.8		20	T	150		--	70	12	C	4	.1
20	.7		28	0.1	90		80	19	11	C	4	.1
21	.7		38	.1	45		65	7.9	9.3	C	4	.1
22	.6	C	1	T	35		169	S 20	10	C	4	.1
23	.6	C	1	T	83		226	S 62	17	C	4	.1
24	.6	C	1	T	96		--	26	28		7	.5
25	.5	C	1	T	150		--	70	22		4	.2
26	.6	C	1	T	139		--	60	16	C	2	.1
27	.6	C	1	T	56		--	8.0	16	C	2	.1
28	.6	C	1	T	38		--	3.5	17	C	2	.1
29	.6	C	1	T	--		--	--	19	C	2	.1
30	.6	C	1	T	--		--	--	16	C	2	.1
31	.5	C	1	T	--		--	--	14	C	2	.1
Total	23.4		--	0.4	894.3		--	346.6	651.3		--	9.9

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

SUSQUEHANNA RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961--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	18	C 1		T	16	5		0.2	5.4	C 2		T
2	15	C 1		T	18	6		.3	5.6	C 2		T
3	12	C 1		T	12	5		.2	4.6	C 2		T
4	10	C 1		T	10	C 5		.1	3.9	C 2		T
5	9.7	C 1		T	8.6	C 5		.1	3.2	C 2		T
6	10	C 1		T	9.0	C 5		.1	2.8	C 4		T
7	8.6	C 1		T	12	C 5		.1	2.4	C 4		T
8	7.7	C 1		T	11	C 5		.1	3.3	C 4		T
9	7.4	C 1		T	191	468	S	1200	5.1	C 4		T
10	15	--		0.3	78	39	S	9.4	13	114	S	6.3
11	28	--		4.0	35	12		1.1	5.4	C 4		T
12	30	--		4.0	26	12		.8	3.6	C 4		T
13	60	--		26	19	4		.2	3.0	C 4		T
14	99	202	S	90	15	C 3		.1	2.8	C 4		T
15	152	161	S	92	13	C 3		.1	2.8	C 4		T
16	256	115	S	79	30	56	B	8.3	2.4	C 4		T
17	103	20	A	5.6	13	C 3		.1	1.8	C 4		T
18	64	6	A	.9	12	C 3		.1	1.7	C 4		T
19	40	4	A	.4	16	C 20		.6	1.5	C 4		T
20	27	C 3		.2	12	C 20		.6	1.4	C 4		T
21	21	C 3		.2	10	C 20		.6	3.6	C 3		T
22	22	5		.3	13	C 20		.6	5.0	C 3		T
23	24	4		.3	10	C 20		.6	2.4	C 3		T
24	106	136	S	80	9.2	C 20		.6	2.1	C 3		T
25	289	258	S	262	8.2	C 20		.6	2.7	C 3		T
26	94	22		5.6	10	11		.3	2.4	C 3		T
27	48	15		1.9	9.2	C 5		.1	1.8	C 3		T
28	39	8		.8	7.9	C 5		.1	1.3	C 3		T
29	30	6		.5	7.3	C 5		.1	1.1	C 3		T
30	20	6		.3	6.7	C 5		.1	1.1	C 3		T
31	--	--		--	5.9	C 5		.1	--	--		--
Total	1655.4	--		654.6	654.0	--		1226.4	99.2	--		7.1

Day	JULY				AUGUST				SEPTEMBER			
1	1.2	C 2		T	.7	C 2		T	1.3	C 3		T
2	1.0	C 2		T	.9	C 2		T	1.2	C 3		T
3	1.1	C 2		T	.9	C 2		T	1.1	C 3		T
4	.9	C 2		T	.7	C 2		T	1.1	C 3		T
5	.7	C 2		T	.6	C 2		T	.9	C 3		T
6	.7	C 2		T	.5	C 2		T	.9	C 3		T
7	1.4	5	A	0.1	.4	C 2		T	.9	C 3		T
8	2.8	8	A	.1	.4	C 2		T	1.2	C 3		T
9	1.2	C 2		T	.3	C 2		T	.9	C 3		T
10	.9	C 2		T	.4	C 2		T	.9	C 3		T
11	.9	C 2		T	.7	C 2		T	.7	C 3		T
12	.7	C 2		T	.9	C 2		T	.7	1		T
13	.7	C 2		T	.6	C 2		T	2.2	5		T
14	.9	C 2		T	.4	C 2		T	1.3	2		T
15	.9	C 2		T	.4	C 2		T	8.7	14	A	0.5
16	1.5	C 3		T	.3	C 2		T	2.6	C 1		T
17	1.3	C 3		T	.2	C 2		T	1.7	C 1		T
18	1.2	C 3		T	.2	C 2		T	1.4	C 1		T
19	1.2	C 3		T	.2	C 2		T	1.2	C 1		T
20	2.2	34	S	.2	1.5	11	A	0.2	1.2	C 1		T
21	1.4	C 1		T	3.2	6	A	.1	1.2	C 1		T
22	1.0	C 1		T	2.1	C 2		T	1.1	C 1		T
23	.9	C 1		T	1.7	C 2		T	1.0	C 1		T
24	1.2	6		T	1.1	C 2		T	.9	C 1		T
25	3.5	31	S	.4	5.5	54	A	1.8	.9	C 1		T
26	1.3	C 1		T	25	92	A	15	.8	C 2		T
27	1.2	C 1		T	7.4	C 1		T	.8	C 2		T
28	.9	C 1		T	4.9	C 1		T	.7	C 2		T
29	.9	C 1		T	3.0	C 1		T	.6	C 2		T
30	.7	C 1		T	2.1	C 1		T	.6	C 2		T
31	.6	C 1		T	1.7	C 1		T	--	--		--
Total	37.0	--		1.0	68.9	--		17.2	40.7	--		0.7

Total discharge for year (cfs-days)..... 4,289.9
Total load for year (tons)..... 2,264.7

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

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 1961.
Sediment records: May 1954 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 77°F Aug. 10; minimum, freezing point Jan. 28, Feb. 10.
Sediment concentrations: Maximum daily, 889 ppm May 9; minimum daily, 0 ppm Aug. 17-19.
Sediment loads: Maximum daily, 596 tons May 9; minimum daily, 0 tons Aug. 17-19.
EXTREMES, 1954-61.--Water temperatures (1956-61): Maximum, 84°F July 27, 1958; minimum, freezing point on many days during winter months.
Sediment concentrations: Maximum daily, 889 ppm May 9, 1961; minimum daily, 0 ppm on many days.
Sediment loads: Maximum daily, 852 tons Apr. 5, 1957; minimum daily, 0 tons on many days.
REMARKS.--Records of specific conductance and pH of periodic sediment samples available in subdistrict office at Harrisburg, Pa. Flow affected by ice Dec. 1-4, Dec. 8 to Feb. 21, Mar. 10, 11, 16-18, 20, 21.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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
Apr. 24, 1961.	92	6.1		0.03		11	1.8	2.5	2.2	20	15	2.0	0.11	7.3	73	35	19		94	7.2	3
June 15.....	2.9	.9		.01	0.02	15	7.3	3.4	2.0	49	13	2.1	0.11	.2	70	47	7		113	7.6	6

Temperature (°F) of water, water year October 1960 to September 1961
(Daily measurement at approximately 0900)

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	62	57	53	52	57	54	51	51	53	56	54	58	57	59	62	55	54	53	54	--	50	55	49	48	49	49	53	52	55	53	54
November.....	57	53	50	49	51	48	45	42	49	51	45	43	--	48	54	55	50	42	45	51	44	45	51	41	43	44	49	53	56	44	--	48
December.....	44	43	42	40	41	41	46	42	42	42	41	42	40	42	41	52	44	42	43	43	43	--	43	43	43	42	43	43	44	43		43
January.....	45	44	42	44	45	44	44	43	43	42	43	51	35	35	35	34	--	34	35	33	33	33	35	35	34	35	34	32	35	33	33	38
February.....	33	--	34	35	34	33	35	33	36	32	34	35	35	35	35	--	36	35	35	35	33	35	34	43	43	45	39	39	--	--	--	36
March.....	34	35	--	42	45	46	45	38	38	34	35	38	36	36	40	35	35	35	37	35	35	38	38	40	--	35	41	46	43	39	--	38
April.....	38	38	38	37	39	40	40	37	45	36	38	39	35	40	40	44	40	40	40	39	44	50	59	48	53	53	46	50	46	50	--	43
May.....	45	48	44	47	47	49	--	59	58	63	50	56	60	57	62	61	53	54	52	54	54	63	61	53	58	56	49	--	58	50	51	54
June.....	59	60	63	--	60	64	62	70	65	67	63	68	--	66	55	55	57	59	62	66	65	64	66	62	60	61	64	63	65	69	--	63
July.....	67	73	69	64	60	59	62	66	--	--	69	--	--	--	--	--	68	67	67	68	69	70	70	73	72	72	--	--	--	75	70	--
August.....	64	65	67	65	75	67	64	64	65	77	67	69	60	59	61	65	58	58	64	64	65	65	66	68	71	67	72	68	69	65	67	66
September.....	68	72	--	--	71	67	70	68	67	--	65	68	70	70	65	66	56	52	56	64	64	62	63	64	68	62	53	54	49	47	--	63

SUSQUEHANNA RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961

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	1.9	C 1	T	3.5	C 2	T	1.7	C 3	T
2	1.4	C 1	T	2.7	C 2	T	1.5	C 3	T
3	1.4	C 1	T	2.5	C 2	T	1.4	C 3	T
4	1.3	C 1	T	2.5	C 2	T	1.5	C 3	T
5	1.3	C 1	T	2.5	C 1	T	1.7	C 3	T
6	1.4	C 1	T	4.1	C 1	T	1.7	C 1	T
7	1.4	C 1	T	3.3	C 1	T	1.6	C 1	T
8	1.1	C 1	T	3.0	C 1	T	1.0	C 1	T
9	1.1	C 1	T	2.7	C 1	T	.9	C 1	T
10	1.0	C 1	T	3.5	C 1	T	.8	C 1	T
11	1.0	C 1	T	3.3	C 1	T	.8	C 1	T
12	.9	C 1	T	2.7	C 1	T	.8	C 1	T
13	.9	C 1	T	2.7	C 1	T	.9	C 1	T
14	.9	C 1	T	2.5	C 1	T	1.0	C 1	T
15	.9	C 1	T	2.5	C 6	T	1.1	C 1	T
16	.9	C 1	T	2.5	C 6	T	1.0	C 1	T
17	.9	C 1	T	2.5	C 6	T	.9	C 1	T
18	.8	C 1	T	2.3	C 6	T	.9	C 1	T
19	1.1	2	T	2.3	C 6	T	.8	C 1	T
20	5.3	9	S 0.2	2.1	C 1	T	.9	C 4	T
21	1.9	3	T	2.1	C 1	T	.8	C 4	T
22	1.6	C 1	T	1.9	C 1	T	.8	C 4	T
23	1.4	C 1	T	2.5	C 1	T	.8	C 4	T
24	1.6	C 1	T	2.1	C 1	T	.9	C 4	T
25	1.9	C 1	T	2.1	C 1	T	1.0	C 4	T
26	2.5	C 1	T	1.9	C 1	T	1.0	C 2	T
27	1.9	C 1	T	1.9	C 1	T	.9	C 2	T
28	1.9	C 1	T	1.7	C 1	T	.9	C 2	T
29	1.6	C 1	T	2.1	C 1	T	.8	C 2	T
30	1.4	C 1	T	2.3	C 1	T	.9	C 2	T
31	1.6	C 1	T	--	--	--	.9	C 2	T
Total	46.2	--	0.4	76.3	--	0.4	32.6	--	0.2

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	1.0	C 2	T	.6	C 4	T	20	C 5	0.3
2	1.1	C 2	T	.5	C 4	T	16	C 5	.2
3	1.0	C 2	T	.6	C 4	T	13	C 5	.2
4	.9	C 2	T	.6	C 4	T	10	C 5	.1
5	.8	C 7	T	.7	C 4	T	12	C 5	.2
6	.8	C 7	T	.7	C 4	T	19	13	S .7
7	.7	C 7	T	.7	C 4	T	18	C 5	.2
8	.8	C 2	T	.7	C 4	T	21	C 5	.3
9	.8	C 2	T	.6	C 4	T	24	C 5	.3
10	.7	C 2	T	.6	C 2	T	18	C 5	.2
11	.8	C 2	T	.6	C 2	T	17	C 5	.2
12	.8	C 2	T	.6	C 2	T	16	C 5	.2
13	.7	C 2	T	.6	C 2	T	15	C 5	.2
14	.7	C 2	T	.6	C 2	T	32	76	S 9.4
15	.7	C 2	T	.6	C 2	T	26	13	S .9
16	.7	C 2	T	.7	C 2	T	17	C 4	.2
17	.8	C 2	T	.8	C 2	T	15	C 4	.2
18	.8	C 2	T	1.0	C 2	T	14	C 4	.2
19	.8	C 2	T	11	230	6.8	13	C 4	.1
20	.7	C 2	T	60	55	8.9	12	C 4	.1
21	.7	C 2	T	40	10	1.1	10	C 4	.1
22	.7	C 2	T	32	35	S 3.6	11	C 4	.1
23	.7	C 2	T	66	139	S 28	14	C 4	.2
24	.7	C 2	T	84	140	S 34	24	47	S 4.7
25	.6	C 2	T	157	607	S 390	20	5	.3
26	.7	C 2	T	160	191	S 113	18	C 4	.2
27	.7	C 2	T	44	35	S 4.3	19	C 4	.2
28	.7	C 2	T	32	11	1.0	19	C 9	.5
29	.7	C 2	T	--	--	--	20	C 9	.5
30	.7	C 2	T	--	--	--	18	C 9	.4
31	.6	C 2	T	--	--	--	16	6	.3
Total	23.6	--	0.2	697.8	--	590.8	537	--	21.9

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 1960 to September 1961--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..	20	C 3		0.2	16	C 2		0.1	4.2	C 2		T
2..	17	C 3		.1	19	C 2		.1	4.2	C 2		T
3..	14	C 3		.1	14	C 2		.1	3.2	C 2		T
4..	13	C 3		.1	10	C 2		.1	2.7	C 2		T
5..	12	C 3		.1	9.0	C 2		T	2.1	C 2		T
6..	13	C 3		.1	9.5	C 2		.1	1.9	C 2		T
7..	12	C 3		.1	14	4		.2	1.6	C 2		T
8..	9.5	3		.1	14	4		.2	4.3	39	S	1.2
9..	9.0	3		.1	106	889	S	596	7.2	16		.3
10..	15	5		.2	54	28	S	4.5	17	24	S	1.7
11..	20	5		.3	32	C 4		.3	5.6	C 4		.1
12..	24	6		.4	26	C 4		.3	3.9	C 4		T
13..	38	8		.8	20	C 4		.2	3.2	3		T
14..	70	170	S	53	16	C 4		.2	2.9	C 2		T
15..	116	377	S	183	13	C 4		.1	2.9	C 2		T
16..	224	494	S	478	35	22	S	3.0	1.9	C 2		T
17..	89	49	S	13	14	C 2		.1	1.7	C 2		T
18..	47	C 7		.9	14	C 2		.1	1.6	C 2		T
19..	34	C 7		.6	19	C 2		.1	1.1	C 2		T
20..	25	C 7		.5	13	C 2		.1	1.4	C 2		T
21..	22	C 7		.4	10	C 2		.1	3.6	C 2		T
22..	21	C 7		.4	13	C 2		.1	4.5	C 2		T
23..	21	C 7		.4	10	C 2		.1	1.7	C 3		T
24..	92	252	S	136	8.0	C 2		T	1.6	C 3		T
25..	241	221	S	175	6.7	C 2		T	2.3	C 3		T
26..	81	35		7.7	11	7		.2	2.1	C 3		T
27..	40	C 4		.4	8.5	C 2		T	1.3	C 3		T
28..	34	C 4		.4	6.3	C 2		T	.9	C 3		T
29..	27	C 4		.3	5.9	C 2		T	.6	C 3		T
30..	20	C 4		.2	5.6	C 2		T	.5	C 3		T
31..	--	--		--	4.5	C 2		T	--	--		--
Total	142 .5	--		1052.9	557.0	--		606.7	93.7	--		3.7

Day	JULY				AUGUST				SEPTEMBER			
1..	.5	C 5		T	.2	3		T	1.6	C 3		T
2..	.4	C 5		T	.4	14		T	1.4	C 3		T
3..	.5	C 5		T	.4	C 3		T	1.1	C 3		T
4..	.5	C 5		T	.3	C 3		T	1.1	C 3		T
5..	.4	C 5		T	.3	C 3		T	.9	C 5		T
6..	.2	C 5		T	.3	C 3		T	.7	C 5		T
7..	.7	8	S	0.1	.3	C 3		T	.6	C 5		T
8..	2.9	20	S	.2	.3	C 2		T	1.0	C 5		T
9..	.9	8		T	.2	C 2		T	.6	C 5		T
10..	.5	4		T	.5	8		T	.5	C 5		T
11..	.4	4		T	.9	C 5		T	.3	C 5		T
12..	.4	C 3		T	.6	C 5		T	.3	C 5		T
13..	.4	C 3		T	.3	C 5		T	1.6	3		T
14..	.4	C 3		T	.2	C 5		T	1.0	8		T
15..	.5	C 3		T	.1	C 5		T	8.6	14		0.3
16..	1.0	C 3		T	.1	C 5		T	2.7	C 2		T
17..	1.0	C 3		T	0	0		0	1.7	C 2		T
18..	.7	C 3		T	0	0		0	1.4	C 2		T
19..	.6	C 3		T	0	0		0	1.3	C 2		T
20..	1.1	C 3		T	2.1	16		.1	1.1	C 2		T
21..	.7	C 3		T	4.1	17		.2	1.1	C 3		T
22..	.5	C 3		T	2.6	9		.1	1.0	C 3		T
23..	.7	C 3		T	2.1	12		.1	.7	C 3		T
24..	1.0	5		T	1.0	6		T	.6	C 3		T
25..	3.0	11		.1	4.9	104	S	3.0	.5	C 3		T
26..	1.0	4		T	36	212	S	42	.5	C 1		T
27..	.6	C 3		T	10	13		.4	.5	C 1		T
28..	.4	C 3		T	6.7	C 5		.1	.4	C 1		T
29..	.3	C 3		T	3.9	C 5		.1	.4	C 1		T
30..	.2	C 3		T	2.7	C 5	S	T	.3	C 1		T
31..	.2	C 3		T	2.1	C 5		T	--	--		--
Total	22.6	--		0.6	83.6	--		46.3	35.5	--		0.5

Total discharge for year (cfs-days)..... 3,626.4
Total load for year (tons)..... 2,324.6

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

SUSQUEHANNA RIVER BASIN--Continued

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

Particle-size analyses of suspended sediment, 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)	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	
Apr. 16, 1961.....	1230		45	560	2240		9	21	33	40	51	67	83	95	99			BSWC
Apr. 24.....	0715		48	236	2100		13	26	36	49	63	78	94	99	100			BSWC
Apr. 24.....	0715		48	236	2100		4	12	21	31	49	85	--	--	--			BN
Apr. 25.....	1030		55	297	422		13	25	34	46	62	78	90	99	100			BSWC

1-5360. LACKAWANNA RIVER AT OLD FORGE, PA.

LOCATION.--On highway bridge, 600 feet upstream from gaging station which is 150 feet upstream from Delaware, Lackawanna, and Western Railroad bridge in Old Forge, Lackawanna County, and 0.5 mile upstream from St. Johns Creek.
DRAINAGE AREA.--332 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1947 to September 1951, February to August 1956, October 1958 to September 1961.
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 1960 to September 1961

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. 5, 1960.	372	7.8		0.02	1.0	26	17	8.7	2.5	12	132	6.6	0.2	7.8	--	135	125		336	6.0	10
Nov. 16.....	174	11	0.6	.05	1.0	39	25	14	3.0	0	209	9.5	.3	5.5	351	201	201		515	4.4	2
Dec. 21.....	125	--		--	--	--	--	17	--	4	150	14	--	3.8	--	144	141		388	5.2	3
Feb. 1, 1961.	68	8.6		.40	1.0	21	10	13	3.0	16	86	18	--	6.7	--	94	81		319	6.5	3
Mar. 16.....	800	6.0		.02	.33	13	6.4	5.3	1.2	2	53	7.5	--	2.6	--	59	58		166	5.2	3
Apr. 26.....	1440	4.7		.01	.29	12	5.7	4.5	1.5	4	53	15	.0	4.0	95	54	50		155	5.8	3
June 7.....	150	7.1		.04	.43	21	14	9.2	2.5	8	102	8.5	.3	2.9	188	110	104		282	6.2	8
July 19.....	108	6.7		.09	.93	23	12	10	3.5	12	96	8.0	.1	1.6	190	107	97		312	5.9	3
Aug. 15.....	56	--		.00	1.0	--	--	21	--	13	128	18	--	15	272	134	124		432	5.6	2
Sept. 27.....	43	--		--	--	--	--	49	--	95	105	32	.8	.0	269	128	50		491	7.1	5

SUSQUEHANNA RIVER BASIN--Continued

1-5405. SUSQUEHANNA RIVER AT DANVILLE, PA.

LOCATION.--At gaging station on right bank, 200 feet upstream from Mill Street Bridge 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 1961.
Water temperatures: October 1945 to June 1953, October 1956 to September 1961.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 462 micromhos Sept. 29; minimum daily, 87 micromhos Feb. 27.
Water temperatures: Maximum, 84°F July 24; minimum, freezing point on many days in December, January, and February.
EXTREMES, 1945-53, 1956-61.--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, 557 micromhos Oct. 13, 1948; 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 1960 to September 1961

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, 1960..		4.4		0.02	0.00	29	12	7.6	1.5	26	96	6.6	0.1	1.9	183	122	101		295	7.0	3
Nov. 1-4, 6, 8-10.....		4.0		.02	.00	29	8.4	8.8	1.3	50	77	7.6	.0	2.2	165	107	66		268	7.1	0
Dec. 1-10.....		3.4		.00	.03	29	8.9	10	1.0	44	75	7.6	.1	2.3	160	109	73		267	6.6	0
Jan. 1-9, 1961		4.1		.00	.93	36	13	13	1.7	50	113	12	.1	2.7	222	144	103		354	7.0	3
Feb. 1-4, 6-10		4.9		.02	1.3	39	14	14	1.9	40	129	13	.1	5.6	250	155	122		390	6.5	4
Mar. 1-10.....		6.2		.07	.00	13	4.0	3.4	1.3	28	26	5.3	.1	3.2	79	49	26		124	6.8	5
Apr. 1-10.....		4.6		.15	.01	16	4.5	4.5	1.1	34	32	6.2	.0	2.4	88	59	31		149	7.0	8
May 1-10.....		7.1		.12	.00	19	4.4	5.3	1.2	46	32	4.8	.2	1.8	108	66	28		163	7.4	6
June 2-10.....		1.9		.01	.11	29	8.0	9.8	1.2	64	58	11	.2	1.0	171	106	53		261	7.5	5
July 1-10.....		2.2		.02	.00	34	9.4	9.8	1.5	70	67	9.5	.3	.7	181	124	66		284	7.3	3
Aug. 1-10.....		4.6		.00	.00	33	11	12	2.0	74	65	13	.1	1.4	182	128	67		293	7.5	3
Sept. 1-2,4-6, 8-10.....		5.7		.00	.00	30	12	10	2.0	50	83	8.4	.1	1.4	180	125	84		282	7.2	3

SUSQUEHANNA RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1960 to September 1961

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	--	60	61	60	60	58	62	67	63	61	61	63	64	62	64	60	59	58	55	55	52	48	47	50	49	52	51	52	51	57
November	52	50	51	48	--	46	--	44	43	45	44	44	44	43	46	47	47	47	47	48	45	46	46	44	45	45	44	48	46	39	--	46
December	37	38	38	39	42	40	40	37	35	32	--	32	32	32	32	34	34	--	32	32	32	32	32	33	33	34	32	32	33	33	34	34
January	34	33	33	33	34	33	33	33	33	33	38	34	--	34	34	34	34	32	32	--	32	32	32	32	32	32	32	32	32	32	33	33
February	32	32	32	32	--	34	33	34	34	34	35	33	35	35	35	35	34	35	35	35	34	35	36	38	40	38	39	36	--	--	--	35
March	--	38	36	40	42	43	45	40	41	32	38	39	37	37	38	39	38	38	38	40	41	40	39	38	41	43	45	46	--	48	45	40
April	42	40	41	41	42	42	44	43	45	43	43	42	--	45	45	44	45	45	44	43	42	50	54	56	56	53	53	--	51	53	--	46
May	51	52	53	53	54	53	56	58	60	60	60	61	62	67	68	67	66	65	62	64	61	60	61	62	63	58	57	60	58	60	62	60
June	--	67	66	68	71	75	75	75	73	77	--	79	77	73	70	69	70	71	71	72	70	72	--	71	70	70	72	73	76	77	--	72
July	78	80	77	74	77	77	76	74	73	73	75	76	76	79	76	76	79	76	76	77	81	82	80	84	83	81	82	83	80	80	80	78
August	80	74	77	79	77	76	79	78	80	78	78	79	76	75	77	--	78	76	76	77	71	74	74	76	75	76	76	78	78	78	79	77
September	79	78	--	79	80	82	--	80	81	82	80	82	81	80	78	70	70	71	68	69	72	75	77	79	80	70	68	68	67	65	--	75

SUSQUEHANNA RIVER BASIN--Continued

1-5412. WEST BRANCH SUSQUEHANNA RIVER NEAR CURWENSVILLE, PA.

LOCATION.--At bridge on State highway 453, 30 feet upstream from gaging station, 1.1 miles south of Curwensville, Clearfield County, and 1.8 miles upstream from Anderson Creek.
DRAINAGE AREA.--367 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES 1960-61.--Specific conductance: Maximum daily, 1,220 micromhos Oct. 3; minimum daily, 132 micromhos Feb. 25, 26, Mar. 7.
Water temperatures: Maximum, 80°F July 2, 23, 24; minimum, freezing point on many days during December to February.
REMARKS.--Records of specific conductance of daily samples available in district office at Philadelphia, Pa.

Chemical analyses in parts per million, water year October 1960 to September 1961

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, 1960.....		12	11	0.24	3.6	86	32	60	3.0	0	512	4.0	0.2	0.5	730	346	346	1.7	1080	3.4	1
Nov. 1-10.....		9.4	4.5	.02	1.2	49	16	30	2.4	0	276	3.0	.1	1.4	392	189	189	.6	582	4.2	0
Nov. 16.....	148	49	8.4	.03	.89	42	13	23	1.8	0	208	2.5	.1	.6	314	159	159	.5	478	4.2	1
Dec. 4-10.....		--	--	--	--	--	--	--	--	0	305	6.0	.1	.5	453	210	210	.8	678	4.0	3
Jan. 1-2, 4-10, 1961..		9.9	2.0	.03	1.2	36	13	25	1.9	0	206	4.5	.2	2.6	314	144	144	.6	490	4.4	3
Feb. 1-9.....		11	3.9	.06	1.0	41	13	29	1.8	0	231	5.0	.1	1.9	351	156	156	.8	538	3.6	3
Mar. 1-10.....		6.7	1.2	.03	.55	19	4.6	4.2	1.0	0	74	3.0	.1	2.3	125	67	67	.2	199	4.4	2
Apr. 1-10.....		7.9	1.1	.02	.52	21	7.5	7.3	1.5	0	95	2.0	.1	1.1	147	84	84	--	243	4.5	3
May 1-9.....		7.9	1.2	.02	.57	24	8.5	7.3	1.8	0	109	1.5	.0	.6	168	95	95	--	266	4.5	3
June 1-10.....		8.2	2.7	.01	.95	38	12	17	1.5	0	189	4.0	.0	.6	287	145	145	--	418	4.5	3
July 1-10.....		9.0	1.9	.04	.96	52	17	24	3.0	0	267	5.0	.1	.7	408	200	200	.8	566	4.1	3
Aug. 1-10.....		9.9	2.0	.04	.81	29	12	14	2.0	0	150	3.0	.1	.9	226	122	122	--	348	4.6	3
Sept. 1-10.....		12	2.0	.05	1.0	49	17	28	2.5	0	260	4.0	.1	1.1	387	193	193	.8	568	4.3	3

SUSQUEHANNA RIVER BASIN--Continued

1-5412. WEST BRANCH SUSQUEHANNA RIVER NEAR CURWENSVILLE, PA.--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	61	62	61	61	60	57	59	59	61	63	61	61	63	65	64	61	58	55	54	52	51	50	50	47	59	50	52	51	50	50	57
November	53	51	46	48	45	43	39	43	51	41	41	40	45	47	49	50	45	44	47	47	43	44	42	42	44	--	45	49	50	--	--	46
December	--	--	--	41	41	39	40	38	32	32	32	32	--	33	34	32	32	--	32	32	32	32	32	32	34	33	33	32	32	32	32	34
January	32	32	32	32	32	33	34	34	32	33	33	32	34	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	32	32	32
February	32	32	32	32	32	32	32	32	32	34	34	34	34	36	36	36	36	33	37	37	35	35	41	41	44	44	42	43	--	--	--	36
March	41	41	42	42	44	44	46	41	40	38	36	36	40	40	43	40	37	39	39	41	43	40	40	40	45	45	50	50	49	46	43	42
April	40	40	41	40	43	45	45	43	41	41	41	43	41	44	49	45	46	44	44	46	44	50	55	58	57	54	51	51	49	50	--	46
May	50	50	47	50	53	52	57	57	61	58	59	59	63	68	62	62	57	58	56	55	55	55	55	58	60	60	58	59	59	61	62	57
June	65	68	70	71	71	71	75	74	69	72	71	72	76	71	62	62	64	66	70	61	67	65	67	65	64	63	66	67	72	74	--	68
July	78	80	79	72	73	73	73	70	70	68	73	73	74	77	77	75	76	75	73	71	70	73	80	80	77	74	73	75	76	79	76	75
August	75	75	71	71	71	72	76	78	79	75	76	78	71	69	73	74	73	75	74	75	69	72	74	74	74	75	76	75	77	77	76	72
September	74	77	75	78	74	73	76	73	75	76	76	78	77	77	71	74	65	63	63	61	69	70	72	75	76	69	62	62	53	59	--	71

SUSQUEHANNA RIVER BASIN--Continued

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

LOCATION.--At center of Lockport Bridge at 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 1961.
Water temperatures: October 1945 to September 1951, October 1958 to September 1961.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 764 micromhos Oct. 28; minimum daily, 104 micromhos Feb. 27.
Water temperatures: Maximum, 86°F July 30, Sept. 9, 10; minimum, freezing point on many days during December to February.
EXTREMES, 1945-51, 1958-61.--Dissolved solids (1945-47): Maximum, 262 ppm Sept. 21-30, 1946; minimum, 51 ppm Mar. 1-10, 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, 785 micromhos Sept. 18, 1951; 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 for water year October 1960 to September 1961 based on records for West Branch Susquehanna River at Renovo, Pa.

Chemical analyses in parts per million, water year October 1960 to September 1961

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, 1960.....		11	1.6	0.23	2.8	43	20	12	2.0	0	242	6.0	0.2	0.5	364	190	190	1.1	592	3.5	2
Nov. 1-10.....		9.8	6.4	.14	3.1	46	20	17	1.9	0	280	6.0	.1	1.4	395	197	197	2.2	634	3.6	2
Nov. 17.....		8.1	4.2	.04	2.6	37	16	12	2.0	0	202	8.0	.1	1.1	296	159	159	.8	507	3.5	2
Dec. 1-10.....		8.9	2.2	.11	2.4	36	15	12	2.1	0	194	5.5	.2	.7	286	152	152	.8	453	3.9	2
Jan. 1-10, 1961.....		9.3	2.7	.10	2.6	40	17	15	2.1	0	214	5.5	.2	2.3	335	170	170	.9	545	4.0	2
Feb. 1-4, 6-10.....		8.2	3.4	.09	1.5	29	11	10	1.9	0	146	6.0	.1	.2	227	118	118	.6	370	3.9	4
Mar. 1-10.....		6.8	.6	.00	.38	11	4.3	3.5	1.5	0	54	1.5	.1	.0	80	45	45	.2	160	4.3	3
Apr. 1-10		6.8	.1	.06	.36	14	5.7	4.2	1.3	0	67	1.0	.1	.0	102	59	59	.5	210	4.2	3
May 1-10.....		6.6	1.7	.06	.81	15	6.9	3.3	1.5	0	81	1.5	.1	1.1	136	66	66	.4	215	4.1	2
June 1-3, 5-10		6.8	2.0	.06	1.3	20	8.0	4.7	1.0	0	105	2.0	.2	.2	165	83	83	.5	274	3.9	3
July 1-10.....		7.3	1.8	.12	1.2	22	10	4.7	2.0	0	115	5.0	.1	.2	186	96	96	.5	306	4.0	3
Aug. 1-10.....		7.8	2.0	.04	1.6	23	10	6.1	1.5	0	121	2.5	.1	2.0	182	99	99	.4	317	3.8	2
Sept. 1-10.....		8.8	2.1	.13	2.2	30	14	8.1	1.8	0	164	3.5	.1	2.5	253	133	133	.8	431	3.7	2

SUSQUEHANNA RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1960 to September 1961

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	62	63	61	60	60	60	54	59	60	61	61	61	61	62	62	62	61	58	55	54	52	51	49	--	47	--	50	51	50	50	57
November	52	51	48	47	47	47	44	43	42	43	44	44	43	44	47	--	48	47	46	46	45	44	45	43	42	41	42	--	45	43	--	45
December	38	36	36	36	37	40	38	38	37	35	32	32	--	38	35	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33	34
January	33	35	34	32	33	34	35	34	33	33	33	33	34	33	33	34	34	33	33	32	32	32	33	33	32	32	32	32	33	32	33	33
February	32	32	32	32	--	33	32	32	32	33	33	33	32	33	33	33	34	33	33	--	34	34	37	40	41	--	34	41	--	--	--	34
March	39	36	--	38	48	46	46	36	34	32	32	32	32	34	35	32	33	33	34	34	36	33	35	33	36	38	--	--	38	--	--	26
April	--	--	--	--	--	--	45	44	44	44	43	43	40	44	48	43	45	44	45	48	49	50	56	56	57	55	54	--	52	53	--	--
May	51	52	52	53	55	52	56	57	62	61	60	60	64	68	69	67	64	60	57	57	57	55	55	60	63	60	56	60	60	61	63	59
June	67	71	80	--	74	74	74	75	72	74	77	77	78	73	--	68	70	72	73	73	70	72	72	70	69	71	72	74	76	78	--	73
July	79	81	80	76	78	74	75	73	73	73	74	76	77	78	77	77	77	78	77	79	80	81	80	81	80	76	78	78	77	86	81	78
August	80	77	76	79	78	77	78	78	79	78	78	78	77	74	75	78	77	76	78	78	74	75	75	74	75	76	75	76	77	77	79	77
September	81	80	79	81	81	82	80	80	86	86	79	81	82	82	80	69	69	68	67	68	72	72	74	77	76	77	69	66	64	69	--	76

SUSQUEHANNA RIVER BASIN--Continued

1-5545. SHAMOKIN CREEK AT WEIGH SCALE, PA.

LOCATION.--At foot bridge, 400 feet below gaging station at Weigh Scale, Northumberland County, 1 mile downstream from Trout Run, and 2 miles northwest of Shamokin.
DRAINAGE AREA.--54.2 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1949 to September 1950, October 1958 to September 1961 (discontinued).
Water temperatures: October 1958 to September 1961 (discontinued).
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 1,840 micromhos Nov. 4; minimum daily, 479 micromhos July 1.
Water temperatures: Maximum, 77°F June 29; minimum, 36°F Dec. 13, 23, Jan. 23.
EXTREMES, 1949-50, 1958-61.--Dissolved solids (1959-60): Maximum, 1,270 ppm July 15-29; minimum, 853 ppm Mar. 28 to Apr. 9.
Hardness (1959-60): Maximum, 700 ppm Oct. 26 to Nov. 13; minimum, 468 ppm Mar. 28 to Apr. 9.
Specific conductance (1958-61): Maximum daily, 1,910 micromhos Sept. 16, 1959; minimum daily, 477 micromhos Aug. 22, 1959.
Water temperatures (1958-61): Maximum, 77°F June 29, 1961; minimum, 36°F Dec. 13, 23, 1960, Jan. 23, 1961.
REMARKS.--Records of specific conductance and pH of daily samples from October 1958 to September 1961 available in district office at Philadelphia, Pa.
Temperature affected by coal mine effluents.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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.1-10,1960.	--	23	13	3.3	5.8	112	95	7.6	3.0	0	823	3.5	0.3	0.7	1210	671	671	3.2	1660	3.1	0
Nov. 1-10.....	--	22	12	2.4	9.6	112	89	10	3.6	0	782	5.0	.4	1.2	1050	646	646	2.8	1560	3.2	1
Nov. 17.....	44	22	15	11	11	126	96	12	4.5	0	874	7.0	.3	.8	1240	710	710	3.9	1600	3.2	2
Dec. 1-10.....	--	22	12	4.6	10	120	91	12	4.1	0	823	7.0	.4	.4	1160	674	674	3.0	1600	3.2	3
Jan. 1-10,1961	--	19	9.7	3.0	9.8	118	82	13	3.9	0	693	12	.3	1.2	1100	632	632	2.3	1480	3.5	2
Feb. 1-10.....	--	19	10	2.9	10	131	84	14	3.8	0	798	12	.3	1.3	1120	673	673	2.7	1630	3.2	5
Mar. 1-10.....	--	19	8.0	3.4	7.1	98	67	6.5	2.5	0	592	4.0	.3	1.4	876	521	521	2.3	1330	3.2	3
Apr. 1-10.....	--	20	1.8	.58	7.4	94	74	6.5	3.3	0	622	3.5	.3	.2	925	540	540	3.1	1440	3.0	5
May 1-10.....	--	20	8.3	2.7	21	90	78	6.9	3.0	0	643	3.5	.2	.4	974	546	546	2.4	1350	3.2	2
June 1-10.....	--	21	9.4	1.4	8.7	102	74	7.5	3.0	0	666	3.0	.2	.1	1020	560	560	2.9	1390	3.2	3
July 1.....	77	--	--	--	--	--	--	--	--	98	113	--	--	--	--	--	--	--	479	6.4	--
July 2-10.....	--	22	2.3	2.4	9.1	100	80	7.5	3.5	0	689	8.0	.2	.3	1020	579	579	2.9	1500	2.6	3
Aug. 1-10.....	--	22	11	2.1	9.2	102	86	10	3.8	0	748	9.0	.1	.2	1050	609	609	2.9	1500	3.1	3
Sept. 1-10....	--	22	9.2	6.5	9.9	102	86	10	3.8	0	714	8.0	.1	.5	1060	609	609	2.9	1460	3.1	5

SUSQUEHANNA RIVER BASIN--Continued

1-5545. SHAMOKIN CREEK AT WEIGH SCALE, PA.--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	59	60	57	59	58	60	61	62	59	60	64	63	62	61	59	58	54	55	55	53	50	53	54	54	57	55	54	54	58
November	56	53	50	53	52	48	45	48	52	52	50	50	50	54	56	55	52	53	51	50	51	52	49	47	49	51	53	55	54	48	--	51
December	43	43	46	48	50	50	44	43	41	44	40	41	36	40	39	43	44	42	41	41	42	38	36	38	42	45	40	40	42	45	45	42
January	43	43	43	40	43	46	47	43	41	44	45	45	47	47	46	45	47	47	43	37	37	37	36	38	37	39	40	38	41	40	43	42
February	39	38	38	39	42	42	42	43	45	45	44	43	44	45	45	45	45	46	43	45	46	48	48	52	56	47	49	48	--	--	--	45
March	47	50	52	52	57	52	53	46	48	45	51	52	47	49	50	48	47	51	47	52	51	47	48	50	53	55	58	56	56	52	49	51
April	48	49	50	49	53	50	52	52	51	48	49	50	44	53	55	50	52	50	52	55	55	57	60	62	60	54	57	52	53	55	--	53
May	54	56	55	57	60	53	60	63	65	61	57	60	61	67	66	65	63	58	57	60	59	56	60	65	65	58	53	59	60	60	60	60
June	69	69	62	67	68	70	--	67	65	69	70	74	72	65	62	67	67	64	67	69	65	65	67	65	66	64	66	65	77	72	--	67
July	72	71	71	66	70	69	70	68	66	68	70	71	68	73	68	68	72	73	68	71	76	62	76	76	76	71	74	72	70	76	72	71
August	72	60	60	73	71	71	72	72	72	73	70	71	66	68	70	73	72	71	68	70	63	70	62	72	69	70	70	71	69	69	72	69
September	73	71	69	73	72	71	67	67	70	68	69	71	71	71	64	65	64	63	63	64	68	72	68	69	72	64	64	68	68	60	--	68

SUSQUEHANNA RIVER BASIN--Continued

1-5670. JUNIATA RIVER AT NEWPORT, PA.

LOCATION.--At gaging station on right bank at downstream side of highway 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 1961.
Water temperatures: October 1944 to June 1953, April 1958 to September 1961.
Sediment records: January 1951 to September 1961.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 403 micromhos Oct. 23; minimum daily, 113 micromhos Apr. 18.
Water temperatures: Maximum, 84°F July 23, Sept. 6; minimum, freezing point on many days during December to March.
Sediment concentrations: Maximum daily, 530 ppm Feb. 20; minimum daily, 1 ppm Oct. 1-31.
Sediment loads: Maximum daily, 59,100 tons Feb. 26; minimum daily, 1 ton Oct. 8, 11, 12, 19, 26.
EXTREMES, 1944-61.--Dissolved solids (1944-47, 1957-58): 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, 24 ppm Nov. 25, 1950.
Specific conductance: Maximum daily, 499 micromhos Dec. 17, 1946; minimum daily, 59 micromhos Aug. 19, 1950.
Water temperatures (1944-53, 1958-61): Maximum, 89°F July 22, 1952; minimum, freezing point on many days during winter months.
Sediment concentrations (1951-61): Maximum daily, 1,130 ppm Mar. 2, 1954; minimum daily, 0 ppm on many days.
Sediment loads (1951-61): Maximum daily, 128,000 tons Mar. 2, 1954; minimum daily, 0 tons on many days.
REMARKS.--Records of specific conductance and pH of daily samples available in district office at Philadelphia, Pa. Flow affected by ice Dec. 9 to Feb. 21.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 5, 1960.	569	2.8		0.00	0.00	38	11	17	1.7	128	41	19	0.1	0.8	195	140	35		337	7.7	5
Nov. 2.....	915	.8		.00	.00	42	11	17	2.5	131	51	21	.2	1.7	215	150	43		363	7.4	7
Dec. 1.....	900	.0		.00	.00	42	12	17	2.1	132	55	20	.0	1.7	225	155	47		372	7.3	6
Feb. 21, 1961	21500	6.8		.08	.07	18	4.1	4.6	2.0	39	24	5.4	.1	7.5	98	62	30		151	6.7	12
Feb. 26.....	44500	13		.00	.00	16	3.3	2.8	1.8	34	20	2.0	.2	7.0	97	54	26		126	7.2	2
Feb. 27.....	48400	6.2		.14	.04	14	2.8	2.9	1.9	32	19	2.6	.1	5.8	90	47	21		114	7.0	45
Mar. 7.....	19500	6.8		.12	.02	15	4.0	3.5	1.6	37	22	3.6	.1	3.7	81	54	24		128	7.2	20
Mar. 10.....	19500	6.7		.06	.03	16	3.5	3.0	1.4	40	21	3.6	.1	4.2	91	55	22		128	7.5	15
Apr. 1-30....	12700	6.0		.00	.00	18	5.0	2.4	.8	49	21	4.3	.1	3.6	92	66	26		147	7.3	3
June 3-30....	2114	3.9		.01	.00	29	9.0	8.3	1.5	91	33	8.9	.1	2.2	148	110	35		243	7.8	4
July 1-31....	1033	3.2		.01	.00	33	8.9	11	1.5	105	38	13	.1	1.3	174	119	33		286	7.9	4
Aug. 1-8.....	2052	3.9		.01	.00	32	6.9	22	2.0	112	44	14	.1	1.8	182	109	17		301	8.0	3
Sept. 1-30...	763	1.4		.00	.00	36	10	15	2.2	114	51	15	.2	.9	197	131	38		333	7.1	3

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

Temperature (°F) of water, water year October 1960 to September 1961

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	64	65	64	64	63	63	64	62	64	68	66	65	66	70	67	67	64	62	56	54	56	60	47	49	53	52	54	--	--	55	61
November	--	54	49	49	51	49	48	42	44	45	46	48	45	48	50	50	49	49	48	49	46	48	45	44	45	47	46	49	44	40	--	47
December	37	38	40	44	47	45	42	38	34	32	32	32	32	32	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	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34
February	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	37	35	35	39	40	41	39	40	--	--	--	34
March	38	39	41	--	--	48	47	47	42	43	44	41	46	40	38	37	32	32	32	32	32	34	35	38	42	39	36	40	41	39	34	39
April	36	38	41	40	43	45	43	44	42	42	42	41	40	41	43	42	45	45	45	44	46	48	51	57	59	59	55	55	52	54	--	46
May	55	50	50	49	49	52	56	56	63	65	67	66	68	67	67	66	70	68	66	64	62	60	62	60	53	55	54	57	53	61	64	60
June	67	68	69	70	71	70	72	75	75	72	74	75	74	75	71	69	70	70	69	69	69	69	69	70	71	70	69	68	67	70	--	71
July	71	73	70	74	70	70	69	69	69	65	69	72	72	73	73	77	73	75	76	76	77	78	84	82	81	81	77	77	80	81	81	75
August	78	78	76	75	73	74	77	75	75	78	78	78	70	69	74	75	74	74	72	76	74	72	73	75	74	71	73	76	79	78	77	75
September	76	77	79	79	78	84	81	79	77	79	81	78	79	79	74	64	69	62	66	68	69	70	71	72	74	72	64	64	59	60	--	73

SUSQUEHANNA RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961

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	660	C 1	2	844	2	5	900	C 3	7
2	635	C 1	2	915	C 3	7	915	C 3	7
3	648	C 1	2	1000	C 3	8	900	C 3	7
4	613	C 1	2	1020	C 3	8	788	C 3	6
5	569	C 1	2	844	C 3	7	710	C 3	5
6	558	C 1	2	748	C 3	6	525	C 3	4
7	558	C 1	2	760	C 2	4	602	C 3	5
8	525	C 1	1	698	C 2	4	735	C 3	6
9	558	C 1	2	760	C 2	4	640	C 3	5
10	580	C 1	2	735	C 2	4	600	3	5
11	547	C 1	1	802	C 2	4	580	3	5
12	445	C 1	1	802	C 3	6	540	3	4
13	558	C 1	2	735	C 3	6	500	3	4
14	569	C 1	2	685	C 3	6	660	3	5
15	569	C 1	2	648	C 3	5	760	3	6
16	569	C 1	2	672	C 3	5	820	3	7
17	591	C 1	2	748	C 2	4	780	3	6
18	591	C 1	2	776	C 2	4	840	3	7
19	536	C 1	1	750	C 2	4	750	3	6
20	635	C 1	2	666	C 2	4	680	3	6
21	613	C 1	2	722	C 2	4	640	3	5
22	648	C 1	2	635	C 3	5	800	3	6
23	685	C 1	2	569	C 3	5	860	3	7
24	722	C 1	2	774	C 3	6	800	3	6
25	613	C 1	2	722	C 3	6	860	3	7
26	495	C 1	1	698	C 2	4	700	3	6
27	624	C 1	2	698	C 2	4	660	3	5
28	698	C 1	2	672	C 2	4	600	3	5
29	648	C 1	2	580	C 2	3	700	3	6
30	613	C 1	2	651	3	5	900	3	7
31	648	C 1	2	--	--	--	1000	4	11
Total	18521	--	57	22329	--	151	22745	--	185
	JANUARY			FEBRUARY			MARCH		
1	1050	4	11	1400	4	15	17000	74	3400
2	1100	4	12	1500	4	16	13000	48	1680
3	800	3	6	1400	4	15	10500	28	794
4	800	3	6	1300	4	14	8730	22	519
5	900	3	7	1400	4	15	10900	41	1210
6	940	3	8	1000	4	11	16000	78	3370
7	980	4	8	1000	4	11	19500	68	3580
8	1100	4	11	1200	4	13	18400	51	2530
9	1400	4	15	1600	4	17	19500	53	2790
10	1000	4	11	1500	4	16	19500	47	2470
11	1500	4	16	1400	4	15	15300	21	868
12	1900	6	26	1300	4	14	11800	18	573
13	1900	5	26	1300	4	14	9920	18	482
14	1800	5	24	1700	4	18	9320	C 17	428
15	2000	5	27	2100	-- E	70	9020	C 17	414
16	1400	5	19	2800	-- E	130	8150	31	682
17	1600	5	22	4000	-- E	260	7300	42	828
18	1700	5	23	5000	-- E	380	6470	C 31	542
19	1500	5	20	8000	-- E	900	6200	C 31	519
20	1700	5	23	15000	530 B	21000	6740	C 31	564
21	1900	5	26	21500	380	22100	7020	32	607
22	1600	5	22	15200	168 S	6840	7300	C 29	572
23	1500	5	20	12100	95	3100	7580	C 29	594
24	1250	4	14	14300	73	2820	7860	31	658
25	1300	4	14	21900	120 S	7410	8730	26	613
26	1800	5	24	44500	462 S	59100	10500	28	794
27	1600	5	22	48400	321 S	43800	11800	38	1210
28	1500	4	16	26900	176 S	12800	10500	C 19	539
29	1600	4	17	--	--	--	9920	C 19	509
30	1700	4	18	--	--	--	9620	C 19	494
31	1500	4	16	--	--	--	8440	C 19	433
Total	44320	--	530	260700	--	180914	342520	--	35266

E Estimated.
S Computed by subdividing day.
B Computed from estimated-concentration graph.
C Composite period.

SUSQUEHANNA RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961--Continued

Day	APRIL			MAY			JUNE		
	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	7580	22	450	8150	21	462	2830	C 4	31
2	8440	24	547	7580	16	327	2350	C 4	25
3	9320	C 13	327	6600	21	374	2040	C 3	17
4	8440	C 13	296	5800	19	298	2440	C 3	20
5	7580	C 13	266	5270	16	228	2310	C 3	19
6	6740	C 14	255	4880	25	329	2020	C 3	16
7	6200	C 14	234	5010	31	419	1850	C 3	15
8	5660	C 14	214	6060	38	622	2020	C 3	16
9	5010	C 14	189	6470	45	786	1900	C 3	15
10	5660	23	351	7860	108	2290	2510	C 3	20
11	9020	33 A	800	7300	84	1660	3070	C 10	83
12	10500	57 A	1600	6600	48	855	3380	C 10	91
13	16100	82	3560	6340	31	531	2600	C 5	35
14	24400	113	7440	6060	C 20	327	2490	C 5	34
15	25200	83	5650	5660	C 20	306	2070	C 5	28
16	23200	78	4890	6340	C 20	342	2260	C 5	31
17	29400	131	10400	7020	C 17	322	2370	C 5	32
18	29800	140	11300	6340	C 17	291	1960	C 5	26
19	20100	70	3800	5930	C 15	240	1770	C 5	24
20	14300	46	1780	5660	C 15	229	1690	C 5	23
21	10800	40	1170	5270	C 15	213	1980	10	53
22	9020	41	999	4880	C 8	105	3010	46	374
23	10200	77	2120	4750	C 8	103	2180	14	82
24	11100	78 A	2300	4370	C 8	94	2130	C 5	29
25	9920	45	1210	4120	C 8	89	1960	C 5	26
26	10500	57	1620	3870	C 8	84	1690	C 5	23
27	13700	82	3030	3500	C 5	47	1440	C 5	19
28	13000	58	2040	2850	C 5	38	1400	C 5	19
29	10800	46	1340	2440	C 5	33	1240	C 5	17
30	9320	28	705	2490	C 5	34	1420	C 5	19
31	--	--	--	3020	C 5	41	--	--	--
Total	381010	--	70883	168490	--	12119	64380	--	1262

Day	JULY			AUGUST			SEPTEMBER		
	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	1290	C 4	14	677	4	7	850	C 2	5
2	1120	C 4	12	1030	12	33	946	C 2	5
3	962	C 4	10	1640	61	270	979	C 2	5
4	835	C 4	9	4860	224 S	3380	835	C 2	4
5	1330	C 4	14	3300	90	802	790	C 2	4
6	1030	C 4	11	1980	C 15	80	865	C 2	5
7	1100	C 4	12	1510	C 15	61	1040	C 2	6
8	930	C 4	10	1420	C 15	58	865	C 2	5
9	880	C 4	10	1240	C 8	27	930	C 2	5
10	716	C 4	8	1010	C 8	22	1010	C 2	5
11	703	C 4	8	1060	C 8	23	1030	C 3	8
12	962	C 4	10	1080	C 8	23	805	C 3	7
13	880	C 4	10	1010	C 8	22	913	C 3	7
14	913	C 4	10	913	C 8	20	880	C 3	7
15	1040	C 4	11	730	C 8	16	850	C 3	7
16	1440	C 4	16	716	C 2	4	790	C 3	6
17	1130	C 4	12	745	C 2	4	730	C 3	6
18	970	C 4	11	703	C 2	4	716	C 3	6
19	1150	C 4	12	703	C 2	4	547	C 3	4
20	1440	C 4	16	636	C 2	3	547	C 3	4
21	1100	C 4	12	636	C 2	3	636	C 10	17
22	1610	C 4	17	535	C 2	3	745	C 10	20
23	1220	C 4	13	565	C 2	3	703	C 10	19
24	946	C 4	10	865	C 2	5	760	C 10	21
25	1010	C 4	11	790	C 2	4	608	C 10	16
26	1080	C 4	12	1010	5	14	559	10	15
27	930	C 4	10	1010	C 2	5	454	34	42
28	835	C 4	9	1080	C 2	6	444	38	46
29	820	C 4	9	1200	C 2	6	535	14	20
30	913	C 4	10	1170	C 2	6	535	19	27
31	714	C 4	8	930	C 2	5	--	--	--
Total	32028	--	347	36754	--	4923	22897	--	354

Total discharge for year (cfs-days)..... 1,416,694
Total load for year (tons)..... 306,991

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

SUSQUEHANNA RIVER BASIN--Continued

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

Particle-size analyses of suspended sediment, 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)	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. 20, 1961.....	0730		32	28000	273		21	36	57	75	89	95	96	99	100			BSWC
Feb. 21.....	0730		37	23800	437		20	31	50	60	76	89	90	96	100			BSWC
Feb. 26.....	1725		42	52900	586		22	37	53	65	76	85	87	95	99			BSWC
Feb. 26.....	1725		42	52900	586		6	15	32	46	73	85	--	--	--			BN
Apr. 18.....	0700		45	32300	179		30	46	63	73	83	86	90	96	100			BSWC

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 1961.
Sediment records: February 1954 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 78°F July 3, 23; minimum, freezing point on several days in December, January, and March.
Sediment concentrations: Maximum daily, 318 ppm Feb. 19; minimum daily, 1 ppm Oct. 5 to 11.
Sediment loads: Maximum daily, 189 tons Feb. 25; minimum daily, less than 0.05 ton on many days during year.
EXTREMES, 1954-61.--Water temperatures (1956-61): 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, estimated, 650 tons Nov. 1, 1956; minimum daily, 0 tons Oct. 29, 30, 1956.
REMARKS.--Unpublished records of specific conductance and pH of periodic sediment samples available in district office at Philadelphia, Pa. Flow affected by ice Dec. 9 to Jan. 1, Jan. 9-13, Jan. 18 to Feb. 5.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 5, 1960.	3.4	4.5		0.02	0.01	38	6.9	3.0	0.4	131	15	2.6	0.11	5.9	147	124	16		240	7.6	1
Jan. 6, 1961	4.0	6.8		.00	.00	36	6.4	2.3	1.3	118	15	2.6	.01	5.6	135	117	20		230	7.5	3
June 14.....	6.0	6.9		.05	.01	37	6.0	1.5	1.2	121	14	2.2	.21	6.0	139	117	18		230	7.8	10

Temperature (°F) of water, water year October 1960 to September 1961

Month	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	61	57	57	--	59	65	59	49	52	61	57	59	60	61	62	62	53	62	55	53	51	53	50	49	47	47	45	53	54	55	51	55
November	51	44	44	51	49	46	42	43	42	47	47	47	46	49	53	50	47	49	45	48	--	40	45	43	44	45	47	50	50	40	--	46
December	38	38	41	41	41	45	42	39	32	32	35	32	33	34	33	35	30	32	32	32	32	--	32	32	32	32	34	32	32	32	32	35
January	34	35	33	33	34	34	32	35	34	34	35	36	36	37	36	35	40	40	35	33	34	32	33	33	33	33	33	33	33	33	33	34
February	33	32	33	33	33	33	34	35	35	35	35	33	33	34	38	36	40	40	41	36	40	39	40	40	43	38	50	41	--	--	--	37
March	4	48	52	48	54		47	43	45	32	48	54	41	47	42	43	44	45	41	45	47	39	40	42	41	55	57	49	54	43	40	45
April	42	4	4[illegible]	4[illegible]	42	--	44	51	47	47	50	45	37	45	45	47	35	52	53	58	46	60	60	56	61	55	58	56	50	52	--	49
May	51	56	52	53	47	51	50	61	67	56	56	51	55	55	70	68	65	58	58	--	60	55	58	62	60	59	55	65	55	61	65	58
June	72	7	62	68	65	65	63	--	66	70	70	75	75	70	65	--	60	70	65	65	65	64	67	65	67	65	67	71	71	65	--	67
July	67	71	73	67	66	67	67	71	60	67	68	--	72	67	70	67	72	68	72	68	67	69	78	72	72	70	--	63	73	75	72	70
August	--	65	67	58	57	61	55	65	64	75	72	70	65	68	61	74	69	67	73	69	65	53	72	68	67	73	67	73	73	70	70	69
September	[illegible]	75	71	6[illegible]	76	74	73	75	73	73	75	75	74	68	65	64	64	64	63	63	70	70	75	74	74	61	60	60	60	55	--	69

SUSQUEHANNA RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961

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..	3.7	C 7		0.1	7.1	14		0.3	3.7	C 4		T
2..	3.5	C 7		.1	4.4	C 4		T	3.5	C 4		T
3..	3.4	C 7		.1	3.8	C 4		T	3.7	C 4		T
4..	3.4	5		T	3.8	12		.1	3.5	C 4		T
5..	3.4	C 1		T	4.2	C 4		T	3.7	C 4		T
6..	3.7	C 1		T	4.4	C 4		T	3.5	C 4		T
7..	3.7	C 1		T	4.0	C 4		T	3.4	C 4		T
8..	3.5	C 1		T	3.8	C 4		T	3.4	C 4		T
9..	3.5	C 1		T	3.8	C 4		T	3.0	C 4		T
10..	3.7	C 1		T	4.4	C 3		T	2.3	C 4		T
11..	3.5	C 1		T	4.0	C 3		T	2.6	C 9		0.1
12..	3.7	C 3		T	3.8	C 3		T	2.9	C 9		.1
13..	3.7	C 3		T	3.8	C 3		T	3.2	C 9		.1
14..	3.7	C 3		T	3.8	C 3		T	3.5	C 9		.1
15..	3.5	C 3		T	3.8	C 6		.1	3.2	C 9		.1
16..	3.5	C 3		T	3.8	C 6		.1	3.4	C 6		.1
17..	3.5	C 3		T	3.7	C 6		.1	3.2	C 6		.1
18..	3.4	C 3		T	3.5	C 6		.1	3.1	C 6		.1
19..	3.5	C 2		T	3.7	C 6		.1	2.9	C 6		T
20..	3.5	C 2		T	3.7	C 6		.1	2.8	C 6		T
21..	3.4	C 2		T	3.7	5		T	3.0	C 6		T
22..	3.4	C 2		T	3.8	C 4		T	3.2	8		.1
23..	3.7	C 2		T	4.0	C 4		T	3.0	9		.1
24..	3.5	C 2		T	4.0	C 4		T	3.1	C 8		.1
25..	3.2	C 2		T	4.0	C 4		T	3.2	C 8		.1
26..	3.2	C 3		T	4.0	C 4		T	3.4	C 8		.1
27..	3.4	C 3		T	3.8	C 5		.1	3.2	20		.2
28..	3.5	C 3		T	3.8	C 5		.1	3.1	C 4		T
29..	3.5	C 3		T	5.0	C 5		.1	3.2	C 4		T
30..	3.4	C 3		T	4.8	C 5		.1	3.4	C 4		T
31..	3.9	C 3		T	--	--		--	3.3	C 4		T
Total	109.1	--		1.0	122.2	--		2.1	99.6	--		2.2

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..	5.6	C 5		0.1	4.2	C 4		T	36	C 11		1.1
2..	6.9	C 5		0.1	3.8	C 4		T	29	C 11		.9
3..	5.5	C 5		0.1	3.8	C 4		T	24	C 11		.7
4..	4.4	C 5		0.1	4.1	C 4		T	30	34	S	3.4
5..	4.2	C 4		T	4.5	C 4		T	36	21	S	2.3
6..	4.0	C 4		T	5.1	C 4		0.1	64	79	S	17
7..	4.8	C 4		.1	5.1	C 4		.1	60	34		5.5
8..	6.4	C 4		.1	5.1	C 4		.1	81	49	S	13
9..	5.2	C 4		.1	5.0	C 4		.1	95	30	A	7.7
10..	4.7	C 4		.1	5.3	C 4		.1	66	8		1.4
11..	4.4	C 3		T	5.7	C 4		.1	49	9		1.2
12..	4.4	C 3		T	5.7	C 4		.1	39	C 5		.5
13..	4.5	C 3		T	5.7	C 4		.1	34	C 5		.5
14..	4.8	C 3		T	7.0	6		.1	43	16		1.9
15..	5.3	C 3		T	10	8		.2	32	3		.3
16..	6.1	C 3		T	13	5		.2	28	9		.7
17..	5.9	C 5		.1	15	8		.3	24	5		.3
18..	6.0	C 5		.1	30	90	S	9.3	22	2		.1
19..	6.3	C 5		.1	100	318	S	116	38	16	S	1.6
20..	5.0	C 5		.1	63	42	S	7.9	30	7		.6
21..	5.7	C 5		.1	35	14		1.3	26	C 6		.4
22..	5.4	C 5		.1	34	26	B	3.2	28	C 6		.5
23..	5.1	C 5		.1	54	35	B	5.1	34	9		.8
24..	4.8	C 5		.1	64	32	B	6.1	48	21	A	3.2
25..	4.5	C 6		.1	171	245	S	189	47	C 9		1.2
26..	4.6	C 6		.1	125	64	S	25	40	C 9		1.0
27..	4.8	C 6		.1	62	19		3.2	35	C 9		.9
28..	4.7	C 6		.1	47	12		1.5	33	C 4		.4
29..	4.4	C 6		.1	--	--		--	30	C 4		.3
30..	4.3	C 6		.1	--	--		--	24	C 4		.3
31..	4.2	C 6		.1	--	--		--	23	C 4		.2
Total	156.9	--		2.6	893.1	--		369.4	1228	--		69.9

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

SUSQUEHANNA RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961--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..	37	C 5		0.5	24	6		0.4	8.0	C 17		0.4
2..	30	C 5		.4	26	C 7		.5	7.7	C 17		.4
3..	26	C 5		.4	21	C 7		.4	8.9	C 17		.4
4..	25	C 5		.3	19	C 7		.4	8.0	C 17		.4
5..	22	4		.2	18	C 7		.3	7.2	C 17		.3
6..	21	4		.2	19	C 7		.4	6.7	C 17		.3
7..	19	C 4		.2	25	C 7		.5	6.7	C 17		.3
8..	17	C 4		.2	20	12		.6	6.7	C 17		.3
9..	17	C 4		.2	20	13		.7	11	46	A	1.4
10..	32	25	S	2.7	19	14		.7	12	36		1.1
11..	57	32		4.9	17	19		.9	7.5	C 21		.4
12..	59	25	S	6.1	20	20		1.1	6.7	C 21		.4
13..	235	211	S	150	23	33		2.0	6.0	C 21		.3
14..	154	50		21	19	C 17		.9	6.0	C 21		.3
15..	114	25		7.7	19	C 17		.9	5.8	C 21		.3
16..	205	133	S	131	20	C 17		.9	5.5	21		.3
17..	120	26		8.4	16	C 17		.7	5.3	C 21		.3
18..	84	17		3.9	16	C 17		.7	5.5	C 21		.3
19..	61	16		2.6	17	C 17		.8	5.5	C 21		.3
20..	48	12		1.6	14	C 17		.6	5.3	C 21		.3
21..	40	10		1.1	14	C 17		.6	118	143	S	165
22..	44	17	A	2.9	13	C 17		.6	42	58	S	8.9
23..	51	22	S	3.5	12	13		.4	17	12		.6
24..	38	16		1.6	11	C 10		.3	13	C 10		.4
25..	55	20	A	3.0	10	C 10		.3	11	C 10		.3
26..	42	C 16		1.8	11	C 10		.3	9.5	C 8		.2
27..	32	C 16		1.4	10	C 10		.3	8.3	C 8		.2
28..	31	C 6		.5	9.5	C 10		.3	7.5	C 8		.2
29..	28	C 6		.5	9.2	C 10		.2	7.0	C 8		.2
30..	25	C 6		.4	8.9	C 10		.2	6.4	C 8		.1
31..	--	--		--	8.3	C 10		.2				
Total	1769	--		359.2	508.9	--		18.1	381.7	--		184.6

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..	6.0	C 10		0.2	4.4	--	E	0.2	3.6	C 7		0.1
2..	6.0	C 10		.2	8.6	52		1.7	4.2	C 7		.1
3..	7.2	C 10		.2	20	97		7.2	6.2	22	A	.5
4..	5.8	C 10		.2	6.5	15		.3	4.7	21		.3
5..	5.5	C 10		.1	5.8	C 11		.2	4.0	8		.1
6..	5.5	C 8		.1	5.5	C 11		.2	3.6	C 24		.2
7..	5.5	C 8		.1	4.7	C 13		.2	3.8	C 24		.2
8..	5.3	C 8		.1	4.4	C 13		.2	4.0	C 24		.3
9..	5.1	C 8		.1	4.4	C 13		.2	3.8	C 24		.2
10..	4.9	C 8		.1	4.2	C 13		.1	3.8	C 24		.2
11..	4.7	C 8		.1	5.8	C 13		.2	3.6	C 11		.1
12..	4.5	7		.1	4.5	C 13		.2	3.6	C 11		.1
13..	8.8	58	A	1.9	4.0	C 11		.1	3.6	C 11		.1
14..	8.9	53	A	1.3	3.8	C 11		.1	3.6	C 11		.1
15..	6.5	6		.1	3.8	C 11		.1	3.8	C 11		.1
16..	5.8	21		.3	3.8	C 11		.1	3.4	C 10		.1
17..	5.1	16		.2	3.6	C 11		.1	3.4	C 10		.1
18..	4.9	16		.2	3.6	C 11		.1	3.3	C 10		.1
19..	5.6	25		.5	3.8	C 9		.1	3.6	C 10		.1
20..	11	64	A	2.2	4.0	C 9		.1	4.5	--	E	.3
21..	5.8	25		.4	4.5	C 9		.1	4.0	C 9		.1
22..	5.1	C 14		.2	4.0	C 9		.1	3.8	C 9		.1
23..	4.7	C 14		.2	4.0	C 9		.1	3.8	C 9		.1
24..	4.9	C 14		.2	4.0	C 9		.1	3.4	--	E	.2
25..	4.9	C 14		.2	7.3	15	S	.4	3.3	8		.1
26..	4.2	C 14		.2	6.3	16		.3	3.3	C 10		.1
27..	4.2	C 14		.2	4.5	16		.2	3.3	C 10		.1
28..	4.0	C 14		.2	4.0	C 12		.1	3.4	C 10		.1
29..	4.4	C 14		.2	4.8	C 12		.2	3.6	C 10		.1
30..	4.2	18		.2	4.4	C 12		.1	3.6	C 10		.1
31..	6.5	33	A	.7	3.8	C 12		.1	--	--		--
Total	175.5	--		11.2	160.8	--		13.5	119.6	--		4.5

Total discharge for year (cfs-days)..... 5,718.4
TTotal load for year (tons)..... 1,038.3

E Estimated.
S Computed by subdividing day.
A Computed from partly estimated-conecntration graph.
C Composite period.

SUSQUEHANNA RIVER BASIN--Continued

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

Particle-size analyses of suspended sediment, 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)	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. 19, 1961.....	1630		38	214	622		21	32	54	70	90	98	99	100	--			BSWC
Feb. 25.....	1735		45	270	362		30	42	60	76	89	95	98	100	--			BSWC
Feb. 25.....	2215		43	344	307		5	14	29	48	80	93	94	98	99			BSN
Feb. 25.....	2215		43	344	327		26	41	57	69	83	89	92	97	99			BSWC
Mar. 6.....	1715		52	98	183		48	64	80	89	97	98	99	100	--			BSWC
June 21.....	2145		65	529	357		38	58	70	78	87	92	95	98	100			BSWC

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 1961.

Chemical analyses, in parts per million, water year October 1960 to September 1961

Date of collection	Station	Mean discharge (cfs)	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. 20, 1960...	East Channel															
	120	5970		15		4	242	6.0		1.8		232	229	509	5.0	2
	600			26		24	185	9.0		1.1		168	149	391	6.9	3
	1180			9.4		36	92	7.0		1.1		116	87	278	7.2	2
	West Channel															
	600			9.0		54	76	8.0		.5		116	72	275	7.2	3
	1100			18		124	45	19		.2		136	35	339	7.7	2
	1320			9.4		154	24	16		3.5		156	30	338	7.5	3
Nov. 15.....	East Channel															
	120	9900		13		18	171	6.0		3.2		176	161	407	6.5	2
	600			7.8		32	91	7.0		2.9		116	90	273	6.8	3
	1180			11		48	80	6.0		1.3		108	69	257	8.2	2
	West Channel															
	600			9.4		30	85	7.0		2.0		104	80	256	6.9	2
	1100			13		100	61	12		1.1		136	54	316	8.1	3
	1320			14		196	25	16		5.8		184	24	380	8.2	3
Mar. 16, 1961...	East Channel															
	120			1.6		14	58	5.0		3.1		78	67	198	6.9	5
	600			6.2		30	35	6.0		2.5		58	34	157	7.1	3
	1180			2.1		10	38	3.5		2.2		50	42	127	6.8	3
	West Channel															
	600			1.4		13	37	3.0		2.2		52	42	127	6.6	3
	1100			2.8		47	21	4.0		3.7		63	25	148	7.3	3
	1320			5.1		106	19	5.0		8.8		110	23	238	--	3
Apr. 14.....	East Channel															
	120	126000		4.4		12	43	3.0		5.4		54	44	146	5.9	2
	600			3.0		30	30	5.0		2.3		58	34	148	6.6	2
	1180			1.6		10	34	3.0		2.3		46	38	115	6.5	3
	West Channel															
	600			1.6		28	19	2.0		4.2		46	23	110	6.5	3
	1100			1.8		32	17	2.0		4.6		46	20	109	6.6	3
	1320			3.0		58	18	3.0		7.8		70	23	160	6.5	3

SUSQUEHANNA RIVER BASIN--Continued

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

Chemical analyses, in parts per million, water year October 1960 to September 1961--Continued

Date of collection	Station	Mean discharge (cfs)	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 2, 1961....	East Channel															
	120	20900		8.0		27	109	6.0		2.0		128	106	314	6.7	4
	600			6.9		48	51	8.0		1.1		90	51	229	7.8	4
	1180			3.0		19	47	2.0		1.1		62	47	160	7.0	4
	West Channel															
	600			2.3		20	43	1.0		1.5		59	43	147	7.2	2
	1100			4.1		76	25	4.0		1.2		86	24	198	7.9	4
	1320			4.4		173	19	6.0		6.4		166	24	334	7.8	5
July 19.....	East Channel															
	120	8800		11		34	140	12		.9		160	140	399	6.9	3
	600			11		59	82	10		.5		124	76	302	7.1	2
	1180			7.4		34	66	5.0		.7		88	60	217	7.1	2
	West Channel															
	600			6.4		44	52	5.0		1.3		84	48	201	7.3	3
	1100			8.3		94	33	8.5		.5		106	29	241	7.8	3
	1320			1.4		156	19	7.5		5.8		160	32	313	7.9	3
Aug. 16.....	East Channel															
	120	6560		14		29	155	14		2.2		176	152	416	7.2	3
	600			13		47	89	14		1.4		124	86	314	7.8	3
	1180			4.1		18	73	6.5		1.0		92	77	226	7.1	3
	West Channel															
	600			21		32	59	6.0		.9		92	66	211	7.3	3
	1100			11		A 87	40	9.0		.2		104	31	248	8.4	5
	1320			8.5		B 90	22	12		2.5		104	24	212	8.9	5
Sept. 14.....	East Channel															
	120	6190		8.0		14	184	8.0		3.7		200	189	454	6.4	4
	600			8.3		35	110	7.5		8.1		142	114	337	7.2	3
	1180			9.4		23	93	6.5		12		114	95	274	7.1	3
	West Channel															
	600			6.0		31	86	6.5		1.5		112	87	267	6.9	4
	1100			13		100	45	13		.8		120	38	291	7.3	4
	1320			10		108	19	12		8.6		110	22	252	7.7	5

A Includes equivalent of 2 ppm carbonate (CO_3).
B Includes equivalent of 8 ppm carbonate (CO_3).

1-5730. SWATARA CREEK AT HARPER TAVERN, PA.

LOCATION (revised).--At gaging station on left bank 10 feet downstream from bridge on State Highway 934, at Harper Tavern, Lebanon County, 6 miles northwest of Annville, and 8.5 miles below mouth of Little Swatara Creek.
DRAINAGE AREA.--333 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1949 to September 1950, October 1958 to September 1961 (discontinued).
Water temperatures: October 1958 to September 1961 (discontinued).
Sediment records: May 1959 to September 1960.
EXTREMES, 1960-61.--Hardness: Maximum, 90 ppm July 5-15, Aug. 1, 3-5, 9, 11-19; minimum, 42 ppm Apr. 11-28.
Specific conductance: Maximum daily, 221 micromhos July 10; minimum daily, 78 micromhos Aug. 27.
Water temperatures: Maximum, 87°F July 24; minimum, freezing point on many days during December, January, and February.
EXTREMES, 1958-61.--Dissolved solids (1959-60): Maximum, 165 ppm July 12 to Aug. 5, 1959; minimum, 70 ppm Mar. 7, 9-14, 16-21, 23-28, 31, Apr. 1-4, 6-11, 1959.
Hardness (1959-61): Maximum, 90 ppm Sept. 1-4, 6-8, 10-12, 1960; July 5-15, Aug. 1, 3-5, 9, 11-19, 1961; minimum, 40 ppm Jan. 3-9, May 9-15, 1960.
Specific conductance (1958-61): Maximum daily, 260 micromhos July 30, 1959; minimum daily, 78 micromhos Aug. 27, 1961.
Water temperatures (1958-61); Maximum, 91°F Aug. 16, 1959; minimum, freezing point on many days during winter months.
Sediment concentrations (1959-60): Maximum daily, 850 ppm Sept. 20, 1960; minimum daily, 2 ppm Oct. 17-22, 1959, July 26, 27, 29, 1960.
Sediment loads: Maximum daily, 20,000 tons Sept. 20, 1960; minimum daily, less than 0.5 ton July 26, 27, 29, Aug. 25-30, 1960.
REMARKS.--Records of specific conductance from October 1958 to September 1961 available in district office at Philadelphia, Pa.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-14,1960	--	--		--	--	--	--	4.1	--	28	49	3.6	--	4.9	112	74	51		176	6.3	3
Oct. 15-Nov. 1	--	9.8		0.02	0.00	20	7.5	5.5	1.5	36	53	3.5	0.2	3.8	129	81	51		192	7.1	2
Nov. 2-4.....	--	--		--	--	--	--	--	--	23	38	--	--	--	--	--	--		143	6.9	--
Nov. 5,.....	206	--		--	--	--	--	--	--	37	55	--	--	--	--	--	--		193	6.8	--
Nov. 6-14.....	--	--		--	--	--	--	4.6	--	28	49	3.8	--	3.2	112	72	49		174	6.4	3
Nov. 15-30.....	--	--		--	--	--	--	6.0	--	34	53	3.4	--	3.5	122	78	50		189	6.2	3
Dec. 1-7, 10..	--	--		--	--	--	--	6.0	--	30	43	3.4	--	3.0	117	64	40		65	7.2	5
Dec. 11-31, Jan. 1, 1961	--	--		--	--	--	--	4.8	--	27	52	3.9	--	3.6	119	74	52		184	7.1	4
Jan. 2-21.....	--	8.6	0.1	.00	--	13	4.3	3.5	1.6	20	31	4.6	.1	5.2	87	50	34		133	6.6	2
Jan. 22-31, Feb. 1.....	--	--		--	--	--	--	6.4	--	33	36	4.0	--	4.7	114	60	33		158	7.3	3
Feb. 2-18.....	--	--		--	--	--	--	3.7	--	24	36	4.1	--	5.2	108	59	39		150	6.7	2
Feb. 19-Mar.17	--	6.9		.05	.06	11	3.8	3.2	1.4	14	26	3.7	.1	7.3	81	43	32		112	6.6	3
Mar. 18-Apr.7, 9-10.....	--	--		--	--	--	--	2.5	--	16	30	3.5	--	5.5	78	48	35		122	6.5	3
Apr. 11-28....	--	--		--	--	--	--	2.1	--	14	26	2.8	--	4.7	70	42	31		106	6.4	5
Apr. 29-May 6.	--	--		--	--	--	--	4.6	--	17	34	2.9	--	3.2	--	46	32		124	6.8	3
May 7-31.....	--	--		--	--	--	--	3.4	--	24	36	2.4	--	2.4	93	55	35		136	7.1	1
June 1-14.....	--	--		--	--	--	--	3.2	--	26	43	2.0	--	2.8	110	65	44		159	7.0	4
June 15-21....	--	--		--	--	--	--	3.4	--	29	53	2.0	--	3.2	142	77	53		183	7.0	3

SUSQUEHANNA RIVER BASIN--Continued

1-5730. SWATARA CREEK AT HARPER TAVERN, PA.--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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				
June 22-24, 1961	--	--		--	--	--	--	3.0	--	14	32	1.5	--	3.4	94	43	32		112	6.7	3
June 26-July 1 3-4	--	--		--	--	--	--	3.9	--	18	59	2.5	--	3.2	132	74	59		180	7.0	3
July 5-15	--	8.1		0.04	00	22	8.5	3.4	1.5	24	71	3.4	.1	2.3	135	90	70		210	6.8	3
July 16-17	--	--		--	--	--	--	--	--	17	34	--	--	--	--	--	--		123	6.8	--
July 18-24	--	--		--	--	--	--	--	--	32	39	--	--	--	--	--	--		169	7.0	--
Aug. 1, 3-5, 9, 11-19	--	--		--	--	--	--	6.7	--	43	57	4.5	--	4.4	136	90	55		216	6.8	4
Aug. 25-Sept.1	--	--		---	--	--	--	3.2	--	17	30	2.9	--	3.9	78	45	31		118	6.4	3
Sept. 2-7	--	--		--	--	--	--	4.4	--	17	51	3.2	--	3.8	104	65	51		162	6.7	2
Sept. 8	537	--		--	--	--	--	--	--	16	36	--	--	--	--	--	--		118	6.5	--
Sept. 9-16	--	--		--	--	--	--	4.1	--	21	49	3.3	--	3.4	103	66	49		163	6.9	2
Sept. 17-30	--	8.1		.00	.00	20	8.8	3.5	1.5	24	63	3.2	.1	3.0	130	86	66		197	6.2	3
Time-weighted average	--	--		--	--	--	--	4.1	--	24	43	3.4	--	4.1	106	64	44		157	6.6	2

Temperature (°F) of water, water year October 1960 to September 1961

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	60	62	56	56	57	56	59	61	56	52	52	56	57	63	62	59	58	56	57	51	53	49	47	45	49	41	49	54	59	50	55
November	55	50	49	47	48	47	43	38	38	43	41	41	42	41	45	45	47	43	44	44	41	40	44	42	40	38	37	46	42	43	--	43
December	32	33	33	37	39	39	43	--	--	34	32	32	32	32	32	2	33	33	32	32	32	32	32	32	32	34	32	32	32	32	32	33
January	33	33	33	32	32	32	32	33	32	32	32	32	32	34	34	33	32	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32
February	32	32	32	32	32	33	33	32	32	34	33	33	32	34	34	33	33	35	36	33	36	37	37	38	38	40	39	43	--	--	--	35
March	39	38	40	40	48	48	46	47	39	39	41	41	43	40	41	42	36	40	41	37	40	41	39	39	47	49	41	50	51	49	46	43
April	42	41	39	41	44	47	45	--	47	42	41	43	40	41	50	49	45	46	47	48	44	59	62	57	61	60	55	55	56	53	--	48
May	52	50	52	50	52	55	54	56	61	65	62	58	61	69	66	66	62	64	59	62	65	59	56	57	61	66	57	60	60	65	59	59
June	64	69	71	74	66	71	72	73	72	75	72	75	77	77	71	70	76	76	78	79	71	70	72	71	--	70	73	75	75	81	--	73
July	77	--	77	78	75	78	76	72	74	78	80	78	75	81	75	74	71	80	78	73	80	83	80	87	79	83	83	82	74	76	74	78
August	78	72	72	71	71	71	73	75	76	78	75	77	74	74	69	77	77	81	71	73	69	76	--	73	73	69	70	71	74	73	79	74
September	75	77	76	76	79	75	76	71	75	75	73	73	74	75	73	65	67	60	63	65	67	69	77	76	72	72	69	62	59	59	--	71

1-5765. CONESTOGA CREEK AT LANCASTER, PA.

LOCATION.--At raw-water intake for City of 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 1961.
Water temperatures: October 1947 to September 1950, October 1958 to September 1961.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 433 micromhos Oct. 14; minimum, 173 micromhos July 30.
Water temperatures: Maximum, 77°F July 23, 24, 28; minimum, freezing point on several days during December to February.
EXTREMES, 1947-50, 1958-61.--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.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....		12		0.02	0.00	55	17	7.6	2.0	196	29	9.1	0.1	22	266	207	47		417	8.1	3
Nov. 1-10....		13		.00	.07	54	14	6.8	2.2	178	28	9.0	.1	19	239	192	46		389	7.7	3
Nov. 17.....	165	7.9		.01	.00	54	15	9.8	3.2	180	32	12	.1	22	249	196	49		412	7.5	3
Dec. 1-4,7-10		12		.02	.00	49	14	8.1	2.7	162	33	9.3	.1	18	231	180	47		369	7.6	7
Feb. 1-10, 1961.....		13		.00	.00	49	12	7.2	2.0	162	26	9.4	.1	22	227	172	39		367	7.9	5
Mar. 1-10....		11		.02	.02	41	11	5.7	2.5	126	26	8.0	.2	25	196	148	44		313	7.9	5
Apr. 1-10....		9.8		.02	.00	44	14	5.2	2.0	146	27	8.3	.1	16	198	168	48		339	7.8	3
May 1-10.....		8.6		.00	.00	39	13	5.0	2.0	130	27	8.0	.1	14	200	151	45		306	7.9	3
June 1-10....		12		.04	.00	51	13	4.6	2.2	168	27	8.4	.2	15	220	181	43		367	7.8	3
July 1-10....		12		.04	.00	55	14	5.3	2.8	186	29	9.2	.2	15	238	195	42		396	7.8	3
Aug. 1-10....		14		.00	.00	52	16	6.0	2.5	180	28	8.8	.1	23	235	196	48		389	7.9	3
Sept. 1-4, 6-10.....		12		.00	.00	54	16	7.0	3.0	190	29	9.6	.1	21	240	201	45		401	7.9	3

SUSQUEHANNA RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1960 to September 1961

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	58	62	56	58	58	56	56	58	58	57	56	57	58	62	62	60	58	58	52	53	50	--	--	48	48	50	52	51	51	56
November	53	52	51	50	50	50	49	45	44	47	47	45	--	--	48	48	--	--	47	47	45	47	46	46	45	45	44	44	45	50	--	47
December	44	38	36	38	--	--	44	34	35	36	35	36	32	32	32	34	33	32	33	33	33	33	35	34	34	34	34	34	34	35	--	35
January	33	36	32	32	32	33	34	34	37	36	34	35	35	--	39	--	--	39	36	36	35	--	34	35	32	32	32	32	32	37	34	35
February	33	33	34	32	37	35	34	34	36	33	34	35	35	34	34	35	37	36	34	35	36	40	41	41	42	41	47	48	--	--	--	37
March	42	44	46	45	48	54	48	48	46	40	--	40	43	46	43	45	43	40	41	41	42	45	43	42	47	48	52	57	55	54	56	46
April	45	49	47	41	47	48	46	47	49	46	48	46	48	44	52	54	55	46	50	56	55	58	55	61	--	63	58	54	54	56	--	50
May	56	55	57	58	56	54	55	58	62	65	64	58	60	61	60	61	66	64	60	56	60	61	63	64	61	63	61	57	61	60	65	60
June	64	65	68	67	69	69	72	73	72	72	72	73	73	74	74	74	74	74	69	70	70	68	70	70	75	71	69	70	73	--	--	71
July	75	76	76	74	72	69	7	70	70	71	72	75	73	72	73	73	74	74	74	72	74	77	77	76	76	--	77	74	73	73	73	73
August	72	73	71	69	70	69	69	72	75	74	74	73	70	70	69	72	71	70	70	71	67	64	68	68	70	72	74	75	74	73	73	71
September	74	75	73	73	--	75	75	74	74	73	75	73	75	75	72	73	65	65	65	65	66	71	73	74	72	72	71	71	64	60	--	71

POTOMAC RIVER BASIN

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

LOCATION.--At highway bridge on State Highway 38 in Kitzmiller, Garrett County, 0.6 mile upstream from stream gage, and 1.5 miles downstream from Wolfden Run.
DRAINAGE AREA.--225 square miles.

Temperature (°F) of water, water year October 1960 to September 1961

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	
August																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	68	72	72	70	68	71	70	72	72	73	74	76	76	76	76	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	66	66	66	66	64	63	66	67	68	68	67	66	68	69	66	--
September																																
Maximum	75	74	78	76	78	76	74	72	76	76	76	76	77	76	73	62	64	62	62	62	64	66	70	71	71	69	65	62	60	62	--	70
Minimum	68	70	70	72	70	72	72	70	71	70	68	69	70	68	62	58	56	56	60	62	61	60	62	64	64	62	58	57	52	53	--	64

1-5970. CRABTREE CREEK NEAR SWANTON, MD.

LOCATION.--Temperature recorder at gaging station on left bank, 0.9 mile upstream from Middle Fork, 1.0 mile downstream from Springlick Run, and 5.0 miles northeast of Swanton, Garrett County.
DRAINAGE AREA.--16.7 square miles.
RECORDS AVAILABLE.--Water temperatures: February 1952 to December 1955, July 1956 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 75°F July 30, 31; minimum, freezing point on many days during December to February.
EXTREMES, 1952-61.--Water temperatures: Maximum, 82°F Aug. 2, 3, 1955; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961
[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	59	57	58	57	57	57	56	53	54	59	58	59	59	60	57	58	58	57	55	54	50	49	50	48	46	46	47	50	50	49	47	54
Minimum	53	51	54	53	50	53	50	49	53	53	52	53	53	54	54	54	53	51	50	49	46	44	44	43	42	40	45	47	45	43	45	49
November																																
Maximum	50	48	46	46	44	43	42	40	42	43	41	40	41	44	47	48	45	43	42	41	41	41	44	39	42	41	43	46	46	41	--	43
Minimum	46	44	44	42	43	41	38	36	38	41	38	36	36	39	42	43	41	39	39	37	37	37	39	36	38	37	38	42	41	36	--	39
December																																
Maximum	36	35	34	38	37	39	39	37	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	33
Minimum	35	34	34	34	34	34	37	34	32	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	34	35	35	33	32	32	33	34	36	36	36	38	38	37	32	32	32	32	32	32	32	32	32	32	32	32	33
Minimum	32	32	32	32	32	32	34	33	32	32	32	32	32	34	34	34	36	37	32	32	32	32	32	32	32	32	32	32	32	32	32	33
February																																
Maximum	32	32	32	32	32	32	32	32	32	33	33	33	33	33	32	35	37	38	40	42	41	41	44	45	43	41	45	42	--	--	--	36
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34	36	38	40	40	40	41	42	41	40	40	41	--	--	--	35
March																																
Maximum	41	42	46	44	47	50	51	46	42	42	46	49	45	44	46	43	42	40	43	49	44	43	45	46	50	53	53	52	53	52	47	46
Minimum	40	40	39	42	44	45	46	42	40	39	38	42	42	42	42	39	36	37	40	42	40	39	43	44	44	44	48	48	47	46	45	42
April																																
Maximum	45	48	53	48	54	52	49	54	48	51	52	50	49	57	57	54	54	53	55	59	55	59	62	67	63	60	59	57	55	58	--	55
Minimum	45	44	43	46	46	49	47	45	44	43	47	46	46	49	51	52	51	49	51	49	51	55	57	57	58	55	53	53	52	49	--	49
May																																
Maximum	56	58	57	62	57	58	59	63	63	62	59	59	66	69	65	60	59	55	54	54	55	54	55	59	62	57	50	58	56	57	58	59
Minimum	54	52	51	51	50	55	55	57	57	57	57	57	57	58	58	55	51	53	52	50	51	51	49	49	51	50	47	47	51	49	49	53
June																																
Maximum	63	63	56	58	60	61	63	61	60	63	64	64	64	64	60	60	61	60	64	63	60	64	61	64	61	59	63	66	68	67	--	62
Minimum	54	56	53	50	52	56	57	58	59	59	58	58	58	60	54	51	52	54	55	56	59	59	58	56	55	57	58	57	57	60	--	56
July																																
Maximum	70	71	68	61	61	62	64	63	63	63	67	63	67	70	68	66	70	71	67	73	73	72	73	73	74	68	73	71	71	75	75	69
Minimum	60	61	60	58	59	59	59	58	55	54	56	58	60	61	63	63	63	63	62	65	65	65	66	65	65	65	63	65	66	66	66	62
August																																
Maximum	72	68	69	70	68	70	71	70	69	73	71	70	68	66	67	70	70	71	70	66	66	69	68	70	68	71	72	73	72	72	72	70
Minimum	67	67	65	63	64	64	62	62	65	65	66	66	62	58	60	62	63	62	63	64	62	60	63	64	65	65	63	63	65	64	62	63
September																																
Maximum	70	72	73	72	72	72	70	71	74	73	72	73	72	72	68	61	61	60	59	59	62	64	65	67	67	65	62	58	57	57	--	67
Minimum	64	65	66	67	66	67	68	67	68	67	64	66	66	64	59	56	54	54	58	58	58	58	58	59	60	58	54	54	51	49	--	61

POTOMAC RIVER BASIN--Continued

1-5995. NEW CREEK NEAR KEYSER, W. VA.

LOCATION.--At gaging station at highway bridge, 1.5 miles south of Keyser, Mineral County.
DRAINAGE AREA.--45.7 square miles.
RECORDS AVAILABLE.--Sediment records: October 1959 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge and particle size, 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)	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	
Feb. 19, 1961.....	0800		41	514	175	243												
Feb. 19.....	1230		43	884	698	1670	6	9	25	39	51	72	80	90	96			BSWC
Feb. 20.....	0950		39	424	31	36												
Feb. 21.....	1030		40	250	11	7.4												

1-6000. NORTH BRANCH POTOMAC RIVER AT PINTO, MD.

LOCATION.--At highway bridge, 0.5 mile east of U.S. Highway 220, 250 feet downstream from gaging station at Pinto, Allegany County, and 2.8 miles downstream from Mill Run.
DRAINAGE AREA.--596 square miles.
RECORDS AVAILABLE.--Sediment records: October 1959 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of 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)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Percent finer than size indicated, in millimeters										Method of analysis
Feb. 18, 1961.....	1800			4730	2010	25700											
Feb. 19.....	1615			10600	976	28000											
Feb. 20.....	1220			7340	196	3890											
Feb. 21.....	1125			5240	127	1800											

1-6010. WILLS CREEK BELOW HYNDMAN, PA.

LOCATION.--At county road bridge, 150 feet downstream from gaging station, 0.5 mile south of Hyndman, Bedford County, and 0.4 mile downstream from Little Wills Creek.
DRAINAGE AREA.--146 square miles.
RECORDS AVAILABLE.--Sediment records: May 1960 to September 1961.
REMARKS.--Sediment discharge measurements usually made during periods of high water discharge.

Periodic determinations of suspended-sediment discharge and particle size, 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)	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	
May 9, 1960	1410		50	2210	52	311												
May 28	1150		57	294	13	10												
Feb. 18, 1961	1615		33	1350	318	1160												
Feb. 19	1500		40	3000	711	5760	7	15	27	39	51	73	82	92	97			BSWC
Feb. 20	1110		39	1630	49	216												
Feb. 21	1220		39	750	11	22												

1-6045. PATTERSON CREEK NEAR HEADSVILLE, W. VA.

LOCATION.--At gaging station, 1 mile downstream from bridge on State Highway 46, 4 miles northeast of Headsville, Mineral County.
DRAINAGE AREA.--219 square miles.
RECORDS AVAILABLE.--Sediment records: October 1959 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high water discharge.

Periodic determinations of suspended-sediment discharge and particle size, 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)	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	
Feb. 19, 1961	1715		40	4130	1280	14300	8	23	42	60	75	90	94	98	99			BSWC
Feb. 20	1320		41	1740	130	611												
Feb. 21	1325		40	895	54	131												

POTOMAC RIVER BASIN--Continued

1-6060. NORTH FORK OF SOUTH BRANCH POTOMAC RIVER AT CABINS, W. VA.

LOCATION.--At highway bridge, 380 feet downstream from gaging station at Cabins, Grant County, 16 miles west of Petersburg, and 1.2 miles downstream from Jordan Run.
DRAINAGE AREA.--314 square miles.
RECORDS AVAILABLE.--Sediment records: March 1960 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge and particle size, 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)	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	
Feb. 19, 1961.....	1100		45	6000	183	2970	4	12	24	39	52	64	71	88	97			BSWC
Feb. 20.....	0845		40	4350	60	705												
Feb. 21.....	0925		41	1870	14	71												

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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 82°F July 24, Sept. 9-12; minimum, freezing point several days during December and January.
EXTREMES, 1947-53, 1954-61.--Water temperatures: Maximum, 84°F June 27, July 23, 1952, Aug. 3, 1955; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1960 to September 1961

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	67	66	66	65	64	62	62	61	60	62	63	64	64	65	65	64	62	60	56	55	56	54	52	49	50	50	51	51	52	60
November.....	53	54	51	48	49	46	45	43	43	43	42	41	41	43	45	48	49	48	46	45	46	46	45	45	44	43	44	45	44	43	--	46
December.....	40	38	36	38	40	44	45	41	38	35	34	32	32	32	33	32	32	33	32	32	33	32	32	32	33	33	33	34	34	34	35	35
January.....	35	37	38	34	34	35	36	38	34	34	34	34	35	36	38	35	36	35	35	33	32	32	33	32	32	32	32	32	33	33	33	34
February.....	33	33	33	34	34	33	33	33	33	33	34	33	33	34	35	38	40	41	43	42	43	44	45	46	46	46	45	44	--	--	--	38
March.....	44	44	45	46	50	51	54	50	45	40	41	46	48	45	45	44	42	40	40	44	44	41	42	45	46	47	50	53	51	51	48	46
April.....	46	43	45	44	46	48	46	46	45	43	44	44	41	42	47	50	46	45	46	47	49	51	55	59	60	59	57	54	50	50	--	48
May.....	50	50	50	53	54	54	55	55	59	57	55	56	59	63	65	64	61	59	59	59	59	60	59	59	61	61	56	58	60	60	61	58
June.....	64	64	65	65	66	69	71	72	66	66	69	71	70	68	65	67	69	67	67	68	66	68	67	67	66	66	67	69	70	70	--	68
July.....	72	75	74	75	70	69	70	72	71	69	70	70	73	74	76	75	75	74	74	75	76	78	79	82	78	75	76	76	76	77	78	74
August.....	78	77	76	77	76	75	74	75	75	76	75	76	76	74	75	76	76	76	75	73	72	72	73	74	75	75	75	76	77	78	78	75
September.....	79	79	80	81	81	81	80	81	82	82	82	82	81	81	81	75	68	67	66	65	66	66	69	72	72	73	72	70	68	68	--	75

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

Periodic determinations of suspended sediment discharge and particle size, 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)	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	
Feb. 19, 1961.....	1000		46	9470	229	5860	7	19	30	46	59	74	78	91	98			BSWC
Feb. 20.....	0740		41	7260	93	1820												
Feb. 21.....	0850		42	3560	19	183												

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

LOCATION.--At gaging station on left bank at highway bridge, 2 miles east of Springfield, Hampshire County, and 13 miles upstream from confluence with North Branch.
DRAINAGE AREA.--1,471 square miles.
HECORDS AVAILABLE.--Sediment records: October 1959 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

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)	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	
Feb. 19, 1961.....	1930		41	18900	701	35800												
Feb. 20.....	1445		43	14500	222	8700												
Feb. 21.....	1100		42	6880	78	1450												

POTOMAC RIVER BASIN--Continued

1-6100. POTOMAC RIVER AT PAW PAW, W. VA.

LOCATION.--At bridge on Maryland State Highway 51 at Paw Paw, Morgan County, 250 feet downstream from gaging station, and 3.3 miles downstream from Little Cacapon River.
DRAINAGE AREA.--3,109 square miles.
RECORDS AVAILABLE.--Sediment records: March 1959 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

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)	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. 19, 1961.....	2045		39	37300	723	72900											
Feb. 20.....	1730		41	39300	225	23900											
Feb. 21.....	1500		40	18600	92	4620											

1-6115. CACAPON RIVER NEAR GREAT CACAPON, W. VA.

LOCATION.--At gaging station on left bank at Rock Ford, 3 miles southwest of Great Cacapon, Morgan County, and 6.5 miles upstream from mouth.
DRAINAGE AREA.--677 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1946 to September 1954, October 1958 to September 1961.
Sediment records: October 1959 to February 1961, periodic (discontinued).
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F July 26-29; minimum, 33°F on many days during December to February.
EXTREMES, 1946-54, 1958-61 .--Water temperatures: Maximum, 96°F July 23, 1952; minimum, freezing point many days during most years.
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Temperature (°F) of water, water year October 1960 to September 1961

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	--	--	64	64	64	64	62	62	--	60	60	60	62	62	62	--	62	62	62	62	60	57	--	56	54	50	50	50	50	--	50	59
November	52	52	52	52	52	--	50	48	46	46	44	44	--	44	44	44	46	46	46	--	46	44	44	--	44	44	--	44	44	44	--	46
December	42	42	42	--	40	40	40	40	38	38	--	36	33	33	33	33	33	--	33	33	33	33	33	33	--	33	33	33	33	33	33	36
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
February	33	33	33	33	--	33	33	33	33	33	--	33	33	33	33	33	33	33	--	33	33	33	33	36	40	--	42	42	--	--	--	34
March	42	42	42	44	--	46	46	46	46	46	46	46	44	44	44	44	44	44	--	44	44	43	40	40	40	--	40	40	44	46	46	44
April	--	--	46	46	46	46	46	46	--	44	44	44	42	42	42	--	44	44	46	46	46	46	--	50	53	55	56	56	56	--	--	--
May	58	58	58	58	56	56	--	56	58	58	58	60	58	--	60	60	60	60	60	60	--	60	60	60	60	61	61	--	61	--	61	59
June	61	62	64	--	64	66	68	72	72	72	--	74	74	75	75	72	72	--	72	72	72	70	70	70	--	70	70	71	71	72	--	70
July	74	--	76	--	74	74	73	72	--	72	72	72	72	73	74	--	76	76	76	76	77	77	--	78	78	80	80	80	80	--	--	--
August	--	--	--	--	--	--	78	78	78	78	78	78	--	76	76	75	74	74	74	--	74	74	74	74	74	74	--	74	74	74	76	--
September	76	76	--	--	76	78	78	76	78	--	78	78	78	78	76	74	--	74	70	70	70	70	70	--	70	70	70	70	70	70	--	74

Periodic determinations of suspended sediment discharge, October 1960 to February 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)	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. 19, 1961	2245		34	10600	475	13600												
Feb. 20	1615		40	9300	260	6540												
Feb. 21	1625		40	3520	69	656												

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.
RECORDS AVAILABLE.--October 1946 to September 1954, October 1958 to September 1961.
Sediment records: October 1959 to September 1960, periodic.
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F July 26-29; minimum, 33°F Dec. 13 to Feb. 23.
EXTREMES, 1946-54, 1958-61.--Water temperatures: Maximum, 96°F July 23, 1952; minimum, freezing point on many days during winter months.
REMARKS.--Records of discharge are given for Cacapon River near Great Cacapon.

Temperature (°F) of water, water year October 1960 to September 1961

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	--	--	64	64	64	64	62	62	--	60	60	60	60	62	62	--	62	62	62	62	60	57	--	56	54	50	50	50	50	--	50	59
November	52	52	52	52	52	--	50	48	44	44	44	44	--	44	44	44	46	46	46	--	46	44	44	--	44	44	--	44	44	44	--	46
December	42	42	42	--	40	40	40	40	38	38	--	36	33	33	33	33	33	--	33	33	33	33	33	33	--	33	33	33	33	33	33	36
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
February	33	33	33	33	--	33	33	33	33	33	33	--	33	33	33	33	33	33	--	33	33	33	33	36	40	--	42	42	--	--	--	34
March	42	42	42	44	--	46	46	46	46	46	46	46	44	44	44	44	44	44	--	44	44	43	40	40	40	--	40	40	44	46	46	44
April	--	--	46	46	46	46	46	46	--	44	44	44	42	42	42	--	44	44	46	46	46	46	--	50	53	55	56	56	56	--	--	47
May	58	58	58	58	56	56	--	56	58	58	58	58	58	--	60	60	60	60	60	60	--	60	60	60	60	61	61	--	61	--	61	59
June	61	62	64	--	64	66	68	72	72	72	--	74	74	75	75	72	72	--	72	72	72	70	70	70	--	70	70	71	71	72	--	70
July	74	--	76	--	74	74	73	72	--	72	72	72	72	73	74	--	76	76	76	76	77	77	--	78	78	80	80	80	80	--	--	--
August	--	--	--	--	--	--	78	78	78	78	78	78	--	76	76	75	74	74	74	--	74	74	74	74	74	74	--	74	74	74	76	--
September	76	76	--	--	76	78	78	78	78	--	78	78	78	78	76	74	--	74	70	70	70	70	70	--	70	70	70	70	70	70	--	74

POTOMAC RIVER BASIN--Continued

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 (formerly called Great or Big Tonoloway Creek).
DRAINAGE AREA.--4,073 square miles.
RECORDS AVAILABLE.--Water temperatures: July 1952 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 89°F July 23-25; minimum, freezing point Dec. 11 to Feb. 19.
EXTREMES, 1952-61.--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.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 9, 1961	2,850	4.6	0.65	0.50	0.15	27	5.8	7.0	2.2	60	43	11	0.1	2.4	139	91	42		234	7.2	0
Feb. 20.....	56,000	3.9	.0	.00	.00	12	3.9	1.8	2.8	26	26	2.0	.0	4.0	71	46	25		112	5.9	0
Aug. 21.....	573	3.8	.2	.10	.00	34	7.3	8.0	2.4	80	51	8.0	.1	.7	157	115	49		269	7.4	--

POTOMAC RIVER BASIN--Continued

1-6130. POTOMAC RIVER AT HANCOCK, MD.--Continued

Temperature (°F) of water, water year October 1960 to September 1961
[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	69	65	68	64	64	64	66	62	60	66	66	67	69	69	70	69	69	67	63	62	59	58	55	54	51	49	50	51	53	53	52	61
Minimum	66	63	63	62	61	61	59	59	59	60	61	62	63	64	65	66	65	62	61	59	56	54	54	51	48	47	48	49	48	48	51	58
November																																
Maximum	56	53	52	50	49	49	47	45	43	45	45	45	43	45	48	47	49	48	47	47	47	45	47	44	43	44	45	46	47	46	--	47
Minimum	51	51	48	47	49	47	45	42	43	43	42	41	41	43	44	47	46	45	45	44	43	43	44	42	42	41	41	44	46	40	--	44
December																																
Maximum	40	37	38	37	40	39	41	40	37	34	34	32	33	33	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	43
Minimum	37	35	35	34	36	37	39	37	34	33	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	34	34	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	34	38	39	39	40	41	43	43	43	42	--	--	--	35
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34	38	39	39	40	41	43	42	42	--	--	--	34
March																																
Maximum	42	42	42	43	45	48	51	51	49	45	42	42	43	44	45	45	45	43	42	42	42	42	40	41	43	44	47	50	50	50	50	45
Minimum	42	41	41	42	43	45	48	49	45	42	40	41	42	43	44	45	42	42	41	40	42	40	39	39	41	43	44	47	50	50	47	43
April																																
Maximum	47	44	43	43	45	45	45	47	47	46	44	43	43	41	46	49	49	47	45	48	48	50	54	58	59	59	59	58	55	52	--	49
Minimum	44	43	41	43	43	45	45	45	46	44	43	43	41	41	41	46	47	45	45	45	48	48	50	54	58	59	56	55	53	52	--	47
May																																
Maximum	52	54	54	55	55	55	55	56	59	62	62	61	61	64	66	67	67	66	63	62	60	60	58	62	64	64	62	61	61	63	64	60
Minimum	52	52	54	53	54	55	55	55	56	59	61	60	60	61	64	66	66	63	62	60	59	58	58	58	62	62	59	57	60	60	61	59
June																																
Maximum	68	72	71	71	71	71	75	75	75	74	75	76	78	78	78	73	71	72	73	75	75	74	73	73	74	73	73	75	79	82	--	74
Minimum	64	67	69	68	69	70	71	73	72	71	73	73	75	77	73	70	69	70	70	72	72	71	73	71	71	71	69	71	73	77	--	71
July																																
Maximum	84	86	85	82	79	76	77	79	77	78	79	77	81	84	85	82	84	85	83	85	86	87	89	89	89	85	85	85	83	87	87	83
Minimum	79	81	82	79	76	72	74	75	75	73	74	76	75	76	80	81	79	79	79	80	81	81	82	84	82	82	80	80	81	79	82	79
August																																
Maximum	87	83	84	84	82	83	83	83	81	84	84	82	80	79	76	78	78	79	81	78	75	77	77	79	81	84	85	85	86	86	85	82
Minimum	81	80	78	78	81	79	79	78	79	79	80	79	78	76	73	74	76	75	75	75	72	71	74	75	77	78	78	78	79	79	78	77
September																																
Maximum	85	83	83	83	85	86	83	82	81	83	85	86	87	86	82	75	74	72	71	70	74	77	80	80	80	78	74	72	70	69	--	79
Minimum	79	79	79	79	79	80	79	79	79	79	79	80	81	80	75	70	68	66	69	69	69	70	72	74	76	73	69	68	65	63	--	74

1-6145. CONOCOCHEAGUE CREEK AT FAIRVIEW, MD.

LOCATION.--At bridge on State Highway 494, 0.7 mile downstream from gaging station at Fairview, Washington County.
DRAINAGE AREA.--494 square miles.
RECORDS AVAILABLE.--Chemical analyses: April 1948 to September 1950.
Sediment records: April 1948 to September 1950, March 1959 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements in 1960-61 usually made during periods of high-water discharge.

Chemical analyses, in parts per million, February 1961

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. 20, 1961....	4,640	7.9	0.01	37	4.7	2.6	2.2	102	20	5.0	0.2	13	152	112	29	239	7.2	9

Periodic determinations of suspended sediment discharge and particle size, October 1960 to February 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)	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	
Feb. 19, 1961.....	1605		40	2580	468	3260	--	--	--	--	--	--	--	--	--			
Feb. 20.....	0930		36	4640	528	6620	6	13	21	40	71	95	96	98	99			BSN
Feb. 20.....	0930		36	4640	528	6620	12	19	42	69	89	94	95	98	99			BSWC
Feb. 20.....	1535		37	4380	328	3880	--	--	--	--	--	--	--	--	--			
Feb. 21.....	1555		39	2580	115	802	--	--	--	--	--	--	--	--	--			

POTOMAC RIVER BASIN--Continued

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

LOCATION.--At gaging station on right bank 300 feet upstream from Evans Run, 2.3 miles upstream from Tuscarora Creek, and 3 miles southeast of Martinsburg, Berkeley County.
DRAINAGE AREA.--272 square miles.
RECORDS AVAILABLE.--Sediment records: March 1959 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge and particle size, 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)	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	
Feb. 19, 1961.....	0720		35	2060	1300	7240	4	8	15	32	58	87	91	96	99			BSN
Feb. 19.....	0720		35	2060	1300	7240	9	22	43	61	85	95	97	98	100			BSWC
Feb. 19.....	2015		38	2160	459	2680	--	--	--	--	--	--	--	--	--			
Feb. 20.....	0740		34	3030	524	4290	--	--	--	--	--	--	--	--	--			
Feb. 20.....	1415		37	2530	260	1780	--	--	--	--	--	--	--	--	--			
Feb. 21.....	1655		40	763	99	204	--	--	--	--	--	--	--	--	--			

1-6195. ANTIETAM CREEK NEAR SHARPSBURG, MD.

LOCATION.--At Burnside bridge, 400 feet upstream from gaging station, and 1 mile southeast of Sharpsburg, Washington County.
DRAINAGE AREA.--281 square miles.
RECORDS AVAILABLE.--Sediment records: March 1959 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge and particle size, 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)	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	
Feb. 19, 1961.....	1450		45	935	681	1720	2	10	19	43	69	86	87	97	100			BSWC
Feb. 20.....	0815		40	1130	759	2320												
Feb. 20.....	1450		42	1060	589	1690												
Feb. 21.....	1500		43	700	126	238												

1-6310. SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA.

LOCATION.--At gaging station on left bank at downstream side of bridge on State Highway 619, 1.0 mile west of Front Royal, Warren County, and 3.5 miles upstream from confluence with North Fork.
DRAINAGE AREA.--1,638 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1948 to September 1949, October 1952 to September 1956.
Water temperatures: October 1952 to September 1956.
Sediment records: April 1953 to September 1956 (daily), January 1960 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements in 1960-61 usually made during periods of high-water discharge.

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)	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	
Feb. 18, 1961.....	1550		37	3380	259	2370												
Feb. 19.....	1020		42	7060	315	6010												
Feb. 19.....	2230		42	10200	271	7470												
Feb. 20.....	1250		41	10600	244	6990												
Feb. 21.....	1935		41	6000	128	2080												

1-6340. NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA.

LOCATION.--At gaging station on right bank at downstream side of bridge on State Highway 55, 1.5 miles southeast of Strasburg, Shenandoah County, 2.2 miles upstream from Cedar Creek, and 10 miles upstream from confluence with South Fork.
DRAINAGE AREA.--772 square miles.
RECORDS AVAILABLE.--Chemical analyses: April 1929 to March 1930, October 1948 to September 1949, October 1951 to September 1952, October 1955 to September 1956.
Water temperatures: October 1948 to September 1949, October 1955 to September 1956.
Sediment records: October 1955 to September 1956 (daily), January 1960 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements in 1960-61 usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge and particle size, 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)	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	
Feb. 18, 1961.....	1635		35	2420	519	3390												
Feb. 19.....	0940		40	5140	553	7680	5	14	25	41	64	76	83	95	97			BSWC
Feb. 19.....	2150		39	6810	500	9200												
Feb. 20.....	1215		41	6770	333	6090												
Feb. 21.....	1900		41	2690	63	458												

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 1961.
Sediment records: March 1959 to September 1960 (periodic), October 1960 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 85°F Sept. 5; minimum, freezing point on many days during December, January, and February.
Sediment concentrations: Maximum daily, 1,180 ppm Feb. 20; minimum daily, 2 ppm Dec. 1-12, Jan. 10, and Sept. 14-18.
Sediment loads: Maximum daily, 276,000 tons Feb. 20; minimum daily, 8 tons Dec. 1-12.
REMARKS.--Flow affected by ice Dec. 12 to Feb. 19.

Temperature (°F) of water, water year October 1960 to September 1961
[Once-daily measurements at approximately 9:00 a.m.]

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	61	64	63	60	64	59	59	59	59	62	62	62	64	62	65	64	62	61	62	55	53	53	50	45	41	51	52	52	52	53	58
November	59	59	51	49	50	46	40	43	43	48	43	42	44	45	48	49	49	46	46	45	45	44	47	41	43	44	44	45	49	40	--	46
December	37	36	39	37	41	40	43	41	33	36	36	32	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
January	--	--	--	--	--	--	--	--	33	32	32	34	32	33	37	33	36	36	35	--	--	--	--	--	--	--	--	--	--	--	--	--
February	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	34	35	38	40	41	41	45	44	46	45	--	--	--	--
March	43	45	46	48	47	50	52	49	50	--	42	46	44	45	48	46	41	44	43	45	45	42	43	41	42	47	49	52	52	53	49	46
April	49	47	46	46	49	49	49	49	50	46	48	46	44	45	47	49	52	49	48	49	49	54	56	59	63	62	60	59	57	56	--	51
May	57	55	56	56	57	56	56	59	62	61	61	62	63	64	64	68	66	66	65	64	63	62	60	60	62	66	58	59	62	60	60	61
June	64	71	70	69	69	72	75	76	74	75	75	77	79	77	72	71	71	71	71	74	73	72	72	72	73	73	71	72	74	76	--	72
July	78	80	78	76	75	73	75	76	74	72	75	75	76	78	81	80	80	78	78	79	80	82	83	84	83	83	80	81	79	81	83	78
August	82	79	79	78	79	77	77	78	80	80	79	80	78	74	75	78	77	76	75	74	71	72	75	76	79	79	79	79	82	79	78	78
September	80	83	82	80	85	82	82	78	79	79	79	79	82	79	75	68	69	66	67	69	70	71	74	76	76	74	69	69	70	62	--	75

POTOMAC RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961

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..	2080	C 9		51	1550	126	A	550	1510	C 2		8
2..	2060	C 9		50	1830	C 21		104	1530	C 2		8
3..	2030	C 9		49	1870	C 21		106	1550	C 2		8
4..	1990	C 9		48	1920	C 21		109	1510	C 2		8
5..	1940	C 9		47	1900	C 21		108	1530	C 2		8
6..	1990	C 7		38	1940	C 21		110	1530	C 2		8
7..	1790	C 7		34	1990	C 21		113	1490	C 2		8
8..	1680	C 7		32	2010	C 21		114	1470	C 2		8
9..	1620	C 7		31	1900	C 21		108	1450	C 2		8
10..	1680	C 7		32	1850	C 22		110	1400	C 2		8
11..	1700	C 7		32	1900	C 22		113	1400	C 2		8
12..	1680	C 7		32	1900	C 22		113	1350	C 2		7
13..	1640	C 7		31	1870	C 22		111	1350	2	E	7
14..	1700	C 7		32	1900	C 22		113	1300	2	E	7
15..	1660	C 7		31	2270	C 22		135	1350	2	E	7
16..	1700	C 8		37	2170	C 22		129	1500	2	E	8
17..	1550	C 8		33	2080	C 22		124	1550	2	E	8
18..	1530	C 8		33	1870	C 26		131	1500	2	E	8
19..	1590	C 8		34	1920	C 26		135	1550	2	E	8
20..	1830	8		40	1810	C 26		127	1500	2	E	8
21..	1870	C 22		111	1740	C 26		122	1500	2	E	8
22..	1960	C 22		116	1700	C 26		119	1450	2	E	8
23..	1810	C 22		108	1640	C 26		115	1400	2	E	8
24..	1920	C 22		114	1590	C 26		112	1350	2	E	7
25..	2170	C 22		129	1570	C 26		110	1300	2	E	7
26..	1920	C 22		114	1530	21	A	85	1250	2	E	7
27..	1790	C 22		106	1510	33	A	140	1300	2	E	7
28..	1720	C 22		102	1510	98	A	400	1450	2	E	8
29..	1620	27	A	120	1550	27	A	110	1600	2	E	9
30..	1590	42	A	180	1620	6	A	26	1800	2	E	10
31..	1550	77	A	320	--	--		--	2300	2	E	12
Total	55360	--		2267	54410	--		4102	46020	--		247

Day	JANUARY				FEBRUARY				MARCH			
1..	2400	2	E	13	2500	7	E	48	38700	88	S	9300
2..	3000	2	E	16	2500	7	E	48	29600	54	S	4350
3..	3400	2	E	18	2500	7	E	48	23600	C 37		2360
4..	3800	2	E	21	2600	7	E	50	19900	C 37		1990
5..	3700	2	E	20	2700	7	E	50	19300	C 37		1930
6..	3600	2	E	19	2800	7	E	50	24300	C 65		4260
7..	3600	2	E	19	3000	7	E	55	27300	C 65		4790
8..	3500	2	E	19	3500	7	E	65	27900	C 65		4900
9..	3000	4		32	4000	7	E	75	26500	C 65		4650
10..	3500	2		19	4000	7	E	75	32400	C 66		5770
11..	4000	8		86	4000	8	E	85	30500	C 66		5440
12..	4200	4		45	4000	8	E	85	24200	C 22		1440
13..	3800	C 10		103	4200	8	E	90	20100	C 22		1190
14..	3500	C 10		94	4500	8	E	95	18000	C 22		1070
15..	3300	5		45	5000	12	E	160	16500	C 22		980
16..	3700	7		70	6000	20	E	320	15400	C 22		915
17..	4400	C 11		131	9500	30	E	750	13900	C 22		826
18..	5200	C 11		154	18000	65	K	3300	12500	C 22		742
19..	6500	15		264	40000	255	J	31000	12300	C 22		731
20..	6500	15	E	260	85900	1180	S	276000	13800	C 22		820
21..	5200	12	E	170	88800	636	S	160000	16800	C 41		1860
22..	4500	9	E	110	49600	197	S	27400	18100	C 41		2000
23..	4000	8	E	85	40400	102	S	11200	21500	C 41		2380
24..	3600	8	E	80	48000	89	J	12000	27100	C 41		3000
25..	3300	8	E	70	61300	156	J	26000	33500	C 41		3710
26..	3100	7	E	60	73400	232	S	48700	42200	C 94		10700
27..	2900	7	E	55	87500	518	S	122000	39000	C 94		9900
28..	2800	7	E	50	56400	242	S	38900	31100	C 39		3270
29..	2700	7	E	50	--	--		--	26900	C 39		2830
30..	2600	7	E	50	--	--		--	23300	C 41		2580
31..	2600	7	E	50	--	--		--	20300	C 41		2250
Total	115900	--		2278	716600	--		758649	746500	--		102934

E Estimated.
S Computed by subdividing day.
A Computed from partly estimated-concentration graph.
C Composite period.
J Computed from partly estimated-concentration graph and subdividing day.
K Computed from estimated-concentration graph and subdividing day.

POTOMAC RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961--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	19100	C 24		1240	16200	C 19		831	5830	7		110
2	22100	C 24		1430	15100	C 19		775	5680	C 9		138
3	24800	C 24		1610	14500	C 19		744	5610	C 9		136
4	21700	C 24		1410	14100	C 19		723	5760	C 9		140
5	18900	C 21		1070	13200	C 19		677	6860	C 9		167
6	16700	C 21		947	12100	C 19		621	7090	C 9		172
7	14800	C 21		839	11400	C 19		585	6520	C 9		158
8	13200	C 21		748	12000	8		259	6120	C 9		149
9	11900	C 21		675	15700	16		678	6520	C 9		158
10	14600	C 21		828	17100	22		1020	6820	C 9		166
11	22700	C 44		2700	16200	21		919	9400	24		609
12	30000	C 44		3560	16400	17		753	10300	23		640
13	37500	54	S	5620	21100	52	S	3010	9740	21		552
14	69200	210	S	40900	25700	65		4510	8080	C 13		284
15	62900	148	S	25600	27400	62	S	4640	7520	C 13		264
16	49900	98	S	13300	22200	43	S	2660	7720	C 13		271
17	54200	113	S	17400	18400	28		1390	7440	C 13		261
18	60600	243	S	40500	16400	23		1020	6590	C 13		231
19	43700	96	S	11600	14500	18		705	5650	C 13		198
20	31600	44		3750	13000	C 12		421	5020	C 13		176
21	24100	C 35		2280	12300	C 12		399	4520	C 13		159
22	20200	C 35		1910	11300	C 12		366	4840	C 11		144
23	18400	C 35		1740	10200	C 12		330	6190	C 11		184
24	17900	C 35		1690	9480	C 12		307	6300	C 11		187
25	16700	C 35		1580	8720	C 12		283	6220	C 11		185
26	16500	C 35		1560	8200	C 11		244	5540	C 11		165
27	21500	C 35		2030	7640	C 11		227	4980	C 11		148
28	22800	C 35		2150	7090	C 11		211	4600	C 11		137
29	19600	C 35		1850	6780	C 11		201	4120	C 11		122
30	17500	C 35		1650	6480	C 11		192	3820	C 11		113
31	--	--		--	6040	C 11		179	--	--		--
Total	835300	--		194167	426930	--		29880	191400	--		6524
	JULY				AUGUST				SEPTEMBER			
1	3760	C 10		102	2390	C 5		32	1870	C 7		35
2	3380	C 10		91	2270	C 5		31	1960	C 7		37
3	3170	C 10		86	2240	C 5		30	1870	C 7		35
4	3000	C 10		81	2290	C 5		31	1720	C 7		33
5	2840	C 10		77	2010	C 5		27	1720	C 7		33
6	3030	C 10		82	2390	C 5		32	1990	C 7		38
7	3060	C 10		83	2870	C 5		39	2190	C 7		41
8	3170	C 10		86	3380	11		100	2640	C 7		50
9	3300	C 8		71	2840	9		69	3500	7		66
10	3200	C 8		69	2640	C 6		43	2980	C 4		32
11	3290	C 8		71	2440	C 6		40	3000	C 4		32
12	3000	C 8		65	2440	C 6		40	2840	C 4		31
13	2710	C 8		59	2340	C 6		38	2610	C 4		28
14	2710	C 8		59	1990	C 6		32	2360	C 2		13
15	2980	C 8		64	3030	8		66	1960	C 2		11
16	2710	C 8		59	3060	C 3		25	1790	C 2		10
17	3200	18	B	160	2580	C 3		21	1680	C 2		9
18	3140	11	B	93	2270	C 3		18	1450	C 2		8
19	3030	C 7		57	2120	C 3		17	1350	C 3		11
20	2870	C 7		54	2100	C 3		17	1310	C 3		11
21	2580	C 7		49	1870	C 3		15	1430	C 3		12
22	2510	C 7		47	2080	C 3		17	1570	C 3		13
23	2480	C 7		47	1740	C 3		14	1590	C 3		13
24	2310	C 7		44	1450	C 3		12	1850	C 3		15
25	2690	C 7		51	1530	C 3		12	1920	C 3		16
26	2710	C 7		51	1900	C 3		15	1850	C 3		15
27	2440	C 6		40	1920	C 3		16	1900	C 3		15
28	2310	C 6		37	1850	C 3		15	1850	C 3		15
29	2410	C 6		39	2580	C 3		21	1660	C 3		13
30	2360	C 6		38	2410	C 3		20	1530	C 3		12
31	2540	C 6		41	2080	C 3		17	--	--		--
Total	88890	--		2053	71100	--		922	59940	--		703

Total discharge for year (cfs-days)..... 3408350
Total load for year (tons)..... 1104726

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

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

Periodic determinations of suspended-sediment and particle-size analyses, 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)	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	
Feb. 21, 1961.....	0440		35	102000	656		8	16	35	56	71	87	90	96	99	--		BSWC
Feb. 27.....	1155		48	91700	386		10	15	26	37	47	79	83	91	98	--		BSWC
Mar. 26.....	1535		48	42500	91		16	28	45	60	71	90	93	97	99	100		BSWC
Apr. 14.....	1835		48	80400	257		10	19	30	40	59	73	81	90	96	100		BSWC

1-6390. MONOCACY RIVER AT BRIDGEPORT, MD.

LOCATION.--At bridge on State Highway 97, 60 feet upstream from gaging station at Bridgeport, Carroll County, and 3.4 miles northwest of Taneytown.
DRAINAGE AREA.--173 square miles.
RECORDS AVAILABLE.--Chemical analyses: April 1948 to June 1951.
Sediment records: April 1948 to June 1951, March 1960 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements in 1960-61 usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge, October 1960 to February 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)	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. 1, 1961.....	1235		34	45	2	0.2												
Feb. 18.....	1355		34	1740	50	235												
Feb. 19.....	1635		34	4200	461	5230												
Feb. 20.....	1315		33	4340	202	2370												
Feb. 21.....	1700		33	1870	81	409												

POTOMAC RIVER BASIN--Continued

1-6395. BIG PIPE CREEK AT BRUCEVILLE, MD.

LOCATION.--At bridge on State Highway 194, 300 feet upstream from gaging station at Bruceville, Carroll County, and 3.5 miles upstream from Detour and confluence with Little Pipe Creek.
DRAINAGE AREA.--102 square miles.
RECORDS AVAILABLE.--Sediment records: March 1960 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Chemical analyses, in parts per million, June 1961

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				
June 19, 1961	60	7.5		0.14	0.01	1.7	3.8			51	7.2	5.5	0.2	8.6	84	58	16		135	6.6	6

Periodic determinations of suspended-sediment discharge and particle size, October 1960 to February 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)	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	
Feb. 18, 1961.....	1430		33	558	140	211												
Feb. 19.....	1600		34	2200	1160	6900	5	16	29	50	68	88	91	97	99			BSWC
Feb. 20.....	1235		35	686	450	834												
Feb. 21.....	1635		38	395	95	101												

1-6410. HUNTING CREEK AT JIMTOWN, MD.

LOCATION.--At highway bridge, about 2.2 miles southeast of Thurmont, 0.4 mile southwest of Jimtown, Frederick County, and 2.2 miles upstream from Little Hunting Creek.
DRAINAGE AREA.--18.4 square miles.
RECORDS AVAILABLE.--*Sediment records:* January to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Chemical analyses, in parts per million, June 1961

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				
June 19, 1961	6.8	9.9		0.15	0.00	10	2.7			36	6.0	4.5	0.1	4.3	63	36	7		96	6.4	7

Periodic determinations of suspended-sediment discharge and particle size, January 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)	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. 1, 1961	1205		33	20	149	8.1												
Feb. 18	1310		36	43	60	7.0												
Feb. 19	1800		35	241	327	213	3	12	25	34	59	70	73	86	93			BSWC
Feb. 20	1400		40	79	18	3.8												
Feb. 21	1730		39	48	7	0.9												
Aug. 26	1010		71	7.0	3	.1						---						

POTOMAC RIVER BASIN--Continued

1-6425. LINGANORE CREEK NEAR FREDERICK, MD.

LOCATION.--Temperature recorder at gaging station on left bank, 2.2 miles upstream from mouth, and 4 miles east of Frederick, Frederick County.
DRAINAGE AREA.--82.3 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1951 to September 1961.
Sediment records: March 1960 to February 1961, periodic (discontinued).
EXTREMES, 1960-61.--Water temperatures: Maximum, 86°F July 24; minimum, freezing point on many days in December, January, and February.
EXTREMES, 1951-61.--Water temperatures: Maximum, 90°F June 30, 1959; minimum, freezing point on many days during winter months.
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Chemical analyses, in parts per million, June 1961

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				
June 19, 1961	45	7.0		0.04	0.00	16	4.0	--	--	54	5.6	4.5	0.2	7.5	78	55	11	--	128	6.6	4

1-6425. LINGANORE CREEK NEAR FREDERICK, MD.--Continued

Temperature (°F) of water, water year October 1960 to September 1961
[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	68	62	64	61	60	61	61	58	58	62	62	63	63	64	65	66	64	61	59	59	55	52	50	50	49	47	49	50	53	53	52	58
Minimum	60	56	59	58	55	59	56	54	57	56	56	58	57	59	60	61	58	56	56	55	51	47	48	47	45	43	47	49	50	49	51	54
November																																
Maximum	54	52	51	49	48	46	46	42	42	46	45	42	42	45	49	49	50	47	46	44	44	44	46	43	44	44	45	46	50	50	--	46
Minimum	52	49	47	46	46	45	42	39	39	42	42	39	38	40	44	46	46	43	43	41	41	40	43	40	41	40	41	43	46	39	--	43
December																																
Maximum	39	36	37	36	41	41	42	40	37	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	34
Minimum	36	34	34	34	36	38	40	37	32	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	33	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	37	39	39	39	39	44	44	44	48	48	--	--	--	36
Minimum	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	36	38	38	38	38	42	39	40	42	--	--	--	34
March																																
Maximum	42	44	47	47	52	53	54	53	44	42	44	47	47	44	46	46	41	40	41	47	46	44	41	46	48	50	53	54	54	54	50	47
Minimum	40	40	41	46	46	52	51	44	42	39	37	43	44	43	43	41	37	38	40	41	44	39	39	41	44	44	48	51	51	50	43	43
April																																
Maximum	44	46	48	47	50	50	49	49	47	46	48	48	46	53	55	55	55	51	49	54	54	60	63	63	63	63	60	56	55	56	--	53
Minimum	42	43	41	44	44	48	46	43	46	42	45	46	39	44	48	53	47	47	46	47	49	52	58	60	60	60	55	54	51	49	--	48
May																																
Maximum	56	58	56	57	57	57	56	63	70	68	61	59	61	67	70	69	65	61	61	61	62	62	61	64	67	65	60	62	63	64	65	62
Minimum	54	53	52	51	52	53	52	56	62	60	59	58	59	61	64	65	60	59	58	57	57	58	56	57	59	60	55	56	60	58	58	57
June																																
Maximum	70	74	72	70	73	76	77	76	73	74	78	80	81	80	75	69	70	72	73	75	72	71	74	74	72	69	70	74	76	78	--	74
Minimum	63	68	66	64	64	70	70	72	71	70	71	72	74	75	65	60	61	63	65	67	69	68	67	68	66	67	65	66	67	69	--	67
July																																
Maximum	80	81	77	72	70	68	71	75	71	72	74	70	75	79	79	76	76	78	79	77	80	83	84	86	84	80	82	82	79	82	82	78
Minimum	71	72	72	68	67	66	66	67	65	64	64	67	68	70	73	72	71	72	72	74	73	75	76	78	76	76	73	73	76	74	76	71
August																																
Maximum	83	77	75	78	75	78	80	80	78	82	78	80	78	76	76	78	76	77	74	70	69	72	74	76	75	77	80	80	81	79	79	77
Minimum	75	74	73	71	72	71	72	71	73	74	74	75	72	66	66	69	71	70	67	67	66	65	69	71	72	73	73	73	74	72	70	71
September																																
Maximum	80	80	80	78	81	82	79	74	77	79	80	80	80	79	77	69	67	66	64	65	73	74	75	76	75	72	68	68	64	63	--	74
Minimum	72	74	74	73	73	74	74	72	73	73	73	73	74	74	68	63	61	60	63	64	65	67	68	68	68	67	62	62	58	56	--	68

POTOMAC RIVER BASIN--Continued

1-6425. LINGANORE CREEK NEAR FREDERICK, MD.--Continued

Periodic determinations of suspended-sediment discharge and particle size, October 1960 to February 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)	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. 18, 1961.....	1545		34	547	617	912											
Feb. 19.....	1410		39	677	729	1330	1	5	11	29	44	63	70	76	90			BSWC
Feb. 21.	1825		39	297	63	51											

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 1961.
Sediment records: October 1960 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 84°F July 2; minimum, 34°F on several days during January and February.
Sediment concentrations: Maximum daily, 884 ppm Sept. 8; minimum daily, 1 ppm on many days during year.
Sediment loads: Maximum daily, 16,300 tons Feb. 20; minimum daily, less than 0.50 ton Oct. 6-20, Sept. 1-3.
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Temperature (°F) of water, water year October 1960 to September 1961

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	64	65	63	62	63	63	60	60	63	64	65	62	63	63	63	63	64	62	59	56	54	52	51	49	50	51	53	55	50	54	59
November	57	55	50	52	49	46	47	48	49	47	44	50	52	51	54	49	46	47	49	48	49	49	46	48	46	48	48	48	50	48	--	49
December	46	48	52	50	48	54	54	46	41	44	44	44	38	38	34	36	44	38	36	36	36	38	36	36	36	36	38	38	38	38	38	41
January	38	36	36	38	38	40	40	--	38	38	38	42	42	42	42	40	36	36	36	34	34	34	34	36	36	--	--	--	--	34	34	37
February	--	--	--	--	--	--	--	--	--	34	34	34	34	34	34	36	36	36	38	36	36	38	38	40	44	44	48	42	--	--	--	--
March	--	46	46	46	48	52	56	48	42	40	40	42	40	42	46	42	40	--	42	40	40	40	40	44	50	50	54	54	54	50	52	46
April	50	52	52	52	54	52	52	54	50	50	--	--	--	48	54	52	52	50	50	52	54	54	52	52	54	52	52	52	--	54	--	52
May	54	56	58	60	--	--	--	64	66	66	66	66	64	66	68	66	66	64	66	66	66	68	68	70	70	66	--	66	66	--	--	65
June	70	--	70	74	74	76	--	76	--	--	76	80	82	--	80	78	70	72	--	--	--	74	78	74	74	74	75	76	78	78	--	--
July	82	84	80	78	80	76	78	78	78	78	80	78	80	80	80	78	76	76	78	80	80	82	82	--	--	82	80	78	82	83	81	80
August	82	76	77	79	78	79	81	81	80	82	80	80	75	--	75	--	--	78	75	72	68	76	68	72	78	83	78	78	82	80	82	78
September	82	82	78	78	80	82	78	78	80	80	80	82	--	80	73	69	69	67	67	68	74	75	78	75	75	73	73	67	65	65	--	75

POTOMAC RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961

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..	154	C 2	1	244	100 A	65	356	C 7	7
2..	139	C 2	1	632	140 A	240	233	C 7	4
3..	131	C 2	1	389	160 A	170	186	C 7	4
4..	131	C 2	1	259	C 36	25	165	C 7	3
5..	131	C 2	1	216	C 36	21	156	C 7	3
6..	137	C 1	T	196	C 36	19	156	C 7	3
7..	145	C 1	T	186	C 36	18	156	C 7	3
8..	137	C 1	T	180	C 36	18	156	C 7	3
9..	137	C 1	T	180	C 36	18	148	C 7	3
10..	145	C 1	T	232	C 7	4	118	C 12	4
11..	131	C 1	T	305	C 7	6	120	C 12	4
12..	128	C 1	T	418	C 7	8	110	C 12	4
13..	120	C 1	T	270	C 7	5	120	C 12	4
14..	123	C 1	T	226	C 7	4	140	C 12	5
15..	120	C 1	T	202	C 7	4	150	C 12	5
16..	123	C 1	T	199	C 7	4	160	C 12	5
17..	128	C 1	T	196	C 7	4	180	C 12	6
18..	123	C 1	T	180	C 22	11	170	C 12	6
19..	128	C 1	T	177	C 22	11	160	C 28	12
20..	180	1	T	168	C 22	10	145	C 28	11
21..	356	C 30	29	159	C 22	9	140	C 28	11
22..	351	C 30	28	156	C 22	9	135	C 28	10
23..	216	C 30	17	165	C 22	10	145	C 28	11
24..	177	C 30	14	168	C 22	10	140	C 28	11
25..	154	C 30	12	165	C 22	10	130	C 28	10
26..	145	C 30	12	159	C 16	7	148	C 28	11
27..	139	C 30	11	159	C 16	7	165	C 28	12
28..	148	C 44	18	156	C 16	7	177	C 25	12
29..	154	C 44	18	220	55 S	36	186	C 25	13
30..	148	C 44	18	280	36 S	28	202	C 25	14
31..	148	C 44	18	--	--	--	212	C 25	14
Total	4827	--	205	6842	--	798	5065	--	228

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..	420	43	49	350	14 B	13	2500	34	230
2..	800	83 S	217	350	22 A	20	2160	C 14	82
3..	1600	111 S	488	300	19 A	15	1830	C 14	69
4..	960	25	65	300	35 B	28	1660	C 14	63
5..	640	19	33	300	34 B	28	3060	116 S	1020
6..	470	23	29	350	40 B	38	2260	39 J	240
7..	420	9	10	350	22 A	20	2920	101 J	800
8..	480	7	9	350	30 B	28	2300	59 S	376
9..	860	55 A	130	350	25 A	24	4900	175 S	2410
10..	820	38	84	400	C 65	70	2600	33 S	246
11..	540	20	29	450	C 65	79	1860	C 16 A	80
12..	420	8	9	550	C 65	97	1630	C 16 A	70
13..	420	C 8	9	700	C 65	123	1420	C 16 A	61
14..	445	C 8	10	850	C 65	149	1560	C 16 A	67
15..	615	C 8	13	1050	C 65	184	1880	C 16 A	81
16..	1610	75 A	320	1420	128 A	500	1350	C 7	26
17..	1550	66	276	1900	64	328	1100	C 7	21
18..	1250	28	95	2750	364 S	2910	956	C 7	18
19..	1470	40	159	6000	862 S	13700	1620	C 65 A	280
20..	760	17	35	10200	590 S	16300	2190	C 65 A	380
21..	550	13	19	6460	310 S	5820	1430	C 65 A	260
22..	470	33	42	3860	86 S	914	1760	C 65 A	300
23..	420	24	27	5930	218 K	3500	4660	167 S	2160
24..	400	32	35	7260	157 K	3100	3600	47 S	467
25..	370	49	49	8890	435 K	10000	2440	37 S	245
26..	350	8 A	8	10800	288 K	8400	1890	35	179
27..	350	13 A	12	4730	66 S	876	1640	C 38	168
28..	350	10 A	9	3300	40	356	1480	C 38	152
29..	350	15 A	14	--	--	--	1500	C 38	154
30..	350	30 A	28	--	--	--	1330	C 38	136
31..	350	20 B	19	--	--	--	1220	C 38	125
Total	20860	--	2340	80500	--	67620	64706	--	10966

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

POTOMAC RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961--Continued

Day	APRIL Mean discharge (cfs)	APRIL Suspended sediment Mean concentration (ppm)	APRIL Suspended sediment Tons per day	MAY Mean discharge (cfs)	MAY Suspended sediment Mean concentration (ppm)	MAY Suspended sediment Tons per day	JUNE Mean discharge (cfs)	JUNE Suspended sediment Mean concentration (ppm)	JUNE Suspended sediment Tons per day
1	3160	C 159 A	1400	1290	C 14	49	445	C 11	13
2	2650	C 159 A	1100	1380	C 14	52	430	C 11	13
3	1710	C 55	254	1230	C 14	46	430	C 11	13
4	1450	C 55	215	1020	C 14	39	500	C 11	15
5	1300	C 55	193	921	C 7 A	17	500	C 11	15
6	1200	C 55	178	886	C 7 A	17	420	C 12	14
7	1110	C 55	165	984	C 7 A	19	430	C 12	14
8	991	C 55	147	1080	C 13	38	396	C 12	13
9	907	C 55	135	963	C 13	34	463	C 12	15
10	3660	136 S	1460	921	C 13	32	491	C 12	16
11	3660	100 B	1000	886	C 13	31	460	C 12	15
12	1940	59 A	300	1070	13 S	42	392	C 12	13
13	8690	215 B	5000	2300	125 S	797	328	C 12	11
14	9820	275 A	7300	2030	78 S	446	307	12	10
15	3800	96 B	1000	1440	31	121	1080	25 S	93
16	3540	106 B	1000	1220	22	72	651	338 S	583
17	4920	258 B	3400	1100	C 9	27	374	116	117
18	2680	C 28 A	200	914	C 9	22	299	41	33
19	2200	C 28 A	170	852	C 9	21	266	27	19
20	1860	C 28 A	140	806	C 9	20	247	16	11
21	1630	C 28 A	130	735	C 9	18	279	16	12
22	1510	C 28 A	203	681	C 8	15	727	69 A	140
23	1660	C 28 A	125	639	C 8	14	681	92 A	170
24	1520	C 28 A	115	593	C 8	13	374	27	27
25	1310	C 28 A	99	560	C 8	12	351	33	31
26	2620	206 S	1800	612	37 S	67	369	47	47
27	2380	126 S	939	633	25	43	328	36	32
28	1620	C 25	109	571	12	19	307	26	22
29	1820	C 25	123	500	11	15	251	C 14	9
30	1700	C 25	115	485	10	13	236	C 14	9
31	--	--	--	460	8	10	--	--	--
Total	79018	--	28515	29762	--	2181	12812	--	1545

Day	JULY Mean discharge (cfs)	JULY Suspended sediment Mean concentration (ppm)	JULY Suspended sediment Tons per day	AUGUST Mean discharge (cfs)	AUGUST Suspended sediment Mean concentration (ppm)	AUGUST Suspended sediment Tons per day	SEPTEMBER Mean discharge (cfs)	SEPTEMBER Suspended sediment Mean concentration (ppm)	SEPTEMBER Suspended sediment Tons per day
1	219	C 9	5	177	C 13	6	120	C 1	T
2	209	C 9	5	168	C 13	6	118	C 1	T
3	228	14	9	165	C 13	6	118	C 1	T
4	209	C 12	7	180	C 13	6	420	17 S	25
5	209	C 12	7	171	C 13	6	418	10	11
6	296	43	34	177	C 3	1	246	7	5
7	259	C 13	9	171	C 3	1	488	88 S	595
8	226	C 13	8	159	C 3	1	2640	884 S	7060
9	216	C 13	8	148	C 3	1	603	170 S	293
10	219	C 5	3	148	C 3	1	287	50	39
11	202	C 5	3	145	C 3	1	212	24	14
12	193	C 5	3	145	C 3	1	174	8	4
13	205	C 6	3	142	C 3	1	154	C 11	5
14	212	C 6	3	142	C 3	1	145	C 11	4
15	229	C 6	4	128	C 3	1	137	C 11	4
16	240	C 6	4	134	C 3	1	128	C 11	4
17	678	164 B	300	174	C 3	1	123	C 3	1
18	553	102 A	150	139	C 3	1	120	C 3	1
19	270	20	15	128	C 3	1	112	C 3	1
20	202	15	8	118	C 3	1	112	C 3	1
21	183	C 6	3	139	C 3	1	115	C 3	1
22	190	C 6	3	137	C 3	1	115	C 4	1
23	171	C 6	3	165	C 3	1	112	C 4	1
24	154	6	2	174	C 3	1	108	C 4	1
25	281	33 B	24	273	26 J	24	102	C 4	1
26	240	12	8	564	28 J	55	105	C 4	1
27	168	17	8	438	25	30	108	C 2	1
28	148	C 10	4	240	8	5	108	C 2	1
29	154	C 10	4	162	C 2	1	105	C 2	1
30	174	C 10	5	139	C 2	1	102	C 2	1
31	190	C 10	5	126	C 2	1	--	--	--
Total	7327	--	657	5616	--	166	7975	--	8078

Total discharge for year (cfs-days)..... 325310
Total load for year (tons)..... 123299

S Computed by subdividing day.
T Less then 0.05 ton.
A Computed from partly estimated-concentration graph.
B Computed from estimated-concentration graph.
C Composite period.
J Computed from partly estimated-concentration graph and subdividing day.
K Computed from estimated-concentration graph. and subdividing day.

POTOMAC RIVER BASIN--Continued

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

Periodic determinations of suspended sediment discharge and particle size, 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)	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. 3, 1961.....	1150		36	1740	50		11	30	54	76	93	94	95	98	99	--		BSWC
Feb. 18.....	1510		38	2790	116		12	26	31	57	82	90	91	97	99	--		BSWC
Feb. 19.....	1810		38	7370	630		5	11	15	36	64	83	87	96	98	--		BSWC
Feb. 20.....	1345		36	10400	486		7	23	43	70	85	93	95	98	99	--		BSWC
Feb. 26.....	1130		42	12500	327		10	15	41	70	84	94	96	99	100	--		BSWC
Mar. 9.....	1710		40	5370	154		16	28	46	69	85	92	93	96	97	100		BSWC
Mar. 23.....	1810		40	4680	117		17	22	51	75	91	95	96	99	100	--		BSWC
Apr. 26.....	2000		52	4140	326		10	29	41	65	80	89	91	95	97	100		BSWC
Sept. 8.....	1755		78	2000	516		32	60	79	94	99	99	99	100	100	--		BSWC

1-6440. GOOSE CREEK NEAR LEESBURG, VA.

LOCATION.--At gaging station on left bank 400 feet upstream from bridge on State Highway 621, at Evergreen Mills, 1.4 miles downstream from Little River, 6.7 miles south of Leesburg, Loudoun County, and 10.9 miles upstream from mouth.
DRAINAGE AREA.--338 square miles.
RECORDS AVAILABLE.--Sediment records: March 1959 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge and particle size, 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)	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. 1, 1961.....	1350		33	238	35	23	--	--	--	--	--	--	--	--	--			
Jan. 2.....	0940		33	416	65	73	--	--	--	--	--	--	--	--	--			
Feb. 18.....	1320		42	1700	397	1820	6	17	35	56	74	87	90	97	99			BSWC
Feb. 19.....	0940		34	3590	757	7340	4	7	24	45	62	83	86	96	98			BSWC
Feb. 19.....	1210		38	3330	840	7560	--	--	--	--	--	--	--	--	--			
Feb. 19.....	2215		35	3930	1440	15300	--	--	--	--	--	--	--	--	--			
Feb. 20.....	1645		38	2300	465	2890	--	--	--	--	--	--	--	--	--			
Feb. 21.....	1350		40	1740	188	884	--	--	--	--	--	--	--	--	--			

1-6450. SENECA CREEK AT DAWSONVILLE, MD.

LOCATION.--At gaging station on right bank 60 feet downstream from bridge on State Highway 28, 150 feet downstream from confluence of Great Seneca and Little Seneca Creeks, and 0.5 miles east of Dawsonville, Montgomery County.
DRAINAGE AREA.--101 square miles.
RECORDS AVAILABLE.--Sediment records: March 1959 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Chemical analyses, in parts per million, June 1961

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				
June 19, 1961.	84	12		0.30	0.02	6.8	2.4			24	4.0	5.0	0.2	6.7	58	27	8		79	6.6	5

Periodic determinations of suspended-sediment discharge and particle size, 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)	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. 1, 1961.....	1050		34	327	229	202											
Jan. 1.....	1925		--	924	483	1210											
Jan. 2.....	0745		33	486	129	169											
Jan. 3.....	1935		32	153	40	17											
Jan. 15.....	1510		34	214	346	200											
Feb. 18.....	2345		35	309	272	227											
Feb. 19.....	1145		39	672	640	1160	5	13	32	54	74	88	95	97	99			BSWC
Feb. 20.....	1055		37	495	322	431											
Feb. 21.....	1230		40	309	79	66											
Feb. 21.....	2045		40	327	69	61											

POTOMAC RIVER BASIN--Continued

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 of post office in Rockville, Montgomery County.
DRAINAGE AREA.--3.70 square miles.
RECORDS AVAILABLE.--Water temperatures: September 1957 to September 1961.
Sediment records: May 1960 to September 1961 (periodic).
EXTREMES, 1960-61.--Water temperatures: Maximum, 79°F Aug. 1; minimum, 33°F Dec. 11-31, Jan. 1.
EXTREMES, 1957-61.--Water temperatures: Maximum, 88°F June 29, 30, 1959; minimum, 33°F on many days during winter months.
REMARKS.--Water temperatures for Apr. 25 to May 29 affected by diversion of entire flow away from gage. Sediment discharge measurements usually made during periods of high-water discharge.

Temperature (°F) of water, water year October 1960 to September 1961
[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	60	66	59	60	62	62	57	58	62	62	63	62	65	65	65	63	62	60	60	54	54	53	53	52	51	53	53	56	56	54	59
Minimum	57	54	57	56	54	57	56	53	56	55	54	56	56	58	58	59	58	55	56	54	50	48	49	48	46	46	50	52	52	50	53	54
November																																
Maximum	56	54	53	53	50	50	48	46	48	52	48	47	48	51	53	54	53	51	50	49	50	48	50	45	48	49	49	50	55	48	--	50
Minimum	53	49	49	47	49	46	44	41	42	47	43	41	41	44	48	48	48	45	45	43	44	43	45	42	45	43	44	46	48	40	--	45
December																																
Maximum	40	39	40	40	45	44	45	41	36	36	35	33	33	33	33	34	34	34	34	34	34	34	34	33	34	34	35	34	34	35	36	36
Minimum	36	35	35	35	40	38	41	36	34	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33	34
January																																
Maximum	36	39	41	38	38	40	40	40	37	37	38	40	39	41	41	40	41	41	40	34	34	35	35	35	35	35	35	35	35	36	36	38
Minimum	33	35	38	36	36	36	36	36	34	34	34	35	35	37	36	36	36	39	34	34	34	34	35	35	35	35	35	35	35	35	35	35
February																																
Maximum	36	36	--	--	--	--	--	--	--	--	--	--	--	--	41	41	41	37	39	40	40	42	44	49	48	48	52	46	--	--	--	--
Minimum	35	35	--	--	--	--	--	--	--	--	--	--	--	--	36	36	36	34	34	36	39	39	39	40	36	41	42	42	--	--	--	--
March																																
Maximum	42	48	52	50	56	57	58	52	46	46	49	53	48	46	52	48	48	44	45	54	48	44	44	53	54	56	59	59	60	57	48	51
Minimum	41	40	40	45	47	50	50	44	43	39	37	41	45	43	44	41	38	38	40	42	42	41	41	42	44	43	47	49	49	48	44	43
April																																
Maximum	49	53	55	49	56	51	52	55	50	51	52	46	45	58	59	61	56	52	53	59	55	65	68	66	68	68	58	58	56	61	--	56
Minimum	44	44	42	43	43	47	44	42	45	44	44	43	40	45	48	50	46	47	45	45	45	50	54	55	56	59	55	52	50	50	--	47
May																																
Maximum	56	64	62	64	62	59	60	69	71	67	62	64	68	72	72	75	72	64	67	65	66	66	67	71	68	67	61	67	63	64	65	66
Minimum	54	53	53	52	53	54	54	57	61	62	60	59	60	62	62	65	59	60	59	57	57	59	57	57	60	60	56	54	57	54	52	57
June																																
Maximum	66	72	63	68	68	69	71	71	66	69	71	74	73	73	66	65	67	68	68	70	63	67	70	70	70	62	65	67	70	72	--	68
Minimum	57	59	57	55	54	59	59	60	62	62	60	60	62	64	57	54	54	55	56	58	61	60	59	60	58	59	59	58	58	60	--	59
July																																
Maximum	75	76	72	68	66	68	68	72	70	71	72	66	70	75	73	71	76	74	74	74	76	78	78	78	77	77	77	77	74	78	78	74
Minimum	62	64	64	60	61	61	61	61	58	58	58	60	62	64	65	65	65	66	64	66	65	66	66	68	68	66	64	65	67	66	67	64
August																																
Maximum	79	69	71	75	72	75	75	76	76	76	74	74	74	72	73	76	74	74	70	65	65	71	70	75	75	72	76	77	77	75	76	74
Minimum	68	67	66	65	66	66	66	65	66	68	67	68	64	60	60	63	65	65	61	62	63	62	66	66	68	68	68	66	67	66	64	65
September																																
Maximum	77	78	76	74	76	77	73	70	74	75	76	77	77	74	70	66	65	62	63	65	72	72	72	73	73	70	65	66	63	63	--	71
Minimum	66	67	68	67	67	68	69	68	67	66	66	67	67	68	61	58	57	56	60	63	63	63	63	64	64	62	58	57	54	52	--	63

1-6452. WATTS BRANCH AT ROCKVILLE, MD.--Continued

Periodic determinations of suspended-sediment discharge and particle size, 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)	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	
May 28, 1960	1015		--	133	1730	622											
July 27	1630		71	2.9	266	2.1											
July 30	0615		65	18	145	7.1											
Aug. 13	0800		66	19	302	16											
Sept. 12	0650		72	96	266	69											
Jan. 1, 1961	1030		34	33	236	21											
Jan. 15	1430		37	18	217	11											
Feb. 14	1730		37	7.2	120	2.3											
Feb. 15	1715		41	8.1	94	2.1											
Feb. 16	1720		40	13	194	6.8											
Feb. 18	1110		38	26	288	20											
Feb. 18	1800		35	60	1270	206											
Feb. 19	0400		35	38	169	17											
Feb. 20	1030		--	13	68	2.4											
Feb. 22	1105		42	9	19	0.5											
Feb. 22	1525		--	14	71	2.7											
Feb. 22	1910		40	48	557	72											
Feb. 23	0810		40	38	375	38											
Feb. 23	0955		40	81	954	209	8	13	15	39	70	91	96	98	100			BSWC
Feb. 23	1115		41	49	336	44											
Feb. 25	1850		50	21	102	5.8											
June 1	0650		57	5.7	191	2.9											
June 10	1755		67	22	1550	92											
Aug. 21	0225		63	3.7	96	9.6											
Aug. 26	0720		70	9.2	424	11											
Aug. 26	0830		71	26	3270	230											
Aug. 26	0945		71	23	1230	76											
Aug. 26	1125		70	12	501	16											

POTOMAC RIVER BASIN--Continued

1-6460. DIFFICULT RUN NEAR GREAT FALLS, VA.

LOCATION.--At gaging station on right bank 300 feet downstream from Rocky Run, 0.7 mile upstream from mouth, and 1.5 miles southeast of Great Falls, Fairfax County.
DRAINAGE AREA.--58 square miles, approximately.
RECORDS AVAILABLE.--Sediment records: March 1959 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Chemical analyses, in parts per million, January 1961

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. 1, 1961.....	547	7.2		5.0	1.1			7	11	5.0	0.1	6.5	53	17	12	65	6.1	30

Periodic determinations of suspended-sediment discharge and particle size, 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)	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. 1, 1961.....	1140		34	547	1490	2200	3	9	16	28	41	79	91	98	99			BSN
Jan. 1.....	1140		34	547	1490	2200	5	11	23	44	60	82	89	97	99			BSWC
Jan. 1.....	1925		34	379	648	664	--	--	--	--	--	--	--	--	--			
Jan. 2.....	0735		34	140	148	56	--	--	--	--	--	--	--	--	--			
Jan. 3.....	1350		--	66	9	1.6	--	--	--	--	--	--	--	--	--			
Feb. 18.....	1125		38	409	845	934	--	--	--	--	--	--	--	--	--			
Feb. 19.....	0810		36	924	738	1840	5	7	25	39	54	70	83	88	96			BSWC
Feb. 19.....	2320		39	739	459	917	--	--	--	--	--	--	--	--	--			
Feb. 21.....	1120		40	156	70	30	--	--	--	--	--	--	--	--	--			
May 12.....	1005		--	137	748	277	--	--	--	--	--	--	--	--	--			
May 12.....	1435		--	137	80	30	--	--	--	--	--	--	--	--	--			
May 12.....	1925		--	119	102	33	--	--	--	--	--	--	--	--	--			

1-6466. PIMMIT RUN NEAR FALLS CHURCH, VA.

LOCATION.--At gaging station at highway bridge on Great Falls Road, 1.5 miles northwest of intersection of U.S. Highway 29 and State Highway 7, Fairfax County.
DRAINAGE AREA.--2.87 square miles.
RECORDS AVAILABLE.--Sediment records: August 1960 to August 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge, August 1960 to August 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)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Percent finer than size indicated, in millimeters										Method of analysis
Aug. 13, 1960.....	0620	71		24	784	51											
Sept. 13.....	0620	68		60	661	107											
May 12, 1961.....	0920	--		91	1320	325											
May 12.....	1140	--		57	494	76											
Aug. 26.....	0915	70		500	1480	2000											

1-6467. PIMMIT RUN AT ARLINGTON, VA.

LOCATION.--At gaging station at highway bridge on Kirby Road, 0.8 mile northwest of Arlington County.
DRAINAGE AREA.--8.12 square miles.
RECORDS AVAILABLE.--Sediment records: May 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge, May 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)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	*Suspended sediment* Percent finer than size indicated, in millimeters										Method of analysis
May 12, 1961.....	1155			82	1600	355											
May 12.....	1455			64	552	95											
May 12.....	0745			8.8	143	3.4											

1-6470. LITTLE FALLS BRANCH NEAR BETHESDA, MD.

LOCATION.--At gaging station at bridge on Massachusetts Avenue, northwest of Westmoreland Circle, 2.0 miles southwest of Bethesda, Montgomery County.
DRAINAGE AREA.--4.1 square miles, approximately.
RECORDS AVAILABLE.--Sediment records: March 1957 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

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)	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	
Aug. 23, 1961.....	0745		71	30	123	10												
Aug. 26.....	0755		68	620	4820	8080												
Aug. 26.....	0905		72	470	3160	4010												

1-6480. ROCK CREEK AT SHERRILL DRIVE, WASHINGTON, D. C.

LOCATION.--At gaging station at bridge on Sherrill Drive in Rock Creek Park, Washington, 7.5 miles upstream from mouth.
DRAINAGE AREA.--62.2 square miles.
RECORDS AVAILABLE.--Sediment records: October 1959 to May 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge, October 1960 to May 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)	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. 1, 1961.....	0910		34	483	1660	2170												
Jan. 1.....	1600		34	467	1940	2450												
Jan. 2.....	0655		32	196	637	337												
Feb. 19.....	1700		42	604	2490	4060												
Feb. 22.....	1035		40	140	122	46												
Feb. 23.....	1520		46	689	3600	6700												
Feb. 24.....	1330		45	181	319	156												
Feb. 25.....	2005		52	932	9110	22900												
Mar. 19.....	1630		43	163	320	141												
Mar. 23.....	1650		42	208	481	270												
Apr. 13.....	0845		40	1450	2640	10300												
Apr. 13.....	1115		42	1650	2060	9190												
Apr. 13.....	1935		43	1440	1290	5020												
Apr. 14.....	0805		44	196	418	221												
May 12.....	1440		--	374	2960	2990												
May 12.....	2025		--	343	2000	1850												

1-6495. NORTHEAST BRANCH ANACOSTIA RIVER AT RIVERDALE, MD.

LOCATION.--At gaging station on right bank at downstream side of bridge on Riverdale Road in Riverdale, Prince Georges County, 1.8 miles downstream from Indian Creek, and 1.8 miles upstream from confluence with Northwest Branch.
DRAINAGE AREA.--72.8 square miles.
RECORDS AVAILABLE.--Sediment records: October 1959 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge, water year October 1960 to August 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)	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. 1, 1961.....	0820		33	428	1920	2220											
Jan. 1.....	1525		35	598	1370	2210											
Jan. 2.....	0605		32	418	245	277											
Jan. 3.....	1825		36	130	39	14											
Feb. 19.....	0530		37	1080	860	2510											
Feb. 19.....	1600		--	820	428	949											
Feb. 20.....	0230		39	570	347	535											
Feb. 22.....	0945		40	178	46	22											
Aug. 26.....	1140		73	1180	5270	16800											
Aug. 26.....	1600		75	1030	1530	4260											

POTOMAC RIVER BASIN--Continued

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

LOCATION.--At gaging station on right bank 400 feet upstream from bridge on State Highway 183, 1.5 miles southwest of Colesville, Montgomery County, 3.0 miles upstream from Burnt Mills, and 10 miles upstream from Sligo Branch.
DRAINAGE AREA.--21.3 square miles.
RECORDS AVAILABLE.--Sediment records: April 1960 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

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)	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. 20, 1960	0710		65	20	24	1.3											
Jan. 1, 1961	0730		32	224	611	370											
Jan. 1	1430		34	187	496	251											
Jan. 2	0515		32	58	312	49											
Feb. 19	0455		35	242	801	524											
Feb. 19	1520		42	313	1700	1440											
Feb. 22	0910		39	47	20	2.5											
Feb. 22	2010		40	106	727	208											
Feb. 25	1935		51	608	2750	4520											
Apr. 13	0800		40	1040	788	2210											
Apr. 13	1040		40	688	572	1060											
Apr. 13	2005		--	97	130	34											
Aug. 21	0310		64	13	81	2.8											
Aug. 26	1030		71	224	4150	2510											
Aug. 26	1210		71	306	2310	1910											
Aug. 26	1705		74	56	546	83											

1-6510. NORTHWEST BRANCH ANACOSTIA RIVER NEAR HYATTSVILLE, MD.

LOCATION.--At gaging station on right bank at downstream side of bridge on Queens Chapel Road (State Highway 500), 0.8 mile downstream from Sligo Branch, and 1 mile west of Hyattsville, Prince Georges County.
DRAINAGE AREA.--49.4 square miles.
RECORDS AVAILABLE.--Sediment records: January 1960 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge, water year October 1960 to August 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)	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. 1, 1961.....	0840		34	358	2830	2740												
Jan. 1.....	1510		34	368	4370	4350												
Jan. 2.....	0625		32	127	1040	357												
Feb. 19.....	0555		37	497	3940	5290												
Feb. 22.....	1005		40	70	198	37												
Aug. 26.....	1115		73	1560	3780	15900												
Aug. 26.....	1620		75	372	2470	2480												

1-6526. HOLMES RUN AT MERRIFIELD, VA.

LOCATION.--At gaging station at bridge on U. S. Highway 50, 3.0 miles west of Seven Corners, Fairfax County.
DRAINAGE AREA.--2.70 square miles.
RECORES AVAILABLE.--Sediment records: February to April 1960, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended sediment discharge, February to April 1960
(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)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Percent finer than size indicated, in millimeters											Method of analysis
Feb. 18, 1960.....	2355			133	385	138												
Feb. 19.....	0050			14	269	10												
Feb. 19.....	0720			32	151	13												
Feb. 19.....	1335			13	71	2.5												
Apr. 3.....	1425			46	546	68												

POTOMAC RIVER BASIN--Continued

1-6526.1. HOLMES RUN NEAR ANNANDALE, VA.

LOCATION.--At gaging station at Sleepy Hollow Road Bridge, 0.5 mile upstream from Lake Barcroft, 1.6 miles northeast of Annandale, Fairfax County.
DRAINAGE AREA.--7.10 square miles.
RECORDS AVAILABLE.--Sediment records: October 1959 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge, water years October 1960 to February 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)	Water temperature (°F)	Sampling point	Discharge (cfs)	Sediment concentration (ppm)	Sediment discharge (tons per day)	Percent finer than size indicated, in millimeters										Method of analysis
Oct. 1, 1959.....	0140			25	552	37											
Jan. 15, 1960.....	1350			28	190	14											
Apr. 3.....	1720			93	984	247											
Apr. 5.....	1015			182	484	238											
Apr. 18.....	1030			22	448	27											
May 8.....	1645			61	1430	236											
Feb. 23, 1961.....	1030			85	937	215											

1-6526.2. TRIPPS RUN AT FALLS CHURCH, VA.

LOCATION.--At gaging station at South Washington Street Bridge, Fairfax County.
DRAINAGE AREA.--1.78 square miles.
RECORDS AVAILABLE.--Sediment records: April 1960 to September 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

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)	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
Apr. 3, 1960.....	1540		--	26	508	36											
Apr. 3.....	1800		--	9.0	486	12											
Apr. 5.....	0630		48	72	743	145											
Apr. 18.....	0915		58	28	900	69											
Apr. 18.....	0950		58	89	1000	241											
May 8.....	1510		--	37	1270	127											
May 22.....	2205		--	26	1390	98											
May 28.....	0702		60	75	1640	332											
Sept. 3, 1961.....	1708		75	36	692	67											
Sept. 4.....	1532		78	47	1330	169											

1-6526.5. TRIPPS RUN NEAR FALLS CHURCH, VA.

LOCATION.--At gaging station at State Road 613 (Sleepy Hollow Road) bridge, 1 mile southwest of Seven Corners, Fairfax County.
DRAINAGE AREA.--4.55 square miles.
RECORDS AVAILABLE.--Sediment records: October 1959 to February 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge, water year October 1959 to February 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)	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. 1, 1959	0125		--	26	625	44												
Jan. 15, 1960	1405		45	9.7	108	2.8												
Apr. 3	1635		50	48	928	120												
Apr. 5	0710		48	131	1190	421												
May 8	1556		--	86	1210	281												
Feb. 23, 1961	0930		42	110	1620	482												

1-6540. ACCOTINK CREEK NEAR ANNANDALE, VA.

LOCATION.--At gaging station on left bank at upstream side of bridge on State Highway 620, 0.2 mile upstream from Long Branch, and 2.3 miles southwest of Annandale, Fairfax County.
DRAINAGE AREA.--23.6 square miles.
RECORDS AVAILABLE.--Sediment records: October 1959 to August 1961, periodic (discontinued).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge, water year October 1960 to August 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)	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. 23, 1961	1245		42	104	118	33												
Apr. 11	1450		52	40	26	2.8												
Apr. 13	1730		44	152	312	128												
May 16	0845		60	27	25	1.8												
June 12	0930		69	18	55	2.7												
July 2	1620		76	30	3100	251												
July 20	1415		75	9.4	23	.6												
Aug. 16	1300		70	6.5	54	.9												

270-946 O - 67 - 13

POTOMAC RIVER BASIN--Continued

1-6570. BULL RUN NEAR MANASSAS, VA.

LOCATION.--At gaging station on left bank at downstream side of bridge on State Highway 616, 0.5 mile downstream from Cub Run, and 3.2 miles north of Manassas, Prince William County.
DRAINAGE AREA.--147 square miles.
RECORDS AVAILABLE.--Sediment records: March 1959 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Periodic determinations of suspended-sediment discharge and particle size, 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)	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. 1, 1961	1240		33	1200	218	707											
Jan. 1	2025		33	2210	105	627	28	41	53	76	88	92	94	96	97			BSWC
Jan. 2	0835		33	1520	49	201											
Jan. 3	1500		34	382	43	44											
Feb. 20	0045		34	6510	125	2200											
Feb. 20	1740		--	1140	102	314											
Feb. 21	1235		38	863	37	86											

1-6580. MATTAWOMAN CREEK NEAR POMONKEY, MD.

LOCATION.--At bridge on State Highway 227, 80 feet upstream from gaging station at confluence of Old Womans Run and Mattawoman Creek, and 1.2 miles southeast of Pomonkey, Charles County.
DRAINAGE AREA.--57.7 square miles.
RECORDS AVAILABLE.--Sediment records: October 1960 to September 1961 (periodic).
REMARKS.--Sediment discharge measurements usually made during periods of high-water discharge.

Chemical analyses, in parts per million, April and June 1961

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				
Apr. 13, 1961	666	4.4		0.07	0.01	7.5	1.1	3.3	1.7	18	9.8	2.5	0.1	0.3	49	23	8		61	6.6	25
June 20.....	5.3	9.6		.54	.01	3.0	.9			6	8.4	4.3	.1	.5	39	11	6		47	5.8	5

Periodic determinations of suspended-sediment discharge and particle size, water year October 1960 to Septemper 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)	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. 1, 1961.....	2345		33	276	23	17												
Jan. 2.....	2355		34	376	20	17												
Jan. 3.....	1650		34	396	19	20												
Feb. 26.....	1020		45	450	23	28												
Apr. 13.....	1530		45	666	38	68	10	16	21	27	36	58	83	96	98	100		BSWC

RAPPAHANNOCK RIVER BASIN

1-6640. RAPPAHANNOCK RIVER AT REMINGTON, VA.

LOCATION.--At gaging station on left bank 80 feet upstream from bridge on U.S. Highway 29 at Remington, Fauquier County, 0.3 mile upstream from Tinpot Run, 0.4 mile downstream from Ruffans Run, 2.5 miles downstream from Hazel River, and at mile 35.2.
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 1961.
EXTREMES, 1960-61.--Sediment concentrations: Maximum daily, 700 ppm May 13; minimum daily, 3 ppm Oct. 25.
Sediment loads: Maximum daily, 13,700 tons Apr. 13, May 13; minimum daily, 1 ton Oct. 25-27, Nov. 15.
EXTREMES, 1951-61.--Sediment concentrations: Maximum daily, 1,330 ppm Oct. 1, 1959; minimum daily, 1 ppm on many days.
Sediment loads: Maximum daily, 23,400 tons June 10, 1951; minimum daily, less than 0.05 ton on many days.
REMARKS.--Flow affected by ice Dec. 11-14, 21, 22, Jan. 4-14, 16, 23-31, Feb. 1-7, 18, 19.

Suspended sediment, water year October 1960 to September 1961
[Where no daily 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..	190	--	10	169	--	3	185	--	5
2..	175	--	7	193	6	3	148	10	4
3..	170	--	7	177	5	2	130	--	4
4..	172	13	6	144	--	2	127	--	3
5..	165	7	3	137	--	2	134	7	3
6..	160	5	2	134	--	2	130	6	2
7..	170	5	2	137	--	2	130	6	2
8..	168	--	2	134	5	2	130	--	2
9..	185	5	2	134	--	2	124	--	2
10..	230	10	6	154	5	2	115	--	6
11..	210	--	6	181	--	2	110	--	7
12..	190	--	5	169	--	2	110	7	2
13..	177	7	3	154	--	2	120	--	6
14..	162	--	3	148	--	2	140	16	6
15..	151	5	2	144	--	1	158	18	8
16..	150	6	2	140	5	2	162	16	7
17..	148	5	2	137	8	3	154	9	4
18..	145	5	2	130	7	2	148	--	3
19..	144	9	3	127	--	2	130	10	4
20..	177	10	5	127	--	2	130	6	2
21..	236	8	5	121	--	2	120	19	6
22..	185	7	3	121	7	2	120	--	5
23..	162	--	3	127	7	2	112	--	5
24..	154	--	2	134	--	3	103	--	4
25..	144	3	1	130	8	3	115	--	5
26..	134	--	1	127	8	3	121	--	5
27..	137	--	1	121	6	2	148	--	6
28..	148	4	2	121	9	3	177	--	7
29..	148	5	2	127	7	2	177	--	7
30..	144	--	2	177	--	4	223	--	9
31..	140	5	2	--	--	--	246	--	10
Total	5171	--	104	4276	--	68	4377	--	151

RAPPAHANNOCK RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961--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	930	--	510	260	9	6	1780	74	356
2	1090	--	590	260	10	7	1480	--	240
3	735	--	230	260	9	6	1260	--	170
4	520	75	105	270	6	4	1120	35	106
5	400	--	50	280	10	8	1060	32	92
6	320	--	30	280	11	8	995	30	81
7	300	20	16	300	13	11	962	28	73
8	310	--	10	379	37	38	930	--	130
9	300	--	10	409	38	42	1550	110	460
10	280	10	8	534	37	53	1160	40	125
11	260	10	7	631	--	60	962	21	55
12	250	--	7	670	--	50	930	--	60
13	250	--	7	670	15	27	832	60	135
14	245	--	7	670	15	27	832	21	47
15	388	--	50	865	18	42	865	18	42
16	900	152	369	1300	31	109	754	13	26
17	761	95	195	1850	--	350	683	13	24
18	586	--	90	3200	--	1900	631	18	31
19	527	30	43	6300	--	12000	930	37	93
20	421	--	20	6310	600	10200	930	21	53
21	451	10	12	3510	244	2310	800	15	32
22	350	20	19	3050	--	1500	1930	220	1150
23	310	14	12	4860	293	S 3930	3120	242	2040
24	290	10	8	4800	172	S 2310	2820	182	1390
25	280	10	8	4730	289	S 4110	2080	--	450
26	280	25	19	6100	529	S 9040	1700	50	230
27	260	49	34	2980	--	1600	1480	36	144
28	260	145	102	2150	96	557	1340	40	145
29	280	73	55	--	--	--	1200	30	97
30	280	62	47	--	--	--	1060	--	90
31	270	20	15	--	--	--	1030	--	140
Total	13084	--	2685	57878	--	50505	39206	--	8307
	APRIL			MAY			JUNE		
1	1920	128	664	800	--	30	514	8	11
2	1400	--	110	1100	60	178	494	--	9
3	1200	--	60	960	40	104	527	--	20
4	1090	19	56	832	15	34	488	20	26
5	995	12	32	780	10	21	427	--	10
6	930	13	33	832	10	22	403	--	10
7	832	--	30	1000	11	30	514	--	60
8	780	--	30	930	15	38	631	52	89
9	748	13	26	832	18	40	800	--	40
10	4020	460	S 5620	800	18	39	962	--	60
11	2380	165	1060	832	--	40	3270	--	3200
12	1780	80	384	2000	156	S 929	1030	125	348
13	9400	549	S 13700	7070	700	S 13700	728	--	110
14	5630	184	S 2990	4110	--	2700	690	--	90
15	3050	105	865	2450	--	760	1030	272	756
16	2900	182	1430	2150	--	670	728	--	140
17	2980	150	1210	1660	80	359	572	--	80
18	2220	--	360	1370	46	170	482	--	50
19	1850	50	250	1260	35	119	427	--	40
20	1590	--	210	1090	--	90	391	--	30
21	1370	48	178	995	25	67	446	--	80
22	1340	--	150	930	--	50	1440	330	1280
23	1230	--	120	832	--	40	832	--	250
24	1120	22	67	780	19	40	598	--	60
25	1060	20	57	716	12	23	482	20	26
26	1030	22	61	696	--	40	427	--	20
27	962	--	60	735	43	85	457	19	23
28	898	--	50	638	14	24	501	25	34
29	962	--	50	592	10	16	403	--	20
30	832	--	40	638	15	26	355	18	17
31	--	--	--	553	10	15	--	--	--
Total	58499	--	29953	40950	--	20499	21049	--	6989

S Computed by subdividing day.

RAPPAHANNOCK RIVER BASIN--Continued

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

Suspended sediment, water year October 1960 to September 1961--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	328	21	19	158	14	6	173	--	9
2	295	--	20	148	15	6	154	--	7
3	328	12	11	169	43	20	144	15	6
4	344	20	19	218	130	77	177	--	9
5	300	12	10	407	--	130	173	20	9
6	384	--	80	548	--	220	137	25	9
7	664	90	161	328	42	37	233	60	38
8	427	--	50	246	25	17	2940	551 S	4450
9	333	--	20	197	18	10	905	--	460
10	280	15	11	290	33	26	657	--	180
11	255	--	10	290	--	30	421	60	68
12	236	12	8	255	--	20	322	25	22
13	236	10	6	218	--	10	260	23	16
14	521	170	239	173	25	12	218	25	15
15	520	320	449	144	15	6	189	23	12
16	463	--	180	130	15	5	169	--	10
17	338	--	80	121	17	6	151	--	8
18	572	140	216	115	15	5	140	--	8
19	494	--	170	109	--	4	144	--	8
20	311	69	58	112	17	5	184	--	20
21	265	--	40	200	27	15	333	--	40
22	361	--	30	260	27	19	246	--	20
23	316	30	26	201	22	12	181	--	10
24	270	40	29	236	40	25	151	--	8
25	260	31	22	418	100	113	137	--	7
26	546	270	398	1340	285	1030	140	--	8
27	285	60	46	882	148	352	127	--	7
28	218	23	14	445	40	48	118	--	6
29	201	--	10	311	--	20	118	--	6
30	210	--	10	246	19	13	118	--	6
31	181	20	10	197	20	11	--	--	--
Total	10742	--	2452	9112	--	2310	9560	--	5482
Total discharge for year (cfs-days)									273904
Total load for year (tons)									129505

S Computed by subdividing day.

RAPPAHANNOCK RIVER BASIN--Continued

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

Particle-size analyses of suspended sediment, 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)	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	
Feb. 25, 1961.....	1500			4915	125		12	18	28	42	62	78	92	99	100			SBWC
Aug. 25.....	1800			490	55		52	59	74	86	91	95	98	99	100			SBWC

MISCELLANEOUS ANALYSES OF STREAMS IN NORTH ATLANTIC SLOPE BASINS

Chemical analyses, in parts per million, water year October 1960 to September 1961

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				
HUDSON RIVER BASIN																					
HUDSON RIVER AT NEWBURGH, N. Y.																					
Sept. 13, 1961		3.2		0.14		25	4.4	7.2	1.2	76	22	7.1	0.2	3.4	120	81	18		205	8.1	7
Sept. 13.....		2.7		.09		26	4.5	6.8	1.2	78	24	7.3	.2	3.2	117	84	20		207	7.2	7
HUDSON RIVER AT TARRYTOWN, N. Y.																					
Sept. 15, 1961		3.3		0.04		96	269	1990	77	86	532	3640	0.5	0.2	7180	1350	1280		11500	7.2	7
Sept. 15.....		3.3		.08		96	267	1990	77	85	533	3640	.4	4.2	7170	1340	1270		11400	7.2	7
DELAWARE RIVER BASIN																					
1-4315. LACKAWAXEN RIVER AT HAWLEY, PA.																					
Oct. 25, 1960.	214	12		0.01	0.01	10	1.6	3.7	1.8	27	13	2.8	0.1	0.7	--	32	10		79	6.8	16
Dec. 17.....	160	--		--	--	--	--	2.1	--	27	11	1.5	--	1.5	--	32	10		75	7.6	5
Jan. 24, 1961.	115	9.0		.04	.00	11	3.8	4.0	1.4	32	15	5.0	.1	2.7	68	43	17		107	6.5	2
Mar. 7.....	2780	4.2		.04	.03	6.9	.6	2.0	1.1	12	12	.5	--	2.0	52	20	10		57	6.6	3
Apr. 11.....	780	3.8		.00	--	7.8	.6	3.5	1.3	17	12	2.0	--	.9	40	22	8		63	7.1	2
May 9.....	912	6.8		.07	.03	8.6	.6	3.0	.8	20	11	2.8	.0	1.1	58	24	8		66	7.1	10
June 23.....	294	4.7		.03	.00	11	1.1	3.0	.4	28	9.9	2.7	.2	1.9	53	32	9		79	7.1	3
Aug. 1.....	118	9.6		.02	.01	11	1.6	5.0	1.5	34	9.7	4.0	.0	1.4	68	34	6		91	7.1	2
1-4530. LEHIGH RIVER AT BETHLEHEM, PA.																					
Nov. 3, 1960..	1450	7.5		0.02	--	16	6.0	5.8	1.8	36	32	5.5	0.5	5.4	109	65	35		166	6.9	5
Dec. 14.....	940	14		.03	--	21	8.3	9.0	2.1	52	46	6.3	--	8.5	140	87	44		211	7.3	5
Jan. 24, 1961.	1100	10		.10	0.00	20	6.3	6.2	1.9	42	37	8.0	.1	7.9	124	76	42		197	6.9	2
Mar. 8.....	6460	5.0		.06	.06	8.6	2.8	2.0	1.1	13	20	2.0	--	3.6	74	33	23		91	6.4	3
Apr. 17.....	8720	5.8		.02	.00	7.8	3.0	3.4	1.0	12	20	3.0	.0	4.7	58	32	22		90	6.2	6
May 22.....	2700	4.9		.02	.21	13	4.7	3.4	1.0	28	27	5.2	.1	4.8	98	52	29		132	6.8	5
June 29.....	1400	6.4		.00	.00	16	6.9	7.5	3.0	38	34	7.0	.4	8.1	120	69	38		176	6.7	5

1-4584. HARIHOKAKE CREEK NEAR FRENCHTOWN, N. J.

May 24, 1961..	8.66							7.6		a 46	24	3.5		3.2		57	16		143	8.6	
Sept. 6.....	1.05									74	18	6.0				70	10		166	8.2	

1-4587. LITTLE NISHISAKAWICK CREEK AT FRENCH TOWN, N. J.

May 24, 1961..	1.55							5.3		49	44	6.0		3.6		86	46		190	7.4	
Sept. 6.....	.00									94	43	10				116	39		266	7.8	

1-4609. LOCKATONG CREEK NEAR RAVEN ROCK, N. J.

May 6, 1961...	15.2							7.1		26	31	5.5		3.4		49	28		135	7.4	
Sept. 6.....	1.61									48	30	8.0				62	23		170	7.5	

1-4622. MOORE CREEK NEAR TITUSVILLE, N. J.

May 6, 1961...	8.41							9.2		47	35	6.0		0.7		64	26		168	7.5	
Sept. 6.....	.86									92	39	16				104	29		262	7.9	

1-4658.8. SOUTHWEST BRANCH RANCOCAS CREEK AT MEDFORD, N. J.

Apr. 25, 1961.	71.1							2.5		4	13	4.0		1.3		18	15		57	6.0	
Sept. 8.....	37.4									10	9.2	4.0				16	8		57	5.9	

1-4829. COOL RUN NEAR ALLOWAY, N. J.

Apr. 25, 1961.	8.28									10									115	6.7	
Sept. 8.....	4.69									26	11	16				44	23		133	6.5	

1-4832. BLACKBIRD CREEK AT BLACKBIRD, DEL.

Mar. 22, 1961.	13	14		0.25		4.1	1.5	4.2	1.5	12	9.0	4.4		3.2	65	16	6		62	6.4	35
July 13.....	1.4	21		.20		4.1	1.5	5.0	1.0	17	3.6	6.5	0.1	3.9	68	16	2		63	6.5	35

a Includes equivalent of 4 ppm of carbonate (CO_3).

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

Chemical analyses, in parts per million, water year October 1960 to September 1961--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 $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
SUSQUEHANNA RIVER BASIN																					
1-5435. SINNEMAHONING CREEK AT SINNEMAHONING, PA.																					
Oct. 12, 1960.	33	6.9	8.8	0.07	2.4	26	14	13	4.5	0	189	16	0.1	0.0	--	123	123	1.6	484	3.8	1
Nov. 15.	83	6.2	2.2	.03	1.2	17	8.2	8.2	1.4	0	94	9.5	.1	.4	152	76	76	.6	291	4.1	3
Jan. 6, 1961.	82	--	--	--	--	--	--	--	--	0	106	14	--	.5	196	86	86	.8	324	3.8	3
Feb. 9.	72	--	--	--	--	--	--	--	--	0	90	12	--	1.4	161	76	76	.4	273	4.3	3
Mar. 22.	1630	6.8	.1	.00	.17	9.0	3.5	4.2	1.3	1	42	3.0	--	.2	75	37	36	--	120	4.7	3
May 3[a].	1200	--	--	--	--	--	--	3.0	--	2	22	2.0	--	.2	--	21	20	--	68	6.1	3
May 3[b].	1200	--	--	--	--	--	--	--	--	0	47	2.5	--	.4	--	42	42	--	142	4.2	3
June 8.	287	7.1	1.1	.00	.56	12	4.5	4.1	1.0	0	53	5.0	.1	.4	109	49	49	--	157	4.5	4
July 19.	287	6.4	.9	.01	.34	10	5.0	4.0	1.2	1	51	4.0	.1	1.8	114	46	45	--	151	4.6	3
Aug. 31.	100	--	--	--	--	--	--	--	--	0	82	7.5	--	.5	--	70	70	.4	229	4.2	3
1-5475. NORTH BALD EAGLE CREEK AT BLANCHARD, PA.																					
Nov. 16, 1960.	158	5.9	5.0	0.00	--	42	16	6.8	1.7	178	18	7.4	0.0	7.4	198	171	25		341	7.9	3
Dec. 29.	130	--		--	--	--	--	14	--	174	23	9.0	--	5.6	236	154	12		350	8.0	3
Feb. 17, 1961.	278	13		.02	0.00	36	8.4	6.0	2.0	112	26	10	.1	6.1	168	125	33		281	6.7	3
Mar. 20.	615	17		.00	--	27	8.0	6.3	1.8	100	19	4.5	--	4.5	140	101	19		222	7.4	3
May 2.	559	--		--	--	--	--	2.5	--	118	21	4.7	--	5.8	148	124	28		245	7.2	3
June 5.	241	5.6		.02	.09	41	14	5.3	1.2	167	19	7.5	.0	4.6	189	160	23		306	8.2	8
July 18.	169	4.5		.00	.00	44	14	5.3	2.0	172	22	8.0	.1	6.7	198	168	27		330	8.0	3
Aug. 29.	162	--		--	--	--	--	2.1	--	169	20	8.5	--	6.0	--	172	34		335	7.9	4
1-5535. WEST BRANCH SUSQUEHANNA RIVER AT LEWISBURG, PA.																					
Oct. 5, 1960.	1950	2.8		0.00	0.00	21	6.3	6.0	1.8	20	65	5.0	0.1	1.0	130	79	62		195	7.1	2
Oct. 27.	1800	7.0		.00	.02	30	9.9	7.5	2.0	55	82	6.9	.1	2.7	--	116	71		265	7.7	4
Dec. 6.	2150			--	--	--	--	6.4	--	27	64	5.1	--	2.8	146	84	62		205	6.3	5
Jan. 19, 1961.	2100	27		.10	.69	29	8.9	14	2.0	28	103	8.0	.1	2.7	214	109	86		308	7.0	3
Mar. 2.	42100	5.3		.04	.05	9.0	3.5	3.2	1.0	8	31	2.0	--	1.8	74	37	31		106	6.2	3
Apr. 12.	18400	--		--	--	--	--	1.8	--	10	37	2.0	--	.9	--	46	38		126	6.3	3
May 23.	14400	5.2		.14	.48	15	4.5	3.4	1.2	26	39	4.5	.1	.1	111	56	35		149	7.0	8
June 28.	6060	6.4		.00	.00	17	6.2	4.7	2.0	6	65	3.0	.2	1.1	118	68	63		176	6.1	3
Aug. 1.	3640	6.0		.00	.16	19	6.3	5.1	1.8	13	63	4.5	.0	1.8	128	74	63		190	6.5	4
Sept. 14.	1850	6.5		.00	.25	31	11	7.5	2.6	10	117	5.0	--	3.1	202	123	115		308	6.1	3

SUSQUEHANNA RIVER NEAR DUNCANNON

July 19,1961b										20	206					220	204		493	6.7	
July 19 d....										65	80					130	77		329	7.1	
July 19 e....										58	69					118	71		291	7.1	
July 19 f....										29	67					94	70		228	6.7	
July 19 g....										36	54					80	51		196	7.2	

1-5760. SUSQUEHANNA RIVER AT MARIETTA

Nov. 9,1960h.	12600			0.00			6.9		38	99	7.0		4.0		132	101		307	6.9	2
Nov. 9 i.....				.00			4.1		38	79	7.0		2.2		116	85		276	7.1	2
Nov. 9 j.....				.04			8.0		44	77	7.0		1.6		110	74		263	7.2	2
Nov. 9 k.....				.02			6.7		56	64	9.0		1.8		112	66		266	7.2	3
Nov. 9 l.....				.04			9.0		72	60	10		2.2		118	59		278	7.4	4

b Left side.
c Center and right side.
d Left center.
e Center
f Right center.
g Right side.

h Station 600.
i Station 1600.
j Station 2600.
k Station 3600.
l Station 4600.

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

Chemical analyses, in parts per million, water year October 1960 to September 1961--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 $CaCO_3$: Calcium, magnesium	Hardness as $CaCO_3$: Noncarbonate	Total acidity as H^{+1}	Specific conductance (micromhos at 25°C)	pH	Color
POTOMAC RIVER BASIN																					
1-5953. ABRAM CREEK AT OAKMONT, W. VA.																					
Sept. 29, 1960	5.4		2.6	0.10	2.0					0	113	1.5	0.2	0.2		103	103		267	4.4	
Apr. 17, 1961.	320		.1	.82	.33					3	27	.5	.1	1.3		28	26		76	5.8	
SOUTH BRANCH POTOMAC RIVER NEAR FRANKLIN, W. VA.																					
Sept. 6, 1960.	34	5.6		0.08	0.00	35	3.8	0.7	0.7	119	6.4	2.0	0.1	0.2	110	103	6		199	7.5	4
Apr. 19, 1961.	452	3.1		.06	.10	23	2.6	.8	.6	78	7.0	1.0	.1	1.4	80	69	4		140	7.6	5
SOUTH FORK OF SOUTH BRANCH POTOMAC RIVER AT BRANDYWINE, W. VA.																					
Sept. 6, 1960.	10	5.4		0.06	0.02	26	4.3	1.4	1.0	88	13	1.0	0.1	0.2	102	82	10		172	7.4	3
Apr. 19, 1961.	250	4.8		.10	.09	12	2.6	1.2	.9	39	9.6	1.5	.1	1.0	54	40	8		92	7.1	5
POTOMAC RIVER AT SHEPHERDSTOWN, W. VA.																					
Sept. 28, 1960	1040	4.8		0.22	0.12	37	7.0	5.7	1.9	108	34	8.0	0.3	1.9	156	122	33		272	7.2	7
Apr. 18, 1961.	35100	5.5		.54	.10	15	3.1	1.6	1.2	37	19	1.5	.1	2.3	66	50	20		116	7.0	40
1-6365. SHENANDOAH RIVER AT MILLVILLE, W. VA.																					
Sept. 28, 1960	812	3.4		0.20	0.21	30	11	12	2.3	152	31	9.0	0.2	2.3	178	140	16		328	7.5	10
Apr. 18, 1961.	12900	6.1		.15	.26	20	4.7	3.1	1.0	69	12	2.5	.2	2.6	88	70	13		153	7.4	10
June 19.....	1360	7.0		.11	.02	38	13	9.0	--	158	23	7.5	.2	2.6	180	147	18		320	7.1	5

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 4.0 miles downstream from Lake Drummond Canal.
DRAINAGE AREA.--275 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1961.
Water temperatures: October 1957 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 14 ppm Feb. 15, Sept. 1-30; minimum, 8.5 ppm Feb. 16-28.
Specific conductance: Maximum daily, 132 micromhos Feb. 15; minimum daily, 57 micromhos June 28.
Water temperatures: Maximum, 95°F July 25; minimum, freezing point Jan. 27.
EXTREMES, 1957-61.--Chloride: Maximum, 1,630 ppm Nov. 29, 1958; minimum, 7.7 ppm Mar. 1-10, 1958.
Specific conductance: Maximum daily, 5,020 micromhos Nov. 10, 1958; minimum daily, 57 micromhos June 28, 1961.
Water temperatures: Maximum, 95°F July 25, 1961; minimum, freezing point Jan. 27, 1961.
REMARKS.--Records of specific conductance of samples collected available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-31,1960		9.1	1.6	5.3	0.9	7.1	1.7	5	9.4	10	0.4	1.0		167	48	16	12	81	5.0	700
Nov. 1-30.....		11	2.0	5.5	1.5	8.7	1.4	9	14	12	.4	1.1		190	62	20	12	91	5.6	800
Dec. 1-31.....		11	1.2	5.1	3.1	7.8	1.4	7	14	13	.3	1.7		146	62	25	20	89	5.4	480
Jan. 1-31,1961		9.5	.78	4.6	2.9	6.7	1.1	7	11	12	.3	.8		120	53	24	18	78	5.4	320
Feb. 1-14.....		8.2	.57	4.7	2.3	6.4	1.2	6	12	9.5	.2	1.3		98	49	22	18	75	5.5	240
Feb. 15.....		--	--	--	--	11	2.4	14	19	14	--	3.5		--	--	40	28	132	7.2	--
Feb. 16-28....		7.2	.56	4.4	1.8	5.8	1.3	6	12	8.5	.2	.9		97	46	18	14	68	5.3	320
Mar. 1-31.....		6.1	.71	4.2	1.8	5.9	1.1	6	10	9.5	.3	.2		121	43	18	13	68	5.4	320
Apr. 1-30.....		5.8	.76	5.4	1.7	6.4	1.3	6	12	9.5	.2	.6		122	47	20	16	70	5.4	360
May 1-31.....		7.0	1.3	4.6	2.0	6.2	1.4	6	14	10	.4	.7		142	51	20	15	68	5.3	480
June 1-30.....		6.6	1.4	4.0	1.5	5.7	1.1	6	11	9.0	.4	.3		144	44	16	11	65	5.2	480
July 1-31.....		7.8	1.1	3.4	2.5	6.5	1.2	8	9.4	12	.4	.6		139	49	18	12	70	5.5	400
Aug. 1-31.....		8.2	1.3	4.2	2.5	8.5	1.4	7	6.8	12	.3	.9		152	49	20	15	80	5.5	500
Sept. 1-30....		9.1	.71	4.6	1.0	11	1.4	12	11	14	.4	3.3		148	63	16	6	105	5.8	320
Time-weighted average.....		8.3	1.1	4.6	2.0	7.2	1.3	7	11	11	0.3	1.0		141	52	19	14	78	--	450

PASQUOTANK RIVER BASIN--Continued

2-438.52. PASQUOTANK RIVER NEAR ELIZABETH CITY, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement between 10:30 a.m. and 7 p.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	68	62	49	46	40	56	62	68	77	78	87	90
2..	70	59	49	46	37	56	57	66	75	79	89	86
3..	71	57	48	45	40	54	58	65	80	77	88	83
4..	69	57	48	45	40	56	54	64	79	88	82	85
5..	68	61	55	45	40	60	56	65	81	84	82	89
6..	73	55	56	44	39	63	58	62	78	77	84	85
7..	70	56	55	46	40	65	60	64	81	81	88	84
8..	69	56	50	46	40	65	62	68	80	80	91	84
9..	65	57	44	41	43	59	55	68	81	80	91	84
10..	65	57	45	43	46	54	58	70	78	81	86	85
11..	67	55	45	42	48	56	62	71	83	80	89	85
12..	69	54	41	43	48	55	57	74	88	78	94	89
13..	70	55	39	45	45	57	67	73	89	82	88	87
14..	69	55	41	46	49	60	59	70	87	84	80	83
15..	71	62	40	46	47	62	61	72	74	84	85	77
16..	70	56	41	46	48	57	61	72	78	85	89	73
17..	69	54	39	47	52	55	63	68	78	85	83	73
18..	70	60	42	46	53	55	58	68	73	84	82	78
19..	70	54	47	46	55	57	58	68	79	87	78	77
20..	68	56	39	43	53	57	57	64	84	89	79	75
21..	62	57	40	44	51	57	58	61	78	84	81	76
22..	64	57	39	41	50	53	68	62	80	94	78	76
23..	65	56	38	41	54	56	61	70	82	83	81	78
24..	59	56	40	40	55	52	74	70	76	84	83	81
25..	59	58	40	36	55	56	72	70	75	95	83	79
26..	60	57	41	35	55	58	70	65	76	91	81	83
27..	59	56	40	32	60	59	64	67	74	87	84	76
28..	52	58	40	36	--	62	67	67	72	88	83	75
29..	52	59	40	35	--	60	63	68	74	90	84	74
30..	56	51	45	35	--	60	68	68	72	92	84	74
31..	60	--	44	38	--	58	--	70	--	85	88	--
Average	65	57	44	42	48	58	62	68	79	84	85	81

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 1961.
Water temperatures: October 1957 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 4,950 ppm Sept. 30 (bottom); minimum, 4.5 ppm Mar. 6 (top).
Specific conductance: Maximum daily, 14,100 micromhos Sept. 30 (bottom); minimum daily, 63 micromhos June 3 (top).
Water temperatures: Maximum, 88°F July 29 (bottom), 31 (top); minimum, 35°F Jan. 28 (top), 30 (bottom), Feb. 2 (bottom).
EXTREMES, 1957-61.--Chloride: Maximum, 8,020 ppm Oct. 30 (bottom), 1958; minimum, 4.5 ppm Mar. 6 (top), 1961.
Specific conductance: Maximum daily, 20,800 micromhos Oct. 29 (bottom), 1958; minimum daily, 63 micromhos June 3 (top), 1961.
Water temperatures: Maximum, 89°F July 29, 30, (top) 1959, Sept. 1 (top), 1960; minimum, freezing point on several days during winter months.
REMARKS.--Top (T) and bottom (B) samples were collected once daily (10:30 a.m.) and were composited unless otherwise indicated. When specific conductance values indicated salt-water encroachment, only specific conductance and chloride were determined on individual samples. The individual chloride determinations are tabulated separately from the composite chemical analyses. Records of specific conductance of samples collected available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-31,1960		8.9	1.4	4.3	1.8	8.0	2.0	3	11	13	0.4	1.1		158	53	18	16	90	5.3	720
Feb. 21(B),22-23,24(T),1961		7.0	.35	4.2	2.8	8.3	1.2	7	14	12	.2	.5		--	54	22	16	89	5.8	280
Feb. 24 (B)...		--	--	--	--	15	1.7	9	12	23	--	.7		--	--	27	20	130	6.4	--
Feb. 25-28....		6.1	.30	4.5	2.3	6.8	1.5	9	10	10	.3	.7		--	46	20	13	78	5.7	220
Mar. 1-4, 5(T)		5.7	.15	4.2	1.7	5.6	1.8	8	12	9.0	.2	.1		--	44	18	11	67	5.8	180
Mar. 5 (B)....		--	--	--	--	--	--	8	14	42	--	.7		--	--	30	24	200	6.3	--
Mar. 6 (T)....		--	--	--	--	--	--	8	7.2	4.5	--	--		--	--	18	11	70	6.4	--
Mar. 6 (B)....		--	--	--	--	--	--	8	14	46	--	.7		--	--	33	26	220	6.4	--
Mar. 7 (T)....		--	--	--	--	--	--	7	9.6	5.0	--	.6		--	--	19	13	70	6.0	--
Mar. 7 (B)....		--	--	--	--	--	--	9	22	97	--	.8		--	--	50	42	382	6.4	--
Mar. 8 (T)....		--	--	--	--	--	--	8	--	5.0	--	--		--	--	19	12	70	6.4	--
Mar. 8 (B)....		--	--	--	--	--	--	9	21	84	--	.7		--	--	45	38	342	6.5	--
Mar. 9-21.....		6.0	.59	3.8	2.7	7.3	1.5	8	12	12	.2	.4		113	50	20	14	76	5.5	320
Mar. 22.....		6.6	.19	5.1	4.3	18	2.1	8	12	30	.3	.1		--	83	30	24	158	5.5	--
Mar. 23, 24(T)		5.9	.56	5.0	2.0	8.2	1.5	8	14	12	.2	.5		--	54	21	14	81	5.8	360
Mar. 24 (B)...		--	--	--	--	--	--	10	15	64	--	.7		--	--	40	32	272	6.3	--
Mar. 25-27, 28 (T).....		5.6	.41	3.4	2.8	7.6	1.4	10	13	11	.3	.6		--	51	20	12	78	5.7	360

PASQUOTANK RIVER BASIN--Continued

2-438.62. PASQUOTANK RIVER AT ELIZABETH CITY, N. C.--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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. 28 (B), 1961		--	--	--	--	--	--	12	12	33	--	0.7		--	--	32	22	168	6.6	--
Mar. 29 (T)		--	--	--	--	--	--	11	8.8	14	--	.8		--	--	22	13	89	6.4	--
Mar. 29 (B)		--	--	--	--	--	--	10	14	63	--	.7		--	--	39	31	262	6.3	--
Mar. 30-31		5.8	0.62	4.2	3.1	8.6	1.4	9	12	13	0.3	.5		--	54	24	16	86	6.0	360
Apr. 1		6.4	.36	4.0	5.8	24	2.3	9	12	46	.3	.0		--	105	34	26	204	6.0	--
Apr. 2-12		5.1	.56	5.0	2.6	9.3	1.5	10	11	14	.2	.4		130	55	24	16	93	5.9	280
Apr. 13		5.8	.46	4.6	6.5	31	2.9	8	17	58	.3	.0		--	131	38	32	251	5.7	--
Apr. 14-25		5.1	.60	4.8	2.9	12	1.7	10	9.4	19	.2	.3		148	61	24	16	108	5.8	360
Apr. 28 (B), 29-30		5.3	.71	4.9	2.7	11	1.8	10	11	18	.2	.4		--	61	23	15	102	5.8	360
May 1		5.9	.54	5.6	3.1	28	2.5	8	12	46	.3	1.0		--	109	26	20	210	6.2	240
May 2-8		6.2	.80	4.1	2.8	9.8	1.4	10	8.6	16	.4	.7		137	56	22	14	90	6.0	400
May 9-11,12(T)		6.3	1.0	5.8	1.8	15	1.7	10	10	26	.4	.7		--	74	22	14	126	5.9	360
May 12 (B), 13-31		6.9	1.3	5.1	2.5	7.2	1.6	8	12	12	.4	.6		140	54	22	16	80	5.8	480
June 1-8		7.3	.90	3.8	2.4	6.9	1.3	8	7.6	11	.3	.5		133	46	20	13	70	5.5	400
June 9-13, 14 (T)		7.3	.93	5.1	3.3	19	2.0	8	13	34	.4	.8		174	90	26	20	155	5.7	400
June 14 (B), 15-17, 18(T)		7.0	1.0	4.2	2.1	12	1.5	9	10	17	.0	1.4		--	60	20	12	99	5.6	550
June 18 (B), 19-20		7.0	.80	5.9	3.6	26	2.0	9	12	40	.3	2.4		--	104	30	22	182	5.5	550
June 21-22		6.8	.61	5.8	5.7	38	1.8	8	23	65	.3	2.2		--	153	38	32	262	5.6	390
June 23-26		6.8	.84	5.4	2.2	17	1.8	10	10	26	.3	1.4		--	77	22	14	135	5.6	550
June 27-30		6.6	.83	4.8	2.1	8.5	1.3	10	10	11	.3	1.4		--	52	21	13	77	5.7	600
July 1-16		6.2	.67	5.8	2.0	8.0	1.7	10	14	12	.3	.9		127	57	22	14	89	6.1	320
Aug. 1-9,10(T)		7.3	.66	5.9	5.6	31	3.0	12	15	58	.2	1.2		215	134	38	28	257	6.5	400
Aug. 10 (B), 11-13		8.2	.52	11	3.6	47	3.5	14	21	83	.4	1.2		251	186	42	31	340	6.2	320
Aug. 14 (T)		--	--	--	--	--	--	--	--	--	--	--		--	--	--	--	--	--	--

Aug. 14 (B), 15-18,19(T), 1961.....		8.3	.53	6.3	6.2	41	3.2	16	19	74	.4	1.0		230	168	41	28	290	6.2	210
Aug. 19 (B), 20-31.....		8.2	.30	6.7	8.4	58	3.8	14	22	105	.2	.9		276	220	52	40	410	6.4	240
Sept. 1-13....		7.9	.35	7.4	8.7	65	4.3	17	23	110	.2	1.1		303	236	54	40	430	6.2	210
Sept. 14-17...		7.8	.31	7.7	9.4	76	4.7	16	25	127	.2	1.0		387	267	58	45	490	6.2	275
Sept. 18-20...		7.9	.42	7.5	7.0	54	3.7	15	21	92	.3	1.2		272	202	48	35	369	6.2	300
Sept. 21-26, 27 (T).....		7.1	.19	7.1	11	87	4.5	13	27	150	.2	1.6		357	302	65	54	590	6.1	180

Chloride, in parts per million, water year October 1960 to September 1961

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			94	161	336	342	630	740	48	920			46	46	46	46								
2			185	256	306	334	776	772	172	716		9.0												
3			172	255	304	332	160	965	241	382	9.0													
4			78	191	316	1,000	162	770	212	209														
5			189	430	1,100	532	812	806	84	98		42			16	16	11	11			58	58		
6			211	430	480	1,130	158	752	24	458	4.5	46												
7			41	45	382	1,180	82	962	27	26	5.0	97	14	14									110	110
8			113	152	654	1,230	66	1,080	84	268	5.0	84												
9			110	153	560	1,240	52	672	17	16									12	12				
10			116	320	1,020	1,040	54	698	12	12					26	26						83		
11			148	183	574	1,200	905	905	14	792							34	34						
12			138	181	574	1,210	34	1,070	14	778						12					83	83		
13			124	286	380	392	46	1,060	18	16			58	58										
14			788	1,050	678	965	268	496	14	678								17			--	74		
15			685	1,050	338	480	272	504	11	730	12	12					17	17					127	127
16	13	13	650	816	448	840	190	724	22	24											74	74		
17			227	985	520	708	642	642	19	640									55	17				
18			223	975	744	778	92	950	19	590							40	28						
19			129	746	462	1,080	63	1,030	48	52									19	19		105	92	92
20			372	902	158	1,140	98	108	13	70			19	19			40	40	37	25				
21			426	910	372	356	75	574	36	12									18	36				
22			328	1,080	266	696	59	606		12	30	30			12	12	65	65	27	16				
23			179	1,020	174	250	74	71	12		12	12							11	32				
24			176	1,000	590	492	79	610		23	12	64							18	13			150	150
25			474	960	84	1,100	61	88									26	26	20	23				
26			216	975	77	1,100	130	144	10	10		11	102	97					15	10	105	105		
27			207	990	37	101	95	376			11		44	47					28	10				4,640
28			314	980	146	1,060	29	794				33	17	18			11	11	14	14			430	4,540
29			400	970	476	920	114	98	--	--	14	63							63	70			185	1,000
30			384	985	1,000	1,020	43	1,090	--	--			18	18					18	17			220	4,950
31			--	--	154	1,100	46	1,240	--	--	13	13	--	--			--	--	63	24			--	--

PASQUOTANK RIVER BASIN--Continued

2-438.62. PASQUOTANK RIVER AT ELIZABETH CITY, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Top (T) and bottom (B) once-daily measurements at approximately 10:30 a.m.)

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

CHOWAN RIVER BASIN

2-532.44. CHOWAN RIVER AT WINTON, N. C.

LOCATION.--At drawbridge 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 1961.
Water temperatures: October 1954 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 23 ppm Nov. 26-30; minimum, 4.5 ppm June 1-30.
Specific conductance: Maximum daily, 210 micromhos Sept. 26; minimum daily, 50 micromhos Feb. 14-16.
Water temperatures: Maximum, 79°F Aug. 14; minimum, 38°F Jan. 29, 30, Feb. 2, 9, 15.
EXTREMES, 1954-61.--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.--Records of specific conductance of samples collected from October 1954 to September 1961 and records of suspended matter of composite samples from October 1954 to September 1955 available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960		13	0.33	5.8	1.8	7.3	2.0	26	7.4	8.5	0.2	1.4	70	22	0	83	6.6	60
Nov. 1-3		14	.30	6.3	1.6	8.9	2.1	30	6.4	10	.2	1.6	a66	22	0	92	6.6	--
Nov. 4-25		15	.39	7.1	1.9	13	2.0	36	8.4	14	.2	1.1	97	26	0	116	7.4	100
Nov. 26-30		16	.35	7.5	2.1	22	2.1	46	12	23	.3	.7	a109	28	0	160	6.7	110
Dec. 1-16		14	.54	7.3	1.9	20	2.0	41	8.4	20	.3	.8	114	26	0	150	7.4	120
Dec. 17-31		13	.50	5.7	1.5	14	1.8	37	6.4	10	.1	.5	90	20	0	108	7.6	120
Jan. 1-31, 1961		11	.20	5.1	1.8	8.8	1.5	22	8.8	10	.2	1.6	70	20	2	85	6.4	80
Feb. 1-2		13	.26	5.6	1.8	11	1.3	23	10	12	.1	.6	a67	22	2	104	7.2	--
Feb. 3-28		8.0	.08	4.2	1.3	5.6	1.6	13	6.4	7.0	.1	1.2	52	16	5	64	6.4	55
Mar. 1-31		7.8	.21	5.3	1.0	6.4	1.8	18	4.3	8.2	.1	1.4	67	17	2	69	7.1	110
Apr. 1-30		6.8	.14	4.7	1.5	5.8	1.2	20	6.4	7.0	.1	.7	55	18	2	68	6.9	65
May 1-31		8.5	.31	5.3	1.3	4.3	1.4	21	6.8	5.5	.1	1.2	57	18	1	61	6.9	90
June 1-30		9.1	.30	4.6	1.6	5.7	1.4	20	6.4	4.5	.3	1.7	73	18	2	71	6.6	130
July 1-26		12	.37	5.6	1.2	6.6	1.4	23	6.0	8.0	.2	.4	70	19	0	75	6.9	105
July 27-31		11	.40	6.6	1.6	12	1.6	32	6.8	12	.2	1.4	a70	23	0	110	6.8	110
Aug. 1-31		14	.11	6.7	2.2	18	2.1	38	6.8	19	.2	.6	93	26	0	130	6.7	80
Sept. 1-30		12	.12	7.0	2.0	21	2.1	41	8.4	20	.2	.7	105	26	0	160	6.9	90
Time-weighted average		11	0.26	5.7	1.6	10	1.7	27	7.0	11	0.2	1.1	76	21	1	94	--	90

a Calculated from determined constituents.

CHOWAN RIVER BASIN--Continued

2-532.44. CHOWAN RIVER AT WINTON, N. C.--Continued

Temperature (°F) of water, water year October 1960 to September 1961
(Once-daily measurement at approximately 9 a.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	66	63	58	42	39	41	60	60	72	74	75	76
2..	66	63	57	42	38	43	60	60	71	74	76	75
3..	65	62	57	42	39	43	60	60	72	73	77	76
4..	66	62	57	43	39	44	59	59	73	73	78	77
5..	66	62	57	42	39	44	60	59	73	74	77	76
6..	65	61	58	44	39	44	60	60	72	72	76	75
7..	65	60	58	43	40	44	60	59	73	73	76	76
8..	65	60	56	42	40	--	58	61	73	73	78	76
9..	64	60	55	42	38	45	59	61	74	74	78	77
10..	64	60	54	43	40	45	60	62	75	73	77	76
11..	64	60	54	43	40	47	60	63	75	72	77	76
12..	65	59	53	44	39	48	59	63	75	71	78	76
13..	65	59	51	43	39	50	60	64	71	72	77	74
14..	65	59	50	42	39	52	60	64	72	73	79	74
15..	65	60	49	43	38	55	61	65	72	72	76	73
16..	64	60	48	42	39	56	60	67	71	73	77	72
17..	64	60	48	42	40	57	61	68	72	75	78	74
18..	64	60	46	43	40	58	61	69	72	73	77	71
19..	63	60	45	42	41	57	60	70	73	73	78	72
20..	62	59	48	43	41	57	60	71	73	74	78	72
21..	61	58	47	42	40	57	60	70	72	75	77	71
22..	62	58	46	41	39	56	61	70	73	75	78	70
23..	60	59	46	42	40	57	62	71	73	75	78	71
24..	60	58	45	40	40	56	62	70	73	75	76	71
25..	63	58	44	40	40	56	61	71	72	75	77	72
26..	63	58	44	40	41	56	62	70	73	76	76	70
27..	62	58	43	39	41	57	61	69	74	75	77	70
28..	62	59	45	39	42	58	60	68	72	75	76	69
29..	62	58	44	38	--	59	60	68	74	76	75	68
30..	63	58	44	38	--	60	60	71	73	76	77	68
31..	63	--	43	39	--	60	--	70	--	77	76	--
Average	64	60	50	42	40	52	60	66	73	74	77	73

2-536.52. *CHOWAN RIVER NEAR EDENHOUSE, N. C.*

LOCATION.--At draw section on U. S. Highway 17 bridge, 0.8 mile northeast of Edenhouse, Bertie County.
DRAINAGE AREA.--4,871 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1961.
Water temperatures: October 1957 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 1,700 ppm Dec. 6 (bottom); minimum, 3.0 ppm June 1-30.
Specific conductance: Maximum daily, 5,580 micromhos Dec. 6 (bottom); minimum daily, 47 micromhos Oct. 8, 14 (bottom).
Water temperatures: Maximum, 88°F Sept. 1 (bottom); minimum, freezing point Jan. 24, 25.
EXTREMES, 1957-61.--Chloride: Maximum, 9,140 ppm Nov. 11 (bottom), 1958; minimum, 3.0 ppm June 1-30, 1961.
Specific conductance: Maximum daily, 23,500 micromhos Nov. 11 (bottom), 1958; minimum daily, 43 micromhos Sept. 22 (bottom), 1960.
Water temperatures: *Maximum*, 91°F June 11 (top), 1959; *minimum*, freezing point Jan. 24, 25, 1961.
REMARKS.--Top (T) and bottom (B) samples were collected once daily (3 p.m.) and were composited unless otherwise indicated. When specific conductance values indicated salt-water encroachment, only specific conductance and chloride were determined on individual samples. The individual chloride determinations are tabulated separately from the composite chemical analyses. Records of specific conductance of samples collected available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....		6.2	0.26	4.3	1.0	4.4	1.9	15	3.4	5.0	0.2	0.9	54	15	2	52	6.7	100
Oct. 31.....		--	--	--	--	--	--	26	12	6.7	--	.8	--	25	4	110	7.4	--
Nov. 1-2.....		7.4	.21	7.5	3.1	18	2.5	31	9.4	26	.1	1.6	a91	32	6	161	6.8	70
Nov. 3-4.....		7.8	.33	4.6	1.9	6.1	1.9	21	7.4	7.5	.1	.6	a48	20	2	72	7.2	100
Nov. 5-6.....		7.4	.27	7.1	2.8	17	2.7	29	8.4	26	.1	2.3	a88	29	5	158	6.9	70
Nov. 7-22.....		8.1	.47	5.0	2.0	7.2	2.0	20	4.4	9.5	.1	1.4	76	20	4	79	6.7	100
Feb. 1-8, 1961.....		13	.36	5.5	2.9	18	2.1	26	7.6	24	.1	1.7	101	26	4	146	7.3	90
Feb. 9-17.....		11	.00	5.3	1.8	10	1.6	21	10	11	.1	1.0	70	20	3	90	6.5	60
Feb. 18-28.....		8.1	.14	3.8	1.7	6.5	1.6	13	8.4	7.5	.1	1.5	56	16	6	68	6.5	70
Mar. 1-31.....		7.3	.13	4.5	1.2	6.0	1.9	13	8.0	7.5	.1	2.0	61	16	6	66	7.0	80
Apr. 1-30.....		7.2	.11	4.5	1.5	6.6	1.5	16	6.9	8.0	.1	1.1	57	17	4	71	6.9	75
May 1-31.....		4.5	.19	4.6	1.2	5.8	1.5	16	5.6	7.0	.1	1.1	52	16	4	66	7.0	60
June 1-30.....		6.0	.20	3.6	1.6	4.2	1.5	17	7.6	3.0	.0	1.5	60	16	2	56	6.5	100
July 1-31.....		7.6	.29	4.7	1.5	6.6	1.7	20	3.2	8.5	.1	.4	65	18	2	72	6.9	105
Aug. 1-19.....		6.2	.17	4.3	1.6	7.6	2.1	19	5.0	10	.1	1.7	67	18	2	77	6.9	80
Aug. 20-22.....		6.0	.10	5.1	2.2	12	2.2	24	7.2	17	.1	1.6	83	22	2	110	7.2	60
Aug. 23-31.....		4.0	.13	3.7	2.3	9.6	2.1	21	6.8	11	.1	1.4	73	18	2	93	7.1	80
Sept. 1-23.....		4.9	.10	5.0	2.1	9.4	2.0	24	6.4	13	.1	.8	69	22	2	104	6.6	50
Sept. 24 (T).....		--	--	6.4	4.8	--	--	28	--	50	--	--	--	36	13	241	7.4	--
Sept. 24 (B).....		--	--	7.5	7.9	--	--	37	--	99	--	--	--	52	30	417	7.3	--
Sept. 25-30.....		5.5	.01	5.9	5.4	32	2.8	27	12	54	.2	1.2	146	37	15	262	6.7	35
Time-weighted average.....		6.7	0.19	4.6	1.7	7.5	1.8	18	6.2	9.8	0.1	1.2	65	18	4	80	--	80

a Calculated from determined constituents.

CHOWAN RIVER BASIN--Continued

2-536.52. CHOWAN RIVER NEAR EDENHOUSE, N. C.--Continued

Chloride, in parts per million, water year October 1960 to September 1961

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			26	26	125	152	346	338																
2					86	85	274	284																
3			7.5	7.5	168	950	224	225																
4					514	885	215	223																
5			26	26	172	168	231	232	24	24														
6					148	1,700	235	234																
7					430	742	153	162																
8					174	174	106	102																
9					554	630	104	102																
10					510	592	149	184													10	10		
11					584	576	113	114																
12					558	562	115	116															13	13
13					556	554	108	292	11	11														
14					494	492	111	114																
15			9.5	9.5	480	500	115	116																
16	5.0	5.0			474	556	138	136			7.5	7.5	8.0	8.0	7.0	7.0	3.0	3.0	8.5	8.5				
17					542	544	105	106																
18					524	552	105	104																
19					516	536	107	107																
20					510	514	60	63																
21					492	504	62	63													17	17		
22					496	508	73	122																
23			32	32	448	444	75	75	7.5	7.5														
24			103	41	444	468	37	37															50	99
25			65	48	446	470	66	65																
26			48	48	354	356	30	29																
27			248	770	350	346	29	29													11	11	54	54
28			53	900	348	344	35	40																
29			98	98	274	272	27	45	--	--														
30			245	242	238	436	35	34	--	--														
31	6.7	6.7	--	--	334	480	33	43	--	--			--	--			--	--					--	--

CHOWAN RIVER BASIN--Continued

2-536.52. CHOWAN RIVER NEAR EDENHOUSE, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Top (T) and bottom (B) once-daily measurements at approximately 3 p.m.)

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

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 1961.
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 1961.

Suspended sediment, water year October 1960 to September 1961
[Where no daily 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..	1500	--	380	1290	--	70	1260	--	50
2..	1380	--	320	1410	--	110	1230	--	50
3..	1260	--	270	1600	--	170	1170	--	50
4..	1170	--	240	1470	--	160	1140	--	50
5..	1140	--	220	1350	--	130	1140	--	50
6..	1170	--	190	1290	--	90	1140	--	30
7..	1200	--	180	1260	--	70	1170	--	30
8..	1230	--	170	1230	15	50	1170	10	32
9..	1200	--	150	1200	--	60	1170	--	50
10..	1200	--	130	1230	--	70	1140	--	50
11..	1230	35	116	1350	--	70	1140	--	80
12..	1410	--	110	1410	--	60	1740	--	1700
13..	1260	--	100	1350	--	50	2150	--	1800
14..	1170	--	110	1290	--	70	1770	--	860
15..	1110	--	100	1260	--	70	1440	--	390
16..	1080	--	100	1260	--	50	1410	--	133
17..	1200	--	110	1260	--	50	1440	30	117
18..	1170	--	110	1230	15	50	1290	--	90
19..	1110	--	90	1230	--	50	1170	--	80
20..	1200	30	97	1200	--	50	1200	--	60
21..	1630	--	1100	1200	--	50	1290	--	70
22..	2070	--	1800	1200	--	60	1260	--	70
23..	1660	--	900	1200	--	50	1080	--	60
24..	1410	--	570	1200	--	30	860	--	50
25..	1290	--	400	1200	--	50	885	--	50
26..	1200	--	260	1230	--	50	1170	--	60
27..	1170	--	190	1200	--	50	1350	--	70
28..	1170	--	170	1200	--	50	1320	--	70
29..	1290	35	120	1170	15	47	1320	20	71
30..	1350	--	110	1230	--	50	1380	--	70
31..	1290	--	70	--	--	--	1440	--	80
Total	39920	--	8983	38200	--	2037	39835	--	6473

ROANOKE RIVER BASIN--Continued

2-660. ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA.--Continued

Suspended sediment, water year October 1960 to September 1961--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..	2140	--	2400	1400	--	130	5300	--	1900
2..	3300	--	3900	1300	--	140	4600	--	1500
3..	2830	--	1500	1200	--	900	4000	--	1200
4..	2150	--	700	1300	--	1800	3400	--	920
5..	1740	--	520	1500	--	1000	3010	--	810
6..	1600	--	320	1600	--	1200	2830	--	720
7..	1500	--	180	1500	--	1700	2740	--	740
8..	1440	--	100	2000	--	2800	3600	--	4300
9..	1380	--	60	2300	--	1700	7740	--	13000
10..	1260	15	50	2500	--	1600	7660	360	7440
11..	1170	--	60	2900	--	1600	5500	--	4400
12..	1170	--	60	3100	--	1400	4200	--	2800
13..	1230	--	70	3800	160	1640	3500	--	2100
14..	1290	--	70	4600	--	2000	3400	--	1800
15..	1320	--	70	4100	--	1700	3800	--	1800
16..	1440	--	190	4100	--	1700	3900	--	1600
17..	1860	--	750	3900	--	1700	3400	--	1200
18..	2310	--	1000	3500	--	1600	2920	--	750
19..	1950	55	290	7780	--	14000	2830	--	610
20..	2230	--	240	9610	--	7300	3010	--	570
21..	2070	--	200	7050	--	2100	3100	70	590
22..	1660	--	180	6960	--	1900	6920	230	4300
23..	1470	--	160	10200	500	13800	12200	470	15500
24..	1320	--	140	22200	1035	62000	8840	--	6900
25..	1440	--	160	14800	--	30000	7230	--	4300
26..	1380	--	110	13100	--	30000	5880	--	3000
27..	1110	--	100	11100	--	11000	4700	--	2000
28..	1000	--	140	6690	--	2900	4100	--	1700
29..	1100	--	1300	--	--	--	3700	--	1200
30..	1200	--	1600	--	--	--	3300	--	890
31..	1300	50	180	--	--	--	3400	--	920
Total	50360	--	16800	156090	--	201310	144710	--	91460
	APRIL			MAY			JUNE		
1..	7980	230	5000	2560	--	550	1740	--	230
2..	8390	280	6300	3400	--	1300	1660	--	220
3..	6150	--	3000	3700	--	1900	1600	--	220
4..	4700	--	1800	3100	--	1300	1560	--	250
5..	4000	--	1200	2740	--	1100	1500	--	240
6..	3600	--	970	2560	--	1000	1500	--	280
7..	3200	--	860	2560	--	970	1910	--	1100
8..	2920	--	790	2650	--	1000	2150	--	1300
9..	2740	--	660	3010	130	1060	2390	210	1400
10..	8410	--	18000	2830	--	990	2070	--	780
11..	14900	--	21000	2740	--	1200	2310	--	940
12..	8170	--	5300	3700	--	2200	2470	--	1300
13..	9880	610	16000	8750	--	17000	1910	--	820
14..	12500	--	19000	8060	--	9800	1800	--	730
15..	8840	--	6000	6150	--	5500	2070	--	840
16..	6690	--	3600	4700	--	3000	1990	--	700
17..	7660	--	8700	3800	--	1700	2470	--	1700
18..	7410	--	4400	3300	--	1400	2230	--	1200
19..	5600	--	2600	2920	--	1100	1770	--	810
20..	4800	--	2100	2650	--	930	1560	--	720
21..	4200	--	1700	2560	--	760	1730	180	841
22..	3800	--	1400	2310	90	561	6920	467 S	10000
23..	3700	--	1300	2230	--	570	7050	--	8000
24..	3500	--	1100	2070	--	530	4400	--	2900
25..	3300	--	890	1990	--	460	6060	--	7900
26..	3100	--	750	1950	--	420	4200	--	4300
27..	2920	--	630	1990	--	430	5000	--	5100
28..	2740	--	590	1990	--	430	3300	--	2500
29..	2740	70	518	1880	--	410	2650	--	1800
30..	2650	--	570	1840	--	350	2230	--	1500
31..	--	--	--	1770	50	239	--	--	--
Total	171190	--	136728	98460	--	60160	82200	--	60621

S Computed by subdividing day.

ROANOKE RIVER BASIN--Continued

2-660. ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA.--Continued

Suspended sediment, water year October 1960 to September 1961--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..	1910	--	1100	1140	--	250	1500	--	810
2..	1740	--	840	1050	--	230	1380	--	740
3..	1630	--	620	1350	--	510	1350	--	660
4..	1530	--	410	1500	--	1100	1440	--	580
5..	1470	--	280	1980	--	2200	1500	--	530
6..	1440	65	253	3200	--	5300	1320	80	280
7..	1470	--	280	2150	--	1800	1290	--	280
8..	1470	--	300	1800	160	778	1260	--	270
9..	2190	--	2600	1600	--	520	1440	--	310
10..	2070	--	1700	1660	--	540	1380	--	300
11..	1630	--	970	1800	--	630	1260	--	270
12..	1410	--	760	1530	--	540	1170	--	250
13..	1380	--	710	1380	--	450	1110	--	240
14..	1500	--	810	1200	--	390	1050	--	230
15..	1770	--	1100	1080	--	350	1020	--	160
16..	1800	--	1100	1050	--	310	960	--	160
17..	1600	--	970	990	--	290	935	--	130
18..	1740	150	705	960	--	260	910	--	120
19..	1660	--	580	935	--	200	960	--	130
20..	1700	--	550	960	--	210	1170	70	221
21..	1740	--	560	1440	170	660	4680	--	8300
22..	1470	--	480	2180	--	1900	3800	--	3700
23..	1350	--	400	3300	--	4100	1800	--	1300
24..	1410	--	420	3200	--	2700	1410	--	760
25..	1600	--	430	3100	340	2850	1260	--	510
26..	1470	--	400	4600	420	5220	1170	--	350
27..	1380	90	335	5700	--	8300	1110	--	240
28..	1320	--	280	4100	--	4600	1080	40	117
29..	1260	--	270	2650	--	2100	1050	--	80
30..	1200	--	260	1990	--	1300	1020	--	80
31..	1140	--	250	1660	--	940	--	--	--
Total	48450	--	20723	63235	--	51528	42785	--	22108

Total discharge for year (cfs-days)..... 975435
Total load for year (tons)..... 178931

ROANOKE RIVER BASIN--Continued

2-660. ROANOKE (STAUNTON) RIVER AT RANDOLPH, VA.--Continued

Particle-size analyses of suspended sediment, 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)	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. 10, 1961.....	1445			7420	358		28	34	48	61	71	76	86	93	100			SBWC

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 1961.
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 1961.

Suspended sediment, water year October 1960 to September 1961
[Where no daily 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	2000	--	1100	1500	--	320	1250	--	180
2	1500	--	610	2200	--	650	1250	--	170
3	1200	--	430	1980	--	440	1150	--	150
4	1400	--	530	1610	--	350	1250	--	150
5	1670	--	630	1450	--	280	875	--	90
6	1500	--	570	1350	--	250	950	--	100
7	1850	--	700	1250	--	210	1200	--	100
8	2410	--	940	1180	59	190	1200	30	97
9	2050	--	800	1400	--	200	1150	--	90
10	2050	--	820	1180	--	170	1180	--	90
11	1500	148	600	1350	--	200	1150	--	90
12	1600	--	650	1350	--	200	1730	--	430
13	1500	--	610	1300	--	200	2970	--	1800
14	1500	--	570	1200	--	180	2260	--	550
15	1300	--	350	1050	--	160	1550	--	260
16	1200	--	230	1250	--	200	1550	--	250
17	1100	--	150	1300	--	200	1550	56	234
18	1200	--	160	1250	55	186	1500	--	210
19	1400	--	230	1250	--	200	1000	--	140
20	1500	72	292	1250	--	200	1000	--	130
21	1730	--	420	1100	--	170	1400	--	170
22	1400	--	300	1050	--	160	1450	--	160
23	1200	--	230	1200	--	180	1350	--	140
24	1100	--	180	1300	--	200	1120	--	100
25	1400	--	260	1300	--	200	1000	--	80
26	1500	--	280	1350	--	210	1120	--	90
27	1500	--	280	1250	--	200	1150	--	90
28	1600	--	320	1100	--	160	1350	--	100
29	1700	78	360	1000	55	149	1350	25	91
30	1400	--	280	1250	--	190	1300	--	80
31	1000	--	190	--	--	--	1400	--	80
Total	46960	--	14070	39550	--	6805	41705	--	6492

ROANOKE RIVER BASIN--Continued

2-755. DAN RIVER AT PACES, VA.--Continued

Suspended sediment, water year October 1960 to September 1961--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	1610	--	180	1500	--	130	4010	--	2700
2	2730	--	700	1550	--	130	3370	--	1600
3	2730	--	560	1550	--	130	3050	--	1200
4	2120	--	320	1450	--	120	2810	--	910
5	1670	--	230	1200	--	90	2570	--	730
6	1550	--	210	1400	--	110	2120	--	540
7	1500	--	180	1450	--	110	2330	--	570
8	1450	--	160	4700	--	6800	4550	--	1200
9	1350	--	150	6560	--	9500	16400	--	51000
10	1250	39	132	5570	--	4800	16600	962	S 48500
11	1200	--	120	3690	--	1900	5050	--	3700
12	1200	--	120	3290	--	1100	3930	--	1900
13	1250	--	120	3050	97	800	3130	--	890
14	1300	--	140	3290	--	800	3530	--	2700
15	1400	--	150	3050	--	680	5130	--	3500
16	2470	--	1200	2730	--	570	4170	--	1500
17	5300	--	5000	2490	--	470	3370	--	1100
18	3530	--	1800	2330	--	380	2890	--	820
19	2650	128	916	3380	--	2600	2810	--	760
20	3370	--	1600	7200	--	13100	2730	--	590
21	3850	--	1900	4490	--	3500	3130	85	720
22	2810	--	1000	5130	--	3700	13400	682	S 26900
23	1850	--	500	8020	665	S 15900	18700	705	S 35600
24	1670	--	360	14100	1510	S 58700	7380	--	6100
25	1910	--	350	11900	--	35000	5500	--	2800
26	1670	--	230	11400	--	30000	4870	--	2000
27	1450	--	160	9120	--	9100	3690	--	1300
28	1450	--	160	4810	--	4900	3130	--	1000
29	1610	--	170	--	--	--	3450	--	1000
30	1400	--	150	--	--	--	3290	--	870
31	1350	35	128	--	--	--	3930	--	1000
Total	62650	--	19096	130400	--	205120	165020	--	205700

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	10500	405	S 12000	1850	--	310	1490	--	320
2	10400	420	11800	2050	--	500	1670	--	410
3	5300	--	3300	2650	--	860	1610	--	360
4	4090	--	1700	2570	--	830	1730	--	430
5	4250	--	1100	2330	--	780	1550	--	390
6	3690	--	850	2330	--	750	1550	--	330
7	3130	--	800	2490	--	770	1670	--	270
8	2970	--	740	1610	--	470	1790	--	240
9	2970	--	800	1850	100	500	1790	52	251
10	7390	--	12000	2050	--	610	1730	--	230
11	15000	--	24000	2890	--	3300	1910	--	280
12	7200	--	3900	4650	--	9500	1320	--	200
13	8620	562	S 13200	6920	--	9600	1970	--	310
14	8980	--	8700	5400	--	4700	2090	--	400
15	6110	--	4200	3960	--	2700	1730	--	350
16	6380	--	6100	2990	--	1900	1730	--	360
17	5750	--	5000	3060	--	1700	2570	--	550
18	5050	--	3100	2850	--	1300	2290	--	460
19	4570	--	1900	2780	--	1100	1200	--	260
20	4170	--	1500	2710	--	800	1370	--	300
21	3690	--	1200	2780	--	620	1910	140	722
22	3370	--	1200	1670	70	316	9440	1220	S 37800
23	3290	--	1100	1910	--	360	12600	804	S 28600
24	2330	--	630	2150	--	470	6470	--	6600
25	2330	--	600	2220	--	490	4440	--	3200
26	2570	--	610	2150	--	490	3270	--	2100
27	2490	--	570	2290	--	460	3800	--	3500
28	2490	--	490	2430	--	410	4600	--	3100
29	2570	50	347	1730	--	280	3340	--	1600
30	2410	--	330	1610	--	300	2780	--	1200
31	--	--	--	1670	80	361	--	--	--
Total	154060	--	122767	82600	--	47537	87410	--	95123

S Computed by subdividing day.

ROANOKE RIVER BASIN--Continued

2-755. DAN RIVER AT PACES, VA.--Continued

Suspended sediment, water year October 1960 to September 1961--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..	2500	--	980	1320	--	520	1730	--	860
2..	2220	--	780	1170	--	460	1610	--	700
3..	1730	--	540	1130	--	430	1610	--	630
4..	1670	--	410	2150	--	700	1270	--	430
5..	1910	--	390	2090	--	680	1240	--	350
6..	1610	70	304	2030	--	690	1270	95	326
7..	1790	--	390	1850	--	650	1270	--	270
8..	2030	--	410	2360	265	1690	1320	--	300
9..	2290	--	400	2090	--	1200	1320	--	290
10..	1610	--	270	1670	--	650	1490	--	330
11..	1550	--	260	1430	--	500	870	--	160
12..	1550	--	260	1430	--	460	1040	--	170
13..	1610	--	300	1430	--	460	1220	--	200
14..	1670	--	290	1220	--	350	1220	--	210
15..	1670	--	280	1120	--	290	1220	--	230
16..	1670	--	320	1170	--	260	1170	--	240
17..	1170	--	290	1120	--	250	1140	--	220
18..	1430	95	367	1140	--	280	945	--	150
19..	1550	--	400	1170	--	300	820	--	150
20..	1430	--	390	1370	--	480	1100	65	193
21..	1490	--	360	2640	540	S 4120	1320	--	280
22..	1910	--	620	3130	--	5800	1320	--	290
23..	2570	--	1500	4680	--	9600	1370	--	300
24..	2710	--	2600	4360	--	5500	1120	--	200
25..	2150	--	3000	4040	480	5240	870	--	150
26..	1670	--	1600	4200	695	7880	870	--	150
27..	1610	250	1090	5400	--	10000	1120	--	240
28..	1910	--	1100	3720	--	4000	995	75	201
29..	1730	--	860	2290	--	1700	1100	--	210
30..	1370	--	620	2030	--	1400	920	--	200
31..	1270	--	530	1970	--	1200	--	--	--
Total	55050	--	21911	68920	--	67740	35880	--	8630

Total discharge for year (cfs-days)..... 970205
Total load for year (tons)..... 820991

S Computed by subdividing day.

ROANOKE RIVER BASIN--Continued

2-755. DAN RIVER AT PACES, VA.--Continued

Particle-size analyses of suspended sediment, 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)	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 22, 1961.....	1000			8620	942		12	16	26	38	52	63	74	85	94	97	100	SBWC

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 1961.
Water temperatures: October 1955 to September 1961.
EXTREMES, 1960-61. Dissolved solids: Maximum, 87 ppm Aug. 1-31; minimum, 63 ppm Apr. 1-30.
Hardness: Maximum, 42 ppm Oct. 1-31; minimum, 27 ppm Mar. 1-31, May 1-31.
Specific conductance: Maximum daily, 152 micromhos Aug. 7; minimum daily, 74 micromhos June 26.
Water temperatures: Maximum, 86°F Aug. 12; minimum, freezing point Jan. 11.
EXTREMES, 1955-61.--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, 166 micromhos June 24, 1959; minimum daily, 66 micromhos Mar. 3, 1958.
Water temperatures: Maximum, 88°F July 6, 1956; minimum, freezing point Jan. 11, 1961.
REMARKS.--Records of specific conductance of samples collected from October 1955 to September 1961 and records of suspended matter of composite samples from October 1955 to September 1956 available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960		8.3	0.11	11	3.3	6.3	1.9	55	5.6	5.8	0.0	2.1	74	42	0	119	7.3	18
Nov. 1-30		8.0	.08	10	3.5	8.6	2.0	56	2.0	5.5	.2	1.7	86	40	0	118	7.7	25
Dec. 1-31		8.2	.11	10	3.0	8.9	2.1	52	5.6	6.0	.1	1.3	75	38	0	116	7.0	25
Jan. 1-31, 1961		8.2	.12	8.1	3.0	8.4	2.0	45	7.2	5.8	.1	1.6	68	32	0	106	7.7	25
Feb. 1-28		8.6	.03	6.7	2.8	6.5	1.0	36	5.8	5.7	.1	1.9	66	28	0	96	6.5	20
Mar. 1-31		9.9	.05	6.7	2.6	5.9	1.9	32	9.0	4.2	.1	1.7	65	27	1	86	6.7	50
Apr. 1-30		9.7	.11	6.3	2.9	5.7	1.8	29	9.4	5.0	.1	1.2	63	28	4	84	6.8	30
May 1-31		10	.01	7.1	2.3	6.6	1.8	33	11	4.0	.1	1.8	76	27	0	84	7.1	55
June 1-30		10	.02	7.5	2.9	6.6	1.8	36	11	3.8	.1	1.9	76	30	1	85	7.0	35
July 1-31		10	.04	9.4	2.7	6.7	2.4	40	7.2	5.7	.2	3.5	74	34	2	108	7.1	40
Aug. 1-31		11	.04	11	2.7	7.7	2.8	46	6.0	5.3	.1	4.1	87	38	1	118	7.3	30
Sept. 1-30		10	.09	8.7	2.4	7.3	2.3	40	6.0	5.1	.1	1.9	77	32	0	108	7.4	35
Time-weighted average		9.3	0.07	8.6	2.8	7.1	2.0	42	7.2	5.2	0.1	2.1	74	33	1	102	--	32

ROANOKE RIVER BASIN--Continued

2-810.94. ROANOKE RIVER AT JAMESVILLE, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement between 6 a.m. and 6 p.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	--	60	53	--	37	50	57	60	66	73	85	81
2..	72	60	52	42	36	49	57	61	69	74	85	81
3..	72	60	52	42	36	48	55	60	71	74	85	81
4..	72	60	50	41	36	49	54	60	73	75	84	80
5..	71	60	50	41	36	52	54	59	74	75	84	80
6..	72	59	42	40	36	54	54	60	74	75	83	80
7..	71	58	48	41	36	55	57	61	75	75	83	80
8..	71	57	48	40	35	57	58	62	74	76	83	80
9..	70	56	47	40	35	54	--	65	75	76	83	80
10..	71	55	47	40	35	53	--	66	76	76	84	80
11..	70	55	46	32	35	52	55	68	76	76	84	80
12..	69	54	45	34	37	50	55	68	76	75	86	80
13..	70	55	42	39	38	52	54	68	76	76	84	81
14..	70	55	42	41	35	54	57	68	78	77	82	81
15..	70	55	42	41	41	54	55	70	77	77	82	78
16..	70	54	42	42	43	54	59	71	74	79	83	77
17..	70	55	41	42	44	53	58	70	72	81	84	78
18..	70	55	40	42	44	51	56	66	74	81	82	78
19..	70	55	40	43	46	51	56	65	73	81	81	77
20..	70	55	39	42	46	51	54	65	73	82	80	75
21..	68	54	41	41	47	51	55	66	73	83	79	75
22..	--	54	39	40	48	50	59	66	74	83	79	75
23..	66	54	39	40	48	50	58	65	75	84	78	75
24..	66	55	40	39	47	50	60	66	74	84	80	75
25..	64	54	39	38	47	50	62	65	75	84	79	76
26..	63	54	39	38	48	49	64	66	73	84	--	75
27..	62	55	39	38	50	52	63	66	72	84	79	76
28..	61	55	39	38	50	54	62	66	71	84	79	76
29..	61	55	40	37	--	55	60	66	72	83	79	76
30..	60	--	40	37	--	57	59	66	71	85	80	75
31..	60	--	40	37	--	58	--	65	--	85	--	--
Average	68	56	43	40	41	52	57	65	74	79	82	78

ALBEMARLE SOUND

2-811.53. ALBEMARLE SOUND NEAR EDENTON, N. C.

LOCATION.--At draw section on State Highway 32 bridge, 7.6 miles southeast of Edenton, Chowan County.
DRAINAGE AREA.--14,600 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1961.
Water temperatures: October 1957 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 1,060 ppm Nov. 26 (bottom); minimum, 7.0 ppm Mar. 25-31.
Specific conductance: Maximum daily, 3,500 micromhos Nov 26 (bottom), Dec. 6 (top); minimum daily, 69 micromhos Apr. 5, June 4, 5, 8, (top).
Water temperatures: Maximum, 86°F July 28-31 (top), Aug. 1 (top); minimum, freezing point Feb. 4.
EXTREMES, 1957-61.--Chloride: Maximum, 12,100 ppm Nov. 3-6 (bottom), 1958; minimum, 4.7 ppm Apr. 1-30, 1958.
Specific conductance: Maximum daily, 30,600 micromhos Nov. 6 (bottom), 1958; minimum daily, 50 micromhos May 20 (bottom), 1958.
Water temperatures: Maximum, 87°F Aug. 14 (top), 1960; minimum, freezing point Feb. 4, 1961.
REMARKS.--Top (T) and bottom (B) samples were collected once daily (12 m.) and were composited unless otherwise indicated. When specific conductance values indicated salt-water encroachment, only specific conductance and chloride were determined on individual samples. The individual chloride determinations are tabulated separately from the composite chemical analyses. Records of specific conductance of samples collected are available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, February to September 1961

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. 8-14, 1961		10	0.27	8.3	9.7	66	3.8	38	22	105	0.1	1.4	262	61	30	467	6.9	60
Feb. 15-20		10	.22	7.5	7.4	48	3.1	36	18	74	.1	1.1	200	50	20	342	7.3	60
Feb. 21-27, 28 (T)		10	.17	5.5	3.6	20	2.0	30	12	28	.1	.7	110	29	4	163	7.3	70
Feb. 28 (B)		--	--	--	--	--	--	31	18	66	--	1.0	--	39	14	301	7.3	--
Mar. 1-6, 7 (T)		8.4	.07	4.5	2.4	10	2.0	20	6.1	13	.1	1.4	69	21	4	96	7.2	55
Mar. 7 (B), 8		8.0	.18	4.3	3.7	15	1.8	19	10	24	.1	1.1	a77	26	10	138	7.0	70
Mar. 10, 11 (T)		7.9	.06	4.3	2.3	12	2.1	15	11	18	.1	.6	a65	20	8	110	6.6	35
Mar. 19-21		11	.24	4.9	3.2	8.0	1.7	28	9.0	8.8	.1	2.0	a63	25	2	91	7.4	80
Mar. 25-31		9.0	.08	5.1	3.0	7.1	1.6	26	7.9	7.0	.0	1.0	61	25	4	85	7.1	55
Apr. 1-30		8.0	.09	4.8	1.8	6.9	1.7	21	7.7	7.5	.0	1.2	59	20	2	78	7.0	65
May 1-31		7.9	.20	5.8	1.7	6.8	1.6	25	7.4	7.5	.1	.4	61	22	1	78	7.3	80
June 1-30		7.7	.18	4.7	1.9	7.5	1.6	22	7.0	7.5	.2	1.9	71	20	2	76	6.8	110
July 1-21		8.9	.18	5.2	2.1	7.9	1.7	25	8.0	10	.1	1.1	66	22	1	90	6.9	80
Aug 1-4		8.3	.10	4.6	5.8	32	3.0	24	13	54	.1	1.2	157	36	16	250	6.9	60
Aug. 5-12		7.1	.10	4.2	4.6	23	2.4	26	9.2	34	.1	.7	115	30	8	180	6.9	60
Aug. 13-24		5.9	.08	5.0	4.6	23	2.5	28	11	36	.1	.8	122	32	8	195	7.1	50
Aug. 25-31		4.9	.04	5.5	6.6	39	3.2	28	14	67	.0	.9	174	40	18	308	7.3	40
Sept. 1-7		6.2	.05	6.2	6.3	41	3.1	28	15	65	.2	.4	172	42	18	291	6.9	35
Sept. 8-15		7.8	.07	5.9	4.9	29	2.8	29	12	46	.1	.6	129	35	11	225	7.0	35
Sept. 16-20		8.5	.03	6.6	7.7	56	4.0	28	17	93	.1	.5	227	48	25	389	7.1	33

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 1960 to September 1961

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	144	140	44	38	790	914	568	570	244	222														
2	138	140	237	212	810	870	592	590	218	215											54	54		
3	110	116	9.8	10	556	768	588	504	192	194														
4	109	114	8.2	10	620	740	520	530	191	191		13												
5	91	106	86	86	550	920	416	556	260	262	13												65	65
6	63	144	11	14	1,000	780	412	502	86	179														
7	93	92	16	17	770	1,020	440	442	171	177		24												
8	93	91	12	11	925	900	434	440			24	24												
9	60	60	12	10	900	910	444	330			131	141									34	34		
10	58	81	54	181	675	690	346	350				18												
11	56	79	96	136	750	1,010	322	380	105	105	18	44											46	46
12	95	134	100	137	920	930	348	420			46	52							10	10				
13	98	96	94	138	660	680	366	422			47	50												
14	93	96	72	175	660	950	410	402			78	102												
15	86	84	167	280	754	676	408	--			105	106												
16	75	75	165	280	750	760	440	560			125	124	7.5	7.5	7.5	7.5	7.5	7.5						
17	58	60	118	604	770	770	466	464	74	74	43	58												
18	99	101	78	139	770	780	--	--			88	92											93	93
19	100	97	122	135	680	700	420	438													36	36		
20	103	104	210	324	720	766	384	398			8.8	8.8												
21	36	37	328	320	730	754	--	--															164	166
22	34	43	274	334	746	756	420	414			42	43							15	25			294	316
23	46	47	206	316	632	684	440	446			47	48							14	25			292	310
24	26	27	212	239	648	688	414	424		28	47	49							34	52			294	296
25	34	34	214	334	578	740	322	318	28										46	26			294	296
26	130	128	227	1,060	650	630	262	260											29	46			290	290
27	56	53	388	840	570	564	223	214											29	30			250	272
28	8.0	8.0	758	776	566	570	197	207		66	7.0	7.0							20	24	67	67	318	342
29	8.0	10	782	776	534	536	191	202	--	--									20	25			350	368
30	6.4	5.2	894	888	514	556	238	240	--	--									36	36			110	114
31	11	8.0	--	--	402	556	225	228	--	--			--	--			--	--	31	55			--	--

ALBEMARLE SOUND--Continued

2-811.53. ALBEMARLE SOUND NEAR EDENTON, N. C.--Continued

Temperature (°F) of water, water year October 1960 to September 1961
(Top (T) and bottom (B) once-daily measurements at approximately 12 m)

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

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 1961.
Water temperatures: October 1959 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 15 ppm Feb. 26; minimum, 5.1 ppm Aug. 21-31.
Specific conductance: Maximum daily, 228 micromhos Feb. 26; minimum daily, 55 micromhos Aug. 22, 23.
Water temperatures: Maximum, 84°F Aug. 1, 11, 12; minimum, freezing point Jan. 26.
EXTREMES, 1959-61.--Chloride: Maximum, 262 ppm Sept. 12, 1960; minimum, 5.1 ppm Aug. 21-31, 1961.
Specific conductance: Maximum daily, 990 micromhos Sept. 12, 1960; minimum daily, 49 micromhos Feb. 1, 1960.
Water temperatures: Maximum, 84°F Aug. 1, 11, 12, 1961; minimum, freezing point Jan. 26, 1961.
REMARKS.--Records of specific conductance of samples collected available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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
Oct. 1-31,1960		11	0.46	7.6	3.5	7.9	1.3	25	14	10	0.3	1.0		114	69	34	13	94	7.0	100
Nov. 1-30.....		12	.64	10	2.7	9.0	1.0	34	9.4	12	.2	.8		120	75	37	9	108	6.9	400
Dec. 1-31.....		13	.52	12	3.2	8.8	.9	33	12	14	.2	2.0		117	83	43	16	126	7.0	160
Jan. 1-31,1961		10	.53	9.6	2.6	8.0	1.0	23	12	12	.2	1.8		114	69	34	16	107	6.6	160
Feb. 1-25.....		8.1	.34	7.0	2.5	6.6	1.0	13	12	10	.2	1.7		80	55	28	17	87	6.5	200
Feb. 26.....		--	--	--	--	--	--	106	8.0	15	--	2.7		--	--	96	9	228	8.1	--
Feb. 27-28....		5.9	.26	5.2	1.7	3.9	1.1	10	9.6	6.0	.2	1.4		--	40	20	12	67	6.0	--
Mar. 1-6.....		6.6	.39	5.3	2.3	5.4	.9	9	13	7.0	.3	3.7		95	49	22	15	69	6.2	210
Mar. 7.....		--	--	--	--	--	--	62	8.2	12	--	1.7		--	--	64	14	162	7.8	--
Mar. 8-31.....		8.1	.44	5.6	2.2	6.8	.9	11	11	8.7	.2	3.4		97	52	23	14	76	6.3	280
Apr. 1-6.....		5.6	.32	6.6	2.2	6.7	.7	16	11	9.8	.2	1.0		95	52	26	12	79	6.4	200
Apr. 7.....		--	--	--	--	--	--	57	13	11	--	--		--	--	59	12	153	7.8	--
Apr. 8-30.....		6.0	.37	6.3	1.8	6.2	.7	13	12	9.2	.3	.8		101	50	24	14	76	6.7	200
May 1-31.....		6.8	.68	5.7	2.7	5.8	1.0	13	9.4	8.8	.3	.7		104	48	25	14	72	6.5	200
June 1-30.....		7.4	.39	7.1	1.8	6.0	.7	18	7.6	9.5	.2	.9		97	51	26	10	73	6.5	300
July 1-3.....		8.3	.77	5.4	2.1	5.1	.8	10	13	5.9	.3	.8		--	47	22	14	67	6.3	360
July 4.....		--	--	--	--	--	--	38	8.2	9.0	--	1.5		--	--	46	15	107	7.3	--
July 5-10.....		7.7	.43	6.3	1.4	5.2	.8	13	5.2	12	.3	.5		101	46	22	12	69	6.3	300
July 11.....		--	--	--	--	--	--	42	9.4	9.0	--	1.7		--	--	48	13	116	7.6	--
July 12-16....		9.0	.74	6.1	1.8	5.5	.7	14	9.4	6.7	.0	.7		--	48	22	11	70	6.4	270
July 17.....		--	--	--	--	--	--	92	6.2	13	--	1.8		--	--	88	12	202	7.7	--
July 18-31....		7.8	.50	7.7	2.3	6.3	.6	21	8.2	9.5	.3	.8		109	54	28	12	85	6.6	300
Aug. 1-20.....		8.9	.18	8.1	2.5	7.0	1.0	23	11	9.0	.2	.8		113	60	30	11	92	6.8	150
Aug. 21-31....		8.4	.48	5.5	1.8	4.2	1.1	12	7.2	5.1	.3	1.2		96	41	22	11	65	6.3	220
Sept. 1-30....		10	.48	7.1	2.3	5.9	1.0	17	8.8	9.3	.3	.9		122	54	28	14	82	5.5	300
Time-weighted average.....		9.1	0.47	7.7	2.5	6.9	0.9	21	10	9.7	0.2	1.3		107	59	30	13	90	--	230

SCUPPERNONG RIVER BASIN --Continued

2-811.66. SCUPPERNONG RIVER NEAR CRESWELL, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement at approximately 7 a.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	70	60	50	47	39	56	62	65	65	75	84	80
2..	66	60	50	49	38	54	60	65	68	75	82	80
3..	68	58	48	49	39	55	60	62	70	76	82	81
4..	68	58	48	46	39	55	58	62	75	78	82	82
5..	68	58	46	45	42	56	58	62	75	78	82	80
6..	68	55	46	44	42	65	58	60	76	80	82	81
7..	70	55	46	42	42	64	58	64	76	80	82	80
8..	70	52	48	43	45	65	58	66	77	78	82	81
9..	68	54	46	48	50	62	58	67	77	78	82	82
10..	68	60	45	47	50	56	60	70	78	78	82	80
11..	66	58	45	42	49	56	60	75	78	78	84	79
12..	65	56	45	42	49	59	58	72	78	76	84	80
13..	65	54	40	42	50	60	58	75	78	78	82	80
14..	68	55	38	42	55	58	58	72	78	78	80	79
15..	68	55	40	45	47	60	58	72	78	80	80	76
16..	70	56	40	49	55	60	60	74	75	80	82	75
17..	--	60	40	49	55	58	60	72	70	80	81	75
18..	68	60	39	49	54	55	60	68	70	80	81	74
19..	68	60	38	47	52	54	58	65	70	80	80	75
20..	70	56	41	44	60	61	58	65	72	80	81	74
21..	65	56	40	43	53	55	56	66	74	80	82	73
22..	62	55	39	41	54	60	58	66	75	80	81	75
23..	62	58	39	40	59	61	60	66	75	80	80	73
24..	62	56	40	40	55	60	65	66	75	82	82	76
25..	58	56	39	37	62	60	67	65	75	82	81	74
26..	58	54	40	32	53	56	70	68	75	82	82	75
27..	60	54	40	36	57	58	65	65	75	82	82	74
28..	60	60	40	35	54	59	66	64	75	82	81	73
29..	58	60	41	36	--	61	--	64	75	82	80	73
30..	58	55	41	36	--	60	64	66	75	82	81	72
31..	58	--	41	36	--	60	--	65	--	83	80	--
Average	65	57	43	43	50	59	60	67	74	79	82	77

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 Coast Line Railroad bridge, 2 miles southwest of Enfield, Halifax County, 4.8 miles downstream from Rocky Creek, and 40 miles upstream from mouth (revised).
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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 84°F on several days during July and August.
EXTREMES, 1948-49, 1953-61.--Water temperatures: Maximum, 86°F July 27-29, 1955, June 30, July 1, 2, 1959; minimum, 33°F Dec. 28, 1948 and on several days during December 1958.
REMARKS.--Recorder malfunction Jan. 5 through Apr. 12, June 23-27, and Sept. 22-30.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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			
Feb. 13, 1961.....	988	12	0.12	2.1	1.7	3.6	1.4	15	5.2	3.6	0.1	0.5	37	12	0	48	7.0	30
Sept. 18.....	86.1	21	.13	5.0	2.9	6.0	2.0	43	1.2	4.5	.0	.7	64	24	0	77	6.9	50

PAMLICO RIVER BASIN--Continued

2-830. FISHING CREEK NEAR ENFIELD, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
[Continuous ethyl alcohol-actuated thermograph]

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..	68	67	56	55	51	50	40	38					--	--	60	59	66	65	70	68	84	83	79	77
2..	68	67	56	55	50	47	42	40					--	--	60	60	68	66	73	70	83	82	80	78
3..	67	66	56	56	47	44	42	41					--	--	60	60	70	68	74	73	83	82	81	79
4..	67	66	56	55	44	42	41	40					--	--	60	59	72	70	75	73	82	80	81	80
5..	67	66	55	54	42	41	--	--					--	--	59	58	74	72	74	74	80	79	81	80
6..	68	67	54	54	41	41	--	--					--	--	58	57	74	73	74	72	81	80	82	80
7..	68	67	54	52	41	41	--	--					--	--	59	57	75	73	72	71	81	79	82	80
8..	67	66	52	50	41	41	--	--					--	--	63	59	76	74	72	71	81	79	80	79
9..	66	66	50	49	41	41	--	--					--	--	66	63	76	75	73	71	81	79	80	78
10..	66	64	49	48	41	41	--	--					--	--	67	66	77	76	73	71	81	79	80	78
11..	64	63	48	48	41	41	--	--					--	--	67	65	77	76	73	72	82	80	80	78
12..	64	63	48	48	41	40	--	--					--	--	66	65	79	76	72	72	83	81	79	78
13..	64	63	48	48	40	38	--	--					54	54	66	66	79	77	74	72	82	81	78	78
14..	64	64	48	48	38	36	--	--					54	53	66	65	79	77	76	73	82	80	78	77
15..	64	64	48	47	36	36	--	--					54	54	67	66	78	74	78	75	80	78	77	75
16..	66	64	48	47	36	36	--	--					57	54	68	67	74	71	79	77	79	78	75	73
17..	66	65	49	48	36	36	--	--					58	57	68	68	71	69	80	78	79	78	73	71
18..	66	65	50	49	36	36	--	--					58	58	68	68	69	68	79	78	79	78	71	69
19..	66	65	51	50	36	36	--	--					58	56	68	67	69	67	79	77	79	76	69	68
20..	66	64	51	50	36	36	--	--					56	55	68	67	70	68	80	78	76	74	69	69
21..	64	63	50	50	36	36	--	--					55	54	68	67	70	69	80	78	76	74	69	67
22..	63	61	50	49	36	36	--	--					56	54	68	66	70	69	82	79	76	75	--	--
23..	61	58	49	49	36	36	--	--					60	56	68	66	--	--	82	80	75	74	--	--
24..	58	57	49	49	36	35	--	--					62	60	66	65	--	--	83	80	76	74	--	--
25..	57	56	50	49	35	35	--	--					66	62	66	65	--	--	84	81	77	76	--	--
26..	56	55	50	50	35	35	--	--					68	66	67	66	--	--	84	82	77	76	--	--
27..	55	54	50	49	35	35	--	--					68	66	67	65	--	--	84	82	76	74	--	--
28..	54	54	50	50	35	35	--	--					66	62	65	64	67	67	84	81	74	74	--	--
29..	54	54	52	50	36	35	--	--					62	60	64	63	67	67	84	82	75	74	--	--
30..	54	54	52	51	36	36	--	--					60	59	65	63	68	67	84	82	77	75	--	--
31..	55	54	--	--	38	36	--	--					--	--	66	64	--	--	84	82	78	76	--	--
Aver.	63	62	51	50	39	38	--	--					--	--	65	64	--	--	78	76	79	78	--	--

PAMLICO RIVER BASIN--Continued

2-835. TAR RIVER AT TARBORO, N. C.

LOCATION.--At gaging station 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.
Water temperatures: October 1944 to September 1945, October 1953 to September 1954.
Sediment records: January 1958 to September 1961.
EXTREMES, 1960-61.--Sediment concentrations: Maximum daily, 337 ppm June 27; minimum daily, 6 ppm Dec. 28-30.
Sediment loads: Maximum daily, 3,900 tons June 27; minimum daily, 9 tons Sept. 21, 30.
EXTREMES, 1958-61.--Sediment concentrations: Maximum daily, 353 ppm July 17, 1958; minimum daily, 6 ppm Dec. 28-30, 1960.
Sediment loads: Maximum daily, 6,130 tons May 12, 1958; minimum daily, 9 tons June 24, 1959, Sept. 21, 30, 1961.
REMARKS.--Records of suspended matter of composite samples from October 1944 to September 1945, October 1953 to September 1954 available in district office at Raleigh, N.C.

Suspended sediment, water year October 1960 to September 1961

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...	930	26	65	812	19	42	830	10	22
2...	1070	50	144	795	16	34	850	12	28
3...	1390	49	184	778	15	32	830	11	25
4...	1150	28	87	778	13	27	812	11	24
5...	970	25	65	795	14	30	760	10	21
6...	930	28	70	742	11	22	760	9	18
7...	930	23	58	708	10	19	725	10	20
8...	1010	32	87	690	10	19	725	9	18
9...	1110	32	96	672	9	16	725	12	23
10...	1110	27	81	672	11	20	725	10	20
11...	1150	30	93	690	10	19	760	10	21
12...	1150	26	81	690	10	19	1070	21	61
13...	1030	24	67	690	9	17	1590	34	146
14...	930	25	63	690	9	17	2090	41	231
15...	870	25	59	672	9	16	2390	41	265
16...	950	28	72	690	14	26	2090	27	152
17...	1150	44	137	690	11	20	1790	21	101
18...	1190	38	122	690	14	26	1690	22	100
19...	1010	27	74	725	15	29	1540	21	87
20...	950	29	74	760	14	29	1350	20	73
21...	1030	27	75	760	14	29	1230	19	63
22...	1440	53	206	760	14	29	1230	15	50
23...	1990	49	263	778	14	29	1270	15	51
24...	1790	34	164	760	11	23	1270	14	48
25...	1350	25	91	795	12	26	1230	11	37
26...	1150	26	81	850	15	34	1110	8	24
27...	1030	24	67	870	15	35	1110	7	21
28...	970	23	60	870	13	31	1110	6	18
29...	930	24	60	830	13	29	1070	6	17
30...	910	22	54	830	12	27	1070	6	17
31...	850	20	46	--	--	--	1070	8	23
Total	34420	--	2946	22532	--	771	36872	--	1825

PAMLICO RIVER BASIN--Continued

2-835. TAR RIVER AT TARBORO, N.C.--Continued

Suspended sediment, water year October 1960 to September 1961--Continued

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...	1350	58	211	1310	8	28	12300	40	1330
2...	1990	37	199	1350	7	26	9940	31	832
3...	2960	40	320	1540	9	37	7550	28	571
4...	3720	88	884	2090	24	135	5690	25	384
5...	3210	133	1150	2440	21	138	4480	26	314
6...	2490	62	417	2760	23	171	3720	28	281
7...	2140	34	196	3060	22	182	3240	30	262
8...	1940	30	157	3940	61	S 672	3120	37	312
9...	1740	24	113	5640	136	2070	3600	43	418
10...	1540	20	83	6980	126	2370	4080	40	441
11...	1350	19	69	7830	130	2750	4440	40	480
12...	1270	15	51	8770	97	2300	4260	40	460
13...	1150	10	31	9660	69	1800	3480	34	319
14...	1150	12	37	9480	53	1360	3000	30	243
15...	1310	16	57	7590	40	820	2640	30	214
16...	1790	21	101	6000	34	551	2490	30	202
17...	2490	30	202	4350	33	388	2490	30	202
18...	3060	30	248	3410	34	313	2240	31	187
19...	2820	34	259	2880	31	241	1990	22	118
20...	2440	35	231	2700	30	219	1890	24	122
21...	2240	28	169	4260	97	S 1210	1940	24	126
22...	2040	18	99	7190	137	S 2610	2930	40	316
23...	1940	15	79	8800	81	1920	4690	54	684
24...	1740	15	70	9660	58	1510	5590	56	845
25...	1590	12	52	10800	54	1570	6960	91	S 1720
26...	1440	11	43	11700	60	1900	7760	59	1240
27...	1310	12	42	12600	68	2310	8370	56	1270
28...	1190	8	26	13000	53	1860	8690	70	1640
29...	1110	9	27	--	--	--	8550	48	1110
30...	1200	10	32	--	--	--	6760	32	584
31...	1230	9	30	--	--	--	5160	29	404
Total	58940	--	5685	71790	--	31461	54040	--	17631

Day	APRIL			MAY			JUNE		
1...	4680	40	505	2540	29	199	1350	38	139
2...	5120	46	636	2520	29	197	1310	23	81
3...	5850	55	869	3450	29	270	1190	18	58
4...	6450	64	1110	4020	44	478	1070	18	52
5...	6230	39	656	3720	46	462	930	15	38
6...	5230	31	438	3000	34	275	850	22	50
7...	4650	38	477	2590	27	189	778	20	42
8...	3680	49	487	2240	28	169	830	18	40
9...	3060	44	364	2100	32	181	812	16	35
10...	2820	30	228	1800	30	146	890	20	48
11...	3000	34	275	3200	110	950	812	20	44
12...	3240	32	280	5100	124	1710	795	16	34
13...	3960	38	406	6700	55	995	1440	36	S 149
14...	4680	54	682	7500	45	911	1770	89	S 405
15...	5120	52	719	8400	42	953	1140	153	S 476
16...	5320	45	646	8610	48	1120	1030	88	245
17...	5060	34	465	8060	34	740	1480	76	304
18...	4680	30	379	6460	28	488	2240	156	S 956
19...	4140	32	358	4720	29	370	2020	182	S 1000
20...	3270	31	274	3040	35	287	1350	88	321
21...	2700	35	255	2290	33	204	1110	62	186
22...	2390	35	226	1940	30	157	1190	56	180
23...	2190	32	189	1690	28	128	1500	62	251
24...	2040	26	143	1490	25	101	2800	123	S 957
25...	1890	25	128	1350	25	91	3180	217	1860
26...	1840	24	119	1310	26	92	2550	152	S 1060
27...	1940	32	168	1390	31	116	4360	337	S 3900
28...	2390	37	239	1540	36	150	5000	123	1660
29...	2760	44	328	1890	38	194	5580	143	2150
30...	2760	36	268	2040	41	226	6110	227	3740
31...	--	--	--	1540	32	133	--	--	--
Total	13140	--	12317	8240	--	12682	57467	--	20461

S Computed by subdividing day.

PAMLICO RIVER BASIN--Continued

2-835. TAR RIVER AT TARBORO, N.C.--Continued

Ssupended sediment, water year October 1960 to September 1961--Continued

Day	JULY			AUGUST			SEPTEMBER		
	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...	5570	105	1580	830	77	173	1570	78	331
2...	3910	74	780	575	63	98	1030	65	181
3...	2560	60	415	485	57	75	870	68	160
4...	2040	50	275	410	44	49	760	50	103
5...	1890	50	255	500	56	76	620	44	74
6...	1990	50	269	850	107	246	530	37	53
7...	2140	62	358	1030	89	248	485	34	45
8...	2540	98	672	1150	104	323	485	32	42
9...	2540	104	713	1070	80	231	440	32	38
10...	2190	72	426	778	48	101	410	30	33
11...	1840	48	238	638	43	74	380	27	28
12...	1540	43	179	530	52	74	362	24	23
13...	1190	34	109	500	51	69	328	24	21
14...	1190	37	119	425	44	50	356	23	22
15...	1030	28	78	380	38	39	340	20	18
16...	910	32	79	395	35	37	318	15	13
17...	830	28	63	377	36	37	300	14	11
18...	760	30	62	345	28	26	308	14	12
19...	795	30	64	328	28	25	310	14	12
20...	778	26	55	345	50	47	300	12	10
21...	812	28	61	440	32	38	278	12	9
22...	725	29	57	380	28	29	295	12	10
23...	708	37	71	838	38	86	322	14	12
24...	672	36	65	1190	102	328	340	15	14
25...	575	24	37	725	143	280	368	19	19
26...	500	19	26	655	87	154	353	14	13
27...	485	22	29	669	87	157	350	14	13
28...	725	56	110	2520	266	S 1910	320	19	16
29...	795	44	94	3990	293	3160	285	22	17
30...	870	56	132	4740	207	2650	278	12	9
31...	690	42	78	3590	100	S 992	--	--	--
Total	45790	--	7549	31678	--	11882	13691	--	1362
Total discharge for year (cfs-days)									848600
Total load for year (tons)									126572

S Computed by subdividing day.

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 2-1/2 miles northwest of Washington, Beaufort County.
DRAINAGE AREA.--254 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 1,340 ppm Dec. 10; minimum, 5.7 ppm May 11-21.
Specific conductance: Maximum daily, 4,500 micromhos Dec. 10; minimum daily, 35 micromhos June 24.
Water temperatures: Maximum, 88°F Aug. 1; minimum, 35°F Jan. 27-30.
REMARKS.--When specific conductance values indicated salt-water encroachment, only specific conductance and chloride were determined on individual samples. The individual specific conductance and chloride determinations are tabulated separately from the composite chemical analyses. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960		11	0.43	5.4	1.8	6.7	2.7	18	7.4	8.0	0.2	0.7	80	20	6	72	6.5	140
Nov. 1-7		12	.67	4.1	2.1	7.4	2.3	16	5.4	10	.1	2.4	a93	19	6	75	6.6	140
Dec. 18-31		9.5	.20	5.0	1.8	8.5	1.8	16	5.4	14	.1	1.2	71	20	7	87	6.5	60
Jan. 1-2, 1961		9.6	.09	5.1	2.6	12	2.2	14	8.6	20	.1	.8	b68	24	12	116	6.9	--
Jan. 3-31		7.5	.14	5.1	1.2	6.8	1.7	12	10	10	.2	1.2	68	18	8	80	6.8	60
Feb. 1-28		5.9	.15	4.8	1.5	5.2	1.7	10	6.2	8.0	.2	1.6	71	18	10	70	6.7	80
Mar. 1-31		4.7	.30	4.6	1.3	5.6	1.8	11	7.8	7.8	.2	1.7	68	16	8	64	6.9	120
Apr. 1-30		3.3	.34	4.7	1.9	6.1	1.4	15	9.5	8.5	.1	.3	60	20	8	71	6.8	110
May 1-10		4.9	.47	5.9	1.8	7.6	1.6	18	8.8	10	.2	.3	73	22	7	79	7.2	110
May 11-21		4.7	.54	4.4	.8	4.1	1.7	11	8.4	5.7	.2	.7	c66	14	6	53	6.7	160
May 22-31		7.2	.74	5.7	1.3	5.8	1.7	15	11	8.5	.2	.5	69	20	7	70	6.8	140
June 1-30		7.6	.24	5.5	1.5	6.4	1.6	16	5.6	9.0	.1	.8	73	20	6	70	6.3	150
July 1-15		7.0	.29	5.1	1.0	5.1	1.3	14	6.8	7.5	.1	.6	67	16	5	62	6.6	160
July 16-27		8.4	.30	6.1	1.6	6.6	1.5	20	9.0	9.0	.1	.6	79	22	5	78	6.7	160
July 28-31		12	.38	6.4	2.6	10	2.0	28	9.6	13	.1	1.0	b71	27	4	110	6.7	75
Aug. 1-5		13	.26	7.1	4.8	26	2.8	28	12	65	.2	1.3	b146	38	14	218	7.3	70
Aug. 6-12		11	.31	6.5	3.0	13	2.4	27	8.2	18	.1	1.2	96	28	6	131	7.2	100
Aug. 28-31		11	.56	5.8	2.5	13	2.2	22	9.2	21	.2	.9	104	25	7	130	6.9	120
Sept. 1-3		9.5	.11	6.7	1.5	9.7	2.1	21	9.4	12	.2	1.0	87	23	6	103	7.0	100
Sept. 4-20		10	.18	5.9	1.7	7.8	2.6	20	9.2	9.8	.1	.5	80	22	6	93	6.9	75
Sept. 21-24		9.7	.12	6.4	1.8	11	2.6	21	11	17	.2	.5	88	24	6	111	7.0	90
Time-weighted average		7.5	0.31	5.3	1.6	7.1	1.9	16	8.0	10	0.2	1.0	74	20	7	79	--	110

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 36 parts per million.

PAMLICO RIVER BASIN--Continued

2-843.92. TRANTERS CREEK NEAR WASHINGTON, N. C.--Continued

Specific conductance (micromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961

Day	October		November		December		January	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	--		65		879	216	130	20
2	72		81		928	228	102	
3	74		66		964	238	84	
4	80		75		983	242	82	
5	84		69	10	712	170	83	
6	77		77		1,680	470	76	
7	88		91		1,040	260	73	
8	73		500	125	2,980	870	74	
9	80		332	80	4,080	1,200	77	
10	78		140	10	4,500	1,340	77	
11	74		212	46	1,100	256	80	
12	75		332	78	870	212	81	
13	74		298	71	588	130	80	
14	77		182	20	588	138	81	
15	79		118	20	336	73	84	
16	80	8.0	212	49	342	74	80	
17	77		529	160	162	30	83	10
18	81		384	96	99		81	
19	83		363	88	97		79	
20	77		662	170	104		78	
21	86		478	115	89		76	
22	101		520	130	114		76	
23	84		140	25	83		79	
24	75		788	210	81		79	
25	80		418	105	81	14	79	
26	68		248	55	80		80	
27	65		422	105	83		82	
28	68		622	165	85		80	
29	70		380	90	88		83	
30	69		382	92	87		81	
31	82		--	--	92		84	

Day	February		March		April		May	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	84		59		69		85	
2	84		57		73		79	
3	81		57		71		79	
4	79		56		73		80	
5	78		57		73		82	
6	76		61		69		91	10
7	71		71		83		77	
8	75		62		72		78	
9	67		65		69		79	
10	69		65		70		81	
11	63		63		73		63	
12	69		62		74		56	
13	67		64		66		43	
14	69	8.0	64		71		46	
15	71		66	7.8	63	8.5	50	
16	71		77		58		51	5.7
17	72		70		70		54	
18	72		74		63		54	
19	75		77		64		58	
20	70		75		64		60	
21	70		74		66		59	
22	63		77		68		66	
23	76		68		72		67	
24	56		69		89		68	
25	53		60		79		71	
26	59		58		79		71	8.5
27	59		61		78		71	
28	65		65		76		83	
29	--	--	64		89		80	
30	--	--	58		93		75	
31	--	--	61		--	--	81	

PAMLICO RIVER BASIN--Continued

2-843.92. TRANTERS CREEK NEAR WASHINGTON, N. C.--Continued

Specific conductance (micromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961--Continued

Day	June		July		August		September	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	76		48		228		105	
2	73		55		240		100	12
3	74		58		213	65	100	
4	76		60		205		66	
5	76		60		199		84	
6	80		62		158		95	
7	81		67		143		97	
8	77		68	7.5	130		91	
9	78		64		115		94	
10	74		68		118	18	98	
11	78		68		120		97	
12	78		59		120		101	9.8
13	82		60		1,510	432	99	
14	88		62		752	170	89	
15	88		65		2,370	682	92	
16	91	9.0	74		1,890	524	93	
17	95		70		2,650	762	99	
18	96		74		2,300	648	83	
19	85		68		2,600	752	87	
20	88		71		1,900	530	72	
21	68		74		1,590	438	109	
22	54		77	9.0	1,180	312	105	
23	58		80		1,050	270	117	17
24	35		82		671	158	120	
25	46		83		678	108	339	128
26	40		87		524	167	1,370	400
27	44		90		327	68	590	142
28	51		101		160		332	70
29	42		110		140		360	80
30	48		108	13	100	21	100	7.8
31	--	--	122		118		--	--

PAMLICO RIVER BASIN--Continued

2-843.92. TRANTERS CREEK NEAR WASHINGTON, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
[Once-daily measurement between 1:45 p.m. and 5:50 p.m.]

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	--	58	51	42	38	54	62	65	68	72	88	81
2..	69	60	49	44	37	54	62	65	71	74	87	81
3..	70	59	49	42	37	54	62	68	71	75	86	81
4..	70	59	49	43	36	55	59	65	71	77	85	79
5..	69	57	50	43	37	57	56	65	75	78	84	80
6..	70	57	50	44	37	59	56	65	72	78	84	80
7..	70	53	50	44	37	63	56	65	75	78	84	80
8..	68	54	48	42	39	65	56	66	76	78	85	80
9..	67	54	47	41	39	63	57	66	76	79	86	80
10..	68	55	48	40	39	60	59	66	77	78	86	--
11..	68	55	48	41	41	61	59	68	77	76	86	81
12..	69	54	42	41	42	59	59	68	78	75	86	81
13..	68	54	40	42	43	54	57	69	78	76	85	80
14..	68	54	40	43	45	55	58	70	80	78	85	79
15..	69	54	40	44	45	59	60	70	80	78	83	79
16..	70	55	41	43	46	60	60	70	78	78	83	75
17..	69	57	41	43	49	60	60	70	75	80	83	75
18..	69	57	41	43	50	58	60	70	73	80	83	75
19..	69	57	41	44	51	54	60	69	74	80	80	74
20..	69	56	40	44	50	56	59	69	74	80	78	73
21..	65	56	41	45	51	58	59	68	75	82	78	74
22..	65	56	38	42	51	59	60	68	77	83	79	75
23..	63	55	37	40	51	58	61	68	78	83	79	76
24..	62	55	37	40	53	59	61	68	75	84	79	76
25..	60	55	38	39	55	58	62	69	73	85	80	76
26..	60	55	38	37	54	58	65	68	72	85	81	78
27..	58	55	39	38	54	56	65	68	72	85	81	77
28..	56	56	39	35	54	58	65	66	71	85	81	76
29..	57	56	40	35	--	60	64	65	70	85	81	75
30..	57	54	40	35	--	60	54	65	71	85	81	74
31..	57	--	40	37	--	60	--	66	--	87	81	--
Average	66	56	43	41	45	58	60	67	74	80	83	78

NEUSE RIVER BASIN

2-871.82. NEUSE RIVER AT FALLS, N. C.

LOCATION.--At bridge on county road 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 1961.
Water temperatures: October 1953 to September 1954, November 1960 to September 1961.
EXTREMES, November 1960 to September 1961.--Dissolved solids: Maximum, 84 ppm Sept. 1-30; minimum, 38 ppm Jan. 15-17.
Hardness: Maximum, 34 ppm July 18; minimum, 16 ppm Jan. 15-17, Feb. 21-28.
Specific conductance: Maximum daily, 145 micromhos Sept. 23; minimum daily, 37 micromhos Aug. 4.
Water temperatures: Maximum, 80°F July 25-28, Aug. 1, 3; minimum, freezing point on many days during winter months.
EXTREMES, 1953-54, November 1960 to September 1961.--Dissolved solids: Maximum, 129 ppm Sept. 21-30, 1954; minimum, 38 ppm Jan. 15-17, 1961.
Hardness: Maximum, 41 ppm Sept. 21-30, 1954; minimum, 13 ppm Jan. 21-31, 1954.
Specific conductance (November 1960 to September 1961): Maximum daily, 145 micromhos Sept. 23, 1961; minimum daily, 37 micromhos Aug. 4, 1961.
Water temperatures: Maximum, 81°F July 15, 1954; minimum, freezing point on many days during winter months.
REMARKS.--Records of specific conductance of samples collected from November 1960 to September 1961 and records of suspended matter from October 1953 to September 1954 available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, November 1960 to September 1961

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. 1-30, 1960		9.0	0.03	7.7	3.0	10	2.6	48	5.4	9.0	0.0	3.2	80	31	0	118	7.5	13
Dec. 1-31		16	.14	6.8	3.0	8.7	2.2	38	8.6	7.7	.1	3.9	80	30	0	106	6.7	25
Jan. 1-14, 1961		14	.14	5.6	2.9	7.9	1.9	29	7.0	6.5	.1	3.0	76	26	2	87	6.7	35
Jan. 15-17		8.7	.11	4.2	1.4	3.7	1.9	18	6.4	2.7	.1	.1	a38	16	1	56	7.1	--
Jan. 18-31		15	.25	5.8	2.3	7.8	1.6	29	8.0	7.0	.1	2.7	73	24	0	87	6.7	35
Feb. 1-7		15	.21	6.4	2.5	8.9	1.4	32	6.4	7.7	.2	1.6	73	26	0	98	7.7	30
Feb. 8-20		11	.18	4.7	1.5	5.0	1.5	18	3.4	5.2	.1	1.3	67	18	3	67	6.7	45
Feb. 21-28		8.1	.13	4.1	1.5	4.1	1.6	14	11	3.5	.1	.7	66	16	4	57	7.2	45
Mar. 1-31		11	.14	5.4	1.8	6.0	1.2	24	7.8	5.0	.1	.7	57	20	1	71	7.2	45
Apr. 1-27		12	.12	5.3	1.8	5.8	1.5	25	7.0	4.2	.1	.8	51	20	0	74	7.4	25
Apr. 28-30		14	.14	6.3	2.8	7.7	1.4	34	7.8	6.0	.1	.6	a64	27	0	104	7.5	--
May 1-11		13	.17	6.3	2.2	7.4	1.2	32	4.0	5.5	.2	1.6	65	24	0	85	7.3	35
May 12-19		11	.14	5.0	1.6	4.7	1.3	24	6.8	3.2	.1	.9	59	19	0	65	7.1	50
May 20-31		16	.01	7.3	1.6	7.8	1.3	34	3.8	5.5	.1	2.2	72	24	0	88	7.3	40
June 1-14		16	.03	6.4	2.7	9.2	1.8	35	4.0	8.0	.1	2.9	70	27	0	106	7.5	15
June 15-30		12	.02	5.2	1.7	5.8	1.5	24	6.8	4.2	.1	1.1	69	20	0	73	7.1	15
July 1-17		16	.10	5.6	3.1	6.3	1.7	31	5.2	4.1	.1	2.5	76	27	2	89	7.4	35
July 18		--	--	9.1	2.8	--	--	49	--	7.0	--	--	--	34	0	119	7.7	--

July 19-25, 1961....		12	.38	5.3	2.0	5.3	1.3	29	4.8	4.3	.1	.8	73	22	0	77	6.7	--
July 26-28.....		16	.06	8.0	2.5	9.8	2.4	40	6.6	7.6	.1	2.5	82	30	0	112	7.2	35
July 29-31.....		12	.06	4.8	2.0	5.4	1.4	30	--	4.3	.1	.1	50	20	0	71	7.2	15
Aug. 1-4.....		14	.01	6.1	2.0	6.6	1.9	30	5.6	5.0	.1	2.4	68	23	0	84	7.1	32
Aug. 5-16.....		14	.06	5.5	2.1	4.6	2.0	28	5.4	5.1	.0	1.6	74	22	0	75	7.2	40
Aug. 17-19.....		19	.07	7.6	2.8	10	2.6	44	5.4	7.2	.0	2.1	a79	30	0	112	7.4	26
Aug. 20-31.....		11	.05	4.5	1.8	5.1	1.9	22	5.6	4.7	.0	1.1	58	18	0	61	6.7	38
Sept. 1-30.....		17	.08	7.5	2.7	9.8	2.5	43	5.4	9.6	.0	.3	84	30	0	111	6.7	10
Time-weighted average.....		13	0.11	6.1	2.3	7.3	1.8	32	6.3	6.2	0.1	1.8	70	24	1	88	--	29

a Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

2-871.82. NEUSE RIVER AT FALLS, N. C.--Continued

Temperature °F of water, November 1960 to September 1961
(Once-daily measurement between 8:55 a.m. and 9:30 a.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.		55	44	39	34	48	50	59	65	71	80	76
2.		54	42	40	33	48	49	61	68	72	79	78
3.		56	38	38	32	47	49	60	70	72	80	78
4.		56	40	38	32	50	51	58	70	72	75	78
5.		52	37	39	32	59	49	58	70	75	73	78
6.		50	37	36	32	60	52	57	72	75	74	78
7.		48	39	35	34	60	53	60	74	73	75	79
8.		47	38	36	33	62	52	65	74	72	75	78
9.		47	36	36	34	56	52	66	75	72	76	76
10.		47	34	37	33	53	53	67	77	70	77	76
11.		44	33	36	33	49	52	67	76	70	77	77
12.		47	33	38	37	48	52	66	76	70	78	75
13.		47	32	38	38	47	52	66	76	71	79	77
14.		46	32	39	38	55	52	65	76	72	75	75
15.		45	32	47	38	55	53	65	73	76	75	74
16.		48	32	44	42	52	53	67	68	77	74	74
17.		50	32	44	42	54	56	65	67	78	75	72
18.		50	32	44	46	49	54	65	67	78	75	67
19.		51	32	42	49	49	53	65	67	77	74	67
20.		48	32	37	50	49	51	66	68	78	72	67
21.		48	32	36	45	49	53	66	68	77	68	68
22.		46	32	35	47	47	56	66	69	76	70	68
23.		50	32	34	49	46	59	64	70	78	74	69
24.		48	32	34	50	48	62	63	71	78	74	70
25.		49	33	34	53	47	64	65	70	80	74	71
26.		49	34	32	49	50	68	65	70	80	73	72
27.		48	35	32	48	51	65	64	68	80	75	71
28.		50	35	33	49	55	60	62	67	80	74	70
29.		54	34	32	--	55	58	64	68	79	76	68
30.		48	36	32	--	57	58	62	68	78	76	63
31.		--	38	33	--	55	--	--	--	78	--	--
Average		49	35	37	40	52	55	64	71	75	75	73

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 1961.
REMARKS.--Records of discharge are given for Neuse River at 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 1960 to September 1961

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, 1960	740	14	0.00	6.2	1.8	10	2.5	33	6.0	12	0.1	2.5	75	23	0	110	6.8	10
Nov. 1	406	19	.20	6.6	1.9	9.5	2.5	35	4.6	8.0	.1	4.0	74	24	0	100	7.0	20
Dec. 1	374	17	.02	6.6	2.2	13	2.6	43	4.0	10	.1	2.7	87	26	0	120	7.0	20
Jan. 2, 1961	1,820	14	.02	6.1	1.8	7.8	2.2	27	7.8	6.1	.1	2.7	64	22	0	89	6.3	10
Feb. 1	636	17	.12	5.5	1.9	10	1.9	29	5.8	8.2	.1	6.3	77	22	0	100	7.4	20
Mar. 2	2,500	11	.06	3.5	1.4	5.5	1.8	19	7.0	5.5	.0	.5	48	15	0	63	6.6	20
Apr. 1	4,000	10	.16	4.6	1.8	7.0	1.5	21	8.2	7.3	.1	2.1	61	19	2	79	7.2	35
May 1	860	15	.02	5.6	2.2	8.3	1.6	34	5.6	7.0	.1	.7	66	23	0	90	6.6	5
June 1	552	16	.01	5.9	2.2	14	1.6	36	8.6	13	.2	1.8	88	24	0	115	6.4	25
June 30	636	9.5	.03	3.8	1.8	4.8	1.7	19	6.8	5.0	.2	1.1	56	17	2	60	6.5	40
July 31	588	13	.03	5.5	1.8	6.2	2.2	29	4.6	6.1	.2	1.8	65	21	0	82	6.7	18
Sept. 1	588	13	.05	4.9	1.9	9.1	2.0	26	4.6	10	.2	1.5	76	20	0	92	6.6	30

NEUSE RIVER BASIN--Continued

2-883.64. NEUSE RIVER NEAR ROSEWOOD, N. C.

LOCATION.--At bridge on county road (Asylum Road), 3.5 miles southwest of Goldsboro, Wayne County, and 6.5 miles upstream from Little River.
DRAINAGE AREA.--2,037 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1958 to September 1961.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....		14	0.08	5.3	1.5	9.7	2.0	28	4.2	9.3	0.1	2.8	70	19	0	90	6.8	25
Nov. 1.....		15	.51	5.5	1.6	9.6	2.3	28	7.4	10	.1	2.4	69	20	0	91	7.1	40
Dec. 1.....		12	.01	3.8	1.8	9.9	2.0	27	4.4	11	.1	1.2	65	17	0	91	7.0	40
Jan. 2, 1961.....		13	.06	4.2	1.7	9.3	1.7	22	4.4	9.3	.1	2.4	63	18	0	89	6.7	20
Feb. 1.....		12	.24	3.5	2.6	7.0	1.4	18	8.2	7.5	.1	2.6	55	20	4	74	7.3	30
Mar. 2.....		6.6	.07	2.4	1.5	3.5	1.7	11	6.0	4.5	.2	.8	42	12	3	47	6.7	50
Apr. 1.....		8.0	.10	3.2	1.6	5.5	1.4	16	5.2	5.9	.1	1.3	49	14	2	57	6.8	40
May 1.....		9.4	.10	3.6	1.5	7.3	1.4	22	3.2	8.3	.1	.4	55	15	0	66	6.6	30
June 1.....		13	.04	3.8	2.1	7.4	1.5	26	7.0	6.5	.1	1.0	65	18	0	72	6.2	25
June 30.....		7.2	.06	3.0	1.0	4.1	1.7	15	4.4	4.7	.2	.5	47	12	0	47	6.3	50
Aug. 1.....		13	.20	5.1	2.1	14	2.2	28	4.8	16	.1	1.9	79	22	0	118	6.6	45
Sept. 1.....		9.4	.12	2.4	2.2	4.8	2.0	19	3.4	6.0	.2	.2	60	15	0	52	6.7	50

2-888.21. 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 1961.
Water temperatures: October 1948 to September 1949, October 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 82 ppm Nov. 1-30, Sept. 13-30; minimum, 45 ppm Apr. 1-30.
Hardness: Maximum, 22 ppm Sept. 13-30; minimum, 14 ppm Feb. 1-28, Mar. 1-31, Apr. 1-30, Aug. 7-13.
Specific conductance: Maximum daily, 140 micromhos Sept. 26; minimum daily, 46 micromhos Feb. 28, Mar. 1, 2.
Water temperatures: Maximum, 83°F July 29, Aug. 1-4; minimum, freezing point Jan. 28.
EXTREMES, 1948-49, 1960-61.--Dissolved solids: Maximum, 82 ppm Nov. 1-30, 1960, Sept. 13-30, 1961; minimum, 43 ppm Jan. 1-10, 1949.
Hardness: Maximum, 22 ppm Sept. 13-30, 1961; minimum, 11 ppm Jan. 1-10, 1949.
Specific conductance (1960-61): Maximum daily, 140 micromhos Sept. 26, 1961; minimum daily, 46 micromhos, Feb. 28, Mar. 1, 2, 1961.
Water temperatures: Maximum, 86°F June 29, July 28, 1949; minimum, freezing point Jan. 28, 1961.
REMARKS.--Records of specific conductance of samples collected from October 1960 to September 1961 available in district office at Raleigh, N. C.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....	1,594	13	0.23	4.5	1.5	7.9	2.0	23	5.2	9.0	0.1	2.6	66	17	0	77	7.3	60
Nov. 1-30.....	911	15	.27	3.8	2.6	9.9	2.2	29	3.6	11	.1	2.8	82	20	0	92	7.4	40
Dec. 1-31.....	1,203	14	.27	4.2	1.9	8.2	1.1	25	3.0	8.5	.1	2.9	72	18	0	86	7.2	40
Jan. 1-31, 1961.....	2,481	12	.13	3.9	1.7	5.9	.9	17	5.0	7.0	.1	2.7	59	17	3	72	7.1	50
Feb. 1-28.....	5,591	9.3	.21	3.5	1.3	4.9	1.6	15	4.2	5.8	.2	2.8	53	14	2	60	6.6	55
Mar. 1-31.....	6,865	8.8	.12	3.7	1.3	5.4	1.4	15	7.8	4.8	.1	1.1	60	14	2	58	7.0	45
Apr. 1-30.....	4,963	8.9	.09	3.8	1.2	5.8	1.6	18	3.8	6.0	.2	.3	45	14	0	62	6.8	50
May 1-31.....	3,371	11	.18	4.1	1.9	6.7	1.6	21	5.4	6.7	.2	1.7	56	18	1	71	6.8	40
June 1-30.....	1,740	12	.04	4.3	1.7	9.1	1.7	24	8.8	8.2	.1	2.0	71	18	0	77	7.2	45
July 1-31.....	1,938	11	.18	4.3	1.5	6.3	1.6	21	5.2	5.7	.2	2.0	76	17	0	71	6.8	80
Aug. 1-6.....	1,157	13	.16	5.1	1.9	9.6	2.3	29	6.8	9.4	.1	2.2	71	21	0	95	7.3	45
Aug. 7-13.....	3,109	10	.11	3.3	1.6	5.5	1.9	17	4.8	4.9	.1	1.1	65	14	0	60	7.0	45
Aug. 14-31.....	1,906	12	.02	4.4	1.8	7.3	1.9	24	3.6	8.1	.1	2.6	60	18	0	81	7.1	30
Sept. 1-12.....	1,290	13	.09	4.5	1.8	7.1	1.9	23	5.0	8.9	.1	.7	62	18	0	79	6.7	40
Sept. 13-30.....	528	14	.06	5.5	1.9	14	2.6	33	8.0	16	.1	.6	82	22	0	119	6.6	20
Time-weighted average.....	2,778	12	0.15	4.1	1.7	7.4	1.7	22	5.3	7.3	0.1	2.0	65	17	1	76	--	47

NEUSE RIVER BASIN--Continued

2-888.21. NEUSE RIVER AT GOLDSBORO, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement between 5 a.m. and 9:30 a.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	76	60	46	45	36	53	60	62	70	70	83	78
2..	70	60	48	45	36	52	58	64	70	72	83	79
3..	70	60	48	40	35	53	57	64	74	72	83	80
4..	64	54	46	50	35	54	55	64	74	78	83	80
5..	72	58	48	55	36	55	55	63	74	76	82	81
6..	70	54	48	50	35	58	55	62	76	78	78	82
7..	74	52	48	55	38	60	57	64	78	76	75	82
8..	70	50	46	50	38	63	56	65	80	78	76	82
9..	70	50	45	45	36	62	56	68	80	76	76	82
10..	68	55	40	45	36	58	56	70	79	74	78	80
11..	66	55	44	38	38	56	56	68	80	74	78	80
12..	65	55	48	38	38	55	57	69	80	75	80	80
13..	66	50	36	38	40	57	58	69	80	76	81	81
14..	68	50	36	42	42	56	58	69	80	--	78	80
15..	68	55	38	42	44	58	57	68	80	78	80	80
16..	68	54	38	45	45	58	57	68	76	79	78	76
17..	68	54	36	45	46	56	56	68	74	80	79	76
18..	68	55	36	38	48	54	57	66	70	82	79	74
19..	70	56	36	46	50	55	57	68	70	80	78	73
20..	70	54	38	42	55	55	57	68	70	80	80	73
21..	65	54	42	42	54	53	56	67	74	79	76	73
22..	68	54	40	38	52	52	57	68	74	79	78	75
23..	65	56	36	38	54	50	60	67	75	80	76	76
24..	56	54	36	38	54	50	63	66	75	81	76	76
25..	55	54	35	36	54	48	63	65	74	82	76	76
26..	55	56	35	35	54	48	65	68	75	82	76	78
27..	56	56	38	35	52	51	67	68	74	82	76	78
28..	56	56	38	32	53	53	65	65	74	82	76	78
29..	58	56	40	34	--	58	64	66	72	83	78	76
30..	58	56	42	34	--	60	62	68	70	82	78	74
31..	58	--	40	35	--	60	--	68	--	82	78	--
Average	66	55	41	42	44	55	59	67	75	78	78	78

NEUSE RIVER BASIN--Continued

2-891.92. *NEUSE RIVER AT WHITEHALL, N. C.*

LOCATION.--At bridge on paved county road 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 1961.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....		13	0.07	4.4	1.4	7.7	2.0	19	4.8	8.8	0.1	1.0	59	16	1	76	6.6	30
Nov. 1.....		13	.13	4.3	1.8	8.9	2.2	22	5.2	9.0	.1	3.1	61	18	1	85	7.3	40
Dec. 1.....		12	.02	3.8	1.8	9.4	2.1	25	4.6	10	.1	.4	66	16	0	86	6.9	20
Jan. 2, 1961.....		12	.14	4.3	1.6	7.4	1.7	19	5.8	6.7	.1	2.6	55	18	2	74	6.9	20
Feb. 1.....		12	.22	3.7	2.3	7.7	1.4	16	7.4	8.5	.1	3.7	58	18	5	76	7.2	30
Mar. 2.....		6.2	.11	2.4	1.5	3.4	1.6	11	5.2	4.9	.2	.4	50	12	3	44	6.6	70
Apr. 1.....		7.5	.17	3.5	1.6	5.1	1.5	16	6.8	5.6	.1	.6	49	16	2	58	6.8	40
May 1.....		8.9	.07	3.7	1.2	6.8	1.4	20	3.6	7.1	.1	.6	54	14	0	62	6.2	30
June 1.....		12	.14	4.2	1.8	8.7	1.8	24	5.8	9.0	.0	1.1	65	18	0	80	6.3	25
June 30.....		7.0	.06	2.8	1.1	4.3	1.6	12	4.4	4.8	.1	.7	47	12	2	46	6.5	50
Aug. 1.....		11	.25	4.1	2.0	9.4	2.2	22	6.2	9.5	.1	1.3	61	18	0	87	6.5	55
Sept. 1.....		9.4	.09	2.9	1.3	4.5	1.9	14	4.2	6.0	.2	1.2	54	12	1	54	6.6	40

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 1961.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960	2,170	9.3	0.05	4.6	0.9	5.0	2.2	14	7.6	6.5	0.1	1.1	55	15	4	68	6.0	40
Nov. 1	1,320	14	.50	5.5	1.1	8.2	2.2	22	6.2	8.8	.1	2.2	64	18	0	83	7.1	40
Dec. 1	1,270	12	.03	5.0	1.1	9.3	2.0	23	5.6	10	.1	.5	65	17	0	83	7.2	20
Jan. 2, 1961	1,620	11	.06	5.0	.9	6.9	1.6	18	5.0	7.0	.1	1.9	54	16	1	71	6.7	20
Feb. 1	2,120	12	.10	4.0	2.1	8.1	1.6	16	9.6	7.8	.1	3.7	59	18	5	79	7.2	20
Mar. 2	11,500	6.0	.10	2.1	1.5	3.5	1.6	10	6.8	4.6	.1	.5	46	11	3	46	6.7	60
Apr. 1	8,210	7.3	.12	3.2	2.0	4.5	1.4	14	6.0	5.2	.1	.3	52	16	4	56	6.4	50
May 1	2,950	9.1	.27	4.0	1.2	6.7	1.7	19	5.8	7.0	.1	1.2	54	15	0	69	6.9	35
June 1	1,770	11	.28	4.4	1.7	8.6	1.7	22	6.6	9.3	.2	1.7	62	18	0	78	6.6	40
June 30	6,070	6.6	.09	2.9	1.1	3.8	1.5	12	6.2	4.5	.2	.7	46	12	2	46	6.8	60
Aug. 1	1,300	9.5	.16	4.2	1.5	6.1	2.1	20	6.0	5.6	.1	.8	60	16	0	69	6.2	55
Aug. 30	3,790	10	.06	3.4	1.4	5.7	3.7	16	5.6	6.7	.1	1.2	a46	14	2	62	6.5	45
Sept. 1	4,550	9.3	.22	3.2	1.3	4.0	2.0	16	4.2	4.5	.1	.7	62	13	0	52	6.6	40

a Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

2-918.2. CORE CREEK NEAR FORT BARNWELL, N. C.

LOCATION.--At bridge on State Highway 55, 3.8 miles southeast of Fort Barnwell, Craven County, and 6.5 miles above mouth.
DRAINAGE AREA.--59.2 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1961.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960		6.7	0.11	12	0.9	3.6	1.0	34	4.6	5.5	0.2	1.0	55	33	5	80	7.6	40
Nov. 1		9.1	.24	21	1.2	3.5	.8	61	3.6	6.7	.1	1.4	105	58	8	120	7.5	120
Dec. 1		8.1	.30	15	1.8	3.8	.6	49	4.6	6.2	.1	.5	91	46	6	110	7.3	120
Jan. 2, 1961		5.5	.06	8.8	.9	3.6	1.4	22	6.4	5.6	.1	.3	63	26	8	73	6.8	80
Feb. 1		6.2	.08	8.8	1.3	3.5	.5	23	8.4	6.0	.1	.2	67	28	8	73	7.1	70
Mar. 1		3.6	.09	7.9	1.0	3.4	.3	19	5.6	6.9	.2	.2	62	24	12	64	6.9	80
Apr. 1		4.1	.09	9.3	1.2	3.6	.8	27	7.4	6.0	.2	.4	63	28	6	76	6.8	70
May 1		5.3	.17	8.8	1.0	3.3	.6	24	6.4	5.5	.2	1.0	70	26	6	68	6.5	100
June 1		5.2	.14	8.0	1.2	3.1	.3	23	2.4	6.5	.2	.1	a76	25	6	69	6.4	110
June 30		3.9	.06	3.6	.9	2.3	.6	9	4.0	1.7	.3	2.0	b63	12	5	34	6.1	180
Aug. 1		6.2	.15	18	1.6	3.4	.7	52	6.4	5.0	.1	.5	100	51	8	117	6.9	100
Sept. 1		8.2	.20	12	1.6	3.3	.6	36	3.8	5.2	.2	.5	80	37	8	85	6.7	120

a Organic matter present; sum of mineral constituents 38 parts per million.
b Organic matter present; sum of mineral constituents 23 parts per million.

NEUSE RIVER BASIN--Continued

2-918.31. NEUSE RIVER AT COWEN LANDING, NEAR VANCEBORO, N. C.

LOCATION.--At Cowen Landing 6.0 miles southeast of Vanceboro, Craven County.
DRAINAGE AREA.--4,027 square miles.
RECORDS AVAILABLE.--Chemical analyses: September 1954 to September 1961.
Water temperatures: October 1954 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 87 ppm Sept. 12 (p.m.), 13-30; minimum, 54 ppm Apr. 1-30.
Hardness: Maximum, 26 ppm Sept. 12 (p.m.), 13-30; minimum, 16 ppm Feb. 1-28, Apr. 1-30, June 23-30.
Specific conductance: Maximum daily, 152 micromhos Sept. 14 (p.m.); minimum daily, 47 micromhos June 27 (p.m.).
Water temperatures: Maximum, 89°F July 30 (p.m.); minimum, 35°F Jan. 27 (a.m.).
EXTREMES, 1954-61.--Dissolved solids: Maximum, 6,270 ppm Oct. 15 (p.m.), 1954; minimum, 43 ppm Jan. 1-21, 1960.
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.
REMARKS.--Samples were collected twice daily (7:30 a.m. and 4:30 p.m.) and were composited unless otherwise indicated. Records of specific conductance of samples collected available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....		10	0.05	5.0	2.0	8.0	2.5	19	8.4	9.5	0.2	3.2	63	20	5	84	7.1	50
Nov 1-30.....		11	.41	6.5	2.0	9.4	2.3	26	6.4	11	.1	3.9	73	24	3	102	7.3	40
Dec. 1-31.....		11	.33	6.3	1.5	8.7	2.0	23	6.4	10	.1	3.7	70	22	2	89	7.5	45
Jan. 1-31, 1961.....		9.7	.18	4.3	1.9	6.2	1.6	17	6.8	8.0	.1	3.1	56	19	5	76	7.2	60
Feb. 1-28.....		8.3	.07	4.3	1.4	6.0	1.5	12	7.2	7.0	.1	2.4	55	16	6	68	6.5	40
Mar. 1-31.....		8.2	.18	4.3	1.6	5.4	1.9	14	6 8	6.5	.1	2.8	58	18	6	64	6.4	80
Apr. 1-30.....		5.5	.12	4.3	1.2	5.7	1.5	15	6.7	7.0	.1	1.8	54	16	4	68	6.7	55
May 1-31.....		8,1	.29	4.8	1.3	6.4	1.8	18	5.8	7.5	.2	2.4	60	18	2	76	6.9	60
June 1-22.....		7.4	.07	6.7	1.5	8.1	2.0	22	8.6	9.5	.1	3.2	58	22	4	83	6.5	50
June 23-30.....		5.3	.17	3.9	1.4	4.0	1.4	13	6.2	3.0	.1	2.1	56	16	5	52	6.8	90
July 1-13.....		7.5	.17	5.0	1.3	5.8	2.0	16	7.6	7.0	.1	1.7	57	18	4	70	6.9	100
July 14-31.....		8.8	.18	6.0	1.3	8.2	1.9	23	3.2	9.5	.2	3.1	60	20	1	87	6.9	70
Aug. 1-31.....		11	.04	4.8	1.9	7.4	2.2	22	6.6	8.1	.1	.8	55	20	2	89	6.9	30
Sept. 1-11, 12 a.m..		10	10	5.5	1.5	6.9	2.2	22	7.0	8.4	.1	1.7	61	20	2	83	6.9	45
Sept. 12 p.m., 13-30		11	.03	8.3	1.4	11	2.8	32	7.8	12	.1	2.0	87	26	0	116	6.9	27
Time-weighted average.....		9.1	0.17	5.3	1.6	7.2	2.0	20	6.8	8.5	0.1	2.6	61	20	4	81	--	55

NEUSE RIVER BASIN--Continued

2-918.31. NEUSE RIVER AT COWEN LANDING, NEAR VANCEBORO, N. C.--Continued

Temperature (°F) of water, water year October 1960 to September 1961
(Twice-daily measurements at approximately 7:30 a.m. and 4:30 p.m.)

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

NEUSE RIVER BASIN--Continued

2-918.36. NEUSE RIVER AT STREETS FERRY, NEAR VANCEBORO, N. C.

LOCATION.--At Streets Ferry 1-1/2 miles east of Lima, Craven County.
DRAINAGE AREA.--4,040 square miles.
RECORDS AVAILABLE.--Chemical analyses: September 1954 to September 1961.
Water temperatures: October 1954 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 12 ppm Aug. 1-31; minimum, 3.0 ppm June 22-30.
Specific conductance: Maximum daily, 128 micromhos Sept. 26 (bottom); minimum daily, 48 micromhos Mar. 4, 5, (bottom), 6, 7 (top), 8 (top).
Water temperatures: Maximum, 90°F July 30 (top); minimum, 38°F Jan. 27, 28 (top).
EXTREMES, 1954-61.--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 (bottom), 1959.
Water temperatures: Maximum, 92°F June 29, 30, (top), 1959; minimum, 33°F Feb. 19 (bottom), 1958.
REMARKS.--Top (T) and bottom (B) samples were collected once daily (12 m.) and were composited unless otherwise indicated. Integrated samples were collected three times daily (6 a.m., 12 m., 6 p.m.) from September 1954 to September 1957. Records of specific conductance of samples collected available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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 1960.....		10	0.48	5.5	1.4	7.3	2.2	20	7.4	8.5	0.2	2.5	68	20	3	79	7.0	70
Nov. 1-30.....		12	.56	6.7	1.6	8.7	2.0	27	5.4	10	.1	3.0	72	23	1	91	7.2	50
Dec. 1-31.....		11	.48	5.9	1.9	8.4	1.8	21	8.4	10	.1	3.0	65	22	6	85	7.5	50
Jan. 1-31, 1961.....		9.9	.23	5.0	1.4	6.5	1.9	17	4.8	8.5	.1	3.0	56	18	4	76	6.7	65
Feb. 1-28.....		8.2	.06	4.0	1.9	6.0	1.5	14	7.2	7.0	.1	2.0	55	18	6	67	7.0	40
Mar. 1-31.....		6.3	.13	3.8	1.2	5.9	1.7	13	6.2	7.3	.1	1.8	55	14	4	61	7.0	75
Apr. 1-30.....		5.6	.11	4.2	[illegible]	5.7	1.5	17	5.7	7.5	.0	1.4	49	16	2	65	6.8	55
May 1-31.....		8.0	.29	5.4	1.0	5.7	1.5	19	6.4	6.7	.1	1.5	56	18	2	69	6.8	50
June 1-21.....		8.0	.19	5.9	1.7	6.9	1.6	22	7.0	6.5	.1	2.3	67	22	4	78	6.8	55
June 22-30.....		5.2	.20	4.0	1.1	3.5	1.4	13	4.8	3.0	.2	2.0	a56	15	4	52	6.8	90
July 1-9.....		8.2	.37	4.6	1.3	4.1	1.6	15	7.4	6.0	.1	1.4	58	17	4	60	6.8	90
July 10-31.....		10	.32	5.3	1.6	6.7	1.8	22	4.0	8.5	.1	1.7	68	20	2	81	6.9	55
Aug. 1-31.....		11	.23	4.8	1.8	6.6	2.1	20	5.8	12	.1	1.9	70	20	3	81	7.1	70
Sept. 1-10.....		9.8	.22	5.5	1.3	6.0	2.1	19	5.4	7.0	.1	1.2	66	20	4	79	7.0	90
Sept 11-30.....		12	.21	7.5	1.8	9.4	2.8	31	6.8	11	.1	.9	81	26	0	109	7.2	38
Time-weighted average.....		9.2	0.28	5.2	1.5	6.7	1.8	20	6.2	8.4	0.1	2.1	63	19	3	77	--	60

a Calculated from determined constituents.

2-918.36. NEUSE RIVER AT STREETS FERRY, NEAR VANCEBORO, N. C.--Continued

Temperature (°F) of water, water year October 1960 to September 1961
(Top (T) and bottom (B) once-daily measurements at approximately 12 m.)

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

NEUSE RIVER BASIN--Continued

2-920. SWIFT CREEK NEAR VANCEBORO, N. C.

LOCATION.--Temperature recorder at gaging station at highway bridge, 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 81°F Aug. 2-5; minimum, 37°F on several days during January and February.
EXTREMES, 1951-52, 1954-61.--Water temperatures: Maximum, 87°F July 29, 1952; minimum, freezing point on several days during December 1958.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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			
Mar. 14, 1961.....	346		0.29	7.1	1.4	6.0	1.1	14	6.3	9.0		1.6		23	12	78	6.4	
Aug. 30.....	257	9.5	.19	9.0	1.1	5.4	1.6	26	9.6	8.2	0.1	.9	59	27	6	85	6.5	90

NEUSE RIVER BASIN--Continued

2-920. SWIFT CREEK NEAR VANCEBORO, N. C.--Continued

Temperature (°F) of water, water year October 1960 to September 1961
(Continuous ethyl alcohol-actuated thermograph)

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..	69	69	60	58	54	49	47	42	39	37	58	58	66	66	67	65	68	67	72	72	80	80	77	77
2..	69	68	60	60	49	45	47	46	39	38	59	58	66	64	68	67	71	68	73	72	81	81	78	77
3..	68	68	60	60	45	44	46	46	38	38	59	58	64	63	67	67	73	71	74	73	81	81	78	78
4..	68	68	60	57	44	42	46	43	38	38	59	58	63	61	67	67	74	73	75	74	81	81	78	78
5..	68	68	57	56	42	42	43	42	38	38	63	59	61	59	67	66	74	74	75	75	81	79	78	78
6..	69	68	56	56	43	42	42	42	39	38	67	63	63	61	66	65	75	74	76	75	79	79	78	78
7..	69	69	56	53	44	43	42	42	39	38	68	67	64	63	69	65	75	74	76	75	79	79	78	78
8..	69	68	53	50	45	44	42	42	40	39	68	68	64	62	71	69	76	75	75	75	79	79	78	78
9..	68	67	50	50	45	44	42	42	42	39	68	64	63	62	73	71	76	75	75	75	79	79	78	78
10..	67	67	55	50	44	43	42	39	43	42	64	60	64	62	73	73	76	76	75	75	79	79	78	78
11..	67	66	56	55	43	42	39	38	43	42	60	59	64	62	73	73	76	76	75	74	79	79	78	78
12..	66	66	55	54	42	42	38	38	44	43	60	59	63	63	73	73	76	76	74	74	80	79	78	78
13..	66	66	54	53	42	42	40	38	45	44	63	60	63	63	73	73	76	76	74	74	80	80	78	78
14..	67	66	53	52	42	42	43	40	49	45	67	63	63	62	73	73	78	76	76	74	80	79	78	77
15..	67	67	52	52	42	40	46	43	51	49	67	66	62	62	73	73	78	76	77	76	79	77	77	76
16..	68	67	54	52	40	40	47	46	51	51	66	66	65	62	73	72	76	71	78	77	77	76	77	73
17..	68	68	56	54	40	40	47	47	51	51	66	61	65	65	72	72	71	69	79	78	76	76	73	70
18..	68	67	56	56	40	39	47	46	55	51	61	58	65	64	72	72	69	67	79	79	76	76	70	70
19..	68	67	56	56	39	39	46	45	59	55	62	58	64	62	72	71	68	67	79	79	76	76	70	69
20..	67	67	56	55	39	39	45	43	59	58	62	61	62	60	71	70	70	68	79	79	76	76	72	70
21..	67	65	55	54	41	39	43	40	58	54	62	59	61	59	70	70	70	70	79	79	76	76	72	72
22..	65	62	54	52	41	39	40	38	54	54	59	58	65	61	70	70	71	70	79	79	76	76	72	72
23..	62	60	52	52	39	39	38	37	54	54	59	58	69	65	70	70	72	71	79	79	76	76	73	72
24..	60	60	52	52	39	38	38	37	57	54	59	58	70	69	70	68	72	72	80	79	76	76	73	73
25..	60	59	53	52	38	38	38	38	60	57	59	58	73	70	68	68	72	72	80	80	76	76	73	73
26..	59	57	53	52	38	38	38	37	60	59	60	59	74	73	70	68	72	72	80	80	77	76	74	73
27..	58	57	52	52	40	38	37	37	59	58	62	60	74	70	70	68	72	72	80	80	77	77	74	74
28..	58	58	54	52	40	40	37	37	58	58	66	62	70	67	68	65	72	72	80	80	77	77	74	74
29..	58	58	56	54	40	40	37	37	--	--	69	66	67	66	66	66	72	72	80	80	78	77	74	73
30..	58	58	56	54	42	40	37	37	--	--	69	69	66	64	67	66	72	72	80	80	78	77	73	71
31..	58	58	--	--	42	42	37	37	--	--	69	66	--	--	68	67	--	--	80	80	77	77	--	--
Aver.	65	64	55	54	42	41	42	41	49	47	63	61	65	64	70	69	73	72	77	77	78	78	75	75

NEUSE RIVER BASIN--Continued

2-921.22. BATCHELDERS CREEK NEAR STREETS FERRY, N. C.

LOCATION.--At bridge on county road 2.4 miles south of Streets Ferry, Craven County.
DRAINAGE AREA.--55.3 square miles.
RECORDS AVAILABLE.--Chemical analyses: September 1957 to September 1961.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....		11	0.17	23	2.2	4.4	2.8	81	2.4	7.0	0.1	0.2	110	67	0	150	7.4	70
Nov. 1.....		14	.01	33	2.5	6.4	1.7	111	4.4	8.8	.1	.8	135	94	2	210	7.0	40
Dec. 1.....		12	.04	19	6.5	6.5	1.5	86	5.2	9.0	.1	.4	119	75	4	172	7.8	30
Jan. 2, 1961.....		7.9	.17	14	1.3	4.5	2.2	43	4.8	6.0	.1	.9	76	39	4	105	7.3	50
Feb. 1.....		9.6	.08	14	3.1	5.7	.7	51	7.8	7.7	.1	.7	80	48	6	117	7.6	20
Mar. 1.....		6.9	.09	11	1.0	4.2	.7	34	3.2	6.9	.1	.4	64	32	4	89	7.0	30
Apr. 1.....		6.2	.15	13	2.2	4.3	1.2	47	4.4	6.9	.1	1.0	75	42	4	103	7.6	45
May 1.....		7.6	.33	17	3.2	5.1	1.0	60	3.0	7.3	.2	.5	87	54	6	128	7.6	45
June 1.....		7.7	.04	13	1.3	3.8	.5	41	4.2	7.0	.1	.2	80	36	3	89	7.0	55
June 30.....		5.6	.17	4.9	1.0	2.0	.7	14	2.8	4.5	.1	.1	a51	16	4	47	6.3	110
Aug. 1.....		7.5	.09	26	2.1	4.8	1.2	84	5.6	7.0	.1	.3	114	73	4	171	7.1	45
Sept. 1.....		12	.15	21	1.7	4.7	1.0	66	5.6	7.8	.1	.3	97	59	5	140	6.9	50

a Organic matter present; sum of mineral constituents 29 parts per million.

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 1961.
Water temperatures: October 1956 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 7,750 Aug. 15 (bottom); minimum, 4.5 ppm June 24-30, July 8 (top).
Specific conductance: Maximum daily, 21,200 micromhos Aug. 15 (bottom); minimum daily, 55 micromhos June 30 (bottom), July 1 (bottom).
Water temperatures: Maximum, 85°F on several days during July and August; minimum, 35°F Dec. 24 (top), Jan. 30 (top).
EXTREMES, 1956-61.--Chloride: Maximum, 9,420 ppm Sept. 28 (bottom), 1957; minimum, 4.5 ppm June 24-30, July 8 (top), 1961.
Specific conductance: Maximum daily, 25,900 micromhos Sept. 28 (bottom), 1957; minimum daily, 52 micromhos May 16 (top), 1958, May 2 (top), 1959.
Water temperatures: Maximum, 89°F June 17, 22, Aug. 3, 18 (top), 1957; minimum, 33°F Feb. 18 (top), 19, 20, 1958.
REMARKS.--Top (T) and bottom (B) samples were collected once daily (8 a.m.) and were composited unless otherwise indicated. When specific conductance values indicated salt-water encroachment, only specific conductance and chloride were determined on individual samples. The individual chloride determinations are tabulated separately from the composite chemical analyses. Integrated samples were collected once daily during October and November 1956. Records of specific conductance of samples collected available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, February to July 1961

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. 18-28, 1961....		7.6	0.16	5.2	1.6	7.9	1.7	18	8.4	12	0.1	0.8	65	20	4	85	6.7	60
Mar. 1-16.....		6.4	.11	4.7	1.4	6.3	1.9	13	7.6	8.3	.1	2.1	60	18	7	68	6.8	80
Mar. 20-31.....		6.6	.30	5.6	2.3	9.7	1.7	19	5.3	14	.1	2.8	77	24	8	100	6.8	80
Apr. 1-30.....		5.6	.13	5.8	1.4	7.1	1.4	20	7.2	9.5	.1	1.1	57	20	4	79	7.0	60
May 1-31.....		7.7	.17	6.5	1.4	7.1	1.5	22	8.0	9.2	.1	1.0	64	22	4	84	6.8	60
June 1-23.....		7.8	.24	7.1	1.8	9.0	1.6	25	8.0	10	.2	2.0	73	25	4	95	7.0	90
June 24-30.....		5.4	.20	5.3	1.4	4.9	1.2	17	8.2	4.5	.0	1.7	67	19	5	62	7.1	110
July 1-6, 7 (T).....		6.4	.15	5.0	1.4	5.4	1.2	16	7.0	7.5	.0	.8	52	18	5	66	7.0	130

270-946 O - 67 - 17

NEUSE RIVER BASIN--Continued

2-921.62. NEUSE RIVER AT NEW BERN, N. C.--Continued

Chloride, in parts per million, water year October 1960 to September 1961

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	11	11	536	940	1,080	3,780	2,320	--	368	4,500											1,530	5,850	34	1,600
2	12	12	184	910	1,300	2,320	558	2,600	1,240	3,920											2,250	5,500	32	2,800
3	10	12	350	534	790	3,080	450	3,080	1,110	3,900											2,590	6,050	48	3,700
4	108	714	554	1,800	348	3,160	1,180	3,280	1,250	4,070									8	8	1,930	5,800	54	3,020
5	31	1,250	226	1,430	520	3,450	402	2,700	610	3,040											1,460	4,250	139	4,070
6	11	166	1,440	1,780	416	4,820	238	2,330	258	3,570											900	5,000	231	5,690
7	12	14	542	3,640	772	5,100	127	2,450	237	3,350									39		756	5,200	286	4,500
8	62	74	1,120	3,570	1,880	5,090	124	2,780	140	1,250									4	6	500	3,580	378	5,440
9	12	12	604	4,090	3,230	4,870	840	2,710	131	1,220	8	8							42	2,120	290	5,750	690	5,690
10	98	664	486	3,910	1,820	4,880	252	2,130	420	2,190									115	2,950	236	6,800	590	4,050
11	69	756	1,240	2,200	2,020	4,710	108	4,010	39	2,160									21	3,500	165	4,350	655	4,810
12	35	664	1,120	2,900	2,560	3,600	84	5,050	54	1,480							10	10	41	1,080	111	7,050	575	4,660
13	11	1,240	722	3,090	3,800	3,940	139	5,060	62	1,980									18	2,550	127	6,800	540	2,810
14	1,500	14	572	2,470	1,560	4,080	114	4,880	42	2,010									16	21	396	1,980	900	3,040
15	18	196	580	2,720	1,380	4,580	328	4,700	68	1,390			10	10					10	1,850	740	7,750	384	1,650
16	17	386	566	2,660	1,140	4,580	190	3,620	39	1,890					9.2	9.2			16	2,850	1,320	7,550	670	885
17	72	888	1,140	3,180	1,340	2,780	440	4,580	38	1,780	48	50							17	105	900	7,200	556	870
18	59	1,180	985	2,510	648	3,120	756	4,710			38	3,080							12	170	1,140	7,150	1,690	1,220
19	20	1,320	915	3,100	504	3,960	1,360	4,230			19	25							53	1,800	1,150	7,000	685	1,020
20	15	18	1,180	2,810	806	3,660	855	2,340											13	330	2,070	2,180	1,160	1,730
21	13	15	970	3,140	828	3,710	592	3,600											20	70	1,850	2,710	1,060	1,310
22	12	13	542	3,250	1,540	2,640	1,080	4,200											16	17	794	2,780	488	2,950
23	12	12	568	2,830	1,390	3,180	570	5,010	12	12									37	2,350	360	1,000	800	3,750
24	12	11	1,200	3,420	442	3,550	392	3,950											120	3,400	195	2,250	835	4,120
25	172	2,230	990	3,430	218	3,510	294	1,400											115	2,700	98	2,150	2,540	5,190
26	37	1,950	488	3,100	160	3,540	74	1,790			14	14							260	830	50	626	3,220	5,540
27	69	1,780	530	3,730	282	3,700	344	2,130									4.5	4.5	400	3,200	30	1,060	3,050	5,140
28	504	2,530	580	4,380	470	3,650	167	1,500											330	4,250	40	940	1,600	4,800
29	955	1,610	344	4,380	1,060	2,650	50	2,490	--	--									420	4,750	23	1,170	1,800	3,600
30	714	1,100	1,360	3,650	960	3,900	205	3,320	--	--									900	5,750	25	2,210	2,280	4,910
31	306	955	--	--	516	3,820	802	3,470	--	--			--	--			--	--	1,500	6,250	100	2,870	--	--

2-921.62. NEUSE RIVER AT NEW BERN, N.C.--Continued

Temperature (°F) of water, water year October 1960 to September 1961
[Once-daily measurements at approximately high tide, effective Aug. 1]

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

T Top.
B Bottom.

NEUSE RIVER BASIN--Continued

2-925. TRENT RIVER NEAR TRENTON, N. C.

LOCATION.--At gaging station 50 feet downstream from Free Bridge, 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 September 1961.
Water temperatures: October 1951 to September 1953, January 1955 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 115 ppm Aug. 1-6; minimum, 33 ppm July 1-4.
Hardness: Maximum, 66 ppm Aug. 1-6; minimum, 17 ppm June 22-30.
Specific conductance: Maximum daily, 158 micromhos Aug. 3; minimum daily, 35 micromhos June 29.
Water temperatures: Maximum, 85°F July 23; minimum, freezing point on several days during winter months.
EXTREMES, 1951-53, 1955-61.--Dissolved solids: Maximum, 153 ppm Sept 1-10, 1957; minimum, 33 ppm July 1-4, 1961.
Hardness: Maximum, 117 ppm Aug. 11-20, 1957; minimum, 17 ppm June 22-30, 1961.
Specific conductance (1955-61): Maximum daily, 257 micromhos June 17, 1957; minimum daily, 35 micromhos June 29, 1961.
Water temperatures: Maximum, 86°F June 17, 1957; minimum, freezing point on many days during winter months.
REMARKS.--Records of specific conductance of samples collected from January 1955 to September 1961 and records of suspended matter of composite samples from October 1951 to September 1953 available in district office at Raleigh, N. C.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960	90.3	--	--	--	--	--	--	58	17	6.6	--	2.5	--	59	12	140	7.3	--
Oct. 4-31	133	8.0	0.22	12	1.8	4.4	0.9	36	4.4	6.0	0.2	1.0	85	38	8	88	7.1	110
Nov. 1-30	55.9	8.0	.31	20	1.6	4.4	.8	54	8.4	7.0	.1	2.2	95	56	11	122	7.9	90
Dec. 1-31	104	7.0	.28	14	1.2	4.4	.6	38	4.4	7.5	.1	1.7	84	40	9	100	7.4	80
Jan. 1-31, 1961	142	5.4	.13	12	1.2	3.5	.4	30	7.2	7.0	.1	1.5	66	36	11	92	7.0	100
Feb. 1-28	345	4.5	.11	10	.8	3.0	.4	22	8.4	6.0	.2	1.8	67	28	10	71	6.9	90
Mar. 1-16	253	3.5	.22	11	1.5	3.9	.6	28	7.2	6.0	.1	.5	68	32	10	78	6.6	110
Mar. 17-22	85.7	4.2	.25	16	1.8	4.5	.9	44	7.2	6.5	.1	2.7	84	47	11	110	7.6	120
Mar. 23-31	273	4.1	.16	9.7	1.8	4.1	.7	26	6.0	7.0	.1	1.8	69	32	10	76	7.0	120
Apr. 1-23	496	3.7	.18	8.5	1.0	3.2	.4	20	6.7	5.3	.1	.5	60	25	8	62	7.1	150
Apr. 24-30	104	3.8	.25	15	1.4	3.9	.5	39	7.4	6.2	.1	.6	77	42	10	98	7.2	140
May 1-11	153	4.9	.35	13	1.1	4.1	.5	34	6.8	7.0	.1	.9	77	37	9	85	7.6	160
May 12-31	356	5.0	.40	9.0	1.6	3.3	.5	24	5.2	6.0	.2	.5	72	29	10	66	7.2	160
June 1-18	93.9	7.2	.20	16	1.6	4.6	.4	44	11	6.5	.0	1.5	90	46	10	107	7.5	150
June 19-21	163	6.6	.33	9.6	1.2	3.4	.3	27	5.0	5.8	.1	1.5	a47	29	7	72	7.2	150
June 22-30	2,317	3.6	.13	5.6	.8	2.2	.6	16	3.6	4.0	.2	.3	b52	17	4	44	6.8	170
July 1-4	2,303	4.4	.26	5.1	1.3	2.6	.7	13	9.2	2.8	.3	.5	a33	18	7	46	6.6	220
July 5-18	342	5.5	.28	10	1.4	3.1	.4	27	5.8	4.5	.1	.8	68	31	9	72	7.2	170

July 19-31, 1961....	55.4	7.1	.26	22	1.8	4.1	.7	63	8.6	6.0	.1	2.7	94	62	10	140	7.5	150
Aug. 1-6.....	37.5	11	.21	23	1.8	4.6	1.1	64	8.4	5.8	.1	3.7	115	66	13	149	7.5	100
Aug. 7-22.....	66.6	9.6	.27	14	1.8	3.9	.9	40	6.0	6.0	.1	2.2	94	42	10	107	7.1	140
Aug. 23-31.....	99.0	8.9	.28	9.7	1.5	3.7	.8	28	5.2	5.8	.1	1.5	82	30	7	80	7.0	140
Sept. 1-7.....	68.1	8.0	.16	13	.9	3.6	.8	36	5.4	6.6	.2	.8	83	36	6	86	7.2	110
Sept. 8-30.....	34.4	8.2	.08	16	1.3	3.8	.9	45	8.4	5.5	.2	1.1	86	46	10	108	6.9	85
Time-weighted average.....	252	6.3	0.22	13	1.4	3.8	0.6	35	6.9	6.2	0.1	1.4	79	38	9	92	--	120

a Calculated from determined constituents.
b Organic matter present; sum of mineral constituents 29 parts per million.

NEUSE RIVER BASIN--Continued

2-925. TRENT RIVER NEAR TRENTON, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement between 6 a.m. and 12 m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	68	65	45	50	32	52	60	60	65	--	79	78
2..	69	58	45	44	32	--	55	64	70	74	79	75
3..	68	56	42	44	33	53	55	65	70	74	76	75
4..	67	58	43	43	38	59	52	64	70	75	77	76
5..	68	56	44	40	37	60	52	64	70	75	79	76
6..	67	56	46	40	36	62	55	60	68	75	84	76
7..	67	55	48	42	38	65	53	70	70	75	80	76
8..	65	50	50	44	38	65	53	68	70	75	80	75
9..	65	56	40	39	40	58	55	68	76	73	80	75
10..	65	58	42	37	40	40	59	69	76	76	80	75
11..	62	55	42	37	38	50	54	68	75	74	80	73
12..	62	52	42	39	43	53	55	68	75	75	80	74
13..	62	50	33	40	43	56	53	69	74	75	78	74
14..	65	50	34	46	45	57	53	68	75	76	74	74
15..	67	52	37	47	49	58	54	68	75	76	78	68
16..	67	59	40	48	49	56	60	70	68	75	79	66
17..	62	59	38	49	46	53	56	68	65	78	75	75
18..	62	59	38	47	54	54	58	65	60	76	75	75
19..	70	59	36	48	56	58	57	65	60	77	76	75
20..	70	45	39	40	55	58	51	65	60	78	80	75
21..	60	50	40	39	50	54	51	65	62	78	78	72
22..	50	48	34	38	57	49	55	65	69	78	78	73
23..	50	55	32	38	58	50	60	65	69	85	78	72
24..	55	53	32	41	59	53	65	65	72	79	79	73
25..	48	54	35	35	59	50	68	67	72	78	78	72
26..	48	54	40	32	54	54	68	67	70	79	78	72
27..	58	54	45	32	54	54	67	62	71	79	78	73
28..	60	58	40	32	55	58	67	65	71	78	77	65
29..	56	59	42	35	--	61	65	65	70	79	78	65
30..	56	55	43	32	--	60	58	65	72	79	78	65
31..	62	--	42	32	--	60	--	64	--	79	77	--
Average	62	55	40	40	46	56	57	66	70	77	78	73

NEUSE RIVER BASIN--Continued

2-925.58. TRENT RIVER NEAR NEW BERN, N. C.

LOCATION.--At private pier on north bank of river 3 miles southwest of New Bern, Craven County, and 100 yards downstream from Haywood Creek.
DRAINAGE AREA.--430 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1958 to September 1961.
Water temperatures: October 1958 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 2,130 ppm Aug. 2; minimum, 5.0 ppm June 24-30.
Specific conductance: Maximum daily, 7,020 micromhos Aug. 2; minimum daily, 49 micromhos July 4.
Water temperatures: Maximum, 85°F July 29; minimum, 37°F Jan. 27, Feb. 4.
EXTREMES, 1958-61.--Chloride: Maximum, 3,200 ppm July 8, 1959; minimum, 3.0 ppm July 31, 1960.
Specific conductance: Maximum daily, 10,500 micromhos, July 8, 1959; minimum daily, 48 micromhos Mar. 11, 1959.
Water temperatures: Maximum, 86°F June 30, 1959; minimum, 37°F Mar. 5, 6, 12, 1960, Jan. 27, Feb. 4, 1961.
REMARKS.--When specific conductance values indicated salt-water encroachment, only specific conductance and chloride were determined on individual samples. The individual specific conductance and chloride determinations are tabulated separately from the composite chemical analyses. No discharge records available for this station.

Chemical analyses, in parts per million, October 1960 to July 1961

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, 1960		8.9	0.28	23	2.9	10	1.5	75	6.4	18	0.3	1.0	130	70	9	188	7.2	100
Mar. 1-16, 1961		4.8	.25	14	2.3	6.9	1.0	40	5.4	11	.2	2.3	83	44	12	119	7.4	140
Mar. 17-31		4.9	.25	17	2.5	7.7	1.0	47	8.0	12	.2	2.2	100	54	15	138	7.6	140
Apr. 1-12		4.6	.22	11	1.8	5.3	.7	32	7.4	9.0	.2	.2	79	36	10	96	7.2	150
Apr. 13		--	--	--	--	--	--	41	7.2	22	--	--	--	38	4	165	7.6	--
Apr. 14-30		4.2	.25	12	1.8	5.7	.6	35	6.0	9.5	.2	.2	83	38	7	99	7.1	170
May 1-11		5.8	.28	17	1.7	7.3	.8	50	6.0	10	.2	.6	93	50	9	128	7.7	120
May 12-31		5.3	.33	13	1.3	4.5	.7	34	7.0	7.0	.3	.7	69	38	10	97	7.3	160
June 1-12		7.0	.24	19	1.4	6.6	.5	54	7.6	8.0	.2	1.6	103	53	8	130	7.7	100
June 13-23		7.5	.27	21	2.0	6.9	.8	65	12	7.0	.4	1.5	112	62	8	147	7.6	110
June 24-30		3.5	.18	7.6	1.8	3.3	.8	24	4.4	5.0	.1	.4	a66	26	7	60	6.6	160
July 1-8		3.5	.11	7.7	1.0	2.9	.7	22	3.2	6.5	.1	.4	b62	23	5	58	6.8	220
July 9-24		5.8	.31	17	1.7	6.2	.7	52	6.8	10	.2	.9	92	50	7	120	7.4	180

a Organic matter present; sum of mineral constituents 39 parts per million.
b Organic matter present; sum of mineral constituents 37 parts per million.

NEUSE RIVER BASIN--Continued

2-925.58. TRENT RIVER NEAR NEW BERN, N. C.--Continued

Specific conductance (micromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961

Day	October		November		December		January	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	180		280	44	3,690	1,100	1,090	280
2	162		170	13	4,620	1,380	892	210
3	186		222	26	3,900	1,130	192	27
4	189		492	100	1,920	488	210	32
5	198		162	11	1,640	430	160	19
6	190		189	18	1,620	426	138	15
7	190		190	19	1,580	414	134	13
8	199		228	30	4,000	1,220	247	43
9	190		200	23	5,700	1,780	422	92
10	191		182	17	5,400	1,650	638	145
11	189		2,900	826	4,210	1,220	258	45
12	189		862	215	2,530	686	240	42
13	189		820	190	3,420	1,000	283	56
14	188		600	127	2,900	840	632	148
15	181	18	770	173	1,560	390	1,060	278
16	178		700	150	2,990	846	670	148
17	178		914	213	3,280	935	1,320	362
18	178		1,780	484	2,640	730	2,000	560
19	179		1,500	400	1,900	518	2,400	688
20	188		2,000	560	3,920	1,200	5,260	1,610
21	186		1,540	410	2,890	786	5,800	1,800
22	171		1,680	460	3,240	940	3,620	1,050
23	180		1,600	440	1,300	310	1,480	392
24	189		3,140	915	2,560	718	3,010	895
25	180		3,100	910	808	166	5,920	1,880
26	180		1,810	502	430	93	4,610	1,410
27	172		1,190	298	598	126	2,000	554
28	178		982	233	1,400	382	1,080	272
29	170		1,120	284	1,020	256	932	225
30	250		2,820	822	446	87	1,980	578
31	270		--	--	544	118	788	178

Day	February		March		April		May	
1	658	144	110		112		140	
2	2,880	804	93		116		165	
3	2,000	542	102		100		148	
4	382	62	97		110		128	
5	608	128	128		92		120	
6	204	24	97		88		100	10
7	148	12	120		89	9.0	127	
8	168	22	101		85		122	
9	194	30	108	11	84		123	
10	108	12	124		133		127	
11	98	7.0	129		85		125	
12	108	11	129		77		82	
13	95	8.9	131		165	22	85	
14	176	28	138		77		74	
15	92	8.4	138		74		72	
16	94	8.4	138		101		87	
17	102	10	148		78		82	
18	128	16	152		77		84	
19	118	12	150		77		92	
20	108	8.0	154		75		92	
21	119	10	162		78	9.5	94	7.0
22	114	8.4	162		96		102	
23	150	17	152		100		106	
24	134	12	140	12	100		103	
25	202	29	138		128		102	
26	168	23	130		127		100	
27	110	9.0	126		124		108	
28	97	6.8	110		131		110	
29	--	--	112		139		102	
30	--	--	116		145		98	
31	--	--	116		--	--	94	

NEUSE RIVER BASIN--Continued

2-925.58. TRENT RIVER NEAR NEW BERN, N. C.--Continued

Specific conductance (micromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961--Continued

Day	June		July		August		September	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	98		59		4,610	1,380	202	22
2	128		50		7,020	2,130	190	18
3	130		51		5,990	1,820	--	--
4	118		49		3,600	1,000	200	21
5	119		--	6.5	5,570	1,760	170	17
6	125		65		--	--	243	36
7	129	8.0	69		2,100	510	240	33
8	140		--		2,390	666	233	31
9	141		93		2,230	614	380	72
10	147		86		2,290	628	292	26
11	145		93		2,710	780	243	33
12	149		98		1,820	488	251	34
13	169		118		4,910	1,460	309	46
14	164		111		6,320	1,910	1,090	284
15	169		105		6,750	2,020	228	16
16	165		--	10	6,330	1,900	369	64
17	155		103		4,310	1,240	412	76
18	145	7.0	--		3,630	1,060	2,490	720
19	138		140		4,800	1,430	617	115
20	128		129		3,880	1,100	910	213
21	123		141		780	148	670	142
22	183		138		1,450	394	388	66
23	120		139		1,200	296	477	90
24	84		151		1,180	290	474	90
25	--		258	38	1,000	240	1,050	260
26	61	5.0	1,280	330	527	97	3,060	875
27	71		1,280	320	321	48	3,300	925
28	55		1,600	430	202	22	3,820	1,120
29	54		1,780	470	258	38	3,000	875
30	50		1,790	470	197	21	4,910	1,480
31	--	--	2,000	530	192	21	--	--

NEUSE RIVER BASIN--Continued

2-925.58. TRENT RIVER NEAR NEW BERN, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement between 7 a.m. and 9 a.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	72	62	50	47	40	56	60	64	66	74	83	80
2..	70	60	49	43	41	55	59	65	68	73	84	82
3..	70	60	47	45	39	54	59	64	71	75	84	80
4..	71	58	46	40	37	55	57	64	74	75	83	81
5..	72	57	46	45	38	57	55	63	74	--	83	81
6..	72	57	49	46	40	59	56	63	76	77	80	82
7..	73	55	--	44	40	63	57	63	76	75	79	82
8..	73	51	50	45	41	64	56	67	76	--	80	81
9..	69	53	50	40	39	60	57	69	77	75	80	82
10..	69	56	47	40	40	55	58	69	78	75	81	81
11..	68	55	47	41	42	50	56	70	77	75	80	81
12..	68	53	46	41	42	55	58	70	78	76	82	81
13..	68	53	43	43	45	61	56	71	78	77	82	81
14..	69	49	42	45	41	64	55	69	77	75	84	82
15..	69	54	41	46	41	62	58	70	80	76	81	78
16..	70	56	44	46	47	61	58	72	76	76	80	75
17..	70	60	42	46	47	59	57	71	73	77	80	78
18..	69	59	39	44	52	53	57	69	70	75	80	75
19..	69	57	39	45	53	57	58	70	70	80	79	72
20..	70	55	42	45	50	59	56	69	71	79	78	74
21..	62	56	45	41	49	57	55	69	74	81	76	73
22..	64	56	40	41	54	57	56	69	75	81	77	74
23..	61	57	38	38	58	56	58	70	73	83	77	75
24..	59	58	38	43	56	56	61	66	74	84	78	71
25..	58	57	40	41	63	55	64	66	74	82	79	76
26..	60	53	40	40	47	55	66	69	74	83	79	77
27..	60	54	40	37	55	55	67	68	74	83	78	77
28..	61	57	41	38	55	57	63	65	73	83	78	75
29..	60	60	41	39	--	60	62	65	73	85	79	74
30..	60	55	41	40	--	60	62	66	73	83	78	68
31..	62	--	40	39	--	61	--	66	--	84	80	--
Average	67	56	43	42	46	58	59	67	74	79	80	78

2-930.32. NEW RIVER AT JACKSONVILLE, N. C.

LOCATION.--At bridge on U. S. Highway 17 at Jacksonville, Onslow County, 0.3 mile below Deep Gully Creek.
DRAINAGE AREA --166 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 7,380 ppm Sept. 26; minimum, 7.5 ppm July 1-3.
Specific conductance: Maximum daily, 19,800 micromhos Dec. 5; minimum daily, 60 micromhos July 1.
Water temperatures: Maximum, 93°F July 31; minimum, 34°F Dec. 14.
REMARKS.--When specific conductance values indicated salt-water encroachment, only specific conductance and chloride were determined on individual samples. The individual specific conductance and chloride determinations are tabulated separately from the composite chemical analyses. No discharge records available for this station.

Chemical analyses, in parts per million, April to July 1961

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. 1, 1961		--	--	--	--	18	1.6	26	9.2	25	--	--	--	31	10	150	7.5	--
Apr. 2-14	4.1	0.28	9.9	3.6	27	1.9	30	9.4	45	0.2	0.4	140	40	16	228	7.3	150
Apr. 15-16	4.1	.34	7.5	2.0	9 6	1.0	22	9.2	16	.2	.0	a61	26	8	91	6.6	--
Apr. 17-30	4 0	.35	15	3.0	19	1.2	43	8.7	30	.1	.6	121	50	15	199	7.2	150
May 1-3	6.4	.28	19	2.9	21	1.6	56	8.0	32	.2	2.1	a121	59	13	225	7.4	110
May 4-13	5.8	.35	13	2.0	16	1.3	38	10	25	.2	.9	118	40	10	167	7.1	160
May 14		--	--	--	--	42	2.3	36	14	66	--	1.9	--	56	26	342	7.5	--
May 15-18	5.7	.38	11	2.0	13	1.2	32	9.8	18	.2	1.8	a78	34	8	132	7.0	130
May 19-24	6.4	.37	17	4.1	38	2.2	42	13	63	.2	1.9	a167	59	24	319	7.1	130
May 25-29	6.5	.44	18	11	82	4.0	46	23	150	.3	2.1	a320	90	52	631	7.1	130
May 30-31	--	--	14	4.8	37	2.2	36	13	60	--	1.9	--	54	24	299	6.9	--
June 17-30	4.3	.27	7.2	1.2	8.5	1.0	21	5.6	13	.0	1.8	b88	23	6	100	6.7	180
July 1-3		--	--	5.5	1.7	6.2	.8	18	4.8	7.5	--	.7	--	21	6	72	6.8	--
July 4-18	4.7	.35	13	2.8	11	1.0	42	7.2	18	.2	1.1	97	44	9	138	7.2	200

a Calculated from determined constituents.
b Organic matter present; sum of mineral constituents 53 parts per million.

NEW RIVER BASIN--Continued

2-930.32. NEW RIVER AT JACKSONVILLE, N. C.--Continued

Specific conductance (micromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961

Day	October		November		December		January	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	9,340	2,950	14,800	5,040	8,840	2,930	4,210	1,280
2	10,200	3,020	14,200	4,940	9,180	2,910	--	--
3	4,700	1,240	14,300	5,000	8,920	2,900	2,580	730
4	5,080	1,430	14,200	4,980	14,800	4,980	2,530	692
5	5,080	1,470	13,900	4,830	19,800	7,020	1,500	402
6	5,000	1,400	13,000	4,520	18,000	6,630	1,710	488
7	4,620	1,310	15,300	5,310	18,600	6,430	1,480	408
8	4,620	1,300	13,900	4,700	11,200	3,630	1,480	410
9	3,900	1,080	9,600	3,150	10,800	3,310	1,860	520
10	3,880	1,080	9,590	3,110	11,400	3,690	2,300	656
11	3,580	970	9,620	3,100	9,200	2,920	2,780	790
12	3,590	995	6,600	2,060	18,000	6,480	2,800	788
13	3,390	945	12,800	4,290	9,620	2,940	2,800	790
14	3,400	950	12,800	4,280	9,160	2,930	2,880	818
15	8,890	2,810	12,800	4,330	11,800	3,720	5,300	1,630
16	9,210	2,800	12,800	4,270	11,800	3,730	5,360	1,610
17	9,230	2,800	12,800	4,240	8,220	2,480	5,210	1,560
18	7,780	2,250	12,800	4,270	10,400	3,270	7,110	2,190
19	7,320	2,180	12,800	4,320	10,100	3,130	7,210	2,210
20	8,530	2,570	6,700	2,110	6,100	1,820	9,420	3,010
21	8,080	2,400	6,530	2,080	4,220	1,230	9,600	3,060
22	8,120	2,430	6,580	2,070	4,180	1,220	7,760	2,430
23	11,100	3,580	6,580	2,080	4,180	1,210	7,860	2,460
24	11,100	3,550	6,320	1,980	4,180	1,220	7,510	2,360
25	11,200	3,600	6,580	2,070	4,200	1,220	7,470	2,320
26	11,400	3,570	6,680	2,070	4,190	1,220	6,110	1,890
27	11,200	3,600	6,880	2,180	4,180	1,200	9,900	3,150
28	12,800	4,130	6,210	1,950	4,180	1,220	6,120	1,830
29	13,000	4,100	6,790	2,140	5,100	1,540	5,890	1,770
30	13,000	4,140	6,200	1,950	5,220	1,550	5,810	1,800
31	19,100	6,830	--	--	4,400	1,280	5,820	1,780

	February		March		April		May	
1	--	--	502	108	150	25	232	
2	5,880	1,840	502	110	245		240	32
3	6,980	2,150	510	112	250		219	
4	10,900	3,470	500	107	251		149	
5	--	--	690	160	150		166	
6	3,460	955	702	165	248		--	
7	3,280	950	590	130	255		149	
8	1,380	356	590	128	251	45	149	
9	1,300	356	1,920	518	--		152	25
10	1,300	358	1,880	518	170		209	
11	1,280	356	1,710	446	167		170	
12	1,320	356	--	--	268		211	
13	1,320	362	1,740	456	214		168	
14	2,520	726	2,210	602	223		342	66
15	2,580	722	2,680	776	92		129	
16	4,380	1,300	2,720	788	88	16	128	18
17	4,400	1,290	3,610	1,050	152		152	
18	2,210	626	3,580	1,060	198		151	
19	2,140	620	3,380	955	201		340	
20	1,200	326	3,340	965	161		307	
21	1,180	316	1,290	320	154		--	63
22	1,200	320	902	218	159		308	
23	1,110	300	568	125	200		342	
24	1,110	290	1,210	306	201	30	330	
25	1,220	324	578	129	211		650	
26	1,220	322	552	124	210		769	
27	1,180	310	550	125	210		658	150
28	698	182	890	219	211		--	
29	--	--	902	222	230		489	
30	--	--	887	221	--		330	60
31	--	--	901	224	--	--	280	

NEW RIVER BASIN--Continued

2-930.32. NEW RIVER AT JACKSONVILLE, N. C.--Continued

Specific conductance (micromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961--Continued

Day	June		July		August		September	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	498	110	60	7.5	1,560	424	1,600	450
2	544	116	--		2,900	832	--	--
3	348	68	85		3,000	855	--	--
4	1,100	260	169		4,110	1,210	1,200	324
5	797	183	112		1,010	240	1,140	320
6	1,880	480	157		--	--	1,210	340
7	1,130	280	118		1,610	430	2,570	780
8	1,460	350	158		942	232	2,600	772
9	1,470	360	118		943	234	5,030	1,580
10	764	165	118		680	159	--	--
11	--	--	123	18	708	170	5,120	1,580
12	--	--	118		3,200	950	4,720	1,440
13	263	44	162		2,890	824	6,500	2,060
14	245	40	148		2,710	770	4,000	1,200
15	152	20	118		2,620	746	2,900	800
16	203	34	--		9,990	3,250	3,500	1,040
17	89		170		10,500	3,250	6,200	1,970
18	104		166		10,100	3,250	7,380	2,350
19	135		178	21	3,140	870	9,400	3,070
20	87		187	25	3,000	860	13,000	4,390
21	84		189	26	3,000	850	13,700	5,210
22	79		188	24	4,320	1,280	15,800	5,400
23	82	13	--	--	4,100	1,200	--	--
24	78		219	30	3,060	850	--	--
25	84		248	39	3,050	850	16,200	5,780
26	123		248	39	3,580	1,020	19,100	7,380
27	144		251	37	--	--	16,900	5,780
28	129		2,080	570	2,750	770	3,120	755
29	103		1,570	400	2,710	760	2,370	660
30	71		1,700	440	2,020	556	1,720	490
31	--	--	1,680	430	1,970	554	--	--

NEW RIVER BASIN--Continued

2-930.32. NEW RIVER AT JACKSONVILLE, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement between 8 a.m. and 8 p.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	75	65	57	47	--	59	53	68	72	76	91	82
2..	75	63	52	--	39	60	53	69	74	--	87	--
3..	74	61	49	47	38	60	54	69	75	79	89	--
4..	72	59	51	45	40	61	55	67	78	84	85	82
5..	72	68	55	47	--	61	55	68	79	80	85	81
6..	71	63	55	47	40	63	63	--	80	82	--	81
7..	71	59	54	49	39	67	63	68	84	80	86	81
8..	71	55	52	42	41	67	64	69	84	86	85	80
9..	70	57	52	40	42	61	--	72	85	84	82	84
10..	69	56	51	45	43	64	56	73	80	80	86	--
11..	69	57	50	46	43	64	59	74	--	78	83	85
12..	69	60	50	46	45	65	58	72	--	78	86	84
13..	73	57	35	47	46	--	57	72	78	78	86	85
14..	74	59	34	49	47	65	56	73	80	79	84	80
15..	74	60	38	50	49	63	58	74	80	83	78	80
16..	75	59	37	50	52	64	60	75	70	--	79	75
17..	75	60	39	52	55	60	59	73	76	84	78	71
18..	74	60	40	50	58	55	55	71	75	84	77	72
19..	74	60	40	49	58	56	54	72	73	85	80	74
20..	74	59	44	47	60	55	54	72	73	86	81	75
21..	74	59	44	44	59	54	65	--	74	85	82	75
22..	72	58	44	43	60	55	70	71	76	87	81	76
23..	70	59	44	44	61	55	70	71	78	--	82	--
24..	68	57	43	46	62	56	72	70	75	88	83	--
25..	67	56	43	38	63	58	73	70	--	86	84	83
26..	64	56	42	39	62	60	74	74	77	88	86	80
27..	62	60	41	37	60	61	62	70	73	85	--	80
28..	65	63	40	40	60	61	62	--	73	88	83	73
29..	66	62	45	41	--	63	63	68	73	89	82	75
30..	66	58	45	42	--	64	--	67	75	92	82	74
31..	65	--	47	43	--	64	--	68	--	93	82	--
Average	71	60	46	45	51	61	61	71	77	84	83	79

CAPE FEAR RIVER BASIN

2-935. HAW RIVER NEAR BENAJA, N. C.

LOCATION.--Temperature recorder at gaging station 200 feet upstream from site of old High Rock Mill, 500 feet upstream from highway bridge, 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F July 31, Aug. 1, 3, 12; minimum, freezing point on several days during December, January, and February.
EXTREMES, 1952-61.--Water temperatures: Maximum, 84°F Aug. 2, 1953; minimum, freezing point on many days during winter months.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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			
Feb. 20, 1961.....	160	15	0.04	3.8	2.2	4.3	1.5	25	5.4	2.5	0.1	1.1	48	18	0	64	6.7	15
Sept. 19.....	31.4	20	.04	7.9	2.3	6.5	2.2	45	3.4	3.8	.2	.2	69	29	0	93	6.8	7

CAPE FEAR RIVER BASIN--Continued

2-935. HAW RIVER NEAR BENAJA, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Continuous ethyl alcohol-actuated thermograph)

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

2-967.58. ALAMANCE CREEK AT BELLEMONT, N. C.

LOCATION.--At bridge on State Highway 49 at Bellemont, Alamance County, and 1.2 miles upstream from mouth.
DRAINAGE AREA.--157 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1961.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960		16	0.00	9.1	4.0	5.7	1.7	53	3.0	4.2	0.1	0.4	76	40	0	110	6.9	10
Nov. 15		22	.09	10	4.4	8.0	1.8	61	3.2	6.0	.1	.4	86	43	0	120	7.7	10
Dec. 15		16	.06	7.5	4.2	6.6	1.9	42	9.2	5.5	.0	1.2	a73	36	1	105	7.7	20
Jan. 16, 1961		16	.09	7.5	3.6	6.6	1.3	38	8.4	4.7	.0	1.9	77	33	2	98	6.6	30
Feb. 16		14	.06	6.1	3.5	5.6	1.1	34	8.4	5.3	.1	.2	65	30	2	90	6.8	8
Mar. 15		15	.07	7.1	2.9	5.7	1.1	38	8.0	3.8	.1	.4	73	30	0	82	6.7	30
Apr. 15		13	.03	5.5	2.3	4.2	.9	28	5.8	3.5	.1	.2	64	23	0	66	6.8	40
May 15		15	.06	6.8	2.8	5.0	1.0	35	4.8	4.3	.1	1.0	63	28	0	77	7.4	30
June 15		17	.04	7.8	3.3	5.8	1.9	44	5.6	4.2	.0	.7	71	33	0	94	7.0	10
July 15		14	.00	6.5	3.1	4.9	1.7	37	4.6	1.5	.1	.4	56	28	0	79	7.1	25
Aug. 15		15	.04	9.9	4.5	5.9	2.2	58	2.6	5.3	.1	.1	83	44	0	113	7.2	12
Sept. 16		16	.02	11	5.2	7.9	2.4	67	4.2	6.0	.1	.3	88	48	0	130	7.5	25

a Calculated from determined constituents.

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 5-1/2 miles upstream from gaging station.
DRAINAGE AREA.--1,280 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1961.
Water temperatures: October 1955 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 177 ppm Sept. 15-30; minimum, 52 ppm May 11-15.
Hardness: Maximum, 41 ppm Sept. 15-30; minimum, 20 ppm May 11-15.
Specific conductance: Maximum daily, 370 micromhos Sept. 18; minimum daily, 68 micromhos Apr. 13.
Water temperatures: Maximum, 79°F July 31, Aug. 8; minimum, freezing point on many days during winter months.
EXTREMES, 1955-61.--Dissolved solids: Maximum, 355 ppm Aug. 24-25, 1956; minimum, 45 ppm Sept. 5-10, 1959.
Hardness: Maximum, 45 ppm July 9, 1956; minimum, 14 ppm July 24, 1957.
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 during winter months.
REMARKS.--Records of specific conductance of samples collected from October 1955 to September 1961 and records of suspended matter of composite samples from October 1955 to September 1960 available in district office at Raleigh, N. C. 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 1960 to September 1961

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. 1-23, 1960	446	18	0.09	8.0	3.7	24	3.3	59	12	20	0.6	4.2	129	35	0	199	7.8	25
Oct. 24-31	280	20	.05	8.7	4.1	28	3.8	66	13	24	.8	4.4	142	38	0	229	7.8	20
Nov. 1-30	281	19	.07	9.2	3.9	31	3.7	74	10	28	1.1	4.8	167	39	0	242	7.9	25
Dec. 1-12	317	19	.04	8.8	3.9	30	3.2	70	6.4	26	1.3	5.4	153	38	0	234	7.7	18
Dec. 13-21	630	16	.09	7.4	3.8	19	3.0	45	14	16	1.0	4.9	116	34	0	161	7.7	30
Dec. 22-31	341	19	.15	8.1	3.9	24	2.9	59	11	20	1.0	3.8	143	36	0	202	7.8	30
Jan. 1-31, 1961	679	17	.16	7.7	2.3	19	1.5	50	8.9	14	.6	4.7	113	28	0	157	6.8	50
Feb. 1-6	475	17	.14	7.9	3.4	25	2.3	56	11	19	.6	1.4	121	34	0	182	7.1	10
Feb. 7-28	3,792	11	.10	5.4	2.3	9.2	1.8	26	9.7	6.5	.2	1.2	67	23	2	85	7.5	30
Mar. 1-31	2,236	14	.12	5.7	2.8	11	1.7	33	9.4	8.0	.4	.7	70	26	0	108	7.4	30
Apr. 1-16	3,884	12	.13	6.0	1.8	8.1	1.5	28	6.8	6.5	.2	1.1	69	22	0	91	7.5	40
Apr. 17	4,160	--	--	--	--	8.2	1.6	17	--	24	--	--	--	40	26	141	7.2	--
Apr. 18-26	1,441	14	.15	5.8	2.5	11	1.4	38	10	8.3	.3	1.3	a74	25	0	102	7.1	35
Apr. 27-30	938	16	.09	6.6	3.6	15	1.7	46	7.4	11	.3	1.1	a86	31	0	138	7.8	--
May 1-10	819	16	.21	7.6	3.3	18	2.0	51	7.8	12	.5	2.1	98	32	0	160	7.6	25
May 11-15	5,130	12	.04	5.2	1.8	7.1	1.6	26	5.2	4.0	.2	1.7	a52	20	0	81	7.0	75
May 16-31	656	16	.06	7.5	2.9	19	2.0	51	5.4	14	.5	2.4	100	31	0	169	7.2	15
June 1-12	409	17	.03	7.6	3.5	26	2.5	60	10	18	.6	2.1	124	33	0	200	7.8	30

June 13-25, 1961....	717	18	.03	8.0	3.3	29	3.0	60	11	22	.9	3.6	138	34	0	218	7.7	35
June 26.....	1,220	--	--	6.4	2.0	--	--	32	--	4.0	--	--	--	24	0	81	7.4	--
June 27.....	3,140	--	--	6.4	3.2	--	--	39	--	21	--	--	--	29	0	153	7.4	--
June 28.....	1,700	--	--	6.1	2.5	--	--	35	--	4.4	--	--	--	26	0	85	7.2	--
June 29-30.....	1,052	15	--	7.1	2.5	13	2.6	42	8.2	9.8	.3	.5	a80	28	0	137	7.4	--
July 1-18.....	411	17	.12	7.8	3.5	18	2.5	56	11	12	.5	2.4	107	34	0	156	7.3	25
July 19-31.....	330	16	.14	8.9	3.3	27	3.2	65	14	21	.6	2.7	144	36	0	211	7.4	35
Aug. 1-3.....	217	18	.03	9.5	3.3	29	3.4	61	11	26	.7	4.0	a136	37	0	216	7.8	20
Aug. 4-6.....	908	15	.06	7.8	2.1	17	2.7	41	6.4	16	.3	2.0	95	28	0	140	7.5	50
Aug. 7-19.....	323	16	.07	9.8	3.2	31	3.8	69	14	23	.3	2.5	152	38	0	229	7.5	35
Aug. 20-21.....	567	13	.03	--	--	--	--	41	7.6	15	.2	3.0	--	24	0	140	7.6	20
Aug. 22-31.....	1,584	12	.03	5.7	2.1	10	4.4	32	6.6	9.0	.2	2.7	78	22	0	106	7.1	30
Sept. 1-4.....	237	16	.10	6.8	3 1	14	2.7	41	9.4	12	.1	2.1	a87	30	0	130	7.2	50
Sept. 5-14.....	189	17	.01	8.9	3.4	26	3.3	62	11	21	.2	1.8	a124	36	0	190	6.9	10
Sept. 15-30.....	195	14	.01	10	3.7	43	4.4	85	15	34	.4	3.6	177	41	0	285	7.0	15
Time-weighted average.....	1,103	16	0.09	7.6	3.1	21	2.7	52	10	17	0.6	2.9	115	32	0	172	--	30

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 1960 to September 1961
(Once-daily measurement between 4 a.m. and 9:30 p.m.)

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

2-981.56. *NEW HOPE RIVER NEAR NEW HILL, N. C.*

LOCATION.--At bridge on county road 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 1961.
Water temperatures: October 1956 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 146 ppm Nov. 1-30; minimum, 50 ppm Feb. 21-28.
Hardness: Maximum, 51 ppm Sept. 23-30; minimum, 14 ppm Feb. 21-28.
Specific conductance: Maximum daily, 227 micromhos Sept. 29, 30; minimum daily, 42 micromhos Aug. 26.
Water temperatures: Maximum, 79°F Aug. 1-3; minimum, freezing point on many days during winter months.
EXTREMES, 1956-61.--Dissolved solids: Maximum, 146 ppm Nov. 1-30, 1960; minimum, 31 ppm Sept. 1, 6-9, 1959.
Hardness: Maximum, 51 ppm Sept. 23-30, 1960; minimum, 8 ppm July 24, 1957.
Specific conductance: Maximum daily, 284 micromhos Nov. 1, 1958; minimum daily, 25 micromhos July 24, 1957.
Water temperatures: Maximum, 80°F July 1, 2, 1959; minimum, freezing point on many days during winter months.
REMARKS.--Records of specific conductance of samples collected from October 1956 to September 1961 and records of suspended matter of composite samples from October 1956 to September 1960 available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....		16	0.08	8.8	3.8	16	4.7	41	9.2	16	0.2	8.0	114	38	4	172	7.7	25
Oct. 11-25.....		14	.14	7.1	3.3	9.5	3.6	34	9.2	11	.1	4.6	85	31	4	126	7.5	25
Oct. 26-31.....		14	.19	8.7	3.6	12	4.0	38	10	14	.2	6.3	97	36	4	151	7.5	20
Nov. 1-30.....		16	.04	10	4.0	20	4.8	50	11	18	.2	1.1	146	42	1	172	6.8	30
Dec. 1-11.....		15	.03	10	4.0	18	4.5	45	11	18	.3	13	127	42	6	182	7.6	25
Dec. 12-31.....		13	.10	7.5	4.2	12	3.3	29	13	14	.2	9.7	97	36	12	138	7.5	25
Jan. 1-31, 1961.....		13	.14	7.1	2.8	11	2.8	24	10	12	.2	5.4	88	30	10	118	6.7	40
Feb. 1-7.....		13	.10	8.7	2.8	13	2.3	28	10	16	.2	5.0	97	33	10	138	6.9	15
Feb. 8-13.....		6.7	.09	3.7	1.6	4.9	2.0	11	10	5.0	.2	.3	57	16	6	61	5.9	35
Feb. 14-20.....		10	.12	5.7	2.8	8.6	2.0	19	12	8.7	.2	1.7	75	26	10	95	6.7	35
Feb. 21-28.....		7.1	.23	3.5	1.4	4.4	1.7	11	10	4.3	.2	.3	50	14	6	55	6.2	60
Mar. 1-21.....		12	.24	6.4	2.1	8.0	2.9	23	10	8.8	.2	2.2	81	24	6	96	7.3	45
Mar. 22-28.....		8.7	.10	3.8	1.8	4.7	1.2	15	7.8	4.8	.2	.5	51	16	4	59	6.8	40
Mar. 29-31.....		11	.39	5.3	2.4	6.8	1.7	22	12	6.8	.2	1.1	a59	23	5	85	7.2	--
Apr. 1-11.....		10	.11	5.2	1.8	5.8	1.3	20	10	5.2	.2	1.2	57	20	4	75	7.1	40
Apr. 12-30.....		11	.09	6.2	2.7	8.2	1.5	29	10	7.3	.2	1.6	77	26	3	100	7.3	25
May 1-10.....		13	.34	8.1	3.2	10	2.4	38	8.0	10	.2	3.0	86	33	2	131	7.6	30
May 11-18.....		11	.20	5.9	1.7	6.0	1.8	23	5.4	5.2	.2	1.3	68	22	2	77	7.2	60

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 1960 to September 1961--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			
May 19-31, 1961.....		15	0.03	7.5	2.8	9.7	2.4	35	6.4	9.5	0.2	3.1	83	30	3	122	7.6	30
June 1-25.....		15	.01	8.9	3.0	12	2.7	38	9.2	10	.2	3.1	96	34	2	142	7.6	25
June 26-30.....		11	.08	4.9	2.0	7.0	2.0	20	6.2	5.5	.2	2.2	73	20	4	72	6.5	45
July 1-13.....		16	.23	8.0	2.9	9.9	2.7	36	8.0	8.9	.1	2.4	96	32	2	117	7.2	45
July 14-15.....		12	.11	5.0	2.0	8.7	2.1	21	8.6	3.8	--	1.7	a57	21	4	78	6.7	50
July 16-31.....		14	.06	9.2	2.8	11	3.1	40	8.0	9.3	.2	2.8	98	34	2	128	7.2	35
Aug. 1-4..		18	.15	12	3.7	15	3.8	57	9.0	14	.2	2.6	129	45	0	165	7.8	35
Aug. 5-6.....		8.6	--	--	--	--	--	14	5.8	4.2	.1	1.7	68	16	5	58	7.1	90
Aug. 7-15.....		13	.08	5.8	2.1	6.9	2.5	26	7.2	6.9	.1	1.8	84	24	2	87	7.3	50
Aug. 16-20.....		16	.03	8.8	3.1	11	3.0	43	8.8	11	.2	2.1	98	35	0	130	7.6	30
Aug. 21-31.....		9.9	.08	4.8	1.7	5.0	2.2	19	4.8	5.4	.1	1.4	70	19	4	66	7.0	70
Sept. 1-6.....		17	.25	7.4	3.2	8.4	2.6	37	6.6	8.3	.1	1.3	87	32	2	110	7.5	35
Sept. 7-22.....		18	.16	11	3.8	15	3.8	56	9.8	15	.2	3.0	112	44	0	168	7.2	20
Sept. 23-30.....		17	.03	14	3.9	22	3.1	63	13	21	.3	5.6	139	51	0	218	7.2	15
Time-weighted average.....		13	0.12	7.7	3.0	11	2.9	33	9.4	11	0.2	3.5	93	31	4	124	--	34

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 1960 to September 1961
/Once-daily measurement between 6 a.m. and 4:10 p.m./

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

CAPE FEAR RIVER BASIN--Continued

2-981.87. HAW RIVER AT MONCURE, N. C.

LOCATION.--At bridge on U.S. Highway 1, 1.5 miles above mouth, 2.2 miles east of Moncure, Chatham County.
DRAINAGE AREA.--1,700 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960		13	0.01	7.9	3.2	15	3.1	48	8.0	14	0.7	2.2	95	33	0	150	6.7	20
Nov. 16		15	.26	9.1	3.2	24	3.4	62	11	20	.7	2.7	121	36	0	190	7.6	20
Dec. 16		16	.08	7.6	3.8	22	3.3	46	13	17	1.1	8.8	122	35	0	185	7.5	25
Jan. 17, 1961		16	.10	7.1	3.6	19	2.4	46	13	13	.4	4.4	103	32	0	158	6.6	30
Feb. 17		12	.06	6.1	2.4	12	1.9	34	11	10	.3	1.4	82	25	0	118	6.8	10
Mar. 16		13	.03	6.2	2.6	10	1.7	36	8.4	8.7	.2	.7	78	26	0	99	6.4	15
Apr. 16		12	.11	5.6	1.9	7.7	1.5	28	8.6	7.5	.2	.4	64	22	0	82	6.4	25
May 16		12	.11	5.6	2.2	5.7	1.6	28	6.2	5.5	.1	1.0	65	23	0	74	6.8	60
June 16		16	.09	9.4	2.5	30	3.2	67	9.6	24	1.0	2.7	140	34	0	220	7.0	35
July 16		13	.06	8.5	3.5	17	2.3	56	9.6	10	.4	1.8	104	36	0	138	7.3	40
Aug. 16		13	.03	8.7	3.7	27	3.8	59	15	21	.4	1.7	127	36	0	202	7.2	20
Sept. 17		12	.02	9.4	3.7	42	4.1	90	13	32	.4	1.0	167	39	0	270	7.6	28

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 (formerly known as Neill 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 1961.
Water temperatures: November 1944 to October 1945, October 1954 to September 1955, June 1959 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 89°F July 31; minimum, 36°F Feb. 9-11.
EXTREMES, 1944-45, 1954-55, 1959-61.--Water temperatures: Maximum, 96°F June 30, 1959; minimum, 34°F Dec. 20, 1944 and on several days during January and February 1955.

Chemical analyses, in parts per million, November 1960 to September 1961

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. 1, 1960	674	13	0.03	6.9	3.4	20	3.0	53	11	17	0.5	0.3	105	31	0	150	6.6	8
Dec. 1	555	8.6	.18	7.3	3.4	22	2.9	55	8.4	18	.5	2.8	a102	32	0	170	7.5	20
Jan. 3, 1961	3,000	13	.14	6.5	2.8	14	2.4	37	9.4	12	.3	4.2	88	28	0	130	6.5	30
Feb. 2	1,190	14	.07	6.3	3.2	12	1.7	34	8.2	11	.4	2.8	83	28	0	118	6.9	20
Feb. 22	26,600	7.6	.13	3.2	1.3	3.8	1.5	11	6.4	3.7	.2	3.1	36	13	4	52	6.9	40
Mar. 1	6,350	9.4	.06	4.1	1.9	4.4	1.6	15	8.8	4.2	.1	1.6	47	18	6	61	6.5	30
Mar. 31	4,120	11	.07	4.8	2.2	5.8	1.2	25	6.8	5.9	.2	.4	59	21	0	74	6.6	20
May 1	1,900	13	.15	5.8	2.3	9.1	1.4	33	8.0	8.0	.1	1.5	71	24	0	92	7.4	20
June 1	906	10	.07	6.0	2.7	13	1.6	40	6.8	11	.3	1.2	77	26	0	115	7.5	10
July 3	1,190	11	.06	5.0	1.9	8.6	1.8	26	8.4	7.8	.2	2.0	71	20	0	82	7.3	50
Aug. 1	483	10	.13	7.0	2.8	15	2.5	48	7.6	13	.2	.7	96	29	0	130	7.4	32
Aug. 15	342	10	.05	6.2	2.3	13	2.8	35	5.8	11	.3	1.1	70	25	0	110	6.9	65
Sept. 1	1,110	9.8	.07	3.7	2.0	4.1	2.0	22	3.6	5.3	.0	.6	60	18	0	60	6.2	75

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 1960 to September 1961
(Continuous ethyl alcohol-actuated thermograph)

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..	72	72	60	58	54	49	43	41	40	39	51	51	59	56	64	63	74	72	73	71	88	86	82	80
2..	72	72	60	59	49	47	43	41	40	40	51	51	56	54	66	64	79	74	75	73	88	86	84	81
3..	72	72	60	59	47	46	41	41	40	37	51	50	54	54	66	64	79	77	77	74	86	85	84	81
4..	72	72	59	57	47	46	41	39	38	37	53	51	55	54	66	64	79	79	78	76	86	81	86	83
5..	72	72	57	55	47	46	39	39	38	38	55	53	54	53	65	64	82	78	78	78	83	75	87	84
6..	72	72	56	55	47	46	40	39	38	38	58	55	55	53	64	61	82	80	81	78	76	74	85	84
7..	72	72	55	53	48	46	41	40	38	38	58	58	56	54	67	64	84	80	80	77	77	75	87	83
8..	72	71	54	51	48	48	41	41	38	37	60	58	56	54	68	66	84	82	78	76	79	76	84	83
9..	71	70	51	50	48	46	41	39	37	36	60	58	56	55	69	68	83	81	77	76	80	78	83	81
10..	70	70	55	51	46	45	39	39	36	36	58	56	55	54	69	69	84	82	76	73	80	79	83	81
11..	71	70	55	54	45	44	40	39	37	36	56	55	54	54	69	68	83	83	74	73	82	80	83	80
12..	70	70	54	52	44	44	41	39	38	37	55	54	54	54	68	67	83	81	76	74	85	82	83	80
13..	70	69	54	52	44	39	41	40	41	38	55	55	54	53	67	66	84	82	78	75	85	84	83	81
14..	70	69	54	52	40	38	43	41	43	41	58	55	54	53	66	65	84	83	80	78	84	81	83	80
15..	70	69	54	53	38	38	43	43	44	43	58	56	54	54	68	65	83	77	81	80	82	78	81	77
16..	70	69	56	54	38	38	43	41	44	44	58	57	56	54	69	66	77	75	81	80	83	78	77	73
17..	71	69	58	56	38	38	44	43	47	44	57	56	56	55	69	68	75	74	82	80	84	79	73	72
18..	70	69	58	57	38	38	44	43	50	47	56	55	56	55	69	69	75	73	82	81	85	82	72	70
19..	70	69	57	55	39	38	43	43	50	50	55	54	56	55	70	69	75	73	82	81	82	79	72	70
20..	70	69	55	54	41	39	43	43	50	50	55	54	56	54	70	70	75	74	83	81	79	76	72	72
21..	69	66	54	54	42	41	43	42	50	48	55	54	56	54	71	70	75	73	84	83	79	76	76	72
22..	66	60	54	54	41	39	42	40	48	47	54	49	59	56	71	71	74	73	84	83	79	76	76	74
23..	61	61	54	54	39	37	40	40	47	47	49	49	59	59	71	71	75	73	86	84	76	75	79	75
24..	62	61	54	54	38	37	40	40	49	47	49	49	60	58	71	70	75	73	86	85	76	75	79	76
25..	61	59	55	54	38	38	40	39	51	49	49	49	64	60	71	71	75	74	88	85	76	75	79	77
26..	60	59	55	54	39	38	39	37	51	51	52	49	64	64	72	71	75	73	88	86	75	74	81	79
27..	60	59	55	54	41	39	38	37	51	51	55	51	64	63	72	71	73	70	88	85	74	74	81	78
28..	60	59	56	54	41	40	38	38	51	51	58	53	64	63	71	69	70	69	88	85	75	74	78	75
29..	60	59	58	56	40	39	40	38	--	--	60	56	64	63	72	71	69	68	88	86	77	74	75	74
30..	59	59	58	54	41	40	40	39	--	--	60	59	64	61	72	71	71	68	88	86	78	77	74	74
31..	59	59	--	--	41	41	39	39	--	--	60	59	--	--	72	71	--	--	89	87	80	78	--	--
Aver.	68	67	56	54	43	42	41	40	44	43	55	54	57	56	69	68	78	76	82	80	81	78	80	78

2-1057.71. CAPE FEAR RIVER NEAR ACME, N. C.

LOCATION.--At bridge on State Highway 141, 6.0 miles northwest of Acme, Columbus County.
DRAINAGE AREA.--5,223 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1956 to September 1961.
Water temperatures: October 1956 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 75 ppm Dec. 1-31; minimum, 39 ppm Mar. 26-31.
Hardness: Maximum, 20 ppm Jan. 1-31; minimum, 14 ppm Mar. 1-21, 26-31, Aug. 1-23, 27-31, Sept. 1-30.
Specific conductance: Maximum daily, 112 micromhos Aug. 24; minimum daily, 47 micromhos Mar. 1.
Water temperatures: Maximum, 86°F on several days during July and August; minimum, 38°F on several days during January and February.
EXTREMES, 1956-61.--Dissolved solids: Maximum, 94 ppm Oct. 3-10, 1959; minimum, 30 ppm Sept. 15-18, 1960.
Hardness: Maximum, 27 ppm Oct. 3-10, 1959; minimum, 11 ppm Mar. 1-10, 1957, Apr. 11-20, 1958.
Specific conductance: Maximum daily, 148 micromhos Oct. 6, 8, 1959; minimum daily, 40 micromhos Feb. 12, 1960.
Water temperatures: Maximum, 86°F on several days during summer months; minimum, 33°F Jan. 12, 1958.
REMARKS.--Records of specific conductance of samples collected from October 1956 to September 1961 and records of suspended matter of composite samples from October 1956 to September 1958 available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960		9 6	0.14	4.1	1.4	7.9	1.7	21	1.0	9.2	0.1	2.7	63	16	0	85	6.7	60
Nov. 1-30		8.7	.14	4.5	1.8	9.4	1.6	22	5.2	12	.2	2.2	67	18	0	85	7.0	40
Dec. 1-31		8.4	.18	4.2	1.8	10	1.0	24	5.6	9.5	.2	1.3	75	18	0	92	7.2	45
Jan. 1-31, 1961		11	20	4.6	1.9	9.2	1.6	25	9.2	8.8	.3	3.1	69	20	0	89	6.5	40
Feb. 1-28		9.1	.02	3.9	1.8	7.3	1.7	16	7.8	6.0	.2	3.6	57	17	4	70	7.0	40
Mar. 1-21		8 7	.16	3.4	1.4	5.2	1.2	13	4.6	5.5	.1	1.2	54	14	4	58	7.0	50
Mar. 22-25		8.5	.12	4.0	1.4	7.6	2.8	22	6.8	7.8	.2	.4	a51	16	0	79	6.9	--
Mar. 26-31		8.3	.18	3.0	1.6	4.3	1.4	14	7.4	5.8	.1	.0	a39	14	2	54	6.7	--
Apr. 1-30		8.6	.16	3.6	1.6	4.8	1.2	16	7.0	5.2	.1	1.0	43	16	2	58	6.5	50
May 1-31		9.5	.07	4.2	1.2	6.2	1.0	21	6.8	4.0	.2	.8	57	16	0	65	6.8	40
June 1-30		6.8	.03	4.2	1.8	8.7	1.3	23	7.2	6.7	.2	1.7	57	18	0	72	7.0	60
July 1-31		9.2	.06	4.0	1.4	6.4	1 2	19	6.6	4.8	.2	1.3	66	16	0	63	6.7	90
Aug. 1-23		8.3	.06	3.6	1.3	6.2	1.5	19	5.0	5.3	.1	1.4	56	14	0	61	6.8	45
Aug. 24-26		9.1	.10	3.8	1.8	10	2.6	22	6.0	--	.2	2.6	71	16	0	97	6.8	60
Aug. 27-31		7.8	.04	3.7	1.2	4.8	1.6	14	--	4.8	.2	.7	53	14	2	64	6.8	50
Sept. 1-30		9.1	.08	3.7	1.2	4.6	1.3	15	6.8	4.7	.1	.8	54	14	2	57	6.2	55
Time-weighted average		8.9	0.11	4.0	1.6	7.2	1.4	20	6.1	6.8	0.2	1.7	60	16	1	72	--	50

a Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

2-1057.71. CAPE FEAR RIVER NEAR ACME, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement at approximately 9 a.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	74	62	54	40	38	55	58	65	73	79	86	79
2..	74	62	53	40	38	56	57	65	74	79	86	80
3..	74	62	53	41	38	56	56	65	75	79	86	81
4..	75	60	52	41	38	57	55	65	76	79	85	82
5..	75	60	51	41	38	58	55	65	77	79	85	84
6..	75	59	50	41	39	59	56	65	78	79	85	85
7..	74	58	50	40	39	59	56	65	78	79	85	85
8..	73	58	49	40	40	59	57	65	79	79	84	84
9..	72	58	48	40	41	59	58	65	79	80	83	84
10..	71	57	48	40	38	59	57	66	79	80	82	83
11..	71	57	47	40	39	59	57	66	80	80	81	83
12..	71	57	47	41	39	58	56	67	82	80	80	82
13..	71	57	47	41	40	57	56	68	84	81	81	82
14..	71	57	46	42	41	56	55	68	83	81	81	82
15..	71	57	45	43	43	57	55	69	82	82	82	81
16..	71	57	44	43	45	57	56	69	82	82	82	81
17..	70	57	44	44	46	57	57	69	80	83	82	81
18..	70	57	43	44	47	56	59	69	80	83	82	80
19..	70	56	42	43	48	56	59	70	79	83	82	79
20..	70	56	42	43	49	55	59	70	78	84	81	78
21..	70	56	42	43	50	54	59	71	77	84	81	77
22..	68	55	42	42	50	52	60	71	76	85	81	76
23..	67	55	42	42	51	51	61	71	76	85	80	76
24..	65	55	41	42	54	51	61	71	76	86	79	77
25..	64	55	41	42	55	49	62	71	76	86	79	78
26..	64	55	41	41	55	49	62	72	76	86	79	79
27..	64	55	40	40	55	50	63	72	76	86	79	80
28..	63	55	40	39	55	51	63	73	76	86	78	81
29..	63	54	40	39	--	53	64	73	75	85	78	82
30..	62	54	40	39	--	55	64	73	74	85	78	82
31..	62	--	40	38	--	58	--	73	--	85	77	--
Average	70	57	45	41	45	55	58	69	78	82	82	81

2-1075.69. CAPE FEAR RIVER AT CAROLINA POWER AND LIGHT STEAMPLANT NEAR ROYSTER, N. C.

LOCATION.--At Carolina Power and Light Steam Plant, 1.2 miles east of Royster, Brunswick County, 2.5 miles below Indian Creek.
DRAINAGE AREA.--7,056 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES 1960-61.--Chloride: Maximum, 1,700 ppm Sept. 23; minimum, 4.6 ppm May 1.
Specific conductance: Maximum daily, 5,200 micromhos Sept. 23; minimum daily, 48 micromhos Sept. 8, Apr. 17, July 5.
Water temperatures: Maximum, 87°F July 31, Aug. 1-3; minimum, 41°F on several days during December and February.
REMARKS.--When specific conductance values indicated salt-water encroachment, only specific conductance and chloride were determined on individual samples. The individual specific conductance and chloride determinations are tabulated separately from the composite analyses. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960		8.4	0.30	3.8	1.6	11	1.4	18	6.4	12	0.3	0.7	75	16	1	89	7.0	120
Nov. 1		--	--	--	--	--	--	17	19	126	--	2.2	--	54	40	499	7.0	--
Nov. 2-30		8.8	.39	5.1	1.6	15	1.5	22	6.4	20	.2	2.1	100	20	2	118	7.4	90
Dec. 1-31		8.4	.33	5.6	1.5	15	1.5	23	6.4	18	.3	2.1	82	20	1	118	7.5	90
Jan. 1-13, 1961		9.3	.37	4.6	1.9	12	1.3	19	10	14	.2	2.5	72	20	4	102	7.3	85
Jan. 14-18		9.8	.35	5.0	1.8	15	1.4	20	8.4	18	.3	2.3	a72	20	4	120	6.8	100
Jan. 19-21		9.4	.07	4.3	1.7	10	1.2	18	8.4	11	.1	1.6	a57	18	3	88	7.3	70
Jan. 22-31		9.6	.32	5.6	1.6	14	1.4	21	10	20	.2	2.0	80	20	4	112	6.4	90
Feb. 1-28		7.8	.10	3.8	1.6	7.2	1.3	13	9.2	8.5	.2	1.9	54	16	6	70	6.5	60
Mar. 1-31		6.8	.12	3.5	1.2	6.5	1.3	11	4.0	9.0	.2	1.7	58	14	5	62	6.5	80
Apr. 1-30		6.6	.08	4.2	.9	5.3	.9	11	8.2	7.5	.1	.9	51	14	5	58	6.9	80
May 1		--	--	--	--	--	--	12	4.0	4.6	--	--	--	12	2	52	7.1	--
May 2		--	--	--	--	--	--	22	9.2	14	--	--	--	19	1	122	7.3	--
May 3-10		7.1	.13	3.0	1.3	6.2	.9	14	4.8	6.5	.2	.9	53	12	1	60	6.6	70
May 11-17		8.1	.17	6.2	1.4	9.9	1.1	19	9.2	16	.2	.9	83	22	6	89	6.8	80
May 18-31		7.7	.18	4.3	1.1	7.0	1.0	15	6.6	8.5	.2	.2	66	16	3	70	6.6	100
June 1-14		7.6	.23	5.9	1.0	11	.9	21	7.2	12	.0	1.0	77	19	2	98	6.8	110
June 15-30		5.0	.21	4.2	1.3	8.5	.9	17	6.8	8.5	.4	1.5	68	16	2	78	6.7	110
July 1-14		6.3	.27	3.8	1.0	5.7	.9	12	3.6	8.0	.1	.7	b66	14	4	58	6.6	220
July 15		--	--	--	--	--	--	--	14	45	--	--	--	--	--	187	6.6	--
July 16-31		6.8	.24	4.6	1.3	8.6	1.0	18	4.6	11	.1	.4	65	16	2	78	6.9	140
Aug. 1-17		8.1	.26	4.5	1.5	11	1.4	21	8.4	11	.1	1.1	78	17	0	90	7.1	140
Aug. 18-25		8.7	.18	3.8	1.5	8.2	1.3	16	5.8	10	.2	.5	53	16	2	76	6.7	100
Aug. 26-31		8.1	.11	4.5	1.7	11	1.7	23	7.0	12	.1	1.4	82	18	0	96	7.1	80
Sept. 1-22		8.2	.21	4.1	1.1	7.7	1.1	14	6.0	9.7	.2	1.3	67	14	3	71	6.4	80
Time-weighted average		7.8	0.23	4.4	1.4	9.7	1.2	17	6.8	12	0.2	1.4	70	17	3	86	--	100

a Calculated from determined constituents.
b Organic matter present; sum of mineral constituents 36 parts per million.

CAPE FEAR RIVER BASIN--Continued

2-1075.69. CAPE FEAR RIVER AT CAROLINA POWER AND LIGHT STEAMPLANT NEAR ROYSTER, N.C.--Continued

Specific conductance (micromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961

Day	October		November		December		January	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	--		499	126	102		110	
2	--		102		108		--	
3	73		123		110		101	
4	78		103		110		98	
5	79		107		168		114	
6	74		109		128		110	
7	79		95		118		116	14
8	77		97		96		111	
9	99		97		114		78	
10	87		98		130		77	
11	86		106		140		79	
12	91		110		152		97	
13	109		118		152		109	
14	109		128		140		118	
15	107		159	20	132		124	
16	103	12	140		136	18	118	18
17	88		140		130		116	
18	87		147		130		122	
19	85		158		132		83	
20	93		129		122		74	11
21	91		129		112		108	
22	91		129		116		122	
23	96		122		108		88	
24	90		110		106		130	
25	87		110		106		132	
26	85		110		118		119	20
27	93		112		94		119	
28	94		112		94		122	
29	96		118		94		132	
30	94		108		93		85	
31	97		--	--	112		85	

Day	February		March		April		May	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	--		58		78		52	4.6
2	76		58		64		122	14
3	78		55		58		63	
4	75		51		67		61	
5	75		51		64		60	
6	71		52		62		59	6.5
7	72		80		67		65	
8	66		79		56		63	
9	86		79		53		63	
10	89		55		52		64	
11	68		54		62		110	
12	68		57		54		89	
13	67		57		62		100	
14	68		59		66		72	
15	77	8.5	91		59	7.5	85	16
16	70		86	9.0	49		85	
17	63		64		48		84	
18	62		59		61		68	
19	57		57		64		67	
20	92		62		52		60	
21	62		61		52		85	
22	69		57		52		95	
23	62		70		61		81	
24	71		71		62		92	
25	67		58		57		89	8.5
26	72		56		53		62	
27	67		54		55		64	
28	63		54		55		70	
29	--	--	64		53		70	
30	--	--	55		51		62	
31	--	--	66		--	--	59	

CAPE FEAR RIVER BASIN--Continued

2-1075.69. CAPE FEAR RIVER AT CAROLINA POWER AND LIGHT STEAMPLANT NEAR ROYSTER, N.C.--Continued

Specific conductance (micromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961--Continued

Day	June		July		August		September	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	91		59		83		67	
2	94		55		82		67	
3	95		54		84		63	
4	103		49		83		70	
5	105		48		84		68	
6	96		53		103		60	
7	100		52		93		50	
8	87	12	57	8.0	101		48	
9	95		77		101	11	59	
10	110		57		106		73	
11	114		60		105		74	9.7
12	118		59		110		69	
13	109		64		75		69	
14	112		68		75		68	
15	90		187	45	73		66	
16	92		63		73		76	
17	82		71		70		78	
18	83		66		63		77	
19	84		65		63		92	
20	84		67		74		87	
21	87		71		72	10	84	
22	90	8.5	71		79		87	
23	79		72	11	81		5,200	1,700
24	80		75		88		350	67
25	82		91		83		1,270	368
26	64		88		99		813	212
27	75		90		102		318	71
28	73		91		108		1,390	410
29	72		89		103	12	1,390	406
30	67		85		85		1,280	354
31	--	--	90		72		--	--

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement between 6:30 a.m. and 7:30 p.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	--	64	55	46	--	55	60	66	70	75	87	81
2..	--	63	55	--	42	55	60	66	70	75	87	81
3..	74	63	54	46	42	55	60	66	75	79	87	81
4..	74	62	54	45	42	56	59	64	76	78	86	81
5..	75	61	53	46	42	59	59	64	76	78	85	82
6..	75	62	52	46	42	60	59	68	77	80	86	82
7..	74	60	53	46	41	60	56	69	77	78	85	81
8..	73	59	52	46	41	60	57	70	78	78	85	81
9..	73	59	51	44	41	60	58	70	80	78	82	81
10..	72	60	50	45	41	57	58	70	80	78	82	81
11..	72	58	49	44	41	58	58	71	79	78	82	82
12..	72	57	49	45	41	60	58	71	80	78	83	82
13..	73	58	49	46	41	61	58	71	81	79	82	82
14..	72	58	48	47	42	61	58	71	80	80	82	82
15..	71	58	46	46	45	61	58	71	78	81	82	81
16..	72	59	46	46	47	61	58	71	78	82	82	78
17..	71	58	44	47	49	60	58	70	72	82	82	80
18..	71	59	44	48	51	59	58	70	73	82	80	79
19..	72	58	45	46	59	60	58	70	73	82	80	80
20..	72	58	44	45	55	60	59	70	73	83	80	80
21..	70	58	44	45	53	59	60	70	73	84	80	76
22..	69	58	41	45	55	50	60	70	73	--	79	76
23..	68	57	41	44	54	55	65	70	73	85	79	78
24..	64	57	41	43	54	55	65	70	74	85	81	79
25..	65	58	42	43	53	60	65	71	76	86	81	79
26..	68	57	42	42	53	59	65	69	76	86	81	79
27..	62	57	41	42	54	57	65	69	75	85	79	79
28..	62	57	41	42	54	57	65	70	75	85	81	79
29..	--	57	43	42	--	56	62	70	75	85	80	79
30..	62	57	43	42	--	55	64	69	74	85	80	79
31..	62	--	46	42	--	55	--	70	--	87	80	--
Average	70	59	47	45	47	58	60	69	76	81	82	80

CAPE FEAR RIVER BASIN--Continued

2-1075.76. CAPE FEAR RIVER AT NAVASSA, N. C.

LOCATION.--At drawspan on Atlantic Coast Line Railroad bridge at Navassa, Brunswick County.
DRAINAGE AREA.--7,060 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1959 to September 1961.
Water temperatures: October 1959 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 4,420 ppm Sept. 21; minimum, 6.2 ppm Apr. 1-30.
Specific conductance: Maximum daily, 12,900 micromhos Sept. 21; minimum daily, 46 micromhos Apr. 17.
Water temperatures: Maximum, 87°F Aug. 1, 4; minimum, 39°F Feb. 12.
EXTREMES, 1959-61.--Chloride: Maximum, 4,420 ppm Sept. 21, 1961; minimum. 5.0 ppm Feb. 1-29, 1960.
Specific conductance: Maximum daily, 12,900 micromhos Sept. 21, 1961; minimum daily, 40 micromhos Feb. 22, 26, 1960.
Water temperatures: Maximum, 87°F Aug. 1, 4, 1961; minimum, 39°F Feb. 12, 1961.
REMARKS.--When specific conductance values indicated salt-water encroachment, only specific conductance and chloride were determined on individual samples. The individual specific conductance and chloride determinations are tabulated separately from the composite chemical analyses. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....		8.4	0.33	4.1	1.6	11	1.5	18	7.4	14	0.3	0.5	77	16	2	92	6.8	120
Jan. 1-10, 1961.....		9.3	.24	4.5	2.2	13	1.4	21	10	17	.3	2.3	84	20	3	112	7.2	70
Feb. 4-10.....		6.3	.20	3.4	2.5	11	1.4	17	7.6	14	.2	2.7	72	18	4	98	7.3	110
Feb. 11-28.....		7.4	.07	3.5	1.7	7.0	1.5	13	6.3	8.4	.2	2.1	50	16	6	68	6.8	70
Mar. 1-31.....		6.8	.14	3.6	1.3	6.5	1.4	12	4.3	7.8	.2	1.8	54	14	4	62	6.9	90
Apr. 1-30.....		6.4	.11	3.4	1.4	6.1	1.0	13	6.4	6.2	.1	.4	50	14	4	61	6.7	100
May 1-31.....		7.9	.18	4.3	1.3	8.7	1.1	17	4.4	10	.2	1.1	63	16	2	79	6.8	80
June 17-30.....		5.0	.24	4.0	1.2	8.4	.8	17	6.4	7.5	.2	1.4	66	15	1	76	6.4	130
July 1-24.....		7.7	.29	4.2	.7	5.8	1.0	13	6.0	8.0	.2	.4	68	14	3	61	6.3	120
Aug. 1-15.....		8.7	.19	5.6	1.3	12	1.4	24	6.4	14	.2	.5	70	19	0	99	6.9	100
Aug. 26-31.....		10	.04	4.6	1.9	10	1.6	23	5.6	12	.2	1.3	76	20	1	92	6.6	60
Sept. 1-9.....		8.4	.17	4.8	1.1	7.3	1.3	15	9.4	9.4	.2	.8	72	16	4	73	6.9	120

CAPE FEAR RIVER BASIN--Continued

2-1075.76. CAPE FEAR RIVER AT NAVASSA, N. C.--Continued

Specific conductance (micromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961

Day	October		November		December		January	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	108		522	128	368	90	98	
2	80		462	113	3,910	1,220	--	
3	75		513	122	5,320	1,650	--	
4	75		692	178	5,390	1,670	120	
5	74		730	184	6,040	1,890	108	
6	77		810	210	6,040	1,920	112	17
7	106		2,110	616	5,860	1,850	114	
8	108		2,480	728	7,040	2,320	--	
9	83		2,500	730	7,710	2,440	--	
10	83		2,300	666	10,600	3,350	112	
11	84		2,190	646	11,800	3,830	--	--
12	83		2,190	646	10,600	3,340	--	--
13	80		182	31	941	182	2,160	616
14	102		220	53	171	24	3,260	975
15	103		170	33	150	24	614	144
16	102	14	123	21	2,100	596	540	125
17	108		163	37	2,880	832	660	162
18	106		124	20	827	188	428	98
19	108		123	20	654	164	332	71
20	89		922	238	722	172	87	9.3
21	91		862	224	1,090	290	83	9.0
22	89		878	232	361	74	--	--
23	87		938	244	170	30	--	--
24	87		922	240	130	21	--	--
25	100		661	162	94	11	--	--
26	112		898	236	94	12	--	--
27	102		712	182	94	11	3,500	1,060
28	102		818	210	106	15	3,880	1,170
29	102		922	240	1,200	340	2,500	712
30	108		732	186	138	13	3,000	865
31	107		--	--	95	12	1,690	468

Day	February		March		April		May	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	972	246	59		70		--	
2	148	21	57		--		101	
3	1,900	524	54		--		88	
4	92		50		58		61	
5	88		--		53		61	
6	86	14	--		65		98	
7	116		56		54		100	
8	76		59		66		--	
9	122		72		--		64	
10	110		51		--		64	
11	79		51		52		68	
12	79		48		64		110	
13	--		--		54		81	
14	61		58		76		--	
15	76		78		50		--	
16	80		87	7.8	--	6.2	88	10
17	68		76		46		82	
18	62		61		51		77	
19	58		--		--		61	
20	--	8.4	--		60		61	
21	85		70		66		--	
22	60		61		57		--	
23	61		110		--		85	
24	68		61		--		88	
25	58		49		56		89	
26	--		--		56		90	
27	--		--		80		84	
28	70		51		78		--	
29	--	--	55		54		--	
30	--	--	52		54		86	
31	--	--	59		--	--	78	

CAPE FEAR RIVER BASIN--Continued

2-1075.76. CAPE FEAR RIVER AT NAVASSA, N. C.--Continued

Specific conductance (micromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961--Continued

Day	June		July		August		September	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	81	10	58		116		81	
2	109	15	60		100		80	
3	132	20	52		100		--	
4	130	20	52		92		--	
5	129	20	51		85		78	9.4
6	110	14	56		--		79	
7	130	20	53		--	14	72	
8	458	102	56		104		62	
9	520	118	56		98		64	
10	568	128	--		105		--	--
11	--	--	--		108		--	--
12	--	--	61	8.0	112		260	61
13	307	60	61		--	--	310	74
14	199	32	59		--	--	738	198
15	188	32	63		--	--	282	62
16	103	13	--		836	225	550	140
17	86		--		2,140	632	--	--
18	--		65		6,010	1,880	--	--
19	--		71		3,960	1,170	553	140
20	83		68		--	--	138	22
21	85		74		--	--	12,900	4,420
22	99		74		202	14	11,800	3,840
23	78	7.5	--	--	94	8	11,000	3,650
24	83		--	--	370	92	--	--
25	--		80	9.0	216	16	--	--
26	--		109	16	103		12,000	3,960
27	65		190	38	--		10,900	3,500
28	60		222	46	--		8,180	2,510
29	67		135	20	108	12	6,030	1,850
30	68		--	--	92		9,620	3,230
31	--	--	--	--	76		--	--

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement at approximately high tide)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	--	55	42	43	54	60	--	73	75	87	80
2	75	--	55	--	41	54	--	65	74	75	86	82
3	75	--	53	--	40	54	--	66	76	76	86	--
4	76	--	55	45	46	55	58	67	76	76	87	--
5	75	--	55	45	46	--	56	66	76	76	86	82
6	74	--	55	45	46	--	58	66	76	79	--	82
7	73	--	55	45	41	62	58	66	76	79	--	82
8	74	--	56	--	41	64	58	--	77	79	85	82
9	74	--	55	--	45	62	--	70	80	79	85	82
10	74	--	55	45	42	60	--	70	80	--	84	--
11	73	--	55	--	40	60	59	72	--	--	84	--
12	73	--	55	--	39	62	58	71	--	79	84	82
13	73	58	47	45	--	--	59	71	82	79	--	82
14	73	57	55	47	42	62	58	--	82	79	--	82
15	72	57	55	47	44	62	58	--	82	80	--	82
16	72	58	42	47	42	62	--	71	78	--	82	82
17	72	58	42	47	44	58	58	71	76	--	82	--
18	72	59	45	47	52	58	58	71	--	82	82	--
19	72	58	45	47	52	--	--	70	--	83	81	77
20	71	59	45	47	--	--	58	70	79	84	--	77
21	73	58	45	45	54	58	58	--	79	85	--	76
22	72	58	45	--	54	58	59	--	75	85	79	77
23	72	59	42	--	54	60	--	72	71	--	79	77
24	72	60	42	--	54	55	--	72	71	--	80	--
25	72	59	42	--	54	52	71	73	--	86	81	--
26	71	61	42	--	--	--	71	73	--	86	81	82
27	71	60	42	45	--	--	67	72	71	86	--	80
28	72	60	42	45	54	52	67	--	71	86	--	80
29	70	61	42	45	--	52	65	--	75	86	80	80
30	71	60	42	42	--	58	65	72	75	--	80	80
31	71	--	42	43	--	60	--	72	--	--	81	--
Average	73	--	49	--	46	--	--	--	76	--	--	--

CAPE FEAR RIVER BASIN--Continued

2-1080. NORTHEAST CAPE FEAR RIVER NEAR CHINQUAPIN, N. C.

LOCATION.--At bridge on State Highway 41, 540 feet upstream from gaging station, 0.4 mile downstream from Muddy Creek and 1-1/4 miles west of Chinquapin, Duplin County.
DRAINAGE AREA.--600 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1950 to September 1951, October 1956 to September 1961.
Water temperatures: October 1950 to September 1951, October 1956 to September 1961.
EXTREMES, 1960-61. Dissolved solids: Maximum, 101 ppm Oct. 1-20; minimum, 60 ppm Feb. 1-28.
Hardness: Maximum, 20 ppm Oct. 1-20, Apr. 1-30, Sept. 1-30; minimum, 10 ppm Mar. 1-31.
Specific conductance: Maximum daily, 130 micromhos Sept. 20; minimum daily, 48 micromhos June 1.
Water temperatures: Maximum, 70°F on many days during August and September; minimum, freezing point on several days during December.
EXTREMES, 1950-51, 1956-61.--Dissolved solids: Maximum, 163 ppm Aug. 11-20, 1957; minimum, 25 ppm Feb. 27-28, 1957.
Hardness: Maximum, 40 ppm Aug. 1-10, 1957; minimum, 10 ppm Mar. 21-31, 1958, Mar. 1-31, 1961.
Specific conductance (1956-61): Maximum, daily, 267 micromhos Aug. 13, 14, 1957; minimum daily, 39 micromhos Mar. 31, 1958.
Water temperatures: Maximum, 87°F July 1, 1951; minimum, freezing point on several days during winter months.
REMARKS.--Records of specific conductance of samples collected from October 1956 to September 1961 and records of suspended matter of composite samples from October 1950 to September 1951, October 1956 to September 1960 available in district office at Raleigh, N. C.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-20, 1960.....	924	11	0.26	6.7	0.9	11	2.7	17	4.0	18	0.1	3.8	101	20	6	110	7.0	140
Oct. 21-31.....	987	8.5	.32	4.6	1.1	8.2	1.8	13	5.4	12	.1	3.5	a87	16	6	81	7.0	140
Nov. 1-30.....	330	9.2	.31	4.2	1.6	8.4	1.8	15	3.8	12	.2	2.7	75	17	4	78	7.0	120
Dec. 1-31.....	488	8.3	.09	4.2	1.0	8.8	1.2	9	7.6	12	.1	4.3	65	14	7	82	6.3	55
Jan. 1-31, 1961.....	603	6.6	.11	4.1	1.0	10	.8	10	6.4	14	.1	4.6	61	14	6	85	6.1	55
Feb. 1-28.....	1,146	3.4	.17	4.6	1.6	7.7	1.2	12	7.6	9.5	.2	1.0	60	18	8	76	6.2	70
Mar. 1-31.....	981	3.2	.27	3.4	.5	8.5	1.7	5	4.6	12	.2	2.9	61	10	6	73	5.9	70
Apr. 1-30.....	1,599	3.8	.48	6.1	1.3	9.1	2.0	10	7.2	14	.2	6.9	76	20	12	100	6.0	120
May 1-31.....	731	6.4	.55	4.1	1.2	7.8	1.1	15	6.4	10	.1	2.1	62	15	2	72	6.7	120
June 1-30.....	1,953	4.8	.48	2.8	1.5	4.4	1.4	11	4.0	4.8	.3	1.9	70	13	4	51	6.3	140
July 1-31.....	1,464	7.7	.30	4.2	1.3	10	1.5	12	6.6	13	.1	1.5	88	16	6	87	5.9	160
Aug. 1-31.....	641	6.8	.34	3.9	1.9	9.1	1.7	20	2.2	16	.3	.9	68	18	2	90	6.7	120
Sept. 1-30.....	419	8.9	.25	6.2	1.2	16	2.4	15	7.2	25	.1	1.4	92	20	8	123	6.1	100
Time-weighted average.....	939	6.6	0.30	4.5	1.3	9.2	1.6	12	5.7	13	0.2	2.8	73	16	6	85	--	110

a Organic matter present; sum of mineral constituents 52 parts per million.

CAPE FEAR RIVER BASIN--Continued

2-1080. NORTHEAST CAPE FEAR RIVER NEAR CHINQUAPIN, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement at approximately 8 a.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	69	68	40	38	36	48	55	60	69	60	65	69
2..	69	68	40	38	36	47	55	60	69	60	67	69
3..	69	65	40	36	36	49	56	60	69	60	67	69
4..	69	65	40	36	36	48	56	59	69	60	66	69
5..	69	65	40	36	36	48	56	59	69	60	67	69
6..	69	66	38	36	36	50	56	59	68	60	68	69
7..	69	65	38	36	36	48	56	59	68	60	67	69
8..	69	65	38	36	36	50	56	59	68	60	68	69
9..	69	65	38	38	36	49	56	60	68	60	68	70
10..	69	64	38	38	37	47	57	60	69	60	69	70
11..	69	64	38	38	37	49	57	60	68	61	69	70
12..	69	64	38	36	37	48	57	60	69	61	69	70
13..	69	64	36	36	39	51	57	60	69	61	69	70
14..	69	64	36	36	40	47	57	60	69	61	69	70
15..	68	64	36	36	40	48	57	60	69	61	69	70
16..	68	64	34	36	40	51	57	60	69	61	69	70
17..	68	64	34	38	45	52	57	60	68	63	69	70
18..	68	64	34	38	45	50	57	60	68	63	69	70
19..	68	64	34	38	45	54	57	60	68	63	69	70
20..	68	64	32	39	44	55	57	60	68	63	69	70
21..	65	64	32	39	40	52	57	60	68	63	69	70
22..	65	63	32	39	40	53	57	59	68	65	69	70
23..	65	63	32	39	40	56	58	59	68	65	69	69
24..	65	63	32	39	40	53	58	59	65	65	69	69
25..	64	63	32	35	40	55	58	59	65	65	69	70
26..	64	60	32	34	40	53	58	59	65	65	70	70
27..	64	60	32	33	--	57	57	59	63	65	70	70
28..	62	60	32	33	--	57	59	59	63	65	70	70
29..	62	60	32	33	--	58	59	59	65	66	70	69
30..	62	--	32	35	--	59	59	59	65	66	70	69
31..	62	--	32	35	--	60	--	59	--	66	70	--
Average	67	64	35	37	39	52	57	60	68	62	69	70

CAPE FEAR RIVER BASIN--Continued

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 1961.
Water temperatures: October 1954 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 84 ppm Nov. 1-30; minimum, 55 ppm Jan. 1-31.
Hardness: Maximum, 24 ppm Dec. 1-31; minimum, 14 ppm July 1-31.
Specific conductance: Maximum daily, 87 micromhos June 11; minimum daily, 39 micromhos July 9.
Water temperatures: Maximum, 84°F on several days during July and August; minimum, 38°F Jan. 29-31, Feb. 1, 2.
EXTREMES, 1954-61.--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.--Records of specific conductance of samples collected from October 1954 to September 1961 and records of suspended matter of composite samples from October 1954 to September 1957 available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-31,1960		7.6	0.33	5.8	1.3	5.7	1.2	13	4.4	9.5	0.2	0.3		75	42	20	9	65	6.2	160
Nov. 1-30.....		8.4	.38	6.8	1.3	7.0	1.0	19	6.4	11	.1	.7		84	52	22	7	76	7.0	160
Dec. 1-31.....		8.1	.20	7.1	1.4	6.3	.8	18	4.8	11	.2	.8		67	50	24	8	77	7.0	110
Jan. 1-31,1961		6.4	.19	5.5	1.7	5.4	.4	14	6.8	9.5	.2	.4		55	43	20	9	64	6.7	120
Feb. 1-28.....		5.2	.17	5.9	1.0	5.1	.5	12	8.0	8.0	.2	.6		56	41	18	8	65	6.6	120
Mar. 1-31.....		4.2	.27	5.9	1.3	5.8	.7	14	6.4	9.0	.1	.3		72	41	20	8	64	6.8	170
Apr. 1-30.....		3.3	.27	4.2	1.3	4.2	.6	9	6.4	7.2	.1	.0		65	32	16	8	51	6.5	210
May 1-31.....		5.1	.31	5.3	1.0	5.3	.6	13	4.8	9.3	.2	.4		64	38	17	6	59	7.0	200
June 1-30.....		5.1	.22	5.1	.9	5.0	.5	17	3.0	6.0	.0	2.0		68	36	17	3	60	6.7	200
July 1-31.....		5.6	.37	4.0	1.1	3.7	.7	11	3.2	6.0	.2	.2		68	30	14	6	47	6.3	200
Aug. 1-31.....		7.0	.21	5.3	.9	5.6	.8	12	5.2	8.8	.2	.5		65	46	16	6	64	6.6	160
Sept. 1-30....		6.7	.21	6.6	.9	5.4	.8	17	6.0	8.8	.1	1.7		80	45	20	6	70	6.5	180
Time-weighted average.....		6.1	0.26	5.6	1.2	5.4	0.7	14	5.4	8.7	0.2	0.7		68	41	19	7	63	--	170

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 1960 to September 1961
/Once-daily measurement between 6 a.m. and 6 p.m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	71	62	54	39	38	51	60	62	69	75	84	80
2..	70	62	54	39	38	51	60	62	69	75	84	--
3..	70	62	54	40	39	52	60	63	69	75	83	81
4..	70	61	53	39	40	53	61	63	70	75	84	80
5..	69	61	53	40	40	54	61	64	70	75	84	80
6..	69	61	52	40	40	53	61	63	71	76	84	80
7..	69	60	51	40	40	55	61	64	71	76	84	80
8..	68	60	51	40	41	55	60	64	71	77	84	80
9..	68	60	51	41	41	56	60	64	71	77	84	--
10..	68	60	50	41	41	55	60	65	72	78	84	79
11..	67	60	50	41	42	56	59	65	72	78	84	79
12..	67	60	49	41	43	56	59	65	73	78	83	78
13..	67	59	48	41	43	57	59	66	73	78	83	79
14..	67	59	48	41	44	57	59	66	74	78	84	78
15..	67	58	47	41	45	57	58	67	74	79	84	78
16..	66	58	47	42	46	57	58	66	75	79	84	--
17..	66	58	46	41	46	57	58	67	76	79	83	78
18..	66	57	46	42	47	57	58	67	76	80	83	78
19..	66	57	45	41	47	58	57	67	77	80	83	78
20..	66	57	45	41	48	58	57	68	77	80	83	78
21..	66	57	44	40	48	58	58	68	77	80	83	77
22..	66	56	44	40	49	58	58	68	77	80	83	77
23..	65	56	43	40	49	59	59	69	77	81	83	--
24..	66	55	42	40	49	58	59	69	77	81	83	78
25..	65	55	40	40	50	59	59	69	76	82	82	77
26..	65	55	40	39	50	59	60	70	76	82	83	77
27..	65	55	40	39	51	59	60	70	76	82	82	76
28..	65	55	40	39	51	60	60	70	75	83	82	76
29..	65	54	40	38	--	60	61	71	75	83	82	76
30..	65	54	40	38	--	61	62	70	75	83	81	75
31..	63	--	40	38	--	60	--	69	--	84	81	--
Average	67	58	47	40	44	57	59	66	74	79	83	78

2-1086.37. NORTHEAST CAPE FEAR RIVER NEAR CASTLE HAYNE, N. C.

LOCATION.--At end of county road, 1.0 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 1961.
Water temperatures: October 1959 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 17 ppm Jan. 28; minimum, 2.5 ppm June 22-30.
Specific conductance: Maximum daily, 144 micromhos Jan. 28; minimum daily, 37 micromhos June 27, July 3.
Water temperatures: Maximum, 84°F July 28, 29, Aug. 2, 3; minimum, 40°F Jan. 26-29, Feb. 6.
EXTREMES, 1959-61.--Chloride: Maximum, 364 ppm Oct. 1, 1959; minimum, 2.5 ppm June 22-30, 1961.
Specific conductance: Maximum daily, 1,290 micromhos Oct. 1, 1959; minimum daily, 37 micromhos June 27, July 3, 1961.
Water temperatures: Maximum, 84°F on several days during summer months; minimum, 35°F Mar. 11-15, 1960.
REMARKS.--Records of specific conductance of samples collected available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....		7.4	0.37	5.6	1.1	6.3	1.2	14	8.4	9.5	0.3	0.3	a79	18	7	65	6.7	200
Nov. 1-30.....		7.9	.35	5.4	1.7	7.5	1.0	17	10	11	.2	.7	78	20	6	71	7.0	160
Dec. 1-31.....		8.4	.30	7.1	1.4	7.5	1.0	21	3.2	12	.2	.7	74	23	6	83	7.2	120
Jan. 1-27, 1961.....		6.8	.24	6.1	1.2	5.7	.6	14	7.2	10	.2	.6	60	20	8	68	6.6	110
Jan. 28.....		--	--	--	--	--	--	40	9.8	17	--	--	--	34	2	144	7.6	--
Jan. 29-31.....		6.4	.15	5.5	1.2	6.0	.5	14	5.6	10	.1	.6	b43	18	7	68	7.0	--
Feb. 1-28.....		5.6	.16	5.0	1.7	5.2	.6	14	6.0	9.0	.1	.6	66	20	8	66	6.9	100
Mar. 1-31.....		4.2	.30	4.9	1.7	6.5	.9	15	5.6	9.8	.2	.7	65	19	6	67	6.5	160
Apr. 1-30.....		3.6	.28	4.0	1.8	4.5	.7	11	6.0	7.1	.1	.3	62	17	8	52	6.4	170
May 1-31.....		4.8	.30	4.4	1.6	6.0	.8	14	3.4	9.0	.2	.4	c70	18	6	63	6.6	180
June 1-21.....		5.3	.18	5.9	.8	5.6	.5	16	7.2	7.5	.1	1.9	69	18	6	67	7.0	180
June 22-30.....		4.1	.24	4.0	.9	3.0	.4	10	8.0	2.5	.1	1.7	d60	14	6	45	6.1	180
July 1-31.....		5.2	.40	3.8	1.0	3.3	.7	10	2.8	6.5	.2	.2	e71	14	6	45	6.1	200
Aug. 1-31.....		6.8	.23	4.3	1.4	5.3	.8	12	5.2	9.4	.2	.8	f69	17	7	67	6.6	165
Sept. 1-30.....		6.7	.17	5.6	.8	6.2	.9	16	4.6	9.5	.2	1.5	69	18	4	71	6.1	140
Time-weighted average.....		6.0	0.28	5.1	1.4	5.7	0.8	14	5.8	9.1	0.2	0.7	69	18	6	65	--	160

a Organic matter present; sum of mineral constituents 47 parts per million.
b Calculated from determined constituents.
c Organic matter present; sum of mineral constituents 38 parts per million.
d Organic matter present; sum of mineral constituents 30 parts per million.
e Organic matter present; sum of mineral constituents 29 parts per million.
f Organic matter present; sum of mineral constituents 40 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 1960 to September 1961
(Once-daily measurement between 5:30 a.m. and 11:30 p.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	72	64	55	45	45	57	60	65	74	73	83	79
2..	68	64	53	44	41	57	62	65	74	74	84	79
3..	73	63	54	45	41	57	62	66	74	75	84	80
4..	73	62	54	45	41	57	60	67	74	75	83	82
5..	73	62	54	45	41	58	60	66	76	76	82	79
6..	78	62	54	45	40	60	59	66	76	75	82	79
7..	73	59	54	45	41	61	59	68	78	75	83	78
8..	72	59	54	45	42	61	56	68	77	75	83	79
9..	72	59	52	44	41	60	56	68	79	75	82	78
10..	71	60	52	44	42	58	57	68	79	75	83	79
11..	72	54	50	45	43	58	58	70	79	75	83	79
12..	72	57	48	45	43	59	58	69	80	74	82	79
13..	71	58	44	46	48	61	58	70	82	75	82	79
14..	70	54	45	46	44	60	58	70	82	75	83	80
15..	71	53	47	47	46	61	58	72	83	77	81	78
16..	70	57	46	47	48	63	59	73	76	78	81	76
17..	71	59	45	48	49	61	59	72	75	78	78	75
18..	71	58	44	48	52	61	60	72	74	78	80	73
19..	71	60	44	48	53	61	59	73	75	78	79	73
20..	70	59	45	44	53	61	55	74	74	78	79	73
21..	69	60	44	43	53	60	56	74	71	79	78	73
22..	68	63	42	42	54	60	59	73	71	80	76	74
23..	68	59	41	42	55	59	60	71	71	80	78	74
24..	68	58	41	44	57	58	61	69	73	80	78	74
25..	66	56	41	43	58	58	64	69	74	82	79	76
26..	65	58	42	40	57	59	64	75	74	83	79	76
27..	65	57	47	40	57	59	64	70	74	83	78	76
28..	62	57	42	40	57	59	62	70	73	84	78	75
29..	63	57	42	40	--	60	62	68	73	84	78	75
30..	60	57	44	41	--	60	65	71	72	83	79	74
31..	64	--	44	42	--	60	--	71	--	83	78	--
Average	69	59	47	44	48	59	60	70	76	78	81	77

WACCAMAW RIVER BASIN

2-1095. WACCAMAW RIVER AT FREELAND, N. C.

LOCATION.--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 Wingah Bay.
DRAINAGE AREA (revised).--706 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1950 to September 1951, October 1956 to September 1961.
Water temperatures: June 1960 to August 1961.
EXTREMES, October 1960 to August 1961.--Water temperatures: Maximum, 83°F July 31, Aug. 1, 2; minimum, 39°F on several days during December and January.
EXTREMES, June 1960 to August 1961.--Water temperatures: Maximum, 96°F June 18, 19, 1960; minimum, 39°F on several days during winter months.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960..	1,110	7.6	0.38	3.4	1.2	3.4	1.2	8	2.4	6.5	0.2	0.5		82	31	14	7	48	5.5	280
Nov. 1.....	367	6.0	.34	3.0	.9	3.4	.6	7	.8	5.3	.1	.2		74	24	11	6	42	5.9	200
Dec. 2.....	200	6.4	.39	3.0	1.2	3.7	.4	8	1.8	6.3	.1	.5		76	28	12	6	47	5.7	200
Jan. 10, 1961.	376	5.0	.09	3.4	.6	4.5	.5	6	4.8	7.8	.1	.4		60	30	11	6	46	5.8	120
Feb. 14.....	653	3.2	.01	3.4	.9	4.1	.5	4	4.8	8.2	.1	.5		55	28	12	8	49	5.6	80
Feb. 23.....	745	2.6	.18	3.3	.9	4.2	.6	6	3.2	7.1	.3	.9		--	26	12	6	52	5.4	120
Mar. 15.....	558	1.6	.01	3.9	.2	4.6	.5	7	2.8	7.5	.2	1.4		74	26	11	6	45	5.7	140
Apr. 14.....	3,800	2.6	.07	2.0	.8	3.9	.5	4	2.4	6.4	.2	.2		51	21	8	5	42	5.2	200
May 15.....	1,100	3.1	.12	2.9	.7	4.0	.6	6	1.2	5.9	.2	.2		70	22	10	5	42	5.4	200
June 13.....	284	4.4	.28	2.8	1.2	4.2	.6	9	2.4	7.2	.2	.3		72	28	12	4	44	6.4	160
July 16.....	3,180	3.6	.17	2.5	.2	2.6	.5	5	1.0	4.5	.2	.5		76	18	7	3	33	5.4	200
Aug. 14.....	237	6.9	.12	4.0	.7	3.5	.9	12	1.6	5.7	.1	.6		78	30	13	3	48	5.8	140
Aug. 16.....	260	6.4	.61	4.1	1.8	4.3	.9	11	4.2	7.6	.3	.9		--	36	18	8	49	5.8	240
Sept. 18.....	103	7.6	.29	3.9	.9	3.7	.5	7	3.6	6.9	.1	.5		86	31	14	8	57	5.5	180

WACCAMAW RIVER BASIN--Continued

2-1095. WACCAMAW RIVER AT FREELAND, N. C.--Continued

Temperature °F of water, October 1960 to August 1961
[Continuous ethyl alcohol-actuated thermograph]

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..	72	71	60	59	58	54	48	45	42	41	58	57	66	65	62	62	68	67	75	74	83	82		
2..	72	72	61	60	54	49	49	48	43	42	59	58	65	63	63	62	70	68	76	74	83	82		
3..	72	71	61	60	49	46	49	48	43	42	59	58	63	62	64	63	73	70	77	76	82	81		
4..	71	71	60	59	46	44	48	46	42	41	58	58	62	60	64	64	74	73	77	76	81	80		
5..	71	71	59	57	44	44	46	44	41	41	62	58	60	58	64	64	75	74	78	76	80	79		
6..	71	71	57	57	45	44	44	44	42	41	66	62	59	58	64	64	76	75	78	76	79	78		
7..	71	71	57	55	47	45	45	44	42	42	68	66	61	59	66	64	78	76	78	77	79	78		
8..	71	71	55	53	48	47	45	45	43	42	69	68	60	59	68	66	79	78	77	76	80	79		
9..	71	71	53	52	48	48	45	45	44	43	69	64	60	59	71	68	79	78	76	75	80	79		
10..	71	70	54	52	48	47	45	43	45	44	64	58	62	59	71	70	80	79	76	75	80	79		
11..	70	69	56	54	47	46	43	41	46	45	58	54	62	60	70	70	80	79	76	74	80	78		
12..	69	69	57	56	47	47	41	41	46	46	55	54	62	60	70	69	80	79	74	74	80	80		
13..	69	68	57	55	47	44	43	41	49	46	59	55	60	60	69	69	80	78	75	74	81	80		
14..	69	69	55	54	44	41	45	43	51	49	63	59	60	58	69	68	79	78	76	75	81	80		
15..	69	69	55	54	41	40	49	45	53	51	63	63	60	59	70	69	80	79	77	76	80	78		
16..	70	69	56	55	40	40	50	49	56	53	63	63	61	59	72	70	80	75	78	76	78	77		
17..	70	70	57	56	41	40	50	49	56	56	63	61	61	59	73	72	75	68	79	78	77	76		
18..	70	69	59	57	41	41	49	48	57	56	61	57	61	60	73	72	68	66	78	78	77	77		
19..	69	69	59	59	41	41	49	48	60	57	57	57	61	59	72	70	67	66	78	78	77	75		
20..	69	69	59	57	41	41	48	46	62	60	59	57	60	58	71	70	68	67	78	78	76	75		
21..	69	68	57	56	43	41	46	45	62	59	59	59	60	58	71	70	68	68	78	78	77	76		
22..	68	64	56	55	43	43	45	42	59	56	59	57	61	58	70	70	71	68	80	78	77	77		
23..	64	61	55	54	43	41	42	41	56	55	57	57	63	60	70	69	73	71	80	79	77	76		
24..	61	60	55	55	41	39	42	41	58	56	57	56	65	63	69	68	74	73	80	79	79	77		
25..	60	60	56	55	39	39	44	42	61	58	57	56	68	65	68	68	74	74	81	80	80	79		
26..	60	58	56	56	40	39	44	41	61	59	57	56	69	68	69	68	75	74	82	81	80	80		
27..	58	57	56	55	42	40	41	39	59	57	59	57	69	66	69	68	75	74	82	81	80	80		
28..	59	58	56	55	43	42	39	39	57	56	63	59	66	65	68	65	74	74	82	81	80	79		
29..	59	59	59	56	44	43	40	39	--	--	66	63	65	63	65	64	74	73	81	80	81	80		
30..	59	59	59	58	45	44	40	40	--	--	68	66	63	62	66	64	74	73	82	81	81	80		
31..	59	59	--	--	45	45	41	40	--	--	68	66	--	--	67	66	--	--	83	82	81	80		
Aver.	67	67	57	56	45	43	45	44	51	50	61	59	62	61	68	67	75	73	78	77	80	79		

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 421 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.
Water temperatures: October 1947 to September 1948, October 1957 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 75°F on several days during July, August, and September; minimum, freezing point on several days during December.
EXTREMES, 1947-48, 1957-61.--Water temperatures: Maximum, 83°F June 24, 25, 1948; minimum, freezing point on several days during February and December 1958 and December 1960.
REMARKS.--No temperature record Oct. 1-13 due to failure of thermograph.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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			
Dec. 31, 1960.....	453																	
Aug. 1, 1961.....	574	13	0.01	2.9	0.9	2.4	0.8	18	0.3	1.9		1.5		8	0	32	7.0	
						2.4	1.2	17	1.8	1.9	0.0	.5	33	11	0	37	6.5	4

PEE DEE RIVER BASIN--Continued

2-1120. YADKIN RIVER AT WILKESBORO, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
/Continuous ethyl alcohol-actuated thermograph/

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..	--	--	55	53	45	40	41	39	39	35	49	46	49	47	56	53	67	62	72	68	75	73	74	72
2..	--	--	54	50	40	37	40	38	39	37	48	45	50	47	60	55	71	63	72	68	75	72	75	71
3..	--	--	53	51	39	36	39	36	37	33	48	45	50	47	59	54	72	67	71	68	75	72	75	72
4..	--	--	52	48	39	36	37	35	35	33	53	48	49	47	59	55	72	67	71	66	74	72	75	72
5..	--	--	51	47	41	38	38	36	37	33	55	52	49	45	56	52	70	66	71	67	73	70	75	72
6..	--	--	51	48	43	41	39	36	37	33	57	55	52	49	55	52	70	66	71	68	73	70	75	71
7..	--	--	50	46	47	43	40	37	35	33	61	57	52	48	61	55	71	67	70	67	73	69	75	72
8..	--	--	47	43	46	45	40	39	37	33	62	57	51	47	66	59	69	65	71	66	73	69	75	72
9..	--	--	45	43	46	42	39	36	38	37	57	47	51	47	65	61	69	66	71	67	73	70	75	72
10..	--	--	49	45	42	38	37	33	41	37	47	44	50	47	61	58	70	67	70	65	73	71	75	72
11..	--	--	49	45	40	38	36	33	42	39	47	45	52	47	58	57	72	69	69	64	72	69	75	71
12..	--	--	45	42	41	39	37	33	44	40	50	45	52	48	57	56	72	67	67	64	73	70	75	71
13..	--	--	46	42	39	34	37	34	44	41	49	48	49	47	59	56	71	68	70	64	73	70	75	72
14..	63	60	47	44	34	33	41	37	44	40	53	49	51	46	61	57	71	67	72	68	73	69	74	71
15..	63	60	49	45	36	33	44	41	47	43	52	49	51	51	63	60	68	64	72	69	71	67	72	69
16..	65	62	50	46	38	36	44	43	47	44	53	51	53	50	65	61	64	62	72	69	72	67	69	63
17..	65	61	52	49	36	34	43	41	47	44	52	47	51	48	65	61	63	59	73	68	73	68	65	62
18..	63	60	51	47	34	32	42	41	45	44	49	43	51	47	63	60	66	61	73	69	73	67	63	61
19..	61	59	47	45	35	32	42	39	48	45	48	43	50	46	64	59	68	63	72	68	70	68	62	61
20..	61	59	47	43	38	35	39	37	48	47	49	47	53	47	65	60	68	65	72	68	70	67	67	62
21..	59	54	49	45	38	37	37	35	47	44	49	45	53	51	65	61	67	62	70	67	69	65	68	65
22..	54	51	48	45	37	32	35	33	45	44	46	45	57	53	64	59	63	61	71	67	70	67	69	64
23..	55	51	50	48	33	32	35	33	48	45	48	46	59	56	65	60	64	63	71	67	70	67	70	66
24..	56	53	51	50	32	32	37	34	48	46	49	47	61	57	64	59	66	63	72	70	69	67	72	68
25..	55	51	51	49	32	32	36	33	49	47	51	46	62	59	64	59	66	64	72	69	68	67	72	68
26..	53	49	50	47	34	32	34	33	48	43	51	47	65	60	63	60	66	63	72	70	68	67	72	67
27..	53	51	49	47	38	34	33	33	46	43	53	49	63	54	60	56	64	61	72	68	70	67	71	67
28..	55	53	50	47	38	36	34	33	49	46	52	50	57	52	61	55	67	63	75	70	72	68	69	64
29..	55	53	53	50	39	38	35	33	--	--	54	49	57	52	62	57	70	65	75	71	73	70	66	62
30..	55	53	51	45	40	39	37	33	--	--	53	51	56	51	65	59	71	66	75	71	73	70	65	61
31..	55	53	--	--	40	37	36	34	--	--	51	48	--	--	65	59	--	--	75	71	74	71	--	--
Aver.	--	--	50	46	39	36	38	36	43	40	51	48	54	50	62	58	68	64	72	68	72	69	71	68

2-1165. YADKIN RIVER AT YADKIN COLLEGE, N. C.

LOCATION.--At gaging station at bridge on U. S. Highway 64, 1-1/2 miles south of Yadkin College, Davidson County, and 6-1/4 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 1961.
Water temperatures: October 1943 to September 1944, October 1950 to September 1951, October 1955 to September 1961.
Sediment records: January 1951 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 58 ppm Nov. 1-30; minimum, 39 ppm Apr. 1-30.
Hardness: Maximum, 16 ppm Nov. 1-30, Dec. 1-31; minimum, 12 ppm June 1-30, Aug. 1-31.
Specific conductance: Maximum daily, 80 micromhos Oct. 6; minimum daily, 34 micromhos Feb. 27.
Water temperatures: Maximum, 80°F July 2; minimum, freezing point Dec. 23, 24, Jan. 25, 27, 28.
Sediment concentrations: Maximum daily, 1,540 ppm Mar. 9; minimum daily, 12 ppm Dec. 10.
Sediment loads: Maximum daily, 52,700 tons Mar. 9; minimum daily, 47 tons Dec. 10.
EXTREMES, 1943-44, 1950-61.--Dissolved solids (1943-44, 1950-51, 1955-61): Maximum, 85 ppm Nov. 1-10, 1950; minimum, 32 ppm Mar. 21-31, 1944.
Hardness (1943-44, 1950-51, 1955-61): Maximum, 26 ppm Mar. 6, 1959; minimum, 10 ppm July 11-20, 1944, Sept. 1-4, 7-10, 1959.
Specific conductance (1955-61): Maximum daily, 136 micromhos Aug. 17, 1956; minimum daily, 28 micromhos Apr. 29, 1958.
Water temperatures (1943-44, 1950-51, 1955-61): Maximum, 88°F Aug. 24, 1959; minimum, freezing point on many days during winter months.
Sediment concentrations (1951-61): Maximum daily, 2,970 ppm May 26, 1952; minimum daily, 1 ppm Dec. 3, 1953.
Sediment loads (1951-61): Maximum daily, 108,000 tons Jan. 23, 1954; minimum daily, 3 tons Dec. 3, 1953.
REMARKS.--Records of specific conductance of samples collected from October 1955 to September 1961 and records of suspended matter of composite samples from October 1943 to September 1944, October 1950 to September 1951 available in district office at Raleigh, N. C.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....	2,108	15	0.04	3.7	1.3	4.2	1.6	23	2.0	4.0	0.0	2.0	45	14	0	62	7.4	22
Nov. 1-30.....	1,698	14	.03	4.2	1.2	4.8	1.7	24	5.2	3.5	.1	1.3	58	16	0	56	7.4	15
Dec. 1-31.....	1,748	14	.03	3.6	1.6	4.3	1.3	23	1.6	3.0	.1	2.0	57	16	0	55	6.9	12
Jan. 1-31, 1961.....	2,328	13	.06	4.0	.9	2.6	.6	20	.5	2.3	.1	2.5	40	14	0	52	6.7	25
Feb. 1-28.....	4,795	12	.07	3.4	1.1	4.3	.5	18	4.2	2.8	.1	2.9	51	13	0	50	7.3	10
Mar. 1-31.....	4,636	12	.09	3.3	1.2	3.3	1.2	16	3.0	2.2	.1	.7	40	13	0	47	7.2	20
Apr. 1-30.....	4,884	12	.09	3.3	1.5	3.1	1.5	16	3.8	2.3	.1	.9	39	14	1	46	7.0	20
May 1-31.....	3,234	12	.07	3.8	1.2	3.9	1.2	19	3.2	3.0	.1	1.3	41	14	0	49	7.2	10
June 1-30.....	3,473	13	.00	2.7	1.3	3.7	1.4	17	6.2	2.0	.1	1.8	44	12	0	47	7.2	20
July 1-31.....	2,464	14	.04	3.4	1.5	3.4	1.7	21	3.2	1.6	.1	1.6	a41	14	0	50	7.0	20
Aug. 1-31.....	2,973	13	.01	3.4	.8	3.6	2.0	17	4.8	3.1	.2	2.1	42	12	0	47	7.2	5
Sept. 1-30.....	1,682	14	.05	3.4	1.4	4.2	1.8	21	4.0	3.8	.0	2.0	46	14	0	56	6.9	15
Time-weighted average.....	2,988	13	0.05	3.5	1.3	3.8	1.4	20	3.5	2.8	0.1	1.8	45	14	0	51	--	16

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 1960 to September 1961
(Once-daily measurement between 6:15 a.m. and 5 p.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	65	55	42	41	34	46	51	59	68	69	--	74
2..	65	55	39	39	35	45	52	59	71	80	75	72
3..	66	53	36	38	--	45	49	60	74	78	75	75
4..	65	52	48	37	33	50	50	59	75	75	72	75
5..	65	52	39	37	33	56	47	59	74	76	71	75
6..	66	55	39	37	33	48	52	57	73	77	72	71
7..	56	46	41	41	33	60	51	64	75	75	70	74
8..	65	45	40	40	35	61	50	60	75	75	70	73
9..	63	44	39	38	36	53	51	68	77	74	70	74
10..	63	46	34	36	38	48	50	67	75	74	70	75
11..	62	44	37	34	36	45	50	66	78	72	69	73
12..	64	45	38	34	42	46	50	65	76	71	74	74
13..	63	44	34	35	40	47	50	65	76	70	75	75
14..	62	44	34	40	40	54	50	65	77	69	70	74
15..	65	47	34	45	40	50	52	65	78	69	70	65
16..	66	50	37	41	44	53	50	67	69	65	70	65
17..	64	52	38	43	42	50	54	68	66	64	69	65
18..	63	46	36	40	46	47	53	65	69	60	70	60
19..	64	50	34	40	47	44	50	67	68	--	69	59
20..	64	50	35	35	49	48	50	65	70	--	65	63
21..	53	49	38	35	45	47	51	67	70	--	65	64
22..	56	46	33	33	45	44	50	67	69	--	65	64
23..	56	49	32	--	46	45	61	65	70	--	67	66
24..	57	48	32	33	46	47	50	67	70	--	69	70
25..	52	52	33	32	52	50	60	67	70	--	68	71
26..	49	50	36	--	49	51	60	69	70	--	68	70
27..	52	50	35	32	50	52	64	62	68	--	68	64
28..	53	49	36	32	47	55	56	62	67	--	68	66
29..	53	50	36	33	--	55	57	62	67	--	71	65
30..	56	47	39	33	--	58	57	64	70	74	73	64
31..	54	--	38	33	--	55	--	--	--	74	71	--
Average	60	49	37	37	41	50	53	64	72	--	70	69

PEE DEE RIVER BASIN--Continued

2-1165. YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Suspended sediment, water year October 1960 to September 1961

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	2170	98	574	2120	82	469	1580	25	107
2	1840	82	407	2270	75	460	1490	16	64
3	1800	92	447	1980	52	278	1490	16	64
4	2750	618	S4790	1760	35	166	1490	16	64
5	2170	200	1170	1710	30	139	1530	15	62
6	2950	334	S2810	1710	30	139	1530	15	62
7	2750	277	2060	1760	30	143	1490	13	52
8	2320	148	927	1620	24	105	1490	13	52
9	2750	135	1000	1620	24	105	1450	13	51
10	2950	160	1270	1710	24	111	1450	12	47
11	2650	142	1020	1760	24	114	1660	33	148
12	2270	93	570	1710	24	111	3550	268	S2600
13	2030	76	417	1660	24	108	3550	231	S2230
14	1840	62	308	1710	24	111	2220	110	659
15	1800	63	306	1620	24	105	1940	62	325
16	1800	80	389	1620	24	105	1940	36	189
17	2030	74	406	1660	24	108	1800	26	126
18	1800	107	520	1580	24	102	1660	20	90
19	1760	120	570	1580	34	145	1660	20	90
20	1890	120	612	1580	24	102	1620	16	70
21	2550	210	1450	1620	24	105	1760	20	95
22	2460	128	850	1580	24	102	1660	28	125
23	1940	95	498	1580	24	102	1450	30	117
24	1890	56	286	1710	24	111	1280	38	131
25	1760	56	266	1710	24	111	1410	42	160
26	1660	46	206	1620	24	105	1710	39	180
27	1660	46	206	1620	24	105	1840	29	144
28	1710	38	175	1660	24	108	1660	19	85
29	1840	42	209	1580	24	102	1620	19	83
30	1800	44	214	1530	25	103	1580	25	107
31	1760	47	223	--	--	--	1620	25	109
Total	65350	--	25156	50950	--	4280	54180	--	8488

Day	JANUARY			FEBRUARY			MARCH		
1	2680	242	S1880	1890	70	357	4820	255	3320
2	2750	137	1020	1800	65	316	4160	225	2530
3	2320	72	451	1800	60	292	3650	210	2070
4	1940	54	283	1800	57	277	3350	140	1270
5	1800	30	146	1840	55	273	3150	120	1020
6	1710	30	139	1800	54	262	3050	105	865
7	1660	22	99	1760	46	219	2950	105	836
8	1660	22	99	3520	330	S3170	4600	325	S5980
9	1660	20	90	4050	272	2970	12500	1540	S52700
10	1530	26	107	3150	138	1170	6560	735	S13300
11	1490	26	105	2850	78	600	4490	400	4850
12	1490	26	105	2950	100	796	3750	224	2270
13	1530	17	70	2950	94	749	3450	125	1160
14	1580	21	90	2950	72	573	3750	210	2130
15	2080	61	5367	2750	58	431	3950	200	2130
16	5830	359	S6030	2650	59	422	3450	130	1210
17	5810	319	S5080	2550	52	358	3050	120	988
18	3950	179	1910	2460	50	332	2850	105	808
19	3150	118	1000	6780	859	S16700	3050	90	741
20	3350	205	1850	4710	410	5210	3450	115	1070
21	2750	87	646	4710	424	5390	5160	576	S12000
22	2270	77	472	5700	290	4460	14600	988	S39100
23	1980	30	160	9760	906	S31100	8820	492	S10500
24	2030	38	208	14800	1280	S52500	5700	270	4160
25	1980	38	203	9460	727	S18500	4710	225	2860
26	1900	38	195	16000	890	S38700	3950	190	2030
27	1700	70	321	10800	602	S18300	3650	135	1330
28	1700	110	505	6030	340	5540	3350	100	904
29	1900	133	682	--	--	--	3250	105	921
30	2000	110	594	--	--	--	3050	95	782
31	1980	130	695	--	--	--	3450	237	S2600
Total	72160	--	25602	34270	--	209967	43720	--	178435

E Computed by subdividing day.

PEE DEE RIVER BASIN--Continued

2-1165. YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Suspended sediment, water year October 1960 to September 1961--Continued

Day	APRIL			MAY			JUNE		
	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	6360	363	S6100	2750	67	497	2120	65	372
2	6250	170	2870	3150	75	638	2030	60	329
3	4600	185	2300	3350	75	678	2030	50	274
4	5810	518	S8430	2950	65	518	1890	45	230
5	4050	165	1800	2650	55	394	1940	60	314
6	3550	95	911	2650	60	429	2220	160	959
7	3250	85	746	2650	50	358	2650	135	966
8	3050	80	659	2650	45	322	2360	230	1470
9	3050	210	S1967	2550	45	310	2220	135	809
10	11400	1170	S33600	2650	50	358	2170	105	615
11	9170	663	S17000	3050	110	906	2320	115	720
12	5260	330	4690	6820	728	S15900	3350	455	S4210
13	7640	798	S17100	8620	1230	S30800	3050	400	3290
14	7280	502	S10100	5700	505	7770	2650	216	1550
15	5370	255	3700	4380	255	3020	2550	280	1930
16	5590	301	S4580	3750	175	1770	3820	403	S4460
17	8000	509	S11100	3550	140	1340	3750	426	S4740
18	5590	370	5580	3150	120	1020	2750	245	1820
19	4600	200	2480	2950	120	956	2410	150	976
20	4160	125	1400	2850	105	808	2220	125	749
21	3750	120	1220	2750	155	1150	5370	1200	S21600
22	3650	105	1030	2650	125	894	12800	1180	S40500
23	3550	80	767	2550	90	620	8480	632	S14800
24	3450	65	605	2460	85	565	5260	470	6670
25	3250	70	614	2360	80	510	3950	320	3410
26	3150	70	595	2410	85	553	3550	235	2250
27	3050	65	535	2950	200	1590	4270	342	S3960
28	2950	85	677	2550	110	757	4010	302	3270
29	2950	80	637	2360	85	542	3150	190	1620
30	2750	55	408	2220	65	390	2850	132	1020
31	--	--	--	2170	75	439	--	--	--
Total	46530	--	144201	260	--	76802	4190	--	123883

Day	JULY			AUGUST			SEPTEMBER		
	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	2650	98	701	1840	138	686	2220	156	935
2	2460	110	731	1710	116	536	2120	131	750
3	2460	94	624	2030	167	915	2080	100	562
4	2410	130	846	2270	231	1420	2080	96	539
5	2220	110	659	3650	340	S3790	3080	343	S3270
6	2080	75	421	3750	505	S5970	2030	653	3580
7	2320	137	S890	3450	579	5390	1940	219	1150
8	2410	138	898	2950	639	S5260	1890	159	811
9	2410	93	605	3150	484	S4280	1760	103	489
10	2170	88	516	2550	334	2300	1710	88	406
11	1940	90	471	2360	188	1200	1710	78	360
12	1840	72	358	2950	229	S1900	1620	80	350
13	2120	100	572	2550	275	1890	1530	72	297
14	2270	92	564	2080	200	1120	1490	71	286
15	2650	108	773	1840	148	735	1490	63	253
16	2460	180	1200	1660	125	560	1380	60	224
17	2850	185	1420	1620	92	402	1380	52	194
18	2460	208	1380	1580	88	375	1380	46	171
19	2120	131	750	2650	277	S2530	1380	46	171
20	2080	117	657	2410	410	2670	1450	46	180
21	2650	158	1130	2460	364	2420	2270	234	S1510
22	2850	271	2090	2550	396	S2940	1800	225	1090
23	3750	540	5470	2750	488	3620	1490	79	318
24	3050	471	3880	4600	471	S5850	1380	52	194
25	2950	505	S4200	5260	642	S9300	1410	47	179
26	2750	518	3850	5480	861	S12800	1340	50	181
27	2550	337	S2350	6360	778	S13500	1340	52	188
28	2750	240	1780	4600	709	S8980	1310	48	170
29	2550	319	S2250	3150	270	2300	1240	40	134
30	2170	176	1030	3350	228	2060	1170	40	126
31	1980	153	818	2550	244	1680	--	--	--
Total	76380	--	43884	92160	--	109379	50470	--	21068

Total discharge for year (cfs days)..... 1096620
Total load for year (tons)..... 977145

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 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	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	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		
June 22, 1961.....	1835			14,100	1,170	32	38	52	65	77	82	94	99	100			SBWC

PEE DEE RIVER BASIN--Continued

2-1180. SOUTH YADKIN RIVER NEAR MOCKSVILLE, N. C.

LOCATION.--At gaging station at highway bridge 1 mile upstream from Little Creek, 4 miles downstream from Fifth Creek, 4-1/2 miles upstream from Hunting Creek, and 6-1/2 miles southwest of Mocksville, Davie County.
DRAINAGE AREA.--313 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1954, October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
Sediment records: January 1958 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 158 ppm June 3-11; minimum, 35 ppm Apr. 1-30.
Hardness: Maximum, 103 ppm June 3-11; minimum, 15 ppm Mar. 1-31, Apr. 1-30, May 1-31, Aug. 1-31.
Specific conductance: Maximum daily, 239 micromhos June 7; minimum daily, 37 micromhos Feb. 26, Mar. 22, Apr. 10.
Water temperatures: Maximum, 78°F Aug. 15, Sept. 9-12; minimum, freezing point Feb. 3.
Sediment concentrations: Maximum daily, 1,140 ppm Feb. 23; minimum daily, 10 ppm Dec. 30, Jan. 11.
Sediment loads: Maximum daily, 4,980 tons Feb. 23; minimum daily, 6 tons Dec. 8, 23, 24, 30, Jan. 11.
EXTREMES, 1958-61.--Dissolved solids (1960-61): Maximum, 158 ppm June 3-11, 1961; minimum, 35 ppm Apr. 1-30, 1961.
Hardness (1960-61): Maximum, 103 ppm June 3-11, 1961; minimum, 15 ppm Mar. 1-31, Apr. 1-30, May 1-31, Aug. 1-31, 1961.
Specific conductance (1960-61): Maximum daily, 239 micromhos June 7, 1961; minimum daily, 37 micromhos Feb. 26, Mar. 22, Apr. 10, 1961.
Water temperatures (1960-61): Maximum, 78°F Aug. 15, Sept. 9-12, 1961; minimum, freezing point Feb. 3, 1961.
Sediment concentrations: Maximum daily, 1,500 ppm Aug. 5, 1959; minimum daily, 5 ppm Nov. 23, 1958.
Sediment loads: Maximum daily, 8,600 tons Apr. 29, 1958; minimum daily, 2 tons Nov. 23, 1958.
REMARKS.--Records of specific conductance of samples collected from October 1960 to September 1961 available in district office at Raleigh, N. C.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....	298	16	0.10	4.1	1.6	2.8	1.4	26	0.8	3.0	0.0	0.8	46	16	0	64	7.4	10
Nov. 1-9.....	256	16	.07	4.2	1.9	3.0	1.5	28	.4	2.5	.1	.7	50	18	0	48	6.8	25
Nov. 10.....	259	--	--	--	--	--	--	34	--	--	--	--	--	--	--	70	7.5	--
Nov. 11-30.....	234	16	.18	3.7	2.0	2.9	1.3	26	2.4	2.2	.1	.7	48	17	0	44	7.2	25
Dec. 1-31.....	245	16	.00	4.2	1.4	3.4	1.2	24	1.2	2.3	.0	1.2	45	16	0	49	7.5	10
Jan. 1-31, 1961.....	279	15	.12	3.6	2.0	3.2	1.1	24	1.2	1.5	.1	1.3	42	17	0	47	7.1	25
Feb. 1-28.....	608	13	.00	3.6	1.6	3.0	1.4	20	1.1	1.4	.1	2.0	a37	16	0	46	7.4	10
Mar. 1-31.....	547	13	.19	3.5	1.5	2.2	1.3	18	4.6	1.2	.1	1.3	54	15	0	45	6.9	35
Apr. 1-30.....	618	13	.03	3.0	1.8	2.3	1.1	20	1.4	1.8	.1	.2	a35	15	0	43	7.1	8
May 1-31.....	350	15	.06	4.0	1.1	3.0	1.2	24	2.0	2.0	.0	.8	44	15	0	49	6.9	10
June 1-2.....	250	16	.06	3.8	1.5	2.6	1.1	23	2.4	--	.1	.4	--	16	0	44	7.4	30
June 3-11.....	243	27	.04	22	12	11	1.7	130	9.0	7.8	.0	.9	158	103	0	250	8.0	5
June 12-30.....	376	15	.20	3.5	1.7	2.6	1.5	23	4.0	1.2	.1	.6	47	16	0	47	6.7	15
July 1-31.....	310	16	.31	4.0	1.4	2.7	1.6	25	3.8	1.5	.1	.5	53	16	0	50	7.2	20
Aug. 1-31.....	389	14	.01	4.0	1.3	3.1	1.9	22	1.8	2.1	.0	1.3	43	15	0	49	7.3	5
Sept. 1-30.....	191	17	.01	4.6	2.1	2.9	1.6	27	2.2	3.0	.0	.8	a47	20	0	54	6.5	5
Time-weighted average.....	365	15	0.09	4.3	1.9	3.1	1.4	26	2.3	2.1	0.1	1.0	48	18	0	54	--	15

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 1960 to September 1961
(Once-daily measurement between 7:30 a.m. and 9 p.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.	--	55	41	37	35	50	--	58	68	--	74	70
2.	--	53	39	38	33	50	--	62	69	67	74	70
3.	--	53	39	37	32	48	50	65	70	68	74	70
4.	--	52	40	36	33	58	48	60	70	70	74	72
5.	--	52	39	36	35	60	50	65	70	68	74	72
6.	--	53	38	36	34	60	51	66	71	70	74	72
7.	--	48	41	37	35	61	52	66	70	70	71	72
8.	--	44	45	38	38	60	50	67	67	70	72	72
9.	--	46	44	39	39	55	50	68	70	67	72	78
10.	--	44	43	39	40	50	51	67	--	68	72	78
11.	--	43	38	39	42	50	50	65	69	68	72	78
12.	--	42	37	--	43	48	48	65	70	68	64	78
13.	--	43	35	38	42	52	51	66	67	68	--	72
14.	--	45	36	40	45	52	50	65	68	72	74	73
15.	64	44	36	--	45	54	53	66	70	72	78	72
16.	62	48	37	45	--	55	54	66	68	72	70	72
17.	64	50	38	45	--	52	55	66	68	72	70	72
18.	63	48	37	43	45	45	50	65	65	70	70	70
19.	62	50	36	43	47	55	55	66	68	72	68	70
20.	63	57	38	42	49	50	55	67	66	72	68	70
21.	63	50	36	40	50	46	55	68	65	72	68	70
22.	54	48	34	38	50	45	55	67	--	72	68	70
23.	54	46	36	35	52	48	55	66	69	74	68	68
24.	54	43	37	35	50	50	60	65	68	76	68	68
25.	53	48	38	34	--	53	67	66	68	74	70	65
26.	51	49	36	33	50	50	70	66	68	76	68	68
27.	54	50	36	33	--	55	55	67	66	72	68	68
28.	53	51	37	34	--	58	55	67	66	76	68	68
29.	55	54	36	35	--	56	--	68	66	74	68	68
30.	53	47	35	36	--	55	60	68	67	74	70	68
31.	53	--	35	36	--	54	--	67	--	74	70	--
Average	--	49	38	38	42	53	54	66	68	71	71	71

PEE DEE RIVER BASIN--Continued

2-1180. SOUTH YADKIN RIVER NEAR MOCKSVILLE, N. C.--Continued

Suspended sediment, water year October 1960 to September 1961

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	273	57	42	315	44	37	223	11	7
2	248	51	34	290	39	31	218	14	8
3	256	72	S53	262	22	16	215	14	8
4	435	243	S287	248	18	12	215	13	8
5	318	160	137	245	15	10	218	13	8
6	390	218	238	242	13	8	218	13	8
7	405	300	328	237	11	7	218	15	9
8	390	288	S316	231	11	7	218	11	6
9	420	163	185	237	14	9	215	12	7
10	375	108	109	259	15	10	212	12	7
11	329	75	67	262	14	10	270	59	S46
12	298	50	40	248	14	9	525	184	261
13	279	40	30	242	18	12	369	79	79
14	265	37	26	240	22	14	276	19	14
15	284	244	S216	234	21	13	282	18	14
16	273	79	58	234	26	16	268	20	14
17	293	58	46	234	38	24	254	18	12
18	273	74	55	231	30	19	242	14	9
19	254	50	34	231	16	10	237	12	8
20	312	132	111	229	15	9	237	12	8
21	343	188	174	229	20	12	254	11	8
22	279	66	50	226	21	13	248	12	8
23	262	36	25	231	18	11	180	12	6
24	254	28	19	248	24	16	170	14	6
25	242	23	15	240	20	13	230	13	8
26	237	20	13	231	16	10	230	13	8
27	240	22	14	226	15	9	234	12	8
28	254	28	19	226	16	10	229	11	7
29	256	24	17	223	19	11	226	12	7
30	245	21	14	223	18	11	231	10	6
31	242	22	14	--	--	--	242	12	8
Total	9224	--	2786	7254	--	399	7604	--	621

Day	JANUARY			FEBRUARY			MARCH		
1	390	39	41	242	15	10	560	100	151
2	366	11	11	242	13	8	480	76	98
3	301	12	10	237	13	8	420	74	84
4	276	19	14	234	14	9	390	76	80
5	262	18	13	248	15	10	375	84	85
6	254	15	10	237	14	9	363	76	74
7	251	11	7	262	18	13	355	68	65
8	248	11	7	560	209	S311	552	673	S1190
9	240	15	10	542	89	130	870	1070	S2520
10	229	11	7	420	44	50	590	300	478
11	226	10	6	363	32	31	450	145	176
12	220	12	7	338	33	30	405	85	93
13	226	12	7	326	35	31	390	70	74
14	240	43	28	312	32	27	510	135	186
15	349	103	97	301	31	25	420	80	91
16	375	80	81	296	32	26	375	89	90
17	346	51	48	282	32	24	355	60	58
18	312	28	24	375	250	S359	340	44	40
19	301	25	20	965	771	S1990	405	59	65
20	355	38	36	650	312	S557	405	69	75
21	324	20	17	792	323	691	960	456	S1780
22	270	20	15	775	470	983	1820	600	S2960
23	250	19	13	1430	1140	S4980	1160	261	S858
24	290	17	13	1740	550	2580	745	147	296
25	254	11	8	1360	961	S3670	575	108	168
26	230	15	9	1640	800	3540	495	88	118
27	250	21	14	1200	330	1070	450	70	85
28	260	20	14	668	240	433	420	59	67
29	259	14	10	--	--	--	390	56	59
30	242	14	9	--	--	--	372	53	53
31	242	15	10	--	--	--	546	104	S176
Total	8647	--	616	17037	--	21605	16943	--	12393

s Computed by subdividing day.

PEE DEE RIVER BASIN--Continued

2-1180. SOUTH YADKIN RIVER NEAR MOCKSVILLE, N. C.--Continued

Suspended sediment, water year October 1960 to September 1961--Continued

Day	APRIL			MAY			JUNE		
	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	810	265	580	343	28	26	251	60	41
2	605	153	250	390	40	42	248	42	28
3	510	97	134	390	40	42	242	23	15
4	810	649	S1450	343	40	37	234	20	13
5	605	204	333	332	33	30	231	22	14
6	495	82	110	340	29	27	256	24	17
7	435	70	82	332	29	26	276	19	14
8	405	54	59	324	30	26	248	20	13
9	582	81	S192	315	37	31	240	24	16
10	1740	709	S3280	315	32	27	231	22	14
11	1520	369	S1570	363	46	45	229	22	14
12	792	177	378	635	310	S538	338	310	S292
13	965	410	S1090	635	122	209	282	169	129
14	792	140	299	480	44	57	307	93	77
15	605	118	193	405	40	44	262	81	57
16	745	280	S593	369	42	42	259	89	62
17	745	300	603	340	48	44	248	88	59
18	575	129	200	324	40	35	231	88	55
19	510	65	90	321	50	43	220	87	52
20	465	62	78	312	70	59	215	85	49
21	435	53	62	301	72	59	565	663	S1300
22	420	46	52	290	52	41	1300	598	S2070
23	405	44	48	287	44	34	590	265	S440
24	390	43	45	279	44	33	372	112	112
25	390	45	47	270	45	33	312	140	118
26	375	42	43	287	49	38	312	135	114
27	360	41	40	405	65	71	375	162	164
28	363	37	36	307	40	33	355	120	115
29	346	29	27	279	43	32	310	93	78
30	338	28	26	265	42	30	282	80	61
31	--	--	--	259	47	33	--	--	--
Total	18533	--	11990	10837	--	1867	9821	--	5603

Day	JULY			AUGUST			SEPTEMBER		
	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	262	70	50	324	382	334	290	111	87
2	251	95	64	324	517	452	254	130	89
3	268	138	100	284	252	193	240	110	71
4	240	90	58	450	558	S800	240	65	42
5	223	83	50	496	447	S695	234	53	33
6	215	85	49	1030	1130	S3280	218	47	28
7	517	376	S932	480	315	408	207	42	23
8	792	915	S2230	355	115	110	202	45	25
9	349	180	170	304	95	78	199	46	25
10	273	101	74	282	104	79	197	44	23
11	248	80	54	352	224	S236	191	40	21
12	251	89	60	355	208	199	189	42	21
13	279	89	67	298	112	90	184	42	21
14	308	161	S175	256	85	59	181	45	22
15	420	430	488	234	87	55	181	34	17
16	340	339	311	223	184	111	176	28	13
17	349	472	S512	212	188	108	169	24	11
18	270	218	159	263	213	S167	169	26	12
19	254	105	72	502	234	S379	174	26	12
20	245	91	60	276	208	155	202	26	14
21	231	80	50	312	188	158	194	24	13
22	242	90	59	661	423	S907	176	26	12
23	405	175	191	635	582	S1000	167	26	12
24	265	120	86	405	307	336	162	28	12
25	262	138	98	425	241	S300	157	26	11
26	245	110	73	575	356	S573	159	27	12
27	593	646	S1160	451	234	S288	167	25	11
28	318	553	475	411	180	S219	157	23	10
29	254	165	113	304	158	130	153	25	10
30	237	264	169	290	98	77	153	48	20
31	218	289	170	276	155	116	--	--	--
Total	9624	--	8379	12045	--	12092	5742	--	733

Total discharge for year (cfs-days)..... 133311
Total load for year (tons)..... 79084

s Computed by subdividing day.

PEE DEE RIVER BASIN--Continued

2-1180. SOUTH YADKIN RIVER NEAR MOCKSVILLE, N. C.--Continued

Particle-size analyses of suspended sediment, 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	Sampling point	Water temperature (°F)	Discharge (cfs)	Sediment concentration (ppm)	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		
Mar. 22, 1961.....	1425			1,780	486	41	46	54	61	68	73	83	91	96	100		SBWC

2-1256.81. ROCKY RIVER AT GADDY , NEAR NORWOOD, N.C.

LOCATION.--At bridge on county road, 2 miles upstream from gaging station, half a mile downstream from Cribs Creek and 5-1/2 miles southwest of Norwood, Stanly County.
DRAINAGE AREA.--1,231 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1961.
Water temperatures: October 1955 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 365 ppm Sept. 12-30; minimum, 53 ppm Feb. 21-28.
Hardness: Maximum, 56 ppm Sept. 12-30; minimum, 19 ppm Feb. 21-28.
Specific conductance: Maximum daily, 742 micromhos Sept. 30; minimum daily, 56 micromhos Feb. 21.
Water temperatures: Maximum, 88°F Aug. 1; minimum, 34°F Dec. 23, 24, Jan. 26, Feb. 3.
EXTREMES, 1955-61.--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, 89°F July 22, 1956, June 30, 1959; minimum, freezing point Dec. 17, 18, 22, 1955.
REMARKS.--Records of specific conductance of samples collected from October 1955 to September 1961 and records of suspended matter of composite samples from October 1955 to September 1960 available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960		--	--	--	--	--	--	142	14	46	--	3.2	--	42	0	430	7.9	--
Oct. 2-3		--	--	--	--	--	--	96	32	24	--	1.8	--	39	0	278	7.7	--
Oct. 4		--	--	--	--	--	--	70	21	92	--	7.9	--	38	0	482	7.5	--
Oct. 5-7		--	--	--	--	--	--	78	29	14	--	3.4	--	37	0	217	7.5	--
Oct. 8-12		--	--	--	--	--	--	50	25	13	--	.5	--	31	0	150	6.9	--
Oct. 13-15		--	--	--	--	--	--	89	40	21	--	.7	--	40	0	248	7.2	--
Oct. 16-31		16	0.01	12	4.6	59	5.3	131	19	40	0.2	2.1	230	49	0	362	7.9	15
Nov. 1-7		20	.02	11	5.1	52	5.1	129	20	28	.2	1.8	230	48	0	352	8.0	20
Nov. 8-17		20	.03	12	5.5	70	5.4	150	21	45	.2	2.9	260	53	0	399	7.6	20
Nov. 18-30		16	.03	11	9.0	62	5.1	143	10	41	.2	2.1	240	50	0	358	7.6	25
Dec. 1-2		5.9	.02	12	5.4	41	4.1	116	12	31	.2	.7	a169	52	0	291	7.0	--
Dec. 3-12		17	.03	11	4.9	63	5.0	143	13	43	.2	2.4	251	48	0	402	8.2	25
Dec. 13-16		16	.14	8.7	3.6	22	3.4	56	15	17	.1	1.2	a115	36	0	180	7.2	--
Dec. 17-21		17	.10	10	4.2	55	4.4	106	27	32	.2	2.1	206	42	0	312	7.6	20
Dec. 22-31		18	.13	10	4.3	36	3.4	89	15	22	.2	4.0	162	42	0	242	8.0	25
Jan. 1-5, 1961		13	.06	7.1	3.4	14	2.5	44	13	10	.2	.1	87	32	0	129	6.9	10
Jan. 6-15		17	.07	9.6	4.3	42	3.3	92	21	26	.2	.6	175	42	0	261	7.2	10
Jan. 16-19		15	.03	7.6	3.5	16	2.6	46	12	12	.1	.0	a92	33	0	142	7.3	--

a Calculated from determined constituents.

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 1960 to September 1961--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			
Jan. 20-31, 1961....		16	0.00	8.9	5.4	36	2.0	88	17	21	0.2	0.7	167	44	0	236	7.2	10
Feb. 1-7.....		15	.06	9.7	4.1	32	2.7	74	16	21	.2	1.2	a139	41	0	212	7.8	10
Feb. 8-14.....		11	.23	6.3	2.8	11	2.0	30	13	9.5	.1	1.6	80	28	3	112	7.2	30
Feb. 15-17.....		16	.03	9.1	2.5	21	2.3	57	11	16	.1	.1	a106	33	0	168	7.5	--
Feb. 18-20.....		8.7	.10	5.7	2.0	8.9	2.0	24	10	8.8	.2	1.1	a60	22	3	97	7.3	--
Feb. 21-28.....		7.7	.08	4.1	2.2	4.9	1.6	17	8.8	4.0	.1	1.3	53	19	5	68	7.0	35
Mar. 1-16.....		14	.14	6.7	2.8	15	1.9	42	11	12	.1	1.0	86	28	0	138	7.6	35
Mar. 17-20.....		14	.09	7.5	3.6	23	2.1	62	11	14	.1	.4	a107	34	0	180	7.1	--
Mar. 21-24.....		9.4	.25	4.9	2.0	6.2	1.4	20	6.6	5.0	.1	.9	a47	20	4	78	7.1	--
Mar. 25-31.....		13	.04	6.5	2.6	14	1.8	40	9.8	10	.1	.1	85	26	0	124	7.2	10
Apr. 1-4.....		12	.23	5.8	2.1	7.2	1.3	28	7.6	4.9	.1	.8	a56	24	0	93	7.6	--
Apr. 5-8.....		14	.26	6.1	3.4	15	1.6	46	9.0	11	.1	.2	a84	29	0	141	7.9	--
Apr. 9-19.....		10	.19	4.7	2.4	6.4	1.3	24	9.4	5.7	.1	1.2	58	22	2	80	7.2	35
Apr. 20-26.....		14	.04	6.7	3.0	15	1.6	46	11	11	.1	.7	88	28	0	140	7.7	15
Apr. 27-30.....		17	.15	7.4	2.8	22	2.0	57	11	17	.1	.3	a108	30	0	167	7.8	--
May 1-10.....		16	.08	8.6	4.1	30	2.7	75	12	22	.2	1.1	136	38	0	227	7.8	15
May 11-16.....		13	.02	5.9	2.6	8.1	1.7	30	8.0	5.7	.1	1.9	a62	25	0	96	7.3	45
May 17-21.....		17	.02	7.5	3.5	22	2.3	58	11	13	.2	1.4	a107	34	0	180	7.6	17
May 22-26.....		18	.08	9.1	3.8	31	2.8	76	11	23	.2	1.2	a138	39	0	240	7.6	15
May 27-31.....		15	.06	11	3.6	38	3.4	92	12	28	.2	.7	a158	42	0	270	7.8	15
June 1.....		--	--	11	6.4	--	--	86	--	14	--	--	--	55	0	180	7.9	--
June 2-11.....		19	.01	9.6	4.6	46	3.4	97	19	29	.2	1.8	a181	43	0	290	8.0	30
June 12-16.....		11	.17	6.9	2.6	15	2.9	39	10	10	.2	4.0	93	28	0	145	6.8	50
June 17-21.....		17	.07	8.8	3.6	26	3.2	68	13	20	.2	1.5	a127	36	0	218	7.0	30
June 22.....		--	--	12	4.6	--	--	116	--	30	--	--	--	48	0	304	7.9	--
June 23-30.....		12	.00	5.9	2.7	11	2.2	33	11	8.0	.1	.3	84	26	0	119	7.4	40
July 1-7.....		16	.11	8.7	3.7	16	2.4	54	9.6	13	.2	2.1	113	37	0	159	7.6	25
July 8.....		--	--	6.3	2.1	--	--	26	--	3.6	--	--	--	24	3	80	7.3	--
July 9-13.....		14	.13	8.8	3.0	11	2.3	50	7.2	8.5	.2	1.4	88	34	0	130	7.2	25
July 14-21.....		14	.28	10	4.0	31	3.5	78	12	24	.3	1.9	145	42	0	237	7.6	30
July 22.....		--	--	12	4.7	--	--	127	--	40	--	--	--	48	0	369	7.7	--
July 23-25.....		15	.05	7.4	3.0	21	3.1	52	9.4	16	.4	1.2	115	30	0	164	6.9	37
July 26-30.....		12	.10	8.3	3.6	30	3.7	74	11	24	.3	2.0	131	36	0	225	7.1	20
July 31.....		--	--	12	4.4	--	--	127	--	31	--	--	--	47	0	340	8.1	--
Aug. 1-3.....		13	.03	11	3.4	44	4.4	96	14	28	.1	2.5	a168	40	0	272	8.1	25
Aug. 4-7.....		11	.02	7.4	2.1	28	3.7	60	11	20	.1	2.7	132	28	0	191	7.9	30

Aug. 8-12, 1961.....		16	.03	8.2	3.0	28	3.7	63	10	22	.1	3.0	136	33	0	207	7.8	35
Aug. 13-19.....		9.7	.06	11	4.7	60	5.2	128	16	40	.3	1.5	228	46	0	365	8.1	30
Aug. 20-24.....		10	.02	7.1	2.4	26	3.4	56	11	20	.1	2.6	117	28	0	187	7.7	30
Aug. 25.....		--	--	6.1	2.0	--	--	30	--	7.0	--	--	--	24	0	106	7.4	--
Aug. 26-31.....		15	.01	7.2	3.2	27	3.4	59	11	22	.2	2.7	139	31	0	195	7.5	20
Sept. 1-2.....		17	.01	8.7	3.5	35	3.9	71	15	28	--	--	--	36	0	240	6.9	10
Sept. 3-11.....		14	.01	11	4.6	52	5.0	110	17	38	.2	2.7	208	45	0	339	7.3	10
Sept. 12-30.....		13	.02	14	5.1	112	8.2	217	22	74	.3	2.2	365	56	0	618	7.5	20
Time-weighted average.....		15	0.07	8.9	4.0	36	3.4	83	14	24	0.2	1.6	155	38	0	243	--	24

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 1960 to September 1961
(Once-daily measurement at approximately 5 p.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	74	60	46	43	41	51	57	66	73	79	88	78
2..	70	--	44	43	38	54	55	68	80	82	86	85
3..	75	60	42	40	34	54	54	68	82	82	84	86
4..	76	57	43	40	37	53	53	67	82	84	80	86
5..	73	56	43	40	39	60	56	61	79	84	80	85
6..	74	54	45	41	36	64	58	64	80	83	80	85
7..	70	50	42	43	36	61	59	71	--	78	79	84
8..	77	49	45	41	39	64	60	75	82	77	81	83
9..	70	50	44	41	40	56	58	74	81	78	80	84
10..	67	53	41	40	41	53	56	72	81	78	81	82
11..	70	50	40	40	42	52	57	66	82	76	84	83
12..	70	52	38	40	45	59	55	65	77	79	86	83
13..	71	52	36	40	44	53	55	66	73	82	85	83
14..	73	52	36	46	50	60	56	69	80	82	80	82
15..	71	55	38	46	52	59	56	71	81	83	80	79
16..	73	56	39	42	53	61	58	74	68	85	78	74
17..	72	56	38	43	51	58	58	73	70	86	82	67
18..	72	55	38	43	51	50	57	71	72	83	80	66
19..	70	55	38	45	55	52	57	74	74	83	78	79
20..	69	52	40	43	54	53	60	75	74	84	74	74
21..	78	54	40	40	46	49	51	75	73	85	74	77
22..	64	52	36	37	45	48	61	74	75	87	76	76
23..	63	54	34	39	55	50	69	71	73	87	76	78
24..	65	53	34	43	53	53	71	73	76	86	80	80
25..	62	54	38	39	54	50	73	72	76	87	76	81
26..	65	54	38	34	51	58	73	74	72	87	75	81
27..	64	55	40	35	51	58	64	70	71	85	79	80
28..	--	60	40	37	54	--	66	70	69	83	80	77
29..	62	59	40	40	--	64	65	72	71	84	83	76
30..	62	52	43	40	--	--	66	74	70	86	83	74
31..	58	--	43	40	--	56	--	75	--	87	84	--
Average	69	54	40	41	46	56	60	71	76	83	80	80

PEE DEE RIVER BASIN--Continued

2-1290. PEE DEE RIVER NEAR ROCKINGHAM, N. C.

LOCATION.--At gaging station at bridge on U. S. Highway 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 mouth in Wingah Bay.
DRAINAGE AREA.--6,870 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1946 to September 1948, October 1957 to September 1961.
Water temperatures: October 1946 to September 1948, October 1957 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 66 ppm Jan. 1-31; minimum, 51 ppm Mar. 1-31, May 1-31.
Hardness: Maximum, 21 ppm Jan. 1-31, Feb. 1-18; minimum, 17 ppm Apr. 1-30.
Specific conductance: Maximum daily, 102 micromhos Oct. 8; minimum daily, 52 micromhos Feb. 22.
Water temperatures: Maximum, 76°F Oct. 1-4; minimum, 36°F Feb. 3, 4.
EXTREMES, 1946-48, 1957-61.--Dissolved solids: Maximum, 69 ppm Jan. 1-31, 1959; minimum, 38 ppm Mar. 1-10, 1948.
Hardness: Maximum, 24 ppm Mar. 21-31, 1948, Nov. 17, 1959; minimum, 11 ppm Feb. 1-10, 1958.
Specific conductance (1957-61): Maximum daily, 152 micromhos Nov. 17, 1959; minimum daily, 46 micromhos Feb. 17-19, 1960.
Water temperatures: Maximum, 84°F Aug. 16-19, 1958, Aug. 31, Sept. 1, 1959; minimum, 33°F Feb. 13, 1948.
REMARKS.--Records of specific conductance of samples collected from October 1957 to September 1961 and records of suspended matter of composite samples from October 1946 to September 1948, October 1957 to September 1958 available in district office at Raleigh, N. C.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960.....	4,221	13	0.00	4.9	1.4	7.9	1.7	31	3.2	6.0	0.0	1.4	56	18	0	95	7.5	8
Nov. 1-30.....	3,546	12	.01	4.5	1.7	8.8	2.1	33	6.2	4.5	.1	1.6	a58	18	0	78	6.7	15
Dec. 1-31.....	3,845	13	.03	5.2	1.8	9.9	1.0	35	4.6	6.0	.1	1.6	63	20	0	88	7.5	35
Jan. 1-31, 1961.....	4,335	11	.10	5.1	1.9	8.6	1.8	34	4.0	6.2	.1	2.0	66	21	0	91	7.6	35
Feb. 1-18.....	7,340	14	.03	4.8	2.1	7.3	.9	29	6.0	5.7	.2	3.8	62	21	0	85	7.5	15
Feb. 19-28.....	30,828	8.7	.17	4.2	1.7	5.4	1.5	19	5.8	3.3	.1	1.2	61	18	2	62	7.2	60
Mar. 1-31.....	13,340	11	.14	4.2	1.7	6.0	1.3	23	3.4	4.0	.1	1.1	51	18	0	66	7.0	40
Apr. 1-30.....	14,410	12	.04	4.3	1.5	5.6	1.4	23	8.4	3.7	.1	1.2	57	17	0	70	7.2	10
May 1-31.....	7,637	12	.01	4.9	1.6	6.3	1.3	25	7.0	4.5	.1	1.6	a51	18	0	73	6.8	30
June 1-30.....	6,396	11	.00	4.2	2.0	6.9	1.4	28	6.6	3.5	.1	1.0	58	19	0	72	7.5	30
July 1-31.....	5,239	12	.20	5.3	1.6	6.1	1.6	29	3.8	3.9	.1	1.0	62	20	0	76	7.1	20
Aug. 1-31.....	5,320	10	.04	5.1	1.6	7.4	2.0	31	3.8	5.5	.2	1.2	60	19	0	79	7.3	10
Sept. 1-30.....	5,556	13	.01	4.8	1.7	7.1	2.0	29	4.6	5.2	.1	1.5	61	19	0	76	6.6	5
Time-weighted average.....	7,396	12	0.06	4.8	1.7	7.3	1.6	29	5.1	4.8	0.1	1.5	59	19	0	78	--	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 1960 to September 1961
(Once-daily measurement at approximately 7 a.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1.	76	63	53	42	37	49	54	62	69	66	71	71
2.	76	63	53	42	37	49	55	62	69	66	72	71
3.	76	62	53	41	36	49	55	62	69	66	72	71
4.	76	62	52	41	36	50	55	61	69	67	72	70
5.	75	62	52	41	37	50	55	62	68	68	71	70
6.	75	62	52	42	37	50	56	62	69	68	71	70
7.	75	61	52	42	38	50	56	63	70	69	71	70
8.	75	61	51	42	38	50	55	63	70	68	71	70
9.	75	60	51	43	38	51	56	63	70	68	71	70
10.	74	60	49	43	38	51	56	64	70	69	70	70
11.	74	59	48	42	38	51	56	66	70	69	70	69
12.	74	58	48	42	38	52	55	66	70	69	70	69
13.	74	58	48	42	38	52	55	67	70	68	70	69
14.	74	58	47	42	39	52	55	67	70	68	70	69
15.	73	58	47	42	40	53	55	67	70	68	70	69
16.	73	57	45	42	40	52	56	66	70	68	70	69
17.	73	57	45	43	41	52	56	66	70	69	70	68
18.	72	57	45	43	41	52	56	65	70	69	70	69
19.	71	57	45	42	43	53	57	65	69	70	70	68
20.	71	56	44	42	44	53	57	66	69	70	70	68
21.	69	56	44	42	45	53	58	66	69	70	70	67
22.	69	56	44	41	46	53	58	67	69	70	70	66
23.	68	56	44	41	47	53	58	67	69	70	70	64
24.	66	55	44	40	47	53	59	67	68	70	70	63
25.	66	55	43	40	48	54	59	67	68	70	70	62
26.	65	55	43	39	48	54	60	68	67	71	70	61
27.	65	54	43	39	48	54	60	68	66	71	70	60
28.	64	54	43	39	48	54	61	68	66	71	70	58
29.	64	54	42	38	--	55	61	69	66	71	70	58
30.	64	53	42	38	--	54	62	69	66	71	70	57
31.	63	--	42	37	--	54	--	69	--	71	71	--
Average	71	58	47	41	41	52	57	65	69	69	70	67

PEE DEE RIVER BASIN--Continued

2-1320. LYNCHES RIVER AT EFFINGHAM, S. C.

LOCATION.--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, November 1960 to Sepember 1961.
Water temperatures: October 1954 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 89°F July 30, 31; minimum, 34°F Dec. 24, 25, Jan. 28.
EXTREMES, 1954-61.--Water temperatures: Maximum, 89°F Aug. 10, 13, 1960, July 30, 31, 1961; minimum, 33°F Mar. 12, 1960.

Chemical analyses, in parts per million, November 1960 to September 1961

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. 1, 1960.....	427	8.3	0.18	2.1	0.5	7.1	0.8	14	3.0	5.8	0.1	0.4	43	7	0	47	7.2	40
Dec. 1.....	654	8.8	.15	2.2	.6	4.2	1.0	11	2.4	6.0	.1	.6	40	8	0	40	6.5	45
Dec. 29.....	676	8.7	.17	2.6	.8	5.7	.9	13	2.8	7.0	.1	.5	44	10	0	47	6.9	30
Feb. 1, 1961.....	788	7.6	.21	1.4	1.2	5.6	.8	14	1.8	6.0	.1	.6	36	8	0	42	6.6	40
Mar. 31.....	2,630	5.8	.24	3.4	2.4	19	1.4	10	7.4	33	.1	1.6	102	18	10	150	6.1	70
May 1.....	1,710	5.3	.52	2.9	1.2	4.7	1.2	15	3.6	5.5	.0	1.0	49	12	0	55	6.4	70
June 1.....	720	7.7	.42	2.2	1.0	5.5	1.0	16	5.8	3.5	.0	.9	44	10	0	49	6.7	60
June 30.....	1,590	6.5	.18	3.0	.7	4.6	1.0	12	4.0	5.0	.1	.6	36	12	2	45	6.4	70
July 31.....	444	8.0	.06	2.2	.9	8.0	1.1	18	4.2	6.1	.0	1.2	44	9	0	71	6.2	35
Aug. 31.....	1,250	8.1	.08	2.6	.7	4.1	1.0	13	2.8	4.5	.0	.2	47	10	0	42	6.4	90
Sept. 29.....	356	8.2	.14	1.9	.6	7.9	.9	20	3.6	4.8	.1	.5	51	8	0	56	6.7	45

PEE DEE RIVER BASIN--Continued

2-1320. LYNCHES RIVER AT EFFINGHAM, S. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
[Continuous ethyl alcohol-actuated thermograph]

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..	75	71	61	58	53	46	45	42	41	37	58	57	65	63	63	62	74	69	79	75	88	84	81	77
2..	73	70	60	56	46	43	44	42	41	39	58	55	64	61	66	63	77	71	81	77	87	83	81	78
3..	74	70	60	57	43	40	44	42	39	36	58	54	62	60	67	63	79	74	82	78	86	82	82	79
4..	73	70	58	54	42	39	42	39	38	35	59	55	60	58	67	63	80	75	78	76	85	80	84	80
5..	72	70	57	53	44	40	41	38	39	36	63	59	59	55	67	64	81	77	80	77	80	79	82	79
6..	73	70	57	54	45	41	42	39	39	37	66	63	59	58	68	65	83	78	81	78	83	79	81	78
7..	73	71	54	51	46	42	42	40	38	38	68	66	60	57	71	67	85	79	83	80	81	78	80	78
8..	72	71	51	49	46	45	42	41	40	38	68	67	60	56	74	70	85	81	81	79	82	78	80	77
9..	71	69	52	49	45	43	42	40	40	39	67	57	59	58	74	72	85	80	80	77	80	78	80	78
10..	69	67	54	52	43	41	40	37	43	39	57	53	61	58	74	70	84	80	80	76	78	76	79	77
11..	70	66	54	51	42	41	38	35	44	40	55	51	61	58	71	70	84	79	79	76	80	77	81	77
12..	70	66	53	50	42	41	41	37	47	42	59	53	60	58	71	69	86	81	80	76	82	78	81	77
13..	70	66	52	49	41	38	41	38	48	45	61	58	59	58	70	68	84	78	83	78	82	80	80	77
14..	69	67	53	50	38	35	44	41	51	47	65	61	60	56	73	68	84	81	84	79	81	79	80	78
15..	69	68	53	50	37	36	47	44	54	51	63	59	60	59	73	70	86	80	84	81	80	77	80	77
16..	71	68	56	52	38	36	47	46	56	52	65	60	62	59	76	72	80	72	85	80	80	76	77	72
17..	71	68	56	55	38	36	46	44	55	52	63	59	61	59	75	72	72	70	84	81	80	75	73	69
18..	71	67	55	55	37	35	46	42	58	54	59	55	61	58	74	71	71	67	81	79	79	76	70	67
19..	71	68	56	54	38	35	45	43	60	57	56	54	60	57	73	71	73	68	80	77	78	75	69	66
20..	71	69	55	51	39	36	44	42	60	59	59	55	60	56	73	71	72	70	83	79	76	74	70	69
21..	69	64	54	51	40	39	42	39	59	54	59	56	60	57	73	71	71	71	82	80	78	73	74	69
22..	64	61	53	50	40	37	39	38	54	52	58	54	63	60	73	71	75	71	83	78	77	75	75	70
23..	61	58	53	52	37	35	38	36	56	53	54	52	67	63	71	69	77	73	85	80	80	75	76	71
24..	62	59	52	52	36	34	42	38	60	56	56	53	70	66	70	66	77	75	86	81	79	76	77	72
25..	61	57	55	52	37	34	42	38	61	58	57	53	73	69	70	67	78	76	87	82	79	77	78	74
26..	58	55	54	51	38	35	38	35	58	53	59	54	73	72	72	70	79	76	88	83	77	75	79	75
27..	59	56	53	52	40	37	35	35	56	52	62	57	72	64	70	66	77	75	87	83	76	75	81	77
28..	59	57	57	53	40	39	35	34	58	54	63	60	65	62	68	64	75	74	86	83	80	76	79	76
29..	59	56	58	56	39	38	37	35	--	--	66	62	65	62	69	64	75	74	88	83	81	78	76	73
30..	59	56	58	53	42	38	38	35	-	--	68	65	63	61	71	67	77	73	89	84	81	79	74	71
31..	58	56	--	--	42	40	40	35	--	--	68	65	--	--	73	68	--	--	89	86	80	78	--	--
Aver.	68	65	55	52	41	39	42	39	50	47	61	57	63	60	71	68	79	75	83	79	81	77	78	75

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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 77°F July 31; minimum, 34°F on several days during December and January.
EXTREMES, 1953-61.--Water temperatures: Maximum, 77°F Aug. 21, 1955, Aug. 1, 2, 1958, July 31, 1961; minimum, 33°F on several days during March 1960.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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			
Feb. 14, 1961.....	259			1.0	0.3	2.0	0.4	3	0.4	2.4		1.5		4	1	19	5.9	
Sept. 15.....	116	5.7	0.16	1.0	.1	2.0	.2	4	.4	3.3	0.0	.9	16	3	0	19	5.8	70

PEE DEE RIVER BASIN--Continued

2-1335. DROWNING CREEK NEAR HOFFMAN, N. C.--Continued

Temperature, °F of water, water year October 1960 to September 1961
(Continuous ethyl alcohol-actuated thermograph)

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..	68	67	60	57	50	45	44	41	38	36	52	50	59	57	61	59	66	63	71	68	76	75	73	72
2..	67	67	59	58	45	42	43	41	38	38	51	48	57	53	65	61	68	67	72	69	76	74	74	72
3..	67	66	58	57	42	40	41	39	38	36	51	47	55	53	63	59	70	67	73	70	75	74	74	72
4..	67	66	57	55	40	38	40	38	36	35	54	48	53	51	61	58	69	68	73	71	74	73	74	73
5..	67	66	55	54	40	39	39	37	37	35	59	54	55	48	60	58	70	68	72	70	73	72	74	73
6..	68	67	55	54	41	40	39	38	36	35	61	58	57	54	60	58	70	68	72	70	73	72	74	72
7..	68	67	54	52	43	41	40	39	36	36	62	60	58	53	64	60	72	70	72	71	73	72	74	72
8..	68	66	52	49	44	43	41	40	38	36	62	60	57	52	68	64	72	70	72	70	74	72	73	72
9..	67	66	50	48	46	42	41	40	37	36	60	53	56	53	69	66	73	70	71	70	73	72	72	71
10..	66	65	53	49	42	40	40	38	39	36	53	49	59	54	68	66	73	72	70	68	73	72	72	71
11..	65	64	53	53	40	40	38	37	40	37	50	47	58	53	67	65	73	71	69	67	74	72	72	70
12..	65	64	53	53	41	39	37	37	43	39	52	48	57	54	66	64	73	71	68	67	75	72	72	70
13..	65	64	53	52	39	35	38	37	44	42	56	52	56	53	64	63	74	72	71	68	74	73	71	70
14..	65	64	52	51	35	34	42	38	46	44	60	56	58	52	66	62	75	72	73	70	74	71	71	70
15..	66	65	52	51	36	34	46	42	48	46	58	54	57	55	67	64	74	70	74	72	72	69	72	70
16..	67	66	55	51	38	36	46	46	48	46	58	55	62	56	70	66	70	66	74	72	70	67	71	67
17..	67	66	57	55	38	37	46	44	48	46	56	52	60	55	69	67	66	64	75	73	69	67	67	64
18..	67	66	57	57	37	36	44	42	51	47	53	49	58	54	69	66	65	62	75	73	70	68	66	63
19..	67	66	57	55	36	36	43	42	54	51	49	48	57	54	67	65	66	63	74	72	69	68	64	63
20..	68	66	55	53	38	36	42	41	54	53	51	48	58	51	67	66	65	64	74	72	69	68	66	64
21..	66	62	53	52	40	38	41	38	53	48	51	49	58	53	67	66	65	65	74	73	69	67	68	66
22..	62	59	52	51	40	36	38	36	48	47	49	48	62	56	67	65	68	65	75	73	69	68	68	66
23..	59	58	52	51	36	34	36	36	50	47	49	47	65	60	65	64	70	67	76	73	70	68	68	66
24..	59	58	53	50	34	34	38	36	52	50	50	48	66	63	65	63	70	69	75	74	71	69	69	67
25..	59	57	50	50	35	34	38	37	54	52	53	48	69	64	64	62	69	68	75	74	71	70	70	68
26..	57	56	50	49	36	35	37	34	52	49	54	48	69	66	65	64	70	69	76	74	71	70	71	68
27..	57	56	49	49	38	36	34	34	51	48	56	51	68	60	65	62	69	68	75	74	71	69	71	69
28..	59	57	52	49	38	38	35	34	52	50	60	55	63	57	62	58	68	67	75	73	72	70	70	69
29..	58	58	54	52	38	38	36	35	--	--	62	57	62	58	63	59	67	67	75	73	73	71	69	66
30..	58	57	54	50	41	38	36	36	--	--	62	58	61	56	64	61	69	66	76	74	74	72	67	65
31..	57	57	--	--	41	40	37	36	--	--	61	58	--	--	64	61	--	--	77	74	73	71	--	--
Aver.	64	63	54	52	40	38	40	38	45	43	55	52	60	55	65	63	70	68	73	71	72	71	71	69

SANTEE RIVER BASIN

2-1435. INDIAN CREEK NEAR LABORATORY, N. C.

LOCATION.--Temperature recorder at gaging station 250 feet upstream from remains of Rudisill Mill dam, 0.5 mile upstream from highway bridge, 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 76°F July 28; minimum, 35°F on several days during December, January, and February.
EXTREMES, 1953-61.--Water temperatures: Maximum, 84°F Aug. 1, 2, 5, 1953; minimum, 33°F on several days during winter months.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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			
Dec. 20, 1960.....	48.4		0.06	3.4	1.8	2.9	1.1	22	0.2	3.6	0.0	1.0		16	0	48	7.0	
June 19, 1961.....	67.5	14	.08	3.8	2.0	2.4	1.7	22	3.4	2.5	.0	.9	42	18	0	54	6.5	7

270-946 O - 67 - 21

SANTEE RIVER BASIN--Continued

2-1435. INDIAN CREEK NEAR LABORATORY, N. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Continuous ethyl alcohol-actuated thermograph)

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..	65	63	55	54	46	42	44	43	40	38	53	49	55	51	58	56	67	63	70	67	--	--	75	73
2..	65	63	55	51	42	39	44	41	41	39	49	47	55	50	61	58	69	65	70	67	--	--	75	72
3..	65	63	54	53	39	37	42	39	39	35	51	46	54	50	61	56	70	66	70	68	--	--	75	72
4..	65	62	53	50	39	37	39	37	38	35	56	49	52	50	59	57	70	67	71	67	--	--	75	73
5..	64	63	51	49	42	39	40	38	39	37	58	56	55	47	59	55	69	66	71	67	--	--	75	73
6..	65	63	51	50	44	42	41	39	39	37	59	58	55	53	58	56	68	66	70	68	--	--	75	73
7..	65	65	50	47	46	43	41	39	38	37	61	59	55	51	64	58	71	67	69	67	--	--	74	70
8..	65	62	47	44	47	45	42	41	42	38	61	59	55	49	67	63	71	68	69	67	72	69	73	72
9..	62	61	45	44	46	42	42	39	42	40	59	49	54	51	67	65	71	68	69	66	72	70	73	72
10..	63	61	51	45	42	39	39	37	42	39	49	45	53	49	65	61	72	69	68	64	72	70	73	71
11..	63	61	51	47	41	39	38	36	44	40	49	46	54	49	61	59	72	69	66	63	74	71	72	71
12..	63	60	47	44	42	40	38	37	47	42	53	47	54	51	61	61	71	68	65	64	74	71	73	71
13..	62	60	47	45	40	37	40	37	47	44	53	51	52	49	63	59	71	68	69	65	74	72	73	71
14..	63	61	48	46	37	35	44	40	48	43	56	53	55	49	65	61	71	67	71	67	73	70	72	71
15..	63	62	49	47	39	36	48	44	50	48	55	50	55	53	66	63	71	65	71	68	71	68	71	67
16..	64	62	54	49	41	39	48	47	50	46	55	53	55	53	67	64	65	61	72	68	69	67	67	63
17..	64	61	55	54	40	37	47	43	49	46	55	49	56	52	67	63	62	61	72	70	70	68	63	61
18..	63	61	54	51	38	36	44	42	49	46	52	45	54	52	65	63	63	59	72	69	70	69	61	60
19..	62	60	51	47	38	36	44	43	52	49	50	44	53	51	67	62	65	61	71	68	70	69	62	60
20..	63	61	49	45	41	37	43	41	52	49	52	49	55	51	67	63	65	63	72	69	69	66	67	62
21..	61	56	49	47	43	41	41	38	49	45	52	47	57	53	65	63	65	64	71	69	68	65	68	67
22..	56	52	49	46	41	35	38	35	47	45	49	47	60	56	65	61	67	65	73	69	69	67	68	65
23..	55	52	51	49	35	35	38	35	49	47	50	48	61	58	63	61	67	65	73	70	70	68	69	66
24..	56	55	51	51	36	35	39	37	51	47	52	49	64	60	63	59	68	65	74	71	71	69	70	68
25..	56	52	52	50	37	36	40	37	53	51	53	48	64	62	63	59	68	65	74	72	71	70	71	68
26..	53	50	51	49	39	35	37	35	51	45	55	49	66	63	63	61	67	64	--	--	71	69	71	69
27..	54	52	50	48	41	39	37	35	51	47	56	51	66	57	62	57	64	63	--	--	71	69	71	69
28..	55	54	52	49	41	40	37	36	53	49	57	55	59	54	60	55	65	63	76	73	73	69	69	65
29..	55	53	57	52	42	40	39	37	--	--	59	54	58	55	62	58	67	64	--	--	73	71	66	63
30..	54	53	55	46	45	42	39	37	--	--	59	56	58	55	63	60	69	65	--	--	74	72	65	63
31..	54	54	--	--	44	41	39	37	--	--	57	53	--	--	64	59	--	--	--	--	74	72	--	--
Aver.	61	59	51	48	41	39	41	39	46	43	54	50	57	53	63	60	68	65	71	68	--	--	70	68

SANTEE RIVER BASIN--Continued

2-1460. CATAWBA RIVER NEAR ROCK HILL, S. C.

LOCATION.--At gaging station at bridge on U.S. Highway 21, 3.5 miles (revised) downstream from Lake Wylie Dam, 5 miles northeast of Rock Hill, York County, and 7.5 miles upstream from Sugar Creek.
DRAINAGE AREA.--3,050 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1957 to September 1961.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960	683	13	0.01	4.2	1.8	5.6	1.6	24	3.6	3.5	0.1	0.5	49	18	0	66	6.5	5
Nov. 16	3,360	11	.02	4.2	1.6	6.2	1.6	25	3.2	5.0	.1	.4	46	17	0	65	7.3	5
Dec. 16	3,610	11	.03	3.7	1.9	6.6	1.4	26	1.2	5.0	.1	.7	50	17	0	68	7.4	5
Jan. 17, 1961	4,460	10	.02	4.5	1.5	7.0	1.4	25	2.2	5.0	.1	.6	48	17	0	72	6.9	5
Feb. 17	3,360	11	.00	4.3	1.5	6.7	1.2	24	8.8	5.5	.0	.2	a51	17	0	69	7.0	8
Mar. 15	5,840	10	.00	3.6	1.5	4.7	1.4	19	6.0	3.5	.0	1.7	41	15	0	57	6.9	8
Apr. 15	10,400	10	.01	3.7	1.5	4.8	1.3	20	6.4	2.7	.0	2.0	46	15	0	57	6.8	10
May 15	6,950	8.8	.01	3.7	1.6	4.3	1.3	21	5.0	4.0	.0	.9	50	16	0	59	6.9	10
June 15	4,350	8.6	.04	3.6	1.7	5.6	1.3	23	6.2	4.5	.0	.5	49	16	0	66	6.7	10
July 16	1,590	9.7	.03	4.4	1.2	5.7	1.7	22	7.0	4.0	.1	.9	48	16	0	64	6.6	17
Aug. 16	4,730	11	.00	3.8	1.4	5.0	1.6	23	5.2	4.2	.1	.3	51	16	0	66	7.0	5
Sept. 16	1,340	11	.00	4.3	1.2	5.9	1.6	23	6.6	4.2	.0	.6	53	16	0	63	6.9	7

a Calculated from determined constituents.

SANTEE RIVER BASIN--Continued

2-1515. BROAD RIVER NEAR BOILING SPRINGS, N. C.

LOCATION.--At gaging station half a mile upstream from Sandy Run Creek, 3 miles downstream from Second Broad River and 3-1/2 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 1961.
Water temperatures: October 1945 to September 1946, October 1956 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 48 ppm Dec. 1-31; minimum, 29 ppm Apr. 1-30, June 20-30.
Hardness: Maximum, 13 ppm Oct. 1-31; minimum, 8 ppm June 20-30.
Specific conductance: Maximum daily, 59 micromhos Oct. 23; minimum daily, 23 micromhos June 21.
Water temperatures: Maximum, 82°F Aug. 1; minimum, 38°F on several days during winter months.
EXTREMES, 1945-46, 1956-61.--Dissolved solids: Maximum, 57 ppm June 1-10, 1957; minimum, 26 ppm Apr. 21-30, 1958.
Hardness: Maximum, 18 ppm Aug. 11-20, 1956; minimum, 8 ppm Jan. 1-10, Feb. 1-10, 1946, Feb. 11-19, 1957, Apr. 1-10, 1958, Feb. 1-29, 1960, June 20-30, 1961.
Specific conductance (1956-61): Maximum daily, 74 micromhos Aug. 13, 1957; minimum daily, 22 micromhos Mar. 30, 1960.
Water temperatures: Maximum, 85°F Aug. 7, 1958; minimum, freezing point Feb. 3, 4, 1946, Feb. 18, 19, 1958, Mar. 3, 1960.
REMARKS.--Records of specific conductance of samples collected from October 1956 to September 1961 and records of suspended matter of composite samples from October 1945 to September 1946, October 1956 to September 1958 available in district office at Raleigh, N. C.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960	1,325	15	0.02	2.7	1.5	2.6	1.0	20	1.6	2.2	0.0	0.7	40	13	0	54	7.4	7
Nov. 1-30	984	15	.01	3.0	.9	2.7	.9	20	1.4	1.5	.1	1.6	39	12	0	37	6.6	10
Dec. 1-31	895	13	.01	3.2	.8	3.7	1.0	19	1.4	1.7	.0	1.3	48	12	0	40	7.4	10
Jan. 1-31, 1961	1,224	14	.02	2.7	1.3	3.7	1.0	16	1.4	2.0	.1	1.4	36	12	0	38	7.4	10
Feb. 1-28	2,218	13	.00	2.9	.9	3.2	1.0	16	.9	1.8	.1	1.5	35	10	0	37	7.2	10
Mar. 1-31	1,882	12	.03	2.9	.7	2.5	.9	15	1.8	1.8	.1	.1	30	10	0	36	7.1	5
Apr. 1-30	2,346	12	.01	2.8	.8	2.2	.8	15	1.2	1.5	.1	.3	a29	10	0	33	7.0	8
May 1-31	1,767	12	.01	3.0	.5	2.9	.8	16	3.2	2.0	.0	.8	36	10	0	36	6.9	8
June 1-19	1,384	14	.02	2.4	1.3	3.5	.8	18	1.2	1.5	.1	.5	37	11	0	40	7.2	10
June 20-30	3,859	9.9	.00	1.9	.8	1.9	.9	13	3.6	.8	.0	.0	29	8	0	31	7.2	10
July 1-31	1,444	14	.01	2.7	.9	2.6	.9	16	4.0	1.1	.1	1.2	38	11	0	38	6.9	15
Aug. 1-31	1,908	13	.01	2.4	.9	2.6	1.1	16	1.4	2.3	.0	1.0	40	10	0	36	7.1	5
Sept. 1-30	1,190	14	.01	2.9	1.1	3.0	1.2	19	2.2	2.3	.1	.9	40	12	0	41	6.7	5
Time-weighted average	1,617	13	0.01	2.8	1.0	2.9	1.0	17	1.9	1.8	0.1	0.9	37	11	0	39	--	9

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 1960 to September 1961
(Once-daily measurement at approximately 7 a.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	66	58	47	42	40	49	53	59	67	71	82	73
2..	67	56	46	42	40	50	52	62	70	71	81	74
3..	68	56	45	43	39	52	50	62	73	71	80	74
4..	69	56	45	42	39	53	50	61	74	72	79	73
5..	69	55	43	43	38	54	52	63	73	73	78	74
6..	68	55	43	43	38	56	54	65	74	74	78	75
7..	65	54	43	42	39	58	53	67	75	74	79	75
8..	66	53	42	42	40	60	52	68	76	73	78	75
9..	65	52	41	42	40	58	50	68	78	74	78	75
10..	66	50	41	41	40	55	50	67	74	74	78	74
11..	67	50	40	42	41	52	52	66	75	73	77	75
12..	68	50	40	42	41	51	52	64	76	74	76	75
13..	67	50	40	42	42	50	50	63	77	75	78	76
14..	66	51	39	43	43	52	51	62	78	74	76	76
15..	65	58	38	44	45	52	52	63	78	73	75	73
16..	66	57	40	45	46	53	53	65	75	73	75	69
17..	65	55	38	43	48	50	54	66	70	73	74	64
18..	64	50	40	44	49	48	55	67	69	74	74	64
19..	66	49	40	41	50	46	56	66	68	74	75	65
20..	65	49	42	43	51	47	55	67	68	75	74	66
21..	65	51	42	41	48	49	56	68	67	76	73	66
22..	64	50	43	40	48	48	57	69	67	76	75	67
23..	64	52	43	39	48	48	58	70	68	77	72	68
24..	63	53	42	38	48	50	62	78	69	78	73	69
25..	62	54	42	39	49	52	64	72	69	78	72	64
26..	60	56	41	39	48	52	62	68	69	79	73	65
27..	58	55	41	39	48	54	60	66	69	80	75	65
28..	57	54	40	38	49	55	59	64	70	80	74	66
29..	57	51	40	39	--	55	58	65	70	81	75	64
30..	58	49	41	40	--	55	57	66	71	80	74	64
31..	57	--	41	40	--	54	--	66	--	81	74	--
Average	64	53	42	41	44	52	55	66	72	75	76	70

SANTEE RIVER BASIN--Continued

2-1555. PACOLET RIVER NEAR FINGERVILLE, S. C.

LOCATION (revised).--At gaging station 100 feet upstream from highway bridge, 0.2 mile downstream from confluence of North Pacolet and South Pacolet Rivers, and 2.8 miles southeast of Fingerville, Spartanburg County.
DRAINAGE AREA.--212 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1952 to September 1953, November 1958 to September 1961.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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, 1960	331	12	0.00	3.4	1.4	3.3	1.2	23	4.0	1.0	0.1	0.4	a38	14	0	48	6.6	5
Nov. 15	286	13	.04	3.7	1.7	3.9	1.3	26	1.2	3.0	.1	.9	42	16	0	51	6.7	5
Dec. 15	213	13	.11	3.4	1.4	8.5	1.4	30	1.6	5.0	.1	1.0	59	14	0	69	6.8	15
Jan. 16, 1961	440	11	.13	3.2	1.0	2.9	1.5	19	1.6	3.0	.0	1.1	39	12	0	42	7.1	5
Feb. 16	368	11	.02	2.2	1.5	4.2	1.2	22	1.8	2.5	.0	1.1	a37	12	0	45	6.9	6
Mar. 15	437	11	.10	2.7	1.0	4.8	1.0	20	2.0	3.0	.0	1.4	47	11	0	47	6.9	25
Apr. 15	590	11	.00	2.4	1.1	4.7	.9	21	1.6	1.5	.0	1.3	a35	10	0	44	7.1	7
May 15	524	9.8	.01	2.8	1.5	2.7	1.0	19	2.0	1.5	.0	1.1	36	13	0	41	6.9	5
June 15	400	11	.01	2.8	.7	9.8	1.4	32	3.4	3.0	.0	.6	51	10	0	68	6.9	5
July 15	442	9.9	.10	3.0	1.0	4.8	1.6	23	2.0	2.5	.0	.7	43	12	0	48	6.7	10
Aug. 15	368	11	.04	3.2	1.1	4.0	1.4	22	1.2	3.0	.0	.7	38	12	0	48	6.6	8
Sept. 16	250	12	.00	2.7	1.2	6.5	1.4	28	1.2	3.0	.0	.4	42	12	0	56	6.9	15

a Calculated from determined constituents.

SANTEE RIVER BASIN--Continued

2-1690. SALUDA RIVER NEAR COLUMBIA, S. C.

LOCATION.--At gaging station 0.4 mile upstream from site of old Saluda Mill, 1.6 miles upstream from confluence with Broad River, and 3.3 miles west of State Capitol in Columbia, Richland County.
DRAINAGE AREA.--2,510 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: November 1960 to September 1961.

Chemical analyses, in parts per million, November 1960 to September 1961

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. 4, 1960	1,880	9.2	0.06	4.2	1.1	6.2	1.6	24	3.4	4.1	0.1	0.5	48	15	0	60	7.5	30
Nov. 25	1,530	10	.01	3.4	1.3	8.1	1.7	29	3.6	5.0	.2	.4	49	14	0	67	7.1	5
Dec. 5	2,270	7.9	.01	3.4	1.5	6.9	1.7	26	3.2	4.5	.1	.1	48	14	0	61	7.1	15
Jan. 6, 1961	1,520	8.0	.04	3.5	1.4	7.0	1.6	24	1.2	5.0	.1	.0	42	14	0	61	6.8	5
Feb. 2	3,810	7.8	.04	3.3	1.4	6.5	1.6	26	2.4	5.0	.1	.3	46	14	0	55	7.2	5
Mar. 16	3,440	8.2	.01	3.4	1.3	7.1	1.4	25	3.2	4.2	.0	.4	41	14	0	63	6.7	12
Apr. 11	7,220	8.7	.03	3.0	1.6	6.9	1.4	25	2.8	4.2	.1	1.0	52	14	0	62	6.9	30
May 5	2,870	7.0	.06	2.6	1.5	5.8	1.3	21	4.0	5.0	.0	.8	44	12	0	58	6.8	25
June 13	3,980	8.0	.07	3.0	1.3	6.3	1.7	22	5.2	4.5	.0	.9	56	13	0	61	6.8	60
June 21	4,000	8.4	.11	3.5	1.2	6.3	1.9	23	4.2	4.0	.0	.5	a41	14	0	58	6.8	25
Aug. 15	5,120	9.5	.00	3.4	1.3	5.7	1.9	24	3.8	4.1	.0	.4	42	14	0	60	6.7	8
Sept. 18	4,400	9.0	.03	3.2	1.5	6.0	1.6	22	4.8	5.2	.0	1.3	45	14	0	60	6.9	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, 200 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.
Water temperatures: November 1956 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 79°F on several days during July and August; minimum, 35°F Dec. 24, 25.
EXTREMES, 1956-61.--Water temperatures: Maximum, 79°F on many days during August 1957, July and August 1958, July and August 1961; minimum, 34°F Feb. 19-21, 1958.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 27, 1961.....	1,030	2.1	0.27	1.9	0.3	2.9	0.3	8	1.0	3.2	0.0	1.4	27	6	0	28	6.0	60

EDISTO RIVER BASIN--Continued

2-1730. SOUTH FORK EDISTO RIVER NEAR DENMARK, S. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Continuous ethyl alcohol-actuated thermograph)

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..	70	70	57	57	54	48	46	43	42	40	57	56	64	62	61	61	68	66	73	72	79	78	76	76
2..	70	70	57	56	48	45	46	45	42	42	57	56	62	59	63	61	70	68	74	73	78	77	76	76
3..	70	70	56	56	45	42	45	43	42	39	57	55	60	59	63	63	71	70	75	74	77	76	76	75
4..	70	69	56	54	42	41	43	41	39	38	57	56	60	58	64	63	72	70	75	75	78	77	76	75
5..	69	69	54	53	41	41	41	40	40	39	60	57	58	56	64	64	73	72	75	74	77	76	76	76
6..	70	69	53	53	42	41	41	40	40	39	62	60	58	58	65	64	73	72	75	75	77	76	76	76
7..	70	70	53	51	43	42	42	41	40	40	63	62	58	57	67	65	74	73	76	75	77	76	76	75
8..	71	70	51	48	46	43	44	42	41	39	63	63	58	57	69	67	74	74	76	75	76	75	76	75
9..	71	69	49	48	46	46	44	43	42	41	63	57	57	57	70	69	74	74	75	74	76	76	76	75
10..	69	68	51	49	46	45	43	40	42	41	57	52	59	57	70	68	75	74	75	74	76	75	76	75
11..	68	67	51	51	46	45	40	39	43	42	54	52	59	57	68	66	76	74	74	73	76	75	76	75
12..	67	67	51	50	46	45	41	39	47	43	57	53	58	58	67	66	76	74	74	73	77	76	76	75
13..	67	67	50	49	45	41	42	41	50	47	59	57	58	58	66	66	76	75	75	74	78	77	75	74
14..	67	67	50	49	41	39	47	42	52	49	62	59	59	58	67	66	76	75	76	75	78	76	74	74
15..	67	67	51	50	40	39	49	47	55	52	62	58	59	59			76	75	77	76	76	74	74	73
16..	67	67	53	51	40	40	49	48	56	54	62	59	59	58			76	70	78	77	75	73	73	70
17..	67	66	56	53	40	40	48	46	56	55	62	59	59	58			70	68	78	77	74	73	70	67
18..	67	66	57	56	40	39	46	45	58	56	59	54	58	58			68	66			74	73	67	65
19..	67	66	57	56	40	39	45	45	58	58	54	53	58	58			68	67			73	73	65	65
20..	67	64	56	53	40	39	45	43	58	58	57	54	58	58	70	65	68	68			73	72	66	65
21..	64	61	53	52	41	40	43	40	58	56	57	56	59	58			69	68	79	75	72	70	68	66
22..	61	59	52	51	41	38	40	37	56	54	56	54	61	59			71	69			71	70	68	67
23..	59	57	52	51	38	36	39	37	56	54	56	52	64	61			72	71			73	71	68	68
24..	58	57	54	52	36	35	44	39	58	56	57	55	65	64			72	72			73	73	70	68
25..	58	56	54	54	36	35	44	43	58	57	58	55	67	65	66	65	72	72			73	73	71	70
26..	56	55	54	54	37	36	43	39	57	54	59	55	67	67	67	66	74	72			73	73	71	71
27..	56	55	55	54	39	37	39	39	54	53	62	58	67	63	67	64	73	73	79	78	74	73	71	71
28..	57	56	56	55	40	39	39	39	56	54	64	61	63	61	64	61	73	72	79	78	75	74	71	71
29..	57	56	57	56	40	40	39	39	-	--	67	63	62	62	64	62	72	72	78	78	76	75	71	70
30..	56	56	57	54	43	40	39	39	--	--	67	65	62	61	66	64	72	72	79	78	76	76	70	69
31..	57	56	--	--	43	43	40	39	--	--	67	64	--	--	67	66	--	--	79	79	76	76	--	--
Aver.	65	64	54	53	42	41	43	41	50	48	60	57	61	59	—	—	72	71	—	—	75	74	72	72

EDISTO RIVER BASIN--Continued

2-1750.3. EDISTO RIVER NEAR (UPPER STATION) JACKSONBORO, S. C.

LOCATION.--On right bank at County Landing, 4.8 miles downstream from U.S. Highway 17 and 4.5 miles south of Jacksonboro, Colleton County.
DRAINAGE AREA.--2,860 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: January 1958 to September 1961.
Water temperatures: October 1958 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 61 ppm Aug. 1-31; minimum, 31 ppm Nov. 1-30.
Hardness: Maximum, 18 ppm May 1-31, Sept. 1-30; minimum, 9 ppm Dec. 1-31.
Specific conductance: Maximum daily, 59 micromhos Aug. 11, Sept. 17; minimum daily, 31 micromhos Nov. 13.
Water temperatures: Maximum, 87°F Aug. 22; minimum, 39°F Feb. 9.
EXTREMES, 1958-61.--Dissolved solids: Maximum, 71 ppm Oct. 1-31, 1959; minimum, 28 ppm Nov. 1-11, 14-30, 1958.
Hardness: Maximum, 46 ppm July 30, 1960; minimum, 9 ppm Dec. 1-31, 1960.
Specific conductance: Maximum daily, 259 micromhos June 14, 1960; minimum daily, 25 micromhos Nov. 2, 1958.
Water temperatures: Maximum, 87°F Aug. 22, 1961; minimum, freezing point Jan. 14, 1959.
REMARKS: Records of specific conductance of samples collected available in district office at Raleigh, N. C. Records of discharge are given for Edisto River near Givhans. 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 1960 to September 1961

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, 1960.....	1,436	7.8	0.20	3.1	0.9	3.7	0.7	12	1.4	5.5	0.1	1.2	47	12	2	43	6.9	60
Nov. 1-30.....	1,148	8.1	.10	2.6	.7	3.6	.7	10	2.4	5.5	.1	.7	31	10	2	36	6.7	40
Dec. 1-31.....	1,517	7.6	.12	2.9	.4	3.6	.6	10	2.4	5.5	.1	.8	40	9	1	37	6.7	40
Jan. 1-31, 1961.....	1,962	5.4	.09	2.9	.7	3.7	.3	10	.8	6.0	.1	.8	40	10	2	38	6.6	40
Feb. 1-28.....	2,974	4.3	.07	4.0	1.5	3.2	.6	11	2.4	6.5	.1	1.1	46	16	7	48	6.8	60
Mar. 1-31.....	4,410	3.9	.19	5.3	1.0	4.3	.9	15	3.8	6.0	.1	.5	55	17	4	53	7.0	130
Apr. 1-30.....	8,972	3.6	.20	4.2	1.3	3.5	.7	14	2.8	5.0	.2	.2	a57	16	4	47	6.8	100
May 1-31.....	5,374	5.3	.24	5.3	1.2	3.8	.5	17	3.4	5.3	.1	.3	54	18	4	49	6.5	150
June 1-30.....	1,755	6.6	.17	4.7	.4	3.1	.2	14	1.4	3.0	.1	1.3	b48	14	2	46	6.6	80
July 1-31.....	2,154	7.2	.22	4.6	1.1	3.1	.6	16	2.0	6.0	.1	.9	56	16	3	46	6.6	80
Aug. 1-31.....	2,594	6.6	.21	4.5	1.1	3.7	.7	16	1.8	4.4	.0	.9	c61	16	2	48	6.8	100
Sept. 1-30.....	3,229	8.5	.13	5.8	.8	3.5	.5	18	1.2	5.0	.0	1.0	53	18	2	52	6.5	90
Time-weighted average.....	3,121	6.3	0.16	4.2	0.9	3.6	0.6	14	2.2	5.3	0.1	0.8	49	14	3	45	--	81

a Organic matter present; sum of mineral constituents 29 parts per million.
b Organic matter present; sum of mineral constituents 28 parts per million.
c Organic matter present; sum of mineral constituents 32 parts per million.

EDISTO RIVER BASIN--Continued

2-1750.3. EDISTO RIVER NEAR (UPPER STATION) JACKSONBORO, S. C.--Continued

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement at approximately high tide)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	74	62	48	42	41	--	59	61	69	75	76	80
2..	74	62	48	42	42	56	59	61	69	75	77	80
3..	75	60	48	42	40	55	59	61	70	73	77	80
4..	75	59	47	41	--	56	58	61	71	73	77	80
5..	--	57	57	43	40	56	59	62	71	73	77	80
6..	75	55	57	46	40	57	58	62	72	74	78	80
7..	75	55	56	47	40	57	58	64	72	74	78	79
8..	74	55	52	45	40	56	59	64	73	75	79	79
9..	74	54	54	42	39	56	57	64	74	74	78	78
10..	74	54	48	42	40	57	57	64	74	74	78	78
11..	74	54	42	40	40	57	56	65	74	74	78	78
12..	73	55	42	40	43	58	58	64	76	74	79	78
13..	73	55	41	41	45	57	58	65	76	75	79	78
14..	73	54	40	41	44	58	58	65	76	75	79	77
15..	72	55	41	42	46	58	59	66	76	75	79	77
16..	72	55	41	44	47	57	59	67	74	75	80	76
17..	72	55	41	47	49	57	59	67	73	75	80	76
18..	73	54	41	48	52	58	57	67	73	74	80	76
19..	73	54	40	50	54	58	56	68	74	74	80	76
20..	72	53	40	49	55	57	56	68	74	74	--	76
21..	67	54	40	44	55	56	57	65	75	74	81	76
22..	69	54	40	45	56	56	57	65	75	74	87	75
23..	65	57	41	45	56	55	58	66	76	74	81	74
24..	65	56	41	46	56	58	58	67	76	74	81	74
25..	65	55	42	46	55	57	58	67	75	75	80	74
26..	64	57	42	44	55	57	58	67	74	75	80	74
27..	63	59	40	42	56	58	59	66	74	75	79	73
28..	62	57	40	40	56	58	59	66	74	76	79	73
29..	62	57	40	40	--	58	58	67	73	76	78	73
30..	62	55	--	41	--	59	58	68	73	77	78	73
31..	63	--	--	41	--	59	--	68	--	77	78	--
Average	70	56	44	43	47	57	58	65	74	74	79	77

EDISTO RIVER BASIN--Continued

2-1750.4. EDISTO RIVER NEAR (LOWER STATION) JACKSONBORO, S. C.

LOCATION.--On left bank at Hill's Fishing Camp, 8.7 miles downstream from U.S. Highway 17 and 7 miles south of Jacksonboro, Colleton County.
DRAINAGE AREA.--2,870 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: January 1958 to September 1961.
Water temperatures: January 1958 to September 1961.
EXTREMES, 1960-61.--Chloride: Maximum, 265 ppm Nov. 19; minimum, 5.5 ppm Jan. 1, Apr. 1-30.
Specific conductance: Maximum daily, 990 micromhos Nov. 19; minimum daily, 38 micromhos Jan. 1.
Water temperatures: Maximum, 88°F July 31, Aug. 1; minimum, 40°F Feb. 3-5.
EXTREMES, 1958-61.--Chloride: Maximum 3,500 ppm Oct. 13, 1958; minimum, 5.0 ppm Feb. 1-29, Apr. 1-30, May 1-31, 1960.
Specific conductance: Maximum daily, 10,700 micromhos Oct. 13, 1958; minimum daily, 38 micromhos Feb. 24, Mar. 10, 1960, Jan. 1, 1961.
Water temperatures: Maximum, 89°F June 29, 30, July 1, 1959; minimum, 34°F Jan. 3, 1958.
REMARKS.--Daily samples were composited for chemical analyses unless otherwise noted. When specific conductance values indicated salt-water encroachment, only specific conductance and chloride were determined on individual samples. The individual specific conductance and chloride determinations are tabulated separately from the composite chemical analyses. Records of discharge are given for Edisto River near Givhans. 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 1960 to September 1961

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. 9-19, 1960.....	1,575	8.0	0.22	3.8	1.7	9.5	1.0	15	4.0	16	0.2	1.2	70	16	4	91	6.8	80
Oct. 29-31.....	1,457	7.4	.20	3.0	1.7	10	1.0	12	4.4	16	.1	.6	a50	14	4	86	7.0	--
Jan. 1-2, 1961.....	1,800	--	--	--	--	--	--	10	2.4	5.5	--	--	--	10	2	38	6.9	--
Jan. 3.....	1,800	--	--	--	--	--	--	10	4.4	26	--	--	--	16	8	110	6.8	--
Jan. 4-13.....	1,780	6.6	.15	3.0	1.1	7.0	.8	11	4.4	12	.2	.7	55	12	3	63	6.8	60
Jan. 20-21.....	1,850	5.0	.16	3.6	2.3	16	1.0	10	7.4	28	.1	.7	a69	18	10	128	6.7	--
Jan. 22-24.....	2,163	4.7	.11	3.4	1.3	7.4	.8	12	4.4	12	.1	.7	a41	14	4	65	6.7	--
Jan. 25.....	2,320	--	--	--	--	--	--	12	5.4	23	--	--	--	18	8	110	6.8	--
Jan. 28-31.....	2,425	5.2	.13	3.2	.9	6.0	.7	10	3.4	9.5	.1	.8	a35	12	4	56	6.5	60
Feb. 1-2.....	2,270	5.4	.11	3.2	1.6	6.6	.6	10	5.2	12	.0	1.0	a41	14	6	66	6.7	--
Feb. 3.....	2,220	--	--	--	--	31	1.7	12	14	50	--	.6	--	28	18	218	7.0	--
Feb. 4-5.....	2,270	5.2	.08	3.0	1.8	4.0	.4	10	3.6	8.5	.0	.8	a32	14	6	52	6.8	--
Feb. 6.....	2,270	--	--	--	--	32	1.7	11	10	53	--	.4	--	29	20	214	7.1	--
Feb. 7-28.....	3,168	4.2	.13	4.3	1.6	6.6	.7	12	6.8	10	.1	1.0	50	18	8	66	6.5	55
Mar. 1-31.....	4,410	4.3	.21	5.5	1.1	5.6	.9	15	3.8	8.5	.1	.5	60	18	6	60	6.5	120
Apr. 1-30.....	8,972	3.7	.20	4.5	.9	4.2	.8	15	2.8	5.5	.1	.2	b53	14	2	50	6.5	100
May 1-31.....	5,374	5.5	.25	5.4	1.2	4.4	.5	18	3.2	6.0	.2	.3	59	18	4	53	7.0	150
June 1-23.....	1,752	7.1	.19	4.9	.7	5.1	.5	16	3.2	6.0	.0	1.3	54	15	2	58	6.8	80

June 24-28, 1961....	1,620	7.0	.02	4.8	.8	5.4	.4	14	1.2	7.5	.0	.8	55	15	4	60	6.5	80
June 29.....	2,160	--	--	--	--	--	--	13	5.8	20	--	.8	--	17	6	109	7.2	--
June 30.....	2,100	--	--	--	--	--	--	14	6.6	12	--	--	--	16	4	74	7.1	--
July 1-19.....	2,299	7.5	.18	5.1	1.0	4.7	.6	15	5.4	7.5	.1	.9	52	17	4	58	6.9	80
July 20-31.....	1,923	7.4	.28	5.0	1.6	8.2	.8	18	2.4	15	.1	.8	75	19	4	81	7.0	50
Aug. 1-31.....	2,594	6.6	.22	5.0	1.3	5.7	1.2	20	2.4	6.7	.1	.7	64	18	2	67	6.5	100
Sept. 1-13.....	4,695	7.9	.08	5.6	.9	3.8	.7	18	4.8	5.8	.1	1.2	62	18	3	57	6.8	65
Sept. 14-24.....	2,545	8.4	.08	6.1	.9	5.6	.6	20	4.2	8.7	.1	1.2	59	19	2	68	6.4	55
Sept. 25-27.....	1,417	--	--	8.3	2.0	--	--	28	--	18	--	--	--	30	6	105	6.6	--
Sept. 28-30.....	1,200	--	--	7.0	3.6	--	--	24	--	42	--	--	--	32	13	186	6.3	--

a Calculated from determined constitents.
b Organic matter present; sum of mineral constituents 30 parts per million.

EDISTO RIVER BASIN--Continued

2-1750.4. EDISTO RIVER NEAR (LOWER STATION) JACKSONBORO, S. C.--Continued

Specific conductance (mircromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961

Day	October		November		December		January	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	639	166	--	--	382	99	38	5.5
2	600	142	341	90	492	126	--	--
3	662	164	418	105	222	51	110	26
4	643	162	--	--	309	74	65	--
5	469	116	--	--	290	70	50	--
6	392	91	116	27	136	28	48	--
7	488	121	131	31	220	52	54	--
8	370	84	390	100	220	52	66	--
9	96	--	385	105	382	100	--	--
10	108	--	219	54	320	80	70	--
11	79	--	--	--	91	16	70	--
12	86	--	189	48	89	18	73	--
13	80	--	--	--	110	24	71	--
14	74	--	137	34	108	22	360	92
15	71	--	--	--	332	84	206	47
16	67	--	--	--	422	105	202	47
17	110	--	--	--	512	133	--	--
18	100	--	--	--	578	148	--	--
19	118	--	990	265	538	132	282	63
20	260	63	--	--	516	130	142	--
21	290	70	--	--	540	133	112	--
22	732	188	968	260	342	82	61	--
23	660	160	--	--	260	62	60	--
24	332	72	--	--	246	59	74	--
25	340	80	--	--	67	10	110	23
26	290	70	--	--	60	10	--	--
27	272	65	--	--	692	177	--	--
28	185	39	122	30	65	7.6	53	--
29	63	--	--	--	58	6.4	52	--
30	112	--	388	100	140	33	47	--
31	110	--	--	--	159	37	74	--

Day	February		March		April		May	
1	70	--	73		64		47	
2	59	--	65		64		--	
3	218	50	64		68		51	
4	50	--	61		47		47	
5	58	--	54		55		51	
6	214	53	53		65		46	
7	59	--	53		61		47	
8	55	--	58		43		46	
9	65	--	52		47		--	
10	59	--	49		50		--	
11	61	--	49		48		47	
12	95	--	51		43		71	
13	88	--	52		44		53	
14	78	--	66		47		51	
15	75	--	58		46		53	
16	76	--	56		46		49	
17	63	--	58		46		--	
18	75	--	59		53		54	
19	58	--	59		50		52	
20	59	--	59		49		54	
21	51	--	61		55		52	
22	55	--	64		53		56	
23	56	--	68		54		53	
24	59	--	63		55		61	
25	--	--	62		50		61	
26	72	--	61		46		52	
27	59	--	59		46		52	
28	56	--	61		48		56	
29	--	--	60		48		57	
30	--	--	78		48		62	
31	--	--	66		--		63	

EDISTO RIVER BASIN--Continued

2-1750.4. EDISTO RIVER NEAR (LOWER STATION) JACKSONBORO, S. C.--Continued

Specific conductance (mircromhos at 25°C) and chloride, in parts per million, water year October 1960 to September 1961--Continued

Day	June		July		August		September	
	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)	Specific conductance (micromhos at 25°C)	Chloride (Cl)
1	59	--	70		102		58	
2	57	--	68		89		55	
3	67	--	63		81		68	
4	58	--	53		79		64	
5	52	--	47		72		49	
6	54	--	53		66		61	
7	57	--	58		68		51	
8	54	--	62		99		53	
9	62	--	49		59		67	
10	67	--	67		56		54	
11	52	--	52		63		51	
12	46	--	58		70		53	
13	49	--	59		60		53	
14	60	--	53		59		80	
15	58	--	59		62		64	
16	49	--	57		50		70	
17	64	--	57		93		76	
18	65	--	63		87		67	
19	67	--	59		54		97	
20	56	--	81		54		61	
21	52	--	84		71		57	
22	51	--	84		59		53	
23	52	--	76		56		57	
24	83	--	77		76		75	
25	54	--	80		63		90	
26	54	--	96		58		--	
27	55	--	98		91		122	
28	64	--	95		59		193	
29	109	20	98		56		202	
30	74	12	67		60		170	
31	--	--	87		55		--	

Temperature °F of water, water year October 1960 to September 1961
(Once-daily measurement at approximately high tide)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1..	75	--	52	50	41	58	65	64	74	80	86	80
2..	75	63	51	49	42	58	65	65	75	80	86	81
3..	75	62	50	48	40	57	65	67	77	80	86	81
4..	76	--	50	48	40	59	64	68	78	79	86	82
5..	76	--	50	47	40	62	63	68	79	80	87	81
6..	76	59	51	46	42	62	62	69	80	80	87	80
7..	76	58	52	46	43	64	62	69	80	80	86	80
8..	76	58	50	46	43	66	62	70	80	79	85	80
9..	76	58	50	--	43	64	62	70	80	77	83	80
10..	76	59	50	45	43	58	62	70	80	77	83	80
11..	76	--	50	45	43	56	62	69	80	77	84	80
12..	76	58	49	45	44	58	62	70	80	79	84	80
13..	75	--	46	47	45	60	59	71	80	80	84	80
14..	73	59	44	50	48	60	60	73	79	80	83	80
15..	73	--	44	50	50	61	60	73	79	82	83	75
16..	73	--	44	51	52	62	60	73	78	84	81	79
17..	73	--	44	--	52	62	60	73	76	86	80	76
18..	73	--	44	--	54	60	60	73	75	84	79	72
19..	73	60	44	50	56	61	60	73	75	82	78	72
20..	73	--	44	46	58	62	61	73	74	82	76	73
21..	72	--	44	46	60	62	62	74	74	82	75	73
22..	70	60	42	44	60	62	63	74	75	82	73	74
23..	67	--	42	44	60	61	64	73	77	84	73	75
24..	66	--	42	43	59	61	65	73	78	84	80	76
25..	65	--	42	42	--	61	65	72	79	86	73	76
26..	64	--	42	--	56	62	67	71	80	86	73	--
27..	65	--	43	--	56	62	67	71	80	86	73	80
28..	65	62	44	41	58	64	66	71	78	86	80	80
29..	65	--	44	41	--	64	66	72	78	86	80	79
30..	65	58	45	41	--	66	66	72	79	87	80	78
31..	65	--	45	41	--	68	--	73	--	88	80	--
Average	72	--	46	46	49	61	63	71	78	82	82	78

SAVANNAH RIVER BASIN

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, 9 miles east of Millhaven, Screven County.
DRAINAGE AREA.--6,650 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: January 1956 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 82°F Aug. 13, 14; minimum, 46°F on many days during January and February.
EXTREMES, 1956-61.--Water temperatures: Maximum, 66°F Aug. 25, 1959; minimum, 39°F Feb. 19, 20, 1958.

Temperature, °F of water, water year October 1960 to September 1961
(Continuous ethyl alcohol-actuated thermograph)

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..	76	75	69	69	62	60	53	52	48	47	57	56	65	62	63	62	75	73	71	70	80	79	73	72
2..	76	76	69	68	60	58	53	52	49	48	57	56	62	60	64	62	76	74	71	70	80	79	73	73
3..	77	76	68	67	58	55	53	52	49	48	56	55	60	60	65	64	76	75	75	71	81	80	74	73
4..	78	77	67	66	55	54	52	51	48	47	56	55	60	60	66	65	77	75	76	75	80	79	76	74
5..	78	77	66	65	54	54	51	50	47	47	57	56	60	60	67	65	78	76	79	76	79	78	78	76
6..	78	77	65	65	54	54	51	50	47	47	59	57	60	59	69	67	79	78	80	79	78	77	78	78
7..	78	78	65	63	56	54			47	47	60	59	60	59	71	69	79	78	80	79	79	78	78	76
8..	78	78	63	62	57	56			47	47	60	59	60	59	73	71	80	79	79	79	79	78	76	74
9..	78	77	62	62	57	57			47	47	59	55	60	59	74	73	80	78	79	78	79	79	75	74
10..	78	77	63	62	57	57			47	46	55	54	60	59	74	72	78	77	78	77	80	79	75	74
11..	77	76	63	62	57	57			47	46	55	54	60	59	72	72	79	77	77	76	80	79	77	75
12..	77	76	62	62	57	56			49	47	56	55	61	60	72	69	80	79	77	76	80	79	79	77
13..	77	76	62	62	56	54			52	49	57	56	61	60	70	69	80	79	79	77	82	80	80	79
14..	77	76	62	62	54	52			53	52	58	57	61	60	72	70	80	79	79	78	82	81	80	79
15..	76	76	62	62	52	52			56	53	58	57	60	60	73	72	80	79	79	78	81	81	79	78
16..	76	76	62	62	52	51			57	56	59	58	61	60	75	73	79	75	80	78	81	80	78	76
17..	76	76	64	62	51	50			57	57	59	58	61	60	75	75	75	72	80	79	80	78	76	74
18..	76	76	64	63	50	49			58	57	58	57	60	60	75	74	72	70	80	79	78	76	74	72
19..	76	76	64	64	49	49	52	46	59	58	57	57	60	60	75	74	72	70	79	77	76	74	72	71
20..	76	75	64	63	50	49			59	59	58	57	60	60	75	74	72	70	77	70	74	74	72	71
21..	75	73	63	63	50	49			59	56	58	57	60	60	76	75	70	70	70	69	74	73	74	72
22..	73	72	63	62	50	49			56	54	57	56	61	60	76	75	72	70	70	69	74	73	75	74
23..	72	70	63	62	49	48			54	53	56	55	62	61	76	73	72	71	71	69	75	74	76	75
24..	70	70	63	62	48	48			56	54	58	56	63	62	74	73	72	71	74	71	76	75	78	76
25..	70	69	63	63	48	48			56	56	59	58	64	63	74	72	75	72	77	74	76	75	79	78
26..	69	68	63	63	48	48			56	55	61	59	64	64	72	71	76	75	77	75	76	75	80	79
27..	69	68	64	63	50	48			56	55	62	61	64	64	71	69	77	76	75	73	76	75	80	80
28..	69	69	64	64	50	50			56	55	63	62	64	63	70	69	76	76	73	72	78	76	80	78
29..	69	69	64	64	50	50			--	-	65	63	64	63	71	70	76	74	74	72	78	77	78	77
30..	69	69	64	63	52	50	47	47	--	-	66	65	63	62	72	71	74	71	76	74	77	74	77	76
31..	69	69	--	--	52	52	48	47	--	-	66	65	--	--	73	72	--	--	79	76	74	72	--	--
Aver.	75	74	64	63	53	52	--	--	53	52	59	58	61	61	72	70	76	75	76	75	78	77	77	75

2-2130. OCMULGEE RIVER AT MACON, GA.

LOCATION.--At intake of Macon Water Treatment Plant at city limits of Macon, Bibb County, 3.1 miles upstream from gaging station at Fifth Street Bridge, and at mile 208.1.
DRAINAGE AREA.--2,230 square miles.
RECORDS AVAILABLE.--Chemical analyses: May 1937 to April 1938, July 1958 to September 1961.
Water temperatures: May 1937 to April 1938, July 1958 to September 1961.
Sediment records: October 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 176 ppm May 12-19, 1961; minimum, 35 ppm Sept. 11-20, 1961.
Hardness: Maximum, 21 ppm Jan. 21-31, 1961; minimum, 10 ppm Feb. 24 to Mar. 11, 1961.
Specific conductance: Maximum daily, 111 micromhos June 26, 1961; minimum daily, 38 micromhos Feb. 24-28, 1961.
Water temperatures: Maximum, 87°F Aug. 27, 1961; minimum, 34°F Nov. 29, 1960.
Sediment concentrations: Maximum daily, 648 ppm Mar. 7, 1961; minimum daily, 3 ppm Nov. 29-30, 1960, Dec. 1, 14-16, 1960.
Sediment loads: Maximum daily, 37,500 tons Feb. 27, 1961; minimum daily, 6 tons Nov. 30, 1960.
EXTREMES, 1937-38, 1958-61.--Dissolved solids: Maximum, 176 ppm May 12-19, 1961; minimum, 31 ppm Apr. 11-20, 1938.
Hardness: Maximum, 58 ppm Oct. 28, 1958; minimum, 10 ppm Feb. 1-10, 11-20, Apr. 1-10, 11-20, 1960; Feb. 24 to Mar. 11, 1961.
Specific conductance (1958-61): Maximum daily, 167 micromhos Oct. 30, 1959; minimum daily, 34 micromhos Feb. 14, 1960.
Water temperatures: Maximum, 90°F July 3, 1960; minimum, 34°F Jan. 19, 1959, Mar. 3, Nov. 29, 1960.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-10,1960	1010	11	0.00	4.4	1.5	7.7	2.5	28	4.8	5.0	0.3	1.7		53	59	17	0	80	6.9	0
Oct. 11-20....	903	11	.01	4.4	1.5	7.1	2.5	28	4.8	4.5	.3	1.3		51	56	17	0	76	6.9	0
Oct. 21-31....	689	12	.02	4.4	1.7	7.5	2.5	28	5.2	5.0	.3	1.2		54	58	18	0	78	7.1	0
Nov. 1-10.....	694	10	.01	4.8	1.5	7.6	2.5	31	4.8	5.2	.0	.9		52	51	18	0	81	7.0	5
Nov. 11-20....	698	12	.00	5.6	1.2	8.1	2.5	32	4.8	5.2	.3	.8		56	58	19	0	84	7.0	5
Nov. 21-30....	724	13	.01	5.6	1.1	8.3	2.5	32	4.8	5.2	.3	1.1		58	59	18	0	75	7.0	5
Dec. 1-10.....	762	13	.01	5.6	1.0	8.2	2.5	32	4.8	5.0	.3	.6		57	53	18	0	84	7.0	5
Dec. 11-20....	842	13	.01	5.6	1.0	8.4	2.5	32	4.8	5.2	.3	1.3		58	55	18	0	83	7.0	5
Dec. 21-30....	915	13	.01	5.6	1.0	8.3	2.5	30	4.8	5.2	.3	1.5		57	57	18	0	84	7.0	5
Jan. 1-10,1961	958	12	.01	4.4	1.9	8.5	2.4	32	5.2	5.0	.3	1.0		57	62	19	0	83	7.2	0
Jan. 11-20....	906	11	.01	4.8	1.9	8.0	2.3	31	4.8	5.0	.3	1.2		54	59	20	0	82	7.3	0
Jan. 21-31....	1070	13	.00	4.8	2.2	7.6	2.0	29	4.8	5.0	.3	1.7		55	54	21	0	82	7.3	0
Feb. 1-17.....	981	13	.01	4.6	1.5	7.4	1.4	28	5.6	5.0	2	1.0		54	72	18	0	49	7.0	5
Feb. 19-23....	17300	9.4	.01	3.6	.9	4.2	1.6	18	8.0	2.5	2	.4		40	--	12	0	54	6.5	15
Feb. 24-28....	36500	6.8	.02	3.2	.6	1.8	1.3	18	7.2	1.5	1	.5		29	--	10	0	38	6.7	--
Mar. 1-9, 11..	7000	8.0	.02	2.8	.8	2.5	1.3	13	6.4	2.5	1	.5		31	51	10	0	40	7.2	--
Mar. 12-20....	4170	11	.02	3.6	1.0	3.8	1.3	17	6.4	3.0	1	.3		39	59	13	0	50	6.8	35
Mar. 21-31....	2860	12	.01	4.2	1.2	4.6	1.2	22	7.6	3.0	2	.3		45	63	16	0	57	6.8	10

270-946 O - 67 - 22

ALTAMAHA RIVER BASIN--Continued

2-2130. OCMULGEE RIVER AT MACON, GA.--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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. 1-10,1961	9280	10	0.05	3.6	0.5	3.5	1.9	18	4.0	3.0	0.1	0.0		36	61	11	0	44	7.5	5
Apr. 11-20....	8510	9.9	.05	3.6	1.0	4.2	2.0	20	6.4	1.0	.1	.1		38	59	13	0	45	7.1	15
Apr. 21-30....	4520	11	.02	3.6	1.0	3.7	1.6	20	5.6	1.0	.1	.1		38	59	13	0	49	7.3	5
May 1-10.....	4930	11	.06	3.2	1.2	3.6	1.7	22	4.8	1.5	.1	.1		38	58	13	0	49	7.2	5
May 12-19.....	5210	11	.02	3.2	1.7	3.9	1.7	24	4.0	1.5	.2	.1		40	176	15	0	50	7.2	5
May 22-26, 29-31.....	2980	11	.02	4.4	1.5	4.2	1.5	24	4.4	3.0	.1	.1		42	39	17	0	58	7.2	8
June 1-10.....	1310	12	.02	4.4	1.9	4.7	1.6	26	5.2	3.5	.2	.1		47	42	19	0	63	6.9	5
June 11-18....	1290	11	.03	4.8	1.9	5.2	1.6	27	5.2	3.5	.1	.1		46	42	20	0	63	7.2	5
June 21-23, 25, 27-30...	4620	10	.03	4.4	1.2	5.0	1.8	24	4.4	3.0	.2	.2		42	--	16	0	58	6.9	5
June 24.....	9060	--	--	4.8	1.0	--	--	40	--	.0	--	--		--	--	16	0	93	7.7	--
June 26.....	4100	--	--	4.8	1.0	--	--	50	--	--	--	--		--	--	16	0	111	8.0	--
July 1-10.....	2060	11	.03	4.4	1.9	4.0	1.8	24	4.8	3.5	.0	.1		44	40	19	0	57	7.0	5
July 11-20....	2400	10	.04	4.0	1.5	4.3	1.8	25	4.0	3.5	.0	.1		41	40	19	0	56	7.1	5
July 21-31....	1180	10	.02	4.4	1.7	5.0	2.0	26	4.0	3.5	.0	.5		44	41	18	0	62	7.1	5
Aug. 1-7, 9,10	1350	11	.06	5.6	1.2	5.9	2.0	30	3.6	3.5	.2	.3		48	48	19	0	69	7.3	3
Aug. 11-20....	1200	11	.03	4.8	1.6	5.4	2.0	30	4.4	3.5	.2	.3		48	55	18	0	70	7.0	8
Aug. 21-23, 26-31.....	3270	10	.02	3.8	1.5	4.6	2.0	25	3.6	3.5	.1	.2		41	46	16	0	60	7.2	10
Sept. 1-10....	1970	12	.03	5.8	.6	2.4	.5	22	1.2	3.0	.0	.4		37	52	17	0	48	7.2	10
Sept. 11-20...	1200	11	.04	5.8	.6	2.1	.5	22	.0	3.5	.0	.3		35	54	17	0	45	7.3	10
Sept. 21-30...	1260	11	.07	6.2	.5	2.0	.5	23	2.0	3.0	.0	.3		37	54	18	0	46	7.5	10
Weighted average....	--	9.9	0.02	3.8	1.1	4.0	1.7	21	5.6	2.6	0.1	0.4		54	--	14	0	52	6.9	9
Time-weighted average....	3191	11	0.02	4.5	1.3	5.6	1.9	26	4.8	3.7	0.2	0.6		57	--	17	0	64	7.0	6
Tons per day.	--	84	0.22	33	9.1	34	14	185	48	22	1.1	3.2		460	--	--	--	--	--	--

ALTAMAHA RIVER BASIN--Continued

2-2130. OCMULGEE RIVER AT MACON, GA.--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	77	79	75	76	77	76	76	72	78	74	74	75	74	75	74	74	74	73	72	73	67	69	68	65	64	63	63	65	67	66	66	74
November	63	62	63	60	65	63	53	55	58	61	54	60	61	51	56	59	61	62	60	38	57	51	58	59	60	57	57	56	34	54	--	56
December	54	47	45	45	45	48	49	55	53	57	58	36	50	41	42	46	50	52	43	43	--	44	43	45	46	47	44	47	47	48	--	49
January	45	46	45	43	43	43	50	40	40	41	42	42	43	50	45	46	42	46	46	44	51	45	43	43	42	42	42	39	43	43	43	42
February	45	44	45	46	45	46	44	44	45	44	48	49	48	51	54	55	55	--	55	55	54	54	56	57	55	55	55	55	--	--	--	49
March	52	55	54	60	60	60	60	63	59	--	60	60	64	57	58	58	58	58	58	58	57	59	56	57	57	58	59	62	60	61	61	57
April	65	64	65	65	66	65	66	68	68	66	--	64	64	68	68	69	68	68	--	--	--	72	71	69	69	69	--	--	69	72	73	--
May	73	75	76	76	78	78	79	80	77	79	80	81	81	80	80	79	70	70	--	--	72	71	72	73	74	73	74	--	--	--	--	--
June	60	60	59	58	58	54	48	55	55	55	56	55	56	56	56	57	57	58	58	58	60	66	62	65	62	63	63	63	64	63	--	58
July	80	80	80	80	80	--	81	80	79	78	78	--	--	73	73	77	78	79	80	78	80	80	81	81	83	84	83	84	85	85	85	80
August	85	86	82	86	85	85	82	--	--	--	--	84	85	84	85	81	80	80	79	79	78	79	79	--	--	--	77	87	78	80	80	--
September	77	85	85	85	81	78	78	79	79	79	79	80	80	80	78	74	76	72	74	74	73	73	74	75	76	76	--	77	75	75	--	78

ALTAMAHA RIVER BASIN--Continued

2-2130. OCMULGEE RIVER AT MACON, GA.--Continued

Suspended sediment, water year October 1960 to September 1961

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	2040	50	A 275	710	7	13	835	3	7
2	885	43	A 103	710	6	12	960	4	10
3	785	38	A 81	690	6	11	735	4	8
4	760	34	A 70	690	6	11	710	5	10
5	735	34	A 67	670	5	9	735	5	10
6	1140	37	114	670	5	9	735	6	12
7	1040	36	A 101	710	5	10	735	6	12
8	1110	35	A 105	670	5	9	735	7	14
9	810	32	A 70	735	6	12	735	7	14
10	785	31	A 66	690	6	11	710	6	12
11	835	30	68	690	6	11	760	6	12
12	960	31	80	690	6	11	785	5	11
13	1040	33	93	690	6	11	935	4	10
14	1180	35	112	710	5	10	860	3	7
15	1210	35	114	690	5	9	835	3	7
16	735	31	62	710	5	10	885	3	7
17	710	26	50	710	5	10	960	4	10
18	690	23	43	710	5	10	810	5	11
19	960	20	52	690	5	9	810	5	11
20	710	18	34	690	5	9	785	5	11
21	670	16	29	710	5	10	785	5	11
22	670	15	27	690	5	9	1010	5	14
23	690	13	24	690	5	9	960	5	13
24	690	12	22	710	5	10	1060	5	14
25	670	11	20	710	5	10	810	5	11
26	690	10	19	690	5	9	785	5	11
27	760	9	18	710	5	10	810	5	11
28	670	8	14	735	5	10	960	5	13
29	670	9	14	810	3	7	1060	5	14
30	690	8	15	785	3	6	910	6	15
31	710	7	13	--	--	--	885	6	14
Total	26700	--	1975	21165	--	297	26085	--	347

Day	JANUARY			FEBRUARY			MARCH		
1	1010	7	19	860	9	21	S 19200	34	S 1800
2	1060	7	20	1140	9	28	7820	30	633
3	935	8	20	1410	10	38	5440	25	367
4	860	8	19	1060	10	29	4880	40	527
5	1140	9	28	785	10	21	4560	135	1660
6	1240	9	30	760	10	21	4250	350	S 4020
7	835	9	20	1210	11	36	S 8590	648	S 16600
8	785	9	19	1520	11	45	10600	375	10700
9	810	9	20	985	12	32	7540	170	3460
10	910	9	22	1010	12	33	7680	80	1660
11	885	9	22	960	12	31	6080	40	657
12	710	9	17	835	13	29	5440	30	441
13	710	9	17	785	13	28	5040	25	340
14	785	9	19	1060	265	732	4320	25	292
15	860	9	21	785	490	1040	4100	30	332
16	835	9	20	760	485	995	3950	25	267
17	910	9	22	760	475	943	3800	25	256
18	1010	9	25	860	522	1210	3720	25	251
19	1040	9	25	S 7890	635	S 14000	3650	20	197
20	1310	13	46	19700	240	12800	3500	20	189
21	810	12	26	22800	130	8000	3070	20	166
22	735	8	16	19000	125	6410	2860	20	154
23	735	6	12	S 16900	160	7300	2790	20	151
24	1240	6	20	S 17600	564	S 22200	2720	20	147
25	1360	6	22	S 41900	380	S 44000	2580	20	139
26	1310	6	21	42600	230	26500	1550	20	84
27	1360	7	26	43300	321	37500	1520	25	103
28	1460	8	32	37000	170	17000	2330	25	157
29	910	8	20	--	--	--	2650	65	465
30	835	9	20	--	--	--	2580	190	1300
31	1040	9	25	--	--	--	S 6820	300	S 6340
Total	30435	--	691	286235	--	201022	155630	--	53855

S Computed by subdividing day.
A Computed from estimated concentration graph.

ALTAMAHA RIVER BASIN--Continued

2-2130. OCMULGEE RIVER AT MACON, GA.--Continued

Suspended sediment, water year October 1960 to September 1961--Continued

Day	APRIL			MAY			JUNE		
	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..	22400	155	9370	4480	28	339	1790	53	256
2..	24000	75	4860	6800	28	514	1350	40	146
3..	S 14000	55	S 2080	6080	25	410	1320	35	125
4..	6000	60	972	5360	25	362	1290	32	111
5..	5260	70	994	4960	24	321	1260	33	112
6..	4720	90	1150	4720	25	319	1240	30	100
7..	4480	85	1030	4480	28	339	1210	30	98
8..	4250	70	803	4320	35	408	1180	30	96
9..	3800	70	718	4180	50	564	1260	30	102
10..	3950	70	747	3880	75	786	1180	32	102
11..	3650	70	690	6920	85	1590	1130	32	98
12..	S 7800	128	S 3200	8420	90	2650	1240	33	110
13..	9780	115	3040	6800	90	1650	1180	34	108
14..	10600	75	2150	5680	85	1300	1100	35	104
15..	11400	70	2150	5040	75	1020	1100	35	104
16..	13800	70	2610	4640	75	940	1240	57	191
17..	10400	70	1970	4320	75	875	2150	64	372
18..	7680	68	1410	4100	75	830	1210	40	131
19..	5280	65	927	2650	75	537	1160	35	110
20..	4720	60	765	2210	75	448	1350	A 43	157
21..	4400	58	689	2030	75	411	2910	A 125	982
22..	3800	55	564	2790	75	565	4180	A 130	147
23..	3350	58	525	3350	75	678	5360	A 190	2750
24..	3140	70	593	4720	73	930	9060	A 120	2940
25..	3500	40	378	2720	68	499	5890	53	843
26..	4020	35	380	3720	65	653	4100	50	554
27..	5200	35	491	4480	63	762	4320	42	490
28..	7160	30	580	3350	60	543	4720	42	535
29..	5760	30	467	2270	57	349	5120	43	594
30..	4880	30	395	2450	60	397	4480	43	520
31..	--	--	--	1850	57	285	--	--	--
Total	223120	--	46698	133770	--	21674	76080	--	13088

Day	JULY			AUGUST			SEPTEMBER		
1..	3720	43	432	855	25	58	2510	105	712
2..	2790	43	324	1070	24	69	2390	76	490
3..	1180	43	137	935	23	58	2150	57	331
4..	1130	43	134	935	23	58	1040	48	135
5..	1130	44	134	990	23	61	1040	50	140
6..	2390	45	290	908	23	56	1520	50	205
7..	2510	45	305	1070	23	66	2270	50	306
8..	3210	44	381	2450	36	238	2930	50	396
9..	1350	42	153	2790	48	362	2330	50	315
10..	1180	40	127	2580	48	334	1550	50	209
11..	1460	40	158	2330	48	302	962	50	130
12..	2450	41	271	1320	47	168	2090	50	282
13..	3350	42	380	1290	45	157	1610	50	217
14..	3000	42	340	935	44	111	1130	50	153
15..	2650	42	301	962	41	106	935	50	126
16..	2390	40	258	1320	170	606	880	38	90
17..	1210	35	114	1290	240	836	855	23	53
18..	2580	30	209	830	215	482	855	12	28
19..	2510	30	203	805	212	461	1850	58	290
20..	2450	30	198	880	210	499	880	57	135
21..	1550	28	114	1020	215	592	1790	75	362
22..	1070	28	81	1130	220	671	1910	70	361
23..	1070	28	81	1160	222	695	2030	55	301
24..	1100	27	80	1290	222	773	1490	30	121
25..	1850	27	135	4960	205	2750	830	15	34
26..	1210	27	88	5120	182	2520	1520	16	66
27..	1100	27	80	6320	173	2950	805	17	37
28..	1100	27	80	5600	167	2520	758	16	33
29..	1130	27	82	3580	160	1550	735	15	30
30..	880	27	64	3070	148	1230	735	15	30
31..	880	27	64	2450	130	860	--	--	--
Total	57580	--	5798	62245	--	22199	44380	--	6118

Total discharge for year (cfs-days)..... 1143425
Total load for year (tons)..... 373762

s Computed by subdividing day.
a Computed from estimated concentration graph.

ALTAMAHA RIVER BASIN--Continued

2-2130. OCMULGEE RIVER AT MACON, GA.--Continued

Particle-size analyses of suspended sediment, 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)	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. 18, 1961.....	1800			4730	647		37	47	58	68	77	87						BWC
Feb. 20.....	0800			9420	147		58	68	82	90	96	99						BWC
Feb. 23.....	1200			24000	153		32	47	74	87	95	97						BWC
Feb. 26.....	0100			41200	208		58	66	83	92	96	98						BWC
Feb. 27.....	0845			33800	283		56	63	78	88	94	99						BWC
Mar. 4.....	1315			21500	87		61	65	82	93	97	99						BWC
Mar. 15.....	1300			9490	132		76	83	92	98	99	--						BWC
Mar. 27.....	2200			4980	66		66	72	86	95	98	99						BWC
May 10.....	1045			4350	99		55	63	77	86	93	98						BWC
May 20.....	0100			5720	87		60	66	80	92	97	99						BWC
May 23.....	1945			8420	97		58	66	80	91	96	99						BWC

ALTAMAHA RIVER BASIN--Continued

2-2195. APALACHEE RIVER NEAR BUCKHEAD, GA.

LOCATION.--At gaging station at downstream side of right bank pier of bridge on State Highway 12, 2 miles downstream from Hard Labor Creek, 3 miles northeast of Buckhead, Morgan County, and 9 miles upstream from mouth.
DRAINAGE AREA.--436 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 49 ppm Nov. 21-30, 1960; minimum, 31 ppm Sept. 1-10, 21-30, 1961.
Hardness: Maximum, 58 ppm May 11, 1961; minimum, 8 ppm Feb. 25, 27, 1961.
Specific conductance: Maximum, 196 micromhos June 14, 1961; minimum, 26 micromhos Feb. 27, 1961.
Water temperatures: Maximum, 82°F June 14, 1961; minimum, freezing point Dec. 22, 1960.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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.12-21,1960	197	14	0.01	3.6	1.0	3.6	1.9	24	1.6	2.5	0.1	0.2		41	42	13	0	50	6.9	0
Oct. 22-31....	157	15	.00	3.2	1.2	4.3	2.0	24	1.6	3.0	.1	.3		43	46	13	0	54	7.0	5
Nov. 1-10.....	169	14	.03	3.6	1.2	4.0	2.0	24	1.6	2.5	.1	.1		41	42	14	0	53	7.0	0
Nov. 11-20....	160	15	.01	3.4	1.3	4.2	1.8	26	1.6	2.5	.1	.4		43	41	14	0	55	6.8	0
Nov. 21-30....	193	14	.02	3.2	1.3	4.2	2.0	26	1.6	2.5	.1	.4		42	49	14	0	55	6.8	0
Dec. 1-10.....	174	16	.01	4.4	1.0	4.2	1.7	27	.4	2.5	.1	.5		44	41	15	0	55	7.1	5
Dec. 11-20....	219	15	.03	4.4	1.0	4.1	1.7	26	.8	2.8	.1	.4		43	39	15	0	54	7.0	5
Dec. 21-31....	196	15	.02	4.4	.7	4.0	1.5	24	1.6	2.5	.1	1.1		43	43	14	0	52	7.0	0
Jan. 1-10,1961	267	13	.01	2.8	1.2	4.1	1.6	22	2.4	2.8	.1	.7		40	46	12	0	52	7.0	0
Jan. 11-20....	301	14	.05	2.8	1.3	3.8	1.6	21	1.6	2.5	.1	1.0		39	44	12	0	50	7.0	0
Jan. 21-31....	281	13	.01	2.8	1.1	4.0	1.4	20	1.6	2.5	.1	.7		37	44	12	0	56	6.8	0
Feb. 1 3-19,24	550	13	.01	3.6	1.0	3.8	1.8	20	3.2	2.8	.2	.2		40	38	13	0	47	6.5	0
Feb. 2.....	258	--	--	5.6	1.0	--	--	28	--	2.5	--	--		--	--	18	0	61	7.5	--
Feb. 20-23, 26,28.....	4670	7.6	.08	3.2	.2	2.2	2.5	11	5.6	4.2	.2	.2		31	34	9	0	37	6.5	--
Feb. 25, 27...	6800	--	--	1.6	1.0	--	--	12	--	1.0	--	--		--	--	8	0	30	7.4	--
Mar. 1-13.....	1080	11	.03	3.2	.6	3.1	1.7	16	3.2	2.2	.2	.4		34	32	10	0	40	6.6	10
Mar. 14, 18-24 27-30.....	599	12	.01	3.6	.7	3.6	1.7	22	2.4	2.5	.2	.2		38	36	12	0	46	6.7	0
Mar. 15.....	772	--	--	5.2	.7	--	--	26	--	3.0	--	--		--	--	16	0	58	7.6	--

ALTAMAHA RIVER BASIN--Continued

2-2195. ALTAMAHA RIVER NEAR BUCKHEAD, GA.--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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. 25, 1961	580	--	--	4.4	1.2	--	--	0	--	6.0	--	--		--	--	16	16	96	4.5	--
Mar. 31	1370	--	--	3.2	1.0	--	--	10	--	1.0	--	--		--	--	12	4	31	7.2	--
Apr. 1-6,9,10, 21,24,27-29	1670	9.5	0.06	4.4	0.4	3.0	1.7	22	0.8	3.2	0.2	0.1		34	37	12	0	44	6.9	5
Apr. 11-20	729	10	.06	3.6	.4	3.0	1.6	20	.4	3.0	.2	.1		32	43	10	0	40	7.0	5
Apr. 7,8,22, 23,25,26,30	699	13	.01	4.2	.9	4.1	1.6	24	3.2	2.2	.2	.2		42	40	14	0	52	7.2	0
May 1-10	614	12	.02	3.8	1.0	3.3	1.6	23	.8	2.2	.2	5		36	36	14	0	47	7.0	5
May 11	1380	--	--	17	3.8	--	--	86	--	--	--			--	--	58	0	160	8.0	--
May 12-20	969	12	.03	3.6	1.0	3.0	1.6	20	1.2	2.0	.2	4		35	34	13	0	44	6.8	10
May 21-29, 31	441	14	.01	3.8	1.0	3.6	1.6	24	.4	2.8	.2	4		40	38	14	0	48	6.8	0
May 30	365	--	--	8.8	1.5	--	--	40	--	2.0	--	--		--	--	28	0	74	7.7	--
June 1-5, 7-10	283	15	.01	3.2	1.0	4.4	1.5	20	2.0	2.0	.0	.3		37	37	12	0	49	6.7	5
June 6	282	--	--	6.0	1.2	--	--	34	--	3.0	--	--		--	--	20	0	73	7.6	--
June 11-13, 15-20	336	13	.01	3.2	1.2	3.8	2.0	24	2.4	2.0	.0	.0		40	44	13	0	48	6.7	5
June 14	266	--	--	4.0	.5	--	--	104	--	3.0	--	--		--	--	12	0	196	8.1	--
June 21-27, 29, 30	728	13	.08	3.2	1.5	3.6	1.1	19	1.6	2.5	.0	.0		36	42	14	0	45	6.5	45
June 28	1160		--	3.2	.5	--	--	28	--	1.0	--	--		--	--	10	0	61	7.6	--
July 1-10	452	12	.06	4.0	.5	3.5	1.9	23	.8	2.0	.2	.1		36	36	12	0	45	6.8	20
July 11-20	819	11	.06	3.4	.6	3.2	2.1	20	.4	3.0	.1	.0		34	39	11	0	43	6.8	90
July 21-31	393	13	.05	4.0	.9	3.9	1.9	24	.8	2.5	.1	.2		39	36	14	0	49	7.0	10
Aug. 1-10	312	14	.02	3.6	1.2	4.2	2.1	24	.4	4.0	.0	.1		42	45	14	0	51	7.1	2

Aug.11-20.1961	241	14	.02	3.6	1.2	4.1	1.8	24	.0	4.0	.0	.2		41	47	14	0	51	6.9	3
Aug. 21-31....	503	13	.03	2.8	1.1	3.8	1.9	21	1.6	3.0	.0	.3		38	35	12	0	46	7.4	8
Sept. 1-10....	328	14	.00	3.6	1.2	3.9	1.9	25	1.2	3.0	.0	.4		41	31	14	0	52	7.6	5
Sept. 11-20...	233	15	.00	3.4	1.3	4.0	1.6	25	.4	3.0	.0	.5		71	32	14	0	50	7.7	3
Sept. 21-30...	187	15	.00	3.2	1.5	4.2	1.7	25	.0	3.0	.0	.4		41	31	14	0	50	7.6	3
Weighted average....	--	12	0.04	3.5	0.8	3.3	1.8	20	2.1	2.8	0.1	0.3		40	--	12	0	45	6.5	10
Time-weighted average....	581.9	13	0.03	3.6	1.0	3.8	1.8	23	1.5	2.7	0.1	0.3		42	--	13	0	49	6.6	7
Tons per day.	--	18	0.06	5.6	1.3	5.2	2.9	31	3.3	4.3	0.2	0.4		63	--	--	--	--	--	--

Temperature (°F) of water, water year October 1960 to September 1961

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	68	69	69	68	68	66	66	66	61	58	58	60	57	55	57	58	57	58	58	--
November	58	55	56	54	53	53	50	49	49	53	46	49	48	50	51	53	50	55	52	49	50	49	52	53	54	55	58	56	57	49	--	52
December	45	40	39	39	39	43	45	47	39	35	36	40	39	36	39	40	40	40	45	41	41	31	35	37	39	40	45	44	44	47	42	40
January	47	44	42	40	40	42	42	43	41	40	40	41	41	44	47	45	45	46	44	42	39	38	41	42	40	36	38	38	40	40	40	42
February	42	40	39	40	41	39	39	40	44	42	58	48	50	51	55	52	55	57	55	56	52	51	53	54	53	52	50	53	--	--	--	48
March	52	52	65	60	62	62	65	65	50	54	52	57	55	58	58	60	56	50	53	55	54	55	56	55	60	59	58	59	60	59	60	57
April	59	56	53	54	55	52	55	54	53	55	55	58	56	57	57	59	55	56	58	54	60	63	65	65	65	68	58	59	68	59	--	58
May	--	65	67	62	61	61	65	69	65	60	59	58	63	64	65	67	67	65	68	68	68	65	64	64	62	60	60	60	63	64	65	63
June	67	69	70	71	72	71	74	75	70	72	--	74	75	82	74	66	63	70	73	65	67	72	69	69	72	73	68	69	74	64	--	70
July	67	72	75	77	77	77	77	75	75	75	70	72	72	72	76	76	75	78	76	76	77	78	78	78	79	80	80	79	80	80	80	76
August	80	81	79	78	80	79	75	77	79	80	78	81	78	78	76	75	75	75	70	70	73	73	73	72	70	72	73	75	76	72	72	76
September	79	73	75	75	76	78	77	76	73	76	77	75	75	71	69	75	63	63	63	65	67	69	76	73	72	73	72	70	67	68	--	72

SATILLA RIVER BASIN

2-2280. SATILLA RIVER AT ATKINSON, GA.

LOCATION.--At gaging station on downstream side of pier of bridge on U. S. Highway 84, 400 feet downstream from Atlantic Coast Line Railroad bridge and 1 mile west of Atkinson, Brantley County.
DRAINAGE AREA.--2,790 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 122 ppm Jan. 11-20, 1961; minimum, 43 ppm Nov. 1-10, 1960.
Hardness: Maximum, 26 ppm July 21, 1961; minimum, 4 ppm Apr. 11-20, 1961.
Specific conductance: Maximum daily, 66 micromhos Dec. 2, 4, 1960; minimum daily, 27 micromhos Apr. 23, 27, 1961.
Water temperatures: Maximum, 88°F July 7, 1961; minimum, 40°F Dec. 18, Jan. 21.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-10,1960	1020	5.8	0.14	1.6	0.7	4.2	0.6	4	1.2	9.5	0.2	0.0		26	60	7	4	41	5.4	80
Oct. 11-20....	719	8.7	.17	2.0	.7	4.2	.6	4	2.4	10	.2	.3		31	63	8	5	42	5.4	80
Oct. 21-31....	300	8.0	.15	2.4	.5	4.6	.6	7	1.6	9.5	.2	.1		31	55	8	2	47	6.0	80
Nov. 1-10.....	162	7.3	.15	2.4	.9	4.8	.4	9	1.2	7.0	.2	.0		29	43	10	3	45	6.2	70
Nov. 11-20....	108	8.1	.13	2.8	.7	5.6	.8	12	2.8	7.2	.1	.1		34	74	10	0	53	6.6	50
Nov. 21-30....	105	6.8	.50	2.6	.9	6.3	.8	11	2.8	8.0	.1	.0		34	47	10	1	55	6.4	70
Dec. 1-10.....	77	10	.19	4.4	.7	5.8	1.2	15	3.6	8.0	.2	.6		42	96	14	2	60	6.9	50
Dec. 11-20....	120	11	.18	2.8	1.1	6.1	.9	11	3.2	8.0	.2	.1		39	50	12	2	59	6.4	60
Dec. 21-31....	182	11	.14	3.6	.7	5.8	.9	11	3.6	8.0	.1	.2		39	50	12	3	58	6.5	70
Jan. 1-10,1961	209	10	.12	2.0	1.2	5.5	1.2	8	3.6	8.2	.2	.3		36	94	10	3	54	6.6	50
Jan. 11-20....	594	11	.08	2.4	.7	4.8	1.2	7	4.4	7.8	.1	.1		36	122	9	3	50	6.2	80
Jan. 21-31....	1160	10	.09	2.0	1.0	5.0	1.4	7	3.2	7.8	.2	.0		34	110	9	4	49	8.2	85
Feb. 1-10.....	1790	9.5	.03	2.4	.4	4.6	.4	2	6.0	7.0	.2	.1		32	55	8	6	46	5.6	85
Feb. 11-20....	2140	9.3	.55	2.8	.1	5.0	.5	2	5.2	7.2	.1	.2		32	54	8	6	47	5.6	85
Feb. 21-28....	2190	8.7	1.0	2.4	.2	4.6	.5	3	4.0	6.8	.2	.2		30	58	7	5	45	5.6	80
Mar. 1-10.....	4040	7.9	.05	2.0	.7	4.6	.7	3	3.2	8.0	.2	.2		29	64	8	6	41	5.4	140
Mar. 11-20....	2850	8.3	.90	1.6	.4	4.4	.6	2	3.2	6.5	.2	.3		27	66	6	4	43	5.4	80
Mar. 21-31....	2980	7.5	.45	2.0	.6	4.5	.4	2	2.4	6.5	.2	.3		26	59	8	6	41	5.3	80

Apr. 1-10,1961	5370	6.0	.46	1.2	.6	3.6	.4	1	2.4	4.8	.2	.4	21	58	6	5	34	5.3	100
Apr. 11-20....	8780	5.1	.25	1.4	.1	3.1	.4	2	1.2	4.0	.1	.4	17	51	4	2	31	5.3	100
Apr. 21-30....	20900	4.0	.22	1.4	.1	3.4	.5	2	1.6	5.0	.1	.5	20	48	4	2	27	5.3	100
May 1-10.....	4380	6.0	.30	2.0	.4	3.1	.5	3	1.2	4.5	.1	.5	20	56	6	4	32	5.6	100
May 11-20.....	1080	8.1	.29	1.6	.5	3.6	.6	3	2.4	5.8	.1	.4	25	48	6	4	34	5.7	80
May 21,22,24, 25, 27-30...	623	8 2	.27	2.0	.4	4.3	.6	4	3.2	6.0	.1	.3	27	53	6	3	39	6.0	60
May 23.....	538	--	--	--	--	--	--	12	--	--	--	--	--	--	--	--	53	6.9	--
May 26.....	538	--	--	7.2	1.5	--	--	22	--	6.0	--	--	--	--	24	6	60	7.7	
June 1-10.....	656	7.6	.11	1.6	.5	4.1	.7	5	4.0	8.2	.1	.1	30	50	6	2	35	6.0	100
June 11-20....	297	7.3	.13	2.0	.7	5.0	.7	8	1.6	7.8	.2	.0	29	44	8	1	44	6.3	80
June 21-30....	740	6.3	.09	1.6	.7	4.4	.6	3	4.4	7.2	.1	.0	27	47	7	5	39	5.9	100
July 1-10.....	922	6.4	.11	1.6	.6	4.1	.6	5	3.2	7.5	.1	.0	27	49	6	2	34	5.9	130
July 11-19....	775	7.9	.30	1.6	.5	3.7	.6	4	4.0	6.5	.1	.0	27	53	6	3	34	5.9	140
July 21.....	1260	--	--	8.0	1.5	--	--	24	--	3.0	--	--	--	--	26	6	57	7.6	
July 22-31....	1750	6.4	.51	1.6	.7	3.5	.5	4	4.0	7.5	.1	.2	27	60	7	4	34	5.2	240
Aug. 1-10.....	396	8.6	.13	2.0	.7	4.5	.5	6	2.4	9.0	.0	.2	31	61	8	3	39	6.1	110
Aug. 11-20....	704	7.9	.11	1.8	.6	4.4	.5	4	1.2	10	.0	.2	29	61	7	4	38	5.8	110
Aug. 21-31....	1665	7.8	.32	2.0	.6	3.8	.5	4	1.6	9.5	.0	.3	28	71	8	5	35	5.3	140
Sept. 1-10....	4860	5.9	.41	1.4	.6	3.2	.8	1	.4	10	.3	.3	24	64	6	5	36	4.7	210
Sept. 11-18,20	4102	5.2	.47	1.4	.5	3.3	.7	1	.4	10	.2	.3	23	62	6	5	34	4.8	180
Sept. 21-30...	1090	6.6	.30	1.0	.9	3.6	.6	2	.4	10	.2	.2	25	58	6	4	34	5.2	180
Weighted average....	--	6.1	0.31	1.7	0.4	3.7	0.6	3	2.1	6.4	0.1	0.3	57	--	6	4	35	5.3	113
Time-weighted average....	2232	7.8	0.26	2.1	0.6	4.5	0.7	5	2.8	7.6	0.1	0.2	62	--	8	4	62	5.5	99
Tons per day.	--	37	1.90	10	2.3	23	3.3	15	13	38	0.9	2.1	346	--	--	--	--	--	--

SATILLA RIVER BASIN--Continued

2-2280. SATILLA RIVER AT ATKINSON, GA.--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	78	75	84	75	78	78	77	82	76	75	76	76	77	76	74	74	74	71	73	70	69	69	67	64	--	66	73	70	68	68	73
November	68	69	68	63	62	62	58	56	58	60	60	61	60	60	60	60	72	72	62	62	62	66	66	66	66	68	68	68	64	62	--	63
December	48	48	47	46	48	44	48	55	58	58	58	58	58	49	49	49	48	40	45	60	43	42	48	48	46	46	48	48	48	48	48	48
January	52	52	46	42	42	48	42	48	48	48	48	51	53	51	54	54	48	52	51	48	40	44	46	54	52	44	47	46	46	46	45	48
February	46	48	48	48	48	48	52	52	50	51	50	51	52	56	56	58	62	62	66	66	67	67	70	68	60	--	68	62	--	--	--	56
March	64	64	68	68	68	68	68	68	60	60	60	62	62	66	62	65	65	66	68	68	68	66	66	66	62	64	64	64	68	68	68	65
April	68	68	64	--	58	--	--	--	--	62	62	62	62	64	64	62	64	65	66	68	62	68	74	74	68	72	76	70	70	72	--	--
May	70	68	70	70	76	75	76	75	74	74	71	72	68	73	73	74	73	78	78	70	78	78	74	74	78	78	70	68	72	72	--	73
June	74	74	74	78	78	78	80	80	80	82	84	84	84	84	80	80	74	74	74	76	76	75	76	78	82	82	80	78	80	80	--	78
July	81	80	84	84	80	81	88	82	82	80	80	79	80	82	84	81	--	80	79	--	80	79	80	80	79	80	80	80	81	87	87	78
August	87	87	84	86	86	80	78	81	87	86	81	84	80	81	80	86	80	80	77	77	76	76	77	78	78	78	78	78	79	79	80	80
September	79	79	79	79	79	79	80	80	80	80	80	80	79	78	80	78	78	78	--	78	78	78	78	78	78	78	78	78	77	78	--	78

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: October 1953 to September 1961 (continuous since June 1959).
Water temperatures: October 1953 to September 1960.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 2,000 micromhos July 20; minimum daily, 122 micromhos Nov. 4.
EXTREMES, 1953-61.--Specific conductance: Maximum daily, 3,500 micromhos June 27, 30; minimum daily 107 micromhos Oct. 10, 1953.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Specific conductance, in micromhos at 180°C, water year October 1960 to September 1961

Day	October	November	December	January	February	March	April	May	June	July	August	September
1	181	138	170	264	402	382	729	540	864	1300	1040	980
2	181	145	184	290	400	380	590	554	830	1300	942	975
3	181	135	156	279	402	380	586	592	893	1300	914	970
4	181	122	158	282	404	390	495	624	833	1300	920	965
5	181	128	162	321	410	382	625	638	841	1300	925	963
6	181	132	160	339	418	398	685	612	1100	1300	930	878
7	170	147	152	331	419	424	616	600	1090	1300	930	789
8	145	143	159	312	399	418	642	600	654	1300	940	829
9	151	126	153	310	390	398	619	600	612	1300	940	802
10	143	137	155	312	382	400	785	595	586	1300	950	829
11	128	127	160	323	378	400	757	609	716	1300	950	855
12	134	136	156	339	375	390	674	612	732	1070	960	899
13	136	142	164	353	371	401	931	616	758	1130	970	856
14	139	138	179	350	372	403	902	601	801	1110	980	800
15	135	138	180	361	370	397	830	628	777	960	985	800
16	135	138	176	358	371	399	638	632	716	1010	988	800
17	143	134	177	365	380	385	670	625	669	998	988	800
18	143	142	185	398	382	394	670	630	570	1000	988	800
19	143	138	195	420	390	430	670	620	596	1290	988	800
20	151	139	188	440	390	414	715	625	934	2000	988	800
21	144	155	188	448	397	466	585	640	1190	1080	988	800
22	142	148	187	460	415	410	576	645	1280	984	988	800
23	145	144	211	462	401	461	580	650	1220	1020	988	800
24	137	145	228	465	382	438	574	655	1190	1010	988	800
25	132	154	228	462	382	477	540	660	1430	1030	988	744
26	138	144	225	452	390	503	540	665	1650	1010	988	748
27	130	141	220	445	380	505	540	662	1300	1000	988	741
28	128	142	226	450	388	565	540	697	1300	976	988	735
29	140	155	235	445	--	556	540	940	1300	959	988	737
30	144	165	240	434	--	512	540	856	1300	992	988	747
31	132	--	260	417	--	490	--	910	--	1000	988	--
Average	148	140	187	377	390	430	646	649	958	1160	970	828

ST. JOHNS RIVER BASIN--Continued

2-2331. ECONLOCKHATCHEE RIVER NEAR BITHLO, FLA.

LOCATION.--At bridge on State Highway 50, 300 feet upstream from small tributary, 3 miles northwest of Bithlo, Orange County, and 8 miles above Little Econlockhatchee River.
DRAINAGE AREA.--119 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1959 to September 1961.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 175 micromhos May 31, 1961; minimum daily, 48 micromhos Nov. 3, 1960.
EXTREMES, 1959-61.--Specific conductance: Maximum daily, 175 micromhos May 31, 1961; minimum daily, 24 micromhos Mar. 24, 1960.
REMARKS.--Only periodic measured discharge records are available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 3, 1960.	--	4.5	0.11	4.2	1.0	4.0	0.3	12	0.0	7.0	0.1	0.4		37	28	14	4	48	7.8	170
Nov. 18.....	--	6.4	.45	4.4	1.7	4.7	.2	12	.8	9.5	.1	.8		91	35	18	8	61	6.0	240
Dec. 20.....	7.9	5.6	.19	7.2	1.6	6.2	.3	21	.4	10	.1	.2		88	42	24	8	78	7.5	100
Feb. 14, 1961	--	4.0	.11	8.6	1.6	7.8	.3	20	1.6	18	.2	.0		92	52	28	12	98	7.5	80
Apr. 12.....	--	3.0	.12	11	1.0	7.4	.6	30	2.4	14	.2	.9		94	56	32	7	99	6.7	120
May 31.....	.1	4.7	.04	26	.7	7.6	1.0	80	4.0	13	.0	.0		114	96	68	2	175	7.0	45
Aug. 4.....	--	7.4	.35	14	1.7	9.6	.8	28	6.4	20	.3	.2		163	75	42	19	128	6.4	200
Sept. 15.....	12.2	7.0	.50	9.6	1.2	6.6	.8	22	5.6	13	.3	.7		152	56	29	11	81	6.5	400

ST. LUCIE RIVER BASIN

2-2540. NORTH FORK ST. LUCIE RIVER AT WHITE CITY, FLA.

LOCATION.--Ten feet upstream from bridge on State Road 712 at White City, St. Lucie County, 1.7 miles downstream from confluence of Fivemile and Tenmile Creeks, and 4 miles south of Fort Pierce.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1961.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 13, 1960.		8.1	0.05	56	7.4	43	2.6	128	47	73		0.0		300		170	65	545	7.8	55
Nov. 18.....		8.0	.03	61	14	69	2.6	144	58	129		.0		413		210	92	780	7.7	40
Jan. 28, 1961.		8.6	.02	10.9	2.8	141	5.8	242	129	270		.2		811		387	188	1430	7.8	18
Feb. 23.....		8.6	.02	102	33	164	7.6	220	133	310		.1		866		390	210	1523	7.6	15
Mar. 21.....		7.1	.02	88	24	119	11	186	104	220		.0		665		318	165	1220	7.3	30
Apr. 20.....		10	.41	110	31	160	5.3	246	117	298	0.7	.2		854		402	200	1540	7.6	20
June 20.....		10	.03	106	26	148	5.3	230	116	270		.9		795		372	183	1420	7.7	18
July 27.....		14	.03	125	21	156	5.8	236	132	290		.7		861		398	204	1480	7.8	25
Aug. 21.....		16	.03	106	33	160	8.3	230	77	307		6.2		824		400	211	1500	7.8	40
Sept. 26.....		14	.05	115	29	151	5.5	244	122	280		1.1		838		406	206	1459	7.9	20

LAKE OKEECHOBEE AND THE EVERGLADES

2-2730. KISSIMMEE RIVER NEAR OKEECHOBEE, FLA.

LOCATION.--At gaging station on downstream end of left pier of bridge on State Highway 70, 9.4 miles west of Okeechobee, Okeechobee County, and 16 miles upstream from Lake Okeechobee.
DRAINAGE AREA.--2,886 square miles.
RECORDS AVAILABLE.--Chemical analyses: March 1940 to February 1941, October 1953 to September 1961.
Water temperatures: October 1953 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 98 ppm July 1-10, 1961; minimum, 49 ppm Oct. 1-10, 1960.
Hardness: Maximum, 27 ppm Sept. 1-10, 1961; minimum, 14 ppm Oct. 1-20, 1960.
Specific conductance: Maximum daily, 338 micromhos Apr. 5, 1961; minimum daily, 54 micromhos Oct. 11-20, 1960.
Water temperatures: Maximum, 94°F July 6, 1961; minimum, 52°F Dec. 22, 1960; Jan. 23, 1961.
EXTREMES, 1940-41, 1953-61.--Dissolved solids: Maximum, 136 ppm May 11-20, 1956; minimum, 39 ppm Apr. 1-10, 1960.
Hardness: Maximum, 56 ppm July 21-31, 1956; minimum, 12 ppm Oct. 11-20, 1953.
Specific conductance (1940-41, 1953-61): Maximum daily, 338 micromhos Apr. 5, 1961; minimum daily, 36 micromhos Oct. 19, 1956.
Water temperatures (1953-61); Maximum, 94°F July 6, 1961; minimum, 50°F Feb. 6, 1956.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-10,1960	13280	1.7	0.05	4.4	0.7	4.7	0.4	12	3.2	8.0	0.1	0.0		29	49	14	4	56	6.5	75
Oct. 11-20....	11590	1.2	.06	4.4	.7	5.0	.4	12	2.8	8.0	.1	.1		29	52	14	4	54	6.5	75
Oct. 21-31....	9756	2.6	.06	4.8	.7	4.8	.4	13	3.6	8.2	.1	.0		32	57	15	4	56	6.5	75
Nov. 1-10.....	8435	3.6	.06	5.2	.7	4.6	1.0	14	2.8	8.0	.1	.1		35	55	16	5	59	6.5	110
Nov. 11-20....	6962	3.4	.06	5.2	.7	4.9	.6	12	3.2	6.0	.1	.1		32	56	16	6	59	6.5	110
Nov. 21-30....	5800	3.4	.07	5.2	.7	4.6	.4	14	2.8	7.5	.1	.1		32	54	16	5	59	6.5	110
Dec. 1-10.....	4897	4.3	.06	5.2	.7	5.6	.3	14	3.6	7.5	.2	.2		35	57	16	5	64	6.7	110
Dec. 11-20....	4257	3.4	.07	7.2	.5	5.0	1.2	17	3.6	8.0	.1	.1		38	58	20	6	69	6.5	110
Dec. 21-31....	3652	3.0	.06	5.2	.7	5.1	1.6	11	4.0	6.5	.1	.2		34	56	16	7	62	6.5	110
Jan. 1-10,1961	2942	2.5	.06	6.0	.5	5.3	1.4	14	4.4	6.0	.1	.0		35	77	17	6	66	7.0	110
Jan. 11-20....	2870	2.6	.08	6.0	.7	5.3	3.5	14	4.0	10.0	.1	.0		39	73	18	7	70	6.9	110
Jan. 21-31....	2863	2.2	.07	5.2	.7	5.5	2.2	14	4.0	9.0	.1	.1		38	85	16	5	66	6.9	110
Feb. 1-10.....	2506	1.5	.14	5.6	.7	5.5	1.0	13	5.2	9.5	.1	.1		36	59	17	6	68	6.6	90
Feb. 11-20....	2296	1.6	.09	5.6	.7	5.6	.6	12	--	9.5	.1	.1		31	62	17	7	68	6.6	90
Feb. 21-28....	2120	1.5	.10	5.2	.6	5.5	.3	13	5.2	8.2	.1	.1		33	58	16	5	64	6.5	100
Mar. 1-10.....	1876	2.1	.29	5.6	1.0	5.8	.4	16	2.4	10.0	.2	.0		36	65	18	5	64	6.7	85
Mar. 12.....	1750	--	--	6.4	.5	--	--	95	--	--	--	--		--	--	18	0	226	7.5	--
Mar. 11, 13-20	1824	1.8	.08	5.2	1.0	5.8	.6	13	5.6	8.5	.1	.1		35	59	17	6	66	6.6	85
Mar. 21.....	1960	--	--	5.6	.5	--	--	106	--	--	--	--		--	--	16	0	258	7.5	--
Mar. 22-31....	1797	1.4	.10	8.6	.5	5.6	.3	21	5.6	8.2	.2	.1		41	63	24	7	78	6.8	90

Apr. 5, 1961..	1710	--	--	6.4	1.0	--	--	144	--	13.0	--	--	--	--	20	0	338	7.9	--
Apr. 1-4, 6-10	1701	1.3	.07	6.4	1.9	5.6	.7	14	4.0	11.0	.2	.0	39	91	24	13	71	6.6	85
Apr. 11-20....	1542	1.6	.23	6.4	1.9	5.9	.7	14	7.2	10.0	.2	.0	41	81	24	13	69	6.5	85
Apr. 21-30....	1293	1.3	.25	6.4	1.5	6.0	.7	14	4.8	11.0	.2	.0	39	91	22	11	70	6.5	85
May 6.....	1200	--	--	5.6	1.5	--	--	44	--	9.0	--	--	--	--	20	0	137	7.6	--
May 1-5, 7-9..	1178	1.8	.08	6.4	1.0	5.9	.9	15	6.4	9.2	.2	.0	39	62	20	8	75	6.7	90
May 11-20.....	998	1.7	.26	7.2	1.0	6.0	.9	16	5.6	11.0	.2	.0	42	93	22	9	76	6.6	85
May 21, 23-31.	956	2.4	.29	8.0	1.0	5.8	1.4	19	6.0	12.0	.2	.0	46	76	24	8	83	6.9	85
June 1-10.....	886	3.6	.05	8.0	1.0	6.1	1.0	16	7.2	14.0	.1	.1	49	87	24	11	83	6.8	55
June 11-20....	722	2.8	.05	7.2	1.5	6.1	1.2	18	8.0	13.0	.1	.1	49	82	24	9	85	7.3	65
June 21-30....	707	3.5	.05	6.8	1.9	6.1	1.7	20	12.0	14.0	.1	.1	56	85	25	9	88	6.6	65
July 1-10.....	854	4.0	.08	6.8	1.9	7.2	.2	20	8.0	14.0	.2	.1	55	98	25	9	88	6.9	110
July 11-20....	945	4.7	.12	6.0	1.9	6.4	1.6	19	6.4	12.0	.1	.1	49	96	23	7	78	6.9	130
July 21-31....	1005	3.7	.07	6.4	1.5	6.3	1.2	18	8.0	12.0	.2	.1	48	88	22	7	81	7.0	90
Aug. 1-10.....	1110	4.2	.05	6.8	1.6	7.2	1.6	17	9.6	12.0	.0	.1	52	62	24	10	92	7.1	55
Aug. 11-20....	1038	3.5	.09	6.6	1.8	7.1	1.7	18	9.2	13.0	.0	.1	52	69	24	9	92	6.5	60
Aug. 21-31....	1235	5.5	.03	7.2	1.7	6.7	2.1	18	8.0	14.0	.0	.1	54	78	25	10	93	6.4	110
Sept. 1-10....	1322	5.6	.11	7.6	1.9	6.5	2.8	23	5.2	13.0	.2	.2	54	80	27	8	93	7.3	160
Sept. 11-20...	1109	4.0	.09	7.2	1.9	6.4	1.4	20	6.4	12.0	.3	.3	50	74	26	10	85	7.4	140
Sept. 21-30...	743	2.2	.04	6.4	2.2	6.9	1.2	17	6.4	12.0	.3	.9	47	68	25	11	86	6.9	70
Weighted average....	--	2.6	0.07	5.5	0.8	5.2	0.9	14	4.1	8.9	0.1	0.1	62	--	17	6	65	6.6	94
Time-weighted average....	3111	2.9	0.10	6.2	1.1	5.8	1.1	17	5.5	10	0.1	0.1	71	--	20	7	75	6.7	95
Tons per day.	--	22	0.66	46	7.1	44	7.2	122	35	75	1.0	0.6	520	--	--	--	--	--	--

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2730. KISSIMMEE RIVER NEAR OKEECHOBEE, FLA.--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	81	81	82	82	82	81	81	81	81	81	83	83	83	82	82	82	82	81	81	81	82	79	77	77	78	78	79	79	77	79	81	78
November	79	78	78	78	72	79	75	78	79	78	70	74	72	71	--	72	70	71	78	71	76	68	68	70	68	67	71	69	71	68	--	73
December	63	63	60	64	68	68	68	67	67	68	66	66	55	54	57	57	55	55	55	55	56	52	46	56	54	53	55	57	63	61	62	59
January	69	64	60	57	57	58	60	60	60	61	61	63	69	69	65	60	62	59	61	57	--	53	52	59	59	58	58	60	59	57	57	60
February	59	58	62	61	60	60	60	59	58	57	57	58	57	--	60	60	60	69	71	61	64	65	67	74	76	68	67	74	--	--	--	63
March	72	74	75	73	76	75	76	77	74	74	70	71	72	69	73	69	70	72	76	77	76	75	75	76	73	71	--	74	74	75	77	73
April	77	77	77	74	74	75	75	71	73	76	76	77	72	73	71	77	74	70	73	72	71	71	74	76	76	77	78	80	80	80	--	74
May	75	76	80	80	78	79	80	78	78	78	81	80	79	81	80	80	82	82	87	84	85	--	87	85	83	80	80	80	80	80	80	80
June	80	80	68	67	78	83	83	83	83	82	84	85	85	85	85	85	85	84	86	86	84	85	85	85	87	83	86	85	85	85	--	82
July	85	--	--	90	85	94	93	84	83	85	85	86	84	86	84	85	84	--	85	84	85	85	85	85	86	84	85	86	87	87	86	
August	86	87	90	86	88	87	87	90	85	85	85	85	88	88	85	85	83	85	85	86	86	85	86	85	86	86	86	85	85	85	85	86
September	85	86	84	85	85	85	84	85	85	84	85	85	85	85	85	86	85	85	85	85	86	85	87	89	89	90	90	90	90	85	--	88

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2770. ST. LUCIE CANAL AT LOCK, NEAR STUART, FLA.

LOCATION.--At gaging station located at upstream end of right lock wall, 6.3 miles southwest of Stuart, Martin County.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1961.
REMARKS.--On days reporting 10 cfs, lock closed and flow consists of leakage and lockage. Values reported for dissolved solids are calculated from determined constituents.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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 (calculated)	Hardness as $CaCO_3$		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Noncarbonate			
Oct. 13, 1960	8690	4.8	0.04	35	2.1	10	0.6	92	12	23		0.0	133	96	20	242	7.3	40
Nov. 19	7860	6.6	.10	35	6.9	12	.6	116	16	25		.0	159	116	21	302	7.5	40
Dec. 17	6860	13	.43	66	13	20	.7	230	21	28		2.1	277	218	30	491	7.7	50
Jan. 28, 1961	2350	7.5	.04	39	7.4	17	1.1	130	21	24		.1	181	128	22	315	7.5	45
Feb. 23	10	6.4	.02	46	6.1	22	1.9	142	22	31		.1	205	140	24	366	7.5	40
Mar. 21	10	11	.03	56	8.4	26	2.7	168	26	42		.0	255	174	36	451	7.4	40
May 17	10	8.5	.40	59	7.1	36	2.0	180	23	58		.0	283	176	28	511	7.5	40
June 19	10	2.0	.03	47	5.0	23	3.2	148	14	35		.0	202	138	16	378	7.7	50
July 27	10	9.5	.04	61	7.3	43	2.2	192	21	66		.0	305	182	24	535	7.7	45
Aug. 21	10	6.5	.06	74	10	58	2.9	236	27	89		.2	384	226	32	681	8.0	45
Sept. 25	10	3.2	.04	70	8.6	47	2.6	224	24	72		.3	338	210	26	608	7.7	45

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

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, 20.0 miles upstream from mouth, and 18 miles northwest of Miami, Dade County.
RECORDS AVAILABLE.--Chemical analyses: November 1958 to September 1961.
Water temperatures: November 1958 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 469 ppm Jan. 21-31; minimum, 319 ppm May 2, 4-10.
Hardness: Maximum, 232 ppm Sept. 2-10, minimum, 162 ppm Mar. 16.
Specific conductance: Maximum daily, 598 micromhos May 24; minimum daily, 424 micromhos May 31.
Water temperatures: Maximum, 91°F Sept. 26; minimum, 60°F Jan. 30.
EXTREMES, 1958-61.--Dissolved solids: Maximum, 469 ppm Jan. 21-31, 1961; minimum, 250 ppm July 1-10, 1959.
Hardness: Maximum, 232 ppm Sept. 2-10, 1961; minimum, 162 ppm Mar. 16, 1961.
Specific conductance: Maximum daily, 598 micromhos Apr. 24, 1960, May 24, 1961; minimum daily, 393 micromhos Feb. 4, 1959.
Water temperatures: Maximum, 91°F Sept. 26, 1961; minimum, 60°F Jan. 30, 1961.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla. No discharge records available for this station during 1961 water year.

Temperature (°F) of water, water year October 1960 to September 1961

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. 1-2, 4-10 1960.....		6.5	0.01	70	1.3	30	1.8	218	10	41	0.3	0.5		268	323	180	1	470	8.2	50
Oct. 11-20....		6.3	.01	70	2.3	30	1.8	218	8.4	40	.4	.7		269	325	184	2	472	8.3	50
Oct. 21-31....		5.7	.01	69	3.4	29	2.0	228	7.2	38	.3	1.2		268	325	186	0	467	8.2	50
Nov. 1-6, 8-10		7.1	.02	70	3.3	30	2.0	228	6.4	41	.3	.7		273	343	188	1	464	8.1	50
Nov. 11. 13-20		7.1	.02	70	3.3	31	1.8	228	6.4	44	.3	.6		277	344	188	1	486	8.2	50
Nov. 21-24, 26-30.....		7.7	.02	74	.9	35	2.2	230	6.8	49	.3	1.8		291	355	188	0	509	8.2	50
Dec. 1-10.....		8.6	.01	72	4.0	37	2.4	234	7.2	52	.3	1.7		302	377	196	1	526	8.3	50
Dec. 11-18, 20		13	.02	77	1.9	38	2.4	236	8.0	54	.3	.9		314	356	200	3	538	8.3	50
Dec. 21, 24-28, 31...		9.2	.02	80	1.1	43	2.7	242	11	60	.4	.4		329	383	204	2	565	8.3	50
Jan. 1-10,1961		9.5	.01	78	2.3	44	2.8	238	9.6	61	.4	1.2		330	367	204	2	572	8.4	60
Jan. 11-20....		10	.02	77	1.9	38	2.2	240	7.2	54	.3	.3		313	338	200	0	536	8.4	60
Jan. 21-31....		8.0	.02	77	1.9	44	2.8	240	8.0	60	.4	.7		325	469	200	0	570	8.3	60
Feb. 1-10.....		7.8	.20	74	5.7	45	1.7	240	11	65	.5	.0		328	382	208	11	572	7.8	55
Feb. 11-20....		5.9	.18	67	12	44	1.7	248	8.8	65	.5	.0		327	402	216	13	581	7.7	55
Feb. 21-28....		7.1	.15	67	10	45	2.0	244	8.8	64	.5	2.1		327	402	208	8	582	7.5	55
Mar. 1-10.....		6.8	.10	69	8.8	39	1.6	246	7.6	57	.4	.0		311	402	208	6	547	8.1	55
Mar. 11-15, 17-20.....		7.2	.09	74	3.8	35	1.2	238	6.8	50	.3	.0		295	361	200	5	517	7.9	55
Mar. 16.....		--	--	54	6.7	--	--	186	--	51	--	--		--	--	162	3	472	8.4	--

Mar.21-31,1961		4.8	.10	67	8.0	40	1.6	240	7.2	56	.3	.0		303	380	208	11	539	7.9	55
Apr. 1-6, 8-10		5.5	.11	72	6.9	34	1.4	250	6.4	49	.4	.0		299	368	208	3	525	8.0	55
Apr. 11-20....		4.8	.09	69	7.8	33	1.2	246	7.2	48	.3	.0		292	362	204	2	515	8.1	55
Apr. 21-30....		5.8	.03	69	7.8	32	1.4	248	6.4	43	.3	.0		288	363	204	1	516	7.9	55
May 2, 4-10...		4.3	.03	68	8.4	32	1.2	242	4.0	44	.3	.0		285	319	204	0	507	8.3	60
May 11, 13-20.		5.9	.03	70	10	30	1.0	246	2.4	44	.3	.0		293	323	216	1	521	8.4	60
May 21-30.....		7.2	.04	75	6.1	34	1.4	258	3.6	48	.3	.0		303	330	212	0	533	8.0	50
May 31.....		--	--	52	9.4	--	--	188		42	--	--		--	--	168	14	415	8.0	--
June 1-6, 8-12		6.2	.05	71	8.5	31	1.1	247	13	45	.2	.2		298	320	212	9	511	8.2	50
June 13-20....		6.2	.06	75	10	30	1.1	260	17	42	.2	.1		310	340	228	15	533	8.2	50
June 21-30....		6.2	.04	75	9.0	30	1.1	256	18	41	.2	1.0		308	344	224	14	534	8.0	50
July 1-5, 7-8.		6.8	.03	74	10	30	1.3	256	12	40	.0	1.0		301	342	226	16	571	7.9	60
July 11, 12, 15-17, 19,20		6.5	.03	72	8.9	29	1.1	252	10	38	.0	.9		290	334	220	13	518	8.0	60
July 22, 24, 25, 29-31...		8.3	.04	72	8.9	29	1.2	250	7.6	39	.0	1.0		294	330	216	4	512	8.3	60
Aug. 1-10.....		7.6	.05	74	9.1	28	1.2	262	5.6	39	.4	.1		294	332	222	7	518	7.8	45
Aug. 11-17, 19, 20.....		8.4	.02	74	9.6	30	1.3	264	9.2	42	.0	1.1		306	338	224	7	532	7.8	55
Aug. 21-31....		7.5	.04	74	8.6	29	1.1	264	7.2	38	.0	.9		296	338	220	3	527	7.7	55
Sept. 2-10....		5.8	.03	77	9.7	28	1.3	274	7.2	38	.4	.8		303	334	232	7	526	8.2	45
Sept. 11-20...		6.3	.04	75	9.5	28	1.2	274	10	39	.4	.2		305	338	226	1	539	7.9	65
Sept. 21-30...		5.8	.03	77	8.3	26	1.0	264	6.4	36	.4	.5		295	324	226	3	517	8.3	70
Time-weighted average...		7.0	0.05	72	6.4	34	1.6	245	8.3	47	0.3	0.6		--	354	208	5	526	8.0	55

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 1960 to September 1961

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	82	82	--	81	82	82	83	83	90	82	84	82	80	80	80	83	82	84	82	83	80	--	81	--	79	82	81	83	82	82	80	82
November	80	80	80	80	83	80	--	80	80	79	80	--	80	79	80	79	77	--	79	74	78	78	78	78	--	79	--	79	77	80	--	79
December	82	68	72	70	74	73	70	79	75	79	77	79	65	70	74	71	65	65	--	74	75	--	--	70	68	72	76	72	--	--	74	73
January	73	73	71	70	72	66	66	74	70	--	70	70	70	73	73	70	70	68	70	68	70	69	72	73	70	73	69	66	74	60	69	70
February	70	70	71	70	70	70	72	70	69	69	68	70	76	70	70	70	73	75	73	73	73	75	76	77	76	72	70	70	--	--	--	72
March	75	76	74	78	79	80	79	79	70	70	71	80	78	78	75	74	81	72	72	79	79	75	79	79	68	72	76	75	75	75	75	76
April	75	69	78	75	75	77	--	72	76	75	76	77	77	77	76	70	75	75	75	74	76	75	75	86	87	86	80	76	78	77	--	77
May	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
June	76	86	80	78	--	76	--	75	80	74	73	77	79	76	75	80	78	82	88	81	90	77	80	80	78	78	76	78	75	76	--	79
July	73	80	79	78	77	--	79	77	--	--	78	78	--	--	80	80	77	--	80	80	--	89	--	80	72	--	--	--	78	79	78	--
August	80	89	83	79	83	83	78	79	76	78	79	78	80	79	80	80	80	--	84	78	78	77	82	78	89	80	87	78	81	79	78	80
September	--	90	90	89	89	90	90	89	89	90	84	79	89	78	79	81	81	80	89	85	89	88	88	89	89	91	83	75	80	86	--	86

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2886. MIAMI CANAL AT N.W. 36th ST., 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 1961.
EXTREMES, 1960-61.--Specific conductance: Maximum daily, 35,200 micromhos May 24, 1961; minimum daily, 505 micromhos Oct. 2, 9, 1960.
EXTREMES, 1959-61.--Specific conductance: Maximum daily, 35,200 micromhos May 24, 1961; minimum daily, 395 micromhos June 30, 1959.
REMARKS.--Canal is tidal at low flow.

Discharge and conductance, water year October 1960 to September 1961

Day	October		November		December		January	
	Discharge (cfs)	Specific conductance (micromhos at 25°C)	Discharge (cfs)	Specific conductance (micromhos at 25°C)	Discharge (cfs)	Specific conductance (micromhos at 25°C)	Discharge (cfs)	Specific conductance (micromhos at 25°C)
1..	1370	510	1250	585	902	620	793	--
2..	1250	505	1250	570	874	620	815	--
3..	1320	510	1280	563	801	625	831	--
4..	1160	518	1240	562	809	625	831	--
5..	1260	525	1220	565	801	630	844	--
6..	1140	530	1170	568	834	638	835	--
7..	1310	525	1200	572	859	640	829	--
8..	1380	510	1140	578	845	640	834	--
9..	1440	505	1130	582	839	645	836	--
10..	1430	515	1140	588	824	645	883	--
11..	1450	519	1150	588	784	648	831	--
12..	1450	522	1080	590	850	650	980	--
13..	1440	532	1100	590	841	--	1090	--
14..	1440	535	1080	592	783	--	1160	--
15..	1450	542	1030	596	682	--	1130	--
16..	1350	540	1040	600	788	--	1110	552
17..	1260	545	1080	600	782	--	1100	570
18..	1270	552	1021	600	801	--	1040	565
19..	1250	558	1020	605	776	--	1010	570
20..	1260	560	995	605	783	--	1020	570
21..	1230	562	992	608	778	--	996	560
22..	1230	565	979	612	856	--	975	575
23..	1200	570	986	605	872	--	963	550
24..	1180	570	983	602	835	--	969	495
25..	1160	573	945	602	863	--	952	510
26..	1190	575	929	602	847	--	951	525
27..	1170	578	941	602	841	--	914	520
28..	1130	583	921	612	834	--	929	535
29..	1100	585	923	618	836	--	914	550
30..	1060	590	916	618	854	--	879	560
31..	1110	590	--	--	829	--	870	580
Average	1270	545	1070	593	823	--	939	--

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2886. MIAMI CANAL AT N.W. 36th ST., MIAMI, FLA. (BELOW CONTROL).--Continued

Discharge and conductance, water year October 1960 to September 1961--Continued

Day	February		March		April		May	
	Discharge (cfs)	Specific conductance (micromhos at 25°C)	Discharge (cfs)	Specific conductance (micromhos at 25°C)	Discharge (cfs)	Specific conductance (micromhos at 25°C)	Discharge (cfs)	Specific conductance (micromhos at 25°C)
1..	812	590	770	675	265	1630	20	17400
2..	802	605	768	869	290	1360	90	16600
3..	778	615	742	1200	290	2280	120	19200
4..	889	620	775	1200	290	1170	120	12100
5..	884	622	786	1200	255	1050	120	10500
6..	811	625	816	1190	230	1120	105	11500
7..	782	630	816	1100	230	1140	15	13300
8..	879	630	720	1060	230	1240	0	--
9..	867	635	518	1090	230	1560	15	17900
10..	825	--	240	1090	230	1960	145	26600
11..	811	--	110	1100	230	2710	125	26900
12..	814	--	110	1450	230	2380	105	14500
13..	802	--	110	1790	230	2720	45	10700
14..	807	--	170	1410	230	3210	0	--
15..	772	--	230	970	230	3920	0	--
16..	757	--	230	930	230	2360	0	--
17..	724	--	230	940	220	2170	0	--
18..	702	--	230	935	140	3560	0	--
19..	727	--	230	930	120	2720	0	--
20..	741	--	230	930	120	2380	0	--
21..	736	--	230	930	120	4710	0	--
22..	750	--	230	930	120	10100	0	--
23..	787	--	320	--	85	9110	0	--
24..	845	--	415	--	30	8170	30	35200
25..	834	--	340	--	0	--	288	24200
26..	750	--	340	910	0	--	440	4120
27..	724	670	340	950	0	--	900	1500
28..	740	675	235	1000	35	24600	935	1240
29..	--	--	180	1020	80	22100	884	1260
30..	--	--	230	1010	60	20200	831	1280
31..	--	--	230	1020	--	--	566	1260
Average	791	--	385	1070	168	5250	190	--

	June		July		August		September	
1..	473	1250	445	1570	45	--	195	1610
2..	398	1240	342	1560	0	--	180	1610
3..	514	1240	357	1600	15	--	165	1640
4..	605	1200	346	1700	86	--	60	2120
5..	477	1200	223	1830	264	--	0	--
6..	408	1220	223	1950	170	--	0	--
7..	328	1280	222	2010	60	--	30	11700
8..	215	1310	216	2250	55	--	50	14500
9..	442	1340	178	2320	0	--	120	15000
10..	574	1350	230	2350	0	--	60	10100
11..	564	1420	247	2500	0	--	0	--
12..	463	1290	252	2600	0	--	0	--
13..	390	1260	245	2700	0	--	0	--
14..	306	1350	194	2900	0	--	40	16700
15..	243	1550	177	4770	0	--	360	17200
16..	248	1650	159	7510	0	--	498	5970
17..	351	1630	120	--	135	--	564	3100
18..	225	1880	292	--	190	--	507	2320
19..	179	4200	217	--	185	6860	400	2780
20..	177	2580	195	--	265	6250	348	2870
21..	195	4320	120	--	441	2510	260	2930
22..	135	5010	60	--	434	1570	226	3000
23..	120	4820	0	--	484	1580	225	3050
24..	120	5120	0	--	262	1510	240	3050
25..	120	4370	40	--	240	1530	230	3100
26..	115	3320	230	--	240	1550	170	3750
27..	171	1770	445	--	180	1590	120	4240
28..	586	1500	255	--	271	1640	120	4580
29..	595	1460	175	--	594	1520	120	5150
30..	470	1520	120	--	438	1580	120	6190
31..	--	--	60	--	278	1580	--	--
Average	340	2820	206	--	172	--	180	5930

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2908.2. EVERGLADES P-33 NEAR HOMESTEAD, FLA.

LOCATION.--Temperature recorder in Everglades National Park, 13 miles southeast of 50-mile bend on U. S. Highway 41, and 16 miles northwest of Homestead, Dade County.
RECORDS AVAILABLE.--Water temperatures: April 1960 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 100°F June 20, July 8.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1960 to September 1961

Date of collection	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	Hydrogen sulfide (H_2S)
													Residue at 180°C	Calculated	Calcium, magnesium	Noncarbonate				
Dec. 19, 1960.	1.9	0.00	37	1.3	6.3	0.2	116	0.8	10	0.2	0.2	0.0	134	115	98	3	218	7.5	20	0.0
Feb. 24, 1961.	1.8	.10	48	3.9	9.5	.2	150	3.2	17	.2	.0	.1	189	158	136	13	283	7.3	46	6.8
May 26.....	4.9	.01	44	2.9	12	.6	137	.0	20	.1	.6	.0	178	152	122	10	275	7.8	20	.0
Aug. 7.....	3.2	.00	50	.7	6.8	.6	148	.0	13	.2	1.1	.0	184	148	128	6	278	8.2	10	--

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

2-2908.2. EVERGLADES P-33 NEAR HOMESTEAD, FLA.--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	88	90	89	87	86	85	86	86	88	89	88	87	87	86	86	88	86	86	86	86	88	86	84	82	81	82	84	84	86	84	82	86
Minimum	84	84	84	84	82	83	83	83	84	85	85	84	84	84	82	83	82	82	83	82	84	82	80	79	79	78	80	81	81	81	80	82
November																																
Maximum	82	80	79	77	79	80	78	74	75	79	80	82	80	79	78	79	80	81	82	80	79	77	78	79	79	79	79	79	80	81	--	79
Minimum	80	78	76	74	74	76	74	70	72	74	77	78	78	76	75	76	77	77	78	77	76	75	75	76	77	77	76	77	77	77	--	76
December																																
Maximum	77	72	68	70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	66	66	65	58	60	64	64	64	68	70	72	73	--
Minimum	72	66	65	66	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	61	63	58	55	57	59	61	62	63	66	68	70	--
January																																
Maximum	73	73	72	68	64	67	70	72	71	68	68	68	71	73	73	73	70	67	67	66	63	62	63	67	70	72	71	70	71	71	70	69
Minimum	70	71	67	61	59	62	64	67	68	66	66	67	67	69	69	69	66	62	62	63	58	57	56	60	64	66	69	66	68	65	64	65
February																																
Maximum	72	71	73	73	71	71	74	75	72	69	65	67	70	72	74	76	75	76	78	79	78	79	80	80	80	76	75	79	--	--	--	74
Minimum	65	68	69	71	68	66	68	71	66	63	61	60	63	66	69	70	71	71	73	74	75	74	70	76	76	69	69	73	--	--	--	69
March																																
Maximum	80	80	80	80	80	82	80	79	79	72	70	73	74	80	80	79	79	80	82	85	86	88	83	82	85	82	82	84	89	87	87	81
Minimum	74	75	75	75	75	76	76	76	74	65	64	68	71	70	74	72	74	75	76	77	78	75	74	73	70	72	72	72	74	77	76	73
April																																
Maximum	80	85	84	84	82	84	84	80	83	89	88	88	88	86	89	86	84	80	86	78	78	78	86	86	88	88	89	86	84	82	--	84
Minimum	75	72	70	73	66	70	74	72	73	77	74	76	76	69	75	78	69	68	66	67	66	66	67	70	70	71	73	73	73	70	--	71
May																																
Maximum	79	74	83	90	88	88	86	86	77	86	88	93	90	94	94	92	96	93	90	94	91	88	87	91	82	92	90	87	94	95	94	89
Minimum	69	71	69	73	74	74	72	70	71	70	70	73	77	76	75	75	76	75	74	74	74	75	74	76	76	74	78	78	77	77	76	74
June																																
Maximum	93	92	90	97	97	94	90	82	84	94	95	96	98	91	98	98	99	99	100	95	96	94	90	93	97	91	85	90	95	--	94
Minimum	76	75	77	77	77	79	80	78	76	76	77	79	79	80	81	78	79	80	79	81	80	80	78	78	77	79	80	77	75	79	--	78
July																																
Maximum	92	90	91	96	94	93	98	100	98	93	93	98	98	95	99	99	89	89	95	91	94	95	95	94	90	94	94	96	93	97	96	94
Minimum	80	81	81	78	80	81	79	82	82	81	81	82	82	83	82	82	81	80	80	81	79	81	81	81	80	79	77	81	81	81	82	81
August																																
Maximum	97	93	94	92	98	98	99	94	91	95	96	94	94	96	98	98	99	94	96	97	89	86	92	96	94	94	94	96	91	95	96	95
Minimum	82	82	80	81	81	82	82	82	80	79	80	78	80	80	80	80	80	80	79	80	80	78	77	78	81	80	79	80	82	81	82	80
September																																
Maximum	96	95	96	96	94	95	87	86	92	94	94	91	94	95	93	93	92	91	96	94	96	96	93	91	92	89	90	90	89	90	--	93
Minimum	83	83	83	83	81	82	81	80	80	80	81	80	80	79	81	78	78	78	80	81	81	82	80	78	79	78	78	78	78	78	--	80

2-2908.3. EVERGLADES P-35 NEAR HOMESTEAD, FLA.

LOCATION.--Temperature recorder in Everglades National Park, 100 feet from Rookery Branch, 8 miles upstream from Shark River, 17 miles northeast of Royal Palm station, and 24 miles west of Homestead, Dade County.
RECORDS AVAILABLE.--Water temperatures: March 1960 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 96°F May 16, 18; minimum, 60°F Dec. 23-25, Jan. 21-24.
EXTREMES, 1959-61.--Water temperatures: Maximum, 98°F May 18-19, 1960; minimum, 60°F Dec. 23-25, 1960; Jan. 21-24, 1961.
REMARKS.--No discharge records available for this station. Recorder stopped May 18 to July 5; range in temperature 74°F to 94°F.

Temperature (°F) of water, water year October 1960 to September 1961

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	86	87	35	85	83	83	84	84	85	85	84	83	83	83	83	84	84	83	82	83	83	83	81	80	80	80	81	81	81	81	81	83
Minimum	82	82	82	82	81	81	81	82	83	83	82	81	81	81	81	81	81	80	80	81	82	80	79	79	79	79	80	80	80	80	79	81
November																																
Maximum	81	79	78	76	76	76	76	73	73	76	77	78	79	77	76	76	77	77	78	78	77	76	76	76	76	76	76	76	76	77	--	77
Minimum	79	77	74	74	71	74	73	70	70	72	74	76	76	75	74	74	74	75	75	75	74	74	74	74	74	74	74	75	74	75	--	74
December																																
Maximum	76	72	68	67	67	67	67	69	70	71	72	72	71	66	64	64	64	64	63	63	64	64	62	60	62	62	63	66	68	70	70	67
Minimum	72	67	65	66	66	66	66	67	68	69	70	71	66	62	62	64	62	62	62	62	62	62	60	60	60	61	62	62	65	67	68	65
January																																
Maximum	72	72	72	68	64	65	66	68	68	68	68	68	70	71	71	72	70	68	66	64	64	62	61	62	65	68	69	69	69	69	68	68
Minimum	70	71	68	64	63	63	64	65	68	68	67	67	68	69	69	68	67	65	63	63	60	60	60	60	61	64	67	67	67	67	65	65
February																																
Maximum	68	68	71	71	71	69	72	72	71	68	65	64	66	68	71	73	72	74	75	76	77	77	78	79	78	78	72	76	--	--	--	72
Minimum	65	66	67	70	68	67	68	71	68	65	62	61	61	64	67	69	70	70	72	74	74	74	74	75	76	70	68	71	--	--	--	69
March																																
Maximum	77	76	77	77	78	78	78	78	78	76	69	70	71	76	76	76	76	78	80	80	81	81	81	77	76	77	76	76	78	81	83	77
Minimum	72	74	75	74	74	76	76	76	76	67	64	66	68	71	74	70	72	74	76	76	76	76	74	72	70	72	71	73	72	75	76	73
April																																
Maximum	82	78	78	78	79	77	78	78	76	82	86	84	86	87	85	88	86	84	82	90	82	74	76	74	76	76	78	80	80	80	--	81
Minimum	78	72	70	72	66	69	69	72	72	75	73	74	74	68	72	75	68	65	64	64	62	64	66	68	69	70	72	74	76	70	--	70
May																																
Maximum	76	74	72	78	77	75	78	78	78	74	80	86	92	88	95	96	92	96	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	70	71	69	69	70	72	72	72	73	70	66	68	72	72	72	70	72	74	--	--	--	--	--	--	--	--	--	--	--	--	--	--
June																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July																																
Maximum	--	--	--	--	--	84	85	88	88	86	86	88	88	87	89	90	84	82	88	91	90	92	92	90	88	85	90	86	88	92	94	88
Minimum	--	--	--	--	--	82	80	82	82	80	81	82	83	83	82	82	80	78	77	79	78	79	82	82	81	78	80	77	76	77	88	80
August																																
Maximum	94	93	90	94	95	94	92	88	86	92	92	91	84	90	90	92	94	94	93	92	87	91	87	87	85	86	82	82	82	84	85	89
Minimum	88	88	84	83	88	88	87	81	79	75	88	85	80	79	85	82	85	88	84	83	78	77	76	75	78	77	77	78	77	78	75	82
September																																
Maximum	86	80	80	85	86	92	86	81	90	90	87	88	86	90	88	91	91	89	89	91	92	92	89	90	88	88	88	86	88	88	--	88
Minimum	78	78	77	78	78	76	77	78	76	75	75	74	77	74	83	80	86	83	84	82	82	84	82	78	76	74	74	74	74	74	--	78

SUWANNEE RIVER BASIN

2-3215. SANTA FE RIVER AT WORTHINGTON, FLA.

LOCATION.--Temperature recorder at gaging station on downstream side of 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 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 81°F July 16-18, 31; minimum, 43°F Dec. 24.
EXTREMES, 1957-61.--Water temperatures: Maximum, 84°F June 17, 1958; minimum, 40°F Feb. 1958.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Temperature (°F) of water, water year October 1960 to September 1961

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	75	75	74	74	73	73	73	73	73	73	73	74	74	74	74	74	74	73	73	74	74	72	70	68	67	67	68	69	70	70	69	74
Minimum	75	74	73	73	73	73	73	73	73	73	72	73	74	74	74	74	73	72	73	73	72	70	68	66	66	66	67	68	69	69	69	72
November																																
Maximum	69	69	66	64	63	63	63	60	61	63	64	64	64	66	66	67	68	69	69	68	66	65	66	67	67	68	68	68	68	68	--	66
Minimum	69	66	64	63	63	63	60	58	58	61	63	64	64	64	65	66	67	68	68	66	64	64	64	66	67	67	68	68	68	64	--	65
December																																
Maximum	64	58	54	52	52	54	54	54	55	58	60	60	58	51	50	51	51	49	46	47	48	48	46	44	45	47	48	50	52	55	57	54
Minimum	58	54	52	52	52	52	53	54	54	55	58	58	51	48	48	50	49	46	45	45	47	46	44	43	44	45	47	48	50	52	55	51
January																																
Maximum	58	58	56	53	50	49	51	52	52	52	52	53	56	58	58	58	57	55	54	54	51	49	48	51	53	52	52	51	49	49	51	53
Minimum	57	56	53	50	48	48	49	51	52	50	51	51	53	56	58	57	54	53	52	50	49	46	45	48	51	51	51	49	49	48	47	52
February																																
Maximum	51	52	52	51	51	52	54	55	55	53	51	53	56	57	58	60	61	63	65	68	69	70	70	67	67	66	62	63	--	--	--	60
Minimum	48	50	51	49	48	50	52	55	53	50	50	50	52	54	55	57	58	61	63	65	67	68	67	67	66	62	59	60	--	--	--	57
March																																
Maximum	66	66	65	68	70	71	71	71	71	64	60	62	62	63	63	64	65	65	66	68	68	66	66	64	63	61	62	63	66	68	68	66
Minimum	63	65	63	65	68	70	70	70	64	60	56	57	61	61	61	60	63	64	64	65	66	65	63	63	61	59	60	61	63	66	67	64
April																																
Maximum	67	67	64	62	62	61	62	62	62	64	64	64	64	62	64	63	63	61	61	61	61	63	64	65	67	69	69	70	69	68	--	65
Minimum	66	64	61	61	58	59	61	59	61	62	61	62	61	60	61	63	60	60	61	60	60	61	61	63	64	66	67	68	66	65	--	63
May																																
Maximum	66	69	69	71	72	74	75	75	74	72	71	67	69	71	72	75	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Minimum	65	65	67	67	69	70	71	72	72	69	67	66	66	67	68	70	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
June																																
Maximum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	78	78	--	--	
Minimum	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	75	75	--	--	
July																																
Maximum	79	79	79	78	79	78	78	78	77	75	77	77	79	80	81	81	81	81	79	77	76	77	78	79	79	79	78	78	79	80	81	79
Minimum	76	76	77	75	76	76	76	76	77	73	73	77	76	77	79	79	80	79	77	76	76	76	77	78	78	76	77	78	79	79	80	78
August																																
Maximum	81	80	78	78	79	79	79	79	80	80	79	80	80	78	78	78	78	77	77	75	74	75	75	76	77	77	77	77	78	78	79	78
Minimum	80	78	76	77	78	79	78	78	79	77	77	79	78	76	77	78	77	77	75	73	74	74	74	75	76	76	77	77	78	78	78	77
September																																
Maximum	79	79	79	79	79	79	80	80	80	80	80	80	80	80	80	80	78	76	75	76	76	78	78	78	78	79	80	80	80	79	--	79
Minimum	78	79	79	77	79	78	79	80	80	80	80	80	79	79	80	78	76	75	75	75	75	76	77	77	77	77	79	79	78	77	--	78

2-3310. CHATTAHOOCHEE RIVER NEAR LEAF, GA.

LOCATION.--At bridge on State Highway 115, 1.5 miles east of Leaf, White County, 2.5 miles downstream from Blue Creek, 3 miles upstream from Soque River, 7.5 miles southeast of Cleveland, and at mile 405.6.
DRAINAGE AREA.--150 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 36 ppm Dec. 21-31; minimum, 12 ppm Feb. 21, 22, 24-26, 28.
Hardness: Maximum, 24 ppm Feb. 15; minimum, 4 ppm Feb. 21, 22, 24-26, 28.
Water temperatures: Maximum, 80°F July 1; minimum, freezing point Dec. 22, Jan. 22.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-10,1960	504	7.9	0.00	2.2	0.2	1.6	0.6	12	2.8	0.5	0.1	0.1		22	20	6	0	24	7.3	10
Oct. 11-20....	400	8.9	.00	1.6	.5	1.5	.6	11	2.8	.5	.1	.1		22	28	6	0	23	6.6	10
Oct. 21-31....	323	8.6	.00	1.6	.5	1.5	.6	10	2.8	1.0	.1	.0		22	26	6	0	29	6.5	10
Nov. 1-10.....	303	9.8	.01	2.0	.2	1.8	.9	12	.8	1.0	.0	.0		22	19	6	0	24	6.5	5
Nov. 11-20....	266	9.0	.00	2.0	.2	1.7	.6	11	.4	1.0	.1	.0		20	17	6	0	22	6.7	5
Nov. 21-30....	264	10	.01	2.0	.2	1.9	.6	13	.8	1.0	.1	.0		23	20	6	0	25	6.7	5
Dec. 1-10.....	242	10	.01	2.4	.2	1.7	.6	13	2.4	.5	.2	.0		24	21	7	0	27	6.7	5
Dec. 11-20....	341	9.7	.00	3.4	.4	1.7	.6	15	.8	.5	.1	.0		25	23	10	0	30	6.6	5
Dec. 21-31....	264	10	.01	2.6	.0	3.2	.6	12	.8	3.0	.0	.0		28	36	6	0	33	6.6	5
Jan. 1-10.....	325	8.2	.01	1.6	.5	1.8	.6	10	1.6	1.0	.1	.0		20	25	6	0	25	6.8	0
Jan. 11-20....	306	8.2	.01	1.6	.4	1.6	.6	10	1.6	1.0	.1	.0		20	23	6	0	24	6.6	0
Jan. 21-31....	275	8.6	.01	1.6	.4	1.6	.6	10	1.6	1.0	.1	.0		20	23	6	0	39	6.5	0
Feb. 1-4,6-10, 11, 13, 14, 18-20,23,27.	506	9.5	.00	2.0	.2	1.6	.9	10	2.8	1.0	.0	.1		23	19	6	0	21	6.8	0
Feb. 5, 12....	268	--	--	5.2	1.7	--	--	24	--	3.5	--	--		--	--	20	0	58	7.2	--
Feb. 15.....	266	--	--	8.0	1.0	--	--	30	--	.0	--	--		--	--	24	0	52	7.5	--
Feb. 21, 22, 24-26, 28...	2320	5.8	.03	.8	.5	1.1	.6	6	.0	1.0	.1	.1		13	12	4	0	16	6.6	15
Mar. 1-6, 8-10	836	8.5	.00	1.6	.2	1.6	1.0	10	1.6	1.0	.0	.0		20	22	5	0	19	6.9	0
Mar. 7.....	756	--	--	4.4	1.2	--	--	20	--	5.5	--	--		--	--	16	0	48	7.4	--
Mar. 11-20....	611	9.4	.00	1.6	.2	1.6	1.0	10	2.0	1.0	.0	.0		22	20	5	0	19	6.7	0
Mar. 21-31....	562	9.1	.00	1.6	.2	1.6	1.0	10	1.6	.8	.0	.0		21	25	5	0	20	6.7	0

APALACHICOLA RIVER BASIN--Continued

2-3310. CHATTAHOOCHEE RIVER NEAR LEAF, GA.--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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. 1-10,1961	612	8.8	0.02	2.0	0.5	1.6	0.6	12	0.8	1.0	0.0	0.0		21	22	7	0	23	7.0	0
Apr. 11-20....	768	7.8	.01	1.6	.5	1.6	.6	10	.8	1.0	.0	.0		19	36	6	0	21	6.9	0
Apr. 21-30....	525	8.9	.02	2.0	.5	1.5	.6	12	.8	1.0	.0	.6		22	22	7	0	23	7.0	0
May 1-10.....	465	8.9	.00	1.6	.5	1.4	.6	11	.8	.5	.0	.0		20	28	6	0	21	7.0	0
May 11-20.....	475	8.8	.00	1.8	.4	1.4	.6	11	.8	.5	.0	.0		20	34	6	0	20	6.9	0
May 21-31.....	396	9.6	.00	2.0	.2	1.6	.6	12	.8	1.0	.0	.0		22	31	6	0	22	7.0	0
June 1-7,9,10.	371	9.7	.03	1.2	.7	1.9	.8	11	.8	.5	.0	.0		21	17	6	0	22	6.6	5
June 8.....	332	--	--	4.4	.7	--	--	18	--	.0	--	--		--	--	14	0	35	7.6	
June 11-20....	392	10	.02	1.6	.5	1.9	.8	11	1.6	.0	.0	.0		22	19	6	0	22	6.5	5
June 21-27, 29, 30.....	772	8.8	.01	1.6	.5	1.8	.8	10	.8	.5	.0	.0		20	18	6	0	22	6.5	5
June 28.....	718	--	--	1.2	1.2	--	--	30	--	.5	--	--		--	--	8	0	61	7.6	--
July 1-10.....	429	8.8	.01	1.6	.4	2.4	.8	14	.4	1.0	.0	.3		23	18	6	0	24	6.6	5
July 11-20....	473	8.7	.02	1.6	.2	2.5	.7	10	.8	1.0	.0	.2		21	17	5	0	22	6.7	10
July 21-31....	446	10	.00	1.8	.2	2.5	.8	12	.4	.5	.0	.4		23	18	6	0	24	6.5	5
Aug. 1-10.....	422	9.3	.03	1.6	.4	1.8	.7	11	.0	2.0	.0	.1		21	24	6	0	21	7.1	2
Aug. 11-20....	382	9.4	.02	1.8	.4	1.6	.7	12	.0	2.0	.0	.1		22	26	6	0	22	6.7	3
Aug. 21-31....	421	9.6	.02	1.8	.5	1.8	.7	12	.0	2.0	.0	.1		22	25	6	0	23	7.1	2
Sept. 1-10....	375	9.1	.02	1.6	.5	1.7	.7	10	.0	.5	.1	.2		19	16	6	0	22	6.7	2
Sept. 11-20...	307	9.4	.02	1.8	.4	1.7	.8	10	.0	.5	.1	.2		20	16	6	0	20	7.2	4
Sept. 21-30...	277	9.3	.02	1.6	.5	1.7	.8	10	.0	.5	.1	.3		20	18	6	0	20	6.9	2
Weighted average....	--	8.8	0.01	1.8	0.4	1.7	0.7	11	1.1	1.0	0.0	0.1		23	--	6	0	22	6.7	3
Time-weighted average....	460.7	9.1	0.01	1.9	0.4	1.8	0.7	11	1.1	1.0	0.0	0.1		24	--	6	0	23	6.7	3
Tons per day.	--	11	0.01	2.2	0.5	2.1	0.9	13	1.3	1.2	0.0	0.1		29	--	--	--	--	--	--

APALACHICOLA RIVER BASIN--Continued

2-3310. *CHATTAHOOCHEE RIVER NEAR LEAF, GA.*--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	67	66	68	67	61	64	67	67	65	63	64	65	65	66	66	63	64	64	62	64	64	60	63	62	55	53	56	62	62	60	62	63
November	55	52	50	50	50	50	50	48	48	52	54	48	50	54	50	54	50	54	54	54	52	50	54	55	55	60	65	65	60	48	--	53
December	44	40	40	40	40	48	50	52	48	40	42	40	38	42	40	40	40	44	40	40	40	32	36	38	42	40	48	40	42	46	42	41
January	44	40	42	44	40	42	44	40	40	38	40	42	40	46	42	42	46	42	40	40	36	32	38	38	40	36	38	40	40	42	40	40
February	40	40	38	38	42	42	36	40	40	42	40	50	50	50	52	54	50	52	50	50	50	50	50	54	46	44	48	54	--	--	--	46
March	54	50	50	54	56	54	54	60	48	48	48	54	52	58	50	52	50	48	50	54	54	60	60	50	50	56	58	60	58	60	56	53
April	56	50	50	50	48	50	48	50	50	54	50	50	48	52	50	50	50	--	54	60	58	60	60	62	70	70	56	66	58	60	--	54
May	60	62	64	--	62	60	60	68	60	56	56	60	66	68	68	68	70	66	68	70	72	66	70	68	68	66	60	68	68	74	60	65
June	68	64	66	74	64	--	64	62	64	62	68	64	64	64	64	58	54	58	62	62	60	66	62	60	62	60	64	64	64	66	--	63
July	80	66	64	64	66	66	64	70	68	64	60	62	64	64	70	74	70	68	66	66	70	72	76	72	70	72	70	70	68	76	72	68
August	74	76	72	70	68	72	72	70	72	74	74	72	74	72	66	66	74	68	68	72	58	68	72	64	64	68	74	74	74	68	68	70
September	70	72	74	70	74	70	72	72	70	74	70	70	70	68	66	64	68	60	60	68	64	68	66	70	70	72	68	66	66	64	--	68

2-3475. FLINT RIVER NEAR CULLODEN, GA.

LOCATION.--Temperature recorder at 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.--Water temperatures: June 1960 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 88°F July 30, 31, Aug. 1, 2; minimum, 37°F Dec. 24.

Temperature (°F) of water, water year October 1960 to September 1961
[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	69	70	72	72	73	73	72	73	73	73	73	73	73	73	73	73	73	72	71	69	67	64	63	63	63	62	61	63	63	62	61	69
Minimum	68	69	69	70	70	71	71	71	71	70	70	70	70	70	70	70	69	68	68	67	63	60	59	60	59	58	59	60	59	60	60	66
November																																
Maximum	60	59	59	59	58	58	56	54	54	55	55	54	53	53	54	56	57	57	57	56	54	54	56	57	57	58	59	60	61	60	--	57
Minimum	57	56	56	55	54	55	53	50	51	54	53	52	50	50	51	53	56	57	54	52	52	51	54	56	57	57	57	57	60	54	--	54
December																																
Maximum	54	50	47	45	45	46	49	50	50	50	52	52	48	45	42	44	43	42	42	42	43	42	40	39	41	42	45	48	48	49	49	46
Minimum	50	46	43	42	42	44	45	49	49	48	50	48	44	41	41	42	40	40	39	40	42	40	38	37	38	39	42	45	46	47	47	43
January																																
Maximum	49	48	47	46	44	43	44	45	44	44	42	43	44	47	48	49	49	48	48	47	45	42	42	44	44	43	41	40	41	41	42	45
Minimum	48	47	46	43	42	42	42	44	42	40	39	40	42	44	47	48	48	45	46	44	42	39	40	42	43	41	40	40	39	39	40	43
February																																
Maximum	42	44	44	44	44	44	43	43	44	44	45	47	50	53	54	56	56	56	56	56	56	56	57	57	58	58	56	56	--	--	--	51
Minimum	41	41	43	42	41	42	43	43	43	42	43	44	46	49	51	53	54	55	56	56	56	56	56	57	57	56	56	56	--	--	--	49
March																																
Maximum	56	56	56	57	60	62	64	64	64	59	56	55	55	58	58	60	60	60	57	57	57	57	59	59	59	61	61	60	63	63	63	59
Minimum	56	55	54	55	57	60	62	64	59	56	54	54	55	55	57	58	60	57	56	56	57	57	57	58	57	58	59	60	60	62	62	58
April																																
Maximum	62	61	60	59	59	59	59	59	58	59	59	59	59	60	62	62	62	60	61	62	63	65	68	70	72	72	69	66	65	64	--	62
Minimum	61	60	59	58	57	58	57	57	58	58	58	58	58	58	60	61	60	58	59	61	62	63	65	67	70	69	66	64	64	63	--	61
May																																
Maximum	64	65	65	65	66	69	71	72	72	70	67	65	65	66	68	71	71	73	76	76	77	77	76	72	71	69	67	66	67	71	73	70
Minimum	64	64	64	64	65	66	68	70	70	67	65	64	63	64	66	68	70	71	72	73	74	74	72	70	69	67	65	65	65	67	69	68
June																																
Maximum	75	77	78	79	81	82	82	82	82	83	83	82	83	82	82	81	74	73	75	75	72	72	72	73	73	73	73	74	75	76	--	77
Minimum	71	72	74	74	75	77	77	78	79	79	79	79	79	79	79	74	71	69	70	72	71	71	70	71	72	73	72	73	74	74	--	74
July																																
Maximum	77	80	81	82	82	82	82	81	81	80	80	75	76	78	79	81	83	83	83	83	82	83	83	84	85	85	85	86	87	88	88	82
Minimum	75	76	78	79	79	79	79	79	79	78	75	73	74	75	77	79	79	80	80	80	79	80	81	80	81	81	82	81	82	82	82	79
August																																
Maximum	88	88	87	87	86	86	82	80	78	78	79	81	82	81	81	82	82	81	80	79	80	80	80	78	73	71	72	75	78	79	78	80
Minimum	82	83	83	83	81	81	80	78	75	76	77	79	80	79	78	77	76	76	76	76	76	76	76	73	71	71	71	72	75	78	77	77
September																																
Maximum	79	80	80	80	80	80	80	80	80	80	81	81	82	81	79	76	73	72	72	74	76	77	79	80	80	80	80	80	79	77	--	79
Minimum	76	78	78	78	79	78	78	79	78	77	78	78	78	78	76	72	69	68	69	70	70	71	73	75	75	76	76	75	73	73	--	75

2-3570. SPRING CREEK NEAR IRON CITY, GA.

LOCATION.--At gaging station on right bank 125 feet downstream from highway bridge, 1.5 miles downstream from Aycock Creek, 1.5 miles upstream from Dry Creek, 5 miles north of Brinson, and 5.5 miles northeast of Iron City, Seminole County.
DRAINAGE AREA.--485 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1959 to September 1961.
Water temperatures: October 1959 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 122 ppm Oct. 21-31; minimum, 57 ppm Apr. 16-21.
Hardness: Maximum, 104 ppm Oct. 21-31; minimum, 28 ppm Apr. 16-21.
Specific conductance: Maximum daily, 362 micromhos June 27; minimum daily, 50 micromhos Apr. 17.
Water temperatures: Maximum, 84°F Aug. 3; minimum, 42°F Dec. 19, 20, 22, 23, 26.
EXTREMES, 1959-61.--Dissolved solids: Maximum, 125 ppm Sept. 1-10, 1960; minimum, 57 ppm Apr. 16-21, 1961.
Hardness: Maximum, 106 ppm June 11-20, 1960; minimum, 28 ppm Apr. 16-21, 1961.
Specific conductance: Maximum daily, 362 micromhos June 27, 1961; minimum daily, 50 micromhos Apr. 17, 1961.
Water temperatures: Maximum, 87°F July 6, Sept. 14, 1960; minimum, 42°F Dec. 19, 20, 22, 23, 26, 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 1960 to September 1961

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
Oct. 1-10,1960	328	6.0	0.01	34	0.2	2.4	0.2	101	4.0	3.0	0.1	0.1		100	105	86	3	179	7.7	0
Oct. 11-20....	203	4.7	.00	40	.5	2.4	.1	124	.8	2.5	.2	.0		112	115	102	0	209	7.9	0
Oct. 21-31....	147	5.2	.00	41	.4	2.4	.1	127	1.6	2.5	.1	.0		116	122	104	0	218	7.9	12
Nov. 1-10.....	115	6.3	.01	41	.1	2.6	.3	126	.8	2.2	.0	.5		116	115	103	0	211	7.7	5
Nov. 11-20....	101	6.6	.02	41	.0	2.6	.3	126	1.2	2.0	.0	.4		116	116	102	0	212	7.6	5
Nov. 21-30....	100	6.6	.02	41	.0	2.4	.4	123	1.2	2.2	.1	.4		115	114	102	1	209	7.7	5
Dec. 1-10.....	95	5.6	.00	38	1.7	2.4	.3	124	.8	2.5	.2	.4		113	113	102	0	206	7.8	0
Dec. 11-20....	107	5.3	.00	37	.4	2.8	.4	114	1.6	3.0	.1	.2		107	113	94	0	196	7.8	0
Dec. 21-31....	112	5.3	.00	34	.7	2.8	.4	106	2.4	3.0	.1	.2		101	108	88	1	192	7.8	0
Jan. 1-10,1961	119	4.7	.01	35	.6	2.6	.3	108	1.6	3.0	.3	.0		101	103	90	1	186	7.8	0
Jan. 11-20....	138	4.8	.00	32	.5	2.7	.3	101	2.4	3.0	.2	.3		96	99	82	0	175	7.8	0
Jan. 21-31....	178	5.5	.01	30	.2	3.8	.3	93	3.2	3.5	.2	.2		93	100	76	0	166	7.8	0
Feb. 1-10.....	251	5.8	.01	27	.9	2.6	.2	82	5.2	3.0	.1	.2		85	69	71	4	149	7.7	10
Feb. 11-20....	302	5.9	.02	28	.7	2.8	.2	82	5.2	4.0	.1	2.1		89	107	73	6	155	7.4	10
Feb. 21-26, 28	495	6.1	.02	27	.6	2.6	.4	82	4.4	4.0	.1	.1		85	119	70	3	148	7.7	25
Mar. 1-7,21-25	741	5.4	.03	27	.6	2.4	.6	82	2.8	3.0	.1	.4		82	105	70	3	147	7.7	15
Mar.8-10,26-31	548	5.5	.02	32	.2	2.4	.2	94	3.2	3.0	.1	.3		93	117	81	4	165	7.9	20
Mar. 11-20....	450	4.9	.01	33	.4	2.4	.4	103	1.2	4.0	.1	.3		98	112	84	0	174	7.7	15

APALACHICOLA RIVER BASIN--Continued

2-3570. SPRING CREEK NEAR IRON CITY, GA.--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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. 1-12, 26-30, 1961.	706	7.9	0.00	29	0.4	2.4	0.2	88	3.2	3.0	0.0	0.0		89	99	74	2	151	7.6	20
Apr. 13-15, 22-25.....	1470	7.9	.03	21	.4	2.4	.6	63	3.2	5.0	.0	.0		72	80	54	2	113	7.8	40
Apr. 16-21....	4320	4.1	.08	9.6	1.0	1.7	.6	32	1.6	7.0	.0	.0		42	57	28	2	62	7.3	65
May 1-10.....	699	5.8	.01	32	.0	2.0	.2	94	.4	4.0	.0	.1		91	103	80	3	165	7.6	15
May 11-20.....	537	5.9	.01	32	.5	2.2	.2	100	.8	4.0	.0	.1		95	107	82	0	170	7.7	10
May 21-27.....	467	6.1	.00	35	.6	1.8	.2	110	.8	4.0	.0	.1		103	110	90	0	181	7.6	15
May 28-31.....	2510	5.3	.09	14	1.2	1.1	.4	43	.8	6.0	.0	.0		50	68	43	8	80	7.3	65
June 1, 2, 22-26, 28-30	1014	6.9	.05	23	.1	2.1	.3	70	.4	3.5	.0	.0		70	67	58	1	121	7.4	30
June 3-10, 21.	488	5.1	.02	32	.0	2.3	.2	97	.4	2.8	.0	.1		91	67	80	0	163	7.8	20
June 11-20....	290	5.1	.01	37	.4	2.6	.3	113	.4	2.8	.1	.0		105	100	94	1	189	7.7	10
June 27.....	900	--	--	16	3.9	--	--	212	--	5.0	--	--		--	--	56	0	362	8.4	--
July 1, 2.....	1215	--	--	24	.7	2.6	.1	74	--	3.0	--	.9		--	--	63	2	128	7.9	20
July 3-10, 22, 23, 24.....	580	6.0	.03	31	.9	2.2	.1	95	.4	3.0	.0	.5		91	96	81	3	161	7.7	15
July 11-20....	556	6.2	.01	32	.5	2.2	.1	98	.4	3.0	.0	.3		93	96	82	2	164	7.7	10
July 21, 25-31	352	6.7	.02	37	.6	2.5	.1	112	.8	2.5	.0	.2		105	108	95	3	186	8.0	10
Aug. 1-10.....	299	6.4	.03	36	.5	2.2	.3	108	.0	3.5	.0	.3		102	112	92	3	182	7.7	4
Aug. 11-20....	368	6.6	.02	33	.9	2.8	.3	101	.4	3.5	.0	.3		98	107	86	3	172	7.7	5
Aug. 21-31....	318	6.3	.02	34	.2	2.0	.3	101	.0	4.0	.0	.2		97	105	86	3	171	7.6	6
Sept. 1-4,8-12	362	6.4	.17	32	1.0	2.8	.7	101	.4	3.5	.0	.6		98	88	84	1	170	8.1	15
Sept. 13-21...	242	6.7	.01	37	.6	2.6	.2	116	.0	3.0	.0	.4		108	102	95	0	192	8.1	8
Sept. 22-30...	157	5.9	.01	39	1.1	2.4	.2	123	.4	3.5	.0	.6		114	106	102	1	202	8.1	5
Weighted average....	--	5.9	0.03	26	0.6	2.2	0.3	82	1.6	4.1	0.0	0.2		91	--	68	2	141	7.5	26
Time-weighted average....	475.6	5.9	0.02	33	0.5	2.5	0.3	101	1.6	3.3	0.1	0.3		103	--	83	2	172	7.6	11
Tons per day.	--	7.5	0.04	34	0.8	2.8	0.4	105	2.1	5.3	0.0	0.2		117	--	--	--	--	--	--

APALACHICOLA RIVER BASIN--Continued

2-3570. SPRING CREEK NEAR IRON CITY, GA.--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	74	72	72	74	73	75	74	72	71	72	73	75	76	69	74	68	69	68	60	61	63	58	64	63	64	62	58	62	62	64	68
November	66	57	65	61	60	65	64	59	55	56	55	56	60	58	64	64	62	65	60	58	50	52	69	62	64	63	61	53	54	60	--	60
December	56	53	61	58	55	53	54	66	68	54	53	51	50	50	49	43	45	46	42	42	45	42	42	46	43	42	54	54	50	62	60	51
January	61	50	58	54	54	55	53	48	55	57	55	57	58	59	55	55	59	50	50	51	46	45	44	44	43	45	50	45	45	44	44	51
February	45	45	47	47	55	60	56	59	53	60	56	59	60	59	58	59	60	65	63	60	67	66	62	65	56	60	--	61	--	--	--	58
March	60	60	60	60	62	66	69	66	62	58	56	59	60	61	61	64	64	63	64	61	65	65	62	64	63	61	61	65	64	65	68	63
April	61	62	60	52	58	60	54	58	57	58	60	62	62	62	60	60	60	60	62	62	61	62	65	65	68	68	62	69	64	64	--	61
May	60	64	65	65	66	68	68	70	70	65	58	66	66	68	64	68	68	72	70	72	72	72	72	72	78	70	62	64	65	64	62	67
June	72	70	71	72	72	72	73	72	74	75	75	75	75	72	75	74	70	64	69	65	68	70	74	72	79	74	72	73	75	72	--	72
July	76	74	75	75	76	75	76	78	74	70	73	75	74	74	78	72	75	74	73	70	75	74	76	76	76	72	76	71	76	72	73	74
August	78	78	84	78	76	74	72	74	80	80	75	72	76	77	75	74	78	71	75	73	72	72	72	72	72	72	76	77	75	72	74	75
September	82	76	74	72	--	--	--	74	75	74	75	75	74	74	72	70	70	68	68	71	71	70	72	73	72	74	72	74	73	71	--	73

BLACKWATER RIVER BASIN

2-3701. BLACKWATER RIVER NEAR HOLT, FLA.

LOCATION.--At Bryant Bridge on county road, 300 feet downstream from Ates Creek, 2.4 miles northwest of Holt, Okaloosa County, and 9.1 miles upstream from Big Juniper Creek.
DRAINAGE AREA.--276 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 73 ppm Apr. 14-18; minimum, 16 ppm Dec. 1-3, 5-10, Sept. 11-20, 21-30.
Hardness: Maximum, 12 ppm Apr. 21; minimum, 2 ppm Sept. 11-30.
Specific conductance: Maximum daily, 98 micromhos Apr. 21; minimum daily, 14 micromhos Feb. 23-24.
Water temperatures: Maximum, 87°F June 29; minimum, 40°F Jan. 27.
REMARKS.--No discharge records available.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-10,1960		6.9	0.02	1.6	0.5	2.0	0.2	6	2.4	2.5	0.1	0.2		19	25	6	1	26	7.7	12
Oct. 11-20....		7.6	.04	1.6	.5	2.2	.2	8	1.6	3.0	.1	.1		21	20	6	0	26	7.7	10
Oct. 21-31....		6.7	.03	1.2	.5	1.8	.1	6	1.6	3.0	.0	.1		18	25	5	0	23	7.9	0
Nov. 1-10.....		6.2	.01	1.6	.5	1.8	.2	6	1.6	3.0	.1	.1		18	23	6	1	26	7.8	0
Nov. 11, 12, 14-19.....		6.5	.04	1.6	.5	2.0	.2	8	1.6	2.5	.1	.1		19	23	6	0	26	7.6	0
Nov. 21-23, 25-30.....		5.0	.04	2.0	.2	2.2	.3	6	1.6	3.0	.3	.2		18	19	6	1	24	7.8	0
Dec. 1-3, 5-10		8.6	.04	1.8	.1	2.2	.3	7	1.2	3.0	.0	.2		21	16	5	0	26	6.1	10
Dec. 12-17, 19, 20.....		9.6	.10	2.0	.1	2.5	.3	9	1.2	3.0	.0	.2		23	21	6	0	28	6.4	10
Dec. 21-24, 26-31.....		9.6	.08	2.0	.1	2.9	.3	8	1.2	2.8	.2	.4		23	24	6	0	28	6.3	10
Jan. 2-7, 9-10, 1961..		5.9	.02	1.2	1.0	1.6	.1	4	1.6	3.0	.1	.3		17	20	7	4	22	8.0	0
Jan. 11-13, 18, 19.....		6.9	.05	1.4	.1	1.8	.1	4	1.6	3.0	.1	.4		17	24	4	1	21	7.8	0
Jan. 24-31....		6.1	.03	1.2	.5	1.9	.3	4	2.4	2.5	.1	.6		18	22	5	2	23	8.2	10
Feb. 1, 2,3-10		6.9	.02	1.2	.7	1.7	.2	5	3.2	3.0	.1	.4		20	46	6	2	22	6.4	15
Feb. 11-20, 25, 26.....		6.4	.02	1.6	.5	1.7	.2	5	1.6	3.0	.2	.4		18	41	5	1	22	6.0	15
Feb. 23-24....		2.7	.01	.6	.5	1.0	.4	3	--	1.0	.1	.4		--	--	4	2	14	6.0	20
Feb. 21, 22, 27, 28.....		6.0	.07	1.6	.5	2.0	.2	5	4.0	3.5	.2	.3		21	45	6	2	25	6.5	50

Mar. 1, 8, 10, 1961.....	8.2	.39	3.2	.5	2.8	.4	11	.4	5.0	.2	.0	26	56	10	1	34	6.7	40
Mar. 2,3,5-7,9	6.4	.04	1.4	.6	1.8	.2	5	3.2	3.5	.4	.3	20	49	6	2	23	6.1	40
Mar. 11-31....	6.7	.04	1.4	.6	1.8	.2	4	.8	3.0	.5	.1	17	43	6	3	22	6.0	30
Apr. 1,8-11,23	7.3	.05	1.6	.7	4.6	1.0	8	3.2	8.0	.1	.2	31	35	7	0	42	6.4	40
Apr.3-7,12,13, 15-17,19,20.	6.0	.46	2.4	1.0	2.0	.4	6	.4	5.0	.2	.0	21	50	10	5	25	6.4	40
Apr. 14, 18...	5.4	.49	2.4	1.0	6.6	1.4	10	.4	11	.2	.0	34	73	10	2	58	6.4	40
Apr. 21.....	--	--	2.0	1.7	--	--	6	--	20	--	--	--	--	12	7	98	5.6	--
Apr. 22,25-30.	7.2	.06	1.6	.7	2.3	.3	8	1.6	6.0	.0	.1	24	46	7	0	27	7.2	40
May 1-10.....	6.1	.52	1.6	.5	1.7	.4	4	.4	4.0	.2	.0	17	35	6	3	20	5.9	40
May 11-15, 17-20.....	6.9	.01	1.2	.2	1.9	.3	4	2.4	4.5	.0	.0	19	42	4	1	22	6.3	35
May 21-30.....	5.9	.51	1.6	.5	1.6	.4	6	.4	4.0	.1	.0	18	29	6	1	20	6.1	40
May 31.....	--	--	2.8	.2	--	--	10	--	3.0	--	--	--	--	8	0	30	7.1	--
June 1-9.....	6.3	.03	.8	.5	2.6	.4	6	2.4	3.5	.0	.2	20	42	4	0	24	7.0	10
June 10,12,27.	7.0	.05	2.0	.5	4.2	.6	6	3.6	7.5	.1	.3	29	--	7	2	38	6.2	20
June 11,13-20.	6.3	.04	1.2	.2	2.3	.4	6	3.2	3.5	.1	.3	21	43	4	0	23	6.5	20
June 21-26, 28-30.....	6.6	.12	1.2	.2	2.6	.4	8	2.4	4.0	.1	.1	22	54	4	0	23	6.3	65
July 1,2,4-10.	6.7	.07	1.2	.2	1.9	.4	4	1.6	2.5	.0	.0	17	36	4	1	19	6.8	30
July 11-18,23, 24, 30, 31..	7.4	.10	.8	.5	3.3	.4	10	1.6	4.5	.1	.1	24	51	4	0	25	6.6	30
July 21, 22, 26-29.....	6.5	.08	.4	.5	1.8	.4	6	.8	1.5	.0	.1	15	49	3	0	16	6.8	45
July 25.....	--	--	.8	.5	--	--	12	--	6.0	--	--	--	--	4	0	42	7.2	--
Aug. 1-10.....	6.6	.06	.8	.4	2.4	.1	4	.0	4.5	.0	.2	17	29	4	1	20	6.1	45

BLACKWATER RIVER BASIN--Continued

2-3701. BLACKWATER RIVER NEAR HOLT, FLA.--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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
Aug.11-20,1961		10	0.07	0.8	0.4	2.2	0.1	4	0.0	4.5	0.0	0.2		20	28	4	1	20	5.8	35
Aug. 21-27, 29-31		7.0	.10	1.0	.4	2.4	.1	4	.0	5.0	.0	.2		18	36	4	1	22	6.0	55
Sept. 1-10		8.5	.11	.8	.5	2.2	.2	4	.0	5.0	.0	1.0		20	19	4	1	24	6.2	50
Sept. 11-20		7.3	.08	.2	.5	2.1	.2	3	.0	4.0	.0	.7		17	16	2	0	19	5.9	35
Sept. 21-30		7.5	.06	.0	.6	2.1	.2	4	.0	3.0	.0	.7		16	18	2	0	17	6.5	20
Time-weighted average		7.0	0.10	1.3	0.5	2.2	0.3	6	1.3	3.7	1.1	0.2		33	--	5	1	23	6.2	25

Temperature (°F) of water, water year October 1960 to September 1961

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	75	77	75	75	74	70	74	74	75	74	74	73	73	73	75	73	73	75	62	68	65	65	66	67	68	68	66	68	68	68	68	69
November	65	65	65	65	65	65	60	60	65	65	62	60	63	67	66	68	68	67	65	65	64	67	65	65	64	65	66	65	61	58	--	64
December	54	52	52	52	52	58	58	60	57	58	57	57	54	54	54	54	52	52	52	55	54	45	45	45	50	54	55	58	58	58	58	54
January	--	55	52	50	50	54	54	54	53	54	54	68	58	58	58	58	56	54	54	54	54	54	54	56	51	50	40	46	50	48	61	54
February	54	60	57	53	55	50	53	51	53	54	53	53	59	65	63	64	64	60	62	62	65	66	60	66	63	55	60	65	--	--	--	59
March	55	61	59	63	65	69	69	71	65	63	59	63	64	67	67	66	63	65	63	65	67	68	67	65	70	73	65	64	65	67	67	65
April	68	72	77	66	65	59	63	65	68	66	64	65	66	67	65	65	67	66	65	66	69	68	65	69	74	71	70	71	72	72	--	68
May	70	75	69	71	76	71	81	74	71	68	65	70	72	76	73	74	75	77	77	78	76	76	77	75	81	72	71	74	77	79	--	74
June	75	77	80	78	78	79	76	78	77	78	81	75	78	75	79	76	74	72	69	81	82	74	85	75	74	75	75	75	87	75	--	77
July	77	78	77	75	78	76	76	77	77	75	75	78	79	78	77	78	77	77	78	79	78	77	78	78	80	80	75	78	80	81	82	78
August	82	83	78	80	78	76	76	78	78	77	78	78	78	77	78	78	79	78	79	79	80	81	87	78	77	78	79	79	78	80	80	79
September	80	80	80	81	81	79	80	81	80	81	81	80	81	81	80	81	79	80	80	80	79	79	81	81	80	81	82	80	81	81	--	80

BLACKWATER RIVER BASIN--Continued

2-3707.5. HURRICANE BRANCH NEAR MILTON, FLA.

LOCATION.--Temperature recorder at bridge 0.6 mile upstream from Pond Creek and 7 miles northwest of Milton, Santa Rosa County
DRAINAGE AREA.--3 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: March 1960 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F July 13, 28-31, Aug. 1; minimum, 43°F Jan. 27.
EXTREMES, 1960-61.--Water temperatures: Maximum, 82°F July 3, 1960; minimum, 43°F Jan. 27, 1961.

Temperature (°F) of water, water year October 1960 to September 1961
[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	73	72	70	72	72	72	72	71	71	71	71	72	72	71	71	71	70	63	64	65	66	66	65	67	67	66	67	67	70
Minimum	68	67	67	67	68	69	70	68	67	67	67	66	65	66	68	68	67	66	67	64	60	59	59	60	60	59	62	63	60	64	62	65
November																																
Maximum	63	63	64	63	63	62	59	59	63	63	58	60	61	64	64	66	65	64	62	61	63	64	66	66	64	64	64	66	66	59	--	63
Minimum	59	57	59	58	57	58	55	53	58	59	55	54	57	59	58	61	64	62	58	55	58	59	64	64	60	59	60	63	59	54	--	59
December																																
Maximum	54	53	54	56	58	60	60	62	60	61	62	58	53	52	52	54	52	52	55	59	59	50	50	54	56	59	59	60	60	60	60	57
Minimum	52	49	48	50	52	55	56	58	57	57	58	53	50	49	50	51	47	47	49	54	50	47	46	49	52	56	57	57	57	59	58	53
January																																
Maximum	58	--	--	--	--	--	--	55	52	52	54	57	57	56	57	56	55	56	56	52	50	48	56	56	55	50	50	49	49	51	53	--
Minimum	54	--	--	--	--	--	--	52	49	47	49	52	55	53	55	53	50	49	52	48	47	44	48	55	48	48	43	47	46	46	46	--
February																																
Maximum	55	57	57	53	54	52	56	54	54	55	56	57	59	61	60	61	62	63	62	64	66	65	66	66	66	60	61	68	--	--	--	60
Minimum	48	52	52	48	48	50	50	52	51	50	49	50	52	55	55	57	58	61	60	62	64	64	62	62	56	52	54	60	--	--	--	55
March																																
Maximum	62	60	61	65	68	68	68	69	63	60	58	62	65	66	64	66	65	69	65	64	67	66	66	65	64	65	66	62	66	66	68	65
Minimum	57	57	53	60	64	66	66	65	58	54	53	57	61	63	56	60	61	61	62	62	62	58	59	58	56	55	61	61	60	62	66	60
April																																
Maximum	66	64	67	64	66	62	63	64	66	64	62	68	65	65	66	64	65	67	67	68	67	69	70	72	71	69	71	72	69	70	--	67
Minimum	61	56	59	58	64	57	55	55	59	58	57	60	58	57	64	58	56	59	62	58	60	60	62	66	68	67	68	54	63	62	--	60
May																																
Maximum	69	68	70	71	72	73	73	74	71	67	65	70	71	73	70	74	72	74	74	74	73	74	75	72	73	72	69	70	72	74	74	72
Minimum	66	64	62	62	62	67	68	69	66	63	62	63	62	66	66	66	64	64	66	68	67	66	69	69	68	69	63	60	62	66	65	65
June																																
Maximum	74	75	74	73	76	75	76	76	74	75	75	77	73	72	75	75	74	71	71	72	73	75	77	74	78	75	76	76	75	77	--	75
Minimum	66	67	66	66	68	66	67	67	69	69	69	69	70	70	73	72	70	69	70	70	72	69	70	72	70	72	72	69	69	70	--	69
July																																
Maximum	76	77	77	74	72	78	75	77	76	76	75	78	80	78	79	78	78	77	79	78	76	76	77	78	79	79	79	80	80	80	80	77
Minimum	70	70	72	72	72	72	72	72	73	73	73	72	73	73	72	74	74	72	72	73	72	73	72	72	73	73	74	73	73	73	73	72
August																																
Maximum	80	--	--	--	--	--	--	75	78	78	78	79	78	79	78	77	78	79	79	78	76	77	78	75	74	73	76	78	79	79	79	--
Minimum	73	--	--	--	--	--	--	73	72	72	73	74	74	74	74	74	74	74	74	72	72	71	72	72	72	71	70	72	73	74	75	--
September																																
Maximum	76	77	78	79	79	79	76	78	78	76	78	77	76	77	75	75	72	71	73	74	76	77	77	78	77	76	76	77	75	75	--	76
Minimum	75	75	74	73	74	74	74	74	74	74	75	75	74	75	73	67	67	66	67	67	69	71	70	72	73	72	71	71	71	70	--	72

MOBILE RIVER BASIN

2-3835. COOSAWATTEE RIVER AT PINE CHAPEL, GA.

LOCATION.--At gaging station at downstream side of bridge 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.--Sediment records: October 1960 to September 1961.
EXTREMES, 1960-61.--Sediment concentrations: Maximum daily, 1,350 ppm Feb. 26; minimum daily, 10 ppm Feb. 16, 17.
Sediment loads: Maximum daily, 60,500 tons Feb. 26; minimum daily, 11 tons Sept. 26-30.

Suspended sediment, water year October 1960 to September 1961
[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	752	--	213	810		98	630	--	53
2	560	--	136	648		80	578	--	53
3	472	--	83	560		60	542	--	53
4	420	--	43	508		55	542	--	53
5	390	--	42	490		53	525	--	53
6	1010	118	322	508		40	525	--	47
7	1090	93	274	508		40	508	--	47
8	810	70	153	E 500		40	508	--	47
9	1100	97	288	E 500		40	472	--	47
10	890	70	168	E 520		40	472	--	47
11	718	--	122	E 600		41	S 1870	266	S 1400
12	612	--	99	E 540		41	3060	234	S 2000
13	542	--	73	E 520		41	1480	70	A 280
14	490	--	59	E 510		41	1090	30	A 88
15	455	--	55	E 510		41	950	30	A 77
16	508	--	55	E 510		26	870	--	46
17	455	--	49	508		26	770	--	46
18	405	--	44	508		26	700	--	46
19	390	--	37	490		26	665	--	46
20	790	--	128	472		26	648	--	46
21	790	--	128	455		25	1170	--	126
22	560	--	76	455		25	1250	--	203
23	508	--	55	700		189	890	--	132
24	472	--	57	1570		850	870	--	70
25	438	--	47	1010		223	810	--	48
26	420	--	40	810		164	752	--	70
27	420	--	40	700		94	735	--	70
28	438	--	47	648		62	700	--	70
29	420	--	40	630		68	665	--	70
30	405	--	33	700		66	930	--	70
31	472	--	38	--		--	1010	--	70
Total	18202	--	3044	18398	--	2647	27187	--	5504

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

MOBILE RIVER BASIN--Continued

2-3835. COOSAWATTEE RIVER AT PINE CHAPEL, GA.--Continued

Suspended sediment, water year October 1960 to September 1961--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	1530	--	186	790	--	32	4690	215	2700
2	1490	--	166	790	--	32	2790	145	1090
3	1210	--	114	790	--	32	2600	180 A	1260
4	1010	--	82	790	--	32	2300	145 A	900
5	910	--	70	735	--	32	2140	55 A	318
6	850	--	57	700	--	19	2120	38 A	217
7	810	--	55	970	--	65	3620	175	1710
8	770	--	52	1880	--	203	6300	478	8130
9	735	--	50	1510	--	143	10100	80	2180
10	682	--	46	1210	--	98	7610	80	1640
11	665	--	36	1010	--	68	3800	85	872
12	648	--	35	930	--	50	3040	70	575
13	630	--	34	870	--	35	2710	60	439
14	770	--	42	810	--	22	2970	20	160
15	1130	--	61	790	--	21	2500	45	304
16	1290	10 A	78	752	10	20	2290	35 A	216
17	1130	10 A	31	718	10	19	2070	30 A	168
18	990	10 A	27	790	25	53	2130	35 A	201
19	1050	20 A	57	2290	200	1240	2280	40 A	246
20	1410	25 A	95	5070	420	5750	2000	35 A	189
21	1210	--	65	8870	710	17000	1950	30 A	158
22	1050	--	57	12000	770	24900	1900	25 A	128
23	970	--	52	11100	660	19800	1780	25 A	120
24	950	--	51	10600	540	15500	1700	25 A	115
25	870	--	47	10200	430	11800	1640	20 A	89
26	950	--	51	16600	1350	60500	1560	20 A	84
27	1410	--	85	12200	1210	39900	1520	15 A	62
28	1050	--	48	7640	620	12800	1490	15 A	60
29	930	--	50	--	--	--	1530	15 A	62
30	870	--	47	--	--	--	1450	15 A	59
31	830	--	45	--	--	--	3070	180 A	1490
Total	30800	--	1972	113405	--	210166	89650	--	25942

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	4390	--	2280	1490	14 A	56	910	12 A	29
2	2700	--	1300	1660	15 A	67	890	15 A	36
3	2170	--	378	1480	14 A	56	870	20 A	47
4	2080	--	428	1370	14 A	52	850	20 A	46
5	1870	--	252	1330	14 A	50	930	30 A	75
6	1770	--	191	1290	12 A	42	1050	62	176
7	1650	--	178	1290	12 A	42	1090	65 A	191
8	1560	--	169	1250	12 A	40	910	45 A	111
9	1730	--	187	1410	31	118	830	45 A	101
10	2770	--	300	1530	30	124	1850	304	1520
11	2120	--	200	1490	25 A	101	1470	248	984
12	3660	--	990	1530	25 A	103	1250	112	378
13	6270	--	4570	1370	15 A	55	1010	118	322
14	4050	--	2190	1290	15 A	52	1170	285	900
15	2740	--	740	1250	15 A	51	1820	215	1060
16	2470	--	383	1250	20 A	67	1480	93	372
17	2170	--	234	1170	15 A	47	1210	65	212
18	1960	--	110	1130	15 A	46	1050	50	142
19	1880	--	127	1290	20 A	70	970	45 A	118
20	1750	--	95	1130	18 A	55	910	35 A	86
21	1660	15 A	67	1050	15 A	43	S 4780	439 S	6500
22	1620	15 A	66	1090	18	53	9020	368 S	8960
23	1570	15 A	64	1830	120	593	S 5700	92 S	1440
24	1570	15 A	64	1410	67	255	3830	261	2700
25	1530	15 A	62	1170	25 A	79	2590	100	700
26	1570	22 A	93	1210	25 A	82	2500	168	1135
27	1830	41	203	1250	25 A	84	3230	118	1030
28	2070	41	229	1130	20 A	61	2550	60	410
29	1660	32 A	143	1050	20 A	57	2320	30	187
30	1530	20 A	83	1010	20 A	55	2250	20	122
31	--	--	--	950	15 A	38	--	--	--
Total	68370	--	16376	40150	--	2694	61290	--	30090

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

MOBILE RIVER BASIN--Continued

2-3835. COOSAWATTEE RIVER AT PINE CHAPEL, GA.--Continued

Suspended sediment, water year October 1960 to September 1961--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	1780	20 A	96	810		32	970		59
2	1710	20 A	92	770		32	1290		52
3	1490	18 A	72	752		32	790		32
4	1410	18 A	68	790		32	682		28
5	1250	15 A	51	752		32	612		25
6	1170	15 A	47	718		20	630		18
7	1280	55 A	190	1050		20	752		18
8	1900	105	539	950		20	665		18
9	1290	40	139	890		20	595		18
10	1130	35	107	850		20	560		18
11	1050	25	71	790		20	542		15
12 S	1490	269 S	190	752		20	560		15
13	4240	665 S	816	718		20	542		15
14	2150	150	870	682		20	525		15
15	1630	60	264	665		20	630		15
16	1900	30	154	682		18	578		15
17	1910	30	155	665		18	525		15
18	1490	30	120	630		18	508		15
19	1410	52	199	595		18	508		15
20	1730	250	117	595		18	525		15
21	1370	56	207	630		18	525		13
22	1250	67	226	612		18	490		13
23	1250	55	186	612		18	472		13
24	1210	40	131	682		18	455		13
25	1090	25	74	718		18	438		13
26	1010	25	68	790		18	420		11
27	970	25	65	810		18	405		11
28	910	20	49	718		18	390		11
29	870	20	47	648		18	384		11
30	850	18	41	612		18	375		11
31	870	18	42	700		18	--		--
Total	45060	--	5493	22638	--	648	17343	--	556

Total discharge for year (cfs-days)..... 512,493
Total load for year (tons)..... 321,827

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

MOBILE RIVER BASIN--Continued

2-3835. COOSAWATTEE RIVER AT PINE CHAPEL, GA.--Continued

Particle-size analyses of suspended sediment, 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)	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	
Feb. 19, 1961.....	2115			4250	395		44	53	65	76	86	89						BWC
Feb. 21.....	1010			9000	481		37	40	51	61	75	83						BWC
Feb. 22.....	1715			13880	261		66	72	79	82	85	87						BWC
Feb. 28.....	0700			12200	157		38	40	52	59	63	70						BWC
Mar. 8.....	1545			8210	270		--	--	17	33	51	64						BN
Mar. 9.....	0800			10640	388		--	--	23	40	49	63						BN
Mar. 9.....	0800			10640	388		60	67	78	89	94	97						BWC
June 21.....	0745			3480	365		49	55	67	79	90	97						BWC
June 22.....	1700			9320	253		46	53	64	71	79	86						BWC

MOBILE RIVER BASIN--Continued

2-3978.8. CHATTOOGA RIVER AT TRION, GA.

LOCATION.--At bridge on county road, 0.2 mile northwest of Trion, Chattooga County.
DRAINAGE AREA.--119 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: October 1960 to September 1961.
Water temperatures: October 1960 to September 1961.
EXTREMES, 1960-61.--Dissolved solids: Maximum, 260 ppm Sept. 21-30; minimum, 49 ppm Feb. 21-27.
Hardness: Maximum, 128 ppm Mar. 24, 1961; minimum, 16 ppm Feb. 20.
Specific conductance: Maximum daily, 664 micromhos Sept. 7; minimum daily, 71 micromhos Mar. 8.
Water temperatures: Maximum, 89°F July 31; minimum, freezing point on several days during December, January, and March.
REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla. No discharge records available.

Chemical analyses, in parts per million, water year October 1960 to September 1961

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. 1-10,1960		3.9	0.01	25	2.1	8.2	1.0	83	4.8	11	0.1	0.3		97	104	71	3	182	7.7	0
Oct. 11-20....		4.7	.01	30	3.6	14	.8	106	4.8	19	.1	.2		129	133	90	3	244	7.9	0
Oct. 21-31....		4.9	.00	34	5.6	14	1.2	122	4.8	22	.1	.6		147	148	108	8	276	7.9	0
Nov. 1-10.....		6.6	.04	34	3.2	17	1.4	118	5.6	22	.0	.7		148	147	98	1	265	7.8	5
Nov. 11-20....		8.4	.02	34	4.1	22	1.2	118	8.0	29	.0	1.3		166	161	102	5	301	7.8	5
Nov. 21-30....		5.4	.01	31	3.5	17	1.2	108	6.0	21	.5	.6		139	137	92	3	258	7.8	5
Dec. 1-10.....		5.8	.01	32	2.4	12	.9	108	6.0	15	.1	.6		128	125	90	1	218	7.7	5
Dec. 11-20....		6.2	.02	28	1.9	7.3	1.0	88	5.6	11	.1	1.4		111	105	78	6	192	7.7	5
Dec. 21-31....		6.0	.02	28	2.4	5.5	.9	92	5.6	7.5	.0	.8		102	99	80	5	183	7.5	5
Jan. 1-4, 1961		4.9	.01	19	1.6	4.0	.9	66	4.8	4.0	.1	.5		73	76	54	0	128	7.7	0
Jan. 5-10.....		6.3	.00	29	1.3	7.6	1.2	91	4.8	11	.0	.6		107	106	78	3	191	7.8	0
Jan. 11-15....		7.2	.00	33	.9	12	1.2	102	5.6	15	.0	.5		125	127	86	2	221	8.0	0
Jan. 16-20....		6.7	.00	30	.7	5.7	1.0	91	4.8	8.0	.0	2.2		104	105	78	3	182	7.6	0
Jan. 21.....		--	--	21	1.8	--	--	68	--	3.5	--	--		--	--	60	4	126	8.0	--
Jan. 22-24, 30, 31.....		6.5	.00	31	1.6	5.5	1.2	99	5.2	8.0	.1	.9		109	106	84	3	190	7.4	0
Jan. 25-29....		6.7	.00	32	1.5	15	1.0	103	6.0	18	.1	.7		132	130	86	2	232	8.2	0
Feb. 1-5.....		6.2	.00	34	1.2	14	1.2	108	5.6	18	.0	.0		133	150	90	1	237	7.7	0
Feb. 6, 15, 16, 18.....		5.0	.05	30	3.6	7.1	.7	106	.4	10	.2	.0		109	117	90	3	210	7.5	0

Feb. 7-14, 17, 19, 1961....		5.7	.00	28	1.0	3.4	1.0	88	4.8	4.5	.0	1.0		91	85	74	2	163	7.5	0
Feb. 20.......		--	--	4.0	1.5	--	--	10	--	2.0	--	--		--	--	16	8	55	7.3	--
Feb. 21-27....		4.1	.03	12	1.0	1.5	1.5	38	5.6	1.2	.0	1.8		50	48	34	3	82	7.3	10
Feb. 28.......		--	--	17	2.3	--	--	60	--	3.0	--	--		--	--	52	3	112	8.2	--
Mar. 1-6,11-20		8.0	.00	25	1.3	3.4	1.0	81	4.0	4.5	.0	.4		88	86	68	2	153	7.7	0
Mar. 7,9,10,31		4.6	.01	15	1.6	2.0	2.3	48	5.2	2.5	.0	3.7		61	67	44	5	103	7.5	5
Mar. 8........		--	--	11	1.1	--	--	36	--	1.0	--	--		--	--	32	2	71	7.7	--
Mar. 21-23, 25-30.......		6.8	.00	27	1.1	3.4	1.0	84	4.0	5.0	.0	2.2		92	93	72	3	159	7.6	0
Mar. 24.......		--	--	15	3.8	--	--	144	--	2.0	--	--		--	--	128	0	248	8.3	--
Apr. 1, 12, 13		--	--	16	1.2	--	--	54	--	--	--	--		--	76	45	1	99	7.6	5
Apr. 2-7,9-11, 14-20, 22...		5.2	.00	22	2.7	2.6	.8	78	4.0	3.5	.2	1.5		80	82	66	2	145	7.6	0
Apr.8,21,23-29		5.6	.01	30	2.2	6.4	.7	103	4.4	10	.2	.1		111	109	84	0	198	7.8	0
Apr. 30.......		--	--	34	3.6	--	--	112	--	12	--	--		--	--	100	8	240	8.1	--
May 1-3, 16, 24, 28......		6.3	.01	27	4.3	2.8	1.0	100	2.8	4.0	.1	2.1		99	112	85	3	180	7.2	3
May 4-6,10-13, 15,17,20-22, 25, 29-31...		6.1	.00	34	4.6	14	.8	119	5.6	22	.0	.3		148	145	104	6	252	7.7	5
May 7,9,14,26.		6.5	.01	13	7.4	3.3	1.8	52	2.4	6.0	.1	18		85	87	63	20	140	7.4	5
May 18, 19, 23, 27......		7.1	.02	34	4.6	22	1.0	119	6.4	30	.0	.7		165	162	104	6	298	7.7	5
June 1-3, 5-10, 13....		6.8	.01	34	5.1	23	1.1	128	4.8	30	.0	.7		169	165	106	1	307	7.2	5
June 4........		--	--	36	6.3	--	--	164	--	50	--	--		--	--	116	0	438	8.3	--
June 11,12,14, 15,17-20,29, 30..........		6.0	.01	25	3.8	12	.9	96	4.0	14	.0	.2		113	108	78	0	202	7.5	5
June 16,22-28.		5.7	.01	20	1.5	4.5	.9	66	3.2	7.0	.0	.0		76	68	56	2	133	7.2	5

MOBILE RIVER BASIN--Continued

2-3978.8. CHATTOOGA RIVER AT TRION, GA.--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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			
June 21, 1961.		--	--	13	1.8	--	--	44	--	1.0	--	--		--	--	40	4	83	7.8	--
July 1,2,4-10.		6.4	0.01	30	4.1	5.1	0.7	111	5.2	6.5	0.0	0.4		113	110	92	1	200	7.9	5
July 11-15, 19		6.7	.02	31	4.0	15	1.0	116	5.6	16	.0	.6		137	129	94	0	241	7.9	5
July 16, 18, 20, 31.....		6.5	.01	20	4.9	6.0	1.3	80	2.8	7.0	.0	2.9		90	98	70	4	160	7.4	5
July 21-29....		7.1	.01	30	5.1	16	1.1	116	1.6	20	.0	1.3		139	136	96	1	254	8.1	5
July 30.....		--	--	34	5.6	--	--	136	--	31	--	--		--	--	108	0	314	8.2	--
Aug. 1-3, 6-10		7.1	.01	32	6.3	22	1.3	124	4.0	32	.0	1.1		167	188	106	4	303	7.5	5
Aug.4,5,13, 16-18,22,25, 27,30.....		7.2	.00	16	7.8	3.0	1.1	74	.8	5.0	.0	14		91	92	72	11	161	7.6	5
Aug.11,12,14, 15,19,20....		6.7	.02	34	8.0	27	1.0	138	4.0	38	.0	.3		187	194	118	5	342	7.0	5
Aug.21,23,24, 26,28,29,31.		6.8	.01	38	6.1	37	1.3	148	4.0	55	.0	1.6		223	220	120	0	406	8.1	5
Sept. 1-4, 6, 8-10.....		6.1	.05	37	5.2	27	1.3	134	5.6	40	.2	.7		189	188	114	4	349	8.1	2
Sept. 5.....		--	--	36	5.8	--	--	140	--	16	--	--		--	--	114	0	277	8.0	--
Sept. 7.....		--	--	39	5.5	--	--	150	--	126	--	--		--	--	120	0	664	7.8	--
Sept. 11-20...		5.6	.03	41	5.7	40	1.2	150	5.2	60	.2	.8		234	232	126	3	439	7.8	2
Sept. 21-30...		6.0	.03	41	5.7	50	1.2	152	6.0	75	.3	.8		261	260	126	1	496	8.0	3
Time-weighted average....		6.1	0.01	29	3.5	13	1.1	102	4.7	18	0.1	1.4		129	--	87	3	230	7.6	2

MOBILE RIVER BASIN--Continued

2-3978.8. CHATTOOGA RIVER AT TRION, GA.--Continued

Temperature (°F) of water, water year October 1960 to September 1961

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	63	64	63	62	67	68	61	63	67	62	61	62	62	62	64	62	64	64	65	54	52	58	56	53	50	53	53	53	54	54	60
November	53	55	52	51	48	43	45	44	48	46	45	45	45	49	51	50	42	43	46	45	47	48	50	50	51	51	51	58	49	43	--	48
December	40	40	34	33	35	32	40	37	35	34	35	32	32	--	32	34	34	30	34	37	32	32	32	37	32	37	32	32	32	35	32	34
January	32	32	32	33	38	35	36	34	37	37	46	45	46	49	49	47	47	48	45	43	41	48	--	--	40	40	40	37	41	42	46	40
February	48	41	38	43	43	41	41	41	45	41	49	57	57	61	60	59	57	57	56	51	53	54	59	55	50	62	65	60	--	--	--	51
March	32	54	68	56	59	70	65	60	53	52	53	61	59	56	58	59	50	50	59	--	54	57	56	53	54	61	59	63	61	58	61	57
April	51	59	54	56	60	52	51	32	57	53	56	58	54	59	65	55	50	57	61	71	61	70	70	68	68	68	65	63	62	72	--	58
May	62	62	62	63	65	65	84	--	70	60	64	64	66	86	71	67	66	68	72	69	67	63	65	78	65	66	61	70	66	67	69	67
June	70	71	72	73	71	70	74	74	72	78	69	73	70	74	80	63	62	65	66	63	64	66	62	66	67	64	65	67	71	71	--	69
July	71	70	70	68	68	73	69	69	72	71	61	68	70	69	70	70	70	74	76	74	74	72	73	74	74	74	76	88	72	72	89	72
August	81	79	73	82	80	72	68	72	73	70	66	69	68	72	69	77	72	75	70	69	69	72	68	69	68	80	74	74	72	75	72	72
September	71	71	72	73	75	71	72	73	71	72	73	73	73	73	65	67	63	63	63	67	63	70	71	71	72	69	--	78	78	73	--	70

MOBILE RIVER BASIN--Continued

2-4058. TALLADEGA CREEK ABOVE TALLADEGA, ALA.

LOCATION.--Temperature recorder at gaging station, 300 feet upstream from Mump Creek, 0.5 mile upstream from bridge on State Highway 77, and 6 miles southeast of Talladega, Talladega County.
DRAINAGE AREA.--67.3 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1959 to September 1961.
EXTREMES, 1960-61.--Water temperatures: Maximum, 80°F July 30 to Aug. 1, Aug. 29, 30; minimum, 35°F Dec. 18, 23.
EXTREMES, 1959-61.--Water temperatures: Maximum, 87°F July 1, 2, 5, 1960; minimum, 35°F Dec. 18, 23, 1960.

Temperature (°F) of water, water year October 1960 to September 1961
(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	71	71	71	71	70	69	70	72	70	69	69	68	68	69	68	67	67	65	64	64	58	57	57	58	56	55	56	56	55	55	57	64
Minimum	65	65	64	65	67	67	67	68	66	64	64	63	63	64	66	63	62	60	62	58	54	52	52	53	52	52	52	53	51	55	53	60
November																																
Maximum	53	53	53	52	51	51	50	47	51	52	48	47	48	50	52	53	53	52	49	47	49	52	53	54	55	55	54	58	58	51	--	52
Minimum	50	48	50	48	47	48	46	44	46	48	45	44	46	46	47	50	51	49	45	44	46	46	52	53	54	53	50	53	51	45	--	48
December																																
Maximum	45	42	39	39	41	44	46	46	46	46	49	48	42	38	39	40	39	38	38	42	42	39	36	39	43	40	45	47	48	49	47	43
Minimum	42	38	37	37	38	40	43	46	44	43	46	42	38	36	37	39	36	35	36	37	39	36	35	36	39	42	44	45	45	47	46	40
January																																
Maximum	47	46	43	42	40	41	42	43	42	40	41	42	44	46	47	47	48	48	47	45	42	39	42	42	42	40	41	40	39	39	41	43
Minimum	46	43	42	39	39	38	40	42	39	38	38	38	40	44	46	47	46	44	45	42	39	37	38	40	40	39	40	38	38	37	38	41
February																																
Maximum	43	46	46	44	43	42	44	44	45	44	45	47	51	53	55	55	54	54	53	55	54	55	58	57	55	52	53	56	--	--	--	50
Minimum	40	42	44	41	40	42	42	43	43	42	42	44	46	50	51	52	52	53	53	53	53	53	55	53	50	48	50	53	--	--	--	48
March																																
Maximum	56	52	52	54	59	60	60	60	57	51	51	53	56	57	56	59	57	54	54	56	59	59	57	55	55	58	56	57	57	56	58	56
Minimum	52	49	48	52	54	58	58	57	50	48	49	51	53	55	51	54	54	52	52	54	56	54	53	52	49	51	55	55	55	55	55	53
April																																
Maximum	57	55	55	54	57	57	55	54	54	56	56	56	55	57	63	61	58	58	60	62	64	66	69	68	68	66	64	63	62	63	--	60
Minimum	54	51	53	50	51	52	49	51	52	53	51	54	53	52	57	55	52	52	53	55	58	59	62	64	64	64	61	58	57	55	--	55
May																																
Maximum	61	64	62	63	68	68	70	70	68	63	61	63	66	69	71	70	67	66	68	70	72	70	65	67	64	63	64	65	67	70	71	67
Minimum	59	58	55	56	59	64	65	65	63	60	59	59	60	61	64	63	59	61	62	62	64	64	62	60	63	61	57	55	57	60	61	61
June																																
Maximum	73	74	74	76	75	72	70	73	74	76	76	77	77	78	74	72	65	70	71	69	66	68	68	71	69	67	68	68	72	74	--	72
Minimum	63	64	64	66	69	66	64	66	69	70	69	69	68	69	72	65	63	62	64	66	65	65	64	64	66	65	64	64	65	66	--	66
July																																
Maximum	74	76	76	75	75	77	75	72	76	73	71	70	73	73	76	77	77	73	73	74	73	75	75	76	77	78	78	78	78	80	80	75
Minimum	67	68	69	68	66	68	71	70	68	68	67	66	68	68	70	71	69	68	69	68	68	68	69	68	69	69	70	70	70	70	70	69
August																																
Maximum	80	78	79	79	78	76	72	71	72	74	78	78	79	76	74	73	76	76	76	74	74	75	74	72	72	71	75	78	80	80	77	76
Minimum	71	72	70	71	69	72	68	67	68	68	69	70	71	70	70	69	67	67	68	67	67	67	68	69	69	69	69	70	72	74	72	69
September																																
Maximum	75	76	77	79	78	74	76	78	78	78	78	77	76	75	70	67	66	66	66	68	71	73	74	75	75	75	74	73	73	72	--	74
Minimum	71	73	71	71	72	70	71	71	72	72	73	72	71	70	67	61	60	61	63	62	63	66	67	68	69	69	68	67	67	68	--	68

2-4550. *LOCUST FORK NEAR CLEVELAND, ALA.*

LOCATION.--Temperature recorder at gaging station at bridge on U.S. Highway 231, 2 miles north of Cleveland, Blount County, and 2.5 miles downstream from Graves Creek.
DRAINAGE AREA.--309 square miles.
RECORDS AVAILABLE.--Water temperatures: October 1959 to February 1961 (discontinued).
EXTREMES, October 1960 to February 1961.--Water temperatures; Minimum, 38°F on several days during December and January.
EXTREMES, 1959-61.--Water temperatures: Maximum, 90°F Aug. 7-9, 1960; minimum, 38°F on several days during December 1960 and January 1961.

Temperature (°F) of water, October 1960 to February 1961
(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	74	74	73	72	72	72	72	71	70	68	67	68	68	68	68	67	66	65	60	58	57	58	58	57	58	58	58	58	59	66
Minimum	69	69	71	71	71	70	70	70	70	69	67	65	65	65	67	65	66	65	65	60	58	55	55	56	56	56	56	56	55	58	58	64
November																																
Maximum	58	56	56	55	54	52	51	49	52	52	49	48	48	51	52	53	53	52	50	49	50	51	54	54	55	54	55	57	57	54	--	53
Minimum	55	54	55	52	52	50	49	48	49	49	47	47	46	48	49	52	52	50	48	47	49	49	51	53	53	53	52	54	54	49	--	51
December																																
Maximum	49	46	44	44	44	46	47	47	47	46	49	48	45	42	41	42	41	40	40	43	43	43	40	42	44	47	46	46	47	47	47	45
Minimum	46	44	42	41	42	43	46	47	45	45	46	45	42	40	40	41	39	38	38	39	42	40	38	39	42	44	46	46	46	47	45	43
January																																
Maximum	46	46	45	44	43	42	43	44	43	42	41	42	42	44	46	46	47	46	46	45	43	41	41	41	40	40	41	40	40	40	41	43
Minimum	46	45	44	43	42	41	42	43	42	40	40	40	41	42	44	46	46	45	45	43	41	38	38	40	39	40	40	39	38	38	39	42
February																																
Maximum	43	44	45	44	43	42	43	44	45	44	45	46	49	51	53	53	53	54	54	54	53	--	--	--	--	--	--	--	--	--	--	--
Minimum	41	43	44	42	41	42	42	43	43	43	43	44	46	48	51	52	52	53	54	53	52	--	--	--	--	--	--	--	--	--	--	--

270-946 O - 67 - 25

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 1961.
EXTREMES, November 1960 to September 1961.--Water temperatures: Maximum, 93°F Aug. 4, 5; minimum, 43°F Jan. 29.

Temperature (°F) of water, November 1960 to September 1961
(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	
November																																
Maximum	--	68	68	68	66	65	64	64	64	63	62	61	61	62	63	62	61	60	61	61	61	60	60	60	61	59	60	61	61	60	--	62
Minimum	--	67	67	65	65	64	64	63	63	62	61	61	60	60	60	61	60	60	60	59	59	59	59	59	59	59	59	59	60	59	--	61
December																																
Maximum	59	58	57	57	56	56	56	55	55	54	54	54	53	54	52	52	52	50	51	50	50	48	48	49	48	49	50	50	51	51	51	53
Minimum	58	57	56	56	56	56	55	55	54	54	54	53	54	52	52	51	50	50	50	49	48	48	48	48	48	48	49	50	50	51	51	52
January																																
Maximum	51	50	48	48	48	47	47	46	46	47	47	47	46	47	47	47	49	50	48	48	47	46	45	45	45	45	44	45	45	45	46	47
Minimum	50	48	48	47	47	47	46	46	46	46	46	46	46	46	47	47	47	48	48	47	46	45	45	45	45	44	44	44	43	45	44	46
February																																
Maximum	47	45	46	47	47	47	46	46	46	46	45	47	48	48	49	50	50	51	51	51	55	56	57	57	56	56	55	56	--	--	--	50
Minimum	45	45	45	46	46	46	46	46	46	45	45	45	47	48	47	48	49	50	50	49	49	55	56	56	56	56	55	55	--	--	--	49
March																																
Maximum	56	55	54	55	56	57	57	58	58	58	58	58	58	59	59	59	58	58	58	58	58	58	59	59	59	59	59	60	59	59	59	58
Minimum	55	54	54	54	55	56	57	57	58	58	58	57	58	58	58	58	58	58	58	58	58	58	58	59	59	59	59	59	59	59	58	57
April																																
Maximum	58	58	58	57	58	58	58	58	58	58	58	58	58	59	60	60	60	60	64	64	66	68	69	69	69	69	66	65	69	--	--	62
Minimum	58	57	57	57	57	58	57	58	57	58	58	58	57	58	58	59	59	59	59	60	61	62	64	66	67	67	66	64	65	64	--	60
May																																
Maximum	66	66	69	69	73	73	73	74	73	71	71	72	77	75	74	77	77	75	75	78	81	78	78	78	78	76	75	76	77	75	78	75
Minimum	66	66	66	67	67	69	70	71	71	71	70	69	69	70	71	71	72	73	74	75	76	77	76	75	76	75	74	73	73	74	74	72
June																																
Maximum	79	79	83	81	82	82	82	82	83	84	85	85	85	84	83	82	81	80	79	79	78	82	79	83	79	79	77	79	83	84	--	81
Minimum	75	76	77	77	78	79	79	80	80	81	81	81	82	82	82	81	80	79	79	78	78	77	78	77	78	77	76	76	78	79	--	79
July																																
Maximum	83	84	83	85	86	87	84	85	86	85	84	82	81	79	79	79	82	81	84	86	86	84	88	86	87	88	87	89	90	90	90	85
Minimum	79	80	81	80	81	82	83	83	83	83	82	81	79	78	78	78	79	79	81	81	81	82	82	83	83	83	85	85	86	86	87	82
August																																
Maximum	90	90	92	93	93	90	88	90	90	89	89	90	89	89	88	85	85	85	86	85	85	85	87	85	83	83	83	86	88	87	85	88
Minimum	87	87	88	88	88	88	87	87	87	86	85	86	86	86	85	84	84	84	84	84	84	83	84	83	82	82	82	82	83	84	83	85
September																																
Maximum	87	85	85	87	87	87	86	85	85	85	85	85	85	84	82	82	81	80	80	81	80	81	81	82	82	81	82	79	80	80	--	83
Minimum	83	83	83	84	84	84	84	84	84	84	84	84	83	82	81	80	80	79	78	78	78	77	77	78	78	79	78	78	78	78	--	81

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS

Chemical analyses, in parts per million, water year October 1960 to September 1961

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.																		
Feb. 14, 1961.....	940	5.2	0.13	2.3	0.9	2.9	1.7	7	2.7	5.0	0.2	0.7	25	10	4	42	6.3	50
Sept. 18.....	1.1	13	.17	5.0	1.8	7.6	2.0	25	2.4	8.9	.1	1.0	54	20	0	79	6.7	80
2-535. AHOSKIE CREEK AT AHOSKIE, N. C.																		
Feb. 14, 1961.....	180	5.5	0.13	3.2	0.4	3.1	1.6	6	8.0	4.5	0.2	0.0	30	10	5	45	6.3	50
Sept. 18.....	.2	9.0	.31	4.3	2.0	8.7	3.5	31	1.4	9.5	.1	1.1	55	19	0	90	6.5	140
ROANOKE RIVER BASIN																		
2-705. MAYO RIVER NEAR PRICE, N. C.																		
Oct. 19, 1960.....	202	18	0.04	4.0	1.6	2.7	1.2	27	1.8	1.7	0.0	0.3	44	16	0	49	7.5	8
Feb. 21, 1961.....	617	--	.12	3.1	1.5	2.0	.9	18	1.0	2.0	.0	.5	--	14	0	40	7.2	--
Sept. 20.....	182	17	.06	4.0	1.4	3.2	1.4	27	1.4	1.1	.1	.1	43	16	0	49	6.9	8
2-710. DAN RIVER NEAR WENTWORTH, N. C.																		
Oct. 19, 1960.....	636	17	0.03	4.2	1.6	3.5	1.6	29	1.8	3.1	0.0	0.0	47	17	0	56	7.3	80
Feb. 21, 1961.....	1,730	12	.04	2.8	1.5	3.3	1.3	15	3.4	2.0	.1	1.1	35	13	0	47	6.6	20
Sept. 20.....	610	15	.02	4.4	2.0	3.1	1.4	27	2.2	1.7	.1	.2	43	19	0	53	6.9	6
2-740. SMITH RIVER AT SPRAY, N. C.																		
Oct. 19, 1960.....	314	13	0.03	4.8	2.1	6.4	1.4	30	5.8	6.0	0.1	0.3	55	21	0	72	7.0	8
Feb. 23, 1961.....	2,200	11	.09	3.1	1.9	4.5	1.6	18	5.8	3.1	.2	1.8	42	16	1	55	6.8	42
Sept. 20.....	321	14	.00	5.4	2.3	7.6	1.6	33	4.2	5.5	.0	.2	57	23	0	84	6.6	6
2-810. ROANOKE RIVER NEAR SCOTLAND NECK, N. C.																		
Mar. 1, 1961.....	17,700	12	0.01	6.8	2.8	8.5	1.7	43	1.6	6.2	0.1	0.5	61	28	0	95	7.0	10
Sept. 1.....	16,200	8.7	.04	7.4	3.0	6.2	1.9	40	4.4	4.8	.1	1.7	58	31	0	95	7.1	20

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS --Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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																		
2-820. TAR RIVER NEAR NASHVILLE, N. C.																		
Feb. 16, 1961	876	13	0.07	3.4	1.3	4.8	1.2	19	5.8	4.0	0.1	0.0	43	14	0	58	7.2	25
Sept. 19	123	20	.08	4.7	2.4	6.6	1.9	34	.0	5.0	.0	.6	58	22	0	74	7.0	40
2-825. SAPONY CREEK NEAR NASHVILLE, N. C.																		
Feb. 16, 1961	88.4	7.4	0.12	3.9	2.3	4.6	0.9	21	2.5	6.5	0.2	0.0	38	20	2	63	6.7	45
Sept. 19	.4	14	.16	6.3	3.4	5.6	1.6	44	.4	5.5	.1	1.1	60	30	0	86	6.9	50
2-829.5. LITTLE FISHING CREEK NEAR WHITE OAK, N. C.																		
Feb. 31, 1961	261	15	0.07	2.5	1.6	4.5	1.1	19	4.4	3.3	0.2	0.5	42	12	0	51	6.9	20
Sept. 1	48.0	21	.02	3.8	1.8	4.7	1.9	25	5.0	3.5	.1	1.1	55	16	0	60	7.0	30
2-838. CONETOE CREEK NEAR BETHEL, N. C.																		
Feb. 14, 1961	122	8.7	0.06	5.5	1.4	4.9	0.9	6	12	8.0	0.1	3.5	48	20	14	74	6.3	8
Sept. 19	5.6	9.1	.03	9.1	1.8	5.5	1.7	16	18	9.0	.0	1.8	64	30	18	102	7.0	10
2-840. TAR RIVER AT GREENVILLE, N. C.																		
Mar. 15, 1961				5.0	1.7	5.1	1.6	20	3.6	5.4		2.3		20	3	70	6.6	
Aug. 31		9.7	0.05	3.4	1.3	2.9	1.9	14	4.8	2.5	0.1	.5	34	14	2	45	6.4	60
2-845. HERRING RUN NEAR WASHINGTON, N. C.																		
Mar. 15, 1961	8.9					5.0	0.7	8	12	5.7		1.5		16	10	62	6.0	
Aug. 31	3.3	25	0.07	5.0	1.4	5.7	0.8	12	12	6.8	0.1	.7	64	18	8	72	6.2	40

NEUSE RIVER BASIN

2-850. ENO RIVER AT HILLSBORO, N. C.

Mar. 8, 1961.....	113	15	0.01	5.6	2.1	5.5	1.0	30	2.8	5.1	0.3	0.7	53	23	0	78	6.5	10
Aug. 23.....	33.9	12	.04	5.0	2.1	5.2	1.8	24	5.4	4.0	.2	1.9	50	21	2	70	6.7	22

2-855. FLAT RIVER AT BAHAMA, N. C.

Mar. 9, 1961.....	258	11	0.06	3.6	1.9	4.5	1.0	20	4.5	4.4	0.2	0.6	42	17	0	62	6.4	35
Aug. 22.....	133	8.4	.06	3.0	1.3	2.6	1.6	13	3.2	2.2	.2	1.7	30	13	2	40	7.1	25

2-860. DIAL CREEK NEAR BAHAMA, N. C.

Mar. 9, 1961.....	5.9	16	0.06	3.0	1.6	5.0	0.7	18	5.8	4.2	0.1	0.5	46	14	0	52	6.7	18
Aug. 23.....	3.9	19	.01	3.4	1.0	4.3	1.2	21	2.6	4.0	.1	.8	46	12	0	51	7.0	10

2-872.24. NEUSE RIVER NEAR MILBURNIE, N. C.

Oct. 1-6, 1960.....		17	0.07	5.9	2.7	14	2.3	37	5.6	16	0.1	3.8	a89	26	0	129	7.0	25
Oct. 7.....		--	--	--	--	--	--	38	5.2	21	--	5.2	--	30	0	172	7.7	--
Oct. 8-16.....		16	.10	5.9	2.3	9.8	2.3	31	6.8	11	.0	2.7	a97	24	0	108	7.6	20
Nov. 1-12.....		18	.19	6.6	2.8	16	2.4	39	5.4	21	.1	2.5	a110	28	0	147	7.5	20
Nov. 13-15.....		--	--	--	--	--	--	44	5.6	16	--	2.8	--	29	0	143	7.4	--

2-885. LITTLE RIVER NEAR PRINCETON, N. C.

Mar. 17, 1961.....	199			3.2	1.4	5.5	1.5	21	2.1	5.0		1.9		14	0	55	6.4	
Aug. 28.....	192	13	0.07	2.2	1.3	4.6	1.8	16	5.2	4.0	0.1	.6	41	10	0	49	6.6	55

2-910. NAHUNTA SWAMP NEAR SHINE, N. C.

Mar. 16, 1961.....	85.4			4.4	0.7	5.5	1.4	14	2.9	7.8		3.5		14	2	63	6.1	
Sept. 1.....	33.0	12	0.06	4.3	1.2	5.3	1.7	14	3.6	7.5	0.1	.8	44	16	4	65	6.5	35

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 1960 to September 1961--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			
NEUSE RIVER BASIN--Continued																		
2-915. CONTENTNEA CREEK AT HOOKERTON, N. C.																		
Mar. 15, 1961	1,570	6.9	0.16	3.2	1.1	5.7	1.5	10	6.4	6.6	0.2	1.6	38	12	4	61	5.9	55
Sept. 1	339	7.8	.06	2.8	1.3	5.8	2.5	11	7.6	7.2	.1	.8	41	12	4	64	6.2	40
2-917. LITTLE CONTENTNEA CREEK NEAR FARMVILLE, N. C.																		
Mar. 15, 1961	83.1					7.4	1.5	14	6.0	9.1		2.5		18	6	73	6.1	
Aug. 31	6.4	9.8	0.06	6.6	1.5	8.1	4.0	23	12	8.8	0.2	1.7	64	22	4	97	6.5	45
NEW RIVER BASIN																		
2-930. NEW RIVER NEAR GUM BRANCH, N. C.																		
Mar. 13, 1961	56.6		0.40	26	1.4	5.3	0.7	72	6.2	7.0	0.1	2.3		70	10	150	7.3	
Aug. 29	103	6.1	.10	22	2.5	3.8	2.2	54	7.6	16	.1	1.8	89	66	21	57	6.8	80
CAPE FEAR RIVER BASIN																		
2-938. REEDY FORK NEAR OAK RIDGE, N. C.																		
Feb. 22, 1961	49.1		0.29	4.3	1.0	3.3	1.9	20	1.6	2.7	0.0	1.3		15	0	55	7.3	
Sept. 21	9.5	19	.03	5.5	1.7	4.4	2.0	33	3.4	2.7	.1	.2	55	21	0	66	6.8	7
2-945. REEDY FORK NEAR GIBSONVILLE, N. C.																		
Feb. 20, 1961	251	13	0.01	4.9	2.5	4.5	1.5	30	3.6	2.3	0.2	0.3	48	22	0	69	6.9	5
Sept. 21	52.0	12	.05	7.3	2.7	4.3	2.4	43	1.6	2.3	.2	.2	54	29	0	80	7.1	7

2-955. NORTH BUFFALO CREEK NEAR GREENSBORO, N. C.

Feb. 23, 1961.....	840	8.2	0.06	8.4	3.2	7.7	2.6	40	12	3.5	0.2	1.0	67	34	1	110	7.1	30
Sept. 21.....	19.9	18	.05	18	5.4	174	14	314	72	85	.4	1.4	545	68	0	933	6.9	35

2-965. HAW RIVER AT HAW RIVER, N. C.

Oct. 15, 1960.....	--	18	0.02	11	3.7	32	3.9	65	12	31	0.8	8.3	a157	42	0	250	6.9	20
Oct. 18.....	131	19	.10	11	3.6	57	5.6	104	19	37	1.1	7.3	212	41	0	330	7.1	10
Mar. 6, 1961.....	426	16	.23	6.7	3.3	19	2.8	57	9.0	13	.5	3.2	102	30	0	165	7.0	40
Sept. 19.....	222	15	.21	9.5	2.7	43	4.7	107	13	23	.4	.5	166	34	0	274	7.2	18

2-967. ALAMANCE CREEK NEAR ELON COLLEGE, N. C.

Oct. 21, 1960.....	35.5	19	0.06	9.3	4.3	6.7	1.9	57	4.0	5.3	0.0	0.0	79	40	0	110	7.5	8
Feb. 22, 1961.....	193	14	.06	5.6	3.0	5.6	1.2	27	8.6	3.0	.2	1.3	56	26	4	81	6.7	32

2-968.5. CANE CREEK NEAR TEER, N. C.

Mar. 8, 1961.....	29.8	15	0.03	4.2	2.0	5.0	0.8	26	4.6	3.8	0.2	1.1	50	19	0	63	6.8	9
Aug. 23.....		13	.04	5.3	1.5	3.7	3.4	24	4.8	3.8	.0	3.1	50	19	0	61	6.4	5

2-970. HAW RIVER NEAR PITTSBORO, N. C.

Feb. 17, 1961.....	754	15	0.04	5.8	2.8	12	1.8	33	9.8	9.0	0.3	3.1	76	26	0	120	6.6	15
Sept. 18.....	457	11	.05	11	3.8	46	4.0	90	13	38	.4	1.9	173	42	0	292	7.7	20

2-990. EAST FORK DEEP RIVER NEAR HIGH POINT, N. C.

Feb. 22, 1961.....	28.7					5.5	1.8	36	6.0	4.0		2.2		32	2	92	7.5	
Sept. 21.....	4.3	28	0.02	8.9	3.5	6.4	1.7	54	2.6	2.9	0.2	.2	81	36	0	98	7.4	7

2-995. DEEP RIVER NEAR RANDLEMAN, N. C.

Feb. 22, 1961.....	300	15	0.06	7.2	3.2	8.8	1.7	30	12	6.0	0.2	3.0	72	31	6	110	7.3	27
Sept. 22.....	15.7	16	.03	12	3.5	42	4.6	53	18	44	.5	11	182	45	2	309	6.5	20

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 1960 to September 1961--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--Continued																		
2-1005. DEEP RIVER AT RAMSEUR, N. C.																		
Feb. 16, 1961	252	15	0.04	6.3	3.1	9.9	1.6	32	7.8	8.2	0.2	3.7	72	28	2	110	6.6	15
Sept. 13	40.4	8.5	.01	9.8	4.4	29	3.6	62	12	29	.2	3.1	131	42	0	223	7.1	20
2-1010. BEAR CREEK AT ROBBINS, N. C.																		
Feb. 16, 1961	83.0	11	0.06	3.0	1.1	5.5	0.6	17	3.4	4.1	0.1	0.7	38	12	0	52	6.5	23
Sept. 13	8.8	8.9	.09	3.5	1.5	6.2	1.0	28	.4	5.9	.0	.8	42	15	0	60	6.8	50
2-1018. TICK CREEK NEAR MOUNT VERNON SPRINGS, N. C.																		
Feb. 16, 1961	3.4			9.5	2.8	4.8	0.9	30	12	5.3		2.7		36	11	95	7.5	
Sept. 13	1.5	13	0.06	8.8	3.8	5.7	1.4	46	3.8	6.1	0.0	1.3	67	38	0	103	6.9	30
2-1020. DEEP RIVER AT MONCURE, N. C.																		
Feb. 14, 1961	880			4.2	1.7	4.5	1.6	17	3.9	4.9		3.4		18	4	62	6.6	
Sept. 18	104	3.3	0.05	5.0	3.0	7.9	1.9	38	1.0	6.6	0.0	.6	51	25	0	88	7.2	40
2-1035. LITTLE RIVER AT LINDEN, N. C.																		
Feb. 22, 1961	1,310	4.9	0.06	0.8	0.7	2.6	0.7	2	4.8	2.7	0.1	1.4	20	5	4	30	5.3	28
Aug. 15	153	4.6	.27	1.2	.5	2.8	.9	3	2.6	3.2	.0	2.4	19	5	2	31	5.2	55
2-1040. CAPE FEAR RIVER AT FAYETTEVILLE, N. C.																		
Mar. 28, 1961		9.4	0.09	3.3	1.8	4.5	1.0	16	5.6	4.8	0.2	0.3	39	15	2	57	6.1	25
Aug. 15		8.9	.18	4.4	1.9	11	2.3	24	7.0	11	.3	2.5	61	19	0	97	6.7	45

2-1055. CAPE FEAR RIVER AT LOCK 3 NEAR TARHEEL, N. C.

Feb. 22, 1961.....	21,000	9.5	0.14	3.2	2.0	6.3	0.9	18	3.1	5.9	0.3	0.0	40	16	2	71	7.1	50
Aug. 15.....	1,220	7.8	.14	3.8	1.3	7.8	1.8	16	4.8	7.1	.2	2.7	45	15	2	71	6.3	38

2-1059. HOOD CREEK NEAR LELAND, N. C.

Feb. 23, 1961.....	27.8			6.6	0.9	4.0	0.2	19	1.9	5.7		2.0		20	4	56	6.6	
Aug. 16.....	8.5	5.2	0.44	5.3	.5	3.0	.2	14	3.6	5.1	0.2	.3	31	15	4	43	6.4	110

2-1060. LITTLE COHARRIE CREEK NEAR ROSEBORO, N. C.

Feb. 24, 1961.....	197			1.7	1.4	5.4	1.0	11	2.5	5.7		2.0		10	0	51	5.9	
Aug. 17.....	32.2	7.8	0.49	1.4	.2	5.5	1.0	6	3.2	5.6	0.1	.8	29	4	0	38	6.0	130

2-1065. BLACK RIVER NEAR TOMAHAWK, N. C.

Feb. 24, 1961.....	1,280	6.0	0.20	2.1	1.2	3.8	0.9	4	2.5	5.2	0.3	0.7	25	10	5	47	5.6	80
Aug. 17.....	281	9.4	.57	1.8	1.1	5.0	1.1	10	6.8	5.2	.2	.8	37	9	1	45	6.1	130

2-1070. SOUTH RIVER NEAR PARKERSBURG, N. C.

Feb. 24, 1961.....	644	3.7	0.12	1.0	0.6	4.5	1.2	6	0.5	6.2	0.2	0.0	21	5	0	43	5.5	80
Aug. 17.....	594	6.8	.83	.9	.4	4.5	1.1	6	6.6	2.0	.2	.4	27	4	0	36	5.3	225

2-1076. NORTHEAST CAPE FEAR RIVER NEAR SEVEN SPRINGS, N. C.

Mar. 13, 1961.....	49		0.59	2.7	1.2	25	1.5	9	1.3	40	0.1	1.3		12	4	168	5.9	
Aug. 29.....	254	5.6	.43	2.2	.9	14	1.7	6	7.0	22	.1	.2	57	9	4	102	5.6	150

2-1085. ROCKFISH CREEK NEAR WALLACE, N. C.

Feb. 24, 1961.....	104	5.4	0.20	3.5	1.1	4.3	0.9	11	3.7	7.5	0.2	0.7	32	14	4	53	6.8	70
Aug. 16.....	13.0	8.4	.65	3.0	1.2	3.4	.9	14	4.0	4.8	.2	.9	34	12	1	42	6.1	150

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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																		
2-1110. YADKIN RIVER AT PATTERSON, N. C.																		
Dec. 31, 1960	25.6	12	0.03	2.2	0.9	1.9	0.6	15	1.6	0.9	0.1	1.0	28	9	0	32	6.4	5
June 30, 1961	52	11	.03	3.8	.5	1.7	.9	15	4.2	.7	.1	.2	30	12	0	38	6.3	4
2-1115. REDDIES RIVER AT NORTH WILKESBORO, N. C.																		
Dec. 31, 1960	73.5			2.7	0.5	2.4	0.7	17	0.3	1.8		1.5		9	0	31	6.7	
Aug. 1, 1961	90	12	0.03	2.8	.5	1.8	1.1	15	2.2	.6	0.0	.7	29	9	0	32	6.5	4
2-1130. FISHER RIVER NEAR COPELAND, N. C.																		
Jan. 7, 1961	96.2	11	0.06	2.1	0.9	1.5	0.5	12	2.6	1.7	0.0	0.6	27	9	0	30	7.2	5
Aug. 4	113	9.8	.10	2.3	.9	1.6	.8	15	1.0	1.5	.0	.2	25	10	0	30	6.8	15
2-1144.5. LITTLE YADKIN RIVER AT DALTON, N. C.																		
Dec. 29, 1960	23.5			3.9	1.3	4.7	1.3	27	1.6	2.8		1.5		16	0	55	6.6	
July 13, 1961	23.0	18	0.01	3.5	1.6	3.7	1.5	23	1.8	2.9	0.1	.7	45	16	0	51	6.6	3
2-1155. FORBUSH CREEK NEAR YADKINVILLE, N. C.																		
Dec. 29, 1960	14.5	13	0.06	3.1	1.5	2.6	0.9	20	0.2	2.5	0.1	0.0	34	14	0	43	7.2	10
Aug. 4, 1961	31	14	.00	3.1	1.6	3.1	.9	19	1.4	1.8	.2	.7	36	15	0	42	6.7	10
2-1175. ROCKY CREEK AT TURNERSBURG, N. C.																		
Dec. 30, 1960	78.2	13	0.07	2.6	1.5	2.3	1.0	17	1.0	2.1	0.0	1.2	33	12	0	41	6.4	5
July 17, 1961	109	11	.03	2.7	1.1	1.8	1.7	14	3.0	2.3	.1	1.1	32	12	0	34	6.5	7

2-1185. HUNTING CREEK NEAR HARMONY, N. C.

Jan. 7, 1961.....	130			2.4	0.7	2.1	1.0	15	0.2	1.9		1.6		9	0	31	6.5	
July 17.....	141	12	0.01	1.8	1.0	1.8	1.4	13	2.4	1.8	0.0	0.9	29	8	0	30	6.6	10

2-1190. SOUTH YADKIN RIVER AT COOLEEMEE, N. C.

Dec. 30, 1960.....	389		0.14	4.1	2.0	32	1.9	87	4.6	4.2		1.4		18	0	160	7.6	
July 18, 1961.....	463	12	.11	3.2	1.4	18	2.6	60	6.6	3.3	0.1	.9	78	14	0	111	7.6	45

2-1194. THIRD CREEK SUBWATERSHED NO. 7A NEAR STONY POINT, N. C. (OUTFLOW)

Dec. 31, 1960.....	4.1		0.01	4.2	2.3	5.6	1.6	20	0.7	3.8	0.0	4.6		20	0	65	8.5	
June 30, 1961.....	5.6	11	.06	2.2	.8	3.3	2.4	9	2.2	3.8	.1	5.3	35	8	1	50	5.9	4

2-1205. THIRD CREEK AT CLEVELAND, N. C.

Dec. 30, 1960.....	68	20	0.09	5.2	3.1	4.1	1.3	38	1.8	2.9	0.0	1.2	59	26	0	71	7.0	10
July 19, 1961.....	68.9	20	.01	6.6	2.9	4.8	1.7	39	1.6	4.3	.1	1.0	62	28	0	82	7.2	4

2-1225. YADKIN RIVER AT HIGH ROCK, N. C.

Dec. 30, 1960.....	7,580			5.5	1.4	6.6	1.8	30	3.2	3.9		2.6		20	0	76	6.6	
July 19, 1961.....	6,970	11	0.03	4.5	1.7	5.1	1.8	27	3.6	4.4	0.0	1.1	46	18	0	65	7.4	8

2-1235. UWHARRIE RIVER NEAR ELDORADO, N. C.

Feb. 15, 1961.....	186		0.18	5.8	3.0	4.8	0.8	31	2.5	5.0	0.0	1.0		27	2	74	7.3	
Sept. 14.....	20.5	15	.01	7.4	3.7	5.6	1.8	49	1.6	4.2	.1	.5	64	34	0	90	7.4	40

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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																		
2-1250. BIG BEAR CREEK NEAR RICHFIELD, N. C.																		
Dec. 30, 1960	4.2	10	0.06	5.5	2.9	5.3	1.0	28	4.8	8.3	0.1	0.7	53	26	3	81	7.4	10
July 19, 1961	.2	12	.03	5.3	2.6	4.4	1.4	27	4.4	5.5	.1	1.9	51	24	2	74	6.8	15
Sept. 21	.2	13	.06	7.9	3.6	6.1	1.9	47	4.2	4.6	.1	1.1	66	34	0	100	6.9	15
2-1270. BROWN CREEK NEAR POLKTON, N. C.																		
Feb. 14, 1961	46.7	8.8	0.11	3.6	2.5	8.3	1.6	13	9.0	10	0.1	1.9	52	20	9	84	6.4	43
Sept. 15	.8	8.7	.16	7.5	4.0	5.4	2.7	45	2.0	6.6	.1	.9	60	35	0	95	6.8	80
2-1280. LITTLE RIVER NEAR STAR, N. C.																		
Oct. 14, 1960	13.1	18	0.12	4.5	2.1	4.6	1.5	30	3.0	3.1	0.1	0.4	52	20	0	62	7.4	30
Feb. 15, 1961	45.7	17	.09	3.2	1.8	5.0	.9	20	5.0	3.0	.2	.6	47	15	0	54	6.5	31
Sept. 14	7.7	17	.07	5.0	2.2	5.4	1.2	36	.4	3.4	.0	.6	53	22	0	66	7.2	50
2-1280.26. DENSON'S CREEK AT TROY, N. C.																		
May 12, 1961		9.8	0.14	2.3	0.9	2.2	0.9	10	2.0	1.5	0.1	0.8	a45	10	2	32	6.2	80
Sept. 21	2.4	27	.20	4.6	1.7	5.5	1.2	33	1.8	1.2	.0	.0	59	18	0	67	6.9	23
2-1300. PEE DEE RIVER AT CHERAW, S. C.																		
Jan. 17, 1961	2,430	11	0.09	4.8	1.7	8.6	1.9	31	1.4	6.0	0.1	1.3	a66	19	0	78	6.9	20
2-1304.9 THOMPSON CREEK NEAR CHERAW, S. C.																		
June 13, 1961	84.2	4.5	0.59	2.0	0.8	3.5	0.9	12	1.2	4.5	0.0	0.9	a32	8	0	40	6.4	60
2-1305.1. PEE DEE RIVER NEAR WALLACE, S. C.																		
Oct. 14, 1960	b2,800	11	0.00	4.0	1.8	11	2.2	35	4.4	6.7	0.1	1.6	a63	17	0	87	7.0	10

2-1306. CEDAR CREEK AT SOCIETY HILL, S. C.

June 14, 1961.....	72.2	4.8	0.46	0.8	0.1	1.6	0.5	3	2.2	3.0	0.0	0.9	a26	2	0	17	5.2	80

PEE DEE RIVER NEAR SOCIETY HILL, S. C.

June 14, 1961.....	6,030	8.7	0.01	3.7	1.6	7.5	1.6	26	4.8	6.0	0.0	1.1	a49	16	0	71	6.8	10

2-1310. PEE DEE RIVER AT PEEDEE, S. C.

Jan. 18, 1961.....	c6,660	10	0.11	3.8	1.4	9.1	1.8	28	2.8	7.0	0.1	0.9	a56	16	0	74	6.8	25

2-1314.4. LYNCHES RIVER NEAR BETHUNE, S. C.

June 13, 1961.....	366	7.8	0.26	1.8	1.0	7.9	1.1	24	3.2	3.5	0.0	0.6	a47	8	0	57	6.5	50

2-1314.8. LITTLE LYNCHES RIVER NEAR BETHUNE, S. C.

June 13, 1961.....	207	7.6	0.00	1.9	0.7	2.5	0.8	4	7.6	2.5	0.0	0.5	a35	8	4	33	5.5	50

2-1315. LYNCHES RIVER NEAR BISHOPVILLE, S. C.

Jan. 16, 1961.....	c918	7.7	0.22	1.4	0.8	4.2	0.7	9	2.6	5.0	0.1	0.7	a34	6	0	36	6.5	40

2-1325. LITTLE PEE DEE RIVER NEAR DILLON, S. C.

Nov. 22, 1960.....	c317	9.1	0.16	1.0	1.0	4.0	0.6	6	3.0	5.5	0.3	0.7	a29	6	2	35	5.7	85

2-1345. LUMBER RIVER AT BOARDMAN, N. C.

Feb. 22, 1961.....	1,490	4.6	0.10	1.4	1.0	3.5	0.6	4	2.1	5.2	0.2	0.2	21	8	4	41	5.3	60
Aug. 15.....	1,040	8.1	.44	2.0	.6	4.6	1.1	5	4.4	6.4	.1	.5	30	8	4	45	5.5	140

CATAWBA RIVER AT CHARLOTTE, N. C.

May 29, 1961.....		8.4	0.03	3.2	1.2	3.1	1.2	20	3.2	2.5	0.0	0.6	34	14	0	45	7.0	17
Aug. 15.....		10	.00	3.2	1.2	3.8	1.2	20	3.8	1.5	.1	.3	a37	13	0	46	7.2	3

2-1350. LITTLE PEE DEE RIVER AT GALIVANTS FERRY, S. C.

Nov. 23, 1960.....	c1,070	9.9	0.20	1.4	0.6	3.9	0.7	6	3.0	6.0	0.1	1.2	a34	6	1	35	6.3	85

2-1355. BLACK RIVER NEAR GABLE, S. C.

Dec. 1, 1960.....	c303	11	0.14	2.6	1.1	5.1	1.4	8	2.4	9.0	0.2	0.0	a50	11	4	49	6.5	120

a Residue at 180°C.
b Estimated mean discharge.
c 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 1960 to September 1961--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																		
2-1370. MILL CREEK AT OLD FORT, N. C.																		
Jan. 7, 1961	18.2	9.8	0.01	2.4	0.8	1.2	0.3	12	2.0	0.8	0.0	1.1	24	9	0	28	7.1	5
July 5	31.6	9.3	.00	2.2	1.3	1.5	.6	12	3.4	.8	.0	.1	25	10	0	26	7.1	4
2-1380. CATAWBA RIVER NEAR MARION, N. C.																		
Jan. 7, 1961	158			3.1	0.9	9.1	1.0	26	2.2	5.5		2.7		12	0	68	7.5	
July 5	227	12	0.05	2.4	.9	2.8	1.4	14	.6	2.6	0.1	1.0	31	10	0	34	6.6	22
2-1385. LINVILLE RIVER AT BRANCH, N. C.																		
Jan. 7, 1961	74.8					1.4	0.6	10	0.9	1.0		1.5		8	0	25	7.0	
July 7	86.4	7.2	0.01	1.9	1.0	1.3	.6	12	1.6	1.1	0.0	.2	21	9	0	22	7.1	4
2-1420. LOWER LITTLE RIVER NEAR ALL HEALING SPRINGS, N. C.																		
Dec. 31, 1960	17.2	12	0.04	2.4	1.4	1.7	0.8	16	2.0	2.0	0.0	0.5	31	12	0	32	6.5	5
July 14, 1961	22.1	12	.02	2.3	.9	1.7	1.2	14	1.8	1.3	.0	1.0	29	10	0	32	6.6	12
2-1425. CATAWBA RIVER AT CATAWBA, N. C.																		
Jan. 17. 1961	4,030	8.5	0.00	2.0	1.5	4.3	1.1	18	2.4	3.5	0.1	0.0	32	11	0	48	6.6	3
June 19	3,390	8.9	.01	2.6	1.0	3.0	1.0	18	.8	2.9	.0	.5	30	10	0	42	6.7	12
2-1426. MOUNTAIN CREEK NEAR TERRELL, N. C.																		
Dec. 31, 1960	26	18	0.07	5.4	3.1	3.6	1.2	33	2.6	3.2	0.2	1.2	55	26	0	72	6.5	3
Aug. 2, 1961	32.6	16	.02	5.1	2.2	2.6	1.6	29	3.2	2.1	.1	.8	48	22	0	60	6.7	15
2-1430. HENRY FORK NEAR HENRY RIVER, N. C.																		
Dec. 31, 1960	61.1	9.7	0.04	1.8	0.6	1.8	0.9	10	1.6	2.8	0.0	1.0	25	7	0	26	6.3	10
July 25, 1961	77.3	10	.01	1.8	.9	1.5	2.8	11	3.2	2.0	.0	.7	28	8	0	29	6.6	4

2-1440. LONG CREEK NEAR BESSEMER CITY, N. C.

Dec. 20, 1960.....	18.4		0.07	5.8	2.1	4.3	1.0	38	0.2	3.4	0.0	0.3		24	0	68	7.0	
June 19, 1961.....	21.3	17	.05	5.0	2.3	3.0	1.4	31	2.2	2.1	.1	.7	49	22	0	63	6.7	5

2-1450. SOUTH FORK CATAWBA RIVER AT LOWELL, N. C.

Jan. 24, 1961.....	575			4.5	1.9	4.0	1.2	24	2.1	3.8		2.4		19	0	64	6.6	
June 19.....	547	14	0.03	4.4	1.9	3.8	1.6	24	3.4	4.4	0.1	1.1	47	19	0	67	6.3	5

2-1465. LITTLE SUGAR CREEK NEAR CHARLOTTE, N. C.

Dec. 20, 1960.....	12.0			19	5.5	13	2.3	81	11	9.7		4.3		70	3	198	6.9	
July 13, 1961.....	45.6	11	0.01	13	3.3	6.4	2.8	47	13	5.7	0.2	2.0	80	46	7	127	6.7	15

2-1469. TWELVE MILE CREEK NEAR WAXHAW, N. C.

Dec. 20, 1960.....	6.3		0.25	6.2	2.8	7.2	2.0	38	4.2	5.4		0.3		27	0	87	7.1	
July 20, 1961.....	19.4	21	.03	7.9	3.3	6.9	1.6	48	3.0	6.2	0.1	1.2	75	33	0	90	7.6	12

2-1490. COVE CREEK NEAR LAKE LURE, N. C.

Feb. 1, 1961.....	75.5			2.6	1.1	2.6	0.9	18	1.9	1.9		1.5		11	0	39	6.4	
July 5.....	89.0	16	0.05	2.7	1.1	3.0	1.3	18	.2	1.9	0.1	.2	36	12	0	34	7.1	17

2-1510. SECOND BROAD RIVER AT CLIFFSIDE, N. C.

Feb. 1, 1961.....	145	17	0.10	3.5	1.7	9.5	1.2	26	6.4	6.9	0.1	2.9	62	16	0	78	6.5	8
July 26.....	263	16	.12	3.9	1.4	8.7	1.7	28	4.2	5.0	.0	1.5	57	16	0	81	6.7	28

2-1521. FIRST BROAD RIVER NEAR CASAR, N. C.

Jan. 30, 1961.....	42.4	14	0.06	2.2	1.1	2.3	0.7	16	2.0	1.5	0.0	0.3	32	10	0	36	7.0	8
July 25.....	85.4	14	.10	2.9	1.0	2.0	1.2	16	1.2	2.6	.0	.3	33	11	0	38	7.0	27

2-1525. FIRST BROAD RIVER NEAR LAWNDALE, N. C.

Jan. 30, 1961.....	171	11	0.01	2.4	1.2	2.3	1.1	16	1.8	2.5	0.1	0.7	31	11	0	39	6.5	5
July 25.....	252	12	.00	2.4	1.1	2.3	1.3	16	1.6	2.4	.0	.7	32	10	0	36	6.9	10

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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																		
2-1474. FISHING CREEK NEAR FORT LAWN, S. C.																		
Apr. 26, 1961.....	165	17	0.03	6.7	3.5	7.4	1.4	45	4.2	6.5	0.0	0.3	a73	32	0	105	7.0	10
2-1475. ROCKY CREEK AT GREAT FALLS, S. C.																		
Nov. 22, 1960.....	c42	33	0.00	9.0	4.6	9.0	1.8	62	3.0	5.5	0.1	0.0	97	42	0	120	6.8	5
2-1480. WATEREE RIVER NEAR CAMDEN, S. C.																		
Nov. 4, 1960.....	c5,590	10	0.03	4.5	1.6	9.6	1.7	30	6.8	5.8	0.1	0.4	a58	18	0	83	7.5	20
WATEREE RIVER NEAR EASTOVER, S. C.																		
June 14, 1961.....	6,430	7.5	0.06	5.0	1.6	8.2	1.7	28	6.4	6.5	0.1	0.9	a62	19	0	82	6.8	30
2-1534.8. BUFFALO CREEK NEAR BLACKSBURG, S. C.																		
Nov. 15, 1960.....	118	15	0.04	3.5	1.5	6.9	1.9	27	2.0	7.5	0.1	0.1	a52	15	0	65	7.0	5
2-1535. BROAD RIVER NEAR GAFFNEY, S. C.																		
May 23, 1961.....	c2,210	13	0.04	3.0	1.0	3.0	1.2	18	1.6	3.0	0.0	0.9	36	12	0	45	6.8	5
2-1536. KINGS CREEK AT KINGS CREEK, S. C.																		
Nov. 15, 1960.....	25.9	14	0.03	15	5.4	4.3	1.7	70	8.4	4.0	0.3	0.0	a90	60	3	138	7.3	5
2-1538. BULLOCK CREEK NEAR SHARON, S. C.																		
Nov. 15, 1960.....	30.6	24	0.08	7.7	3.0	6.7	1.4	45	2.2	4.0	0.1	0.3	a73	31	0	91	7.4	5

2-1545. NORTH PACOLET RIVER AT FINGERVILLE, S. C.																		
May 23, 1961.....	c229	14	0.03	3.7	1.1	3.9	1.0	24	2.0	2.5	0.0	0.6	a48	14	0	47	6.9	10
2-1560. PACOLET RIVER NEAR CLIFTON, S. C.																		
May 23, 1961.....	c557	11	0.06	3.0	1.6	2.9	1.3	18	3.2	3.0	0.0	1.1	36	14	0	43	6.8	17
2-1565. BROAD RIVER NEAR CARLISLE, S. C.																		
Nov. 22, 1960.....	c2,240	16	0.01	4.4	1.6	5.1	1.2	28	4.0	3.0	0.2	0.1	50	18	0	60	6.6	5
2-1570. NORTH TYGER RIVER NEAR FAIRMONT, S. C.																		
Apr. 18, 1961.....	c108	10	0.00	2.8	0.9	2.5	0.8	16	1.2	2.5	0.0	1.8	a32	11	0	37	6.9	5
2-1580. NORTH TYGER RIVER NEAR MOORE, S. C.																		
Apr. 17, 1961.....	c1,090	8.6	0.01	2.6	0.8	7.3	1.2	22	3.6	2.5	0.0	1.9	a43	10	0	54	6.6	5
2-1605. ENOREE RIVER NEAR ENOREE, S. C.																		
May 24, 1961.....	c445	14	0.06	2.9	0.9	12	1.7	36	3.6	4.0	0.0	1.8	59	10	0	74	7.0	3
2-1615. BROAD RIVER AT RICHTEX, S. C.																		
Oct. 17, 1960.....	c4,420	14	0.02	3.9	1.6	7.7	1.9	32	2.4	5.0	0.2	0.0	a53	16	0	69	6.8	5
2-1625. SALUDA RIVER NEAR GREENVILLE, S. C.																		
Nov. 15, 1960.....	c318	13	0.04	2.5	0.6	2.7	1.2	16	3.0	2.0	0.1	0.1	a35	8	0	30	6.7	5

a Residue at 180°C.
c Daily mean discharge.

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MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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																		
2-1630. SALUDA RIVER NEAR PELZER, S. C.																		
Nov. 21, 1960.....	c464	16	0.03	2.4	1.1	2.8	0.9	17	2.4	1.5	0.1	0.4	3	10	0	34	6.6	8
2-1640. REEDY RIVER NEAR GREENVILLE, S. C.																		
Nov. 21, 1960.....	c38	14	0.01	6.0	1.9	20	2.3	63	4.8	7.5	0.1	2.6	90	23	0	138	6.8	8
2-1669. WILSON CREEK NEAR NINETY-SIX, S. C.																		
Nov. 15, 1960.....	11.0	27	0.04	7.9	3.3	20	3.4	27	1.8	19	0.2	2.0	a117	33	0	161	6.6	5
2-1670. SALUDA RIVER AT CHAPPELS, S. C.																		
Nov. 25, 1960.....	c675	16	0.01	3.4	1.3	9.5	1.7	30	4.0	4.5	0.1	1.7	57	14	0	78	6.6	5
2-1674.5. LITTLE RIVER NEAR SILVERSTREET, S. C.																		
Nov. 16, 1960.....	56.8	26	0.02	6.4	3.0	7.3	2.1	46	2.8	5.0	0.2	0.1	a78	28	0	91	6.8	5
2-1695.5. CONGAREE CREEK AT CAYCE, S. C.																		
May 12, 1961.....	c360	2.9	0.24	0.8	0.3	1.0	0.4	2	0.6	2.0	0.0	0.7	a21	3	2	17	5.5	50

EDISTO RIVER BASIN

2-1725. SOUTH FORK EDISTO RIVER NEAR MONTMORENCI, S. C.

Nov. 18, 1960.....	c184	6.8	0.20	1.0	0.3	2.2	0.3	6	3.4	1.5	0.0	0.3	19	4	0	20	6.8	25

2-1725.2. SHAW CREEK NEAR EUREKA, S. C.

June 15, 1961.....	33.0	4.5	0.23	1.1	0.2	2.9	0.4	6	1.6	4.0	0.0	0.9	a22	4	0	27	6.2	30

2-1733. NORTH FORK EDISTO RIVER NEAR NORTH, S. C.

May 24, 1961.....	530	4.7	0.10	1.1	0.4	1.5	0.4	5	0.8	2.5	0.0	0.7	a16	4	0	19	5.8	25

2-1735. NORTH FORK EDISTO RIVER AT ORANGEBURG, S. C.

Mar. 27, 1961.....	c990	1.1	0.10	1.5	0.1	2.5	0.3	7	0.8	2.7	0.0	1.1	a25	4	0	24	5.9	60

2-1740. EDISTO RIVER NEAR BRANCHVILLE, S. C.

Dec. 22, 1960.....	c1,950	7.4	0.13	2.1	0.3	2.3	0.8	7	1.8	5.0	0.1	1.0	a32	6	0	27	6.6	40

2-1750. EDISTO RIVER NEAR GIVHANS, S. C.

Mar. 30, 1961.....	c3,030	2.3	0.23	4.6	0.9	4.4	0.4	16	1.2	6.0	0.1	1.4	a48	15	2	51	6.4	80

EDISTO RIVER AT CANADYS, S. C.

May 11, 1961.....	3,540	4.1	0.46	3.2	0.5	2.5	0.6	10	1.6	3.5	0.1	1.1	a40	10	2	37	6.1	100

COMBAHEE RIVER BASIN

2-1755. SALKEHATCHIE RIVER NEAR MILEY, S. C.

Nov. 29, 1960.....	c249	12	0.01	9.5	1.0	4.5	1.0	29	1.6	6.0	0.1	0.7	a67	28	4	76	6.5	65

a Residue at 180°C.
c 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 1960 to September 1961--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			
SAVANNAH RIVER BASIN																		
2-1834.9. CHAUGA RIVER NEAR WESTMINISTER, S. C.																		
Mar. 16, 1961.....	159	12	0.02	1.8	1.0	2.2	0.5	14	0.8	2.0	0.0	0.2	a28	8	0	24	6.8	5
2-1866. CONNEROSS CREEK AT RICHLAND, S. C.																		
Mar. 16, 1961.....	82.7	14	0.06	2.6	0.8	5.0	0.8	18	1.2	4.6	0.0	1.0	a41	10	0	45	6.7	5
2-1873. BIG GENEROSTEE CREEK NEAR STARR, S. C.																		
Mar. 15, 1961.....	108	14	0.00	4.2	1.0	5.6	1.7	22	3.6	4.5	0.1	1.2	a52	14	0	64	6.3	5
2-1875. SAVANNAH RIVER NEAR IVA, S. C.																		
Apr. 5, 1961.....	c203	12	0.10	3.0	1.0	3.8	1.4	9	7.8	4.0	0.3	2.3	40	12	4	50	6.8	10
2-1880. ROCKY RIVER NEAR CALHOUN FALLS, S. C.																		
Apr. 10, 1961.....	c381	11	0.02	2.7	0.9	2.9	1.7	16	3.6	2.0	0.1	1.2	a39	10	0	41	6.6	10
2-1890. SAVANNAH RIVER NEAR CALHOUN FALLS, S. C.																		
Jan. 9, 1961.....	c3,020	12	0.02	3.0	0.7	4.5	1.5	20	1.2	3.5	0.1	0.7	a38	10	0	45	6.7	5
2-1925. LITTLE RIVER AT MOUNT CARMEL, S. C.																		
Apr. 11, 1961.....	c327	14	0.00	3.8	1.8	3.8	1.4	23	2.8	2.0	0.0	1.1	a48	16	0	53	7.1	18
2-1927. LONG CANE CREEK NEAR ABBEVILLE, S. C.																		
Nov. 15, 1960.....	16.4	27	0.09	4.9	2.8	5.8	1.8	40	2.0	4.0	0.2	0.0	a70	24	0	73	7.0	5
2-1960. STEVENS CREEK NEAR MODOC, S. C.																		
May 23, 1961.....	c142	17	0.15	7.9	3.5	7.6	1.2	47	5.2	6.5	0.0	0.5	a74	34	0	100	7.0	10
2-1970. SAVANNAH RIVER AT AUGUSTA, GA.																		
Jan. 11, 1961.....	c6,010	11	0.04	3.0	1.0	5.0	1.3	22	1.6	3.0	0.1	0.0	a40	12	0	51	6.5	5

a Residue at 180°C.
c 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 1960 to September 1961--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
ST. JOHNS RIVER BASIN																				
2-2332. LITTLE ECONLOCKHATCHEE RIVER NEAR UNION PARK, FLA.																				
Nov. 3, 1960..	6.1	6.3	0.13	6.6	2.1	6.4	1.2	20	1.6	12	0.2	0.3		84	47	25	8	78	7.7	100
Dec. 20.....	2.2	6.5	.03	16	1.9	7.6	.6	51	2.8	14	.2	.0		97	75	48	6	133	7.0	30
Feb. 14, 1961.	8.7	7.3	.10	7.0	2.1	9.8	1.5	18	6.0	20	.4	.3		115	63	26	11	106	7.7	80
Apr. 12.....	1.6	7.3	.13	11	1.8	10	.4	33	3.6	19	.2	.4		116	70	35	8	124	7.0	50
May 24.....	.3	--	--	--	--	--	--	38	--	--	--	--		--	--	37	6	135	7.0	--
May 31.....	.5	2.7	.08	14	2.2	9.4	.4	40	4.8	21	.1	.0		98	75	44	11	141	6.9	40
July 13.....	8.8	8.0	.20	9.6	1.5	10	1.1	20	6.4	18	.3	.0		115	65	30	14	110	6.5	80
Aug. 4.....	11	7.9	.66	7.6	1.2	9.2	.7	16	4.8	18	.3	.4		140	59	24	11	94	6.1	320
Sept. 15.....	3.5	7.6	.19	8.4	1.9	10	.8	16	6.8	19	.1	.8		109	61	24	11	95	6.6	110
INDIAN RIVER BASIN																				
2-2525. NORTH CANAL NEAR VERO BEACH, FLA.																				
Nov. 10, 1960.	12	8.6	0.05	54	7.7	36	1.4	152	28	64		0.0			275	166	42	505	7.7	35
Dec. 28.....	9.4	8.3	.03	61	8.8	39	1.8	170	28	72		.1			303	188	48	555	7.7	45
Feb. 7, 1961..	9.4	9.8	.04	57	7.3	35	2.7	156	28	65		.0			282	172	44	514	7.9	25
Mar. 14.....	58	7.0	.03	75	27	110	8.1	158	80	230		.3			615	298	168	1130	7.2	25
May 9.....	5.5	8.4	.04	66	7.2	35	1.6	188	25	66		.2			302	194	40	536	7.9	45
July 7.....	9.5	6.9	.04	68	8.4	39	1.4	194	23	68		.6			311	204	45	568	7.6	18
Aug. 21.....	7.3	7.0	.02	56	14	50	2.6	152	37	97		.2			339	197	72	616	7.6	35
2-2530. MAIN CANAL AT VERO BEACH, FLA.																				
Nov. 9, 1960..	71	11	0.03	90	14	79	3.2	222	62	150		0.0			518	282	100	928	8.1	40
Dec. 29.....	41	9.5	.03	92	23	108	4.4	228	66	210		.3			625	324	137	1110	7.9	45
Feb. 7, 1961..	71	10	.04	96	21	96	4.2	234	72	195		.1			609	326	134	1080	7.7	45
Mar. 15.....	134	13	.03	75	32	130	7.9	164	95	260		.7			695	318	184	1270	7.5	25
May 8.....	26	14	.02	97	30	138	5.5	230	88	270		.4			756	366	177	1360	7.8	40
July 7.....	117	13	.03	73	15	70	4.1	172	51	130		1.1			442	244	102	801	7.2	25
Aug. 21.....	79	14	.02	99	31	125	6.4	212	76	250		.3			696	350	176	1270	7.7	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 1960 to September 1961--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			
INDIAN RIVER BASIN--Continued																				
2-2535. SOUTH CANAL NEAR VERO BEACH, FLA.																				
Nov. 10, 1961.	12	9.2	0.04	51	6.1	32	0.6	144	22	58		0.0			250	152	34	452	7.8	50
Dec. 29.....	7.7	9.1	.10	60	6.9	36	1.4	176	24	64		.0			288	178	34	520	7.8	55
Feb. 7, 1961..	9.3	7.8	.05	56	6.0	36	1.8	160	22	63		.0			272	164	33	493	7.6	55
Mar. 15.....	7.4	10	.04	56	8.9	43	2.2	168	26	74		.1			303	176	38	535	7.8	45
May 9.....	7.0	7.3	.04	73	7.8	46	1.6	218	24	76		.1			343	214	36	600	8.2	45
July 7.....	30	12	.04	82	18	92	4.8	182	60	175		6.8			541	278	130	969	7.4	35
Aug. 18.....	37	17	.10	96	40	158	8.9	226	92	330		.4			853	404	219	1560	7.5	45
LAKE OKEECHOBEE AND THE EVERGLADES																				
2-2580. HARNEY POND CANAL AT LAKE OKEECHOBEE, FLA.																				
Oct. 11, 1960.		6.3	0.24	13	1.8	7.1	1.2	19	19	12		0.0			70	40	24	120	6.5	240
Nov. 14.....		5.3	.29	16	1.5	7.2	.4	29	15	13		.0			73	46	22	126	7.0	180
Dec. 30.....		4.1	.20	21	3.3	12	.8	62	13	18		.0			103	66	15	185	7.3	90
Feb. 10, 1961.		5.0	.12	29	4.3	16	1.6	70	30	22		.0			142	90	32	248	7.1	110
Mar. 27.....		5.0	.04	30	4.6	17	1.2	90	21	26		.0			149	94	20	262	7.4	80
May 9.....		5.0	.03	36	6.8	22	1.0	116	21	31		.0			180	118	23	318	7.6	50
July 6.....		7.9	.08	42	7.5	25	1.8	124	26	38		.3			210	136	34	373	7.6	45
Aug. 14.....		4.3	.03	37	5.2	20	1.2	96	32	30		.1			177	114	36	315	7.2	55
2-2595. INDIAN PRAIRIE CANAL NEAR OKEECHOBEE, FLA.																				
Oct. 11, 1960.		3.5	0.08	12	1.7	6.6	0.9	20	18	10		0.1			63	37	20	114	6.7	120
Nov. 14.....		6.1	.13	21	3.8	11	.3	34	34	14		.3			108	68	40	182	6.9	160
Dec. 30.....		4.9	.11	22	4.1	12	.6	64	17	18		.0			111	72	20	197	7.3	80
Feb. 10, 1961.		8.2	.27	46	8.0	22	1.3	90	71	28		.0			229	148	74	389	7.2	100
Mar. 27.....		7.8	.04	42	7.1	20	1.4	100	45	28		.0			200	134	52	353	7.5	80
May 9.....		5.6	.04	38	7.1	19	.9	116	22	27		.2			177	124	29	326	7.4	60
July 6.....		6.0	.08	53	8.3	23	1.4	136	43	34		.2			236	166	54	412	7.5	55
Aug. 14.....		1.3	.02	52	8.9	24	1.2	150	43	36		.1			241	166	43	426	7.6	45

ALLIGATOR LAKE NEAR ASHTON, FLA.

Oct. 25, 1960.		0.6	0.03	2.0	1.2	4.9	1.3	7	3.2	9.5		0.0			26	10	4	49	6.1	50
June 1, 1961..		1.7	.08	1.6	1.2	5.3	.5	6	.8	10		.3			24	9	4	53	6.1	50

2-2629. BOGGY CREEK NEAR TAFT, FLA.

Oct. 27, 1960.	30	6.0	0.03	4.4	1.9	7.4	1.6	11	3.2	13	0.1	0.2		76	43	19	10	79	8.0	110
Dec. 22.....	7.8	7.6	.08	6.4	1.7	8.2	1.4	19	2.8	14	.1	.1		72	52	23	8	92	7.4	85
Feb. 16, 1961.	14	5.2	.11	5.8	1.8	9.1	1.4	17	4.0	15	.2	.1		15	51	22	8	97	7.7	60
Apr. 12.....	3.4	6.4	.05	8.0	1.9	9.9	1.1	30	5.2	14	.1	.0		115	62	28	4	108	7.0	90
May 23.....	1.7	--	--	--	--	--	--	30	--	--	--	--		--	--	25	0	110	6.6	--
May 31.....	.8	9.8	.06	8.8	1.5	13	1.0	34	4.8	16	.7	.0		124	73	28	0	117	6.8	75
Aug. 1.....	12	8.8	.22	6.4	1.5	8.6	1.3	18	1.6	16	.3	.0		134	54	22	7	89	6.4	160

2-2637. SHINGLE CREEK NEAR VINELAND, FLA.

Oct. 27, 1960.	--	2.3	0.24	3.2	1.2	4.7	0.0	9	0.0	8.0	0.1	0.4		53	25	13	6	48	7.8	110
Dec. 19.....	2.43	5.5	.07	14	2.9	22	3.6	43	14	33	.4	2.1		150	119	47	12	227	7.2	50
Apr. 10, 1961.	2.82	3.8	.05	14	1.9	22	1.8	49	11	26	.4	.5		164	105	43	3	193	6.9	55
May 23.....	--	--	--	--	--	--	--	31	--	--	--	--		--	--	23	0	155	6.7	--
Aug. 2.....	7.92	5.1	.34	8.8	1.5	14	1.0	34	4.8	18	.3	.1		141	71	28	0	125	6.6	80

2-2720. ISTOKPOGA CANAL NEAR CORNWELL, FLA.

Nov. 28, 1960.	1040	5.1	0.01	6.4	1.0	3.8	0.8	10	9.2	8.0		0.4			40	20	12	67	6.1	120
Feb. 28, 1961.	406	1.4	.03	4.8	1.7	4.8	2.3	10	8.8	9.0		.0			38	19	11	68	6.3	50
Apr. 14.....	313	1.3	.04	6.0	.7	5.0	1.2	9	8.8	10		.0			37	18	10	72	6.2	70
May 23.....	149	1.6	.04	5.2	2.4	5.8	1.4	10	12	10		.0			43	23	15	83	6.6	55

2-2745. TAYLOR CREEK ABOVE OKEECHOBEE, FLA.

Oct. 11, 1960.	342	4.3	0.16	8.0	1.5	6.9	0.9	25	1.2	10		0.0			45	26	6	86	7.2	60
Nov. 14.....	13	3.4	.06	16	3.4	18	1.0	50	8.8	29		.0			105	54	13	194	7.2	70
Dec. 29.....	4.8	4.0	.03	121	54	360	13	100	234	725		.4			1560	524	442	2850	7.3	30
Feb. 8, 1961..	6.2	2.5	.03	76	26	182	8.5	122	114	335		.5			805	296	196	1480	7.4	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 1960 to September 1961--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--Continued																				
2-2745. TAYLOR CREEK ABOVE OKEECHOBEE, FLA.--Continued																				
Mar. 27, 1961.	1.2	3.4	0.02	134	62	442	12	108	232	815		0.2			1750	590	501	3100	7.2	30
May 9.....	.7	2.7	.04	126	63	392	9.4	132	264	740		.4			1660	574	466	2940	7.6	35
Aug. 15.....	3.9	6.8	.02	149	75	510	17	124	298	974		1.2			2090	680	579	3730	7.5	45
2-2765. ST. LUCIE CANAL AT LAKE OKEECHOBEE, FLA.																				
Oct. 3, 1960..		4.7	0.02	37	7.2	21	0.9	120	22	30		0.1			182	122	24	329	7.6	30
Nov. 3.....		5.7	.03	39	7.4	19	.9	130	23	27		.1			186	128	22	334	7.4	25
Dec. 6.....		6.9	.06	42	10	19	.6	148	21	27		.0			200	146	24	361	7.7	45
Jan. 6, 1961..		6.1	.04	34	8.0	15	.8	122	18	22		.0			164	118	18	294	7.6	45
Feb. 4.....		6.5	.03	42	8.5	20	1.3	140	22	28		.1			197	140	26	342	7.5	45
Mar. 4.....		6.3	.05	34	6.1	17	1.0	104	22	24		.2			162	110	25	289	7.9	45
Apr. 4.....		4.9	.04	38	7.5	19	1.2	124	23	30		.9			186	126	24	328	7.4	50
May 1.....		5.8	.03	34	6.3	16	1.8	110	17	23		.0			158	111	21	292	7.4	50
June 1.....		7.4	.01	46	6.1	24	1.2	152	18	32		.1			210	140	16	396	7.3	30
July 4.....		2.5	.01	54	6.7	32	2.4	170	24	46		.1			252	162	22	461	7.7	30
Aug. 2.....		12	.02	41	5.7	21	1.2	126	23	32		.0			198	126	22	343	7.0	30
Sept. 1.....		6.4	.04	56	7.9	34	2.1	172	19	56		.3			267	172	31	488	7.4	70
2-2777. SOUTHWEST FORK LOXAHATCHEE RIVER NEAR JUPITER, FLA.																				
Oct. 21, 1960.	306	4.1	0.03	24	1.9	8.9	0.4	78	6.4	14	--	0.0			98	68	4	175	7.4	35
Nov. 18.....	58	7.1	.04	58	2.8	20	.5	174	13	30	--	.0			217	156	14	386	7.8	30
Dec. 16.....	26	11	.03	86	5.2	28	.7	264	17	42	--	.0			320	236	20	569	7.8	25
Jan. 27, 1961.	131	12	.01	94	6.7	32	1.3	294	20	50	--	.7			362	262	21	620	7.8	40
Feb. 22.....	.1	9.2	.02	152	206	1650	78	278	432	3070	--	.1			5730	1230	998	9540	7.8	35
Mar. 20.....	.1	14	.02	110	6.2	38	2.3	336	21	60	--	.0			418	300	24	740	7.8	30
Apr. 19.....	.1	12	15	104	6.0	39	1.4	316	21	60	0.4	.0			400	284	25	696	7.9	30
May 18.....	.1	5.3	43	66	5.7	50	2.0	225	8.8	74	.4	.0			324	188	4	682	7.7	30
June 19.....	13	13	.04	90	5.7	34	1.1	280	20	53	--	.0			355	248	18	621	7.8	30
July 26.....	50	13	.02	87	7.5	34	.8	272	12	55	--	.2			344	248	25	604	7.9	40
Aug. 21.....	175	8.6	.03	66	4.3	29	1.2	204	14	45	--	.2			268	182	15	468	8.0	35
Sept. 25.....	.1	10	.04	76	5.5	34	.9	232	16	49	--	.1			306	212	22	532	8.0	40

2-2778. LEVEE 8 CANAL AT S76, NEAR CANAL POINT, FLA.

Oct. 3, 1960..		26	0.11	58	26	128	13	262	56	170		--			606	252	37	1050	8.0	300
Nov. 3.....		17	.04	58	21	68	3.5	a 260	42	86		0.0			424	231	18	731	8.4	90
Nov. 11.....		33	.06	112	26	236	8.6	480	64	310		.6			1030	386	0	1730	8.0	240
Dec. 6.....		8.5	.06	48	11	22	.8	162	27	31		.0			228	165	32	397	7.7	55
Feb. 4, 1961..		6.5	.07	35	6.4	16	1.1	118	20	24		.3			167	114	18	297	7.4	70
Feb. 10.....		6.6	.03	38	9.5	17	1.3	142	22	25		.1			190	134	18	335	7.5	45
Mar. 4.....		7.6	.04	36	8.3	16	1.0	124	26	24		.0			180	124	22	309	7.6	45
Mar. 24.....		.2	.01	34	6.6	16	.9	120	18	25		.9			161	112	14	296	7.4	30
Apr. 28.....		7.2	.01	38	6.1	17	.9	124	18	25		.0			173	120	18	311	7.2	25
June 9.....		7.0	.03	34	8.0	18	.8	116	12	27		.9			165	118	23	305	7.6	45
July 21.....		13	.04	42	14	52	2.7	168	19	75		1.1			302	162	25	552	7.5	70

2-2780. WEST PALM BEACH CANAL AT HGS-5, AT CANAL POINT, FLA.

Oct. 3, 1960..	--	6.3	0.02	38	7.5	22	1.0	122	27	30		0.2			192	126	26	343	7.7	25
Nov. 3.....	--	7.5	.05	48	6.8	19	.6	152	22	26		.0			205	148	24	361	7.7	20
Dec. 6.....	447	9.3	.09	46	10	23	.7	156	26	33		.0			225	156	28	395	7.7	45
Dec. 30.....	779	5.4	.05	34	7.1	16	.7	116	18	22		.0			160	114	19	287	7.8	55
Jan. 7, 1961..	629	6.0	.03	37	6.7	16	.7	120	17	23		.0			165	120	22	301	7.8	50
Feb. 4.....	122	5.8	.02	34	6.6	17	1.1	114	22	24		.0			167	112	18	293	7.3	45
Mar. 4.....	461	6.7	.01	37	8.1	17	1.1	128	22	24		.0			179	126	21	312	7.2	45
Apr. 4.....	467	7.5	.04	40	9.7	22	1.3	138	28	32		.0			209	140	27	363	7.5	70
June 6.....	609	8.2	.11	70	4.3	24	3.2	158	45	38	0.4	5.5			277	192	62	459	7.3	65
July 4.....	144	8.5	.01	35	6.9	18	1.6	120	18	24		.2			171	116	18	308	7.3	25
Aug. 2.....	378	10	.03	36	8.8	19	1.1	124	19	28		.0			183	126	24	319	7.5	28
Sept. 1.....	--	9.2	.02	37	7.7	20	1.3	126	22	28		.8			188	124	20	325	7.8	20
Sept. 8.....	136	13	.04	48	15	40	2.4	178	26	52		6.1			291	182	36	501	7.4	50

a Includes 12 ppm 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 1960 to September 1961--Continued

Date of collection	Mean discharge (cfs) b	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--Continued																				
2-2784.5. WEST PALM BEACH CANAL ABOVE S-5A, NEAR LOXAHATCHEE, FLA.																				
Oct. 5, 1960..	993	23	0.19	70	22	118	8.2	272	72	155		--			606	265	42	1031	7.9	250
Jan. 3, 1961..	506	6.4	.06	37	6.2	33	1.2	120	23	44		0.0			210	118	20	384	7.7	60
Feb. 1.....	465	10	.03	45	9.1	46	3.7	158	30	63		.2			285	150	20	511	7.7	50
Mar. 3.....	472	6.9	.04	40	9.2	29	1.4	140	27	40		.5			223	138	24	395	7.5	50
Apr. 13.....	529	11	.03	39	11	35	2.4	144	30	60		.2			260	142	24	477	7.4	60
May 1.....	319	7.2	.07	35	6.9	19	2.0	114	22	24		.6			173	116	22	313	7.3	50
June 1.....	430	31	.10	107	33	120	3.2	348	127	162		18			772	402	118	1270	7.9	220
July 4.....	537	8.2	.12	45	5.2	32	2.0	136	16	48		.2			224	134	22	401	7.3	170
Aug. 1.....	377	11	.04	42	10	36	1.7	152	19	50		.2			245	146	22	452	7.8	60
Sept. 1.....	241	5.6	.09	60	5.5	38	2.3	184	5.2	63		1.1			272	172	21	507	7.5	115
2-2785.5. LEVEE 8 CANAL AT WEST PALM BEACH CANAL, NEAR LOXAHATCHEE, FLA.																				
Oct. 5, 1960..	1530	2.9	0.04	8.8	0.7	4.4	0.7	30	1.6	9.0		0.0			43	25	0	75	7.3	60
Dec. 6.....	264	11	.03	57	12	52	2.3	200	34	70		.0			337	192	28	598	7.7	80
Jan. 3, 1961..	228	6.0	.03	44	6.3	24	2.1	146	19	36		.0			209	136	16	377	7.5	60
Feb. 1.....	244	6.7	.02	47	7.4	25	1.0	154	20	40		.1			223	148	22	400	7.5	65
Mar. 2.....	206	9.3	.01	46	8.5	27	1.4	142	31	40		.1			233	150	34	403	7.4	55
Apr. 3.....	255	7.5	.11	42	6.1	24	1.9	130	21	38		1.0			206	130	24	358	7.4	80
May 1.....	58	7.2	.08	45	4.3	28	2.3	136	22	41		.3			217	130	18	393	7.6	70
June 1.....	269	7.4	.09	46	6.6	32	2.3	136	28	51		3.1			243	142	30	434	7.4	160
July 4.....	191	8.3	.10	45	5.7	32	2.1	144	16	47		.0			227	136	18	407	7.4	140
Aug. 1.....	80	10	.07	49	8.6	50	2.0	170	15	73		.3			292	158	18	530	7.5	120
Sept. 1.....	331	4.5	.13	26	1.7	20	1.2	78	3.6	32		.9			128	72	8	239	7.0	140

2-2805. HILLSBORO CANAL BELOW HGS-4, NEAR SOUTH BAY, FLA.

Oct. 3, 1960..	-224	50	0.06	158	59	148	12	560	246	180		--			1130	636	178	1710	7.8	250
Nov. 2.....	-387	29	.06	124	33	136	6.6	486	95	160		0.0			823	445	46	1350	7.7	200
Dec. 5.....	218	7.3	.03	52	11	29	1.4	172	34	40		.6			260	174	34	462	8.1	80
Feb. 3, 1961..	-4	9.7	.03	40	6.8	20	1.9	122	25	28		.1			192	128	28	335	7.6	50
Mar. 4.....	297	5.2	.04	40	9.2	18	1.1	136	25	28		.1			194	138	26	343	7.6	55
Apr. 3.....	242	7.0	.03	40	8.8	22	1.3	138	26	30		.4			204	136	23	353	7.5	50
May 1.....	442	8.4	.00	45	7.7	18	2.2	142	23	27		.1			201	144	28	357	7.4	110
June 5.....	196	19	.15	107	26	60	4.6	306	112	82	0.9	9.0			572	374	123	903	7.4	90
July 3.....	-297	19	.06	78	25	80	4.0	292	75	100		1.5			527	298	58	895	7.7	120
Aug. 1.....	-181	26	.06	95	31	89	4.1	342	99	112		.2			624	364	84	1030	7.6	130
Sept. 1.....	-288	34	.09	176	51	136	6.1	536	211	174		2.9			979	661	222	1600	8.0	280

2-2835. NORTH NEW RIVER CANAL BELOW HGS-4, NEAR SOUTH BAY, FLA.

Oct. 3, 1960..	-994	13	0.08	73	18	38	3.4	254	47	51		0.0			368	256	48	629	7.8	200
Nov. 2.....	-801	8.7	.09	102	23	45	2.2	344	61	62		.0			473	349	67	793	8.2	180
Dec. 5.....	323	7.1	.03	56	11	29	1.2	178	30	40		.0			262	184	38	463	8.0	75
Jan. 6, 1961..	836	11	.02	45	8.1	20	1.5	154	22	26		.0			210	146	20	358	7.2	55
Mar. 4.....	533	6.0	.01	58	9.1	18	1.5	194	23	27		.0			239	182	23	410	7.5	45
Apr. 3.....	591	6.5	.02	43	9.4	17	1.2	148	28	30		.4			209	146	24	372	7.5	55
May 1.....	435	8.3	.07	40	6.3	20	2.0	124	24	27		1.1			190	126	24	335	7.5	80
June 1.....	142	10	.06	56	13	25	2.8	165	44	40	0.6	3.7			276	193	58	472	7.8	140
July 3.....	358	18	.05	76	23	74	3.8	278	75	96		.5			503	284	56	855	7.7	100
Aug. 1.....	416	23	.05	77	30	80	3.8	280	72	102		2.5			528	316	86	897	7.7	100
Sept. 1.....	288	36	.11	154	41	151	6.3	514	222	180		4.3			1048	552	131	1630	8.0	210

2-2864. MIAMI CANAL AT HGS-3 AND S-3, AT LAKE HARBOR, FLA.

Oct. 3, 1960..	-1550	10	0.08	64	11	31	2.1	206	36	44		1.3			300	204	36	518	8.1	180
Nov. 2.....	-1100	9.4	.05	72	10	36	1.6	208	31	52		.0			314	220	34	571	7.6	140
Dec. 5.....	.1	11	.06	52	12	28	1.4	178	32	39		.0			263	179	33	466	7.7	65
Jan. 6, 1961..	165	5.8	.03	34	6.6	15	.6	108	17	21		.0			153	112	24	275	7.7	50
Feb. 3.....	280	5.5	.04	37	7.2	19	1.3	122	24	26		.1			180	122	22	314	7.5	45
Mar. 3.....	321	6.2	.03	41	8.6	18	1.2	142	25	27		.1			197	138	22	344	7.8	45
Apr. 3.....	363	6.9	.02	40	8.3	15	1.1	136	26	28		.5			193	134	22	345	7.4	50
May 1.....	488	7.7	.02	40	9.2	21	2.2	135	24	30		.0			201	138	28	358	7.1	35
June 1.....	.1	7.5	.13	37	8.6	19	1.7	125	27	30	0.3	.7			194	128	26	336	7.3	110
July 3.....	119	7.8	.01	45	11	29	2.2	152	38	41		.0			249	158	33	441	7.7	40
Aug. 1.....	248	7.7	.04	43	15	35	1.9	156	42	48		.0			270	169	41	469	7.6	45
Sept. 1.....	158	5.7	.03	49	12	33	1.7	166	28	49		.6			261	172	36	494	7.5	50

b Negative figures indicate reverse flow.

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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--Continued																				
2-2885. MIAMI CANAL AT HIALEAH, FLA.																				
Nov. 8, 1960..		4.7	0.04	76	3.5	21	0.2	244	2.4	31	0.4	0.3		286	260	204	4	454	7.5	45
Dec. 8.....		6.7	.04	74	7.7	28	1.1	254	4.8	42	.2	.3		333	290	216	8	517	7.9	50
Feb. 14, 1961.		7.3	.03	70	10	46	1.5	258	8.4	58	.4	.2		372	329	216	4	572	8.2	55
Mar. 30.....		5.0	.05	72	8.4	34	1.4	260	5.2	50	.3	.0		402	304	214	1	537	8.0	60
Apr. 12.....		6.6	.03	71	9.0	31	1.0	256	5.6	44	.2	.6		326	295	214	4	523	8.1	50
May 24.....		7.0	.03	74	7.2	29	1.0	260	4.8	40	.3	.3		322	292	214	1	522	7.6	45
June 16.....		6.2	.03	82	8.6	27	1.1	282	9.6	39	.3	.2		350	313	240	9	548	7.8	55
July 10.....		6.5	.02	78	8.1	27	1.1	260	13	36	.3	.8		307	299	228	15	520	8.2	55
Aug. 18.....		6.7	.05	74	11	30	1.0	c 264	10	42	.3	.8		332	306	230	12	537	8.6	55
Sept. 13.....		8.3	.04	86	9.1	25	1.2	294	6.8	36	.2	6.6		360	324	252	11	555	8.2	55
2-2892. TAMIAMI CANAL AT BRIDGE 45, NEAR MIAMI, FLA.																				
Oct. 31, 1960..	b290	2.5	0.04	24	0.5	8.2	0.8	68	2.4	15	0.2	0.3		109	87	62	6	165	6.7	45
Dec. 15.....	3150	2.7	.04	26	1.7	7.8	.4	80	.8	13	.1	.0		119	92	72	6	164	7.3	25
Jan. 16, 1961.	1950	.4	.03	28	1.2	7.5	.2	83	2.4	14	.1	.0		121	95	75	7	174	7.3	30
Feb. 15.....	910	.7	.03	29	2.1	7.0	.6	93	.0	13	.1	.1		132	99	81	5	192	7.3	25
Mar. 15.....	256	2.4	.04	39	2.6	15	.4	120	4.0	19	.1	1.0		166	143	108	10	247	7.8	30
Apr. 14.....	1	3.7	.03	51	3.6	13	.8	154	4.8	22	.2	6.9		206	182	142	16	326	7.8	40
May 17.....	--	5.0	.24	78	3.3	13	.7	234	6.8	24	.3	.3		270	246	208	16	433	8.2	40
May 17.....	1	5.8	.02	95	4.6	14	1.3	288	4.8	20	.1	16		332	304	256	20	529	7.7	45
June 15.....	10	5.4	.06	50	2.7	11	1.2	156	4.4	21	.1	.8		210	172	136	8	305	7.3	45
July 17.....	267	10	.04	57	2.4	11	.6	174	4.0	18	.2	.9		236	190	152	10	331	7.5	45
Aug. 15.....	356	7.8	.06	81	2.9	16	.4	242	8.0	21	.1	.3		282	257	214	16	431	7.2	45
Sept. 14.....	141	5.8	.05	64	3.0	10	.1	196	3.6	18	.2	1.5		234	203	172	12	357	7.7	55

2-2907. SNAPPER CREEK CANAL AT MILLER DRIVE, NEAR SOUTH MIAMI, FLA.

Oct. 3, 1960..	958	3.8	0.02	61	1.0	8.1	0.1	188	3.2	14	0.3	0.0		203	185	156	2	323	7.4	30
Nov. 1.....	732	3.0	.03	68	2.6	11	.2	212	1.6	18	.3	.5		231	209	180	6	370	7.2	30
Dec. 1.....	556	4.6	.03	69	3.9	12	1.4	218	5.6	21	.2	1.0		252	226	188	10	398	7.7	30
Jan. 4, 1961..	280	22	.03	79	6.1	14	1.1	248	6.8	25	.2	4.0		321	280	222	14	458	7.8	40
Feb. 7.....	398	4.0	.03	72	4.5	13	.6	232	4.8	22	.2	.0		264	235	198	8	421	7.8	30
Mar. 3.....	173	4.3	.03	74	4.7	14	1.0	236	6.4	26	.2	.9		278	248	204	10	431	8.0	30
Apr. 3.....	107	7.5	.04	77	3.9	12	.6	242	5.6	22	.2	1.3		283	249	208	10	434	8.0	35
May 1.....	.1	8.8	.02	76	4.0	13	.4	242	5.6	20	.2	1.5		270	249	206	8	432	7.7	40
June 1.....	498	6.5	.03	77	4.9	14	.4	246	4.8	22	.2	.1		290	251	212	10	439	7.8	33
July 3.....	425	5.5	.05	78	3.8	14	.6	248	4.8	24	.2	.0		279	253	210	7	449	7.6	45
Aug. 1.....	.1	5.4	.02	78	4.7	14	.6	254	5.6	22	.2	.5		306	256	214	6	455	7.5	40
Sept. 1.....	272	5.0	.04	79	3.6	14	.5	252	4.0	24	.2	.4		276	255	212	6	448	7.8	35

EVERGLADES STATION 1-9, LOXAHATCHEE NORTHWEST REFUGE, FLA.

June 6, 1961..	14.70	4.0	0.03	8.8	4.4	14	1.1	12	0	32		7.4			78	40	30	138	6.5	50
Aug. 23.....	14.90	4.4	.02	6.4	1.9	7.3	.0	16	.8	14		.1			43	24	11	81	6.8	30

2-2908.1. EVERGLADES P-37 NEAR HOMESTEAD, FLA.

Oct. 6, 1960..		1.7	0.05	37	1.8	8.8	0.4	114	0.4	16	0.2	0.0	--	128	122	100	6	233	7.2	8
Dec. 20.....		2.4	.00	63	6.6	20	.7	200	.4	38	.2	.0	0.01	249	230	184	20	432	7.4	7
Feb. 23, 1961.		3.9	.06	89	3.4	47	.8	262	3.2	90	.2	.0	.00	401	367	236	22	690	7.4	30
May 25.....		11	.00	123	2.8	73	2.4	356	3.6	158	.2	.3	.03	606	549	318	26	1000	7.9	10
July 25.....		4.0	.04	98	2.3	54	1.4	280	7.2	93	.1	11	.00	409	382	254	24	749	7.6	10

2-2908.3. EVERGLADES P-38 NEAR HOMESTEAD, FLA.

Oct. 6, 1960..		1.9	0.03	39	2.1	13	0.2	116	0.8	24	0.2	0.1	--	156	138	106	11	259	7.1	10
Dec. 19.....		2.2	.00	58	5.2	21	.5	182	.8	38	.2	.0	0.02	246	216	166	17	407	7.5	10
Feb. 23, 1961.		3.4	.04	56	5.0	32	1.3	162	.4	68	.2	.0	.00	312	246	160	27	477	7.4	18
May 25.....		10	.00	110	2.3	46	2.4	d258	17	98	.2	21	.50	500	434	284	72	770	8.4	5
July 25.....		2.5	.01	64	.6	26	1.0	182	1.6	47	.1	4.9	.00	263	238	162	13	441	7.7	7

c Includes equivalent of 14 parts per million of carbonate (CO_3).
d Includes equivalent of 7 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 1960 to September 1961--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--Continued																				
2-2908.7. EVERGLADES P-34 NEAR HOMESTEAD, FLA.																				
Dec. 19, 1960.		2.5	0.00	60	2.1	7.1	0.5	184	0.8	12	0.2	0.1	0.2	190	176	158	7	325	7.4	10
Feb. 24, 1961.		1.6	.10	68	4.0	9.4	.7	210	3.6	18	.2	.0	.1	237	209	186	14	379	7.3	22
May 27.....		3.2	.02	82	2.8	9.2	.5	248	4.8	15	.1	2.5	.0	216	242	216	13	424	8.0	20
Aug. 7.....		5.6	.02	50	2.2	8.0	.5	151	.0	17	.1	.8	.0	188	158	134	10	288	8.0	20
2-2920. CALOOSAHATCHEE CANAL AT MOORE HAVEN, FLA.																				
Oct. 11, 1960.	3910	6.7	0.05	33	4.7	18	1.0	98	22	25		0.5			159	102	22	269	7.7	90
Nov. 14.....	4890	2.3	.05	24	4.4	14	1.0	74	17	21		.0			120	78	18	217	7.5	90
Dec. 30.....	3670	3.3	.06	22	4.6	12	.7	72	13	19		.0			110	74	15	201	7.5	65
Feb. 10, 1961.	3000	4.5	.04	37	4.3	17	.8	108	20	24		.7			161	110	22	290	7.4	65
Mar. 27.....	10	4.9	.04	52	7.4	22	1.7	164	27	32		.1			228	160	26	395	7.7	50
May 9.....	10	3.0	.03	40	6.3	21	1.2	126	22	30		.0			186	126	22	333	7.5	45
July 7.....	1820	9.4	.04	40	9.2	24	1.4	134	26	34		.4			210	138	28	366	7.6	30
Aug. 14.....	10	6.0	.02	48	9.7	24	1.5	156	28	38		.6			233	160	32	410	7.7	45
2-2924. CALOOSAHATCHEE CANAL AT ORTONA LOCK NEAR LABELLE, FLA.																				
Oct. 11, 1960.	3910	6.6	0.08	34	4.6	11	0.8	103	14	23		0.0			145	104	20	266	7.5	75
Nov. 14.....	4890	4.3	.05	26	4.1	9	.8	82	11	20		.0			115	82	15	225	7.3	95
Dec. 30.....	3670	3.3	.03	30	.7	13	1.2	74	14	18		.6			117	78	18	205	7.4	80
Feb. 10, 1961.	3000	4.9	.06	37	6.2	19	1.2	118	21	27		.5			175	118	22	314	7.5	55
Mar. 28.....	10	5.9	.05	52	6.9	18	1.5	156	12	26		.1			199	158	30	367	7.7	70
May 9.....	10	4.7	.02	61	15	25	1.2	224	27	38		.0			282	214	30	495	7.8	75
July 7.....	1820	7.9	.03	43	6.9	23	1.4	142	25	32		.0			209	136	20	368	7.6	45
Aug. 14.....	10	7.9	.03	65	7.3	24	1.2	206	20	36		.1			263	192	23	459	7.7	65
2-2930. ORANGE RIVER NEAR FORT MYERS, FLA.																				
Oct. 3, 1960..		4.7	0.03	66	4.3	17	0.9	e 184	23	26		1.9			235	182	31	419	7.7	45
Nov. 16.....		3.1	.02	75	.2	21	.0	172	34	34		.0			252	188	47	504	8.5	30
Jan. 3, 1961..		8.0	.02	100	8.9	28	1.3	276	46	49		.0			377	286	60	660	8.0	50
Feb. 13.....		6.3	.01	98	9.1	32	1.0	276	41	70		.0			394	282	56	709	8.0	45
Apr. 3.....		9.7	.03	79	7.5	26	2.5	230	29	44		.1			311	228	40	546	7.6	40

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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			
ALAFIA RIVER BASIN																				
2-3015. ALAFIA RIVER AT LITHIA, FLA.																				
Oct. 25, 1960.	364	30	0.87	45	5.7	13	1.2		54	17	11	0.3	86	350	264	136	136	434	3.7	105
Dec. 20.....	221	39	.38	66	13	15	1.2		102	19	20	.7	133	436	409	218	218	539	3.7	10
Feb. 14.....	448	20	.39	35	5.0	14	1.4		52	23	8.5	.3	42	245	202	108	108	321	4.2	105
Apr. 11.....	242	45	.92	55	14	15	1.2		44	22	23	.3	133	410	353	194	194	525	4.1	40
June 6.....	81	42	.17	77	12	20	1.2		124	25	19	3.0	76	402	399	242	242	530	6.7	15
Aug. 1.....	103	44	.09	90	11	26	1.5	2	184	33	14	3.9	105	524	513	270	268	641	5.0	30
Sept. 26.....	149	45	.11	72	14	22	1.5		134	29	17	2.5	105	440	442	237	237	547	6.4	3
HILLSBOROUGH RIVER BASIN																				
2-3030. HILLSBOROUGH RIVER NEAR ZEPHYRHILLS, FLA.																				
Nov. 1, 1960..	269	8.9	0.05	39	2.8	5.8	1.0	123	8.8	10	0.3	0.5	0.6	148	138	109	9	241	7.5	100
Dec. 19.....	142	6.7	.01	50	2.7	6.0	1.2	152	10	9.0	.3	.3	.4	177	161	136	12	285	8.0	10
Feb. 13, 1961.	189	8.5	.04	39	4.5	6.7	1.7	123	10	14	.3	.2	.4	179	146	116	15	255	7.5	100
Apr. 10.....	100	8.7	.00	51	4.6	6.0	1.4	f163	9.6	10	.1	.2	.4	182	172	146	12	300	8.3	3
June 5.....	86	9.1	.00	50	2.7	4.4	.4	160	3.2	9.0	.1	1.4	--	171	159	136	5	287	8.0	5
July 31.....	90	11	.01	51	5.1	5.6	1.0	168	8.4	9.0	.1	.7	.8	184	176	148	10	296	8.1	10
Sept. 25.....	95	4.3	.03	48	4.9	5.6	.8	156	10	11	.1	.1	.0	170	162	140	12	289	8.1	30
WITHLACOOCHEE RIVER BASIN																				
2-3130. WITHLACOOCHEE RIVER NEAR HOLDER, FLA.																				
Oct. 14, 1960.	6830	5.1	0.09	28	1.5	2.8	0.2	83	7.2	6.0	0.2	0.0		118	92	76	8	160	7.3	110
Dec. 1.....	1950	5.0	.03	40	2.9	4.4	.1	120	11	6.0	.3	.7		169	129	112	14	262	7.7	40
Dec. 11.....	1660	7.1	.16	27	2.3	4.9	.1	81	4.0	9.0	.1	.5		125	95	77	10	167	7.2	100
Mar. 7, 1961..	1250	4.1	.00	46	4.1	5.0	.5	140	14	10	.2	.2		182	153	132	18	272	7.3	20
May 5.....	602	5.6	.01	49	6.2	4.7	.1	148	19	8.0	.2	1.0		181	167	148	26	310	8.0	17
June 19.....	514	6.9	.00	50	4.6	4.6	.6	142	21	8.0	.2	.5		185	166	144	28	284	7.4	5
Aug. 17.....	831	6.3	.02	59	6.1	4.2	.7	120	61	10	.1	.2		234	207	172	74	346	8.1	30

May 15, 1961..		11.	0.01	92	10	35	0.8	254	17	66		0.0			357	270	62	669	8.0	30
July 3.....		7.2	.01	66	6.7	22	.4	200	26	38		.4			266	192	28	475	7.8	25
Aug. 15.....		4.2	.05	34	4.1	14	.4	102	11	27	0.1	.3		158	145	102	18	263	7.6	55
PEACE RIVER BASIN																				
2-2970. PEACE RIVER AT ARCADIA, FLA.																				
Oct. 27, 1960.	1680	8.5	0.22	18	4.6	8.3	1.4	26	31	12	1.3	1.5	10	132	110	64	42	171	6.7	105
Dec. 2.....	463	18	.08	34	6.6	14	2.0	49	58	15	1.4	2.2	8.9	222	184	112	72	288	7.1	110
Jan. 12, 1961.	493	14	.04	39	8.4	16	1.9	47	90	15	2.1	2.0	8.3	250	220	132	94	346	7.1	45
Mar. 6.....	446	15	.04	36	5.8	16	1.9	48	62	17	1.7	1.8	8.4	224	190	114	74	301	7.2	110
Apr. 11.....	541	1.2	.03	28	7.3	13	1.4	43	52	18	1.4	.1	8.4	156	152	100	65	265	7.5	50
May 23.....	189	21	.01	49	13	22	2.0	42	136	16	2.6	2.1	14	292	285	176	142	446	7.3	5
July 17.....	1210	9.2	.09	21	3.3	9.0	.8	26	34	11	.7	1.3	6.2	134	110	66	44	174	6.7	160
Sept. 7.....	343	18	.18	23	6.9	10	1.3	33	35	13	1.4	.7	12	162	137	86	59	206	6.7	160
LITTLE MANATEE RIVER BASIN																				
2-3005. LITTLE MANATEE RIVER NEAR WIMAUMA, FLA.																				
Oct. 25, 1960.	64	6.0	0.07	4.2	1.6	3.9	0.5	12	3.6	7.2	0.3	0.1	1.0	44	34	17	8	56	6.5	110
Dec. 20.....	44	6.4	.03	4.8	1.9	4.4	.8	13	3.2	9.8	.1	.2	.9	53	39	20	10	66	7.1	30
Feb. 14, 1961.	120	4.0	.07	4.2	1.3	5.8	.6	8	5.6	11	.3	.0	1.0	60	38	16	10	66	6.5	145
Apr. 11.....	38	4.1	.06	5.2	1.7	4.7	.3	16	4.4	9.0	.4	.1	--	56	38	20	7	66	6.7	50
June 6.....	10	3.3	.16	6.4	2.4	4.8	.5	23	4.8	9.5	.2	.0	--	63	43	26	7	81	6.8	30
Aug. 1.....	30	6.3	.08	5.8	2.1	5.6	.6	15	2.4	11	.1	.2	1.1	68	43	23	10	75	6.4	90
Sept. 28.....	27	14.	.05	6.0	3.2	5.1	.6	21	4.4	10	.2	.2	1.2	61	55	28	11	78	6.5	50

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

MISCELLANEOUS ANALYSES OF STREAMS IN SOUTH ATLANTIC AND EASTERN GULF OF MEXICO BASINS--Continued

Chemical analyses, in parts per million, water year October 1960 to September 1961--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
APALACHICOLA RIVER BASIN																				
2-3587. APALACHICOLA RIVER NEAR BLOUNTSTOWN, FLA.																				
Oct. 4, 1960..		8.8	0.00	12	0.7	3.8	1.1	42	4.0	3.2	0.2	1.2		60	56	33	0	89	6.8	3
Nov. 29.....		8.5	.00	14	1.7	4.4	1.2	51	4.0	4.0	.1	.0		72	63	42	0	101	7.1	0
Jan. 17, 1961.		7.3	.00	12	1.1	3.9	1.1	44	3.2	4.0	.2	2.0		56	57	34	0	91	7.3	3
Mar. 19.....		6.8	.05	6.8	1.0	2.7	1.4	25	4.0	3.0	.1	1.0		63	39	21	1	57	7.4	5
May 9.....		7.5	.06	10	1.2	2.7	.9	38	3.2	3.0	.1	.8		68	48	30	0	74	7.0	15
June 27.....		7.6	.00	14	.5	3.5	.8	46	3.2	3.5	.2	.9		66	57	37	0	93	6.8	0
Aug. 23.....		7.4	.01	15	1.1	3.3	1.0	53	2.4	3.2	.0	.5		64	60	42	0	102	7.1	0
2-3590. CHIPOLA RIVER NEAR ALTHA, FLA.																				
Oct. 4, 1960..	1530	6.7	0.00	26	3.2	3.2	0.4	90	0.8	5.0	0.2	1.0		118	90	78	4	166	7.0	18
Nov. 29.....	755	6.6	.00	34	4.1	2.8	.4	118	.8	5.0	.1	.5		123	112	102	6	202	7.4	5
Jan. 17, 1961.	1030	5.8	.00	27	3.0	4.5	.5	93	.4	7.0	.1	.5		104	95	80	4	176	7.3	7
Mar. 14.....	1300	5.6	.00	29	2.8	3.9	.1	103	.4	5.5	.2	.3		103	99	84	0	180	7.5	5
May 9.....	1500	5.9	.00	30	2.7	3.0	.2	104	.8	5.0	.1	1.5		118	100	86	1	182	7.4	5
June 27.....	1890	5.8	.02	25	1.8	3.4	.4	76	3.6	8.0	.1	.6		98	86	70	8	146	7.1	20
Aug. 22.....	965	6.3	.01	32	3.4	2.2	.5	107	.8	4.0	.0	1.3		104	104	94	6	185	7.5	5
CHOCTAWHATCHEE RIVER BASIN																				
2-3653. CHOCTAWHATCHEE RIVER NEAR IZAGORA, FLA.																				
Oct. 12, 1960.		8.5	0.00	8.4	1.0	3.0	0.7	32	0.8	4.0	0.2	0.5		55	43	25	0	68	6.7	5
Dec. 10.....		8.2	.00	8.8	1.5	2.7	.6	35	.8	1.5	.6	.5		44	42	28	0	71	7.2	0
Jan. 30, 1961.		7.6	.01	5.2	.7	2.3	.5	20	.8	4.0	.1	.8		53	32	16	0	47	7.0	5
May 15.....		7.3	.20	7.6	.6	2.2	.6	27	.4	6.2	.2	.7		46	39	22	0	60	6.9	30
July 10.....		7.7	.03	7.6	1.0	1.0	.5	28	.8	3.5	.0	.7		43	37	23	0	58	7.0	15
Sept. 11.....		6.2	.02	4.2	.9	1.6	.7	17	.0	3.0	.0	.3		29	25	14	0	40	6.4	10
YELLOW RIVER BASIN IN FLORIDA																				
2-3680. YELLOW RIVER AT MILLIGAN, FLA.																				
Nov. 8, 1960..	346	6.9	0.00	8.0	1.2	2.2	0.1	31	0.8	3.5	0.0	0.4		49	38	25	0	60	7.3	0
Jan. 5, 1961..	829	6.9	.01	5.2	.7	1.8	.7	18	1.6	3.2	.0	.4		34	29	16	1	44	6.9	5
Mar. 3.....	2700	4.8	.07	2.8	.5	2.1	.3	8	.8	3.5	.1	.5		52	19	9	2	31	6.3	50
Apr. 17.....	8370	3.0	.11	1.6	.2	1.1	.1	8	.4	2.8	.1	.7		32	14	5	0	19	6.2	50
June 13.....	517	5.6	.00	9.2	1.0	1.8	.1	32	.4	3.0	.1	.0		45	37	27	1	62	6.9	5
Aug. 8.....	2440	5.3	.04	3.0	.6	.6	.5	9	.0	3.5	.0	.2		33	18	10	2	26	6.4	45

SUWANNEE RIVER BASIN

2-3190. WITHLACOOCHEE RIVER NEAR PINETTA, FLA.

Nov. 10, 1960.	184	16	--	35	6.0	14	0.9	128	20	8.0	0.8	0.6		176	164	112	7	267	7.3	40
Jan. 7, 1961..	356	12	0.04	16	3.4	8.2	1.2	49	13	9.0	1.3	.2		101	88	54	14	143	7.0	30
Feb. 22.....	1670	8.2	.09	4.4	1.0	4.8	.8	12	4.8	7.5	.6	.0		68	38	15	5	57	6.2	60
Apr. 18.....	7300	3.6	.15	1.8	.9	2.7	.8	7	2.0	4.0	.3	1.1		47	21	8	2	30	5.9	100
June 14.....	420	13	.15	28	1.0	11	.6	90	11	9.0	.3	.2		135	118	74	0	187	7.3	45
Aug. 9.....	228	17	.05	34	4.1	16	1.2	132	19	8.0	.2	.2		170	165	102	0	261	8.2	30

2-3205. SUWANNEE RIVER AT BRANFORD, FLA.

Nov. 9, 1960..	5790	8.4	0.10	42	5.6	3.6	0.4	144	14	6.0	0.3	1.0		170	152	128	10	261	7.4	60
Jan. 5, 1961..	3780	8.1	.02	42	7.5	3.9	.4	142	17	5.0	.4	.4		174	155	136	20	270	7.5	20
Feb. 23.....	6830	6.2	.13	22	3.2	4.2	.1	70	9.2	6.0	.4	.0		113	85	68	10	144	7.5	130
Apr. 19.....	11900	4.0	.20	4.4	.7	2.6	.4	12	3.2	4.2	.3	.6		62	26	14	4	40	6.2	130
June 15.....	5360	8.6	.03	43	7.9	3.4	.4	148	14	8.0	.3	.1		191	159	140	18	264	7.4	30
Aug. 10.....	3750	7.0	.04	45	6.7	3.7	.5	152	16	6.0	.1	.1		172	160	140	16	279	8.0	45

OCHLOCKONEE RIVER BASIN

2-3290. OCHLOCKONEE RIVER NEAR HAVANA, FLA.

Oct. 9, 1960..	1750	8.1	0.13	2.4	1.0	3.6	0.8	9	0.8	6.8	0.2	0.0		52	28	10	2	43	6.3	60
Dec. 1.....	219	9.5	.04	5.2	2.2	8.4	.8	24	4.0	13	.1	.5		80	56	22	2	89	6.9	15
Jan. 19, 1961.	525	9.6	.04	3.8	1.1	8.0	.8	14	2.8	12	.1	1.0		63	46	14	2	72	6.8	20
Mar. 16.....	609	8.3	.09	4.6	1.2	5.3	.6	18	1.6	8.5	.2	.6		53	40	16	2	62	6.6	25
Apr. 20.....	13900	2.5	.09	1.2	.5	1.8	.9	6	1.6	3.0	.1	.3		51	15	5	0	24	5.9	55
May 10.....	978	7.2	.29	3.2	1.3	4.9	1.0	14	1.6	8.2	.2	.9		60	36	14	2	56	6.6	60
June 29.....	984	6.7	.09	2.8	1.5	8.3	1.0	10	.8	14	.2	.3		72	41	13	5	70	7.9	40
Aug. 24.....	308	4.4	.03	5.2	2.9	5.8	1.2	22	4.8	8.2	.1	.4		46	44	25	7	73	7.0	15

f Includes equivalent of 4 parts per million of carbonate (CO_3).

270-946 O - 67 - 27

BLACKWATER RIVER BASIN

2-3702.70. BIG JUNIPER CREEK NEAR HAROLD, FLA.

Oct. 9, 1960..		3.8	0.01	1.0	0.1	1.2	0.3	3	2.4	1.2	0.0	0.1		20	12	3	0	18	5.5	5
Dec. 6.....		7.0	.10	2.0	1.2	1.7	.0	12	.4	3.5	.0	.2		28	22	10	0	27	6.8	5
Jan. 31, 1961.		7.2	.10	.8	.0	1.5	.0	3	.8	3.0	.0	.3		20	15	2	0	16	5.8	3
May 18.....		6.0	.02	.8	.2	1.6	.1	3	.8	2.0	.0	.0		17	13	3	0	16	6.1	5
July 12.....		6.2	.02	.6	.4	1.2	.1	3	.0	3.0	.0	.3		23	13	3	0	15	5.5	8
Aug. 5.....		6.5	.05	.8	.2	1.6	.2	3	.0	3.0	.0	.8		24	15	3	0	19	5.4	10
2-3705. BIG COLDWATER CREEK NEAR MILTON, FLA.																				
Nov. 9, 1960..	377	7.0	0.01	0.6	0.4	1.9	0.0	4	0.0	3.5	0.0	0.1		17	16	3	0	16	6.2	2
Jan. 3, 1961..	590	7.2	.01	.6	.4	1.8	.1	5	.0	3.5	.0	.3		20	16	3	0	17	6.1	4
Mar. 2.....	1300	5.2	.01	.8	.2	1.5	.1	3	.0	3.0	.0	.3		19	13	3	0	17	5.7	8
Apr. 20.....	778	5.6	.01	.6	.2	1.5	.1	4	.0	3.0	.0	.1		12	13	2	0	16	5.9	2
June 15.....	622	7.6	.01	2.2	.4	4.9	.7	15	1.6	3.0	.1	.2		32	28	7	0	38	6.4	4
Aug. 7.....	2090	4.5	.04	1.2	.2	1.5	.4	5	.0	3.0	.0	.7		23	14	4	0	16	5.9	8
ESCAMBIA RIVER BASIN																				
2-3755. ESCAMBIA RIVER NEAR CENTURY, FLA.																				
Oct. 11, 1960.	2980	8.9	0.00	9.2	0.5	5.1	0.8	27	2.8	10	0.0	0.0		61	50	25	3	99	7.0	5
Dec. 7.....	1630	8.8	.02	10	1.2	9.2	.8	28	4.8	18	.0	.2		77	67	30	7	113	7.1	3
Feb. 1, 1961..	4660	9.0	.02	8.6	.9	5.4	.8	24	3.2	9.5	.0	.2		55	50	25	6	77	7.1	3
May 18.....	4060	8.6	.09	10	1.2	5.0	.8	32	2.4	9.0	.0	.1		56	48	30	4	88	6.8	30
July 13.....	5880	8.2	.04	9.0	.7	5.7	.7	26	4.0	8.5	.0	.8		60	51	26	4	74	6.9	8
Sept. 14.....	5910	8.0	.10	10	.7	4.4	.7	30	2.0	9.8	.0	.2		63	51	28	4	81	6.9	40
PERDIDO RIVER BASIN																				
2-3765. PERDIDO RIVER AT BARRINEAU PARK, FLA.																				
Oct. 10, 1960.	481	8.0	0.00	1.0	0.4	2.8	0.3	4	1.2	4.2	0.1	0.0		23	20	4	0	24	5.9	10
Dec. 8.....	341	8.0	.02	.6	.4	2.0	.2	5	.0	4.0	.0	.2		22	18	3	0	18	6.4	3
Feb. 2, 1961..	540	7.8	.01	.4	.5	1.9	.2	3	.0	3.5	.0	.2		24	16	3	0	18	5.7	3
May 18.....	472	7.1	.01	1.2	.5	1.8	.1	4	.8	2.5	.0	.0		16	16	5	2	20	6.0	5
July 14.....	1140	7.0	.05	.6	.5	2.1	.4	3	.0	4.0	.0	.4		20	17	4	1	21	5.4	17
Aug. 4.....	804	7.2	.08	1.0	.5	1.6	.1	4	.0	3.5	.0	.5		25	16	4	1	17	5.5	20

INDEX

U. S. GOVERNMENT PRINTING OFFICE : 1967 O - 270-946