

Quality of Surface Waters of the United States 1956

Parts 1-4. North Atlantic Slope Basins to St. Lawrence River Basin

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

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of Alabama, Delaware, Florida,
Georgia, Illinois, Indiana, Kentucky,
Minnesota, New Jersey, New York,
North Carolina, Ohio, Pennsylvania,
South Carolina, Tennessee, Virginia,
West Virginia, and Wisconsin, and
with other agencies*



UNITED STATES DEPARTMENT OF THE INTERIOR

FRED A. SEATON, *Secretary*

GEOLOGICAL SURVEY

Thomas B. Nolan, *Director*

PREFACE

This report was prepared by the Geological Survey in cooperation with the States of Alabama, Delaware, Florida, Georgia, Kentucky, Minnesota, New Jersey, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, Virginia, Wisconsin, the Ohio River Valley Water Sanitation Commission in the States of Illinois, Indiana, and West Virginia and with other agencies.

The data were collected and computed by personnel of the Water Resources Division under the direction of C. G. Paulsen, chief hydraulic engineer, succeeded by L. B. Leopold, S. K. Love, chief, Quality of Water Branch, and supervised by district chemists or regional engineers:

N. H. Beamer	Philadelphia, Pa.
P. C. Benedict	Lincoln, Nebr.
G. A. Billingsley	Raleigh, N. C.
Eugene Brown	Ocala, Fla.
W. L. Lamar, succeeded by G. W. Whetstone.	Columbus, Ohio
F. H. Pauszek	Albany, N. Y.
M. E. Schroeder	Charlottesville, Va.

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Figure 1. Map of the United States showing basins covered by the four water-supply papers on quality of surface waters in 1956	2

QUALITY OF SURFACE WATERS OF THE UNITED STATES, 1956

PARTS 1-4

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 States and other 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 industrial, agricultural, and domestic uses insofar as such use is affected by the dissolved or suspended mineral matter in the waters. 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 concentrations in many streams vary over wide ranges.

Publication of annual records of chemical analyses, suspended sediment, and water temperature was begun by the Geological Survey in 1941. The records prior to 1948 were published each year in a single volume for the entire country. Beginning in 1948, the records were published in two volumes, and beginning in 1950, in four volumes, covering the drainage basins shown in Figure 1. The samples for which data are given in this volume were collected from October 1, 1956, to September 30, 1956. The records are arranged by drainage basins according to Geological Survey practice in reporting records of streamflow: Stations on tributary

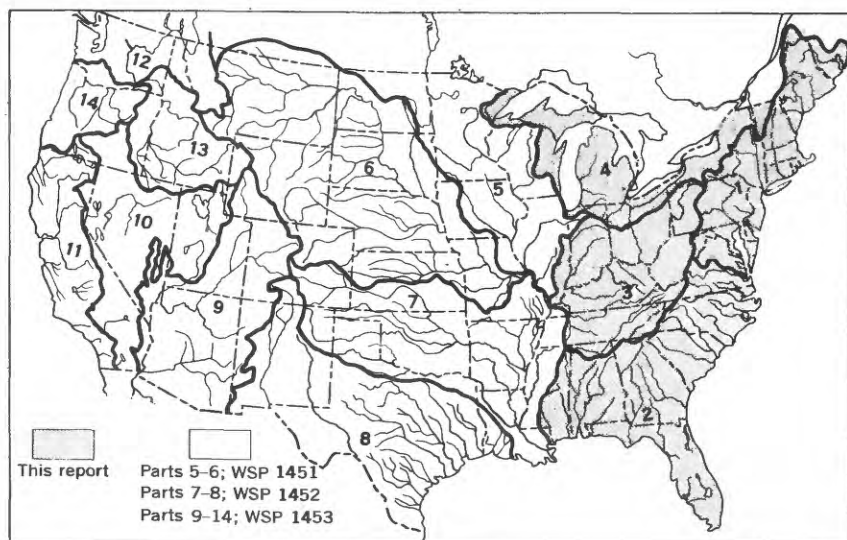


Figure 1.--Map of the United States showing basins covered by the four water-supply papers on quality of surface waters in 1956. The shaded portion represents the section of the country covered by this volume; the unshaded portion represents the section of the country covered by other water-supply papers.

streams are listed between stations on the main stem in the order in which those tributaries enter the main stem. Descriptive statements are given for each sampling station for which regular series of chemical analyses, temperature observations, or sediment determinations have been made. These statements include the location of the stream-sampling station, drainage area, length of time for which records are available, extremes of mineralization, hardness, water temperature, sediment loads, and other pertinent data. Records of water discharge of the streams at or near the sampling period are included in most tables of analyses.

During the year ending September 30, 1956, 252 regular sampling stations on 174 streams for the study of the chemical character of surface waters were maintained by the Geological Survey in the area covered by this volume. Samples were collected less frequently during the year at many other points. Water temperatures were measured daily at 173 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 head-

ings this information is available for reference at the district offices listed under Division of Work, on page 19.

Quantities of suspended sediment are reported for 49 stations during the year ending September 30, 1956. The 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. Sediment samples were collected less frequently during the year at many other points. In connection with measurements of sediment discharge, sizes of sediment particles were determined at 31 of the stations.

Material which is transported almost in continuous contact with the stream bed and the material that bounces along the bed in short skips or leaps is termed "bed load" and is not considered in this report. All other undissolved fragmental material in transport is termed "suspended sediment" and generally constitutes the major part of the total sediment load. At the present time no reliable routine method has been developed for determining bed load.

COLLECTION AND EXAMINATION OF SAMPLES

CHEMICAL QUALITY

Samples of chemical analyses were usually collected at or near points on streams where gaging stations are maintained for measurement of water discharge. Two methods of compositing water samples for analysis are used by the Geological Survey: (1) Equal volume method—Three composite samples were usually prepared each month by mixing together equal volumes of daily samples collected from the 1st to the 10th, from the 11th to the 20th, and from the 21st to the end of the month. Composite samples were prepared for shorter periods if the specific conductance of the daily samples indicated that the mineral content of the water had changed significantly. Conversely, composite samples were occasionally prepared for longer periods if the specific conductance of the daily samples indicated that the mineral content had remained nearly uniform. (2) Discharge method—Composite samples were prepared by mixing together a volume from each sample in proportion to the product of the rate of water discharge at the time of sampling and the time interval represented by that sample. Generally, each daily sample is assumed to represent an equal time interval; therefore, the volume from each sample is proportional only to the water discharge at the time of sampling. Compositing samples by the discharge method was limited to some streams west of the Mississippi River.

The samples were analyzed according to methods regularly used by the Geological Survey. These methods are essentially the same as, or are modifications of, methods described in recognized authoritative publications for the mineral analysis of water samples (Collins, 1928; Am. Public Health Assoc., 1955).

TEMPERATURE

Daily water temperatures were measured at most of the stations when chemical quality or sediment samples were collected. 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, 1948, p. 70-76 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 regularly at two or more verticals to determine the average concentration across the section. During periods of high flow, samples were taken two or more times throughout the day at many sampling stations, and during periods of rapidly changing flow samples were taken hourly at some stations.

Sediment concentrations were determined by filtration or evaporation of the samples as required. At many stations the daily mean concentration for some days was obtained by plotting the instantaneous concentrations on the original or copies of the original gage-height chart. The plotted concentrations, adjusted if necessary for cross-sectional distribution with respect to that at the daily sampling vertical, were connected or averaged by continuous curves

to obtain a concentration graph. This graph represented the estimated concentration at any time and, for most periods, daily mean concentrations were determined from the graph. When the concentration and water discharge were changing rapidly, the day was often subdivided for this computation. For some periods when the day-to-day variation in the concentration was negligible, the data were not plotted, and the average concentration of the samples was used as the mean concentration for the day. For certain stations, when the discharge and concentrations were relatively low and varied only slightly from day to day, the samples for a number of days were composited and the mean daily concentrations and mean daily loads are shown.

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

In many instances where there were no observations for several days, the suspended-sediment loads for individual days are not estimated, because numerous factors influencing the quantities of transported sediment made it very difficult to make accurate estimates for individual days. However, estimated loads of suspended sediment for missing days in otherwise continuous period of sampling have been included in monthly and annual totals for most streams to provide a complete record. For some streams, samples were collected about 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 sediments for many of the stations, and the particle sizes of the bed material for some of the stations were determined periodically. As much of the material carried in suspension is finer than 0.062 mm, the pipet method (Kilmer and Alexander, 1949) or the bottom withdrawal tube method (U. S. Interagency, 1943, p. 82-90) were used in most of the analyses. For most samples, material between 1.0 mm and 0.062 mm was analyzed by the visual accumulation tube method (U. S. Interagency 1957). Separation of sand from the silt-clay-colloid fraction was by sieve. For some samples all sediment coarser than 0.062 mm was analyzed by the sieve method. For material finer than 0.062 mm the settling medium used was native water or distilled water to which a dispersing agent had been added. Because sedimentation diameters of the clay and colloidal fractions are often affected by the chemical character of the settling medium, analyses made with native water may more nearly simulate particle sizes existing in the stream. Results of analyses with dis-

tilled water containing a dispersing agent approximate ultimate particle sizes of the finer fractions. The concentration of sediment suspension for analysis was reduced to less than 5,000 parts per million where necessary by means of a sample splitter, in order to stay within limits recommended for the bottom-withdrawal tube or pipet method; therefore, the concentration of sediment for analyses was often different from the concentration in the stream. The concentration at which analyses were made is indicated in the appropriate tables.

EXPRESSION OF RESULTS

The dissolved mineral constituents are reported in parts per million. A part per million is a unit weight of a constituent in a million unit weights of water. Equivalents per million are not given in this report although the expression of analyses in equivalents per million is sometimes preferred. An equivalent per million is a unit chemical combining weight of a constituent in a million unit weights of water. Equivalents per million are calculated by dividing the concentration in parts per million by the chemical combining weights of the individual constituents. For convenience in making this conversion the reciprocals of chemical combining weights of the most commonly reported constituents (ions) are given in the following table:

Constituent	Factor	Constituent	Factor
Iron (Fe^{++}).....	0.0358	Carbonate (CO_3^{--}) ..	0.0333
Iron (Fe^{++}).....	.0537	Bicarbonate (HCO_3^-)..	.0164
Calcium (Ca^{++}).....	.0499	Sulfate (SO_4^{--}) .....	.0208
Magnesium (Mg}^{++}) ...	.0822	Chloride (Cl^-).....	.0282
Sodium (Na}^+) .....	.0435	Fluoride (F}^-) .....	.0526
Potassium (K}^+) .....	.0256	Nitrate (CO_3^-) .....	.0161

Results given in parts per million can be converted to grains per United States gallon by dividing by 17.12. A calculated quantity of sodium and potassium is given in some analyses and is the quantity of sodium needed in addition to the calcium and magnesium to balance the acid constituents.

The hardness, expressed in terms of an equivalent quantity of calcium carbonate (CaCO_3), is calculated from the equivalents of calcium and magnesium, or is determined by direct titration. The hardness caused by calcium and magnesium (and other ions if significant) equivalent to the carbonate and bicarbonate is called carbonate hardness; the hardness in excess of this quantity is called noncarbonate hardness.

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.

Percent sodium is computed for those analyses where sodium and potassium are reported separately by dividing the equivalents per million of sodium by the sum of the equivalents per million of calcium, magnesium, sodium, and potassium and multiplying the quotient by 100. In analyses where sodium and potassium were calculated and reported as a combined value, the value reported for percent sodium will include the equivalent quantity of potassium. In most waters of moderate to high concentration the proportion of potassium is much smaller than that of sodium.

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. 17) and the temperature in degrees Fahrenheit. Color is expressed in units of the platinum-cobalt scale proposed by Hazen (1892, p. 427-428). 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 or time-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 the 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.

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 and sediment concentration when sample was collected, the concentration of the suspension during analysis, 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 rock materials. 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 springs 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 concentration of dissolved solids in a river water 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 as sodium), bicarbonate, sulfate, chloride, fluoride, nitrate, boron, pH, and dissolved solids. 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.

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 a few contain more than 50 parts, but most waters contain from 1 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 stream turbines.

Aluminum (Al)

Aluminum is generally 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.

Manganese (Mn)

Manganese is dissolved in appreciable quantities from rocks in some sections of the country. 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. Manganese is not regularly determined in areas where it is not present in the waters in appreciable amounts. 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.

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.

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.

Sodium and potassium (Na and K)

Sodium and potassium are dissolved from almost 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

boilers to prevent foaming. More highly mineralized waters that contain a large proportion of sodium salts may be unsatisfactory for irrigation.

Carbonate and bicarbonate (CO_3 and HCO_3)

Bicarbonate occurs in waters largely through the action of carbon dioxide, which enables the water to dissolve carbonates of calcium and magnesium. Carbonate as such is not usually present in appreciable quantities in natural waters. The bicarbonate in waters that come from relatively insoluble rocks may amount to less than 50 parts per million; many waters from limestone contain from 200 to 400 parts per million. Bicarbonate in moderate concentrations in water has no effect on its value for most uses. Bicarbonate or carbonate is an aid in coagulation for the removal of suspended matter from water.

Sulfate (SO_4)

Sulfate is dissolved from many rocks and soils but 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 content, 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 in about the same amount as chloride. However, the quantity of

fluoride in natural surface waters is ordinarily very small compared to that of chloride. Recent investigations indicate that the incidence of dental caries is less when there are small amounts of fluoride present in the water supply than when there is none. However, excess fluoride in water is associated with the dental defect known as mottled enamel if the water is used for drinking by young children during calcification or formation of the teeth (Dean, 1936, p. 1269-1272). This defect becomes increasingly noticeable as the quantity of fluoride in water increases above 1.5 to 2.0 parts per million.

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 methemoglobinemia ("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 parts per million or more (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.

Boron (B)

Boron in small quantities has been found essential for plant growth, but irrigation water containing more than 1 part per million of boron is detrimental to citrus and other boron-sensitive crops. Boron is reported in Survey analyses of surface waters in arid and semiarid regions 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.

PROPERTIES AND CHARACTERISTICS OF WATER

Water temperature

Large quantities of water are used in industrial operation; therefore temperature and seasonal fluctuations of that temperature are major considerations in planning the use of water for cooling in industrial plants. Water at high temperature can carry less oxygen in solution than at low temperature. Consequently water temperature can affect or determine the pollution characteristics of a stream. Temperature data are required in studies of water intended for aquatic life. A few degrees rise in temperature may seriously limit the capacity of a stream to support fish life.

Oxygen consumed

The amount of oxygen consumed furnishes an approximation of the oxidizable matter in the unfiltered and filtered samples and gives a partial measure of polluting materials such as sewage and oxidizable industrial wastes. Waters of naturally high color may have relatively high values for oxygen consumed, and waters that are not noticeably colored may contain oxidizable material.

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 10 units generally passes unnoticed. Some swamp waters have natural color of 200 to 300 units or more.

Hydrogen-ion concentration (pH)

The degree of acidity or alkalinity of water, as indicated by the hydrogen-ion concentration, expressed as pH (see p.7), 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 usually have pH values less than 4.5.

Specific conductance (micromhos per centimeter at 25°C)

The specific conductance of a water is a measure of its capacity to conduct a current of electricity (see p.7). The conductance varies with the concentration and degree of ionization of the different minerals in solution and with the temperature of the water. When considered in conjunction with results of determinations for other constituents, specific conductance is a useful determination and plays an important part in indicating changes in concentration of the total quantity of dissolved minerals in surface waters.

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. Water that has less than 60 parts per million of hardness is usually rated as soft and suitable for many purposes without further softening. Waters with hardness ranging from 61 to 120 parts per million may be considered moderately hard, but this degree of hardness does not seriously interfere with the use of water for many purposes except for use in high-pressure steam boilers and in some industrial processes. Waters with hardness ranging from 121 to 200 parts per million are considered hard, and laundries and industries may profitably soften such supplies. Water with hardness above 200 parts per million generally requires some softening before being used for most purposes.

Acidity

The acidity of a natural water represents the content of free carbon dioxide and other uncombined gases, organic acids, mineral acids and salts of strong acids and weak bases that hydrolyze to give hydrogen ions. Sulfate of iron and aluminum in mine and industrial wastes are common sources of acidity.

Corrosiveness

The corrosiveness of a water is that property which makes the water aggressive to metal surfaces and frequently results in the appearance of the "red-water" caused by solution of iron. The disadvantages of iron in water have been discussed previously. Additionally, corrosion causes the deterioration of water pipes, steam boilers, and water-heating equipment. Many waters that do not appreciably corrode cold-water lines will aggressively attack hot-water lines. Oxygen, carbon dioxide, free acid, and acid-generating salts are the principal constituents in water that cause corrosion. In a general way, very soft waters of low mineral content tend to be more corrosive than hard waters containing appreciable quantities of carbonates and bicarbonates of calcium and magnesium.

Percent sodium

The proportion of sodium to the total cation concentration is termed "percent sodium", and is reported in most of the analyses

of waters collected from streams in the western part of the country where irrigation is practiced extensively. The proportion of sodium to all the constituents in the water is explained on page 10 under "Sodium and potassium". Waters in which the percent sodium is more than 60 may be injurious when applied to certain types of soils, particularly when adequate drainage is not provided (Magistad and Christiansen, 1944, p. 8-9).

Sodium-adsorption-ratio

Of more significance than percent sodium for use as an index of the sodium or alkali hazard to the soil is the sodium-adsorption-ratio because it relates more directly to the adsorption of sodium by the soil. The term, "sodium-adsorption-ratio (SAR)" was introduced by the U. S. Salinity Laboratory Staff (1954), and is a ratio expressing the relative activity of sodium ions in exchange reactions with the soil. It is expressed by the equation:

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

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.

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. Most fluvial sediment results from the normal process of erosion, which in turn is part of the geologic cycle of

rock transformation. In some instances, this normal process may have been accelerated by agricultural practices. Sediment also results from a number of industrial 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, plant cover, topography, and land use. An important property of fluvial sediment is the fall velocity of the particles in transport. Particle sizes, as determined by various methods, represent mechanical diameters, which are related to sedimentation diameters indirectly. Sediment particles in the sand-size (larger than 0.062 mm) range do not appear to be affected by flocculation or dispersion resulting from the mineral constituents in solution. The sedimentation diameter of clay and silt particles in suspension may vary considerably from point to point in a stream or reservoir, depending on the mineral matter in solution and in suspension and the degree of turbulence present. The size of sediment particles in transport at any point depends on the type of erodible and soluble material in the drainage area, the degree of flocculation present, time in transport, and characteristics of the transporting flow. The flow characteristics include velocity of water, turbulence, and the depth, width, and roughness of the channel. As a result of these variable characteristics, the size of particles transported, as well as the total sediment load, is in constant adjustment with the characteristics and physical features of the stream and drainage area.

STREAMFLOW

Most of the records of stream discharge, used in conjunction with the chemical analyses and in the computation of sediment loads in this volume, are published in Geological Survey 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.

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 1941-56, are listed below:

Numbers of water-supply papers containing records for
Parts 1-4, 1941-56

Year	WSP	Year	WSP	Year	WSP	Year	WSP
1941	942	1945	1030	1949	1162	1953	1290
1942	950	1946	1050	1950	1186	1954	1350
1943	970	1947	1102	1951	1197	1955	1400
1944	1022	1948	1132	1952	1250	1956	1450

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 south-eastern 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 25, D. C., 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. 20 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.

DIVISION OF WORK

The quality-of-water program was conducted by the Water Resources Division of the Geological Survey, C. G. Paulsen, chief hydraulic engineer, succeeded by L. B. Leopold, and S. K. Love, chief, Quality of Water Branch. The records were collected and

State	Cooperating agency	Drainage basin	District office
Alabama	Alabama Geological Survey, W. B. Jones, State Geologist	South Atlantic slope and Eastern Gulf of Mexico	P. O. Box 607, Bldg. 211 Roosevelt Village Ocala, Fla.
Delaware	Newcastle County Soil Conservation District, Marvin W. Klair, chairman. Delaware Geological Survey University of Delaware Department of Geology and Geography, Dr. John J. Groot, State Geologist.	North Atlantic slope	Room 1302 U. S. Custom House 2nd and Chestnut Sts. Philadelphia 6, Pa.
Florida	Florida Geological Survey, Herman Gunter, director. Central and Southern Florida Flood Control District. W. Turner Wallis, secretary. City of Pensacola, O. J. Semmes, Jr., City Manager.	South Atlantic slope and Eastern Gulf of Mexico	P. O. Box 607, Bldg. 211 Roosevelt Village Ocala, Fla.
Georgia	Department of Mines, Mining and Geology, Garland Peyton, director.		

State	Cooperating agency	Drainage basin	District office
Illinois	Ohio River Valley Water Sanitation Commission, Edward J. Cleary, executive director and chief engineer.	Ohio River	2822 E. Main St. Columbus 9, Ohio
Indiana	Ohio River Valley Water Sanitation Commission, Edward J. Cleary, executive director and chief engineer.		
Kentucky	Agricultural and Industrial Development Board, Joseph H. Taylor, executive director.		
Minnesota	Iron Range Resources and Rehabilitation Commission, Kaarlo J. Otava, Commissioner.	St. Lawrence River	510 Rudge Guenzel Bldg. Lincoln 8, Nebr.
New Jersey	Division of Water Policy and Supply Department of Conservation and Economic Development, George Shanklin, acting director and chief engineer.	North Atlantic slope	Room 1302 U. S. Custom House 2nd and Chestnut Sts. Philadelphia 6, Pa.

State	Cooperating agency	Drainage basin	District office
New York	New York State Department of Commerce, Bureau of Industrial Development, Ronald J. Peterson, director.	North Atlantic slope, Ohio River, St. Lawrence River	P. O. Box 68 Room 348 Federal Bldg. Albany 1, N. Y.
North Carolina	North Carolina Department of Conservation and Development, Ben E. Douglas, director a.	South Atlantic slope and Eastern Gulf of Mexico	P. O. Box 2857 Federal Bldg. Raleigh, N. C.
Ohio	Ohio Department of Natural Resources, A. W. Marion, director.	Ohio River, St. Lawrence River	2822 E. Main St. Columbus 9, Ohio
Pennsylvania	Pennsylvania Department of Commerce, William R. Davlin, secretary. Pennsylvania Department of Agriculture, Dr. William L. Henning, secretary. Soil Conservation Commission, Dr. William L. Henning, chairman. City of Philadelphia, Richardson Dilworth, Mayor, Department of Water, Samuel S. Baxter, Water Commissioner.	North Atlantic slope, Ohio River St. Lawrence River	Room 1302 U. S. Custom House 2nd and Chestnut Sts. Philadelphia 6, Pa.

a Succeeded by William P. Saunders, director, Dec. 15, 1955.

State	Cooperating agency	Drainage basin	District office
South Carolina	South Carolina State Development Board, R. M. Cooper, director.	South Atlantic slope and Eastern Gulf of Mexico	P. O. Box 2857 Federal Bldg. Raleigh, N. C.
Tennessee	Tennessee Department of Conservation, Division of Geology, W. D. Hardeman, State Geologist.	Cumberland Tennessee Rivers	
Virginia	Virginia Department of Conservation and Development, Raymond V. Long, director.	North Atlantic slope, South Atlantic slope, Ohio River	P. O. Box 3327 University Station Charlottesville, Va. ^b
West Virginia	Ohio River Valley Water Sanitation Commission, Edward J. Cleary, executive director and chief engineer.	Ohio River	2822 E. Main St. Columbus 9, Ohio
Wisconsin	Wisconsin Conservation Department, L. P. Voigt, director through Committee on Water Pollution, George P. Steinmetz, chairman, and Theodore F. Wisniewski, director.	Hudson Bay and Upper Mississippi River	2822 E. Main St. Columbus 9, Ohio

^b Discontinued September 1956. For information write district office at Raleigh, N. C.

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CHEMICAL ANALYSES, WATER TEMPERATURES, AND SUSPENDED SEDIMENT

PART 1A. NORTH ATLANTIC SLOPE BASINS, MAINE TO CONNECTICUT

PAWTUCKET RIVER BASIN

MISCELLANEOUS ANALYSES OF STREAMS IN PAWTUCKET RIVER BASIN IN RHODE ISLAND

Chemical analyses, in parts per million, water year October 1955 to September 1956

Chemical analyses, in parts per million, water, Jan. 9, 1956 to September 1956																		
Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Total ^a	Non- carbon- ate			
SOUTH BRANCH PAWTUCKET RIVER AT WASHINGTON																		
Jan. 9, 1956	235	7.7	0.15	1.8	1.0	3.4	1.2	6	6.3	4.2	0.3	0.6	34	9	4	47.2	6.0	7
SOUTH BRANCH PAWTUCKET RIVER AT WEST WARWICK																		
Jan. 9, 1956						6.3		8	10	7.7				14	7	63.3	6.1	
Includes hardness of all polyvalent cations reported.																		

^a Includes hardness of all polyvalent cations reported.

THAMES RIVER BASIN
QUINEBAUG RIVER AT JEWETT CITY, CONN.

LOCATION --At railroad bridge 0.1 mile upstream from mouth of Pachaug River and 1,000 feet upstream from gaging station at Jewett City, New London County.

DRAINAGE AREA --711 square miles.

RECORDS AVAILABLE --Chemical analyses: October 1955 to September 1956.

Water temperatures: October 1955 to September 1956.

EXTREMES 1955-56 --Dissolved solids: Maximum 82 ppm Sept. 1-10; minimum, 37 ppm Apr. 11-20.

Hardness: Maximum 44 ppm July 15; minimum, 14 ppm Jan. 11-20.

Specific conductance: Maximum 264 micromhos Sept. 11; minimum, 51.8 micromhos Apr. 11-20.

Water temperatures: Maximum 76°F Aug. 20; minimum 32°F Jan. 21.

REMARKS --Records of specific conductance and pH of daily samples available in district office at Albany, N. Y. Records of discharge for water year

October 1955 to September 1956 given in WSP 1431.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Total ^a	Non-carbonate			Unfiltered	Filtered
Oct. 1-10, 1955	1,510	8.7	0.54	5.2	1.7	8.0	1.5	20	11	6.2	0.2	1.8	62	20	4	6.7	18	8.2	7.3
Oct. 11-20	5,450	8.2	.26	4.4	1.5	5.5	1.5	13	10	5.9	.2	1.6	55	17	7	6.5	20	11	7.2
Oct. 21-31	2,910	8.3	.16	3.9	2.1	4.4	1.4	13	9.2	6.0	.2	.9	52	18	8	6.5	25	6.5	5.4
Nov. 1-10	4,720	8.2	.26	3.4	1.6	4.3	1.3	11	9.1	5.2	.2	1.0	47	15	6	6.3	23	5.4	4.9
Nov. 11-20	3,570	7.8	.31	4.0	1.9	4.1	1.2	15	8.3	4.7	.2	.2	49	18	6	6.2	20	5.7	5.7
Nov. 21-30	2,040	8.3	.32	4.3	1.7	4.4	1.2	13	8.9	5.0	.2	1.4	47	18	7	6.6	18	4.3	3.9
Dec. 1-10	1,340	8.6	.29	4.3	1.6	5.7	1.3	16	10	5.1	.2	1.7	51	17	4	6.9	18	4.2	4.0
Dec. 11-20	962	9.2	.34	4.8	2.1	7.0	1.4	19	11	5.6	.2	2.1	57	21	5	6.8	18	5.8	4.5
Dec. 21-31	594	9.8	.35	5.4	1.7	9.3	1.7	23	12	6.7	.2	1.7	65	21	2	6.8	10	4.8	3.4
Jan. 1-10, 1956	971	9.4	.31	4.8	2.2	8.2	1.8	19	13	6.9	.2	3.1	64	21	6	6.7	12	4.6	3.7
Jan. 11-20	2,410	6.5	.23	3.1	1.6	4.8	1.7	11	8.4	5.6	.2	2.0	48	14	6	6.5	18	6.4	5.3
Jan. 21-31	1,240	10	.25	4.5	2.0	5.9	1.4	15	11	7.1	.2	2.1	56	20	7	6.8	15	7.6	5.5
Feb. 1-10	1,760	7.8	.19	4.6	2.1	6.1	1.4	16	11	6.8	.1	2.2	52	20	7	6.9	8	8.2	3.0
Feb. 11-20	2,260	7.4	.18	4.4	1.8	5.2	1.2	14	9.7	5.8	.1	1.8	48	19	7	6.8	8	6.8	3.4
Feb. 21-29	1,710	8.1	.24	4.5	1.8	5.7	1.4	15	11	6.2	.1	1.3	50	19	6	7.0	5	3.9	2.8
Mar. 1-10	2,550	7.4	.20	4.2	1.5	5.2	1.3	14	10	5.2	.1	.8	46	17	5	6.9	10	4.1	2.6
Mar. 11-20	2,340	7.0	.24	4.2	1.8	4.6	1.0	12	10	5.5	.1	2.0	43	18	8	6.9	8	6.2	2.6
Mar. 21-31	2,050	7.2	.23	4.5	1.9	4.8	1.1	12	10	6.2	.1	2.1	46	19	9	6.5	8	4.2	2.5

^a Includes hardness of all polyvalent cations reported.

THAMES RIVER BASIN--Continued
QUINEBAUG RIVER AT JEWETT CITY, CONN.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Mean discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Calcium (Ca)	Mag- ne- sium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Nitrate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color	Oxygen consumed		
														Total ^a	Non-carbon- ate				Unfil- tered	Fil- tered	
Apr. 1-10, 1956	4,160	6.1	0.18	4.0	1.4	3.6	1.0	8	9.5	4.8	0.1	1.8	41	16	9	58.0	6.4	5	9.0	2.7	
Apr. 11-20	5,430	5.7	.28	3.8	1.5	3.1	1.0	10	8.8	3.8	.1	1.6	37	16	8	51.8	6.5	7	5.1	2.4	
Apr. 21-30	2,940	5.2	.28	4.2	1.9	3.6	1.1	13	9.8	4.4	.1	1.3	39	18	8	57.2	6.6	7	4.0	2.3	
May 1-10	2,120	5.3	.36	5.1	2.0	4.0	1.1	14	9.6	5.6	.1	1.0	42	21	10	63.9	6.6	8	5.2	3.0	
May 11-20	1,300	3.8	.44	4.5	2.2	4.4	1.2	17	9.7	4.6	.1	1.6	42	20	7	64.9	6.6	10	5.0	3.0	
May 21-31	1,040	3.3	.38	4.9	1.9	5.0	1.3	16	10	5.1	.1	1.3	45	20	7	71.6	6.7	15	6.1	3.5	
June 1-10	1,800	6.7	.43	4.6	2.1	4.6	1.2	15	9.7	5.6	.1	1.1	49	21	8	68.1	6.8	30	7.4	5.6	
June 11-20	699	6.5	.48	5.5	1.4	5.0	1.2	17	8.5	4.8	.0	2.9	53	20	6	74.3	6.9	30	6.3	5.3	
June 21-30	451	7.0	.38	5.6	1.2	7.7	1.5	22	10	5.4	.0	3.1	61	20	1	89.8	6.9	22	6.3	4.7	
July 1-10	474	3.7	.34	6.4	1.5	8.3	1.0	24	12	6.2	.1	2.7	68	22	3	96.1	6.9	12	7.7	5.2	
July 11-14, 16-20	549	3.5	.31	6.1	1.8	5.8	1.4	20	11	5.8	.1	2.5	61	23	6	85.8	6.7	15	7.8	5.4	
July 15	690	--	.33	--	--	--	--	34	--	6.2	--	2.0	--	44	16	11	111	6.8	--	--	--
July 16-20	431	3.5	.33	6.1	1.5	7.7	1.6	24	11	6.0	.1	1.9	66	22	2	93.1	6.8	15	7.9	6.0	
July 21-26, 28-31	286	--	.47	--	--	--	--	72	--	9.0	--	.9	--	35	0	163	6.9	--	--	--	
Aug. 1, 3-6, 8-10	221	6.3	.28	6.8	1.7	10	1.7	30	12	7.0	.1	2.4	68	24	0	106	7.0	8	7.7	4.1	
Aug. 2, 7	333	--	.44	--	--	--	--	73	--	12	--	1.7	--	24	0	177	7.1	--	--	--	
Aug. 11-20	188	2.6	.24	6.8	1.7	15	1.9	37	15	7.9	.1	2.4	74	24	0	125	6.9	12	7.1	4.0	
Aug. 23-28, 30	195	4.1	.32	6.6	1.8	14	2.0	34	15	7.9	.1	2.4	72	24	0	120	7.0	8	5.9	3.8	
Aug. 21, 22, 31	222	--	.35	--	--	--	--	126	--	15	--	.5	--	22	0	248	7.1	--	--	--	
Aug. 29	242	--	.37	--	--	--	--	63	--	10	--	2.4	--	22	0	171	6.5	--	--	--	
Sept. 1-10	194	5.4	.19	7.1	1.9	16	2.5	40	14	8.8	.1	2.5	82	26	0	136	6.8	7	8.3	4.7	
Sept. 12, 14-20	249	5.9	.24	6.6	1.7	14	2.4	36	12	9.0	.1	2.6	76	24	0	128	6.8	10	6.4	4.5	
Sept. 13	253	--	.37	--	--	--	--	60	--	9.5	--	3.3	--	21	0	169	6.7	--	--	--	
Sept. 11	253	--	.30	--	--	--	--	133	--	7.0	--	1.2	--	26	0	264	7.2	--	--	--	
Sept. 22-24, 26, 27, 29	335	6.5	.26	6.9	1.6	14	2.4	32	15	9.3	0.1	2.6	78	24	0	128	6.9	10	7.3	4.2	
Sept. 21, 25, 28	268	--	.37	--	--	--	--	67	--	8.6	--	2.2	--	24	0	184	6.8	--	--	--	
Time-weighted average	1,750	6.7	0.30	4.9	1.8	6.7	1.4	21	11	6.1	0.1	1.8	55	20	5	85	--	14	6.3	4.2	

a Includes hardness of all polyvalent cations reported.

THAMES RIVER BASIN--Continued

QUINEBAUG RIVER AT JEWETT CITY, CONN.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 7:30 a. m./

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

THAMES RIVER BASIN--Continued
 MISCELLANEOUS OF STREAMS IN THAMES RIVER BASIN IN CONNECTICUT

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue on evap- oration at 180° C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25° C)	pH	Color
														Total a	Non- carbon- ate			
HOP RIVER NEAR COLUMBIA																		
May 4, 1956.....	225	6.1	0.14	3.6	1.7	2.4	0.9	11	8.8	2.8	0.0	0.4	35	16	7	48.6	6.2	8
FIVE MILE RIVER NEAR KILLINGLY																		
May 4, 1956.....	250	3.9	0.14	2.5	1.0	2.0	0.6	7	6.1	2.6	0.1	0.3	26	10	5	36.1	6.3	7
MOOSUP RIVER AT MOOSUP																		
May 4, 1956.....	240	4.2	0.16	2.7	1.6	2.4	0.6	8	7.3	3.2	0.1	0.6	29	13	7	39.6	6.2	17

^a Includes hardness of all polyvalent cations reported.

CONNECTICUT RIVER BASIN
CONNECTICUT RIVER AT THOMPSONVILLE, CONN.

LOCATION --At highway bridge at Thompsonville, Hartford County and about 1 mile upstream from gaging station.

DRAINAGE AREA --9,661 square miles (above gaging station).

RECORDS AVAILABLE --Chemical analyses: October 1955 to September 1956.

Water temperatures: October 1955 to September 1956.

EXTREMES, 1955-56 --Dissolved solids: Maximum, 91 ppm Aug. 11-20; minimum, 46 ppm May 1-10.

Hardness: Maximum, 53 ppm June 25; minimum, 24 ppm Nov. 1-10.

Specific conductance: Maximum, 143 micromhos Aug. 11-31; minimum, 67.5 micromhos May 1-10.

Water temperatures: Maximum, 82°F Aug. 17, 19; minimum, 33°F on several days during December.

REMARKS --Records of specific conductance and pH daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1955 to September 1956 given in WSP 1431. No appreciable inflow between sampling point and gaging station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micromhos at 25°C)	pH	Color	Oxygen consumed	
														Total ^a	Non-carbonate				Unfiltered	Filtered
Oct. 1-10, 1955	9,890	3.6	0.45	11	3.3	6.8	1.9	33	16	7.5	0.1	2.8	79	41	14	125	6.1	10	9.2	6.8
Oct. 11-20	39,500	5.2	.68	6.7	1.9	3.5	1.4	20	9.8	3.5	-.2	1.8	51	25	8	72.5	6.2	10	9.3	5.8
Oct. 21-31	24,700	7.5	.54	6.6	2.5	4.2	1.4	22	12	4.0	-.2	1.8	58	27	9	81.4	6.3	12	12	5.1
Nov. 1-10	43,300	5.0	.33	6.2	2.1	3.3	1.1	18	11	3.2	-.2	1.2	50	24	9	69.5	6.4	12	7.0	5.4
Nov. 11-20	33,400	6.7	.18	7.6	1.5	3.8	1.3	17	13	4.5	-.1	1.3	53	25	11	76.3	6.8	7	4.6	4.0
Nov. 21-30	18,400	7.2	.21	9.0	1.4	4.1	1.3	21	13	4.8	-.1	2.1	58	29	12	89.5	6.6	8	4.2	3.8
Dec. 1-10	13,900	7.6	.29	9.9	1.4	4.1	1.4	25	12	5.8	-.1	.7	63	31	10	96.9	6.6	7	7.0	4.7
Dec. 11-20	9,280	7.9	.39	11	1.8	5.0	1.4	25	16	7.2	-.1	2.8	72	35	15	109	6.7	7	5.4	4.2
Dec. 21-31	7,170	8.3	.38	12	1.7	5.6	1.6	25	18	7.5	-.1	3.5	75	37	17	118	6.6	5	5.0	4.2
Jan. 1-9, 1956	5,880	8.5	.52	13	2.5	6.0	1.6	34	17	7.5	-.1	3.2	83	43	15	122	6.9	5	9.8	5.6
Jan. 10-20	17,900	--	.15	--	--	--	--	20	--	4.6	--	2.2	--	25	9	9	81.2	6.4	--	--
Jan. 21-30	26,600	6.1	.15	8.6	1.8	4.0	1.7	20	14	5.4	-.1	2.2	59	29	13	86.8	6.8	8	11	4.7
Jan. 31	9,970	7.2	.30	11	1.7	5.1	1.5	25	16	6.8	-.1	2.6	71	35	14	105	6.7	5	9.8	5.0
Feb. 1-10	8,870	7.2	.21	12	2.1	7.8	1.4	28	16	11	-.1	2.4	80	39	16	124	6.9	5	13	5.3
Feb. 11-20	9,810	7.7	.57	11	1.6	6.2	1.5	26	16	8.2	-.0	1.8	73	34	13	112	6.7	5	7.5	4.5
Feb. 21-29	10,500	7.3	.53	9.4	1.8	5.4	1.5	23	15	7.0	-.0	1.8	66	31	12	102	6.7	8	6.5	4.2
Mar. 1-10	14,800	8.3	.64	8.8	1.7	5.6	1.6	22	15	6.8	-.0	1.6	66	29	11	102	6.6	8	5.9	4.0
Mar. 11-20	11,400	7.6	.64	8.6	1.5	5.1	1.5	19	15	6.6	-.0	2.4	64	29	14	98.6	6.8	5	6.3	3.8
Mar. 21-31	11,100	7.6	1.3	9.3	2.1	5.6	1.7	20	17	7.3	-.0	3.7	70	37	16	109	6.9	7	9.4	3.7
Apr. 1-10	30,300	6.5	.54	8.4	2.1	4.3	1.3	19	13	5.8	-.0	3.2	61	30	14	89.8	6.7	7	13	3.6
Apr. 11-20	63,600	5.4	.27	6.9	1.9	3.1	1.1	17	10	4.2	-.0	2.2	49	25	11	72.1	6.6	7	14	3.5
Apr. 21-30	57,500	5.2	.30	7.0	1.7	2.9	.9	17	10	3.7	-.0	1.8	49	25	11	67.8	6.7	10	8.2	3.8
May 1-10	73,200	5.1	.30	6.8	1.8	2.7	1.0	20	9.1	2.9	-.0	1.2	46	24	8	67.5	7.1	10	8.3	3.6
May 11-20	40,100	5.0	.43	7.7	1.6	3.0	1.0	21	10	4.3	-.0	1.2	49	26	9	74.9	6.7	10	14.9	8.6
May 21-31	24,900	5.4	.43	8.9	1.9	3.4	1.1	25	11	4.7	-.0	1.2	55	30	10	84.3	6.7	8	6.5	3.6

CONNECTICUT RIVER BASIN--Continued
CONNECTICUT RIVER AT THOMPSONVILLE, CONN.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180°C)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Total ^a	Non-carbonate			Unfiltered	Filtered
June 1-10, 1956	31,600	6.0	0.42	8.4	1.6	4.1	1.0	22	13	3.5	0.1	1.1	53	28	10	6.9	15	7.0	4.6
June 11-20	12,400	5.9	.44	10	1.6	4.3	1.2	29	10	5.6	.0	1.0	65	32	8	6.7	15	5.8	4.6
June 21-24, 26-30	6,360	4.9	.33	13	1.3	4.2	1.2	33	13	5.2	--	2.4	70	38	11	7.0	10	8.5	5.0
June 25	3,330	4.9	.69	--	1.3	4.2	1.2	51	13	7.5	--	3.8	--	53	11	113	--	--	--
July 1-10	4,830	1.8	.19	14	1.9	4.9	1.7	38	12	7.2	.1	3.1	79	43	12	6.7	5	8.7	4.8
July 11-20	11,600	2.4	.20	14	2.3	3.9	1.6	42	7.5	7.1	.1	1.9	79	44	10	123	6.9	8.0	5.0
July 21-31	5,650	2.5	.22	13	2.0	4.3	1.4	35	12	7.2	.1	2.1	77	41	12	114	7	9.5	6.3
Aug. 1-10	3,550	4.7	.28	14	2.2	6.7	1.5	38	16	8.5	.1	2.5	82	44	13	135	12	8.7	5.8
Aug. 11-20	2,710	6.4	.25	14	2.6	7.6	1.6	43	16	8.4	.1	2.9	91	46	10	143	7	8.8	6.2
Aug. 21-31	3,200	3.5	.27	14	2.4	8.0	1.7	40	17	9.5	.1	2.5	88	45	12	143	8	9.4	6.8
Sept. 1-10	6,740	2.6	.20	15	2.4	6.6	1.6	44	14	9.0	.1	1.9	82	47	11	138	7.1	12	8.5
Sept. 11-20	6,660	3.9	.28	14	1.9	6.3	1.9	38	12	8.0	.1	2.5	79	43	12	139	10	9.5	5.9
Sept. 21-30	10,900	6.3	.34	13	1.8	5.6	1.8	36	12	7.7	.1	1.7	76	40	10	116	12	10	6.7
Time-weighted average	19,500	5.8	0.39	10	1.9	4.9	1.4	27	13	6.3	0.1	2.1	67	34	12	103	--	8	4.8

^a Includes hardness of all polyvalent cations reported.

CONNECTICUT RIVER BASIN--Continued

CONNECTICUT RIVER AT THOMPSONVILLE, CONN.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	52	36	34	34	35	42	44	61	79	78	72
2	62	52	35	34	35	36	42	45	63	78	77	74
3	63	52	35	34	34	36	41	46	62	78	78	--
4	64	52	36	34	34	36	42	47	64	75	78	--
5	62	51	37	34	35	37	40	46	65	71	77	75
6	61	49	37	34	35	37	40	47	66	72	77	74
7	61	47	36	35	35	38	40	46	68	76	77	74
8	62	48	35	35	35	37	36	48	70	78	78	73
9	62	51	35	35	35	36	35	49	60	77	78	73
10	60	50	36	35	35	38	40	50	63	77	78	69
11	60	48	36	36	35	38	39	51	--	79	77	70
12	63	46	34	35	35	38	44	51	66	75	78	68
13	64	46	34	35	35	38	40	52	64	78	78	72
14	60	48	35	35	35	38	38	54	71	78	79	72
15	60	47	36	36	35	38	40	54	73	--	79	68
16	57	46	36	36	35	36	42	55	73	74	79	66
17	62	44	36	36	35	36	42	55	73	75	82	65
18	60	44	36	35	35	35	40	55	73	75	81	65
19	55	43	34	34	35	35	40	56	73	76	82	64
20	52	43	33	35	35	35	40	56	73	75	78	63
21	52	42	33	34	36	35	42	57	71	72	--	62
22	52	42	33	35	36	38	41	57	73	75	74	62
23	--	41	34	35	36	39	45	59	73	72	76	61
24	53	40	34	35	36	39	46	58	75	76	75	63
25	53	40	34	--	36	39	44	59	76	75	76	62
26	52	39	34	34	37	39	44	56	76	77	76	60
27	51	38	33	34	36	40	45	60	77	78	77	59
28	51	36	33	35	36	41	44	60	77	76	78	57
29	51	36	33	35	36	39	46	58	79	75	77	59
30	51	36	33	34	--	39	45	58	78	77	--	59
31	51	--	34	34	--	38	--	57	--	77	77	--
Average	58	45	35	35	35	37	42	53	70	76	78	66

NORTH ATLANTIC SLOPE BASINS, MAINE TO CONNECTICUT

CONNECTICUT RIVER BASIN--Continued

SCANTIC RIVER AT BROAD BROOK, CONN.

LOCATION.--Highway bridge on State Highway 140, 300 feet downstream from gaging station, 1 mile southwest of town of Broad Brook, Hartford County and 8½ miles upstream from mouth.

DRAINAGE AREA.--98.4 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1953 to September 1956.

Sediment records: November 1952 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 78°F Aug. 11, 17; minimum, freezing point on several days during December to March.

Sediment concentrations: Maximum daily, 721 ppm, Oct. 16; minimum daily, 2 ppm, Mar. 31.

Sediment load: Maximum daily, 1,376 tons, Oct. 16; minimum daily, 0.4 ton, Aug. 3, 16.

EXTREMES, 1952-56.--Water temperatures (1953-56): Maximum, 63°F Aug. 2, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 721 ppm, Oct. 16, 1955; minimum daily, 1 ppm Jan. 22, 23, 1953, Dec. 15, 1954.

Sediment load: Maximum daily, 6,670 tons (estimated) Aug. 19, 1955; minimum daily, 0.2 ton Aug. 23, 1953, July 25, 1954, Aug. 4, 1955.

REMARKS.--Records of specific conductance of daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1955 to September 1956 given in WSP 1431.

Temperature (°F) of water, water year October 1955 to September 1956

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

CONNECTICUT RIVER BASIN--Continued

SCANTIC RIVER AT BROAD BROOK, CONN.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	146	47	19	759	49	s 99	190	7	3.6
2.....	138	74	28	532	16	23	184	7	3.5
3.....	128	8	2.8	370	13	13	182	7	3.4
4.....	115	95	29	398	55	s 69	206	7	3.9
5.....	110	14	4.2	956	88	s 238	264	14	10
6.....	129	77	s 28	1,090	51	s 162	252	17	12
7.....	224	288	s 175	640	19	33	218	9	5.3
8.....	266	389	s 269	464	17	21	188	5	2.5
9.....	295	36	29	390	15	16	174	7	3.3
10.....	247	20	13	350	10	9.4	166	10	4.5
11.....	197	11	5.9	458	31	s 39	160	8	3.5
12.....	159	10	4.3	550	22	33	157	10	4.2
13.....	136	8	2.9	499	19	26	152	10	4.1
14.....	142	38	15	464	29	s 36	144	11	4.3
15.....	339	612	s 662	464	12	15	145	6	2.3
16.....	675	721	s 1,376	464	13	16	148	7	2.8
17.....	817	383	s 854	453	11	13	138	7	2.6
18.....	660	130	s 234	410	9	10	138	7	2.6
19.....	540	30	44	350	8	7.6	138	8	3.0
20.....	423	21	24	320	7	6.0	122	7	2.3
21.....	358	19	18	304	7	5.7	121	8	2.6
22.....	307	16	13	299	7	5.7	124	14	4.7
23.....	265	13	9.3	276	5	3.7	123	13	4.3
24.....	248	16	11	270	5	3.6	122	28	9.2
25.....	274	18	13	258	5	3.5	124	33	11
26.....	280	19	14	246	4	2.7	127	12	4.1
27.....	266	14	10	232	5	3.1	121	14	4.6
28.....	233	9	5.7	225	7	4.3	123	31	10
29.....	212	9	5.1	218	9	5.3	122	16	5.3
30.....	253	43	s 37	200	9	4.8	120	78	25
31.....	511	90	s 119	--	--	--	118	21	6.7
Total.	9,093	--	4,074.2	12,909	--	927.5	4,811	--	171.2
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	117	6	1.9	144	9	3.5	145	8	3.1
2.....	115	10	3.1	135	8	2.9	173	32	15
3.....	114	6	1.8	148	8	3.2	232	36	23
4.....	111	6	1.8	140	4	1.5	315	55	47
5.....	107	7	2.0	126	4	1.4	330	26	23
6.....	107	36	10	123	6	2.0	288	26	20
7.....	105	10	2.8	215	67	s 43	450	150	s 193
8.....	100	7	1.9	264	46	33	524	91	s 128
9.....	154	87	s 41	232	21	13	475	40	51
10.....	276	85	s 63	200	18	9.7	360	26	25
11.....	294	46	37	186	52	26	294	20	16
12.....	258	42	29	360	94	91	270	14	10
13.....	258	31	22	360	48	47	258	12	8.4
14.....	232	16	10	304	27	22	252	18	12
15.....	194	16	8.4	246	26	17	246	13	8.6
16.....	166	12	5.4	252	16	11	232	9	5.6
17.....	152	10	4.1	218	12	7.1	175	14	6.6
18.....	140	11	4.2	177	8	3.8	184	6	3.0
19.....	122	7	2.3	159	8	3.4	193	8	4.2
20.....	126	6	2.0	152	6	2.5	176	9	4.3
21.....	125	7	2.4	144	7	2.7	181	6	2.9
22.....	118	6	1.9	130	8	2.8	186	8	4.0
23.....	120	4	1.3	122	7	2.3	206	12	6.7
24.....	118	4	1.3	119	5	1.6	232	9	5.6
25.....	113	4	1.2	238	103	s 108	192	7	3.6
26.....	112	4	1.2	390	101	s 112	196	8	4.2
27.....	113	3	.9	340	44	40	198	6	3.2
28.....	112	5	1.5	232	16	10	194	8	4.2
29.....	110	4	1.2	177	10	4.8	193	6	3.1
30.....	135	47	s 20	--	--	--	194	4	2.1
31.....	182	38	s 20	--	--	--	187	2	1.0
Total.	4,606	--	306.6	6,033	--	628.2	7,731	--	647.4

s Computed by subdividing day.

CONNECTICUT RIVER BASIN--Continued

SCANTIC RIVER AT BROAD BROOK, CONN.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	189	7	3.6	380	19	19	124	14	4.7
2.....	239	22	14	315	12	10	135	20	7.3
3.....	320	29	25	282	12	9.1	315	84	s 74
4.....	400	47	51	264	10	7.1	360	51	50
5.....	649	128	s 240	239	8	5.2	288	35	27
6.....	1,030	93	259	212	9	5.2	175	24	11
7.....	845	46	105	206	9	5.0	137	21	7.8
8.....	738	38	76	200	7	3.8	120	21	6.8
9.....	577	41	64	175	8	3.8	110	21	6.2
10.....	537	24	35	175	9	4.3	107	17	4.9
11.....	524	20	28	186	8	4.0	112	19	5.7
12.....	537	21	30	180	7	3.4	110	20	5.9
13.....	487	16	21	167	8	3.6	103	19	5.3
14.....	453	16	20	156	10	4.2	97	18	4.7
15.....	420	16	18	147	11	4.4	94	20	5.1
16.....	453	24	29	140	12	4.5	87	28	6.6
17.....	499	18	24	137	10	3.7	115	27	8.4
18.....	499	14	19	134	8	2.9	123	24	8.0
19.....	400	24	26	133	6	2.1	102	26	7.2
20.....	340	15	14	132	8	2.9	92	16	4.0
21.....	304	12	9.8	129	10	3.5	88	17	4.0
22.....	276	12	8.9	122	12	4.0	88	15	3.6
23.....	264	8	5.7	118	11	3.5	85	14	3.2
24.....	288	10	7.8	127	8	2.7	79	13	2.8
25.....	288	8	6.2	125	8	2.7	76	15	3.1
26.....	258	8	5.6	114	8	2.5	70	15	2.8
27.....	252	7	4.8	115	8	2.5	71	18	3.5
28.....	239	8	5.2	128	11	3.8	81	13	2.8
29.....	246	12	8.0	126	10	3.4	83	12	2.7
30.....	350	34	32	117	8	2.5	77	13	2.7
31.....	--	--	--	116	12	3.8	--	--	--
Total.	12,901	--	1,195.6	5,297	--	143.1	3,704	--	291.8
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.....	70	9	1.7	44	6	0.7	38	30	3.1
2.....	66	16	2.9	43	6	.7	40	18	1.9
3.....	61	51	8.4	40	4	.4	47	20	2.5
4.....	72	30	5.8	41	5	.6	46	19	2.4
5.....	80	28	6.0	40	7	.8	33	23	2.0
6.....	95	13	3.3	40	12	1.3	34	22	2.0
7.....	103	14	4.0	43	4	.5	57	38	5.8
8.....	99	8	2.1	38	13	1.3	49	16	2.1
9.....	92	14	3.5	37	14	1.4	43	16	1.9
10.....	72	10	1.9	37	6	.6	41	36	4.0
11.....	89	14	3.4	37	10	1.0	41	17	1.9
12.....	60	9	1.5	36	12	1.2	41	18	2.0
13.....	54	8	1.2	36	12	1.2	38	34	3.5
14.....	89	129	s 34	36	8	.8	47	42	5.3
15.....	97	26	6.8	32	9	.8	38	13	1.3
16.....	85	17	3.9	31	5	.4	42	17	1.9
17.....	75	12	2.4	29	11	.9	45	13	1.6
18.....	81	51	11	27	12	.9	49	10	1.3
19.....	49	104	14	28	12	.9	45	8	1.0
20.....	54	12	1.7	29	19	1.5	48	17	2.2
21.....	58	16	2.5	35	37	3.5	49	11	1.5
22.....	68	14	2.6	40	36	3.9	49	16	2.1
23.....	69	43	8.0	42	9	1.0	46	10	1.2
24.....	63	13	2.2	41	16	1.8	51	18	2.5
25.....	58	32	5.0	40	17	1.8	58	35	5.4
26.....	62	12	2.0	35	20	1.9	53	6	.9
27.....	56	8	1.2	35	33	3.1	47	8	1.0
28.....	54	10	1.5	37	14	1.4	66	22	3.9
29.....	52	12	1.7	32	15	1.3	75	50	10
30.....	47	12	1.5	33	16	1.4	60	20	3.2
31.....	46	6	.7	38	14	1.4	--	--	--
Total.	2,176	--	148.4	1,132	--	40.4	1,416	--	81.4

Total discharge for year (cfs days) 71,809

Total load for year (tons) 8,655.8

s Computed by subdividing day.

CONNECTICUT RIVER BASIN--Continued
SCANTIC RIVER AT BROAD BROOK, CONN.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment ^a												Methods of analysis
				Concentration of sample analyzed (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Oct. 15, 1955.....			60	690	1,800	2	4	7	14	25	42	79	99	100	--	SBCMW
Oct. 16.....			--	618	670	1	3	9	13	19	21	78	98	100	--	SBCMW
Oct. 16.....			--	940	1,890	1	2	4	7	14	34	70	100	--	--	SBCMW
Oct. 17.....			51	580	1,000	1	2	3	5	8	21	61	100	--	--	SBCMW
Oct. 17.....			51	186	350	1	1	4	5	10	19	52	99	100	--	SBCMW
Oct. 17.....			51	48	320	4	8	14	23	32	57	86	100	--	--	SBCMW
Oct. 18.....			--	96	200	2	5	6	12	18	31	60	100	--	--	SBCMW
Feb. 25, 1956.....			38	183	1,360	10	12	25	41	55	84	96	99	100	--	SBCMW
Feb. 26.....			35	122	659	18	19	30	43	71	88	91	93	99	100	SBCMW
Mar. 4.....			38	61	524	14	16	36	48	50	83	92	96	100	--	SBCMW
Mar. 7.....			37	199	2,060	13	16	34	47	61	80	92	99	100	--	SBCMW
Apr. 6.....			38	84	359	20	21	29	35	42	58	70	87	95	100	SBCMW

^a Of composite samples collected at different times on date shown.

CONNECTICUT RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN CONNECTICUT RIVER BASIN IN CONNECTICUT

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (residue on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro- mhos at 25°C)	pH	Color
														Total ^a	Non-carbonate			
CONNECTICUT RIVER NEAR MIDDLETOWN																		
June 27, 1956	b 8,700	4.6	1.5	12	1.8	5.9	1.4	32	15	5.1	0.0	2.0	77	38	11	120	6.4	9
PEQUABUCK RIVER AT FORRESTVILLE																		
May 3, 1955	200	7.8	.34	6.0	1.7	5.1	1.3	13	12	5.1	0.0	7.0	57	22	11	85.4	6.0	7

^a Includes hardness of all polyvalent cations reported.

^b Daily mean discharge.

HOUSATONIC RIVER BASIN
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 Co. DRAINAGE AREA --632 square miles (above gaging station).
RECORDS AVAILABLE --Chemical analyses: October 1955 to September 1956.
Water temperatures: October 1955 to September 1956.
EXTREMES, 1955-56 --Dissolved solids: Maximum, 184 ppm Aug. 21-31; minimum, 86 ppm Apr. 11-20.
Hardness: Maximum, 149 ppm Aug. 21-31; minimum, 61 ppm Oct. 16-20.
Specific conductance: Maximum, 328 microhmhos Aug. 21-31; minimum, 135 microhmhos Oct. 16-20.
Water temperatures: Maximum, 75°F June 16-17, Aug. 12-14, 19-20; minimum, freezing point on many days during December to March.
REMARKS --Records of specific conductance and pH of daily samples available at district office in Albany, N. Y. Records of discharge for water year October 1955 to September 1956 given in WSP 1431.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Total	Non-carbonate			Unfiltered	Filtered
Oct. 1-10, 1955	1,130	7.1	0.24	25	12	6.8	2.0	121	17	6.2	0.1	2.8	148	112	13	7.0	10	7.0	5.4
Oct. 11-20	1,690	7.5	--	24	10	4.6	1.5	106	15	3.5	.1	2.1	132	101	13	7.0	12	6.7	5.7
Oct. 16-20	7,640	6.7	--	14	6.4	3.1	1.2	63	10	3.0	.2	1.2	87	61	10	7.0	10	9.6	4.0
Oct. 21-30	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oct. 21-31	2,520	6.4	33	20	9.6	3.9	1.1	94	14	3.8	.1	1.2	112	89	12	7.2	7	5.8	4.9
Nov. 1-10	4,160	7.6	27	17	7.9	3.4	1.0	80	12	2.5	.1	1.4	100	75	12	7.2	5	5.6	5.5
Nov. 11-20	3,740	6.3	21	21	6.8	2.7	1.0	84	13	4.4	.1	1.3	106	80	12	7.5	5	4.1	2.6
Nov. 21-30	1,900	7.1	34	25	10	3.3	1.1	107	14	4.8	.1	1.7	120	104	16	7.6	3	3.0	2.4
Dec. 1-10	1,280	6.5	13	26	11	4.3	1.2	124	15	5.6	.1	2.5	130	110	17	7.5	3	3.3	2.3
Dec. 11-20	787	6.3	14	29	12	4.6	1.2	127	17	5.8	.1	2.3	140	122	18	7.5	3	2.6	2.3
Dec. 21-31	515	6.3	13	31	13	5.9	1.6	138	19	6.6	.1	3.2	152	131	18	7.5	3	3.0	2.8
Jan. 1-10, 1956	547	5.5	17	31	13	6.1	1.6	137	19	8.4	.1	3.0	157	131	19	7.5	3	4.5	2.5
Jan. 11-20	1,240	4.8	18	21	8.6	5.0	1.7	90	15	7.6	.1	2.2	115	88	14	7.4	5	6.7	3.2
Jan. 21-31	551	5.6	22	29	12	5.7	1.4	128	19	7.1	.1	2.6	147	122	17	7.6	5	4.1	2.7
Feb. 1-10	491	--	25	29	13	8.2	1.6	132	20	10	.1	2.6	157	126	18	7.7	8	4.8	3.2
Feb. 11-20	676	5.4	58	28	9.8	8.1	2.1	117	19	11	.0	1.6	152	110	14	7.4	10	4.5	2.9
Feb. 21-25, 27-29	865	5.9	42	27	9.1	7.3	1.8	113	18	9.6	.0	1.6	144	105	12	7.5	8	4.4	2.6
Feb. 26	1,640	--	--	--	--	--	--	76	--	7.5	--	2.4	--	69	--	7.1	--	--	--
Mar. 1-10	1,600	4.9	26	23	7.2	5.1	1.8	88	15	8.5	.0	1.6	117	87	15	7.3	8	5.6	2.8
Mar. 11-20	1,290	6.3	27	25	8.4	5.0	1.4	104	15	7.2	.0	1.2	126	97	12	7.8	8	4.5	2.9
Mar. 21-31	982	5.9	33	27	10	5.0	1.2	113	15	6.5	.0	2.6	134	109	16	7.4	7	3.8	2.3

a Includes hardness of all polyvalent cations reported.

HOUSATONIC RIVER BASIN--Continued

HOUSATONIC RIVER AT FALLS VILLAGE, CONN.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956.--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Total a	Non-carbonate				Unfiltered	Filtered
Apr. 1-5, 1956.....	1,630	5.9	0.26	26	10	4.9	1.3	109	15	8.7	0.0	2.7	134	106	17	228	7.3	8	8.2	3.0
Apr. 6-10.....	2,150	--	.21	--	--	--	--	65	--	5.2	--	2.3	--	62	9	143	7.4	--	--	--
Apr. 11-20.....	5,680	5.8	.18	16	6.4	2.4	.9	66	11	5.0	.0	1.6	86	66	12	144	7.3	10	10	2.6
Apr. 21-30.....	4,180	5.0	.16	17	8.0	2.5	.9	72	13	5.2	.0	1.4	94	75	16	187	7.4	8	7.2	2.6
May 1-10.....	3,810	5.6	.28	18	7.2	2.4	1.8	79	12	3.6	.0	.6	92	75	10	161	7.5	5	4.5	2.2
May 11-20.....	1,670	4.9	.35	24	9.2	3.2	1.2	104	13	5.0	.0	1.0	115	98	13	206	7.4	5	4.7	2.0
May 21-31.....	928	4.4	.36	27	10	3.7	1.3	116	14	5.1	.0	1.2	125	108	13	231	7.6	5	3.9	2.2
June 1-10.....	1,250	5.9	.23	24	8.5	3.7	1.2	106	12	4.0	.0	1.3	118	95	8	210	7.3	12	4.4	3.6
June 11-20.....	621	6.5	.18	28	10	4.4	1.2	122	13	4.7	.0	2.4	137	111	11	244	7.4	7	3.9	3.2
June 21-30.....	378	3.1	.11	31	12	7.4	1.6	140	15	6.2	.1	2.8	164	127	12	271	7.4	7	7.2	4.0
July 1-10.....	359	3.0	.08	30	13	7.0	1.6	139	16	7.2	.1	2.8	164	128	14	277	7.3	7	6.4	4.1
July 11-20.....	418	2.8	.06	30	12	6.5	1.6	135	14	6.7	.1	2.8	160	124	14	267	7.4	7	6.6	4.5
July 21-31.....	291	2.6	.09	31	13	6.3	1.5	144	14	6.5	.1	2.2	166	131	13	279	7.5	7	7.0	4.3
Aug. 1-10.....	189	3.6	--	34	12	8.6	1.7	153	18	8.0	.0	2.1	165	134	9	303	7.4	8	6.5	3.3
Aug. 11-20.....	--	--	.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aug. 21-30.....	178	3.8	--	33	13	9.4	1.8	154	19	9.0	.0	2.6	168	136	10	312	7.6	7	5.4	3.2
Sept. 1-10.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sept. 11-20.....	199	4.9	--	35	15	10	2.0	165	22	9.3	.0	2.4	184	149	14	328	7.6	7	5.5	2.9
Sept. 21-31.....	--	--	.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oct. 1-10.....	266	6.5	.16	31	13	12	2.4	147	19	11	--	.0	175	131	11	310	7.4	10	6.9	4.2
Oct. 11-20.....	274	7.2	.13	32	12	8.2	2.2	143	21	8.2	.0	2.1	168	129	12	294	7.6	10	7.9	4.3
Sept. 21-30.....	566	5.7	.24	28	10	6.8	1.8	119	18	7.3	.0	2.5	148	111	14	289	7.5	12	6.5	5.0
Time-weighted average.....	1,430	5.5	0.22	26	10	5.9	1.6	116	16	6.6	0.0	2.1	137	108	13	238	--	7	5.5	3.3

a Includes hardness of all polyvalent cations reported.

HOUSATONIC RIVER BASIN--Continued

HOUSATONIC RIVER AT FALLS VILLAGE, CONN.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

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

HOUSATONIC RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN HOUSATONIC RIVER BASIN IN CONNECTICUT

Chemical analyses, in parts per million, water year October 1955 to September 1956																		
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 on evaporation at 180° C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25° C)	pH	Color
														Total ^a	Non-carbonate			
HOUSATONIC RIVER AT BULLS BRIDGE																		
Nov. 8, 1955	b 6,970							73		2.0				72	12	151	7.2	
Feb. 8, 1956	1,100	5.2	0.29	32	10	8.6	2.4	123		11	0.0	0.6		121	20	255	7.0	3
HOUSATONIC RIVER AT STEVENSON																		
Feb. 8, 1956	446	5.7	0.14	20	6.7	4.4	1.9	80		5.9	0.0	3.4		78	12	186	7.1	5
TEN MILE RIVER NEAR DOVER PLAIN AT WEBB TUCK																		
Feb. 8, 1956	234	4.3	0.10	33	12	4.5	2.4	129		7.7	0.0	4.4		132	26	276	7.5	2
a Includes hardness of all polyvalent cations reported. b Daily mean discharge.																		

^a Includes hardness of all polyvalent cations reported.
^b Daily mean discharge.

HUDSON RIVER BASIN

GLOWEGEE CREEK AT WEST MILTON, N. Y.

LOCATION.--At gaging station at highway bridge, half a mile south of West Milton, Saratoga County, 1½ 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 1956.

EXTREMES, 1955-56.--Hardness: Maximum, 138 ppm Oct. 11-14; minimum, 51 ppm Jan. 10. Specific conductance: Maximum daily, 265 micromhos Oct. 11-14; minimum daily, 132 micromhos Jan. 10.

Water temperatures: Maximum, 79°F June 15, minimum, freezing point on several days during December and January.

EXTREMES, 1953-56.--Hardness: Maximum, 138 ppm Oct. 11-14, 1955; minimum, 47 ppm Feb. 23-24, 1955.

Specific conductance: Maximum daily, 265 micromhos Oct. 11-14, 1955; minimum daily, 104 micromhos Mar. 11-13, 1955.

Water temperatures: Maximum, 81°F July 18, 1953; minimum, freezing point on many days during winter months.

REMARKS.--Records of specific conductance and pH of daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Bicarbonate (HCO ₃)	Chloride (Cl)	Hardness as CaCO ₃		Specific conductance (micromhos at 25°C)	pH	Color
				Total (a)	Non-carbonate			
Oct. 1-6, 8-10, 1955	35	116	5.8	123	28	242	7.6	22
Oct. 7	147	83	4.5	97	29	190	7.5	45
Oct. 11-14	20	134	4.5	138	28	265	7.8	25
Oct. 15-17	407	70	2.5	88	31	156	7.2	45
Oct. 18-19	152	94	3.0	106	29	198	7.7	40
Oct. 20	88	105	3.0	108	22	218	7.9	35
Oct. 21-29	51	110	4.0	116	26	223	7.8	35
Oct. 30-31	371	64	2.0	64	12	144	7.5	35
Nov. 1-10	96	98	2.0	100	20	203	7.8	25
Nov. 11-13	58	102	3.5	104	20	208	7.7	20
Nov. 14	122	77	2.0	82	19	168	7.5	30
Nov. 15-20	76	94	2.0	96	19	193	7.7	25
Nov. 21-30	40	107	4.6	107	19	212	7.4	2
Dec. 1-3, 6-10	34	107	4.8	105	17	213	7.6	3
Dec. 4-5	144	73	3.8	74	14	157	7.5	7
Dec. 11-20	22	114	4.8	108	15	222	8.0	3
Dec. 21-31	16	113	5.0	110	17	224	7.9	3
Jan. 1-9, 1956	13	111	4.3	108	17	216	7.9	3
Jan. 10	114	53	6.1	51	8	132	7.2	5
Jan. 11-14	146	70	4.8	60	3	153	7.5	5
Jan. 15-20	37	105	4.4	103	17	207	7.9	5
Jan. 21-31	15	116	4.5	111	16	224	8.0	3
Feb. 1-10	15	114	4.6	103	10	215	8.0	3
Feb. 11-20	19	108	4.9	100	12	211	8.0	3
Feb. 21-25, 27-29	27	103	4.8	99	15	205	8.0	5
Feb. 26	54	71	5.9	71	13	158	7.5	5
Mar. 1-6, 10	55	92	4.2	88	13	191	7.6	5
Mar. 7-9	151	60	6.4	53	4	133	7.4	7
Mar. 11-15, 17-20	59	99	6.8	92	11	195	7.9	5
Mar. 16	39	112	6.4	112	20	230	7.8	5
Mar. 21-31	34	110	3.6	106	16	221	7.9	12
Apr. 1-4	59	104	4.5	94	9	208	7.7	10
Apr. 5-10	300	68	3.2	69	13	147	7.8	10
Apr. 11-20	218	71	1.9	72	14	148	7.8	11
Apr. 21-30	108	78	2.9	79	15	161	7.7	12
May 1-10	70	92	2.9	86	11	181	7.8	17
May 11-20	40	103	2.6	96	12	198	7.9	17
May 21-31	62	100	2.8	96	14	197	7.6	22
June 1-10	66	116	--	100	5	213	7.9	21
June 11-20	26	122	--	101	1	222	7.8	19
June 21-30	12	122	--	109	9	224	7.9	19
July 1-10	14	126	3.0	115	12	223	7.5	8
July 11-20	19	126	3.0	115	12	222	7.6	12
July 21-31	18	130	3.0	116	9	229	7.9	12
Aug. 1-10	4.8	129	4.3	118	12	235	7.9	5
Aug. 11-20	9.9	124	4.0	111	9	227	7.8	10
Aug. 21-26, 28, 29-31	10	120	4.8	113	15	229	8.0	4
Sept. 1-10	11	124	4.3	117	15	234	8.0	3
Sept. 11-20	27	116	4.1	111	16	225	8.0	3
Sept. 21-30	22	124	4.4	121	19	241	8.0	5
Average	75	101	4.0	98	15	202	--	14

a By compleximetric titration.

HUDSON RIVER BASIN--Continued
 GLOWEGEE CREEK AT WEST MILTON, N. Y.--Continued
 Temperature (°F) of water, water year October 1955 to September 1956
 (Recorder with temperature attachment)⁷

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	
1.....	58	56	50	48	34	33	34	33	34	33	35	33	41	35	52	45	64	60	76	65	69	63	70	67
2.....	56	53	48	46	33	33	34	33	34	33	34	33	38	35	50	46	60	57	75	71	68	63	71	69
3.....	56	52	47	47	33	33	33	33	34	33	33	33	37	36	54	46	61	57	76	68	67	61	70	64
4.....	56	51	47	46	36	32	34	33	35	34	33	33	36	36	52	48	62	58	73	67	68	63	71	63
5.....	56	54	46	45	36	35	33	33	34	33	35	34	37	34	45	62	58	70	63	68	64	72	64	64
6.....	56	54	45	45	35	34	34	33	34	33	34	34	37	33	52	48	64	58	63	61	68	67	70	66
7.....	56	54	45	44	35	33	34	33	33	34	33	34	36	34	55	48	66	59	67	61	69	66	68	64
8.....	58	57	45	43	34	32	34	33	33	34	33	34	36	35	54	46	70	60	71	64	69	66	64	61
9.....	57	54	42	40	34	33	34	33	33	33	34	34	39	35	53	46	67	61	76	69	69	67	62	58
10.....	57	54	41	40	33	32	35	32	34	33	35	34	38	35	51	61	59	74	70	68	60	54	54	54
11.....	61	57	42	41	34	32	34	33	34	33	35	34	39	35	54	48	63	57	76	67	70	68	59	57
12.....	61	57	43	42	34	32	33	33	33	33	35	34	40	35	60	52	68	58	72	67	69	67	62	59
13.....	58	55	43	42	33	32	33	33	34	33	35	34	39	36	65	58	72	65	69	65	69	65	63	59
14.....	56	55	44	43	33	33	34	33	34	33	35	34	41	36	62	58	76	68	71	65	74	67	62	63
15.....	56	56	44	42	34	33	34	33	34	33	36	34	39	38	62	54	79	70	72	66	71	67	64	59
16.....	55	51	43	41	34	32	34	34	34	33	36	34	43	40	60	52	74	70	69	67	72	64	59	57
17.....	51	50	43	40	34	32	34	34	34	33	35	34	42	40	53	48	72	66	69	63	77	67	62	59
18.....	51	51	39	37	34	32	34	33	34	33	36	34	42	40	54	50	70	62	72	62	72	70	63	59
19.....	52	51	38	37	34	33	35	34	33	33	35	35	e42	40	52	49	68	58	73	62	72	69	65	63
20.....	53	51	37	35	34	33	35	34	33	33	36	33	e42	40	56	47	69	61	69	65	69	65	64	59
21.....	52	51	37	36	34	34	34	33	35	33	35	33	44	42	61	51	67	64	68	62	66	63	58	56
22.....	51	47	37	35	34	34	34	33	34	33	34	35	47	42	64	56	75	65	66	62	67	59	57	56
23.....	47	44	37	35	34	34	34	33	34	33	37	34	44	42	64	54	71	66	69	64	67	62	57	53
24.....	48	45	38	37	34	33	34	33	35	33	36	34	43	40	56	49	73	65	72	66	68	64	56	53
25.....	48	45	37	37	33	32	34	33	35	33	36	34	46	40	59	49	75	68	71	67	68	61	57	55
26.....	45	43	37	34	34	33	34	33	35	34	38	36	46	42	58	52	75	65	71	66	68	59	55	51
27.....	46	44	37	34	34	33	34	33	34	33	39	35	46	41	56	53	70	65	72	66	68	63	52	51
28.....	46	44	36	35	33	32	34	33	34	34	38	36	54	45	54	52	70	65	75	68	68	64	53	50
29.....	49	45	37	34	34	33	34	33	35	34	37	35	53	48	60	50	70	65	71	65	68	67	56	54
30.....	50	49	34	33	33	33	33	33	--	--	37	35	50	48	60	54	72	62	68	62	67	65	54	51
31.....	51	50	--	--	33	33	34	33	--	--	37	35	--	--	65	56	--	--	69	61	67	65	--	--
Average.....	53	51	41	40	34	33	34	33	35	34	35	34	42	39	57	50	69	62	71	65	69	65	61	57

e Estimated.

HUDSON RIVER BASIN--Continued

KAYADEROSERAS CREEK NEAR WEST MILTON, N. Y.

LOCATION.--Temperature recorder at gaging station, 500 feet downstream from Glowegee Creek, 1 mile east of West Milton, Saratoga County, and 3½ miles northwest of Ballston Spa.

DRAINAGE AREA.--90 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1955.

Water temperatures: October 1952 to September 1956.

Sediment records: February 1953 to June 1955.

EXTREMES, 1955-56.--Water temperatures: Maximum, 76°F Aug. 17; minimum, freezing point many days during December, January, February and March.

EXTREMES, 1952-56.--Water temperatures: Maximum, 83°F July 1955; minimum, freezing point many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment/

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.....	58	55	51	49	53	32	32	32	32	32	33	32	41	35	48	45	61	59	69	61	69	62	69	65
2.....	56	52	49	48	53	32	32	32	32	32	33	32	39	35	48	46	59	55	70	66	69	62	70	68
3.....	55	50	48	48	53	33	33	33	33	32	33	33	38	37	50	46	58	55	69	65	68	60	70	65
4.....	55	50	48	47	56	34	33	33	33	33	33	33	37	36	49	47	60	57	68	64	70	62	69	64
5.....	55	54	47	46	54	34	33	33	33	32	33	33	37	34	50	44	60	57	65	60	70	63	71	65
6.....	55	53	46	45	54	33	33	33	32	32	33	33	37	34	49	47	62	56	60	58	69	66	68	66
7.....	55	53	45	44	53	33	33	33	32	32	33	33	36	34	47	45	61	57	63	57	72	64	68	64
8.....	57	55	44	43	53	33	33	33	32	32	34	34	35	34	46	44	66	59	68	60	72	65	65	61
9.....	56	53	43	42	53	33	33	33	32	32	34	34	35	34	50	46	64	60	69	65	73	66	62	57
10.....	52	42	40	33	52	32	32	32	32	32	34	34	38	35	50	49	60	58	69	65	73	69	60	54
11.....	59	55	42	41	52	32	32	32	32	32	34	34	39	34	51	46	60	56	70	65	73	67	59	56
12.....	59	55	44	42	52	32	32	32	32	32	35	34	39	34	56	49	65	56	68	65	71	67	62	57
13.....	56	54	44	43	52	32	32	32	32	32	36	35	38	34	61	55	69	63	65	63	68	64	64	59
14.....	55	54	45	44	52	32	32	32	32	32	36	34	39	35	60	56	72	65	66	62	71	66	65	62
15.....	55	55	45	43	52	32	32	32	32	32	36	34	39	37	58	53	74	66	68	63	72	67	62	58
16.....	55	50	43	42	52	32	32	32	32	32	35	34	40	37	57	51	70	67	65	63	72	64	58	56
17.....	50	50	42	40	52	32	32	32	32	32	34	33	39	37	51	48	69	64	66	61	76	67	56	55
18.....	50	50	40	38	52	32	32	32	32	32	34	33	39	38	51	48	64	60	67	60	74	69	57	55
19.....	51	50	38	37	52	32	32	32	32	32	34	34	41	38	50	46	64	58	69	61	73	69	55	52
20.....	52	50	37	36	52	32	32	32	32	32	34	33	40	38	53	46	63	56	66	64	69	66	56	54
21.....	51	50	37	36	52	32	32	32	32	32	34	33	41	38	57	49	60	59	64	61	87	63	54	51
22.....	51	47	37	36	52	32	32	32	32	32	36	33	44	40	60	54	67	59	64	60	85	59	54	50
23.....	47	44	37	36	52	32	32	32	32	32	38	33	44	41	60	52	65	62	67	62	87	63	53	53
24.....	48	45	39	37	52	32	32	32	32	32	36	34	42	40	52	48	67	61	69	64	87	64	56	53
25.....	48	45	38	37	52	32	32	32	32	32	36	34	44	39	54	47	70	63	69	65	87	62	52	52
26.....	45	43	37	35	52	32	32	32	32	32	38	34	44	41	54	49	70	62	69	64	87	60	53	50
27.....	46	44	35	34	52	32	32	32	32	32	39	34	44	36	54	51	66	62	69	64	89	63	51	50
28.....	46	44	36	34	52	32	32	32	32	32	39	34	50	47	56	49	64	60	72	66	71	64	51	48
29.....	48	46	36	34	52	32	32	32	32	32	37	34	50	47	56	49	64	60	69	65	70	66	53	48
30.....	49	46	33	32	52	32	32	32	32	32	36	34	49	47	56	53	66	66	61	68	65	52	50	50
31.....	49	49	---	---	52	32	32	32	32	32	37	35	---	---	62	54	---	---	67	60	67	65	---	---
Average.....	53	50	42	40	53	32	33	33	32	32	35	34	41	38	54	49	65	60	67	63	70	64	60	57

HUDSON RIVER BASIN--Continued

HUDSON RIVER AT MECHANICVILLE, N. Y.

LOCATION.--At west shore of Hudson River at West Virginia Pulp & Paper Co., Mechanicville, N. Y.

DRAINAGE AREA.--4,500 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1954 to July 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 72°F June 25 and several days during July, minimum, freezing point on many days during December, January and February.

EXTREMES, 1947-56.--Water temperatures: Maximum, 82°F July 1-2, 1953, Aug. 5-7, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Plant not in operation from July 26 to September 30. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Temperature (°F) of water, October 1955 to July 1956
/Once-daily measurement at approximately 8 a. m./

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

HUDSON RIVER BASIN--Continued

MOHAWK RIVER AT VISCHER FERRY DAM, N. Y.

LOCATION.--At bridge crossing headrace of Vischer Ferry Power Plant operated by N. Y. 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 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 79° F Aug. 12, 17; minimum, freezing point on several days during December and January.

EXTREMES, 1951-56.--Water temperatures: Maximum, 85° F Aug. 5, 1955; minimum, freezing point on many days during winter months.

Temperature (°F) of water, water year October 1955 to September 1956

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

HUDSON RIVER BASIN--Continued

MOHAWK RIVER AT COHOES, N. Y.

LOCATION.--On Route 4 highway bridge, 1,200 feet downstream from gaging station at Cohoes, Albany County.

DRAINAGE AREA.--3,456 square miles.

RECORDS AVAILABLE.--Water temperatures: May to September 1956.

Sediment records: January 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 76°F July 16.

Sediment concentrations: Maximum daily, 1,234 ppm, Oct. 17; minimum daily, 1.0 ppm Jan. 6.

Sediment loads: Maximum daily, 300,000 tons, Oct. 17; minimum daily, 1.5 tons, Aug. 12.

EXTREMES, 1954-56.--Sediment concentrations: Maximum daily, 1,234 ppm, Oct. 17, 1955; minimum daily, 1.0 ppm July 18, 1954 and Jan. 6, 1956.

Sediment loads: Maximum daily 300,000 tons Oct. 17, 1955; minimum daily, 0.8 ton Aug. 7, 1955.

REMARKS.--Records of specific conductance and pH of daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Temperature (°F) of water, May to September 1956
/Once-daily measurement/

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

HUDSON RIVER BASIN--Continued

MOHAWK RIVER AT COHOES, N. Y.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day
1.....	1,010	14	38	21,600	146	8,510	4,330	9	105
2.....	1,150	13	40	12,100	110	3,590	4,270	6	69
3.....	1,590	12	52	8,770	75	1,780	4,410	6	71
4.....	1,310	12	42	11,000	70	2,080	6,370	7	120
5.....	1,460	12	47	12,200	49	1,610	17,000	14	643
6.....	2,390	18	116	10,400	34	955	11,400	16	492
7.....	9,030	26	634	7,750	24	502	6,870	19	352
8.....	8,610	26	604	8,380	27	611	5,290	20	286
9.....	5,890	24	388	6,460	27	471	4,640	18	226
10.....	4,360	18	212	6,540	25	441	5,000	16	216
11.....	3,370	16	146	6,780	22	403	4,370	13	153
12.....	3,250	15	132	7,540	19	387	6,670	12	216
13.....	3,150	18	153	7,000	22	416	7,580	8	164
14.....	2,620	28	198	9,910	20	535	6,510	8	141
15.....	6,350	26	446	17,300	31	1,450	8,760	7	166
16.....	59,500	353	s 66,600	12,500	30	1,010	4,660	6	75
17.....	87,500	1,234	s 300,000	15,000	43	1,740	4,870	6	79
18.....	36,500	358	35,300	11,900	36	1,160	4,380	6	71
19.....	17,100	170	7,850	8,070	28	610	3,880	14	147
20.....	10,600	120	3,430	8,620	24	559	3,240	11	96
21.....	7,880	90	1,910	7,100	21	403	2,550	16	110
22.....	5,160	70	975	6,280	19	322	3,090	9	75
23.....	5,460	50	737	6,520	15	264	2,540	7	48
24.....	5,650	45	686	6,930	12	225	2,030	7	38
25.....	5,720	42	649	10,500	13	369	3,550	5	48
26.....	7,300	50	986	7,130	10	193	3,660	10	99
27.....	8,250	44	980	6,050	11	180	3,690	6	60
28.....	6,190	38	635	5,100	9	124	3,530	7	67
29.....	4,390	24	284	5,060	8	109	3,570	7	67
30.....	9,430	35	891	4,980	10	134	3,480	4	38
31.....	29,800	84	6,760	--	--	--	2,740	5	37
Total.	361,970	--	431,921	275,470	--	31,143	158,930	--	4,575
Day	January			February			March		
	Mean dis-charge (cfs)	Mean concen-tration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concen-tration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concen-tration (ppm)	Tons per day
1.....	2,640	6	43	2,490	5	34	4,580	16	198
2.....	2,790	8	60	2,350	5	32	4,330	13	152
3.....	2,920	8	63	2,470	4	27	4,790	10	129
4.....	2,610	8	56	2,150	6	35	8,810	16	381
5.....	2,490	4	27	1,520	11	45	10,500	17	482
6.....	2,820	1	7.6	2,290	8	49	8,550	28	646
7.....	2,630	4	28	2,700	7	51	12,600	33	1,120
8.....	2,360	7	45	3,500	5	47	28,500	116	e 9,240
9.....	2,460	2	13	2,780	6	45	28,700	153	e 12,000
10.....	3,050	5	41	2,300	6	37	20,100	85	4,610
11.....	3,420	8	74	2,620	6	42	15,600	51	2,150
12.....	10,400	15	421	2,700	11	80	16,200	35	1,530
13.....	14,100	36	1,370	2,890	8	62	15,800	42	1,790
14.....	8,990	28	680	2,790	6	45	13,500	38	1,390
15.....	6,150	27	448	2,920	4	32	11,200	20	605
16.....	5,110	24	331	3,000	8	65	8,980	14	339
17.....	4,580	28	s 353	3,020	8	65	7,240	16	313
18.....	4,050	9	98	3,340	5	45	6,580	11	195
19.....	3,610	6	58	2,700	6	44	7,270	7	137
20.....	3,480	5	47	2,730	5	37	6,740	4	73
21.....	3,170	4	34	2,850	5	38	6,460	6	105
22.....	2,620	2	14	2,870	11	85	6,150	6	100
23.....	2,620	4	28	2,470	2	13	6,090	7	115
24.....	2,940	2	16	2,090	2	11	5,970	6	97
25.....	2,520	2	14	2,630	7	50	5,540	7	105
26.....	2,470	4	27	3,360	6	54	5,020	4	54
27.....	2,470	4	27	4,800	8	104	5,450	6	88
28.....	1,880	7	36	6,470	8	140	5,150	6	83
29.....	2,050	2	11	5,550	10	150	4,810	8	104
30.....	2,410	2	13	--	--	--	4,810	5	85
31.....	2,210	3	18	--	--	--	7,740	3	88
Total.	118,020	--	4,501.6	86,350	--	1,564	300,760	--	38,434

e Estimated.

s Computed by subdividing day.

HUDSON RIVER BASIN--Continued

MOHAWK RIVER AT COHOES, N. Y.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	4,560	5	62	29,300	136	10,800	27,800	32	2,400
2.....	4,740	8	77	17,600	65	3,090	20,100	44	2,390
3.....	7,410	10	200	17,500	42	1,980	18,000	47	2,030
4.....	13,300	16	575	14,200	37	1,420	12,200	34	1,120
5.....	46,300	209	s32,000	14,600	33	1,300	9,930	33	885
6.....	68,500	563	s105,000	13,500	29	1,060	6,060	24	393
7.....	59,800	368	59,400	12,800	28	953	5,340	18	260
8.....	41,800	89	21,300	11,300	29	885	4,240	20	229
9.....	25,700	75	5,200	9,490	32	820	4,920	24	319
10.....	23,000	46	2,860	8,300	36	807	2,380	25	161
11.....	27,300	58	4,280	11,300	29	885	3,300	25	223
12.....	32,100	86	7,450	9,860	24	639	4,710	22	280
13.....	32,400	88	7,700	9,030	24	585	2,720	15	110
14.....	25,600	75	5,180	9,600	27	700	2,420	14	91
15.....	24,800	45	3,010	8,300	28	627	3,180	10	86
16.....	29,400	60	4,760	8,390	36	816	2,330	12	75
17.....	47,400	208	26,600	8,980	40	970	2,170	16	94
18.....	34,300	147	13,600	9,020	36	877	2,380	20	129
19.....	23,100	50	3,120	7,370	41	816	2,310	22	137
20.....	17,200	29	1,350	5,490	39	578	2,120	16	92
21.....	10,200	24	661	5,810	48	753	2,120	28	160
22.....	12,000	26	842	4,890	46	607	1,380	20	75
23.....	13,300	23	826	3,860	36	375	564	12	18
24.....	12,200	24	791	5,430	35	513	1,090	10	29
25.....	11,600	26	814	4,700	34	431	1,620	20	87
26.....	10,100	27	736	4,350	24	282	1,990	20	107
27.....	11,100	24	719	3,850	32	333	2,240	20	121
28.....	11,300	22	671	5,160	36	502	2,110	22	125
29.....	21,600	23	1,340	5,370	30	435	2,350	27	171
30.....	41,900	158	17,900	9,650	27	703	870	20	47
31.....	--	--	--	20,800	32	1,800	--	--	--
Total.	744,010	--	329,024	309,600	--	37,342	152,944	--	12,444
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.....	1,190	20	64	1,600	16	69	3,480	25	235
2.....	1,820	26	128	1,400	14	53	3,970	21	225
3.....	1,440	22	86	1,040	16	45	3,090	21	175
4.....	1,060	17	49	850	8	18	2,410	18	117
5.....	1,830	24	119	88	7	1.7	2,380	15	96
6.....	1,640	26	115	2,010	10	54	1,780	17	82
7.....	2,090	24	135	1,350	10	36	1,830	22	109
8.....	1,610	21	91	1,290	9	31	2,210	22	131
9.....	2,160	23	134	1,200	9	29	1,670	18	81
10.....	2,380	25	161	1,140	8	25	1,770	20	96
11.....	2,070	18	101	526	10	14	1,870	20	101
12.....	1,810	16	78	93	6	1.5	1,770	18	86
13.....	1,900	13	67	1,300	6	21	1,850	20	100
14.....	2,500	20	135	1,360	9	33	1,970	22	117
15.....	3,320	17	152	1,410	11	42	2,170	22	129
16.....	2,600	14	98	1,230	16	53	1,630	19	84
17.....	2,540	14	96	1,140	16	49	2,710	23	168
18.....	1,760	13	62	500	10	14	4,020	32	347
19.....	1,640	12	53	171	10	4.6	4,120	23	256
20.....	1,830	12	59	1,430	16	62	3,410	24	221
21.....	1,740	12	56	1,500	16	65	6,430	20	347
22.....	1,040	8	22	1,810	13	64	3,850	23	239
23.....	2,030	10	55	1,310	14	50	3,930	18	191
24.....	1,820	8	39	1,600	18	78	4,120	20	222
25.....	2,170	8	47	1,410	16	61	5,220	26	366
26.....	1,990	10	54	106	14	4.0	4,300	24	279
27.....	1,910	10	52	1,450	22	86	3,630	19	166
28.....	2,080	14	79	1,440	20	78	3,920	22	233
29.....	1,200	11	36	1,290	14	49	3,540	16	153
30.....	1,710	14	65	1,150	14	43	2,800	16	121
31.....	1,720	16	74	1,300	17	60	--	--	--
Total.	58,800	--	2,562	35,494	--	1,293.8	91,850	--	5,298
Total discharge for year (cfs days).....									2,693,998
Total load for year (tons).....									900,097.4

s Computed by subdividing day.

HUDSON RIVER BASIN--Continued
MOHAWK RIVER AT COHOES, N. Y.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment										Methods of analysis			
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, 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. 16, 1955 a.	--	--	--	597	5,060	26	40	52	65	71	76	77	79	82	86	93	SECMAW
Oct. 16 a.	--	--	--	682	2,520	22	35	53	62	71	76	80	83	83	86	91	SECMAW
Oct. 16.	10:50 p. m.	94,700	--	676	866	30	55	70	83	91	94	94	97	98	99	100	SECMAW
Oct. 17.	2:30 a. m.	94,300	--	1,190	1,450	32	54	66	79	90	94	97	99	99	100	--	SECMAW
Oct. 17.	9:00 a. m.	98,700	--	1,162	221	66	82	89	92	96	98	99	100	100	--	--	SECMAW
Oct. 17.	10:35 a. m.	95,400	--	1,430	2,860	26	43	64	80	88	95	98	99	100	--	--	SECMAW
Oct. 17.	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	SECMAW
Oct. 17.	1:15 p. m.	90,300	--	1,330	1,820	28	48	61	73	84	92	98	99	99	100	--	SECMAW
Oct. 17.	3:15 p. m.	87,300	--	1,110	1,480	24	54	63	77	84	93	98	99	99	100	--	SECMAW
Oct. 17.	3:40 p. m.	86,300	--	999	1,360	31	51	64	70	83	91	95	97	100	--	--	SECMAW
Oct. 17 a.	--	--	--	1,530	12,900	24	42	59	70	83	90	94	95	96	97	99	SECMAW
Oct. 18.	2:00 a. m.	55,400	--	--	683	27	54	63	70	81	92	96	97	98	100	--	SECMAW
Oct. 18.	9:45 a. m.	40,600	--	--	492	39	58	77	87	94	97	99	100	--	--	--	SECMAW
Apr. 6, 1956 a.	--	--	--	483	6,850	16	34	52	70	82	98	99	100	--	--	--	SECMAW
Apr. 6 a.	--	--	--	586	1,150	18	32	53	68	81	97	99	100	--	--	--	SECMAW
Apr. 7.	2:20 p. m.	60,800	--	295	1,710	17	37	56	73	86	97	99	100	--	--	--	SECMAW
Apr. 7.	11:05 p. m.	51,100	--	246	2,030	20	27	53	74	87	96	98	99	100	--	--	SECMAW
Apr. 12 a.	--	--	--	80	302	22	39	52	68	77	97	99	100	--	--	--	SECMAW
Apr. 17.	11:30 a. m.	52,200	61	108	528	18	29	55	75	85	96	98	99	100	--	--	SECMAW
June 1 a.	--	--	61	29	475	27	37	53	62	70	95	98	99	100	--	--	SECMAW

a Composites samples.

HUDSON RIVER BASIN

HUDSON RIVER AT GREEN ISLAND, N. Y.

LOCATION.--At east shore of Green Island, Albany County, at Ford Motors Co., powerplant, opposite Troy barge locks.

DRAINAGE AREA.--8,090 square miles, approximately above gaging station (including that above site of auxiliary gage).

RECORDS AVAILABLE.--Water temperatures: October 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 77°F Aug. 10-11; minimum, 33°F on many days during December, January, February and March.

EXTREMES, 1947-56.--Water temperatures: Maximum, 84°F Aug. 8-9, 1949; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Temperature (°F) of water, water year October 1955 to September 1956

(Once-daily measurement at approximately 8 a. m.)

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

HUDSON RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN HUDSON RIVER BASIN IN NEW YORK
Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Total ^a	Non-carbonate			

WEST CANADA CREEK AT KAST BRIDGE

Sept. 11, 1956	1,040	4.0	0.18	15	1.3	1.1	0.5	44	7.4	0.8	0.1	0.7	61	43	7	93.9	6.8	22
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EAST CANADA CREEK NEAR ST. JOHNSVILLE

Sept. 11, 1956		5.2	0.06	14	2.9	1.5	0.6	52	6.7	1.4	0.1	0.7	64	47	4	104	6.6	10
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SCHOBARIE CREEK AT FORT HUNTER

Sept. 11, 1956		2.1	0.04	40	5.8	6.6	1.9	125	30	7.2	0.0	0.2	162	124	21	285	7.6	3
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^a Includes hardness of all polyvalent cations reported.

RARITAN RIVER BASIN

STONY BROOK AT PRINCETON, N. J.

LOCATION.--At gaging station at Lawrenceville road bridge on U. S. Highway 206, 4 miles upstream from Carnegie Lake, and 1.6 miles southwest of Princeton, Mercer County.

DRAINAGE AREA.--44.5 square miles.

RECORDS AVAILABLE.--Sediment records: January to September 1956.

EXTREMES, January to September 1956.--Sediment concentrations: Maximum daily, 427 ppm Mar. 14; minimum daily, 0 ppm on several days in September.

Sediment loads: Maximum daily, 1,880 tons Mar. 14; minimum daily, 0 tons on several days in September.

REMARKS.--Station established January 1956 as an index station for the Stony Brook Watershed project. Records of discharge for January to September 1956 available in Basic Records Section, Branch of Surface Water, Washington, D. C. Flow affected by ice Jan. 30, 31, Feb. 1, Mar. 18-20.

Suspended sediment, January to September 1956

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.....	--	--	--	50	10	1.4	78	6	1.3
2.....	--	--	--	352	149	s 340	82	2	.4
3.....	--	--	--	214	60	s 47	80	2	.4
4.....	--	--	--	110	12	3.6	74	4	.8
5.....	--	--	--	157	20	8.5	57	2	.3
6.....	--	--	--	337	92	s 194	60	2	.3
7.....	--	--	--	567	113	s 230	133	15	5.4
8.....	--	--	--	146	18	7.1	660	421	s 836
9.....	--	--	--	110	14	4.2	212	41	s 31
10.....	--	--	--	96	7	1.8	118	7	2.2
11.....	--	--	--	122	34	s 18	94	5	1.3
12.....	--	--	--	204	41	s 27	84	3	.7
13.....	--	--	--	108	10	2.9	78	5	1.1
14.....	--	--	--	76	5	1.0	872	427	s 1,880
15.....	--	--	--	80	7	1.5	251	40	27
16.....	--	--	--	78	5	1.1	147	10	4.0
17.....	--	--	--	60	3	.5	126	8	2.7
18.....	--	--	--	812	246	s 903	100	8	2.2
19.....	--	--	--	254	25	s 22	80	15	3.2
20.....	--	--	--	135	10	3.6	130	10	3.5
21.....	--	--	--	94	10	2.5	92	4	1.0
22.....	--	--	--	64	12	2.1	114	7	2.2
23.....	--	--	--	50	30	s 4.4	220	27	s 23
24.....	--	--	--	43	12	1.4	299	25	s 22
25.....	15	--	--	107	19	s 8.3	175	4	1.9
26.....	14	4	0.1	139	70	s 31	276	38	s 49
27.....	12			76	25	5.1	378	44	s 58
28.....	11			328	93	s 107	228	15	9.2
29.....	12			132	14	5.0	204	12	s 8.7
30.....	240	--	a 98	--	--	--	300	37	s 33
31.....	140	--	a 17	--	--	--	185	15	7.5
Total.	444	--	115.5	5,101	--	1,985.0	5,987	--	3,019.3

s Computed by subdividing day.

a Computed from estimated concentration graph.

RARITAN RIVER BASIN--Continued

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

Suspended sediment, January to September 1956--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.....	129	2	0.7	22	7	0.4	11	4	0.1
2.....	106	4	1.2	21	6	.3	33	26	s 4.8
3.....	88	1	.2	31	7	.6	231	72	s 56
4.....	78	1	.2	30	9	.7	50	11	1.5
5.....	68	2	.4	26	5	.4	27	5	.4
6.....	55	2	.3	31	12	s 2.1	18	4	.2
7.....	257	44	s 38	522	249	s 539	14	5	.2
8.....	809	141	s 317	110	13	3.9	12	4	.1
9.....	514	76	s 139	66	4	.7	9.4	4	.1
10.....	255	53	s 45	54	4	.6	12	--	a .3
11.....	141	15	5.7	44	2	.2	15	16	.6
12.....	106	22	6.3	38	3	.3	10	6	.2
13.....	82	35	7.7	37	2	.2	7.2	5	.1
14.....	70	9	1.7	33	2	.2	6.0	5	.1
15.....	73	10	2.0	26	2	.1	5.0	4	.1
16.....	154	30	s 13	23	2	.1	4.5	4	(t)
17.....	88	9	2.1	20	2	.1	4.0	4	(t)
18.....	63	7	1.2	18	1	(t)	4.0	2	(t)
19.....	54	12	1.7	17	3	.1	4.0		
20.....	47	5	.6	24	4	.3	3.8		
21.....	42	3	.3	17	2	.1	4.2	4	.1
22.....	38	4	.4	15	2	.1	6.6		
23.....	38	5	.5	16	4	.2	5.2		
24.....	34	2	.2	13	2	.1	11	5	.1
25.....	30	2	.2	9.8	1	(t)	11		
26.....	38	18	1.8	8.6	1	(t)	5.7		
27.....	42	12	1.4	11	2	.1	3.8	2	(t)
28.....	34	9	.8	12	2	.1	3.4		
29.....	30	6	.5	9.0	1	(t)	4.5		
30.....	26	8	.6	7.9	1	(t)	4.0	4	(t)
31.....	--	--	--	8.6	2	(t)	--	--	--
Total.	3,591	--	590.7	1,320.9	--	551.2	540.3	--	65.6

Day	July			August			September		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	2.7	1	(t)	1.7			1.4	4	(t)
2.....	2.1	1	(t)	1.7			1.4		
3.....	2.4	1	(t)	1.5	2	(t)	1.7	2	(t)
4.....	2.0	2	(t)	1.5			3.4		
5.....	4.2	6	.1	1.6			3.4		
6.....	6.3	2	(t)	4.6			2.5	3	(t)
7.....	6.0			4.5	5	(t)	2.1		
8.....	4.5			1.8			1.2		
9.....	9.0	2	(t)	1.5			.91	0	0
10.....	14			1.3			.77		
11.....	6.6			1.2	4	(t)	.77		
12.....	3.8			1.1			.77	1	(t)
13.....	2.9	2	(t)	1.4			.77		
14.....	2.7			1.4			.70		
15.....	2.2			.99	4	(t)	.70		
16.....	2.2	2	(t)	.91			1.2	0	0
17.....	2.1			.91			5.2	28	s 1.4
18.....	1.8			.84	2	(t)	3.1	47	s .4
19.....	1.7	2	(t)	.70			1.1	8	(t)
20.....	1.7			1.0	7	(t)	.99		
21.....	37	31	s 4.1	12	18	s .7	1.1	1	(t)
22.....	24	10	s .8	2.2			.99		
23.....	8.3	2	(t)	2.0	2	(t)	.91		
24.....	5.7	1	(t)	2.4			1.9	1	(t)
25.....	4.5	1	(t)	2.0			2.0		
26.....	3.2			1.6			1.4		
27.....	3.8	2	(t)	1.5	3	(t)	1.3	0	0
28.....	2.9			1.3			1.7		
29.....	2.4			1.8			1.7	0	0
30.....	2.1	2	(t)	1.4	4	(t)	1.5		
31.....	2.0			1.4			--	--	--
Total.	176.8	--	5.6	61.75	--	1.2	48.58	--	2.0

Total discharge January to September 1956 17,359.33
 Total load January to September 1956 6,336.1

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

RARITAN RIVER BASIN--Continued

DELAWARE & RARITAN CANAL AT TRENTON, N. J.

LOCATION.--At Rose Street and Holland Avenue.

DRAINAGE AREA.--120 square miles.

RECORDS AVAILABLE --Chemical analyses: February to September 1956.

REMARKS.--Diversion of Delaware River.

Chemical analyses, in parts per million, February to September 1956

Date of collection	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH
								Calcium, mag- nesium	Non- carbon- ate		
Feb. 21-29, 1956	2.2		25	19	5.0	0.1	7.6	49	28	142	7.4
Mar. 1-10	4.9		27	30	5.5	.1	4.1	54	32	148	7.3
Mar. 11-20	1.1		20	29	5.0	.1	4.6	50	16	140	7.1
Mar. 21-31	5.5		27	32	5.0	.2	4.8	55	33	153	7.3
Apr. 1-10	4.9		29	30	4.5	.1	6.3	56	32	149	7.4
Apr. 11-20	6.2		25	28	4.0	.1	7.3	48	26	136	7.3
Apr. 21-29	3.4		35	21	5.0	.1	4.3	54	25	130	7.3
Apr. 30-May 9	5.3		27	20	4.0	.1	3.4	40	18	109	7.1
May 10-19	4.3		30	23	4.0	.1	3.4	48	23	124	7.3
May 20-31	3.2		37	20	5.0	.1	3.1	54	24	131	7.5
June 1-10	3.9		36	19	4.5	.1	3.3	50	20	126	7.5
June 11-20	6.2		48	19	5.5	.1	3.0	56	17	143	7.7
June 21-30	4.2		54	23	6.5	.1	3.2	71	27	170	7.2
July 1-10	3.8		62	20	4.0	.1	3.5	72	21	183	7.5
July 11-20	1.2		48	21	4.5	.1	3.5	68	29	158	7.4
July 21-31	6.5		52	24	5.6	.1	3.0	64	21	165	7.5
Aug. 1-10	6.2		58	25	6.5	.1	3.2	72	24	177	7.4
Aug. 11-20	7.7		59	27	8.1	.1	3.2	74	23	189	7.3
Aug. 21-31	7.2		58	26	8.2	.1	4.1	74	26	187	7.5
Sept. 1-10	7.2		58	25	6.6	.1	4.3	71	23	187	7.2
Sept. 11-20	11		61	24	5.8	.1	3.4	63	24	166	7.2
Sept. 21-30	6.5		44	22	6.4	.1	2.5	56	20	148	7.3

RARITAN RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN RARITAN RIVER BASIN IN NEW JERSEY

Chemical analyses, in parts per million, water year October 1955 to September 1956

Chemical analyses, in parts per million, water year October 1955 to September 1956										
Date of collection	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH
							Calcium, mag- nesium	Non- carbon- ate		
DELAWARE & RARITAN CANAL AT BULLS ISLAND										
Nov. 2, 1955	2.8	18	14	2.0	1.1	27	12	76	7.0	
DELAWARE & RARITAN CANAL AT RAVEN ROCK										
Nov. 2, 1955	4.0	18	15	2.5	1.1	26	11	72	6.9	
DELAWARE & RARITAN CANAL AT LOCKATONG CREEK										
Nov. 2, 1955	9.1	26	36	7.0	2.8	51	30	153	7.0	
DELAWARE & RARITAN CANAL AT PRALLSVILLE										
Nov. 2, 1955	4.9	20	18	3.5	3.2	32	16	85	7.0	
DELAWARE & RARITAN CANAL AT LAMBERTVILLE										
Nov. 2, 1955	5.0	20	18	3.0	3.0	31	15	86	6.9	
DELAWARE & RARITAN CANAL AT SCUDDERS FALLS										
Nov. 2, 1955	5.6	27	24	4.5	4.5	45	23	122	7.0	
DELAWARE & RARITAN CANAL NEAR WEST TRENTON										
Nov. 2, 1955	8.5	32	30	6.5	4.7	52	26	149	7.2	
DELAWARE & RARITAN CANAL AT TRENTON										
Nov. 2, 1955 (Willow Street) ..	10	31	33	7.5	4.7	52	27	165	7.0	
Nov. 2 (Rose Street)	9.5	29	32	7.5	5.1	51	27	165	6.9	
Nov. 2 (Mulberry Street)	12	31	34	8.0	6.7	52	27	165	7.0	
DELAWARE & RARITAN CANAL AT PORT MERCER										
Nov. 2, 1955	8.5	32	34	6.5	5.9	57	31	161	6.9	
DELAWARE & RARITAN CANAL AT KINGSTON										
Nov. 2, 1955	6.9	24	29	6.5	5.0	48	28	136	6.6	
DELAWARE & RARITAN CANAL AT ROCKY HILL										
Nov. 2, 1955	7.1	29	28	6.5	5.4	51	27	141	6.8	
DELAWARE & RARITAN CANAL AT WESTON MILLS										
Nov. 2, 1955	7.3	27	29	5.5	5.9	49	27	136	6.9	
DELAWARE & RARITAN CANAL NEAR NEW BRUNSWICK										
Nov. 2, 1955 (5 mile lock) ...	8.0	28	32	7.0	5.4	53	30	155	6.9	
DELAWARE & RARITAN CANAL AT NEW BRUNSWICK										
Nov. 2, 1955	8.7	24	35	6.5	5.8	51	31	148	6.9	

DELAWARE RIVER BASIN

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

LOCATION.--At Calhoun Street Bridge, Bucks County, Pennsylvania side, 200 feet downstream from gaging station, which is half a mile upstream from Assumpink Creek. Chemical-quality samples collected at Morrisville Filter Plant; sediment samples normally collected at midstream from bridge.

DRAINAGE AREA.--6,780 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1944 to September 1956.

Water temperatures: October 1944 to January 1955, December 1955 to September 1956.

Sediment records: September 1949 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 137 ppm Aug. 21-31; minimum, 55 ppm Nov. 1-10.

Hardness: Maximum, 89 ppm Aug. 21-31; minimum, 30 ppm Oct. 11-20.

Specific conductance: Maximum daily, 370 micromhos Aug. 1; minimum daily, 70 micromhos May 2.

Sediment concentrations: Maximum daily, 459 ppm Oct. 16; minimum, 11 ppm on many days.

Sediment loads: Maximum daily, 119,000 tons Oct. 16; minimum, 11 tons Dec. 4, 5 and 6.

EXTREMES, 1944-56.--Dissolved solids (1944-47, 1950-51, 1953-56): Maximum, 165 ppm Oct. 1-9, 1953; minimum, 44 ppm Mar. 21-31, 1945.

Hardness (1944-47, 1949-56): Maximum, 103 ppm Oct. 1-9, 1953; minimum, 25 ppm Apr. 1-10, 1955, Feb. 21-28, 1954.

Specific conductance: Maximum, 370 micromhos Aug. 1, 1955; minimum, 58 micromhos Apr. 1, 1951.

Sediment concentrations (1949-56): Maximum daily, 1,720 ppm Nov. 28, 1950; minimum daily, 0 ppm Oct. 21, 1952.

Sediment loads (1949-56): Maximum daily, 1,010,000 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. Records of discharge for water year Oct. 1953 to Sept. 1956 for gaging station, Delaware River at Trenton, N.J., given in WSP 1432.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955.....	15,400	2.7	0.29	11	2.8	7.8		32	21	4.0	0.1	2.3	69	39	10	115	7.1	7
Oct. 11-20.....	50,300	3.3	.14	8.7	2.1	7.0		24	29	3.0	.1	2.1	61	30	11	93	7.0	25
Oct. 21-31.....	21,100	3.4	.05	11	3.4	7.4		31	23	4.0	.2	2.4	70	41	16	113	7.2	8
Nov. 1-10.....	25,500	2.6	.04	8.7	2.3	6.7		24	20	2.5		1.5	55	31	12	90	7.2	10
Nov. 11-20.....	23,300	2.8	.02	8.5	2.6	6.8		27	20	3.0	.2	1.9	69	34	12	101	7.2	8
Nov. 21-30.....	16,100	2.8	.04	9.9		7.7		29	21	4.0	.2	2.4	70	37	13	109	7.2	6
Dec. 1-10.....	10,700	4.5	.02	11	2.7	8.8		34	21	4.0	.1	2.6	75	39	11	123	7.2	5
Dec. 11-20.....	7,740	8.9	.01	13	3.7	8.3		39	21	6.5	.1	3.1	94	48	16	142	7.2	7
Dec. 21-31.....	5,630	6.4	.00	14	5.5	11		46	24	9.5	.1	2.9	100	49	12	195	7.2	5
Jan. 1-10, 1956.....	5,770	17.4	.04	17	4.6			48	22	9.5	.1	3.7	104	53	24	191	7.1	10
Jan. 11-20.....	8,160	7.4	.04	13	3.5	8.4		36	23	3.0	.2	2.7	87	47	17	133	6.8	10
Jan. 21-31.....	6,420	5.2	.01	13	3.5	8.2		39	23		.1	4.2	88	50	18	140	6.9	5
Feb. 1-10.....	11,900	7.1	.04	16	3.8	5.9		40	25	5.5	.1	2.0	93	56	23	155	7.1	10
Feb. 11-20.....	14,400	7.9	.06	13	3.5	6.5		35	23	4.0	.1	2.9	85	47	18	132	7.1	5
Feb. 21-29.....	15,000	6.5	.03	12	3.8	4.2		31	20	4.5	.1	2.3	82	46	20	118	7.3	5
Mar. 1-10.....	22,000	7.6	.04	11	3.5	2.2		27	18	2.0	.1	4.9	70	43	20	104	7.2	2
Mar. 11-20.....	22,800	8.1	.03	10	3.5	1.8		23	18	1.5	.1	4.1	76	39	20	99	7.3	2
Mar. 21-31.....	15,800	5.7	.14	14	3.9	2.5		32	22	2.5	.1	4.4	95	51	25	128	7.2	2

Apr. 1-10, 1956	32,800	4.9	0.03	10	4.0	2.0	26	18	2.5	.1	2.4	76	41	20	100	7.4	1
Apr. 11-20	35,700	7.9	.07	7.9	3.3	1.4	20	15	1.0	.1	3.3	67	33	17	84	7.2	4
Apr. 21-30	24,400	5.4	.05	8.6	3.0	4.7	28	17	1.0	.1	2.2	73	34	11	89	7.3	3
May 1-10	30,400	6.1	.04	8.3	3.0	3.4	23	17	1.5	.1	1.8	67	33	14	85	7.2	8
May 11-20	15,100	4.2	.04	11	3.5	3.6	32	17	2.0	.1	3.3	62	42	16	108	7.3	1
May 21-31	10,200	3.2	.05	12	5.3	1.7	37	19	2.0	.1	2.8	68	52	21	122	7.2	2
June 1-10	16,600	3.6	.01	11	4.0	4.5	30	19	5.0	.1	2.4	74	44	19	106	7.2	6
June 11-20	8,550	4.0	.03	13	3.1	1.6	30	16	4.0	.1	2.0	78	45	21	127	7.2	6
June 21-30	6,170	4.3	.01	16	6.5	7.0	48	27	8.5	.1	2.8	110	67	27	170	7.0	8
July 1-10	8,810	8.0	.02	16	5.2	4.8	42	27	4.0	.1	4.2	98	61	27	163	6.4	3
July 11-20	9,690	6.5	.02	15	6.4	2.8	43	15	3.5	.1	4.1	100	64	28	158	6.4	7
July 21-31	7,730	6.2	.07	17	6.7	4.7	51	25	7.0	.1	2.9	110	70	28	168	6.4	6
Aug. 1-10	4,840	2.3	.04	17	8.4	5.8	60	28	5.5	.1	3.9	102	77	28	187	7.2	2
Aug. 11-20	3,890	7.2	.08	22	7.8	11	72	30	13	.1	3.6	134	87	28	235	6.9	2
Aug. 21-31	3,860	8.0	.06	21	8.8	8.9	76	30	7.5	.2	4.0	137	89	26	222	6.8	2
Sept. 1-10	5,920	4.5	.12	17	5.9	6.6	53	25	5.0	.2	4.9	98	67	23	172	7.5	2
Sept. 11-20	4,860	6.5	.14	16	5.9	8.6	51	28	5.5	.2	4.4	128	64	22	170	7.5	3
Sept. 21-30	6,690	7.6	.05	17	8.1	5.9	57	28	6.5	.1	4.0	136	76	29	184	7.2	3
Weighted average	14,800	5.7	0.06	13	4.4	5.7	38	22	4.4	0.1	3.1	88	51	20	135	--	6

DELAWARE RIVER BASIN--Continued

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

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	9,250	10	250	49,200	105	13,900	11,200		
2.....	9,410	9	229	35,200	38	3,610	10,800	1	29
3.....	9,620	11	286	27,600	15	1,120	10,400		
4.....	8,560	10	231	24,000	10	648	10,200		
5.....	8,460	9	206	24,100	10	651	10,000	--	a 11
6.....	8,010	10	216	22,600	12	732	9,900		
7.....	15,200	69	s 4,300	19,600	12	635	11,400		
8.....	35,300	140	13,300	18,500	9	450	10,500	1	28
9.....	27,600	50	3,730	17,700	10	478	9,680		
10.....	22,700	20	1,230	16,200	8	350	9,380		
11.....	18,800	18	914	17,600	7	333	9,200	1	24
12.....	16,100	15	652	18,700	7	353	8,200		
13.....	14,000	12	454	17,500	8	378	7,200		
14.....	17,900	72	s 6,350	16,500	7	312	8,050	2	42
15.....	48,400	354	s 52,100	18,000	10	486	7,850		
16.....	95,500	459	s 119,000	21,600	17	991	7,350		
17.....	121,000	322	s 108,000	32,800	52	4,600	7,350	1	19
18.....	78,700	104	s 22,800	36,300	47	4,610	6,750		
19.....	53,800	45	6,540	29,000	20	1,570	6,700		
20.....	39,800	30	3,220	25,200	10	680	6,000	1	16
21.....	32,000	25	2,150	22,400	7	423	5,000		
22.....	26,800	20	1,450	20,500	7	387	4,800		
23.....	22,700	10	613	18,700	4	202	5,000	--	a 14
24.....	20,000	10	540	17,200	4	186	4,800		
25.....	18,200	12	590	15,800	8	341	6,000		
26.....	18,100	8	391	14,800	10	400	7,000		
27.....	17,200	8	372	14,200	9	345	6,200	1	17
28.....	15,400	10	416	13,200	6	214	5,200		
29.....	14,100	8	305	12,100	12	392	5,800		
30.....	15,100	6	245	12,100	8	261	6,500	1	16
31.....	32,300	213	s 24,100	--	--	--	5,600		
Total.	890,010	--	375,180	648,900	--	40,038	240,010	--	662
Day	January			February			March		
	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day
1.....	5,400			6,920	9	168	15,000	19	770
2.....	5,400	--	a 14	7,650	13	269	13,200	5	178
3.....	5,000			10,200	26	716	13,100	4	141
4.....	6,000			9,260	6	150	14,300	5	193
5.....	6,220			7,300	4	79	16,000	5	216
6.....	6,600	1	17	8,500	16	367	16,400	10	443
7.....	6,220			18,900	192	9,810	17,900	20	967
8.....	5,820			15,800	115	4,910	28,000	125	9,450
9.....	4,780			12,900	45	1,570	42,500	200	23,000
10.....	4,820	2	29	10,900	30	883	42,200	150	17,100
11.....	6,800			10,400	12	337	30,900	35	2,920
12.....	8,200			12,300	15	498	26,900	24	1,740
13.....	9,500	5	132	13,200	25	891	24,800	18	1,210
14.....	11,600			12,500	15	506	28,300	58	4,430
15.....	11,100			12,300	10	332	26,300	41	2,910
16.....	9,620	6	156	11,700	10	316	21,900	15	887
17.....	8,150			11,700	5	158	19,600	15	794
18.....	8,400			15,900	75	3,220	17,500	9	425
19.....	7,700	2	42	22,200	140	8,390	15,700	9	382
20.....	7,300			18,500	50	2,500	14,800	7	280
21.....	7,000			16,500	22	980	14,400	5	194
22.....	6,600	1	18	14,600	10	394	14,200	5	192
23.....	5,940			12,000	6	194	14,800	4	160
24.....	5,580			10,900	8	235	16,900	10	456
25.....	5,660	1	15	10,500	9	255	16,000	5	216
26.....	5,820			12,600	58	1,970	15,100	7	285
27.....	5,620			16,700	35	1,580	16,100	10	435
28.....	5,220			19,900	40	2,150	15,600	6	253
29.....	5,300	1	15	18,600	40	2,010	14,800	5	200
30.....	6,350			--	--	--	15,500	5	209
31.....	8,800	34	808	--	--	--	14,800	7	280
Total.	212,520	--	2,171	381,330	--	45,838	613,500	--	71,316

s Computed by subdividing day.

a Computed from estimated concentration graph.

DELAWARE RIVER BASIN--Continued

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

Suspended sediment, water year October 1955 to September 1956--Continued

Day	Mean dis- charge (cfs)	April		Mean dis- charge (cfs)	May		Mean dis- charge (cfs)	June	
		Suspended sediment			Suspended sediment			Suspended sediment	
		Mean con- cen- tra- tion (ppm)	Tons per day		Mean con- cen- tra- tion (ppm)	Tons per day		Mean con- cen- tra- tion (ppm)	Tons per day
1.....	13,500	3	109	47,800	82	10,600	8,550	3	69
2.....	12,900	4	139	38,800	30	3,140	10,800	20	583
3.....	14,100	7	266	33,200	25	2,240	18,000	60	2,920
4.....	16,000	18	778	32,300	19	1,660	27,500	103	7,650
5.....	23,200	25	1,570	27,600	8	596	25,000	105	7,090
6.....	44,600	126	s 15,800	24,000	10	648	19,600	25	1,320
7.....	52,100	163	22,900	26,900	75	5,450	16,200	14	612
8.....	56,300	123	18,700	27,900	36	2,710	14,000	8	302
9.....	52,000	75	10,500	24,000	13	842	12,300	6	199
10.....	42,400	36	4,120	20,800	10	562	11,000	3	89
11.....	38,000	23	2,360	19,000	8	410	11,100	15	450
12.....	37,000	18	1,800	17,400	8	376	10,800	15	437
13.....	35,200	19	1,810	16,300	9	396	10,000	8	216
14.....	32,900	13	1,150	15,500	7	293	8,950	3	72
15.....	29,700	12	962	14,700	8	318	8,350	6	135
16.....	29,900	20	1,610	13,800	7	261	7,750	5	105
17.....	36,300	34	3,330	13,400	6	217	7,200	5	97
18.....	46,300	58	7,250	12,700	6	206	6,700	9	163
19.....	39,500	41	4,370	12,300	4	133	5,900	8	127
20.....	32,400	16	1,400	12,500	5	169	5,500	7	104
21.....	27,200	5	367	11,700	7	221	5,140	10	139
22.....	23,300	2	126	11,200	8	242	5,100	7	96
23.....	21,600	3	175	10,800	7	204	5,300	6	86
24.....	24,600	13	863	10,300	5	139	7,400	220	4,400
25.....	25,800	12	836	9,800	5	132	6,800	200	3,670
26.....	23,200	5	313	9,100	6	147	6,140	50	829
27.....	22,400	3	181	8,600	5	116	5,900	28	446
28.....	22,300	2	120	8,600	4	93	6,220	42	705
29.....	20,900	3	169	9,320	4	101	5,980	25	404
30.....	31,500	28	s 2,910	9,850	4	106	5,300	15	215
31.....	--	--	--	9,050	5	122	--	--	--
Total.	927,100	--	106,984	559,220	--	32,850	304,480	--	33,730
Day	Mean dis- charge (cfs)	July		Mean dis- charge (cfs)	August		Mean dis- charge (cfs)	September	
		Suspended sediment			Suspended sediment			Suspended sediment	
		Mean con- cen- tra- tion (ppm)	Tons per day		Mean con- cen- tra- tion (ppm)	Tons per day		Mean con- cen- tra- tion (ppm)	Tons per day
1.....	4,660	13	164	5,100	5	69	4,780	12	155
2.....	4,420	12	143	4,980	6	76	5,260	16	227
3.....	4,700	22	279	4,780			4,980	15	202
4.....	5,380	22	320	4,630			5,100	10	138
5.....	6,020	35	569	4,490			4,560	4	49
6.....	8,850	50	1,190	4,520			4,000	4	43
7.....	10,200	60	1,650	4,600	3	38	5,590	15	s 361
8.....	10,200	50	1,380	4,820			10,200	83	2,290
9.....	13,000	215	s 9,660	4,520			7,000	29	548
10.....	17,900	340	16,400	4,280			5,660	17	260
11.....	13,600	90	3,300	4,100			4,740	7	90
12.....	10,700	40	1,160	3,860	2	20	4,520	5	61
13.....	9,500	25	641	3,760			4,280	4	46
14.....	9,850	70	1,860	3,720			4,100	2	22
15.....	11,100	70	2,100	4,000			4,000	3	32
16.....	9,740	26	684	3,860			4,100	3	33
17.....	8,700	17	399	3,680	3	30	4,490	1	12
18.....	7,600	18	369	3,620			4,600	3	37
19.....	6,750	15	273	3,530			5,540	7	105
20.....	6,140	13	216	3,500			6,550	8	141
21.....	7,120	25	481	3,900			5,700	5	77
22.....	10,300	60	1,670	4,740	2	18	5,100	3	41
23.....	9,100	30	737	4,630			6,180	5	83
24.....	8,500	15	344	4,000			5,540	4	60
25.....	7,950	10	215	3,650			5,500	5	74
26.....	7,120	8	154	3,470			7,840	24	s 620
27.....	6,500	8	140	3,290	2	18	8,950	27	652
28.....	6,960	8	150	3,200			7,120	13	250
29.....	6,920	9	168	3,350			6,550	10	177
30.....	5,980	8	129	3,380			5,860	7	111
31.....	5,340	6	87	3,440			--	--	--
Total.	260,000	--	47,032	125,400	--	1,181	168,390	--	6,997

Total discharge for year (cfs-days)..... 5,331,660

Total load for year (tons)..... 763,979

s Computed by subdividing day.

a Computed from estimated concentration graph.

DELAWARE RIVER BASIN--Continued

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

Particle-size analyses of suspended sediment, water year October 1955 to September 1956

(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet.; S, sieve; N, in native water;

W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (° F)	Suspended sediment											Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters								1.000		
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350		0.500
Oct. 15, 1955	8:00 a. m.	34,600		501	302		39	55	82	88	92	96	97		BWSCM	
Oct. 17	6:00 a. m.	133,000		448	405		18	31	40	53	64	75	85	96	BWSCM	
Oct. 17	7:00 a. m.	133,000		360	809		18	25	35	49	65	77	89	96	BWSCM	

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

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1956.
Water temperatures October 1954 to September 1956.
EXTREMES, 1955-56.--Water temperatures: Maximum, 79°F Aug. 18-20; minimum, freezing point on several days during December and January.
EXTREMES, 1954-56.--Water temperatures: Maximum, 83°F July 21-28; minimum, freezing point on many days during winter months.
REMARKS.--Samples taken 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 1955 to September 1956

Date of collection	Discharge at Trenton (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 on evaporation at 180°C)		Hardness as CaCO ₃	Specific conductance (micro-mhos at 25°C)	pH	Color	Biochemical oxygen demand ^a	Dissolved oxygen
													Calcium	Non-carbonate						
Oct. 6, 1955	8,010	2.9	0.22	13	3.9	5.0	1.7	34	25	5.5	0.1	2.4	98	48	21	132	7.1	13	2.1	9.0
Nov. 1	49,200	4.9	.12	9.1	1.7	2.3	.9	20	14	3.0	.1	2.2	51	30	13	76	7.1	18	3.4	10.8
Dec. 6	10,200	4.4	.27	13	4.1	4.0	1.0	36	21	6.0	.1	2.6	97	49	20	128	7.3	12	2.3	11.6
Jan. 5, 1956	6,500	5.3	.21	15	4.5	4.4	1.6	43	21	6.5	.1	4.1	95	56	21	160	7.3	10	1.9	10.4
Feb. 2	7,960	5.5	.08	17	5.5	7.0	2.8	39	31	7.5	.1	7.7	107	65	33	167	7.5	10	4.1	11.6
Mar. 7	18,200	5.8	.10	11	3.4	3.3	1.2	28	20	4.5	.0	3.5	68	43	19	110	7.4	9	2.5	10.6
Apr. 3	14,400	3.1	.06	14	3.9	3.5	1.4	35	23	5.0	.1	3.7	85	51	23	132	7.3	2	.6	10.8
May 1	47,800	3.0	.04	8.5	2.7	2.2	1.0	22	16	2.5	.0	2.5	56	32	14	84	6.9	10	1.1	8.6
June 4	27,500	4.2	.01	12	5.0	3.0	1.4	33	19	4.0	.2	3.7	78	50	24	119	7.7	3	.6	8.0
July 16	10,000	6.6	.04	17	4.9	4.0	--	41	28	3.0	.3	5.8	103	63	29	158	7.5	7	5.6	10.6
Aug. 14	3,850	2.4	.01	17	7.4	--	--	55	31	8.0	.1	5.8	127	73	28	193	7.8	3	1.5	6.0
Sept. 11	4,920	5.5	.01	17	6.9	6.6	6.6	50	28	6.0	.2	7.4	102	71	30	178	7.6	3	2.0	6.8

^a Values for biochemical oxygen demand and dissolved oxygen obtained from surface samples.

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

Temperature (°F) of water, water year October 1955 to September 1956
/Nickel wire round resistance thermometer/

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

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

DELAWARE RIVER BASIN--Continued

DELAWARE RIVER AT TORRESDALE INTAKE, PHILADELPHIA, PA.

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1956.

REMARKS.--Samples taken 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 1955 to September 1956

Date of collection	Discharge at Trenton (cfs)	Chloride (Cl)	Specific conductance (micro-mhos at 25°C)	pH	Biochemical oxygen demand ^a	Dissolved oxygen ^a
Oct. 6, 1955	8,010	5.5	144	6.8	1.4	7.2
Nov. 1	49,200	3.5	135	7.1	1.1	8.8
Dec. 6	10,200	4.0	133	7.0	3.7	12.6
Jan. 5, 1956	6,500	5.0	169	7.2	4.2	13.1
Feb. 3	10,600	4.0	156	7.0	--	7.4
Mar. 7	18,200	2.0	120	6.8	2.5	10.8
Apr. 3	14,400	4.0	136	7.2	1.5	11.0
May 1	47,800	4.5	92	6.6	1.1	8.8
June 4	27,500	3.5	134	6.8	1.6	7.6
July 16	10,000	5.0	163	6.6	2.4	6.4
Aug. 14	3,850	7.5	182	6.8	.6	4.7
Sept. 11	4,920	7.0	181	6.7	1.0	5.6

^a Values for biochemical oxygen demand and dissolved oxygen obtained from surface samples.

DELAWARE RIVER AT LEHIGH AVENUE, PHILADELPHIA, PA.

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1956.

REMARKS.--Samples taken 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 1955 to September 1956

Date of collection	Discharge at Trenton (cfs)	Chloride (Cl)	Specific conductance (micro-mhos at 25°C)	pH	Biochemical oxygen demand ^a	Dissolved oxygen ^a
Oct. 6, 1955	8,010	11	211	6.7	1.5	2.8
Nov. 1	49,200	4.0	130	6.9	1.9	9.4
Dec. 6	10,200	4.0	133	6.9	1.3	10.4
Jan. 5, 1956	6,500	10	202	7.0	4.1	10.7
Feb. 2	7,960	8.0	181	6.8	4.0	10.4
Mar. 7	18,200	3.0	131	6.6	1.7	9.8
Apr. 3	14,400	4.5	156	6.8	1.4	10.4
May 1	47,800	3.5	100	6.5	.8	7.8
June 4	27,500	4.5	136	6.8	1.2	7.0
July 16	10,000	6.5	165	6.7	.8	3.8
Aug. 14	3,850	14	231	6.6	2.2	2.1
Sept. 11	4,920	14	240	6.6	2.2	2.6

^a Values for biochemical oxygen demand and dissolved oxygen obtained from surface samples.

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

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1956.
REMARKS.--Samples taken 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 1955 to September 1956

Date of collection	Discharge at Trenton (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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Biochemical oxygen demand ^a	Dissolved oxygen
														Calcium, mg.	Non-carbonate					
Oct. 6, 1955	8,010	3.6	0.14	17	5.7	12	2.7	42	38	13	0.2	1.1	161	66	32	215	7.0	10	1.4	1.8
Nov. 1	49,200	5.8	.14	13	3.3	3.5	1.4	31	22	4.5	.1	4.5	77	46	21	125	7.1	15	2.1	10.0
Dec. 6	10,200	4.7	.31	15	3.8	6.0	1.1	35	28	5.5	.2	2.7	89	53	25	134	7.2	17	3.6	11.7
Jan. 5, 1956	6,500	5.8	.23	17	5.3	10	2.1	37	37	12	.2	3.5	133	62	34	213	7.7	10	5.1	9.3
Feb. 2	7,960	5.9	.00	14	4.5	12	2.6	27	33	13	.0	9.4	112	53	32	187	7.4	10	5.3	8.4
Mar. 7	18,200	5.5	.10	11	4.2	4.6	1.4	24	23	4.5	.1	7.1	84	45	26	124	7.0	9	2.3	10.5
Apr. 3	14,400	4.3	.09	14	4.2	5.5	1.6	29	29	2.1	.2	7.3	97	52	29	151	7.3	2	1.1	7.4
May 1	47,800	3.4	.13	9.2	3.2	2.8	1.1	24	17	3.3	.0	2.3	64	37	17	93	7.0	10	.1	8.1
June 4	27,500	2.7	.01	13	4.7	6.4	1.4	35	23	5.5	.2	4.7	84	52	24	138	7.2	3	2.3	6.4
July 16	10,000	6.1	.01	16	4.7	4.8	--	36	28	5.5	.1	7.5	107	59	30	160	6.5	7	9.6	11.2
Aug. 14	3,850	3.4	.01	20	6.1	14	--	46	42	12	.1	7.7	150	75	38	224	7.7	3	3.0	1.5
Sept. 11	4,920	1.8	.02	20	7.6	17	--	48	47	15	.3	9.2	170	81	42	252	7.5	3	3.0	1.8

^a Values for biochemical oxygen demand and dissolved oxygen obtained from surface samples.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

DELAWARE RIVER BASIN--Continued

DELAWARE RIVER AT WHARTON STREET, PHILADELPHIA, PA.

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1956.

REMARKS.--Samples taken 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 1955 to September 1956

Date of collection	Discharge at Trenton (cfs)	Chloride (Cl)	Specific conductance (micro-mhos at 25°C)	pH	Biochemical oxygen demand ^a	Dissolved oxygen ^a
Oct. 5, 1955	8,460	12	224	6.6	2.1	1.8
Nov. 2	35,200	6.0	145	6.7	2.2	7.6
Dec. 5	10,400	8.0	178	6.9	5.0	8.6
Jan. 4, 1956	6,000	10	204	7.0	4.3	1.0
Feb. 1	7,190	10	194	6.5	4.8	8.0
Mar. 5	16,300	5.0	146	6.5	.7	8.2
Apr. 2	13,200	5.5	162	6.6	.1	7.4
May 2	38,800	5.5	101	6.6	1.1	5.7
June 5	25,000	6.5	143	6.8	2.8	4.4
July 17	9,030	7.5	182	6.6	1.2	2.0
Aug. 13	3,880	14	226	6.8	3.8	3.8
Sept. 10	5,880	16	248	6.7	4.4	2.0

^a Values for biochemical oxygen demand and dissolved oxygen obtained from surface samples.

DELAWARE RIVER AT LEAGUE ISLAND, PHILADELPHIA, PA.

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1956.

REMARKS.--Samples taken 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 1955 to September 1956

Date of collection	Discharge at Trenton (cfs)	Chloride (Cl)	Specific conductance (micro-mhos at 25°C)	pH	Biochemical oxygen demand ^a	Dissolved oxygen ^a
Oct. 5, 1955	8,460	14	248	6.6	2.8	2.8
Nov. 2	35,200	7.0	152	6.5	2.2	7.4
Dec. 5	10,400	7.0	173	6.7	4.1	8.2
Jan. 4, 1956	6,000	13	230	6.8	5.5	6.5
Feb. 1	7,190	13	226	6.2	4.9	6.8
Mar. 5	16,300	6.0	173	6.6	.9	8.2
Apr. 2	13,200	7.0	182	6.7	2.4	8.4
May 2	38,800	6.0	116	6.5	.5	6.4
June 5	25,000	11	174	6.5	.3	2.4
July 17	9,030	10	219	6.5	5.5	1.8
Aug. 13	3,880	14	243	6.8	3.2	1.9
Sept. 10	5,880	17	274	6.6	4.2	1.9

^a Values for biochemical oxygen demand and dissolved oxygen obtained from surface samples.

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT BERNE, PA.

LOCATION.--At gaging station 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.--Sediment records: October 1947 to September 1956.

EXTREMES, 1955-56.--Sediment concentrations: Maximum daily, 405 ppm Oct. 15; minimum daily, 1 ppm on many days.

Sediment loads: Maximum daily, 6,940 tons Oct. 15; minimum daily, 1 ton on many days.

EXTREMES, 1947-56.--Sediment concentrations: Maximum daily, 8,030 ppm Nov. 4, 1947;

minimum daily, 0 ppm many days during 1952 water year.

Sediment loads: Maximum daily, 90,180 tons Nov. 12, 1947; minimum daily, 0 tons many days during 1952 water year.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Suspended sediment, water year October 1955 to September 1956

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.....	472			2,410	16	104	521	1	1
2.....	389			1,840			507	2	3
3.....	365	1	1	1,520	6	26	507	2	3
4.....	342			1,380			507	2	3
5.....	336			1,140			500	1	1
6.....	1,090	59	s 218	1,030	3	8	466	1	1
7.....	1,440	15	58	940			440	2	2
8.....	1,360	15	55	860			420	2	2
9.....	1,130	7	21	790	4	9	420	2	2
10.....	970			718			407	2	3
11.....	850	2	4	1,030			400	1	3
12.....	745			860	8	19	380	4	3
13.....	683			781			370	2	2
14.....	2,110	118	s 1,070	736			350	3	3
15.....	5,320	405	s 6,940	700	5	11	340	3	3
16.....	4,820	100	1,300	1,030			330	6	5
17.....	4,480	50	605	1,330			350	2	2
18.....	3,200	28	242	1,170	5	16	360	3	3
19.....	2,410	13	85	1,140			330	3	3
20.....	1,820	9	44	1,090			310	7	6
21.....	1,480	7	28	990	6	16	280	--	e 3
22.....	1,260	7	24	900			310	--	e 3
23.....	1,080	6	17	810			360	--	e 4
24.....	990	5	13	790	6	13	410	4	4
25.....	940	3	8	727			380	3	3
26.....	820	2	4	675			330	2	2
27.....	736	2	4	658	4	7	300	3	2
28.....	667	2	4	634			270	12	9
29.....	672	6	11	580			280	21	16
30.....	2,550	62	s 464	550	9	13	260	8	6
31.....	3,480	56	s 569	--	--	--	235	3	2
Total.	49,007	--	11,805	29,809	--	499	11,630	--	108

e Estimated.

s Computed by subdividing day.

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT BERNE, PA.--Continued

Suspended sediment, water year October 1955 to September 1956--Continued

Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day
1.....	270	2	1	320	--	e 4	602	3	5
2.....	270	2	1	330	--	e 4	617	3	5
3.....	277	4	3	400	27	29	617	3	5
4.....	272			353	7	7	617	2	3
5.....	255			325	3	3	572	2	3
6.....	250	3	2	457	17	21	550	2	3
7.....	240			1,320	65	s 253	587	2	3
8.....	230			1,100	57	s 178	930	25	63
9.....	250			945	25	s 69	1,210	12	39
10.....	400			810	10	22	1,100	3	9
11.....	320	4	3	842	12	27	1,130	4	12
12.....	303			1,440	30	117	1,100	4	12
13.....	292			1,020	9	25	1,000	6	16
14.....	255			850	8	18	1,340	21	s 87
15.....	245			772	5	10	1,680	13	59
16.....	235	4	3	727	3	6	1,500	6	24
17.....	230			634	3	5	1,360	5	18
18.....	220			1,070	37	s 152	1,130	5	15
19.....	220			1,500	30	s 133	1,030	3	8
20.....	230			1,140	8	25	890	3	7
21.....	225	4	2	990	5	13	840	5	11
22.....	220			840	4	9	880	4	10
23.....	210			745	5	10	980	3	8
24.....	220			658	2	4	1,190	3	10
25.....	310			772	13	27	1,110	2	6
26.....	260	--	e 3	890	12	29	1,060	2	6
27.....	240	--	e 3	667	3	5	1,000	2	5
28.....	255	--	e 3	709	3	6	920	1	2
29.....	270	--	e 4	700	4	8	880	1	2
30.....	310	--	e 4	--	--	--	870	1	2
31.....	420	--	e 6	--	--	--	830	2	4
Total.	8,204	--	89	23,326	--	1,219	30,122	--	462

Day	April			May			June		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day
1.....	745	1	2	970	4	10	580	9	14
2.....	709	5	10	950	4	12	741	21	s 55
3.....	692	7	15	1,310			1,440	21	82
4.....	675	7	13	1,120			1,190	6	17
5.....	675	6	11	1,050	4	12	1,040		
6.....	642	3	5	980			920		
7.....	870	9	21	1,240			790		
8.....	1,250	13	44	1,010			700	4	8
9.....	1,210	9	29	890			642		
10.....	1,360	10	37	840	5	12	617		
11.....	1,400	16	60	820	3	7	610	2	3
12.....	1,360	11	40	772			507		
13.....	1,250	12	40	910			459		
14.....	1,110	8	24	830			420	3	3
15.....	1,030	3	7	692			389		
16.....	1,060			650	2	3	389	3	3
17.....	940			602			446		
18.....	810			580			389		
19.....	736			564			347	4	4
20.....	667			542			325		
21.....	650	2	3	514	8	11	353	7	7
22.....	617			493			371	4	4
23.....	700			542			383	4	4
24.....	634			514			440		
25.....	564			440			371		
26.....	557	2	3	420	2	2	303	24	26
27.....	550			459			395		
28.....	521			466			389	4	4
29.....	535			407			303	2	2
30.....	1,110		s 73	395			282	2	2
31.....	--	--	--	440	--	--	--	--	--
Total.	25,629	--	509	22,412	--	222	16,531	--	320

e Estimated.

s Computed by subdividing day.

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT BERNE, PA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	272	3	2	325			607	--	a 8
2.....	298	4	3	320			395	--	a 2
3.....	754	23	s 48	298	1	1	320		
4.....	493	5	7	292			287	1	1
5.....	1,010	23	s 65	389			252		
6.....	960	10	26	420			751	98	s 437
7.....	870	7	16	446	--	e 1	1,340	56	s 222
8.....	754	7	14	342			763	10	21
9.....	1,200	16	52	303			617	5	8
10.....	970			303			521	5	7
11.....	781	4	9	287	1	1	486	4	5
12.....	692			272			452	5	6
13.....	642			282	8	6	420	4	5
14.....	683	3	5	336			395	5	5
15.....	557			282			414	4	4
16.....	507			287	1	1	572	8	12
17.....	493			252			433		
18.....	426	2	2	247			414	1	1
19.....	389			262			359		
20.....	377			247			452		
21.....	751			395	2	2	395	2	2
22.....	572	8	13	330			353		
23.....	472			272			359		
24.....	420			252			606	1	1
25.....	401			237			466		
26.....	401	2	2	228			426		
27.....	466			224	--	e 1	401		
28.....	426			219			466	1	1
29.....	440			242			452		
30.....	377	2	2	214			414		
31.....	342			252			--	--	--
Total.	18,196	--	340	9,037	--	41	14,568	--	762

Total discharge for year (cfs-days)..... 258,491

Total load for year (tons)..... 16,376

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT POTTS TOWN, PA.

LOCATION.--At gaging station at Hanover Street Bridge in Pottstown, Montgomery County, 70 feet from west bank of river, and 0.3 mile downstream from Manatawny Creek.

DRAINAGE AREA.--1,147 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1944 to September 1951, February to September 1956.

Water temperatures: October 1944 to September 1951.

Sediment records: March 1948 to September 1951.

EXTREMES, 1944-51.--Dissolved solids: Maximum, 393 ppm Oct. 11-20, 1944; minimum, 119 ppm Mar. 1-10, 1945.

Hardness: Maximum, 258 ppm Oct. 11-20, 1944; minimum, 79 ppm Mar. 1-10, 1945.

Specific conductance: Maximum daily, 573 micromhos Sept. 18, 28, 1951; minimum daily, 150 micromhos Feb. 8, 1951.

Water temperatures: Maximum, 90°F Aug. 16, 1951; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 1,680 ppm Nov. 25, 1950; minimum daily, 1 ppm Oct. 3, 5, 1950.

Sediment loads: Maximum daily, 158,000 tons Nov. 28, 1950; minimum daily, 1 ton Oct. 3, 5, 1950.

REMARKS.--Records of specific conductance and pH of daily samples available in district office at Philadelphia, Pa. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, February to September 1956

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 on evaporation at 100°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-magnesium			
Feb. 15, 1956	2,240													102	66	244	7.8	4
Mar. 7	1,850					7.6		44	63	7.0		8.6		121	73	284	7.2	4
Apr. 13	3,300					8.5		59	70	7.5		9.5		107	69	255	6.8	4
May 24	1,400					7.0		46	87	6.0		7.8		146	105	345	6.9	2
July 5	1,540					9.8		50	100	9.5		11		164	125	370	7.0	5
Aug. 16	660					5.3		48	116	6.5		7.8		200	164	462	6.8	8
Sept. 28	1,130					15		44	164	14		8.2		154	108	376	7.1	3
						24		56	131	12		7.6						

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT MANAYUNK, PHILADELPHIA, PA.

LOCATION.--At Green Lane Avenue bridge, 5 miles upstream from the gaging station at Fairmount Dam, Philadelphia County.

DRAINAGE AREA.--1,893 square miles (at Fairmount Dam.)

RECORDS AVAILABLE.--Sediment records: November 1947 to September 1956.

EXTREMES, 1954-56.--Sediment concentrations: Maximum daily, 924 ppm Oct. 15; minimum daily, 2 ppm on several days.

Sediment loads: Maximum daily, 56,400 tons Oct. 15; minimum daily, 6 tons Aug. 4.

EXTREMES, 1947-55.--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 specific conductance and pH of random samples available in the subdistrict office at Harrisburg, Pa. Records of discharge for water year October 1955 to September 1956 based on records for the Schuylkill River at Philadelphia (Fairmount Dam) given in WSP 1432, and include water diverted by the City of Philadelphia for municipal water supply.

Suspended sediment, water year October 1955 to September 1956

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.....	1,420	10	38	6,490	52	911	1,980	7	37
2.....	1,580	10	43	5,180	21	294	1,960	5	26
3.....	1,410	8	30	4,460	12	144	1,910	2	10
4.....	1,260	9	31	3,960	--	a 96	1,940	2	10
5.....	1,190	11	35	3,620	7	68	2,040	5	28
6.....	1,150	16	50	3,280	3	27	1,940	5	26
7.....	3,000	79	s 783	3,030	7	57	1,780	5	24
8.....	5,380	78	1,130	2,960	10	80	1,680	6	27
9.....	5,850	35	553	2,840	9	69	1,720	9	42
10.....	4,170	19	214	2,640	6	43	1,670	10	45
11.....	3,460	11	103	3,560	9	86	1,530	5	21
12.....	2,990	10	81	4,340	8	94	1,400	5	19
13.....	2,590	7	49	3,330	9	81	1,400	4	15
14.....	2,820	132	s 1,310	2,990	8	65	1,380	3	11
15.....	22,200	924	s 56,400	2,840	7	54	1,400	4	15
16.....	18,100	304	s 15,500	2,740	6	44	1,310	5	18
17.....	13,000	170	4,560	3,400	7	64	1,190	7	22
18.....	9,950	135	2,010	3,840	8	83	1,210	8	26
19.....	7,590	62	1,270	3,450	8	75	1,280	7	24
20.....	6,090	15	247	3,560	6	58	1,200	5	16
21.....	5,040	--	a 95	3,450	6	56	952	5	13
22.....	4,320	10	117	3,290	5	44	859	5	12
23.....	3,820	9	93	3,160	7	60	937	3	8
24.....	3,430	5	46	2,950	8	64	1,080	5	15
25.....	3,250	8	70	2,840	5	38	1,220	--	a 13
26.....	3,110	3	25	2,650	5	36	1,250	4	14
27.....	2,800	3	23	2,530	3	20	1,160	--	a 9
28.....	2,580	5	35	2,450	4	26	1,000	3	8
29.....	2,440	5	33	2,330	5	31	916	3	7
30.....	3,460	24	s 303	2,080	7	39	985	5	13
31.....	7,660	--	a 2,900	--	--	--	994	5	13
Total.	157,110	--	88,177	100,240	--	2,907	43,273	--	587

s Computed by subdividing day.

a Computed from estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

DELAWARE RIVER BASIN--Continued

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

Suspended sediment, water year October 1955 to September 1956--Continued

Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	900	6	15	2,880	44	s 354	3,520	18	171
2.....	876	5	12	3,110	43	s 473	3,180	10	86
3.....	897	4	10	7,890	130	s 2,940	3,150	10	85
4.....	942	7	18	5,740	53	821	3,070	9	75
5.....	985	--	a 24	4,210	32	364	2,590	9	63
6.....	967	--	a 18	5,170	88	s 1,140	2,480	7	47
7.....	976	7	18	15,100	598	s 24,400	2,890	5	39
8.....	914	7	17	9,140	174	s 4,420	7,280	317	s 6,530
9.....	748	8	16	6,300	44	748	8,280	247	s 5,730
10.....	970	10	26	5,090	15	206	5,740	40	620
11.....	1,540	10	42	4,310	17	198	5,040	11	150
12.....	2,030	8	44	5,480	22	326	5,620	10	152
13.....	1,990	11	59	5,640	--	a 152	4,970	9	121
14.....	1,870	10	50	4,310	--	a 116	12,300	238	s 14,900
15.....	1,380	8	30	3,800	9	92	14,500	364	s 16,500
16.....	1,240	5	17	3,670	10	99	10,300	75	2,090
17.....	1,220	8	26	3,350	8	72	8,280	32	715
18.....	1,150	6	19	8,520	225	a 8,170	6,860	22	407
19.....	986	4	11	11,000	213	s 7,100	6,080	18	295
20.....	1,080	5	15	6,840	43	794	5,280	12	171
21.....	1,050	5	14	5,460	23	339	4,790	8	103
22.....	986	5	13	4,360	--	a 177	4,500	10	122
23.....	973	3	8	3,660	9	89	6,000	15	243
24.....	911	5	12	3,320	5	45	7,090	45	861
25.....	827	6	13	3,430	7	65	6,280	12	204
26.....	801	8	17	5,250	108	s 1,600	6,480	10	175
27.....	771	6	12	4,260	33	380	6,490	35	613
28.....	748	8	16	4,110	62	688	6,890	38	707
29.....	824	7	16	4,570	35	432	5,390	12	175
30.....	2,300	22	s 298	--	--	--	6,100	12	198
31.....	6,240	172	s 3,160	--	--	--	5,480	10	148
Total.	40,092	--	4,066	159,970	--	56,800	186,900	--	52,496
Day	April			May			June		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	4,750	8	103	3,370	--	a 319	2,240	39	s 256
2.....	4,180	7	79	3,270	12	106	2,210	--	161
3.....	3,860	8	83	3,700	14	140	3,680	27	a 894
4.....	3,780	9	92	3,580	17	164	4,000	57	616
5.....	3,680	8	79	3,500	15	142	3,080	19	158
6.....	3,480	8	75	3,240	10	87	2,730	17	125
7.....	5,220	--	a 1,920	7,200	128	s 3,080	2,460	18	120
8.....	12,700	273	s 9,400	5,790	108	1,690	2,220	15	90
9.....	10,300	112	s 3,320	4,180	32	361	2,010	15	81
10.....	8,170	25	551	3,560	20	192	1,990	20	107
11.....	6,580	10	178	3,330	--	a 135	2,380	23	148
12.....	5,470	10	148	2,940	15	119	2,160	20	117
13.....	5,080	5	69	2,990	12	97	1,720	15	70
14.....	4,990	6	81	3,080	15	125	1,480	18	72
15.....	4,620	7	87	2,800	14	106	1,340	17	62
16.....	5,670	13	199	2,740	15	111	1,550	20	84
17.....	5,800	12	188	2,500	12	81	1,440	17	66
18.....	4,610	12	149	2,440	10	66	1,800	18	87
19.....	4,110	10	111	2,360	12	76	1,640	18	80
20.....	3,760	8	81	2,280	15	92	1,320	16	57
21.....	3,500	8	76	2,200	13	77	1,260	18	61
22.....	3,280	7	62	2,070	12	67	1,520	15	62
23.....	3,220	9	78	2,140	12	69	1,730	18	84
24.....	3,310	10	89	2,110	12	68	2,010	43	233
25.....	3,160	8	68	2,100	10	57	2,070	30	168
26.....	3,020	8	65	1,840	15	75	1,570	27	114
27.....	3,070	8	66	1,750	11	52	1,330	20	72
28.....	2,980	9	72	1,920	13	67	1,410	19	72
29.....	2,610	8	61	1,920	11	57	1,590	20	86
30.....	2,790	8	60	1,740	9	42	1,250	18	61
31.....	--	--	--	1,740	17	s 98	--	--	--
Total.	141,950	--	17,690	90,380	--	8,018	59,190	--	4,464

s Computed by subdividing day.

a Computed from estimated concentration graph.

DELAWARE RIVER BASIN--Continued

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

Suspended sediment, water year October 1955 to September 1956--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.....	1,130	17	52	1,280	11	38	1,530	20	83
2.....	1,080	12	35	1,190	10	32	1,570	19	80
3.....	1,260	13	44	1,150	5	16	1,700	23	106
4.....	1,620	12	52	1,090	2	6	1,220	17	56
5.....	2,080	12	67	1,230	4	13	977	18	48
6.....	2,780	12	90	1,590	7	30	1,070	20	s 66
7.....	2,770	23	172	2,060	12	67	4,100	138	s 2,710
8.....	2,470	19	127	1,830	7	35	4,960	151	s 2,140
9.....	2,590	21	147	1,410	8	30	2,900	48	376
10.....	3,700	28	280	1,190	7	22	2,180	20	118
11.....	2,970	25	200	1,060	6	17	1,810	16	78
12.....	2,330	26	164	1,030	4	11	1,660	12	54
13.....	2,230	20	120	931	3	8	1,520	10	41
14.....	2,180	20	118	937	6	15	1,410	10	38
15.....	2,150	19	110	1,020	10	28	1,350	8	29
16.....	1,860	19	95	1,020	10	28	1,400	15	57
17.....	1,630	20	88	839	14	32	1,750	15	71
18.....	1,560	16	67	835	18	41	1,510	13	53
19.....	1,440	15	58	757	14	29	1,350	15	55
20.....	1,320	19	68	737	18	36	1,310	10	35
21.....	3,140	56	s 454	1,600	23	99	1,210	12	39
22.....	3,740	33	333	2,230	28	169	1,280	16	55
23.....	2,740	32	237	1,620	25	109	1,200	10	32
24.....	2,100	23	130	1,070	24	69	1,360	9	33
25.....	2,180	23	135	936	17	43	1,520	17	70
26.....	1,820	18	88	844	13	30	1,500	16	65
27.....	1,620	15	66	815	15	33	1,300	11	39
28.....	1,890	33	s 198	778	15	32			
29.....	1,910	20	103	749	8	16	1,430	12	46
30.....	1,670	16	72	1,060	18	52	1,360	12	44
31.....	1,440	6	23	1,520	28	115	--	--	--
Total.	65,400	--	3,993	36,408	--	1,301	51,067	--	6,779

Total discharge for year (cfs-days) 1,131,980

Total load for year (tons) 247,278

s Computed by subdividing day.

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT BELMONT FILTER PLANT, PHILADELPHIA, PA.

LOCATION --At Belmont Filter Plant, Philadelphia, Philadelphia County, 1.6 miles upstream from gaging station at Fairmont Dam in Philadelphia.

DRAINAGE AREA --1,890 square miles.

RECORDS AVAILABLE --Chemical analyses: October 1945 to September 1956.

Water temperatures: October 1945 to September 1956.

EXTREMES 1955-56 --Dissolved solids: Maximum, 308 ppm Jan. 1-10; minimum, 141 ppm Feb. 11-20.

Hardness: Maximum, 171 ppm Jan. 1-10; minimum, 83 ppm Feb. 11-20 and Mar. 11-20.

Specific conductance: Maximum, 85 μ S/cm Aug. 18; minimum, 34 μ S/cm Dec. 22, 23, and 24.

Water temperatures: Maximum, 85 $^{\circ}$ F Aug. 18; minimum, 34 $^{\circ}$ F Dec. 22, 23, and 24.

EXTREMES 1944-56 --Dissolved solids: Maximum, 362 ppm Oct. 21-30, 1953; minimum, 94 ppm Feb. 1-10, 21-28, 1951.

Hardness: Maximum, 231 ppm Oct. 4-9, 1951; minimum, 77 ppm Dec. 11-20, 1953.

Specific conductance: Maximum daily, 588 micromhos Oct. 1951; minimum daily, 154 micromhos Apr. 29, 1952.

Water temperatures: Maximum, 88 $^{\circ}$ F July 20 Aug. 7, 1955; minimum, 34 $^{\circ}$ F Dec. 22, 23, and 24.

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. Records of discharge for water year October 1955 to September 1956 for Schuylkill River at Philadelphia given in WSP 1432.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180 $^{\circ}$ C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25 $^{\circ}$ C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955	2,600	11	0.02	35	16	8.5		70	87	12	0.2	7.8	249	153	96	390	7.4	3
Oct. 11-20	8,950	5.0	.02	23	8.7	2.7		40	48	7.0		7.4	154	93	60	239	7.2	5
Oct. 21-31	3,620	5.7	.02	29	12	8.9		42	84	8.5	.1	8.7	197	122	87	312	7.3	4
Nov. 1-10	3,640	5.6	.01	27	10	13		37	86	8.0	.1	7.4	188	106	78	283	7.3	3
Nov. 11-20	3,200	5.4	.02	30	13	15		47	100	9.0	.2	7.4	208	128	90	330	7.4	4
Nov. 21-30	2,670	10	.18	29	12	14		46	90	10	.1	8.9	238	122	84	308	7.1	3
Dec. 1-10	1,980	10	.18	32	16	14		55	103	12	.2	8.9	238	146	101	362	7.1	3
Dec. 11-20	1,980	12	.23	39	17	13		52	111	14	.2	10	260	167	184	403	7.3	7
Dec. 21-31	1,350	11	.06	31	19	28		70	122	16	.1	8.2	284	156	163	467	7.2	5
Jan. 1-10, 1956	1,270	11	.01	42	16	29		65	144	16	.2	8.2	321	171	187	467	7.2	5
Jan. 11-20	1,670	10	.02	36	12	28		72	110	17	.3	8.0	271	144	155	432	7.4	5
Jan. 21-31	1,780	11	.02	38	14	29		73	117	19	.1	8.4	274	152	93	414	7.2	5
Feb. 1-10	6,210	11	.01	23	7.3	11		44	57	8.5	.1	4.8	157	87	51	242	7.1	5
Feb. 11-20	4,430	15	.01	21	7.4	9.5		44	50	7.0	.2	6.3	141	83	47	238	7.2	5
Feb. 21-30	4,020	15	.05	25	7.7	9.5		44	55	7.5	.2	8.1	156	90	54	237	7.1	5
Mar. 1-10	4,060	16	.02	25	7.7	12		50	59	8.0	.1	6.6	175	94	53	255	7.2	5
Mar. 11-20	7,900	12	.03	23	7.5	6.5	1.6	39	53	7.5	.0	8.8	161	83	52	220	7.7	10
Mar. 21-31	6,380	15	.02	22	9.8	4.6		46	50	6.5	.1	7.4	156	95	59	238	7.5	1
Apr. 1-10	5,760	14	.02	24	9.0	6.8		50	54	6.0	.1	7.1	149	97	56	242	7.7	2
Apr. 11-20	4,880	17	.02	22	10	5.8		46	55	5.0	.1	7.8	154	96	58	236	7.7	1
Apr. 21-30	2,960	7.1	.03	26	13	5.9		52	71	7.0	.2	5.2	173	118	76	280	7.4	2

May 1-10, 1956.....	3,950	5.9	0.01	25	11		9.6	48	70	4.5	0.2	12	169	108	68	270	7.5	4
May 11-20.....	2,750	10	.04	24	14		6.6	54	69	6.5	.2	7.4	170	117	78	277	7.6	3
May 21-31.....	2,060	8.2	.00	29	15		8.8	59	82	10	.2	6.0	220	136	86	328	7.4	3
June 1-10.....	2,600	9.4	.00	29	13		11	51	84	12	.1	5.4	215	126	84	316	7.3	4
June 11-20.....	1,840	11	.01	31	13		12	48	93	12	.2	4.8	237	131	91	332	7.0	2
June 21-30.....	1,770	13	.01	35	14		11	65	90	12	.2	6.2	262	145	92	358	7.5	4
July 1-10.....	2,330	12	.03	35	15		12	63	98	10	.2	8.5	230	149	97	374	7.1	3
July 11-20.....	2,050	12	.10	28	13		14	50	89	8.5	.2	8.0	211	123	82	318	7.1	2
July 21-31.....	2,240	11	.03	28	14		14	54	90	10	.3	7.2	215	127	83	332	7.1	3
Aug. 1-10.....	1,820	10	.13	32	17		17	64	103	14	.3	8.1	250	150	97	384	6.9	3
Aug. 11-20.....	1,210	11	.04	34	19		21	66	118	17	.3	7.6	264	163	109	425	7.0	2
Aug. 21-31.....	1,380	10	.06	34	18		21	70	113	16	.3	7.4	272	159	102	421	6.9	3
Sept. 1-10.....	2,430	9.1	.07	31	16		17	60	101	12	.3	9.3	230	143	94	364	6.8	3
Sept. 11-20.....	1,640	10	.06	27	15		15	56	86	12	.2	10	204	129	83	330	7.1	3
Sept. 21-30.....	1,540	8.7	.06	31	16		19	60	104	14	.2	7.9	231	143	94	378	7.3	2
Weighted average.....	3,110	11	0.05	29	13		13	55	86	11	0.2	7.8	212	127	82	327	--	4

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

DELAWARE RIVER BASIN--Continued

SCHUYLKILL RIVER AT BELMONT FILTER PLANT, PHILADELPHIA, PA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 8:30 a.m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	58	39	35	36	41	44	65	--	--	81	82
2	70	56	39	35	37	42	46	66	--	83	81	83
3	70	55	--	35	37	42	47	65	--	83	80	83
4	69	58	--	36	37	44	49	65	--	--	80	83
5	69	53	42	37	38	45	50	--	--	83	80	82
6	69	50	42	37	41	46	53	--	--	81	78	83
7	69	50	43	39	40	48	53	--	--	79	77	82
8	71	50	42	38	36	47	55	--	--	--	76	79
9	69	50	42	37	37	45	53	60	--	77	78	73
10	66	50	41	37	37	--	58	60	--	77	79	71
11	65	50	41	38	41	44	51	62	--	77	80	69
12	65	46	42	40	--	45	53	62	--	77	81	69
13	65	52	41	41	44	44	53	64	--	79	82	70
14	68	51	41	--	45	52	54	65	78	--	82	73
15	68	51	41	--	47	49	53	68	--	79	82	73
16	64	54	40	40	45	46	54	70	--	78	82	73
17	64	54	39	39	45	46	--	68	83	76	82	74
18	62	52	36	39	43	40	54	70	83	78	85	72
19	61	--	37	38	40	37	53	--	81	77	84	72
20	61	--	36	37	39	38	53	66	81	78	84	71
21	60	50	35	38	40	37	--	66	--	75	82	69
22	57	43	34	38	39	40	--	69	76	--	78	68
23	58	44	34	39	38	41	--	71	78	76	78	67
24	57	45	34	38	37	44	53	69	--	77	77	70
25	57	45	35	38	37	42	54	69	--	78	76	70
26	55	45	36	37	38	42	54	69	82	77	77	70
27	54	45	--	36	40	43	55	68	84	78	77	68
28	55	44	35	--	42	44	56	67	81	--	78	66
29	52	43	35	--	42	45	60	67	81	--	73	65
30	57	40	35	37	--	--	63	--	--	80	73	63
31	58	--	--	38	--	45	--	--	--	80	80	--
Average	63	49	38	38	40	44	53	66	--	78	79	73

DELAWARE RIVER BASIN--Continued
SCHUYLKILL RIVER AT PASSYUNK AVENUE, PHILADELPHIA, PA.

LOCATION --Continuous sample collected from intake pipe at Atlantic Refining Company, Passyunk Avenue, Philadelphia, Pa.
DRAINAGE AREA --1,893 square miles (at Fairmount Dam).
RECORDS AVAILABLE --Chemical analyses: October 1953 to July 1956 (discontinued).
Water temperatures: October 1953 to July 1956 --Range: Maximum, 19.4° C.; minimum, 6.8° C. 30 Jan. 1-10; minimum, 103 ppm Mar. 30, Apr. 1-11.
EXTREMES --October 1955 to July 1956 --Hardness: Maximum, 603 ppm; minimum, 177 micromhos Mar. 15.
Specific conductance: Maximum daily, 603 ppm; minimum daily, 177 micromhos Mar. 15.
EXTREMES 1953-55 --Hardness: Maximum, 224 ppm Oct. 11-20, 1953; minimum, 85 ppm Mar. 1-10, 1954.
Specific conductance: Maximum daily, 795 micromhos Oct. 26, 1953; minimum daily, 177 micromhos Mar. 15, 1956.
REMARKS --Records of discharge for water year October 1955 to September 1956 for Schuylkill River at Philadelphia, Pa. given in WSP 1432.

Chemical analyses, in parts per million, water year October 1955 to July 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
Sept. 30, Oct. 1-10, 1955	2,490	11	0.03	32	15	15		56	96	16	0.2	6.0	244	142	96	454	7.0	3
Nov. 1-10	3,640	28	.01	31	13	11		44	91	10	.3	12	240	131	95	324	7.3	3
Dec. 1-12	1,930	18	.01	36	17	17		57	108	19	.2	13	275	160	113	413	6.8	2
Dec. 30, Jan. 1-10, 1956	1,270	19	.01	44	20	46		68	167	30	.3	24	359	194	136	554	6.9	4
Feb. 29, Mar. 1-12	4,230	15	.01	22	12	10		46	62	11	.2	11	171	104	67	275	7.0	3
Mar. 30, Apr. 1-11	5,800	20	.00	20	13	8.9		53	57	9.5	.2	7.5	162	103	60	261	7.3	2
Apr. 30, May 1-10	3,830	17	.04	24	15	12		57	74	11	.2	8.9	203	121	75	303	7.0	2
May 31, June 1-11	2,530	15	.00	28	17	13		57	91	12	.2	11	220	140	93	341	7.1	2
July 12-20	1,960	24	.03	40	17	19		67	121	19	.2	3.5	308	170	115	364	7.7	4

DELAWARE RIVER BASIN--Continued

DELAWARE RIVER AT EDDYSTONE, PA.

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1956.

REMARKS.--Samples taken at center of stream 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 1955 to September 1956

Date of collection	Sampling station	Discharge at Trenton (cfs)	Chloride (Cl)	Specific conductance (micro-mhos at 25°C)	pH	Biochemical oxygen demand	Dissolved oxygen
Oct. 5, 1955	Top	8,460	18	273	6.4	0.0	2.2
	Bottom		18	283	6.7		
Nov. 2	Top	35,200	7.0	171	7.0	3.9	5.8
	Bottom		7.0	174	6.5		
Dec. 5	Top	10,400	7.0	176	6.5	4.4	7.6
	Bottom		7.0	179	6.5		
Jan. 4, 1956	Top	6,000	15	270	6.8	5.2	6.7
	Bottom		15	266	6.7		
Feb. 1	Top	7,190	14	269	6.1	5.4	6.0
	Bottom		15	271	6.0		
Mar. 5	Top	16,300	7.0	185	6.8	.3	6.8
	Bottom		7.0	184	6.8		
Apr. 2	Top	13,200	8.0	191	6.4	2.4	2.5
	Bottom		8.0	203	6.7		
May 2	Top	36,800	6.5	127	6.3	.9	5.5
	Bottom		8.0	128	6.3		
June 5	Top	25,000	10	196	6.6	.3	2.6
	Bottom		10	196	6.6		
July 17	Top	9,030	13	254	6.6	1.8	4.2
	Bottom		12	254	6.6		
Aug. 13	Top	3,880	15	253	6.6	8.4	1.9
	Bottom		16	255	6.5		
Sept. 10	Top	5,880	21	321	6.8	1.3	2.6
	Bottom		21	315	6.7		

DELAWARE RIVER BASIN--Continued
DELAWARE RIVER AT MARCUS HOOK, PA.

RECORDS AVAILABLE.--Chemical analyses: August 1949 to September 1956.
REMARKS: Data obtained from analyses of center river samples taken 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 1955 to September 1956

Date of collection	Sampling station	Discharge Traction (cfs)	Silica (SiO ₂) (Fe)	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 on evaporation at 180°C)	Hardness as CaCO ₃		pH	Color	Biochemical oxygen demand	Dissolved oxygen
															Calcium	Non-carbonate				
Oct. 5, 1955 ...	Top	8,460	4.1	0.20	20	7.6	20	3.3	38	70	18	0.2	7.0	200	81	50	6.6	11	3.0	1.2
Nov. 2 ...	Bottom	35,200	6.7	.12	16	4.8	8.4	2.0	25	44	8.0	.2	7.2	120	60	40	6.5	14	3.3	5.0
Dec. 5 ...	Top	10,400	6.4	.35	13	4.8	11	1.6	29	37	8.0	.2	3.4	115	52	28	6.7	22	3.5	7.6
Jan. 4, 1956 ...	Bottom	6,000	7.1	.10	20	7.6	28	3.0	10	76	32	.4	9.6	204	81	73	6.8	25	5.2	7.0
Feb. 1 ...	Top	7,190	6.6	.02	20	7.5	22	2.9	24	58	21	.3	14	181	81	62	6.6	25	4.2	6.0
Mar. 5 ...	Bottom	16,300	7.1	.01	16	4.7	9.1	2.2	23	40	7.0	.0	9.1	113	59	41	6.1	10	3.0	6.4
Apr. 2 ...	Top	13,200	5.6	.06	16	4.5	7.3	1.8	26	38	9.0	.2	7.1	114	59	37	6.2	7	1.1	7.6
May 2 ...	Bottom	38,800	4.1	.05	11	3.4	5.5	1.5	23	26	8.0	.0	5.3	79	42	23	7.2	6	.3	6.0
June 5 ...	Top	25,000	5.0	.02	18	5.1	10	2.1	25	45	10	.3	9.1	127	66	46	6.6	9	1.4	2.0
July 17 ...	Bottom	9,030	3.5	.01	20	7.6	15	--	21	63	15	.3	8.3	185	81	64	7.2	4	.5	3.0
Aug. 13 ...	Top	3,880	4.9	.02	22	6.8	23	--	30	60	25	.5	9.4	170	83	59	6.1	6	6.0	2.2
Sept. 10 ...	Bottom	5,880	2.3	.01	23	9.2	35	--	46	70	38	.4	7.6	213	95	58	7.3	5	2.8	4.4

DELAWARE RIVER BASIN--Continued

RED CLAY CREEK AT WOODDALE, DEL.

LOCATION.--Temperature recorder at gaging station 12 feet upstream from bridge on State Highway 48, 0.3 mile south of Wooddale, New Castle County, and 2.3 miles north of Marshallton.
DRAINAGE AREA.--47.0 square miles.

RECORDS AVAILABLE.--Water temperatures: April 1953 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 82°F Sept. 1; minimum, 33°F Dec. 21-24, 26-31, Jan. 1-3, 8-10, Feb. 1.

EXTREMES, April 1953 to September 1956.--Water temperatures: Maximum, 87°F July 17, Aug. 2, 6, 1955; minimum, freezing point on several days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Temperature (°F) of water, water year October 1955 to September 1956

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

DELAWARE RIVER BASIN--Continued

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, October 1952 to July 1953, March to September 1956.

Sediment records: December 1946 to September 1956.

EXTREMES, 1955-56.--Sediment concentrations: Maximum daily, 628 ppm July 21; minimum daily, 1 ppm on several days during December.

Sediment loads: Maximum daily, 4,690 tons Mar. 14; minimum daily, less than 0.50 ton Dec. 21, 22, 23.

EXTREMES, 1946-56.--Sediment concentrations: Maximum daily, 1,420 ppm July 9, 1952; minimum daily, 1 ppm on many days.

Sediment loads: Maximum daily, 20,700 tons Aug. 13, 1955; minimum daily, less than 0.50 ton on many days.

REMARKS.--Records of specific conductance and pH of daily samples available in district office at Philadelphia, Pa. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
								Calcium, magnesium	Non-carbonate			
Oct. 3, 1955 ...	263	5.4		50	19	5.0	4.7	60	19	163	7.0	-
Oct. 28	247	9.4		72	23	8.0	4.0	77	18	201	8.1	-
Mar. 1, 1956 ..	350	8.0		42	22	8.5	8.9	59	25	159	7.0	5
Apr. 5	595	6.7		37	22	7.0	6.8	54	24	144	6.8	4
May 8	570	5.9		41	21	6.5	7.6	58	24	158	6.7	4
June 6	330	7.9		47	22	6.0	6.6	58	20	158	7.1	6
July 6	311	7.4		47	20	12	7.3	66	28	176	7.1	5
Aug. 1	218	8.1		54	22	7.0	4.5	63	19	172	6.8	3
Sept. 6	191	9.0		50	22	8.0	5.5	60	19	175	6.9	5

DELAWARE RIVER BASIN--Continued

BRANDYWINE CREEK AT WILMINGTON, DEL.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	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.....	330	6	5	337			222	2	1
2.....	298	8	6	298	4	3	222	2	1
3.....	263	7	5	285			236	2	1
4.....	247	4	3	274			253	1	1
5.....	247	2	1	269	6	4	253	1	1
6.....	425	10	s 15	258			231	2	1
7.....	484	12	16	263			222	2	1
8.....	493	11	15	304	4	3	218	1	1
9.....	518	6	8	280			227	1	1
10.....	350	2	2	274			231	1	1
11.....	298	2	2	502	10	14	200	2	1
12.....	274	2	1	425			190	2	1
13.....	263	2	1	324	7	7	185	2	1
14.....	330	9	8	298			185	4	2
15.....	654	17	30	280			210	3	2
16.....	536	7	10	269	5	4	183	2	1
17.....	552	8	12	269			180	2	1
18.....	402	7	8	253			180	3	1
19.....	337	5	5	258	8	6	195	2	1
20.....	304	4	3	298			170	2	1
21.....	292	4	3	285			135	1	(t)
22.....	280	4	3	318	3	2	140	1	(t)
23.....	269	4	3	318			183	1	(t)
24.....	269	4	3	285			200	2	1
25.....	280	4	3	269	2	1	205	2	1
26.....	263	4	3	258			205	3	2
27.....	258	3	2	253			170	2	1
28.....	247	12	8	258	8	5	145	3	1
29.....	253	20	14	231			160	3	1
30.....	622	26	s 46	218	17	10	180	2	1
31.....	521	16	23	--	--	--	145	2	1
Total.	11,159	--	267	8,711	--	132	6,061	--	32
Day	January			February			March		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	145			450	40	49	350	4	4
2.....	140	4	2	1,040	150	s 859	372	4	4
3.....	180			1,640	198	s 1,000	372	5	5
4.....	183			824	25	56	350	8	8
5.....	183	3	1	688	10	19	330	5	4
6.....	180			952	25	64	330	6	5
7.....	176			2,470	449	s 3,200	380	6	6
8.....	139	4	2	918	70	174	1,040	108	s 388
9.....	143			612	20	33	1,050	164	s 536
10.....	263	5	4	527	8	11	544	55	81
11.....	402	8	9	493	6	8	493	19	25
12.....	493	15	20	612	7	12	570	15	23
13.....	395	16	17	510	11	15	527	10	14
14.....	304	9	7	434	15	18	2,600	418	s 4,690
15.....	242	7	5	418	10	11	2,020	333	s 2,660
16.....	227	9	6	410	7	8	1,130	70	214
17.....	227	9	6	380	10	10	1,300	51	179
18.....	200	4	2	1,420	38	146	994	15	40
19.....	190	3	2	1,110	32	96	799	20	43
20.....	205	5	3	620	27	45	765	20	41
21.....	195	8	4	518	16	22	731	20	39
22.....	180	11	5	442	7	8	774	19	40
23.....	185	4	2	402	6	7	978	30	79
24.....	165	4	a 2	380	5	5	1,240	40	134
25.....	160	2	1	468	37	47	935	20	50
26.....	180	9	4	570	76	117	824	20	44
27.....	150	17	7	450	24	29	978	15	40
28.....	145	4	2	434	16	19	782	17	36
29.....	183	12	6	402	9	10	731	6	12
30.....	924	144	s 932	--	--	--	850	15	34
31.....	1,870	287	s 1,690	--	--	--	638	5	9
Total.	8,754	--	2,751	20,594	--	6,098	25,827	--	9,487

s Computed by subdividing day.

t Less than 0.50 ton.

a Computed from estimated concentration graph.

DELAWARE RIVER BASIN--Continued

BRANDYWINE CREEK AT WILMINGTON, DEL.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	620	9	15	459	10	12	902	373	s1,080
2.....	595	15	24	468	15	19	468	35	44
3.....	595	8	13	578	13	20	867	77	s189
4.....	620	9	15	518	15	21	484	26	34
5.....	595	15	24	468	16	20	372	25	25
6.....	561	12	18	450	11	13	330	16	14
7.....	1,240	127	425	680	39	72	304	10	8
8.....	1,830	--	a1,100	570	21	32	292	14	11
9.....	1,190	29	93	476	15	19	280	14	11
10.....	850	15	34	450	8	10	304	20	16
11.....	722	6	12	434	13	15	544	50	s79
12.....	680	8	15	425	14	16	344	30	28
13.....	638	15	26	620	--	a85	292	35	28
14.....	620	11	18	595	--	a55	263	15	11
15.....	620	10	17	442	16	19	236	16	10
16.....	824	18	40	410	10	11	242	20	13
17.....	748	15	30	380	11	11	404	82	90
18.....	620	10	17	380	12	12	454	38	47
19.....	604	9	10	372	12	12	304	25	21
20.....	570	9	14	365	15	15	258	25	17
21.....	552	11	16	344	10	9	269	20	15
22.....	544	10	15	344	10	9	285	20	15
23.....	536	9	13	425	16	18	561	35	53
24.....	527	5	7	402	14	15	887	134	s364
25.....	510	5	7	344	10	9	493	175	233
26.....	570	5	8	330	9	8	292	75	59
27.....	570	8	12	344	11	10	280	55	42
28.....	527	10	14	380	9	9	263	40	28
29.....	502	9	12	330	10	9	242	54	35
30.....	494	12	16	311	10	8	218	35	21
31.....	--	--	--	324	11	10	--	--	--
Total..	20,664	--	2,080	13,418	--	603	11,704	--	2,641
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.....	213	22	13	218	10	6	176	23	11
2.....	213	20	12	218			459	42	s80
3.....	1,080	413	s1,460	213			222	24	14
4.....	459	150	186	205			169	12	5
5.....	311	38	32	311			155	10	4
6.....	311	50	42	418	23	26	191	10	s6
7.....	298	21	17	395	15	16	546	95	s164
8.....	269	20	15	292	4	3	247	38	25
9.....	561	112	s168	242			176	22	10
10.....	358	70	68	222			162	10	4
11.....	269	30	22	205	10	5	151	5	2
12.....	253	25	17	196			148	9	4
13.....	227	25	15	191			148	7	3
14.....	258	23	16	196			142	7	3
15.....	247	25	17	191	11	6	148	10	4
16.....	227	20	12	180			169	3	1
17.....	253	21	14	173			176	3	1
18.....	218	18	11	169			158	7	3
19.....	205	18	10	162			139	5	2
20.....	196	18	10	165	30	13	148	7	3
21.....	2,360	628	s4,620	552	65	s103	145	4	2
22.....	740	120	240	444	30	36	136	3	1
23.....	476	10	13	247	16	11	148	2	1
24.....	395	10	11	213	14	8	252	3	2
25.....	365	8	8	196	14	7	196	3	2
26.....	318	15	13	176	10	5	162	3	1
27.....	324	30	26	176	13	6	162	12	5
28.....	318	20	17	173	13	6	395	28	30
29.....	269	20	15	169	7	3	350	17	16
30.....	247	20	13	165	5	2	222	5	3
31.....	227	10	6	183	20	10	--	--	--
Total..	12,465	--	7,139	7,256	--	345	6,198	--	412

Total discharge for year (cfs days) 152,811

Total load for year (tons) 31,987

s Computed by subdividing day.

a Computed from estimated concentration graph.

DELAWARE RIVER BASIN--Continued

DELAWARE RIVER AT THE DELAWARE MEMORIAL BRIDGE, WILMINGTON, DEL.

LOCATION.--Center of the navigation channel at the center of the Delaware Memorial Bridge, 1.9 miles downstream from the mouth of the Christina River.
DRAINAGE AREA.--11,030 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Discharge at Trenton (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 on evap- oration at 180° C)	Hardness as CaCO ₃		Specific conductance (micro- mhos at 25° C)	pH	Color
														Calcium, mg- nesium	Non- carbon- ate			
Oct. 3, 1955	9,620	7.3	0.26	55	88	632		14	226	1,140	0.6	4.7	2,310	499	488	3,960	6.7	8
Jan. 11, 1956	7,050	6.2	.12	67	170	1,370		32	414	2,400	.6	.4	5,120	866	840	8,250	6.9	10
Mar. 2	13,500	6.8	.00	17	6.5	16		14	55	14	.3	9.4	134	70	58	223	6.0	4
July 12	11,100	6.3	.00	19	7.9	47		7	73	66	.5	7.2	255	80	74	495	6.6	5
Aug. 7	4,760	5.8	.03	41	82	621		19	212	1,100	.7	1.7	2,260	440	424	3,790	7.1	6
Sept. 6	4,120	2.6	.00	56	131	1,010		20	317	1,790	.7	3.0	3,530	678	666	5,950	6.3	7

DELAWARE RIVER BASIN--Continued
DELAWARE RIVER AT REEDY POINT, DELAWARE

LOCATION.--One hundred yards west of buoy "IN", 0.8 miles southeast of the Chesapeake and Delaware Canal and 2.1 miles south of Pea Patch Island.
DRAINAGE AREA.--11,220 square miles.
RECORDS AVAILABLE.--October 1955 to September 1956.
REMARKS.--The composites are composed of samples collected within one hour of high-water slack.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
Oct. 3, 1955	9,620	6.2	0.22	85	240	1,880		36	515	3,350	0.6	1.3	6,660	1,200	1,170	10,800	6.9	10
Nov. 1-4, 7-10	26,000	11	.07	25	35	413		22	125	675	.3	3.7	1,120	206	188	2,020	7.1	--
Dec. 1-30	10,700	6.9	.11	44	90	874		22	233	1,500	.4	2.8	2,590	480	482	4,580	7.0	--
Jan. 12, 16, 19, 20, 1956	8,520	6.5	.06	119	340	3,170		50	762	5,500	.6	.1	9,820	1,700	1,650	15,400	7.1	--
Feb. 1, 2, 4, 6-10 ..	11,700	13	.03	78	157	1,590		24	401	2,730	.5	1.3	5,420	840	820	8,860	7.2	2
Mar. 1, 3, 5-8, 10 ..	21,400	12	.02	71	18	333		23	143	570	.3	3.5	1,250	251	232	2,180	7.2	4
Apr. 1-10	32,800	13	.02	27	38	291		17	115	510	.3	3.5	1,090	224	210	1,930	7.2	3
May 1, 3-5, 7-10 ..	30,100	14	.01	13	7.6	33		11	43	54	.3	4.8	1,204	64	55	334	7.2	3
June 1-10	16,600	10	.17	33	44	360		14	138	630	.4	2.4	1,380	263	252	2,330	6.9	4
June 21	5,330	3.5	.00	55	122	864		5	264	1,580	.3	2.0	3,270	639	635	5,330	6.7	5
Aug. 1-10	4,840	5.0	.02	60	134	1,280		30	361	2,180	.5	2.3	4,220	701	676	7,160	7.3	6
Sept. 6	4,120	2.6	.01	100	261	2,300		41	614	4,000	.6	.9	7,540	1,320	1,290	12,300	6.7	7

DELAWARE RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN DELAWARE RIVER BASIN IN PENNSYLVANIA AND DELAWARE

Chemical analyses, in parts per million, water year October 1955 to September 1956*

Date of collection	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
							Calcium, mag- nesium	Non- carbon- ate			

LACKAWAXEN RIVER AT HAWLEY, PA.

Feb. 14, 1956.....	3.9	15	11	3.0	3.0	22	10	70	6.8	8
Apr. 4.....	--	12	11	--	2.5	24	14	60	6.3	4
May 17.....	1.4	21	12	.8	.4	27	10	72	6.6	4
June 26.....	2.0	26	11	2.0	.9	32	11	82	7.0	10
Aug. 7.....	4.6	31	11	2.5	1.9	32	7	91	7.2	5
Sept. 18.....	4.9	26	15	2.5	2.7	32	11	84	7.1	12

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

Feb. 14, 1956.....	5.4	13	9.4	3.0	1.3	14	3	57	6.9	8
Mar. 21.....	2.3	13	11	2.5	2.0	22	11	59	7.2	6
May 15.....	1.3	13	9.6	1.4	1.5	21	10	56	6.4	5
May 17.....	2.6	9	9.4	1.2	2.2	15	8	49	6.6	6
June 19.....	4.3	18	15	1.0	.8	23	8	65	6.9	4
Aug. 16.....	5.2	16	13	2.5	1.3	20	7	68	6.4	2
Sept. 16.....	3.3	18	9.2	2.2	.9	21	6	59	6.7	2

BIG BUSH KILL CREEK AT SHOEMAKERS, PA.

Feb. 14, 1956.....	3.9	8	8.5	2.0	0.3	10	3	41	6.2	8
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BRODHEAD CREEK AT STROUDSBURG, PA.

Feb. 14, 1956.....	7.2	16	11	3.0	1.1	14	1	60	6.6	7
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MARSHALL CREEK NEAR STROUDSBURG, PA.

Feb. 14, 1956.....	6.0	14	13	2.0	1.5	32	5	66	7.3	9
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McMICHAELS CREEK AT STROUDSBURG, PA.

Feb. 14, 1956.....	9.8	18	13	4.0	1.8	14		69	6.8	6
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DELAWARE RIVER AT DELAWARE WATER GAP, PA.

Feb. 14, 1956.....	7.1	13	14	4.0	1.9	17	6	61	7.2	7
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DELAWARE RIVER AT EASTON, PA.

Feb. 14, 1956 (left side)	9.5	32	17	3.5	2.2	30	4	106	6.8	7
Feb. 14 (center).....	4.0	28	13	4.5	2.4	36	13	91	6.7	8
Feb. 14 (right side)...	3.4	24	14	4.0	4.3	36	16	97	6.7	9
Feb. 14 a.....	5.3	28	15	3.5	2.4	34	11	94	7.0	9

LEHIGH RIVER AT BETHLEHEM, PA.

Mar. 5, 1956.....	3.6	27	28	4.5	5.2	54	32	133	6.8	4
Apr. 11.....	4.6	22	29	2.9	4.4	46	28	118	6.7	3
May 22.....	3.8	33	26	5.0	5.2	57	30	146	6.9	2
Aug. 14.....	7.4	36	47	4.5	5.3	73	44	188	6.8	4
Sept. 26.....	5.8	25	35	4.0	5.0	54	34	151	6.9	3

LEHIGH RIVER AT GLENDON, PA.

Feb. 14, 1956.....	11	40	34	8.0	6.7	60	27	175	7.2	5
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LEHIGH RIVER AT EASTON, PA.

Feb. 14, 1956 ^b	2.6	40	32	8.0	7.6	78	45	182	6.7	8
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DELAWARE RIVER AT STOCKTON, N. J.
(Center Bridge, Pa.)

Feb. 14, 1956.....	9.7	34	21	6.0	4.9	41	13	127	7.3	7
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a Easton Filter Plant.

h At Railroad Bridge.

DELAWARE RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN DELAWARE RIVER BASIN IN PENNSYLVANIA
AND DELAWARE--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Chemical analyses, in parts per million, water year October 1953 to September 1956—Continued

Date of collection	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
							Calcium, mag- nesium	Non- carbon- ate			
MAIDEN CREEK AT LEESPORT, PA.											
Feb. 15, 1956	2.6	60	22	4.0	9.9	80	31	171	7.2	13	
Feb. 15	2.6	58	21	4.5	9.8	78	30	169	6.8	10	
Feb. 15	7.9	124	24	4.5	5.3	120	18	269	7.9	16	
SCHUYLKILL RIVER AT READING, PA.											
Feb. 15, 1956	7.4	17	82	6.0	6.6	97	83	247	7.3	6	
SOUTH BRANCH NAAMAN CREEK AT ARDEN, DEL.											
Oct. 5, 1955	5.1	25	6.4	8.0	5.8	32	12	92	6.6		
Nov. 17	5.6	29	10	7.5	4.2	36	12	107	6.7		
CHRISTINA RIVER AT COOCHES BRIDGE, DEL.											
Nov. 17, 1955	11	38	13	6.0	2.3	32	1	124	6.8		
WHITE CLAY CREEK NEAR NEWARK, DEL.											
Oct. 3, 1955	6.2	55	13	9.0	5.2	62	17	169	6.9		
Oct. 27	8.3	67	14	6.0	4.8	68	13	169	7.8		
Nov. 17	6.9	58	15	8.0	5.5	64	16	167	7.0		
MILL CREEK AT STANTON, DEL.											
Oct. 5, 1955	9.9	50	12	11	4.5	51	10	156	7.1		
Nov. 17	7.3	55	13	7.0	4.3	56	11	151	7.7		
RED CLAY CREEK AT WOODDALE, DEL.											
Oct. 3, 1955	11	57	17	14	4.7	64	17	197	6.7		
Oct. 28	16	64	19	24	14	82	30	234	6.7		
RED CLAY CREEK NEAR MARSHALLTON, DEL. (Highway Bridge, Route 41)											
Jan. 19, 1956	31	110	11	22	0.7	65	0	331	6.8		
RED CLAY CREEK AT MARSHALLTON, DEL.											
Jan. 19, 1956	29	76	23	29	7.6	70	8	309	6.7		
SHELLPOT CREEK AT WILMINGTON, DEL.											
Oct. 3, 1955	13	68	38	10	4.9	85	29	250	7.6		
Nov. 17	12	52	28	11	1.8	75	15	212	8.4		
RED LION CREEK AT RED LION, DEL.											
Oct. 6, 1955	6.9	14	12	8.0	4.7	24	13	86	6.1		
Nov. 17	5.3	20	13	8.0	2.8	32	16	96	6.8		
BLACKBIRD CREEK AT BLACKBIRD, DEL.											
Oct. 6, 1955	5.2	17	6.0	5.5	1.6	18	4	65	6.3		
Nov. 17	5.4	19	6.3	5.5	2.2	20	4	66	6.6		
PROVIDENCE CREEK AT CLAYTON, DEL.											
Oct. 5, 1955	1.3	12	16	6.5	5.8	27	17	93	6.2		

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

SUSQUEHANNA RIVER BASIN

SUSQUEHANNA RIVER AT JOHNSON CITY, N. Y.

LOCATION.--At the New York State Electric and Gas Corp., Goudey Station, Johnson City, N. Y.

DRAINAGE AREA.--3,916 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1955 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 77°F June 17, July 4, Aug. 18; minimum, freezing point on several days during December to March.

REMARKS.--Water is brought to plant underground through tubes. Measurements are made at plant which is approximately 200 feet from river. Readings made by employees of plant.

Temperature (°F) of water, water year October 1955 to September 1956
/Once-daily measurement at approximately 8 a. m./

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

SUSQUEHANNA RIVER BASIN--Continued

COREY CREEK NEAR MAINESBURG, PA.

LOCATION.--At gaging station, 1.1 miles downstream from Mainesburg, Tioga County, 3½ miles east of Mansfield, and 4½ miles upstream from mouth.

DRAINAGE AREA.--12.2 square miles.

RECORDS AVAILABLE.--Sediment records: May 1954 to September 1956.

EXTREMES, 1955-56.--Sediment concentrations: Maximum daily, 654 ppm Apr. 3; minimum daily, 0 ppm on Apr. 26-27.

Sediment loads: Maximum daily, 1,940 tons on Oct. 14, minimum daily, 0 tons on Apr. 26-27.

EXTREMES, 1954-56.--Sediment concentrations: Maximum daily, 939 ppm May 29, 1954; minimum daily, no flow on several days during July and August 1955.

Sediment loads: Maximum daily, 1,940 tons Oct. 14, 1955; minimum daily, 0 tons on several days.

REMARKS.--Station established May 1954 as an index station for the Corey Creek Watershed Project and part of an SCS Pilot Watershed study of Corey Creek. Records of discharge for water year October 1955 to September 1956 given in WSP 1432. Flow affected by ice Nov. 29, Dec. 1, 7, 8, 10-13, Dec. 20 to Jan. 11, Jan. 14 to Feb. 10, Feb. 12 to Mar. 1, Mar. 16-28.

Chemical analysis, in parts per million, June 2, 1956

Silica (SiO ₂)	2.6	Nitrate (NO ₃)	0.2
Iron (Fe)	.02	Dissolved solids (residue on evaporation at 180°C)	93
Calcium (Ca)	18	Hardness as CaCO ₃ :	
Magnesium (Mg)	3.2	Calcium, magnesium	58
Sodium (Na)	5.5	Noncarbonate	9
Potassium (K)			
Bicarbonate (HCO ₃)	60		
Sulfate (SO ₄)	17	Specific conductance (micromhos at 25°C)	141
Chloride (Cl)	2.0	pH	7.7
Fluoride (F)	.1	Color	4

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	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.....	1.1			33	7	0.6	8.6		
2.....	1.0			24			7.9		
3.....	.9	2	(t)	22	5	.3	10	3	0.1
4.....	.9			19			15		
5.....	.9			16			10		
6.....	3.2	8	0.1	14	4	.2	7.9		
7.....	2.4	9	.1	12			6.2	3	.1
8.....	7.6	19	s .5	11			5.7		
9.....	2.9	6	(t)	9.7	4	.1	6.2		
10.....	2.3	3	(t)	9.0			6.6	4	.1
11.....	2.0	5	(t)	9.7			5.7		
12.....	1.6	4	(t)	8.3	3	.1	5.2		
13.....	1.5	4	(t)	7.6			5.2	6	.1
14.....	627	646	s 1,940	32	24	s 2.8	5.5		
15.....	147	108	s 54	23	20	s 1.5	5.0		
16.....	256	341	s 374	114	202	s 95	5.2	4	.1
17.....	110	26	s 11	46	28	3.5	5.0		
18.....	49			31			5.2		
19.....	32	7	.7	28	4	.3	5.0	4	.1
20.....	24			24			3.7		
21.....	19			22			3.4		
22.....	16	4	.2	19	2	.1	3.5	1	(t)
23.....	13			27			4.7		
24.....	19			21			4.5		
25.....	20	3	.1	17	4	.2	6.4	2	(t)
26.....	14			15			6.0		
27.....	12			14			4.7		
28.....	11	2	.1	13			3.7		
29.....	10			11	3	.1	3.5	2	(t)
30.....	122	193	s 98	9.6			3.7		
31.....	53	36	s 5.4	--	--	--	3.6		
Total	1,582.3	--	2,486.6	661.9	--	107.7	182.5	--	2.2

s Computed by subdividing day.

t Less than 0.05 ton.

SUSQUEHANNA RIVER BASIN--Continued

COREY CREEK NEAR MAINESBURG, Pa.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	3.5	4	(t)	10	1	(t)	8	1	(t)		
2.....	2.9			5.5			80	113	s 46		
3.....	3.0			5.2			38	24	s 3.4		
4.....	3.3			4.1			23	12	.7		
5.....	3.1			3.7			37	35	s 7.0		
6.....	2.7	--	(t)	3.7	2	(t)	314	344	s 323		
7.....	1.9			6.0			190	258	s 150		
8.....	1.8			20			45	2.4	189	300	s 183
9.....	2.0			21			47	2.7	66	46	s 5.5
10.....	45			80			44	9.5	45	9	1.1
11.....	80	--	e 4.0	43	15	1.7	45	12	1.5		
12.....	30			46	20	2.5	35	13	1.2		
13.....	15			30	12	1.0	27	13	.9		
14.....	11			28	15	1.1	25	13	.9		
15.....	10			90	34	8.3	25	14	.9		
16.....	8.2	3	.1	28	12	.9	20	8	.4		
17.....	6.8			25	12	.8	22	15	.9		
18.....	6.2			84	--	a 26	21	22	1.2		
19.....	6.0			42	20	2.3	18	22	1.1		
20.....	6.6			21	9	.5	15	22	.9		
21.....	6.5	2	(t)	17	11	.5	12	23	.7		
22.....	5.8			13	10	.4	11	27	.8		
23.....	5.4			12	13	.4	12	28	.9		
24.....	5.8			12	12	.4	11	25	.7		
25.....	5.6			150	--	a 51	10	32	.9		
26.....	5.0	2	.1	27	26	1.9	12	25	.8		
27.....	4.5			15	10	.4	15	12	.5		
28.....	4.0			10	2	.1	14	15	.6		
29.....	3.8			9.2	1	(t)	13	16	.6		
30.....	16			--	--	--	15	22	.9		
31.....	40	--	--	--	15	21	.9				
Total.	331.4	--	9.0	861.4	--	115.0	1,383	--	737.9		
	April			May			June				
1.....	28	68	s 7.3	16	3	0.1	7.4	4	0.1		
2.....	69	145	s 46	16	6	.3	5.5				
3.....	252	654	s 527	16	4	.2	9.4				
4.....	182	155	76	13	2	.1	6.2				
5.....	96	45	12	12	2	.1	5.0				
6.....	63	19	3.2	13	--	a .7	4.8	4	(t)		
7.....	118	76	s 26	23	--	a 2.0	3.9				
8.....	86	19	4.4	13	10	(t)	3.5				
9.....	82	53	s 16	11	6	(t)	3.4				
10.....	67	37	s 7.3	11	5	(t)	3.4				
11.....	49	13	1.7	11	4	(t)	2.8	4	(t)		
12.....	39	11	1.2	19	--	a 1.0	2.4				
13.....	33	--	a .8	27	19	s 1.9	2.2				
14.....	28	5	.4	17			2.1				
15.....	26	8	.6	13			2.1				
16.....	63	62	s 15	13	7	.3	1.9	6	(t)		
17.....	38	16	1.6	11			1.8				
18.....	30	5	.4	11			7			.2	1.6
19.....	25	4	.3	9.6							1.4
20.....	20	4	.2	7.9			8			.2	1.4
21.....	17	3	.1	7.0	6	.1	1.4	3	(t)		
22.....	17	1	(t)	6.0			1.4				
23.....	20	2	.1	5.5			1.4				
24.....	17	1	(t)	5.0			1.6				
25.....	13	1	(t)	4.6			1.6				
26.....	14	0	0	3.9	6	.1	1.4	5	(t)		
27.....	13	0	0	4.1			1.6				
28.....	14	4	.2	3.7			1.2				
29.....	27	16	s 1.6	3.5			1.1				
30.....	19	2	.1	3.4			.9				
31.....	--	--	--	3.4	--	--	--	--	--		
Total.	1,565	--	749.6	333.6	--	9.5	85.8	--	1.1		

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

COREY CREEK NEAR MAINESBURG, PA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	0.9	25	0.1	1.2	9	(t)	3.8	7	s 0.1
2.....	1.8	50	.2	1.2	13	(t)	1.8	5	(t)
3.....	1.2	28	.1	1.0	9	(t)	1.1	3	(t)
4.....	1.1	23	.1	.8			.9		
5.....	17	135	s 7.4	1.7	10	.1	.8	4	(t)
6.....	4.7	21	.3	4.0			.8		
7.....	3.0	25	.2	2.1			.8		
8.....	2.1	38	.2	1.2			.6	2	(t)
9.....	5.1	59	s .9	.9	2	(t)	.6		
10.....	4.2	23	.3	.8			.6		
11.....	2.7	27	.2	.6			.6	2	(t)
12.....	2.2	29	.2	.6			.6		
13.....	2.6	58	.4	.6	2	(t)	.6		
14.....	2.6	30	.2	.8			.6	2	(t)
15.....	2.0	15	.1	.6			.8		
16.....	1.6	21	.1	1.0			4.4	44	s .6
17.....	1.6	10	(t)	.9			9.8	80	s 4.0
18.....	1.4	13	(t)	.6	5	(t)	3.2		
19.....	1.2	21	.1	1.7			1.8	2	(t)
20.....	2.7	27	.2	1.0			3.7		
21.....	4.2	35	.4	.8			2.5		
22.....	2.4	15	.1	.6	6	(t)	1.8	2	(t)
23.....	2.6	13	.1	.5			2.0		
24.....	2.0	9	(t)	3.6	26	s .3	1.7		
25.....	1.6	8	(t)	.9	7	(t)	1.3	3	(t)
26.....	1.9	4	(t)	.7	5	(t)	1.1		
27.....	3.0	4	(t)	.6	5	(t)	1.0		
28.....	1.9	4	(t)	.6	5	(t)	.9	2	(t)
29.....	1.6	4	(t)	2.1	13	s .2	.8		
30.....	1.4	4	(t)	2.2	15	s .2	.8		
31.....	1.2	3	(t)	5.6	18	s .4	--	--	--
Total.	85.5	--	12.2	41.5	--	1.7	51.8	--	4.9

Total discharge for year (cfs-days)..... 7,165.7

Total load for year (tons) 4,237.4

s Computed by subdividing day.

t Less than 0.05 ton.

SUSQUEHANNA RIVER BASIN--Continued

ELK RUN NEAR MAINESBURG, PA.

LOCATION.--At gaging station 2.7 miles northeast of Mainesburg, Tioga County, 5½ miles upstream from mouth and 5.8 miles east of Mansfield.
DRAINAGE AREA.--10.2 square miles.

RECORDS AVAILABLE.--Sediment records: May 1954 to September 1956.

EXTREMES, 1955-56.--Sediment concentrations: Maximum daily, 608 ppm, Apr. 3; minimum daily, 0 ppm on several days.

Sediment loads: Maximum daily, 771 tons Oct. 14; minimum daily, 0 tons on several days.

EXTREMES, 1954-56.--Sediment concentrations: Maximum daily, 719 ppm Mar. 22, 1955; minimum daily, no flow on many days.

Sediment loads: Maximum daily 771 tons Oct. 14, 1955; minimum daily, 0 tons on many days.

REMARKS.--Station established May 1954 as an index station for Elk Creek Watershed Project and part of SCS Pilot Watershed Study for Corey Creek which is adjacent to Elk Run.

Records of specific conductance and pH of periodic sediment samples available in district office at Philadelphia, Pa. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analysis, in parts per million, June 2, 1956

Silica (SiO ₂)	1.8	Nitrate (NO ₃)	0.8
Iron (Fe)	.02	Dissolved solids (residue on evaporation at 180°C)	88
Calcium (Ca)	16	Hardness as CaCO ₃ :	
Magnesium (Mg)	2.5	Calcium, magnesium	50
Sodium (Na)	6.7	Noncarbonate	5
Potassium (K)			
Bicarbonate (HCO ₃)	55		
Sulfate (SO ₄)	16	Specific conductance (micromhos at 25°C)	126
Chloride (Cl)	1.5	pH	7.1
Fluoride (F)	.1	Color	5

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	0.6			35	3	0.3	7.5		
2.....	.6			27	1	.1	6.0	0	0
3.....	.4	2	(t)	24	2	.1	10	--	a. 1
4.....	.4			19	2	.1	20	--	a. 4
5.....	.3			15			13	--	a. 2
6.....	3.5			13	14	.5	8.3		
7.....	2.0			12			5.9		
8.....	8.7	4	(t)	11			4.3	1	(t)
9.....	2.7			7.6	5	.1	4.5		
10.....	2.2			6.2			4.5		
11.....	1.4			8.0			4.1		
12.....	1.0	2	(t)	5.9	4	.1	3.8		
13.....	.9			5.3			3.7	6	.1
14.....	364	454	s 771	50	132	s 34	3.7		
15.....	166	113	s 67	29	26	s 4.1	3.5		
16.....	236	175	s 178	103	114	s 51	3.3		
17.....	164	68	s 35	42			3.2		
18.....	60	17	2.8	30	4	.3	3.2	2	(t)
19.....	30	6	.5	25			3.1		
20.....	22	9	.5	22			2.7		
21.....	17	1	(t)	21	3	.2	2.5		
22.....	14	2	.1	18			2.3		
23.....	11	1	(t)	25	14	s 1.3	2.4	2	(t)
24.....	19	17	s 1.3	20			3.0		
25.....	21	5	.3	16	2	.1	5.0	34	.5
26.....	15	8	.3	14			4.5		
27.....	11	13	.4	14			3.5	2	(t)
28.....	9.4	7	.2	12	2	.1	2.8		
29.....	11	8	.2	10			2.7		
30.....	109	157	s 67	9	--	--	2.8	1	(t)
31.....	59	10	1.6	--	--	--	2.7		
Total.	1,363.1	--	1,126.5	649.0	--	95.3	152.5	--	2.0

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

ELK RUN NEAR MAINESBURG, PA.--Continued

Suspended sediment, water year October 1955 to September 1956--Continued

Day	January			February			March				
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment			
		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		
1.....	2.5	1	(t)	8.0	2	(t)	17	2	0.1		
2.....	2.1			4.5			110	184	s 104		
3.....	2.3			3.7			71	130	s 39		
4.....	4.0			3.0			45	69	s 8.9		
5.....	2.9	3	(t)	2.7	1	(t)	43	97	s 15		
6.....	1.7			2.7			270	408	s 317		
7.....	1.4			6.0			238	342	s 236		
8.....	1.3			4.0			222	412	s 286		
9.....	1.5	10	0.4	3.5	12	.1	84	70	16		
10.....	15			16			39	25	2.6		
11.....	40			14			4	.2	31	18	1.5
12.....	19			30			6	.5	27	16	1.2
13.....	13	6	.2	22	2	.1	23	10	.6		
14.....	10			20			18	1.0	21	10	.6
15.....	8.0			80			55	12	17	10	.5
16.....	7.0			18			6	.3	13	4	.1
17.....	6.0	2	(t)	10	7	.2	14	--	a. 2		
18.....	5.0			170			36	s 29	12	--	a. 1
19.....	4.7			82			38	s 11	11	--	a. 1
20.....	5.0			26			22	1.5	10	--	a. 1
21.....	4.7	2	(t)	14	8	.3	9.0	20	.5		
22.....	4.5			9.0			11	.3	8.0	15	.3
23.....	4.1			7.0			11	.2	7.4	6	.1
24.....	4.3			6.0			11	.2	7.0	2	(t)
25.....	4.2	2	(t)	130	213	s 141	6.6	2	(t)		
26.....	3.8			80			64	s 22	7.5	7	.1
27.....	3.4			35			17	1.6	8.5	7	.2
28.....	3.1			32			10	.9	8.0	4	.1
29.....	2.9	10	.3	22	1	.1	7.0	4	.1		
30.....	12			--			--	--	7.5	5	.1
31.....	35			10			.9	--	8.9	11	.3
Total.	234.4			--			4.6	861.1	--	223.7	1,403.4	--	1,031.5
April			May			June					
1.....	20	54	s 4.8	9.5	2	0.1	3.8	8	s 0.1		
2.....	72	149	s 61	10			4.7	2	(t)		
3.....	269	608	s 668	10			4.2	3	(t)		
4.....	206	323	s 182	8.4			2.4	2	(t)		
5.....	115	50	16	7.8	6	.2	2.0	2	(t)		
6.....	87	25	4.5	8.5			--	a. 1	1.8	4	(t)
7.....	133	206	s 81	13			10	.4	1.4	4	(t)
8.....	79	25	5.3	8.9			--	.4	1.1	2	(t)
9.....	83	92	s 30	7.3	33	s 2.8	17.	68	s 6.1		
10.....	82	109	s 29	8.9			4.2	28	s .5		
11.....	45	4	.5	8.4			2.3	6	(t)		
12.....	35	0	0	20			1.7				
13.....	29	5	.4	26	1.5						
14.....	23	2	.1	11	1.2						
15.....	19	--	a. 4	9.5	2	.1	1.2	4	(t)		
16.....	53	93	s 25	9.2			1.0				
17.....	28	3	.2	7.6			.9				
18.....	21	3	.2	8.9			.8				
19.....	16	2	.1	7.3	2	(t)	.6	3	(t)		
20.....	13	0	0	5.6			.6				
21.....	12	3	.1	4.9			.5				
22.....	10	0	0	4.0			.6				
23.....	16	14	.6	3.8	2	(t)	.5	4	(t)		
24.....	12	0	0	3.5			1.4				
25.....	8.6	0	0	3.2			1.0				
26.....	8.9	1	(t)	2.6			.6				
27.....	8.6	15	.3	2.4	2	(t)	.7	4	(t)		
28.....	15	22	s 1.9	2.5			.6				
29.....	20	30	1.6	2.2			.5				
30.....	12	1	(t)	2.4			.4				
31.....	--	--	--	1.3	--	--	--	--	--		
Total.	1,531.1	--	1,113.0	238.6	--	5.6	61.2	--	7.1		

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

ELK RUN NEAR MAINESBURG, PA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	0.3			0.6			3.4		
2.....	.4	9	(t)	.6	2	(t)	2.2	3	(t)
3.....	.2			.5			1.8		
4.....	.4	2	(t)	.4			1.4		
5.....	16	57	s 3.3	.8			1.2		
6.....	4.0	3	(t)	3.0	10	s. 1	1.5	4	(t)
7.....	2.5			2.2			1.5		
8.....	1.5			1.2			1.2		
9.....	4.4	19	s. 3	1.0	2	(t)	1.1		
10.....	2.9			.8			1.0		
11.....	1.9	4	(t)	.6			1.0	3	(t)
12.....	2.0			.5			1.1		
13.....	2.5			.6			1.1		
14.....	2.6	2	(t)	.9	2	(t)	.9		
15.....	1.8			.6			1.2		
16.....	1.2			1.0			4.5	12	.2
17.....	1.0	1	(t)	1.0			11		
18.....	.8			.5			4.4		
19.....	.7			1.5			2.7		
20.....	1.5	1	(t)	1.0	2	(t)	4.9	7	.1
21.....	2.6			.8			3.7		
22.....	2.3			.6			2.9		
23.....	1.7	2	(t)	.5			3.2		
24.....	1.2			2.6	5	(t)	2.9		
25.....	1.0			1.0			2.3		
26.....	1.3	1	(t)	.8			2.0	4	(t)
27.....	1.7			.7			1.8		
28.....	1.2			.7			1.8		
29.....	.9			2.8	24	s. 5	1.7		
30.....	.7	1	(t)	4.2			1.6		
31.....	.6			3.5			--	--	--
Total.	63.8	--	3.9	37.5	--	1.2	73.0	--	1.8

Total discharge for year (cfs-days) 6,668.7

Total load for year (tons) 3,616.2

s Computed by subdividing day.

t Less than 0.05 ton.

SUSQUEHANNA RIVER BASIN--Continued

COHOCTON RIVER NEAR CAMPBELL, N. Y.

LOCATION ---At gaging station at highway bridge 1½ miles upstream from Michigan Creek and 2 miles upstream from Campbell, Steuben County.
 DRAINAGE AREA ---72 square miles.

RECORDS AVAILABLE ---Chemical analyses: October 1955 to September 1956.

EXTREMES, 1955-56 ---Dissolved solids: Maximum, 1,010 ppm Aug. 22-27; minimum, 113 ppm Mar. 1, 3-6, 9-10.

Hardness, 1955-56 ---Dissolved solids: Maximum, 1,010 ppm Aug. 22-27; minimum, 85 ppm July 23. 1956 ---Dissolved solids: Maximum, 1,010 ppm Aug. 22-27; minimum, 85 ppm July 23.

Specific conductance: Maximum, 2,010 micromhos July 18-20; minimum, 69.7 micromhos Mar. 2, 7, 8.

Water temperatures: Maximum, 72°F June 14, July 2; minimum, 33°F on many days during November, December, January, February and March.

REMARKS ---Reports of specific conductance and pH of daily samples available in district office in Albany, N. Y. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Total ^a	Non-carbonate				Unfiltered	Filtered
Oct. 1, 1955	35	--	--	46	14	--	--	162	--	116	--	0.8	--	172	40	707	7.3	--	--	--
Oct. 2-10	101	5.1	--	38	11	--	2.0	136	27	17	0.1	1.2	189	140	29	330	7.6	5	5.0	3.7
Oct. 1-10	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oct. 11-14	866	6.1	--	41	9.1	6.6	2.1	120	--	--	--	1.5	--	--	--	--	8.1	5	--	--
Oct. 15-18	5,740	--	--	17	3.5	--	--	38	--	5.4	--	2.0	--	65	34	141	7.5	--	--	--
Oct. 19-20	1,940	--	--	25	6.2	--	--	58	--	7.2	--	2.9	--	88	40	193	7.5	--	--	--
Oct. 11-20	--	--	14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oct. 21-31	798	11	--	29	7.4	5.1	1.6	79	34	8.0	--	3.6	145	103	38	233	7.8	5	8.7	4.1
Nov. 1-10	953	8.7	--	28	6.8	4.7	1.4	82	29	9.0	--	3.1	134	100	33	224	7.7	6	8.5	3.4
Nov. 11-16, 18-20	1,010	8.2	--	29	8.0	4.5	1.4	82	--	--	--	3.0	--	109	42	224	7.7	7	--	--
Nov. 17	3,060	--	--	--	--	--	--	47	--	--	--	--	--	94	26	147	6.6	--	--	--
Nov. 11-20	--	--	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov. 21-30	730	6.3	--	26	7.1	3.8	1.1	72	29	7.5	--	2.8	120	94	35	207	7.6	5	5.6	2.8
Dec. 1-10	603	9.2	28	28	6.8	5.2	1.3	82	27	7.0	1	4.0	138	98	31	231	7.6	5	5.8	3.6
Dec. 11-20	318	5.9	0.09	30	7.3	4.7	1.0	89	--	8.5	1	3.1	--	105	32	240	7.9	4	--	--
Dec. 21-25	320	5.1	--	40	10	4.2	1.0	124	--	15	0	4.8	--	141	39	309	7.4	5	--	--
Dec. 26-27	540	--	--	--	--	--	--	56	--	9.0	--	4.0	--	73	27	178	7.3	--	--	--
Dec. 29-31	320	--	--	--	--	--	--	82	--	11	--	3.0	--	96	29	222	8.8	--	--	--
Dec. 21-31	--	--	04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jan. 1-10, 1956	236	1.0	0.08	32	8.5	5.0	1.2	--	31	9.3	0	4.5	155	115	35	252	8.2	2	5.7	2.2
Jan. 11-20	199	7.8	--	34	8.4	6.0	1.2	111	--	9.6	0	3.9	--	--	--	--	271	7.8	--	--
Jan. 21-31	123	5.6	11	40	10	6.5	1.3	130	31	9.5	0	4.5	178	141	34	307	8.0	2	3.5	2.4
Feb. 1-10	195	6.0	0.08	37	9.3	5.8	1.2	118	28	9.7	1	5.6	166	131	34	289	8.1	4	3.6	2.2
Feb. 11-20	341	6.5	12	27	6.8	5.5	1.1	88	--	8.4	0	2.0	--	95	23	225	7.7	2	--	--
Feb. 21-29	554	6.3	11	26	6.2	4.7	1.3	76	25	8.5	1	4.2	125	90	28	211	7.4	5	3.7	2.2

^a Includes hardness of all polyvalent cations reported.

^b Includes equivalent of 6 parts per million of carbonate (CO₃).

Mar. 1, 3-6, 9-10, 1956	2,730	7.5	--	22	6.1	4.0	1.4	66	22	7.8	0.1	3.8	113	80	26	190	7.4	5	4.3	2.0
Mar. 2, 7, 8	7,840	--	--	--	--	--	--	14	--	2.5	--	1.1	--	24	13	69.7	6.7	--	--	--
Mar. 1-10	--	--	0.13	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar. 11	4,130	--	--	--	--	--	--	46	--	8.0	--	3.0	--	56	18	139	7.2	--	--	--
Mar. 12-20	2,000	6.5	--	29	8.3	4.0	1.3	86	--	9.5	.1	3.2	--	107	36	234	7.7	5	--	--
Mar. 11-20	--	--	.18	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar. 21	820	--	--	--	--	--	--	112	--	14	--	--	--	142	50	310	7.4	--	--	--
Mar. 22-31	743	6.7	--	27	8.2	4.2	1.2	95	26	7.8	.1	3.7	144	101	51	227	7.5	5	3.9	2.0
Mar. 21-31	--	--	.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr. 1	774	--	--	--	--	--	--	92	--	26	--	--	--	110	35	300	7.5	--	--	--
Apr. 2-3, 7-9	3,120	4.7	--	19	5.0	11	1.2	53	20	18	.1	2.2	115	66	25	201	7.3	6	4.6	2.2
Apr. 4-6	6,640	--	--	--	--	--	--	35	--	8.0	--	2.7	--	44	15	131	7.0	--	--	--
Apr. 10	2,740	--	--	--	--	--	--	c 53	--	16	--	--	--	64	20	186	8.9	--	--	--
Apr. 1-10	--	--	.10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr. 11	2,090	--	--	--	--	--	--	59	--	22	--	3.3	--	75	25	224	7.1	--	--	--
Apr. 11-13	--	--	--	--	--	37	.8	73	--	56	.1	1.3	--	93	33	366	7.7	3	--	--
Apr. 11-19	1,440	7.3	--	26	6.8	--	--	88	--	107	--	2.0	--	98	26	554	7.7	--	--	--
Apr. 20	1,984	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr. 11-20	--	--	.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr. 21, 25, 27-28 ..	732	--	--	--	--	--	--	80	--	163	--	2.6	--	100	34	752	7.9	--	--	--
Apr. 22-24, 26, 29-30	1,020	3.3	--	26	6.6	61	1.2	81	25	96	.1	2.4	276	92	26	518	7.9	4	6.0	3.0
Apr. 21-30	--	--	.08	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
May 1-8	918	3.8	--	26	6.8	74	1.3	79	22	120	.2	1.1	316	93	26	598	7.9	4	4.6	3.1
May 9-10	570	--	--	--	--	--	--	94	--	172	--	1.6	--	110	33	800	7.9	--	--	--
May 1-10	--	--	.11	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
May 11	563	--	--	--	--	--	--	93	--	179	--	2.1	--	109	33	816	7.4	--	--	--
May 12, 16-20	890	4.5	--	28	6.0	80	1.2	90	--	125	.2	2.1	--	95	21	622	7.9	4	--	--
May 13-15	1,200	--	--	--	--	--	--	88	--	56	--	1.5	--	94	22	380	7.7	--	--	--
May 11-20	--	--	.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
May 21-25, 28	412	4.9	--	35	8.0	96	1.5	111	27	148	.1	3.9	398	120	29	738	7.7	7	6.0	5.8
May 26-27, 29-31 ..	301	--	--	--	--	--	--	124	--	276	--	3.5	--	159	57	1,190	7.7	4	--	--
May 21-31	--	--	.26	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

a Includes hardness of all polyvalent cations reported.
c Includes equivalent of 7 parts per million of carbonate (CO₃).

SUSQUEHANNA RIVER BASIN--Continued
COHOCTON RIVER NEAR CAMPELL, N. Y.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Total ^a	Non-carbonate				Unfiltered	Filtered
June 1-5, 1956.....	435	6.0	--	35	11	115	1.7	110	32	183	0.1	3.7	448	133	42	846	7.3	7	5.8	4.2
June 6.....	306	--	--	--	--	--	--	118	--	96	--	3.1	--	136	33	535	7.4	--	--	--
June 7.....	254	--	--	--	--	--	--	126	--	252	--	3.5	--	156	3	1,460	7.5	--	--	--
June 10.....	219	--	--	--	--	--	--	131	--	380	--	2.7	--	142	35	1,490	7.5	--	--	--
June 11-15, 19.....	196	7.1	0.33	42	10	148	1.8	145	28	228	.1	1.3	556	146	27	1,060	7.8	6	5.8	3.4
June 16, 17.....	522	--	--	--	--	--	--	87	--	110	--	2.3	--	90	35	557	7.2	--	--	--
June 18.....	267	--	--	--	--	--	--	108	--	164	--	2.3	--	126	38	791	7.4	--	--	--
June 20.....	178	--	--	--	--	--	--	137	--	370	--	1.8	--	150	38	1,520	7.7	--	--	--
June 21-20.....	154	4.3	20	44	10	230	2.0	140	32	380	.1	1.0	787	151	36	1,500	7.9	6	4.1	3.2
June 21-26, 28-30.....	135	--	--	--	--	--	--	147	--	240	--	1.6	--	157	37	1,070	7.8	--	--	--
June 27.....	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
June 21-30.....	--	--	15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July 1-3, 7, 9.....	222	4.9	--	44	13	160	1.8	145	29	258	.1	2.8	591	163	45	1,110	8.0	7	5.7	3.4
July 4, 6, 10.....	230	--	--	--	--	--	--	132	--	150	--	2.8	--	139	31	781	7.9	--	--	--
July 5.....	138	--	--	--	--	--	--	154	--	14	--	3.1	--	157	31	350	8.0	--	--	--
July 6.....	154	--	--	--	--	--	--	142	--	425	--	3.0	--	159	43	1,680	8.0	--	--	--
July 7-10.....	--	--	20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July 11, 14-17.....	229	7.6	--	39	11	136	1.7	128	25	219	.1	2.6	512	143	38	961	8.1	7	5.7	4.0
July 12, 13.....	222	--	--	--	--	--	--	127	--	336	--	2.6	--	149	45	1,410	7.9	--	--	--
July 18-20.....	140	--	--	--	--	--	--	142	--	512	--	2.0	--	161	45	2,010	7.9	--	--	--
July 21-20.....	--	--	21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July 21, 26-30.....	206	3.6	--	41	8.9	222	1.9	132	29	341	.1	.9	729	139	31	1,380	7.8	6	5.1	4.0
July 22, 24, 25, 31.....	328	--	--	--	--	--	--	104	--	133	--	.9	--	114	29	864	7.3	--	--	--
July 23.....	697	--	--	--	--	--	--	76	--	52	--	.9	--	85	23	346	7.3	--	--	--
July 21-31.....	--	--	.05	--	--	--	--	--	--	--	--	2.8	--	--	--	--	--	--	--	--

^a Includes hardness of all polyvalent cations reported.

Aug. 1, 3-6, 1956....	98	2.4	--	42	11	9.5	1.5	150	27	15	0.1	3.6	195	150	27	335	8.0	6	4.5	3.2
Aug. 2, 7-9	113	--	--	--	--	--	--	132	--	160	--	1.8	--	150	25	835	8.0	--	--	--
Aug. 10	118	--	0.13	--	--	--	--	156	--	260	--	2.2	--	160	32	1,170	7.8	--	--	--
Aug. 11-10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aug. 11, 17-20	106	3.9	--	46	12	130	1.9	156	31	200	.0	2.6	550	164	36	970	7.6	7	4.6	3.5
Aug. 12, 13, 15, 16..	117	--	--	--	--	--	--	150	--	33	--	3.4	--	142	19	402	7.5	--	--	--
Aug. 14	135	--	--	--	--	--	--	160	--	94	--	2.0	--	156	25	623	7.7	--	--	--
Aug. 11-20	--	--	.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aug. 21	96	--	--	--	--	--	--	183	--	305	--	1.7	--	172	38	1,350	7.8	--	--	--
Aug. 22-27	96	3.0	--	13	--	320	2.0	164	33	500	.1	.9	--	181	46	1,940	7.9	5	3.5	3.1
Aug. 28-31	534	--	--	--	--	--	--	90	--	9.2	--	3.3	--	100	26	210	7.6	--	--	--
Aug. 21-31	--	--	.38	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sept. 1	600	--	--	--	--	--	--	82	--	6.1	--	2.9	--	97	30	208	7.1	--	--	--
Sept. 2-10	272	7.0	--	36	9.8	5.7	1.7	124	23	10	.1	2.5	166	130	29	281	7.7	12	6.4	5.2
Sept. 10	--	--	.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sept. 11-20	207	5.3	.23	37	9.8	6.5	1.9	127	23	11	.1	2.7	164	133	29	286	7.6	12	11	4.6
Sept. 21-30	170	3.2	.17	37	10	6.6	1.8	134	25	11	.2	1.6	166	134	24	285	7.5	7	5.8	3.7
Time-weighted average	794	5.8	0.14	33	8.6	44	1.4	104	28	82	0.1	2.8	289	117	32	557	--	5	5.5	3.5

a Includes hardness of all polyvalent cations reported.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

SUSQUEHANNA RIVER BASIN--Continued

COHOCTON RIVER NEAR CAMPBELL, N. Y.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 7:30 a. m. /

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

SUSQUEHANNA RIVER BASIN--Continued

LACKAWANNA RIVER AT OLD FORGE, PA.

LOCATION.--At 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 1948 to September 1951, February to August 1956.

EXTREMES, 1948-51.--Dissolved solids (1948-49): Maximum, 1,280 ppm October 21-31, 1948; minimum, 123 ppm January 5-10, 1949.

Hardness: Maximum, 984 ppm Oct. 21-31, 1948; minimum, 4 ppm Apr. 5, 1951.

Specific conductance: Maximum daily, 1,530 micromhos May 22, 1951; minimum daily, 57.4 micromhos Apr. 5, 1951.

Water temperatures: Maximum, 80°F June 26, 1950; minimum, freezing point Feb. 26, 1950.

REMARKS.--Records of specific conductance and pH of daily samples available in district office at Philadelphia, Pa. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, February to September 1956

Date of collection	Mean discharge (cfs)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Total acidity as H ⁺	Specific conductance (micromhos at 25°C)	pH	Color
						Calcium, magnesium	Non-carbonate				
Feb. 15, 1956	626	0	389	11	0.3	350	350	3.0	885	3.50	4
Mar. 14.....	1,350	0	168	4.5	2.8	170	170	1.0	408	4.40	4
Apr. 17.....	1,840	0	199	2.5	.9	128	128	1.1	329	4.10	2
May 29.....	432	0	383	3.5	1.3	360	360	2.1	798	4.05	2
July 10.....	238	0	432	8.0	.6	400	400	.7	890	4.10	5
Aug. 22.....	166	0	672	14	2.3	585	585	1.7	1,320	3.55	2

SUSQUEHANNA RIVER BASIN--Continued

SUSQUEHANNA RIVER AT DANVILLE, PA.

LOCATION.--At gaging station at bridge on state highway 54 at Danville, Montour County, 0.8 mile upstream from Mahoning Creek.

DRAINAGE AREA.--11,220 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses: September 1906 to September 1907, October 1945 to June 1953, February to September 1956.

Water temperatures: October 1945 to June 1953.

EXTREMES, 1945-53.--Dissolved solids (1945-47): Maximum, 334 ppm Sept. 11-20, 1946; minimum, 68 ppm May 21-31, 1946.

Hardness (1945-47) (1949-53): Maximum, 232 ppm Nov. 1-10, 1952; minimum, 42 ppm Apr. 1-10, 1950.

Specific conductance: Maximum daily, 557 micromhos Oct. 13, 1948; minimum daily, 93.6 micromhos Dec. 6, 1950.

Water temperatures: Maximum, 87°F Aug. 9, 1949; minimum, freezing point on many days during winter months.

REMARKS.--Samples collected daily at midstream 1906-07 and at point 465 feet from north end of bridge 1945-53. Due to cross-sectional differences in concentration of dissolved solids, water samples also collected three times a month at points 120, 650, 880 and 1,180 feet from north end of bridge (1945-50). Cross-sectional studies made on monthly samples during part of 1950-51 and 1952. Records of specific conductance of daily samples from October 1945 to June 1953 available in district office at Philadelphia, Pa. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, February to September 1956

Date of collection	Mean discharge (cfs)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conductance (micromhos at 25°C)	pH	Color
								Calcium, magnesium	Non-carbonate			
Feb. 10, 1956...	11,700	6.3		34	65	10	3.9	99	71	238	6.7	4
Mar. 8 ..	111,000	3.9		22	23	3.0	4.0	41	23	103	6.4	9
Apr. 2 ..	19,900	4.8		34	47	5.0	3.3	76	48	187	6.8	3
Apr. 30..	33,300	5.6		30	34	7.0	3.0	60	35	155	6.8	2
May 31 ..	8,830	6.9		40	74	11	2.1	112	79	264	7.1	2
July 3 ...	4,100	15		28	110	20	2.5	134	111	366	6.9	5
Aug. 22..	2,760	14		23	139	14	2.4	152	133	399	6.8	2
Sept. 13..	3,340	12		16	110	6.6	3.7	113	100	290	6.4	3

SUSQUEHANNA RIVER BASIN--Continued

NORTH BALD EAGLE CREEK AT MILESBURG, PA.

LOCATION.--Highway 220 bridge in Milesburg, Centre County, 130 feet upstream from gaging station and 120 feet downstream from Spring Creek.

DRAINAGE AREA.--265 square miles.

RECORDS AVAILABLE.--Sediment records: December 1955 to September 1956.

EXTREMES, December 1955 to September 1956.--Sediment concentrations: Maximum daily, 788 ppm Feb. 25; minimum daily, 1 ppm, July 12.

Sediment loads: Maximum daily, 6,250 tons Feb. 25, minimum daily, 1 ton on several days during December, January and July.

REMARKS.--Records of water discharge for period December 1955 to September 1956 given in WSP 1432. Flow affected by ice Dec. 22 to 24, Dec. 26 to Jan. 10, Jan. 16 to 30.

Suspended sediment, December 1955 to September 1956

Day	December			January			February		
	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.....				150			214	40	
2.....				160			214	6	23
3.....				170	4	2	258	10	7
4.....				165			273	4	3
5.....				160			243	3	2
6.....				170			258	8	6
7.....				165			538	56	s 84
8.....				155	3	1	661	26	s 51
9.....				160			934	39	98
10.....				175			1,470	81	s 342
11.....				258	20	14	1,140	78	s 243
12.....				243	21	14	1,410	85	s 326
13.....				214	9	5	885	64	s 160
14.....				176	2	1	635	11	19
15.....				183			1,210	223	s 785
16.....				180			917	61	s 156
17.....	186			175	3	1	798	80	172
18.....	186			165			1,390	161	s 635
19.....	200			160			1,210	50	163
20.....	200	4	2	155			1,070	80	231
21.....	176			155	2	1	764	15	31
22.....	165			150			546	12	18
23.....	160			145			471	10	13
24.....	170			140	3	1	407	11	12
25.....	200	4	2	135			1,620	788	s 6,250
26.....	175			130			1,280	348	s 1,420
27.....	160			130	3	1	934	95	240
28.....	155	4	2	130			798	17	37
29.....	160	18	8	140	4	2	604	13	21
30.....	155	14	6	500	--	e 1,170	--	--	--
31.....	150	2	1	360	163	s 189	--	--	--
Total.	2,598	--	39	5,654	--	1,424	23,152	--	11,551

e Estimated.

s Computed by subdividing day.

SUSQUEHANNA RIVER BASIN--Continued

NORTH BALD EAGLE CREEK AT MILESBERG, PA.--Continued

Suspended sediment, December 1955 to September 1956--Continued

Day	March			April			May		
	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.....	546	18	27	520	9	13	353	13	12
2.....	698	31	58	575	7	11	353	17	16
3.....	798	23	50	1,060	50	s 171	504	25	s 37
4.....	934	27	68	1,420	36	138	604	21	34
5.....	866	25	58	1,140	24	s 76	520	8	11
6.....	1,280	71	s 255	934	16	40	498	25	34
7.....	1,850	205	s 1,100	1,640	59	s 278	1,950	168	s 1,110
8.....	3,130	474	s 4,110	1,470	28	s 115	1,240	45	151
9.....	1,980	102	s 573	1,210	13	42	934	30	76
10.....	1,260	44	s 153	934	16	40	866	28	65
11.....	1,000	30	81	764	13	27	635	22	38
12.....	798	32	69	604	15	24	867	35	s 87
13.....	666	27	49	520	9	13	1,490	139	s 623
14.....	698	30	57	494	8	11	1,210	42	137
15.....	698	22	41	471	10	13	934	50	126
16.....	666	8	14	494	11	15	764	95	198
17.....	666	16	29	448	3	4	698	18	34
18.....	575	12	19	448	8	10	575	20	31
19.....	520	12	17	370	6	6	448	29	35
20.....	471	10	13	353	5	5	428	9	10
21.....	520	14	20	336	5	5	388	15	16
22.....	546	13	19	489	10	s 13	388	36	38
23.....	604	11	18	690	14	s 26	520	42	59
24.....	832	21	47	666	5	9	428	45	52
25.....	666	10	18	575	4	6	336	35	32
26.....	666	11	20	604	38	62	336	24	22
27.....	666	10	18	448	6	7	336	30	27
28.....	604	5	8	428	10	12	400	25	27
29.....	635	7	12	407	8	9	330	17	15
30.....	604	5	8	388	16	17	304	15	12
31.....	520	7	10	--	--	--	304	11	9
Total.	26,963	--	7,039	20,900	--	1,218	19,941	--	3,172
	June			July			August		
1.....	304	2	2	210	a 2	a 2	228	21	13
2.....	304	6	5	365	24	24	214	22	13
3.....	452	39	s 57	500	25	34	200	9	5
4.....	407	19	21	670	207	b 250	200	5	3
5.....	353	15	14	1,380	60	b 90	1,300	111	s 520
6.....	336	11	10	843	16	36	2,150	121	s 985
7.....	304	12	10	600	15	24	2,660	208	s 1,610
8.....	304	10	8	450	12	15	1,660	45	s 208
9.....	304	15	12	400	16	17	1,070	25	72
10.....	300	15	12	370	16	16	934	25	63
11.....	273	13	10	273	8	6	764	20	41
12.....	243	12	8	258	1	1	1,050	131	s 444
13.....	228	10	6	243	5	3	764	39	80
14.....	302	19	s 20	258	15	10	635	20	34
15.....	420	40	s 47	228	27	17	494	22	29
16.....	320	15	13	228	18	11	448	18	22
17.....	304	25	21	258	18	13	370	14	14
18.....	616	80	s 159	243	--	a 7	353	10	10
19.....	698	70	132	214	19	11	368	21	22
20.....	520	20	28	1,700	85	s 517	336	25	23
21.....	388	12	13	523	28	s 39	320	24	21
22.....	370	16	16	635	30	51	304	23	19
23.....	320	18	16	546	12	18	288	18	14
24.....	336	--	a 71	407	8	9	288	24	19
25.....	304	18	15	320	12	10	243	16	10
26.....	258	24	17	320	10	9	243	9	6
27.....	304	28	23	320	--	a 17	243	13	9
28.....	280	--	a 9	304	30	25	243	12	8
29.....	235	--	a 6	288	--	a 23	336	44	s 44
30.....	220	--	a 5	258	--	a 11	288	15	12
31.....	--	--	--	243	18	12	884	249	s 1,900
Total.	10,307	--	768	13,855	--	1,328	19,918	--	6,273

s Computed by subdividing day.

a Computed from estimated concentration graph.

b Estimated by use of sediment rating curve.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

SUSQUEHANNA RIVER BASIN--Continued

NORTH BALD EAGLE CREEK AT MILESBERG, PA.--Continued

Suspended sediment, December 1955 to September 1956--Continued

Suspended sediment, December 1955 to September 1956—Continued												
Day	September			Mean dis- charge (cfs)	Suspended sediment		Mean dis- charge (cfs)	Suspended sediment		Mean dis- charge (cfs)	Suspended sediment	
	Mean dis- charge (cfs)	Mean con- cen- tration (ppm)	Tons per day		Mean con- cen- tration (ppm)	Tons per day		Mean con- cen- tration (ppm)	Tons per day			
1.....	1,280	185	s 1,020									
2.....	592	20	32									
3.....	419	17	19									
4.....	360	25	24									
5.....	330	30	27									
6.....	807	269	s 851									
7.....	675	97	s 218									
8.....	453	30	37									
9.....	400	24	26									
10.....	363	16	16									
11.....	346	15	14									
12.....	339	10	9									
13.....	323	5	4									
14.....	310	7	6									
15.....	307	10	8									
16.....	333	10	9									
17.....	317	9	8									
18.....	298	7	6									
19.....	288	5	4									
20.....	363	7	7									
21.....	301	5	4									
22.....	288	8	6									
23.....	276	15	11									
24.....	264	10	7									
25.....	258	14	10									
26.....	246	10	7									
27.....	240	8	5									
28.....	237	8	5									
29.....	234	13	8									
30.....	231	10	6									
31.....	--	--	--									
Total.	11,478	--	2,414									
Total discharge for period (cfs-days)												154,766
Total load for period (tons)												35,244

s Computed by subdividing day.

SUSQUEHANNA RIVER BASIN--Continued

WEST BRANCH SUSQUEHANNA RIVER AT LOCK HAVEN, PA.

LOCATION.--In north channel at bridge on northeast side of Great Island, 2 miles downstream from Lock Haven, Clinton County, and 30.1 miles downstream from gaging station at Renovo.

DRAINAGE AREA.--3,337 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1945 to September 1951, February to September 1956.

Water temperatures: October 1945 to September 1951.

EXTREMES, 1945-51.--Dissolved solids (1945-47): Maximum, 262 ppm Sept. 21-30, 1946; minimum, 51 ppm Mar. 1-10, 1946.

Hardness (1945-47) (1949-51): 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, 79.1 micromhos Apr. 2, 1951.

Water temperatures: Maximum, 83°F July 5, 1949; 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.

Chemical analyses, in parts per million, February 1956 to September 1956

Date of collection	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Ni- trate (NO ₃)	Hardness as CaCO ₃		Total acid- ity as H+	Specific conduct- ance (micro- mhos at 25°C)	pH	Color
							Calcium, mag- nesium	Non- carbon- ate				
Feb. 13, 1956...			0	60	2.5	0.1	54	54	0.8	178	4.15	2
Mar. 13			0	65	1.7	.1	40	40	.6	141	4.20	2
Apr. 16			0	52	1.9	.1	47	47	.5	153	4.30	2
May 4			0	65	1.8	.7	52	52	.3	173	4.20	5
June 4	9.3		0	52	1.6	2.8	46	46	.2	143	4.45	5
July 2			0	76	2.1	.2	62	62	.4	218	4.05	5
Aug. 2			0	72	9.0	.4	64	64	--	206	4.20	1
Sept. 13			0	112	2.9	.3	84	84	--	270	3.90	1

SUSQUEHANNA RIVER BASIN--Continued

NORTH BALD EAGLE CREEK AT BLANCHARD, PA.

LOCATION.--At gaging station 0.9 miles south of Blanchard, Centre County, and 0.7 miles upstream from Marsh Creek.

DRAINAGE AREA.--339 square miles.

RECORDS AVAILABLE.--Sediment records: December 1955 to September 1956.

EXTREMES, December 1955 to September 1956.--Sediment concentrations: Maximum daily, 349 ppm Feb. 25; minimum daily, 1 ppm Dec. 10, 11, 12.

Sediment loads: Maximum daily, 2,340 tons Mar. 8; minimum daily, less than 0.5 ton Jan. 1-5.

REMARKS.--Records of discharge for period December 1955 to September 1956 given in WSP 1432. Flow affected by ice Dec. 19-24, Dec. 26, Jan. 4, 20-29.

Suspended sediment, December 1955 to September 1956

Day	December			January			February		
	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.....	--	--	--	165			269	15	11
2.....	--	--	--	160			248	10	7
3.....	--	--	--	165	2	(t)	274	15	11
4.....	--	--	--	170			318	14	12
5.....	--	--	--	191			280	9	7
6.....	--	--	--	191			290	--	a 4
7.....	280			187	3	1	590	28	s 46
8.....	269	3	2	175			838	62	s 168
9.....	264			175	11	5	1,050	100	284
10.....	238			200	7	4	1,470	115	s 500
11.....	243	1	1	301	17	14	1,260	87	s 310
12.....	238			318	11	9	1,480	116	s 473
13.....	238			254			1,070	40	s 124
14.....	219	2	1	214	7	4	731	16	32
15.....	229			205			1,130	70	s 243
16.....	196			200			1,040	56	s 151
17.....	210	2	1	196	2	1	860	98	s 228
18.....	210			183			1,730	167	s 900
19.....	200			179			1,630	100	s 465
20.....	190	--	a 1	170	3	1	1,130	51	156
21.....	165			170			906	--	a 49
22.....	160			165			724	5	10
23.....	165	3	1	155			620	5	8
24.....	185			145	2	1	525	4	6
25.....	229			145			1,510	349	s 2,230
26.....	220	--	a 2	140			1,840	224	s 1,420
27.....	190			140	3	1	964	54	141
28.....	160			140	3	1	870	20	47
29.....	165			145	4	2	706	15	29
30.....	175	11	5	448	188	s 427	--	--	--
31.....	170			608	227	s 452	--	--	--
Total.	5,118	--	44	6,400	--	943	26,353	--	8,072

s Computed by subdividing day.

t Less than 0.5 ton.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

NORTH BALD EAGLE CREEK AT BLANCHARD, PA.--Continued

Suspended sediment, December 1955 to September 1956--Continued

Day	March			April			May		
	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.....	628	15	25	615	4	7	420	5	6
2.....	761	48	99	621	5	8	458	14	s 37
3.....	900	55	134	926	66	s 227	782	72	s 160
4.....	956	30	78	1,350	76	277	654	10	18
5.....	848	29	66	1,020	20	55	596	5	8
6.....	1,120	75	227	840	15	34	571	7	11
7.....	1,700	135	620	1,290	64	s 260	2,140	223	s 1,530
8.....	3,300	252	s 2,340	1,560	38	160	1,270	40	137
9.....	2,400	82	s 579	1,140	20	62	924	22	55
10.....	1,300	30	105	916	20	49	804	20	43
11.....	997	19	51	790	15	32	706	23	44
12.....	840	27	61	708	10	19	811	42	92
13.....	747	18	36	640	7	11	1,340	97	s 363
14.....	747	11	22	577			1,170	35	111
15.....	811	31	68	546			908	20	49
16.....	804	--	a 46	558	8	11	811	14	31
17.....	734	--	a 30	521			686	8	13
18.....	666	9	16	491			647		
19.....	615	4	7	449	6	7	583	8	8
20.....	602	--	a 11	420			528		
21.....	628	8	14	396			485	6	a 7
22.....	673	8	15	534	6	11	449	--	a 73
23.....	713	15	29	713			503	50	65
24.....	862	30	70	700			473	8	9
25.....	775	11	23	640	8	13	408		
26.....	747	7	14	590			385	7	7
27.....	727	6	12	546			391		
28.....	700	6	11	509	5	7	420		
29.....	700	3	6	479	6	8	362	7	7
30.....	706	7	13	467	8	10	351		
31.....	673	6	11	--	--	--	357		
Total.	29,380	--	4,839	21,550	--	1,374	21,393	--	2,957
Day	June			July			August		
	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.....	362	11	11	232	10	6	246	3	2
2.....	368	--	a 11	409	47	s 80	227	5	3
3.....	509	36	49	549	93	s 148	214	5	3
4.....	473	12	14	668	177	s 696	205	5	3
5.....	425			1,120	135	s 439	893	101	s 374
6.....	396			768	50	104	1,730	156	s 758
7.....	368	12	11	602	--	a 52	3,030	188	s 1,800
8.....	345			461	20	25	1,520	32	s 136
9.....	323			414	20	22	964	25	65
10.....	323	9	7	362	15	15	804	25	54
11.....	286			312	18	15	615	14	23
12.....	265			281	10	8	838	60	s 231
13.....	251	--	a 33	270	5	4	790	41	67
14.....	311			291	8	6	686	22	41
15.....	504	233	s 342	251	5	3	564	18	27
16.....	362	15	15	246	10	7	497	20	27
17.....	402	34	37	318	25	21	443	15	18
18.....	676	165	s 414	251	5	3	408	5	6
19.....	621	83	139	227	9	6	455	20	25
20.....	461	30	37	1,520	160	s 765	391	5	5
21.....	431	26	30	964	35	91	379	4	4
22.....	391	20	21	700	19	36	334	6	5
23.....	334	15	14	640	28	48	307	9	7
24.....	385	70	73	497	13	17	318	12	10
25.....	345	50	47	420	9	10	286	5	4
26.....	296	20	16	396	10	11	265	2	1
27.....	345	22	20	414	13	15	280	4	3
28.....	307	20	17	368	15	15	270	8	6
29.....	260	10	7	334	13	12	522	63	s 93
30.....	246	8	5	281	7	5	351	16	15
31.....	--	--	--	256	5	3	499	42	s 119
Total.	11,371	--	1,441	14,822	--	2,668	19,311	--	3,955

s Computed by subdividing day.

a Computed from estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

SUSQUEHANNA RIVER BASIN--Continued

NORTH BALD EAGLE CREEK AT BLANCHARD, PA.--Continued

Suspended sediment, December 1955 to September 1956--Continued

Day	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.....	1,660	198	s 1,220						
2.....	693	35	65						
3.....	515	10	14						
4.....	431	10	12						
5.....	385	5	5						
6.....	663	97	s 253						
7.....	782	75	s 191						
8.....	540	--	a 13						
9.....	467	9	11						
10.....	425	5	6						
11.....	396	5	5						
12.....	391	6	6						
13.....	368	7	7						
14.....	368	8	8						
15.....	351	9	9						
16.....	396	13	14						
17.....	385	10	10						
18.....	351	8	8						
19.....	323	8	7						
20.....	420	--	a 23						
21.....	351	4	4						
22.....	323	2	2						
23.....	307								
24.....	296	--	a 2						
25.....	275								
26.....	260	5	3						
27.....	251								
28.....	246								
29.....	246								
30.....	241	--	--						
31.....	--								
Total.	13,106	--	1,914						

Total discharge for period (cfs-days) 168,894

Total load for period (tons) 28,227

s Computed by subdividing day.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

NORTH BALD EAGLE CREEK AT BLANCHARD, PA.--Continued

Particle-size analyses of suspended sediment, December 1955 to September 1956
 (Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
 W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water tem- per- ature (°F)	Suspended sediment											Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350		0.500	1.000
July 20, 1956	9:00 a. m.	2,210		337	373		36	59	72	89	95					BWCM
July 20	11:30 a. m.	2,310		170	183		31	56	69	83	95					BWCM

SUSQUEHANNA RIVER BASIN--Continued

MARSH CREEK AT BLANCHARD, PA.

LOCATION.--At gaging station on bridge on highway 220, 0.5 mile southwest of Blanchard, Centre County, and 0.6 miles upstream from mouth.

DRAINAGE AREA.--44.1 square miles.

RECORDS AVAILABLE.--Sediment records: November 1955 to September 1956.

EXTREMES, November 1955 to September 1956.--Sediment concentrations: Maximum daily, 682 ppm Feb. 18; minimum daily, 0 ppm Nov. 4-6.

Sediment loads: Maximum daily, 939 tons Feb. 25; minimum daily, 0 tons Nov. 4-6.

REMARKS.--Records of water discharge for period November 1955 to September 1956 given in WSP 1432. Flow affected by ice Dec. 11 to Jan. 10, Jan. 17-30.

Suspended sediment, November 1955 to September 1956

Day	November			December			January		
	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.....	30			38			8.1		
2.....	25	2	0.1	35	4	0.4	8.0	--	e 0.1
3.....	22			32			8.2		
4.....	23			31			8.0		
5.....	20			27			7.8		
6.....	18	0	0	24	2	.1	7.6	6	.1
7.....	16			22			7.4		
8.....	17			19			7.4		
9.....	16			23			7.3		
10.....	16	2	.1	20	4	.2	25	2	(t)
11.....	17			19			38		
12.....	18			16			25		
13.....	16			14			22		
14.....	18	3	.1	13	3	.1	18	10	.5
15.....	19			13			16		
16.....	269			12			14		
17.....	276			12			13		
18.....	191	7	3.6	11	--	e.1	12	5	.2
19.....	165			11			11		
20.....	128			10			10		
21.....	102	4	1.1	9.3			9.7	8	.2
22.....	63			9			9.5		
23.....	75			8.7			9.0		
24.....	74			10			8.5		
25.....	70	4	.8	13	--	e.1	8.0	1	(t)
26.....	74			11			7.5		
27.....	65			10			7.2		
28.....	62			9.0			7.0		
29.....	52	4	.6	8.8			7.5	2	(t)
30.....	46			9.0			25		
31.....	--			8.5			31		
Total.	2,003	--	188.2	508.3	--	5.0	403.7	--	22.0

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

MARSH CREEK AT BLANCHARD, PA.--Continued

Suspended sediment, November 1955 to September 1956--Continued

Day	February			March			April		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	15	--	0.5	83	15	3.4	94	4	1.0
2.....	17	--	a.5	176	238	s150	77	3	.6
3.....	20			165	90	40	147	21	s1
4.....	18			152	50	21	204	27	15
5.....	18	8	.4	158	35	15	165	12	5.3
6.....	18			246	136	s91	126	5	1.7
7.....	42	19	s2.4	341	248	s232	178	15	7.2
8.....	82	36	s11	633	508	s899	218	17	10
9.....	109	41	12	428	95	s109	178	12	5.8
10.....	214	151	s123	232	32	20	142	19	7.3
11.....	187	112	s75	178	28	13	111	16	4.8
12.....	248	113	s77	124	14	4.7	92	10	2.5
13.....	138	29	s12	104	13	3.7	70		
14.....	94	10	2.5	117	11	3.5	67	6	1.1
15.....	237	188	s139	109	15	4.4	63		
16.....	158	120	s54	109	10	2.9	58		
17.....	107	25	s8.9	115	16	5.0	54	12	1.8
18.....	362	682	s805	74	15	3.0	54		
19.....	262	169	s118	67	14	2.5	52		
20.....	204	80	44	63	14	2.4	52	8	1.0
21.....	140	15	5.7	65	58	10	41		
22.....	106	22	6.3	81	46	10	37		
23.....	79	20	4.3	88	12	2.8	76		
24.....	70	22	4.2	113	15	4.6	63		
25.....	389	568	s939	106	13	3.7	54	3	.5
26.....	230	62	s56	100	18	4.9	68		
27.....	145	22	8.6	104	15	4.2	63		
28.....	135	27	9.8	96	1	.3	60	1	.2
29.....	117	5	1.6	117	2	.6	51	2	.3
30.....	--	--	--	96	12	3.1	48	1	.1
31.....	--	--	--	88	5	1.2	--	--	--
Total	3,961	--	2,521.9	4,728	--	1,670.9	2,763	--	88.5
Day	May			June			July		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	45	1	0.1	32	17	1.5	21	22	1.2
2.....	52	7	1.0	25	15	1.0	52	74	s17
3.....	79	15	3.2	71	100	s22	41	92	s12
4.....	74	9	1.8	63	20	3.4	26	30	2.1
5.....	70	2	.4	56	23	3.5	63	85	s17
6.....	78	9	1.9	51	10	1.4	40	32	3.5
7.....	212	60	s38	43	16	1.9	32	22	1.9
8.....	165	20	8.9	34	15	1.4	31	18	1.5
9.....	128	13	4.5	32	18	1.6	29	21	1.6
10.....	111	9	2.7	35	27	2.6	30	24	1.9
11.....	92	9	2.2	28	22	1.7	23	13	.8
12.....	114	12	3.7	26	21	1.5	20	8	.4
13.....	232	125	s87	20	25	1.4	18	6	.3
14.....	218	28	16	92	--	a 75	18	18	.9
15.....	178	16	7.7	64	--	a 28	18	8	.4
16.....	142	12	4.6	33	55	4.9	16	6	.3
17.....	115			39	48	s5.4	16	8	.3
18.....	86	6	1.4	77	115	s29	15	6	.2
19.....	65			60	30	4.9	15	6	.2
20.....	60	3	.4	51	32	4.4	196	138	s94
21.....	51			62	98	16	140	50	19
22.....	44			45	65	7.9	131	30	11
23.....	35			38	30	3.1	140	52	20
24.....	32	4	.4	42	55	s7.1	102	23	6.3
25.....	32			35	40	3.8	77	10	2.1
26.....	32			33	30	2.7	75	40	8.1
27.....	31	6	.4	49	220	s32	58	8	1.3
28.....	20			34	55	5.0	74	50	10
29.....	16			29	24	1.9	37	5	.5
30.....	28	153	s16	28	16	1.2	37	4	.4
31.....	26	16	1.1	--	--	--	31	3	.3
Total	2,663	--	209.0	1,327	--	277.2	1,622	--	236.5

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

MARSH CREEK AT BLANCHARD, PA.--Continued

Suspended sediment, November 1955 to September 1956--Continued

Day	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.....	28	1	0.1	82	85	s 34			
2.....	22	2	.1	45	6	.7			
3.....	21	1	.1	32	2	.2			
4.....	18	3	.1	25	3	.2			
5.....	48	22	s 3.7	21	1	.1			
6.....	290	259	s 270	92	96	s 37			
7.....	218	30	18	70	8	1.5			
8.....	142	17	6.5	50	5	.7			
9.....	94	11	2.8	38	5	.5			
10.....	106	8	2.3	31	2	.2			
11.....	70	10	1.9	28	3	.2			
12.....	83	23	s 6.4	27	4	.3			
13.....	60	21	s 3.9	23	2	.1			
14.....	46	3	.4	28	20	s 2.0			
15.....	32	2	.2	26	4	.3			
16.....	31	2	.2	40	23	s 2.5			
17.....	28	6	.5	37	14	1.4			
18.....	27	4	.3	34	3	.3			
19.....	27	6	.4	32	4	.3			
20.....	23	3	.2	38	3	.3			
21.....	18	6	.3	29	1	.1			
22.....	17	8	.4	28	2	.2			
23.....	14	10	.4	25	2	.1			
24.....	14	10	.4	23	1	.1			
25.....	14	4	.2	21	1	.1			
26.....	13	1	(t)	19					
27.....	15	2	.1	18					
28.....	14	4	.2	18	4	.2			
29.....	17	13	s .7	16					
30.....	16	25	1.1	16					
31.....	31	32	s 9.7	--					
Total.	1,597	--	331.6	1,012	--	.84.4			

Total discharge for period (cfs-days) 22,588
 Total load for period (tons) 5,635.2

s Computed by subdividing day.

t Less than 0.05 ton.

SUSQUEHANNA RIVER BASIN--Continued
MARSH CREEK AT BLANCHARD, PA.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature- ature (° F)	Suspended sediment											Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350		0.500	1.000
July 20, 1956	9:15 a. m.	191		174	202		33	64	81	89	96	--				BWCM
July 20	11:45 a. m.	133		103	117		32	55	74	88	92	96				BWCM

SUSQUEHANNA RIVER BASIN--Continued

WEST BRANCH SUSQUEHANNA RIVER AT LEWISBURG, PA.

LOCATION.--At gaging station at Market Street Bridge at Lewisburg, Union County, 560 feet from east bank of river, 0.2 mile downstream from Buffalo Creek, and 7.4 miles upstream from mouth.

DRAINAGE AREA.--6,847 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1944 to June 1953, February to September 1956.

Water temperatures: October 1944 to June 1953.

EXTREMES, 1944-53.--Dissolved solids (1944-47): Maximum, 219 ppm Oct. 1-10, 1944; minimum, 46 ppm May 1-10, 1945.

Hardness: Maximum, 156 ppm Oct. 1-10, 1951; minimum, 26 ppm May 21-31, 1946.

Specific conductance: Maximum daily, 408 micromhos Oct. 4, 1951; minimum daily, 64.4 micromhos Apr. 1, 1951.

Water temperatures: Maximum, 90°F July 28, Aug. 10, 1949; minimum, freezing point on many days during the winter months.

REMARKS.--Records of specific conductance and pH of daily samples available in district office in Philadelphia, Pa. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, February to September 1956

Chemical analyses, in parts per million, February 1956								September 1956		Specific conductance (micromhos at 25°C)	pH	Color
Date of collection	Mean discharge (cfs)	Sodium (Na)	Potassium (K)	Bicar-bonate (HCO ₃)	Sulfate (SO ₄)	Chlo-ride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃				
								Calcium, mag-nesium	Non-carbon-ate			
Feb. 10, 1956 ...	12,500	3.9	11	48	5.0	3.1	60	51	161	6.3	2	
Mar. 8 ..	80,700	2.6	4	28	1.5	2.3	31	28	82	5.7	2	
Apr. 2 ..	15,000	3.8	3	50	4.0	1.5	53	51	137	5.5	3	
Apr. 30 ..	13,600	2.6	10	39	2.6	1.6	48	40	121	6.2	2	
May 31 ..	8,280	2.7	19	41	3.5	2.1	59	43	147	6.8	3	
July 3 ...	6,630	5.5	23	47	3.0	2.5	62	43	167	6.9	10	
Aug. 2 ...	6,160	2.4	30	35	3.5	.3	61	36	151	6.9	2	
Sept. 13 ..	4,160	6.8	44	62	6.5	3.8	98	62	231	6.9	2	

SUSQUEHANNA RIVER BASIN--Continued

JUNIATA RIVER AT NEWPORT, PA.

LOCATION.--At gaging station at highway bridge at Newport, Perry County, 1,000 feet upstream from Little Buffalo Creek, and 230 feet from west bank of river.

DRAINAGE AREA.--3,354 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1944 to June 1953, February to August 1956.

Water temperatures: October 1944 to June 1953.

Sediment records: January 1951 to September 1956.

EXTREMES, 1955-56.--Sediment concentrations: Maximum daily, 415 ppm Oct. 15; minimum daily, 1 ppm on many days during year.

Sediment loads: Maximum daily, 31,500 tons Mar. 3; minimum daily, 2 tons Oct. 1-12.

EXTREMES, 1944-56.--Dissolved solids (1944-47, 1949-51): Maximum, 282 ppm Oct. 1-10, 1944; minimum, 74 ppm Feb. 11-20, 1950.

Hardness (1944-47, 1949-53): Maximum, 170 ppm Nov. 1-10, 1952; minimum, 14 ppm

Feb. 21-28, Apr. 1-10, 1951.

Specific conductance: Maximum daily, 465 micromhos Oct. 1, 1944; minimum daily, 74.5 micromhos Nov. 25, 1950.

Sediment concentrations (1951-56): Maximum daily, 1,130 ppm Mar. 2, 1954; minimum daily, 0 ppm on several days during July 1952.

Sediment loads (1951-56): Maximum daily, 128,000 tons Mar. 2, 1954; minimum daily, 0 tons on several days during July 1952.

REMARKS.--Records of specific conductance and pH of daily samples available in district office at Philadelphia, Pa. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, February to August 1956

Date of collection	Mean discharge (cfs)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conductance (micromhos at 25°C)	pH	Color
								Calcium, magnesium	Non-carbonate			
Feb. 9, 1956..	13,200	1.7		35	20	3.5	5.4	55	26	135	7.2	9
Mar. 15	10,900	2.9		40	23	2.5	4.9	58	25	139	7.1	5
Apr. 4	10,700	3.0		51	22	6.0	3.0	69	27	156	7.1	4
May 2	4,550	3.0		59	30	4.0	1.5	80	32	184	7.1	2
June 1	3,800	12		68	39	4.0	2.7	78	22	200	7.4	4
June 29	2,020	11		80	33	9.5	4.4	92	26	242	7.4	5
Aug. 2	1,800	9.0		93	35	9.5	2.0	108	32	224	7.0	6
Aug. 31	1,890	9.9		73	32	6.0	2.4	82	22	269	7.3	4

SUSQUEHANNA RIVER BASIN--Continued

JUNIATA RIVER AT NEWPORT, PA.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day
1.....	858			1,820	22	108	2,490		
2.....	748			1,910	8	41	2,330	6	38
3.....	760			1,590	4	17	2,310		
4.....	722	1	2	1,690	4	18	2,380		
5.....	624			1,550	4	17	2,280	4	25
6.....	735			1,570	2	8	2,170		
7.....	844			1,450	2	8	2,000		
8.....	886			1,220			2,040	4	21
9.....	830			1,350			1,820		
10.....	844	1	2	1,390	1	4	1,720		
11.....	978			1,340			1,600		
12.....	735			1,740			1,400	4	16
13.....	722	6	12	1,910	--	e 5	1,300		
14.....	9,230	355	s 16,600	2,130	--	e 6	1,610		
15.....	17,900	415	s 20,500	2,110	--	e 6	1,500		
16.....	13,400	198	s 7,780	3,150	18	s 209	900		
17.....	6,820	40	737	8,870	250	s 6,680	1,400	4	15
18.....	4,550	25	307	10,300	210	5,840	1,450		
19.....	3,550	15	144	7,160	28	541	1,650		
20.....	3,310	9	80	6,020	16	260	1,450		
21.....	2,720	7	51	4,940	10	133	1,250	3	12
22.....	2,280	6	37	3,920			1,700		
23.....	2,040	10	55	3,920	6	64	1,600		
24.....	1,820	10	49	3,920			1,400		
25.....	1,860	9	45	3,800			1,550		
26.....	1,780	--	a 38	3,670	9	88	2,400		
27.....	1,670	8	36	3,430			1,700	2	9
28.....	1,610	4	17	3,310			1,300		
29.....	1,450	4	16	3,000	2	16	1,600		
30.....	1,490	--	a 20	2,560			1,650	2	8
31.....	1,820	25	123	--	--	--	1,200		
Total.	89,586	--	46,671	96,740	--	14,421	53,130	--	528
Day	January			February			March		
	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day
1.....	1,400			5,400	74	s 1,090	6,870	27	500
2.....	1,250			5,150	102	s 1,450	6,020	20	325
3.....	1,100	2	7	3,550	28	268	5,600	16	242
4.....	1,250			4,810	70	909	5,470	11	162
5.....	1,500			6,870	112	2,080	5,470	20	295
6.....	1,800			5,340	60	885	5,340	38	548
7.....	1,700	2	9	7,160	--	a 3,630	6,680	45	812
8.....	1,550			12,500	--	a 5,570	18,800	216	s 13,100
9.....	1,420			13,200	--	a 3,030	32,900	354	s 31,500
10.....	816			12,500	--	a 3,310	25,000	130	s 8,930
11.....	1,280	3	11	12,500	74	2,500	16,200	32	1,400
12.....	1,670			13,200	55	1,960	11,900	24	771
13.....	1,690			13,200	45	1,600	9,630	18	468
14.....	2,100			10,300	43	1,200	8,680	15	352
15.....	1,800			7,760	20	419	10,900	21	618
16.....	1,500	6	27	7,460	28	564	13,200	27	962
17.....	1,300			7,310	42	829	11,900	15	482
18.....	1,500			7,460	35	705	9,950	11	296
19.....	1,930			8,760	32	757	8,370	8	181
20.....	1,250			13,500	16	596	7,310	10	197
21.....	1,450	2	8	10,900	8	235	6,870	16	297
22.....	1,250			8,370	13	294	7,020	13	246
23.....	1,100			6,580	91	1,620	7,310	14	276
24.....	1,200			5,600	93	1,410	8,370	17	364
25.....	870			5,200	121	1,700	8,680	10	234
26.....	1,350	8	26	9,440	140	s 3,840	8,060	9	196
27.....	1,250			10,800	270	s 7,910	7,610	9	185
28.....	1,300			9,310	43	1,080	6,870	8	148
29.....	1,150			8,370	39	881	6,440	6	104
30.....	1,140	2	8	--	--	--	6,300	6	102
31.....	1,900			--	--	--	6,870	6	111
Total.	43,766	--	446	252,800	--	52,302	306,590	--	64,424

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

JUNIATA RIVER AT NEWPORT, PA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	7,160	7	135	4,300	15	174	3,800	17	167
2.....	6,580	6	107	4,550	19	233	3,310		
3.....	6,160	8	133	5,880	30	476	3,800		
4.....	10,700	212	s 562	8,680	60	1,410	4,040	14	136
5.....	17,200	70	3,250	8,370	25	565	3,310		
6.....	14,200	52	1,990	7,310	40	789	3,430		
7.....	12,900	90	3,130	7,610	40	822	2,900	8	58
8.....	19,200	109	5,650	8,370	18	407	2,650		
9.....	23,500	115	7,300	7,460	16	322	2,560		
10.....	18,200	55	2,700	6,720	9	163	2,380	6	34
11.....	13,200	16	570	6,020	10	163	2,280		
12.....	10,600	15	429	5,600	12	181	2,020		
13.....	8,370	15	339	8,430	71	s 2,400	1,860	9	41
14.....	7,310	14	276	15,900	201	s 9,350	1,800		
15.....	6,440	13	226	10,400	34	955	1,780		
16.....	6,020	15	244	8,370	35	791	1,690	10	55
17.....	5,600	12	181	7,020	29	550	1,610		
18.....	5,340	13	187	6,160	16	266	1,670		
19.....	5,070	12	164	6,020	12	195	1,970	8	55
20.....	4,810	12	156	5,470	11	162	2,470		
21.....	4,420	13	155	4,550	10	123	2,330		
22.....	4,300	11	128	4,550	9	111	2,790	56	331
23.....	4,550	12	147	4,170	18	203	2,440		
24.....	5,600	13	197	4,550	75	921	2,600		
25.....	5,470	12	177	4,300	125	1,450	2,190	41	281
26.....	5,340	15	216	3,670	21	208	2,540		
27.....	5,070	15	205	3,670	17	168	2,400		
28.....	4,680	12	152	3,430	12	111	1,970	70	454
29.....	4,810	9	117	3,310	10	89	2,020		
30.....	4,170	11	124	3,920	10	106	1,890		
31.....	--	--	--	3,920	10	106	--	--	--
Total.	256,970	--	29,347	192,680	--	23,970	74,500	--	2,986
Day	July			August			September		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	1,490	7	28	1,970	--	a 27	2,150	2	11
2.....	1,490	8	32	1,800	6	27	2,150		
3.....	6,060	129	s 3,440	1,630			2,330		
4.....	6,400	188	s 3,460	1,530	45	248	1,620	3	16
5.....	4,680	105	1,330	2,040			1,610		
6.....	3,670	45	446	5,960	194	s 3,610	1,550		
7.....	3,430	35	324	8,370	94	2,120	1,930	104	16
8.....	3,920	36	381	11,200	104	s 3,380	2,720		
9.....	3,800	39	400	15,500	181	s 7,780	2,110		
10.....	3,190	26	224	9,630	65	1,690	1,630	25	8
11.....	2,700	12	87	6,300	25	425	1,490		
12.....	2,400	8	52	5,070	20	274	1,430		
13.....	2,000	4	22	4,420	20	239	1,340	20	16
14.....	1,610	2	9	4,040	20	218	1,470		
15.....	1,570	1	4	3,670	18	178	1,410		
16.....	1,670	1	5	3,310	17	152	1,430	17	9
17.....	3,030	25	s 384	2,890	8	57	1,370		
18.....	6,460	118	s 2,060	2,740			1,760		
19.....	5,340	80	1,150	2,280			1,930	4	16
20.....	4,170	50	563	2,150	6	37	1,970		
21.....	9,110	122	s 2,780	2,280			1,430		
22.....	8,680	49	1,150	2,470	2	14	1,370	1	3
23.....	7,460	53	1,070	2,700			1,470		
24.....	6,720	50	907	2,510			1,510		
25.....	5,470	31	458	2,310	3	15	1,670		
26.....	4,550	16	197	1,740			1,470	4	19
27.....	4,550	18	221	1,610			1,280		
28.....	3,920	17	180	1,570	4	19	1,210		
29.....	2,900	5	39	1,840			1,020	3	15
30.....	2,400	4	26	1,820			1,040		
31.....	2,310	3	19	1,890	3	15	--		
Total.	127,150	--	21,448	119,230	--	20,856	49,070	--	315

Total discharge for year (cfs days)..... 1,662,212

Total load for year (tons)..... 277,714

s Computed by subdividing day.

a Computed from estimated concentration graph

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

SUSQUEHANNA RIVER BASIN--Continued

BIXLER RUN NEAR LOYSVILLE, PA.

LOCATION.--At bridge on State Highway 850; 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.--Sediment records: February 1954 to September 1956.

EXTREMES, 1955-56.--Sediment concentrations: Maximum daily, 367 ppm Oct. 14; minimum daily, 1 ppm on many days.

Sediment loads: Maximum daily, 507 tons Oct. 14; minimum daily, less than 0.05 ton on many days.

EXTREMES, 1954-56.--Sediment concentrations: Maximum daily, 986 ppm June 10, 1954;

minimum daily, 1 ppm on many days.

Sediment loads: Maximum daily, 507 tons Oct. 14, 1955; minimum daily, less than 0.05 ton on many days.

REMARKS.--Records of specific conductance and pH of periodic sediment samples available in district office at Philadelphia, Pa. Records of discharge for water year October 1955 to September 1956 given in WSP 1432. Flow affected by ice Nov. 30 to Dec. 2, Dec. 15-24, Dec. 27 to Jan. 4, Jan. 19-29.

Suspended sediment, water year October 1954 to September 1955

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.....	5.0			11			10		
2.....	5.1			11			10		
3.....	4.8	--	e 0.2	11			11	--	e 0.1
4.....	4.8			10	--	e 0.1	11		
5.....	4.8			10			10		
6.....	9.2	30	.7	10			9.7	2	.1
7.....	6.9	10	.2	9.7			9.0		
8.....	7.3			9.3	1	(t)	9.3		
9.....	5.3			9.0			9.3		
10.....	4.8	--	e .2	10			8.7		
11.....	4.6			14			8.1		
12.....	4.3			16	6	.2	7.8		
13.....	8.7		a 5.7	14			7.8		
14.....	531	367	s 507	12	4	.1	7.5		
15.....	125	18	6.1	11			7.6		
16.....	59	15	2.4	33	55	s 6.4	7.0	--	e .1
17.....	42	20	2.3	31			6.8		
18.....	35	15	1.4	23			7.0		
19.....	28	10	.8	21	4	.3	7.0		
20.....	23	10	.6	20			6.2		
21.....	20			19			6.0		
22.....	18			17			6.0		
23.....	17			16	1	(t)	6.2		
24.....	17			15			7.0		
25.....	16	--	e .3	14			8.7	3	(t)
26.....	15			13	2	.1	7.2	4	.1
27.....	14			13			6.0		
28.....	13			13			5.6		
29.....	12	3	.1	11	--	e .1	5.6	--	e .1
30.....	13			10			5.5		
31.....	12	--	e .1	--	--	--	5.4		
Total.	1,085.6	--	531.9	437.0	--	10.2	240.0	--	3.0

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

BIXLER RUN NEAR LOYSVILLE, PA.--Continued

Suspended sediment, water year October 1955 to September 1956--Continued

Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	5.4			7.8	8	0.2	19	5	0.3
2.....	5.3			11	12	s 4	19	7	.4
3.....	5.2			31	35	s 3.0	18	30	1.5
4.....	6.0			15	18	.7	17	5	.2
5.....	6.7	--	e 0.1	22	38	s 4.1	16	5	.2
6.....	6.4			62	146	s 39	18	10	.5
7.....	6.2			96	108	s 30	32	64	s 73
8.....	5.7			79	152	s 57	62	95	s 16
9.....	5.7			50	54	s 8.3	46	16	2.0
10.....	7.8			42	20	2.3	36	7	.7
11.....	9.7			42	33	s 5.0	33	5	.4
12.....	8.7			47	25	3.2	32	3	.3
13.....	7.5	8	.2	34	10	.9	30	3	.2
14.....	6.9	--	e .1	28	5	.4	53	35	s 6.2
15.....	6.7			27	--	a .4	48	5	.6
16.....	6.4	5	.1	23	5	.3	45		
17.....	6.4			21	4	.2	39		
18.....	5.9			53	89	s 19	34	--	e .5
19.....	5.8			37	32	3.2	30		
20.....	5.6	--	e .1	31	16	1.3	29		
21.....	5.4			26			30	10	.8
22.....	5.2			21	--	e 1	38	26	s 3.3
23.....	5.4	5	.1	19			48	15	1.9
24.....	5.2			19			51	10	1.4
25.....	5.0			35	--	e 22	42	7	.8
26.....	4.8	--	e .1	25	20	1.4	40	5	.5
27.....	4.7			22	10	.6	34	8	.7
28.....	4.6			26	20	1.4	30	6	.5
29.....	5.3			20	--	a .5	31	5	.4
30.....	42	115	s 21	--	--	--	36	14	1.4
31.....	12	27	.9	--	--	--	30	5	.4
Total.	229.6	--	25.8	971.8	--	205.2	1,066	--	51.4
Day	April			May			June		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	26	5	0.4	17	--	a 0.7	12	10	0.3
2.....	26	--	.4	28	40	s 4.0	12	10	.3
3.....	38	--	a 6.1	29	17	s 1.5	18	64	s 3.8
4.....	34	12	1.1	25	15	1.0	11	20	.6
5.....	30	6	.5	23	7	.4	10	15	.4
6.....	30	12	1.0	25	14	s 1.0	9.0	12	.3
7.....	125	154	s 53	42	60	s 8.2	8.7	11	.3
8.....	104	58	s 17	30	15	1.2	8.4	20	.5
9.....	68	20	3.7	26	12	.8	8.4	17	.4
10.....	54	18	2.6	24	9	.6	8.1	18	.4
11.....	45			22	10	.6	7.2	11	.2
12.....	39	11	1.2	25	25	1.7	6.9	18	.3
13.....	35			60	82	s 17	6.7	--	a .3
14.....	31			35	19	1.8	6.9	10	.2
15.....	30	10	.8	30	11	.9	6.7	18	.3
16.....	30			29	11	.9	6.4	15	.3
17.....	26			25	5	.3	6.4	12	.2
18.....	24	8	.5	24	8	.5	11	30	s 1.8
19.....	21			20			7.5	15	.3
20.....	19			17	4	.2	6.7	5	.1
21.....	18	7	.4	16			19	98	s 8.8
22.....	19			15			8.7	19	.4
23.....	32	34	s 3.3	15	4	.2	8.0	--	a .8
24.....	23			13			16	144	s 8.0
25.....	21			12			7.5	36	.7
26.....	21	24	1.4	12	2	.1	6.7	20	.4
27.....	19			12			19	146	s 10
28.....	19			12			8.4	30	.7
29.....	19	15	.8	11			6.9	15	.3
30.....	19	16	.8	11	4	.1	6.4	15	.3
31.....	--	--	--	10			--	--	--
Total.	1,045	--	106.4	695	--	44.8	284.6	--	41.7

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

BIXLER RUN NEAR LOYSVILLE, PA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	5.9	17	0.3	9.0	5	0.1	7.2	7	0.2
2.....	8.1	29	.6	8.7	4	.1	9.7		
3.....	8.4	45	1.0	7.8	2	(t)	7.2		
4.....	6.7	19	.3	7.8	5	.1	6.7		
5.....	13	120	s 4.6	61	99	s 32	6.7	4	.1
6.....	10	48	1.3	44	49	s 7.2	8.8		
7.....	8.1	25	.5	34	18	s 1.8	7.5		
8.....	6.9	20	.4	23	5	.3	6.4		
9.....	7.5	30	.6	18	8	.3	6.2	7	.1
10.....	6.2	20	.3	16			6.2		
11.....	5.7	18	.3	14			6.2		
12.....	7.5	80	s 2.3	13			6.2	3	.1
13.....	8.4	140	3.2	13	5	.2	6.2		
14.....	11	95	s 3.2	12			5.9		
15.....	6.7	39	.7	11			8.1		
16.....	11	52	s 1.5	10	2	.1	8.1	2	(t)
17.....	8.1	29	.6	9.7			6.9		
18.....	6.7	20	.4	9.3			6.4		
19.....	6.4	15	.3	9.0			5.9		
20.....	83	195	s 53	10	4	.1	6.2	2	(t)
21.....	108	88	s 32	14			5.9		
22.....	45	40	4.9	9.7			5.9		
23.....	31	30	2.5	8.7			6.6	2	(t)
24.....	23	20	1.2	8.1	4	.1	6.7		
25.....	20	28	1.5	7.8			5.9		
26.....	17	12	1.6	7.5			5.7	1	(t)
27.....	15	10	.4	7.8	4	.1	5.9		
28.....	13	10	.4	10			7.8		
29.....	11	7	.2	10			s 1.6		
30.....	10	6	.2	7.8	9	.2	6.4	1	(t)
31.....	9.3	10	.3	7.5			--		
Total	537.6	--	120.6	439.2	--	47.9	202.2	--	2.2
Total discharge for year (cfs-days)									7,233.6
Total load for year (tons)									1,191.1

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

SUSQUEHANNA RIVER BASIN--Continued

SHERMAN CREEK AT SHERMANDALE, PA.

LOCATION.--Temperature recorder at gaging station at highway bridge on State Highway 34 at Shermandale, Perry County, 1½ miles upstream from Fishing Run.

DRAINAGE AREA.--200 square miles.

RECORDS AVAILABLE.--Water temperatures: June 1953 to September 1956.

EXTREMES, 1953-56.--Water temperatures: Maximum, 85°F June 14-16, July 1, 2; minimum, freezing point on many days during December to February.

EXTREMES, 1952-56.--Water temperatures: Maximum, 89°F Sept. 2, 1953, July 31, 1954, July 17, Aug. 2, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, 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	63	--	--	--	--	--	--	32	32	32	32	35	46	62	56	73	87	85	73	75	70	81	76
2.....	67	59	49	--	34	33	--	32	32	32	32	38	46	43	60	53	67	61	85	76	78	71	78	72
3.....	67	58	--	--	37	34	32	32	32	32	32	40	47	45	57	52	63	60	84	78	78	69	76	69
4.....	66	58	--	--	--	--	32	32	32	32	32	43	41	50	47	57	52	65	60	79	73	72	69	70
5.....	64	58	--	--	--	--	32	32	32	32	32	45	40	52	49	59	61	67	61	73	68	69	65	71
6.....	--	--	--	--	--	--	32	32	32	32	32	45	43	52	50	61	72	62	68	66	65	64	74	71
7.....	--	--	--	--	--	--	32	32	32	32	32	44	42	50	46	60	55	75	65	77	66	67	84	74
8.....	65	60	--	--	--	--	32	32	32	32	32	44	42	46	44	59	52	77	68	78	71	65	70	63
9.....	63	57	--	--	--	--	32	32	32	32	32	42	38	48	42	57	52	74	87	80	74	73	67	61
10.....	63	56	--	--	--	--	32	32	32	32	32	43	40	50	44	60	54	75	66	76	70	76	71	67
11.....	65	56	39	36	--	--	32	32	32	32	32	45	43	49	46	59	56	79	69	78	67	76	70	66
12.....	65	56	43	39	--	--	32	32	32	32	32	45	42	51	44	64	55	80	70	79	69	78	71	63
13.....	62	56	47	43	--	--	32	32	32	32	32	42	41	53	48	64	61	84	73	72	70	74	70	61
14.....	59	57	50	47	32	32	32	32	32	32	32	41	40	53	48	66	61	85	76	76	70	74	69	61
15.....	57	56	--	--	32	32	32	32	32	32	32	43	40	52	50	64	59	85	76	77	69	77	69	67
16.....	56	54	--	--	32	32	32	32	32	32	32	38	36	42	37	50	60	85	73	73	70	78	70	65
17.....	54	52	--	--	32	32	32	32	32	32	32	36	34	40	36	50	58	84	76	70	68	80	72	67
18.....	54	52	--	--	32	32	32	32	32	32	32	38	36	39	37	49	46	84	76	70	68	79	73	66
19.....	55	51	--	--	32	32	32	32	32	32	32	38	36	40	36	52	45	85	73	72	68	79	75	64
20.....	53	51	--	--	32	32	32	32	32	32	32	40	38	42	38	52	47	81	68	69	65	75	68	63
21.....	53	50	--	--	32	32	32	32	32	32	32	39	36	42	38	52	46	84	66	65	64	70	66	62
22.....	52	49	--	--	32	32	32	32	32	32	32	42	39	54	50	65	60	78	67	66	64	71	64	62
23.....	51	48	--	--	32	32	32	32	32	32	32	44	41	52	48	65	62	81	73	68	65	71	65	68
24.....	--	--	--	--	32	32	32	32	32	32	32	44	43	48	45	63	58	77	73	68	66	74	67	68
25.....	--	--	--	--	32	32	32	32	32	32	32	43	39	50	43	62	55	80	73	72	66	74	65	66
26.....	49	46	--	--	32	32	32	32	32	32	32	44	42	50	48	63	57	80	72	73	68	75	65	61
27.....	50	47	--	--	--	--	32	32	32	32	32	46	42	51	48	62	60	76	74	77	71	73	67	58
28.....	50	47	--	--	--	--	32	32	32	32	32	46	42	51	48	62	60	76	74	77	71	73	67	58
29.....	51	49	--	--	--	--	32	32	32	32	32	45	42	41	64	59	68	60	76	73	78	67	56	54
30.....	55	51	--	--	--	--	32	32	32	32	32	44	41	64	59	68	60	76	68	77	70	77	72	57
31.....	--	--	--	--	--	--	32	32	32	32	32	45	43	--	75	67	--	--	74	67	82	73	--	--
Average.....	58	54	--	--	--	--	32	32	36	34	43	40	52	48	62	56	76	69	75	69	75	69	68	62

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

SUSQUEHANNA RIVER BASIN--Continued

SUSQUEHANNA RIVER AT HARRISBURG, PA.

LOCATION.--At gaging station at Walnut Street Bridge in Harrisburg, Dauphin County.

DRAINAGE AREA.--24,100 square miles.

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.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses of cross-section samples, in parts per million, March to July 1956

Date of collection	Chemical analyses of cross-section samples, in parts per million, March to July 1956										
	Station	Mean discharge (cfs)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
							Calcium, magnesium	Non-carbonate			
Mar. 14, 1956	East channel	119,000									
	120		18	39	4.0	3.0	58	43	142	6.5	5
	600		24	25	4.0	5.0	48	28	118	6.6	7
	1180		20	22	3.0	3.3	38	22	104	7.0	7
	West channel										
	600		10	26	2.0	1.9	34	26	92	6.5	5
	1100		12	26	1.5	2.5	40	30	98	7.0	3
	1320		44	21	3.0	2.7	68	0	202	9.1	12
	Apr. 17, 1956	East channel	83,200								
120		14		52	4.0	2.8	72	61	175	6.8	5
600		28		33	4.0	2.7	56	33	146	6.9	7
1180			30	23	4.0	3.1	54	29	125	7.4	10
West channel											
600			16	29	2.0	1.8	44	31	110	6.9	5
1100			28	26	3.0	2.8	52	29	128	7.3	5
1320			76	22	3.0	5.3	88	26	164	6.1	7
May 15, 1956		East channel	104,000								
	120	24		64	10.0	2.1	88	68	229	6.3	3
	600	18		40	6.0	1.9	56	41	157	6.4	3
	1120		7.0	38	8.0	1.3	40	34	111	6.9	5
	West channel										
	600		10	36	2.0	1.1	46	38	115	6.0	7
	1100		34	23	2.5	3.1	50	22	126	6.5	4
	1320		54	19	3.0	3.9	60	16	137	7.0	6
	July 17, 1956	East channel	15,800								
120		10		155	10	1.7	162	154	405	6.1	1
600		33		88	12	1.4	107	80	298	6.5	3
1140			8.0	56	4.0	1.4	64	57	172	6.8	2
West channel											
600			11	54	3.5	1.4	60	51	166	6.4	1
1100			81	34	6.0	1.7	102	36	222	7.6	2
	1320		124	21	27	3.1	132	30	331	7.2	11

SUSQUEHANNA RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN SUSQUEHANNA RIVER BASIN IN PENNSYLVANIA

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Col- or
							Calcium, mag- nesium	Non- carbon- ate			

CROOKED CREEK AT CROOKED CREEK

Feb. 7, 1956	8.6	2	53	7.0	2.5	50	48	168	4.9	5
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SUSQUEHANNA RIVER AT FALLS

Feb. 15, 1956	2.3	42	16	7.5	3.0	59	25	168	7.1	9
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SUSQUEHANNA RIVER AT WILKES-BARRE

Mar. 13, 1956	10	53	25	4.0	2.8	55	12	150	7.4	6
Apr. 18	4.8	35	21	7.0	2.4	52	23	134	6.9	4
May 30	11	62	71	15	2.3	124	73	309	7.1	3
July 10	17	72	73	21	2.3	130	71	350	6.9	1
Aug. 21	3.2	69	119	20	2.8	204	147	440	6.9	2

FRANKSTOWN BRANCH JUNIATA RIVER AT HUNTINGDON

Mar. 29, 1956	6.9	83	30	9.5	4.2	101	33	236	7.5	4
May 1	7.0	79	31	8.5	2.8	96	31	229	7.3	3
June 12	16	120	33	19	4.3	128	30	329	7.4	5
July 27	12	88	34	13	3.9	104	32	259	7.4	2
Sept. 5	15	140	37	20	6.2	150	35	369	7.5	6

RAYSTOWN BRANCH JUNIATA RIVER NEAR HUNTINGDON

Mar. 27, 1956	4.3	45	28	1.9	4.3	63	26	152	7.6	3
May 1 .....	.1	60	31	2.0	2.4	86	37	182	7.3	2
June 12	7.4	54	28	2.0	2.4	62	18	161	7.1	3
July 24	3.2	44	22	1.5	3.7	57	21	144	7.0	5
Sept. 6	2.6	59	42	2.5	2.6	92	44	209	7.2	3

CODORUS CREEK NEAR YORK

Feb. 10, 1956	11	46	22	19	14	75	37	238	7.3	15
Apr. 4	6.8	47	18	18	10	76	38	208	6.9	6
May 10	25	77	28	44	2.6	103	40	339	6.7	17
June 21	39	62	39	97	1.8	144	93	504	7.4	45
Aug. 1	179	80	329	98	2.8	160	94	545	6.8	55
Sept. 13	45	79	42	121	.8	182	117	619	6.9	65

SUSQUEHANNA RIVER AT COLUMBIA

Feb. 10, 1956 ^a ...	1.6	40	19	2.5	6.6	58	25	153	7.0	10
Feb. 10 ^b	2.6	28	26	3.0	6.6	54	31	153	6.8	8
Feb. 10 ^c	6.5	20	49	4.5	6.7	65	49	193	6.7	2
Feb. 10 ^d	4.0	16	59	4.5	4.9	76	63	217	6.4	2
Feb. 10 ^e	3.1	20	57	5.0	6.2	81	65	220	6.5	4

CONESTOGA CREEK AT LANCASTER

Feb. 10, 1956	4.1	128	28	6.5	27	156	51	339	8.1	5
Apr. 5	7.2	137	29	7.5	23	156	44	326	7.6	3
May 11	3.5	140	26	5.5	20	158	43	330	7.5	4
June 20	4.7	150	21	6.0	21	160	37	346	7.5	6
Aug. 3	23	180	54	8.0	18	180	32	388	6.2	6
Sept. 14	10	176	31	8.5	20	182	38	390	7.6	5

a Right side.

b Right center.

c Center.

d Left center.

e Left side.

POTOMAC RIVER BASIN--Continued

SOUTH BRANCH POTOMAC RIVER NEAR PETERSBURG, W. VA.

LOCATION.--At the Potomac Edison powerplant, 1,000 feet upstream from gaging station, and 2½ miles west of Petersburg, Grant County.

DRAINAGE AREA.--642 square miles.

RECORDS AVAILABLE.--Water temperatures: January 1947 to September 1953, November 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 78°F July 4; minimum, freezing point Dec. 12-13.

EXTREMES, 1947-53, 1954-56.--Water temperatures: Maximum, 84°F June 27, July 23, 1952; minimum, freezing point on several days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Temperature (°F) of water, water year October 1955 to September 1956

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

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

POTOMAC RIVER BASIN--Continued

SOUTH BRANCH POTOMAC RIVER AT ROMNEY, W. VA.

LOCATION.--At water plant at Romney, Hampshire County, 18.6 miles upstream from gaging station near Springfield.

DRAINAGE AREA.--1,412 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1950 to March 1951, October 1951 to September 1952, January 1954 to September 1955, February to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 80°F June 28, 29, July 22, 28, 29.

EXTREMES, 1950-52, 1954-56.--Water temperatures: Maximum, 85°F June 29, 1952; minimum, freezing point on many days during winter months.

REMARKS.--Water temperatures furnished by Water Department, Romney, W. Va. Records of discharge for gaging station near Springfield for water year October 1955 to September 1956 given in WSP 1432.

Temperature (°F) of water, February to September 1956												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1					--	43	42	62	70	77	76	78
2					--	44	42	61	65	78	77	79
3					--	45	44	60	60	78	75	79
4					--	43	46	62	56	78	74	78
5					38	45	48	62	58	76	74	72
6					40	46	50	62	60	76	70	69
7					39	46	50	63	65	75	68	68
8					40	46	44	62	68	74	68	69
9					40	45	42	62	70	74	67	68
10					42	45	49	62	70	74	68	67
11					43	44	50	61	74	73	69	68
12					42	44	50	61	74	74	75	70
13					42	42	52	61	76	73	74	70
14					40	43	52	64	79	74	75	72
15					39	43	53	65	79	74	77	71
16					40	43	53	65	75	75	78	72
17					41	40	54	64	71	76	75	74
18					43	41	55	63	72	76	72	72
19					44	38	54	62	68	76	79	70
20					43	38	55	62	68	73	76	68
21					42	39	56	68	70	73	70	69
22					41	44	58	64	72	80	68	68
23					35	46	58	63	75	79	68	68
24					36	44	60	61	76	78	69	66
25					37	41	61	65	74	78	70	68
26					38	41	60	68	76	75	70	68
27					40	41	61	66	76	74	72	65
28					42	42	62	66	80	80	73	66
29					41	41	62	60	80	80	76	64
30					--	41	62	55	78	78	76	64
31					--	42	--	60	--	76	77	--
Average					40	43	53	63	71	76	73	70

POTOMAC RIVER BASIN--Continued

SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA.

LOCATION.--At gaging station at highway bridge, 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 (discontinued).

Water temperatures: October 1952 to September 1956 (discontinued).

Sediment records: April 1953 to September 1956 (discontinued).

EXTREMES, 1955-56.--Dissolved solids: Maximum, 182 ppm Jan. 11-20; minimum, 100 ppm Apr. 11-20.

Hardness: Maximum, 186 ppm Dec. 21-31; minimum, 75 ppm Mar. 16-20.

Specific conductance: Maximum daily, 352 microhmhos Dec. 20, 23; minimum daily, 137 microhmhos Mar. 18.

Water temperatures: Maximum, 88°F July 24, Aug. 19; minimum, freezing point Jan. 9, 10.

Sediment concentrations: Maximum daily, 83 ppm July 5; minimum daily, 1 ppm on many days.

Sediment loads: Maximum daily, 332 tons Sept. 29; minimum daily, 1 ton on many days.

EXTREMES, 1952-56.--Hardness: Maximum, 172 ppm Oct. 21-31, 1953; minimum, 65 ppm Feb. 23-28, 1953.

Specific conductance: Maximum daily, 405 microhmhos Dec. 16, 1953; minimum daily, 85.8 microhmhos Aug. 18, 1955.

Water temperatures: Maximum, 90°F July 5, 1955; minimum, freezing point on several days during winter months.

Sediment concentrations (1953-56): Maximum daily, 1,170 ppm Oct. 17, 1954; minimum daily, 1 ppm on many days during each year.

Sediment loads (1953-56): Maximum daily, 183,000 tons Aug. 19, 1955; minimum daily, 1 ton on several to many days during each year.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (microhmhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955	633	2.5	0.00	32	15	5.1	2.0	160	12	5.4	0.0	2.0	151	142	10	286	8.1	6
Oct. 11-20	603	3.4	.08	35	14	4.9	1.9	a161	13	7.3	.0	1.5	158	145	13	285	8.5	5
Oct. 21-31	509	--	.02	28	14	--	--	b153	11	--	--	--	--	127	2	286	8.5	5
Nov. 1-10	509	--	.01	--	13	--	2.1	--	16	7.8	--	.5	--	--	--	270	--	6
Nov. 11-20	553	2.6	.22	35	15	6.4	1.8	a164	14	7.8	.0	1.3	156	149	14	285	8.5	5
Nov. 21-30	506	--	.00	33	14	--	--	156	12	--	--	--	--	140	12	281	8.2	0
Dec. 1-10	472	--	.00	25	14	--	--	--	13	--	--	--	--	--	--	284	--	0
Dec. 11-20	426	--	.00	38	14	--	--	179	15	--	--	--	--	152	6	328	8.1	0
Dec. 21-31	418	--	.00	40	16	--	--	181	13	--	--	--	--	160	17	336	8.0	0
Jan. 1-10, 1956	367	1.4	.03	40	14	7.1	2.1	182	17	9.1	.0	3.1	176	137	8	335	8.3	19
Jan. 11-20	446	4.7	.00	38	14	5.8	1.6	169	13	9.4	.0	2.3	182	145	16	315	8.1	3
Jan. 21-31	436	3.7	.01	39	14	6.8	1.8	169	15	11	--	2.4	168	155	16	319	8.2	3
Feb. 1-10	1,690	7.9	.01	32	10	5.1	1.8	132	14	7.4	.0	3.8	142	121	13	264	7.8	5
Feb. 11-20	1,440	6.1	.01	27	6.4	3.0	1.4	95	11	5.2	.0	3.9	102	94	16	194	7.9	5
Feb. 21-29	1,070	5.6	.06	29	8.6	3.8	1.3	116	11	4.8	.0	3.1	136	108	13	226	7.9	3
Mar. 1-15	1,130	2.7	.01	29	9.9	4.1	1.4	121	11	5.2	.0	2.1	128	113	14	231	8.0	5
Mar. 16-20	3,680	7.6	.08	21	5.4	2.7	1.4	75	10	3.9	.0	2.9	102	75	13	162	7.7	17
Mar. 21-31	1,630	6.5	.00	26	6.9	3.5	1.2	101	10	3.9	.0	2.7	117	93	10	199	7.8	3

a Includes equivalent of 5 parts per million carbonate (CO₃).

b Includes equivalent of 3 parts per million carbonate (CO₃).

Apr. 1-10, 1956.....	1,600	4.8	.00	28	8.5	3.7	1.3	119	11	4.2	.0	1.6	124	105	7	221	7.9	5
Apr. 11-20.....	1,670	6.5	.04	23	6.1	2.9	1.2	91	8.4	3.5	.0	1.5	100	82	8	175	7.7	5
Apr. 21-30.....	1,030	4.1	.04	28	8.9	3.7	1.1	125	9.2	4.7	.0	1.4	116	106	4	213	7.9	5
May 1-10.....	758	2.5	.06	29	10	4.2	1.7	131	10	5.5	.0	1.4	131	113	6	239	7.6	5
May 11-20.....	622	2.7	.02	31	11	5.0	1.7	142	12	6.8	.0	1.9	144	123	6	283	7.6	5
May 21-31.....	532	3.8	.03	32	13	5.9	1.8	149	12	7.6	.0	1.7	166	133	11	275	7.7	5
June 1-10.....	498	7.4	.04	33	13	6.4	1.8	153	13	8.3	.0	1.8	160	136	10	277	8.0	5
June 11-20.....	439	11	.03	32	14	7.0	2.0	153	13	8.8	.0	1.2	166	137	12	282	7.9	8
June 21-30.....	422	10	.00	32	13	8.4	2.2	152	14	10	.0	1.5	164	133	9	288	8.0	10
July 1-10.....	461	9.4	.0	30	12	8.7	2.2	145	15	10	.0	1.3	158	124	5	276	8.0	10
July 11-20.....	362	9.2	.00	32	13	7.8	2.1	c151	11	10	.0	1.1	164	133	9	287	8.9	3
July 21-31.....	889	8.8	.00	26	9.2	6.4	2.0	111	13	7.8	.0	2.3	133	103	12	231	8.3	5
Aug. 1-10.....	948	4.4	.01	26	10	5.4	2.0	115	12	6.5	.0	1.2	126	106	12	227	8.3	5
Aug. 11-20.....	510	8.4	.12	23	8.3	4.3	1.5	d100	10	5.2	.0	1.1	114	92	9	196	8.9	10
Aug. 21-31.....	375	7.2	.12	27	10	6.4	1.4	e125	9.3	8.3	.0	.5	136	108	6	236	9.2	3
Sept. 1-10.....	380	5.6	.02	32	12	8.7	1.7	f146	12	10	.0	.5	172	129	9	281	8.7	10
Sept. 11-20.....	374	5.5	.03	33	14	9.0	2.0	c134	20	11	.0	.6	--	140	13	281	8.8	5
Sept. 21-30.....	963	7.8	.06	30	12	8.2	2.2	142	15	9.8	.1	1.5	154	124	8	280	8.3	10
Average.....	778	5.8	0.03	31	12	5.7	1.7	139	13	7.3	0.0	1.8	143	124	10	262	--	6

c Includes equivalent of 11 parts per million carbonate (CO₃).d Includes equivalent of 6 parts per million carbonate (CO₃).e Includes equivalent of 14 parts per million carbonate (CO₃).f Includes equivalent of 8 parts per million carbonate (CO₃).

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

POTOMAC RIVER BASIN--Continued

SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	54	36	34	37	45	49	70	77	84	78	83
2	69	55	36	33	37	47	52	64	68	86	79	82
3	69	52	40	35	39	47	54	65	68	86	78	81
4	69	50	45	34	38	49	60	70	70	86	78	82
5	69	42	47	35	41	51	63	67	75	79	79	80
6	70	46	44	35	38	51	--	67	77	81	78	80
7	74	47	39	34	41	52	57	68	79	82	78	77
8	70	47	40	33	43	52	51	67	80	84	78	72
9	66	48	38	--	45	47	51	66	77	85	80	68
10	67	45	36	--	47	51	54	65	78	83	83	68
11	66	46	34	34	44	54	52	66	82	81	82	71
12	66	50	34	34	41	50	--	68	84	81	84	71
13	67	53	34	36	44	46	55	73	85	80	81	73
14	64	57	34	37	43	45	55	80	85	80	80	75
15	64	54	34	37	45	46	54	73	87	80	80	74
16	61	54	34	36	46	44	58	69	85	82	83	74
17	60	52	34	35	45	44	54	63	86	83	84	74
18	58	42	33	35	48	42	52	66	81	82	85	72
19	58	44	34	34	47	43	53	70	75	80	88	69
20	59	43	33	35	47	42	53	69	72	78	78	68
21	60	44	33	36	44	44	53	73	72	77	73	65
22	58	44	33	36	40	46	56	73	80	82	74	63
23	58	46	33	35	41	47	56	73	84	79	75	67
24	61	46	36	34	40	46	52	71	88	77	77	69
25	56	43	37	--	45	43	55	70	86	77	75	68
26	56	43	35	--	44	46	60	70	86	82	75	64
27	57	40	35	--	47	49	62	70	87	84	79	58
28	58	41	33	34	47	49	69	73	81	84	80	57
29	58	37	33	34	44	47	73	75	80	82	80	60
30	57	36	35	37	--	49	73	77	80	79	82	62
31	54	--	--	37	--	47	--	83	--	78	83	--
Average	63	47	36	35	43	47	57	70	80	81	80	71

POTOMAC RIVER BASIN--Continued

SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	650	2	4	539			467		
2.....	640	1	2	503			467		
3.....	620	2	3	503	1	1	458	2	2
4.....	640	1	2	503			458		
5.....	611	1	2	521			503		
6.....	602	1	2	440	2	3	503	1	1
7.....	611	1	2	503			467		
8.....	670	1	2	512			458		
9.....	640	1	2	512			485		
10.....	650	1	2	557	1	1	458	1	1
11.....	660	1	2	575			449		
12.....	611	1	2	575			458		
13.....	566	1	2	602	1	a 2	476	2	2
14.....	650	1	2	620	1	a 2	458		
15.....	640	1	2	566	1	a 2	408		
16.....	602	1	2	566	1	a 2	400		
17.....	602	1	2	503			416	1	1
18.....	575	1	2	485	1	1	400		
19.....	575	1	2	512			400		
20.....	548	1	1	530			400	1	a 1
21.....	521	1	1	521			384	1	1
22.....	530	1	1	530	1	1	408	1	a 1
23.....	530	1	1	539			440	1	a 1
24.....	512	1	1	530			476	1	a 1
25.....	503	1	1	530			458		
26.....	494	1	a 1	512	1	1	408	1	1
27.....	494			467			416		
28.....	503			485			408		
29.....	467	1	1	458	1	a 1	376	1	1
30.....	530			485	1	1	424	1	1
31.....	512			--	--	--	400	1	1
Total.	17,959	--	53	15,664	--	42	13,587	--	39
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	432			800	1	2	996		
2.....	416	1	1	780	1	2	974	1	3
3.....	408			842	2	5	919		
4.....	392			875	1	2	908		
5.....	408			1,150	2	6	842	2	5
6.....	416	1	1	1,700	11	50	842		
7.....	384			2,450	24	159	810		
8.....	350			3,080	36	299	820		
9.....	300	1	a 1	2,940	27	214	897		
10.....	360	2	a 2	2,310	16	100	930	1	2
11.....	476			1,960	11	58	941		
12.....	521	1	1	1,760	9	43	1,040	1	a 3
13.....	494			1,560	6	25	1,070	1	a 3
14.....	458			1,500	5	20	1,750	2	a 9
15.....	424			1,430	5	19	3,150	6	a 51
16.....	416	1	1	1,340	8	29	4,800	9	a 117
17.....	416			1,260	4	14	4,200	9	a 102
18.....	432			1,230	3	10	3,750	9	a 91
19.....	400	1	1	1,180	3	10	3,010	8	a 65
20.....	424			1,220	3	10	2,660		
21.....	503	1	1	1,160	3	9	2,310	8	48
22.....	325			1,140	2	6	2,100		
23.....	353			1,100	2	6	1,890		
24.....	376	1	a 1	1,060	2	6	1,760		
25.....	360	1	a 1	1,070	3	9	1,630	3	13
26.....	376	1	a 1	1,020	4	11	1,500		
27.....	400	1	a 1	1,010	3	8	1,440		
28.....	360			1,050	3	9	1,360		
29.....	467	1	1	1,010	1	3	1,340	3	11
30.....	539			--	--	--	1,310		
31.....	740	2	4	--	--	--	1,250		
Total.	13,126	--	35	40,987	--	1,144	53,199	--	766

a Computed from estimated concentration graph.

POTOMAC RIVER BASIN--Continued

SOUTH FORK SHENANDOAH RIVER AT FRONT ROYAL, VA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	1,160			780			485	3	4
2.....	1,100	2	6	853	5	11	467	7	9
3.....	1,110			810			512	5	7
4.....	1,050			750			557	5	8
5.....	1,050	2	a 6	800	6	13	566	4	6
6.....	1,030	2	a 6	780			548	3	4
7.....	1,380			760			512	4	6
8.....	2,170			730	10	20	467	5	6
9.....	3,010	15	108	700			424	7	8
10.....	2,940			620			440	7	8
11.....	2,520	11	a 62	710	10	18	440	6	7
12.....	2,100			680			432	5	6
13.....	1,890			670	10	17	392	3	3
14.....	1,630	6	27	620			353	3	3
15.....	1,500			611			400	3	3
16.....	1,430	5	19	602	7	11	476	4	5
17.....	1,430			602			432	3	3
18.....	1,420			602	5	8	432	4	5
19.....	1,430	5	18	566			530	6	9
20.....	1,320			575			503	5	7
21.....	1,250	4	12	584	6	9	521	4	6
22.....	1,180			557			503	5	7
23.....	1,160			539	7	10	432	4	5
24.....	1,030	3	8	530			458	5	6
25.....	1,060			521			449	4	5
26.....	1,010	3	7	548	7	10	440	5	6
27.....	963			521			384	5	5
28.....	897			530	4	6	346	4	4
29.....	952	3	7	512			346	2	2
30.....	820			503			339	4	4
31.....	--	--	--	503	3	4	--	--	--
Total.	49,992	--	855	19,649	--	369	13,586	--	167
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.....	325	5	4	485	3	a 4	360	2	a 2
2.....	311	5	4	494	8	a 11	424		
3.....	297	4	3	512	11	15	392		
4.....	384	9	9	503			408	2	2
5.....	790	83	177	548			416		
6.....	575	16	25	790	16	64	392	1	1
7.....	557	11	17	1,310			376		
8.....	512	6	7	2,310			348		
9.....	467			1,500	5	14	348	2	2
10.....	392			1,030			339		
11.....	318	5	5	690	3	5	339	1	1
12.....	376			620			376		
13.....	376			602	4	4	346		
14.....	339	3	3	575			416	2	2
15.....	325			503			476		
16.....	318	3	3	440	3	4	311	2	2
17.....	325			458			332		
18.....	368			424	2	2	376	8	a 34
19.....	332	9	13	392			376		
20.....	548			392			392		
21.....	800	10	22	392	2	2	368	2	2
22.....	1,280			376			339		
23.....	1,560			408	2	2	325	2	2
24.....	1,270	6	15	416			360		
25.....	1,110			392			339		
26.....	886	2	3	376	2	a 2	325	2	a 2
27.....	740			376			400		
28.....	650			360	2	2	1,250	31	a 332
29.....	539	2	3	360			3,750		
30.....	476			311			2,170		
31.....	467			353	2	a 2	--	--	--
Total.	18,013	--	517	18,698	--	355	17,165	--	529
Total discharge for year (cfs-days).....									284,845
Total load for year (tons).....									4,871

a Computed from estimated concentration graph.

POTOMAC RIVER BASIN--Continued
NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA.

LOCATION:--At gaging station at 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: April 1929 to March 1930, October 1948 to September 1949, October 1955 to September 1956 (discontinued).

RECORDS AVAILABLE: Chemical analyses: April 1929 to March 1930, October 1948 to September 1949, October 1955 to September 1956 (discontinued).

Water temperatures: October 1948 to September 1949, October 1955 to September 1956 (discontinued).

Water temperatures: October 1955 to September 1956 (discontinued).

Water temperatures: October 1955 to September 1956 (discontinued).

Water temperatures: October 1955 to September 1956 (discontinued).

Water temperatures: October 1955 to September 1956 (discontinued).

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Water temperatures: October 1955 to September 1956 (discontinued).

Water temperatures: October 1955 to September 1956 (discontinued).

Water temperatures: October 1955 to September 1956 (discontinued).

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporated at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg./l.	Non-carbonate, mg./l.			
Oct. 26, 1955.....	166	3.4	0.00	52	18	3.2	1.6	217	13	6.1	0.0	3.0	225	204	3	386	8.4	3
Nov. 21.....	178	1.7	.01	48	16	3.1	1.7	214	16	5.4	.0	2.5	194	186	10	360	8.3	5
Dec. 10.....	136	2.5	.04	56	19	1.1	.6	224	16	7.0	.0	4.0	212	218	34	374	8.1	0
Jan. 16, 1956.....	152	3.0	.04	52	19	3.8	1.3	228	15	5.5	.0	4.5	216	208	23	388	8.1	3
Feb. 9.....	1,140	7.0	.00	32	7.7	2.5	1.7	111	15	4.5	.1	5.5	136	112	21	234	7.9	14
Mar. 15.....	3,000	3.4	.03	32	6.6	2.1	1.7	108	13	3.6	.1	3.7	134	107	18	214	8.0	20
May 18.....	233	6.0	.04	37	14	3.2	1.5	176	12	4.4	.0	2.9	171	150	6	305	8.3	3
July 5.....	145	8.7	.00	33	14	3.0	2.0	154	12	4.7	.1	1.0	175	140	14	264	8.1	10
Aug. 10.....	595	8.0	.00	26	6.3	2.1	2.2	96	8.3	2.8	.0	4.9	114	91	12	186	7.9	10
Sept. 12.....	115	2.6	.00	31	19	3.5	2.0	179	12	5.6	.0	.4	164	160	13	297	8.4	8

REMARKS:--Records of specific conductance of daily samples available in district office at Haleigh; N.C. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

POTOMAC RIVER BASIN--Continued

NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

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

POTOMAC RIVER BASIN--Continued

NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Mean concen-tration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concen-tration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concen-tration (ppm)	Tons per day
1.....	224			174			163		
2.....	224			170			139		
3.....	219	6	4	170	2	1	145	8	3
4.....	215			166			152		
5.....	211	12	7	166	5	2	152		
6.....	206	9	5	163	6	3	152	4	2
7.....	211	10	6	170			152		
8.....	228			174			159		
9.....	224			170			149		
10.....	228	8	5	182	2	1	155	4	2
11.....	215			202			145		
12.....	202			202			149		
13.....	197	6	3	215			166	3	1
14.....	215			206			136		
15.....	206			193	2	1	136		
16.....	193			193			152		
17.....	193	6	3	182			145	4	2
18.....	185			174			163		
19.....	185			182			149		
20.....	182			202	2	1	166	10	4
21.....	178	12	6	178			126		
22.....	174			166			133		
23.....	174			174			155	10	a4
24.....	170			174			149	9	a4
25.....	163	9	4	189			139	8	a3
26.....	166			170			142	9	a3
27.....	166			166	1	(t)	152	10	a4
28.....	163			159			152	10	a4
29.....	170	8	4	145			113		
30.....	174			155			142	10	3
31.....	174			--	--	--	129		
Total.	6,035	--	134	5,332	--	30	4,557	--	81
Day	January			February			March		
	Mean dis-charge (cfs)	Mean concen-tration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concen-tration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concen-tration (ppm)	Tons per day
1.....	141			307			361	2	2
2.....	140	1	(t)	323	12	12	339	3	3
3.....	145			384			328	3	3
4.....	136			471			318	2	2
5.....	149			595	13	a21	307	2	2
6.....	149	3	1	678	14	a26	297	3	2
7.....	149			1,140	24	a74	286	2	2
8.....	149			1,820	25	a103	302	3	2
9.....	149			1,140			307	8	7
10.....	145			876	14	35	350	3	3
11.....	152	2	1	736			367	2	2
12.....	139			684			367	2	2
13.....	149			696	6	11	378	6	6
14.....	152			636			877	240	s 712
15.....	139	2	1	595			3,000	344	s 2,470
16.....	136			559			2,400	76	492
17.....	136			536	3	4	1,840	52	258
18.....	152	2	1	524			1,520	22	90
19.....	145			547			1,310	16	57
20.....	136			559			1,140	11	34
21.....	129	4	1	547	2	3	1,030	8	22
22.....	129			518			925	6	15
23.....	126			477			848		
24.....	123			441			788		
25.....	120			436			722	4	8
26.....	126	2	1	424	1	1	672		
27.....	133			430			630		
28.....	142			412	1	a1	589		
29.....	155			384	1	1	595	3	5
30.....	145	4	2	--	--	--	630		
31.....	203			--	--	--	648		
Total.	4,419	--	33	17,875	--	455	24,471	--	4,245

s Computed by subdividing day.

t Less than 0.50 ton.

a Computed from estimated concentration graph.

POTOMAC RIVER BASIN--Continued

NORTH FORK SHENANDOAH RIVER NEAR STRASBURG, VA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	606			323			193		
2.....	577	3	5	307	4	3	202	3	2
3.....	559			307			206		
4.....	559			312			202		
5.....	530	8	12	307	6	5	211		
6.....	530			302			202		
7.....	1,170			291			189	2	1
8.....	3,360	14	s 62	286	4	3	178		
9.....	2,480	70	635	281			178		
10.....	1,640	43	a 288	266			178	3	1
11.....	1,240	19	a 84	262	4	3	170		
12.....	1,030	11	37	262			163		
13.....	883	9	25	257	4	3	159	2	1
14.....	755	6	13	247			155		
15.....	684						145		
16.....	660	5	8	242	3	2	142	2	1
17.....	618			233			118		
18.....	559			233	4	2	136		
19.....	524	4	5	233			257	2	1
20.....	477			233			211		
21.....	441			224	4	2	193	2	1
22.....	424	2	2	215			170		
23.....	412			211			166		
24.....	401	3	3	202	4	a 2	291	2	1
25.....	395			197			206		
26.....	384			185	4	a 2	197	2	1
27.....	367	4	4	189			170		
28.....	356			197			152		
29.....	345			189	3	2	136	2	1
30.....	328			197			115		
31.....	--	--	--	197			--	--	--
Total.	23,294	--	1,287	7,644	--	83	5,391	--	34
	July			August			September		
1.....	110			174	3	a 1	129	1	(at)
2.....	118	2	1	170	2	1	120	2	1
3.....	120			166			118		
4.....	123			174			123		
5.....	145	4	3	178	4	5	126	2	1
6.....	262			215			118		
7.....	247			2,320	46	a 323	107	2	1
8.....	242	2	1	1,640	55	a 244	105		
9.....	228			925	29	a 72	107		
10.....	189			595	12	a 19	105	1	(t)
11.....	170	2	1	436	8	7	110		
12.....	163			339			115	2	1
13.....	155			291			110		
14.....	149	2	1	257	8	5	107	1	(t)
15.....	139			252			118		
16.....	133			281	7	5	118	1	(t)
17.....	136	2	1	228			110		
18.....	155			202	2	1	107	1	(t)
19.....	126			185			110		
20.....	129	2	1	170			113	1	(t)
21.....	142			174	1	(t)	107		
22.....	149			166			105	2	1
23.....	189	4	3	159			107		
24.....	339			155			113	1	(t)
25.....	328			145	1	(t)	105		
26.....	367	4	3	139			105	2	1
27.....	307			133			115		
28.....	247			133	1	(t)	136		
29.....	215	3	a 2	126			139	--	--
30.....	193			129			257		
31.....	178			133			--		
Total.	5,893	--	56	10,790	--	710	3,565	--	--
Total discharge for year (cfs-days).....									118,966
Total load for year (tons).....									7,169

s Computed by subdividing day.

t Less than 0.50 ton.

a Computed from estimated concentration graph

POTOMAC RIVER BASIN--Continued
LINGANORE CREEK NEAR FREDERICK, MD.

LOCATION.--Temperature recorder at gaging station on left bank, 2½ 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 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 86°F July 31; minimum, 33°F on several days during December and January.

EXTREMES, 1951-56.--Water temperatures: Maximum, 88°F July 31, 1954; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, 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	
1.....	66	64	35	34	35	34	34	34	34	41	36	48	41	66	58	72	66	82	70	73	68	81	74	
2.....	64	61	36	35	34	34	34	34	34	46	41	49	47	60	54	66	60	85	75	73	70	78	74	
3.....	63	59	41	36	34	33	34	34	37	34	45	41	51	48	59	53	64	59	86	76	74	68	71	
4.....	63	59	45	41	33	33	37	36	48	44	58	51	65	58	63	58	61	79	74	71	68	76	69	
5.....	63	59	(a)	45	42	33	33	40	37	48	41	58	52	63	55	71	62	74	68	70	68	75	71	
6.....	66	63	42	37	34	33	34	33	40	36	46	44	55	52	66	56	74	65	68	67	69	68	74	
7.....	70	66	37	35	34	34	34	39	36	46	45	53	46	65	59	75	66	75	68	70	68	72	67	
8.....	69	62	37	35	34	34	41	37	48	43	46	43	63	54	76	67	76	72	74	67	69	64	64	
9.....	62	59	37	36	34	34	43	40	44	38	49	41	63	53	72	68	78	73	78	69	65	60	60	
10.....	61	56	42	40	36	34	34	44	42	47	42	52	46	61	58	74	67	76	72	80	73	64	57	
11.....	61	56	45	42	34	33	33	44	42	50	46	51	48	61	60	78	68	77	69	79	71	65	60	
12.....	62	56	49	44	34	34	37	33	43	42	50	42	53	45	65	59	79	67	77	69	77	71	69	
13.....	61	56	53	49	34	34	38	36	43	41	42	41	54	49	72	63	81	69	74	71	75	72	71	
14.....	61	60	55	51	34	34	36	34	41	38	43	40	54	48	76	67	82	72	78	72	75	72	71	
15.....	60	59	53	50	34	34	35	34	42	40	43	41	52	51	71	64	83	74	79	69	77	70	66	
16.....			51	50	34	34	36	34	42	40	43	38	55	51	65	59	80	75	75	71	78	70	65	
17.....			51	43	34	34	36	34	42	40	42	36	51	48	59	55	83	75	77	72	78	70	66	
18.....			43	41	34	34	35	34	42	40	42	37	48	46	59	54	78	70	75	69	79	71	68	
19.....			41	39	34	34	34	34	42	41	41	36	52	45	65	54	73	67	75	70	79	74	64	
20.....			40	38	34	34	34	34	45	42	42	36	51	47	67	59	68	66	72	70	76	68	63	
21.....			42	38	34	34	34	43	38	44	38	52	44	67	58	69	68	73	69	68	85	61	55	
22.....			42	39	34	34	34	38	35	45	39	54	46	68	61	76	67	72	70	69	83	60	56	
23.....	(a)		43	41	34	34	34	37	34	48	43	54	48	68	64	82	72	72	70	70	83	64	58	
24.....			45	42	34	34	34	36	35	48	41	48	45	67	59	78	72	68	72	68	66	66	63	
25.....			42	40	34	34	34	44	38	44	37	52	44	63	55	81	73	71	67	71	63	64	59	
26.....			40	38	33	34	34	44	40	45	44	56	49	65	56	81	72	75	71	72	64	61	59	
27.....			39	37	34	34	34	43	41	47	41	58	52	62	61	75	71	77	73	71	66	59	55	
28.....			40	36	34	34	34	47	42	47	43	72	63	70	61	77	71	79	75	70	66	58	53	
29.....			36	35	34	34	42	37	43	42	42	72	63	70	61	77	67	71	68	73	68	58	53	
30.....			35	35	34	34	33	33	33	33	33	42	42	70	62	70	67	70	66	70	71	63	56	
31.....			--	--	34	34	34	34	--	46	42	--	52	76	66	--	--	70	64	80	73	--	--	
Average.....	--	--	--	--	36	35	34	34	41	38	45	41	54	49	66	59	76	68	76	70	74	69	67	63

a Recorder stopped; range in temperature only from Oct. 16 to Nov. 9; maximum 59°; minimum 42° during this period.

RAPPAHANNOCK RIVER BASIN

RAPPAHANNOCK RIVER AT REMINGTON, VA.

LOCATION.--At gaging station at bridge on U. S. Highway 29 at Remington, Fauquier County, 0.3 mile upstream from Tinpot Run, 0.4 mile downstream from Ruffans Run, 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 (discontinued).

Temperature records: May 1951 to September 1956 (discontinued).

Sediment records: April 1951 to September 1956 (discontinued).

EXTREMES, 1955-56.--Dissolved solids: Maximum, 16 ppm July 11-20; minimum, 40 ppm Apr. 11-20.

Hardness: Maximum, 29 ppm Nov. 10; minimum, 16 ppm July 21-31.

Specific conductance: Maximum daily, 98.1 micromhos July 3; minimum daily, 45.1 micromhos July 21.

Water temperatures: Maximum daily, 82°F July 3; minimum, freezing point on several days during winter months.

Sediment concentrations: Maximum daily, 626 ppm July 5; minimum daily, 1 ppm on many days.

Sediment loads: Maximum daily, 10,600 tons July 21; minimum daily, less than 0.50 ton on several days.

EXTREMES 1951-56.--Dissolved solids (1951-52, 1955-56): Maximum, 47 ppm July 11-20, 1956; minimum, 39 ppm Feb. 21-29, 1952.

Hardness: Maximum 29 ppm Nov. 1-10, 1955; minimum, 15 ppm Feb. 21-28, 1953, Mar. 1-10, 1954, Jan. 11-20, Feb. 11-20, Mar. 1-10, 1955.

Specific conductance: Maximum daily, 98.1 micromhos July 3, 1956; minimum daily, 41.8 micromhos Mar. 27, 1953.

Water temperatures: Maximum, 82°F July 3, 1953; minimum, freezing point on one to many days during each year.

Sediment concentrations: Maximum daily, 1,240 ppm June 10, 1951; minimum daily, 1 ppm on one or more days during each year.

Sediment loads: Maximum daily, 23,400 tons June 10, 1951; minimum daily, less than 0.50 ton on many days during each year.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955	287	12	0.04	6.9	1.1	3.0	1.5	27	2.5	2.7	0.1	0.8	44	22	0	61.7	7.2	9
Oct. 11-20	265	13	.12	5.5	.9	--	--	27	2.8	--	--	--	--	17	0	66.0	7.8	10
Oct. 21-31	181	15	.14	5.5	1.2	--	--	30	2.0	--	--	--	--	19	0	64.2	7.5	9
Nov. 1-10	194	--	.13	6.4	3.1	4.0	1.6	32	5.9	--	--	--	--	29	2	68.3	7.4	5
Nov. 11-21, 23	245	--	.11	6.9	2.3	3.4	1.5	30	6.3	--	--	--	--	27	8	62.1	7.3	5
Dec. 1-10	159	--	.16	7.2	2.3	2.9	1.0	24	4.0	--	--	--	--	27	8	56.1	7.2	5
Dec. 11-20	150	--	.02	4.9	.8	--	--	24	3.5	--	--	--	--	16	0	54.8	7.3	4
Dec. 21-31	137	13	.12	5.5	1.2	3.9	1.2	25	3.1	2.8	.0	1.0	42	19	0	56.5	7.4	7
Jan. 1-10, 1956	201	--	.02	6.6	1.2	--	--	24	4.6	--	--	--	--	20	0	60.3	7.2	5
Jan. 11-20	212	--	.08	5.8	1.9	--	--	24	4.9	--	--	--	--	19	0	50.2	7.4	4
Jan. 21-31	953	12	.10	5.3	1.9	2.7	1.2	17	6.8	3.2	.0	2.5	50	22	8	64.0	6.9	15
Feb. 1-10	591	13	.10	5.3	1.6	2.6	.8	19	5.3	2.8	.1	.6	46	20	4	57.0	7.2	10

Feb. 21-29, 1956	393	13	0.09	4.6	1.5	2.5	0.9	20	3.9	2.6	0.1	1.1	43	18	1	53.7	7.1	5
Mar. 1-10	370	12	.14	4.8	1.6	2.6	1.0	22	5.1	2.7	.1	1.1	46	18	1	52.5	7.2	15
Mar. 11-20	1,230	13	.12	4.9	1.5	2.4	1.2	22	5.1	2.7	.1	1.1	49	18	3	53.3	7.1	36
Mar. 21-31	933	12	.10	4.6	1.4	2.5	.8	18	4.3	2.6	.1	1.6	42	18	4	53.5	7.0	16
Apr. 1-10	902	12	.10	4.6	1.4	2.5	.8	19	3.9	2.4	.1	1.3	43	17	2	53.3	7.0	10
Apr. 11-20	631	11	.07	4.4	1.7	2.5	.9	20	4.1	2.2	.1	1.2	40	18	2	51.7	7.2	10
Apr. 21-30	347	12	.10	5.1	1.6	2.6	.8	23	2.9	2.2	.1	.9	42	19	0	52.5	7.2	10
May 1-10	288	11	.01	5.3	1.4	2.7	1.1	25	2.7	2.5	.0	.8	46	19	0	58.2	7.1	5
May 11-20	220	13	.11	5.1	1.6	3.0	1.2	27	2.5	2.3	.0	1.0	46	19	0	58.0	7.2	6
May 21-31	172	12	.06	5.3	1.6	1.6	1.3	27	2.4	2.4	.0	.8	46	19	0	57.5	7.4	7
June 1-10	161	13	.04	5.6	1.9	3.0	1.4	27	3.0	2.3	.1	1.2	50	22	0	59.6	7.2	8
June 11-20	99	11	.04	5.7	1.9	3.0	1.7	29	3.0	2.4	.1	.8	48	22	0	61.4	7.3	3
June 21-30	82	10	.01	6.0	1.9	3.2	2.0	32	3.2	2.6	.0	.8	45	23	0	64.4	7.2	5
July 1-10	296	9, 3	.09	6.7	1.9	2.7	2.7	29	4.9	2.7	.0	1.4	51	24	1	69.1	7.1	35
July 11-20	272	10	.11	6.2	1.8	2.5	2.7	27	4.8	2.6	.0	1.7	57	23	1	66.4	7.0	40
July 21-31	2,200	13	.06	4.9	1.5	2.2	1.8	20	3.8	2.4	.1	1.9	50	18	2	61.1	6.8	25
Aug. 1-10	599	13	.05	6.0	1.9	2.5	1.6	25	3.2	2.8	.1	1.2	50	23	2	65.0	7.0	15
Aug. 11-20	237	12	.03	6.0	2.1	2.8	1.5	29	2.0	2.6	.1	.9	47	24	0	65.6	7.3	20
Aug. 21-30	149	8, 2	.00	6.2	1.6	3.7	1.5	30	3.2	2.8	.1	.5	44	22	0	64.6	7.1	5
Sept. 1-10	119	8, 6	.0	6.0	1.9	3.6	1.8	30	2.6	3.0	.1	1.5	44	23	0	67.5	7.0	5
Sept. 11-20	123	10	.00	6.0	1.6	3.8	1.8	28	2.7	3.0	.1	1.0	48	22	0	65.4	7.0	5
Sept. 21-30	556	11	.02	5.7	1.6	3.1	1.9	24	3.7	3.0	.1	1.1	46	20	1	62.9	6.8	8
Average	400	12	0.07	5.6	1.6	2.9	1.4	25	3.7	2.6	0.1	1.1	46	21	1	60.5	--	11

RAPPAHANNOCK RIVER BASIN--Continued

RAPPAHANNOCK RIVER AT REMINGTON, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	65	45	32	33	34	32	43	62	74	73	68	76
2	62	46	35	32	34	44	48	60	65	78	72	76
3	65	48	38	34	36	42	50	60	60	81	70	72
4	59	43	45	33	37	45	53	60	60	75	70	71
5	--	42	43	36	38	44	51	59	63	75	70	73
6	--	39	40	34	40	49	50	61	66	73	72	74
7	71	43	36	35	38	48	54	68	69	73	71	71
8	66	43	36	33	40	53	49	59	69	75	70	65
9	60	40	38	33	42	46	45	57	70	75	71	61
10	61	40	34	33	41	45	49	59	69	74	74	56
11	56	40	33	35	37	48	50	62	71	70	73	59
12	56	44	32	35	43	49	49	64	70	70	73	63
13	56	47	32	33	42	44	49	65	71	74	73	65
14	60	51	33	32	38	43	50	69	74	73	74	67
15	60	50	33	34	42	--	47	69	75	70	70	68
16	57	50	32	34	42	42	50	65	75	73	70	68
17	53	51	32	35	43	40	52	57	75	75	72	69
18	55	40	34	33	45	42	49	61	75	68	73	65
19	53	39	34	33	44	38	48	59	68	70	76	59
20	50	39	32	34	45	39	49	61	66	72	71	61
21	--	39	32	34	42	40	48	60	61	61	67	53
22	53	38	33	33	--	40	52	66	71	71	63	56
23	48	42	34	34	35	43	53	68	75	71	63	57
24	54	45	35	35	34	47	52	60	77	70	67	63
25	57	39	36	33	40	41	48	56	75	69	64	58
26	47	37	34	33	40	44	51	59	74	70	62	57
27	49	35	33	33	42	43	56	--	77	73	68	58
28	49	40	32	32	45	47	62	65	73	74	69	54
29	54	32	33	34	40	45	67	66	70	75	72	56
30	55	33	34	37	--	43	70	65	70	68	72	59
31	48	--	33	33	--	43	--	70	--	77	74	--
Average	56	42	35	34	40	44	51	62	70	72	70	64

RAPPAHANNOCK RIVER BASIN--Continued

RAPPAHANNOCK RIVER AT REMINGTON, VA.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	236	6	4	201			175	12	6
2.....	241	5	3	189			201	2	1
3.....	228	5	3	189	2	1	197	1	1
4.....	214	6	3	197			214	1	1
5.....	205	3	2	189			218	1	1
6.....	214	3	2	181			205	1	1
7.....	223	3	2	181	2	1	185	1	(t)
8.....	376	19	19	201			177	2	1
9.....	463	15	19	210			185	1	(t)
10.....	270	6	4	201	1	1	181		
11.....	228			295	3	2	155		
12.....	205			355	6	6	145	4	2
13.....	193	8	5	255	2	1	148		
14.....	265			232	2	1	173		
15.....	527	15	21	218	2	a1	185	2	1
16.....	328	5	4	214	1	1	121		
17.....	250			218	1	1	165		
18.....	228			197	2	1	169		
19.....	218	3	2	201	2	1	173	2	1
20.....	205			241	1	a1	137		
21.....	193			255	1	1	158		
22.....	189			260	1	1	140		
23.....	177	2	1	255	4	3	151	4	2
24.....	173			241	6	a4	162		
25.....	173	2	1	223	4	2	177		
26.....	177			210	1	1	177		
27.....	177			205	1	1	137	3	1
28.....	177	2	1	201	1	1	109		
29.....	177	2	1	197	1	1	148		
30.....	189	2	1	181	13	6	158	2	1
31.....	193	1	1	--	--	--	137	3	a1
Total.	7,312	--	125	6,593	--	47	5,163	--	43
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	130			427	16	18	306	2	2
2.....	137			361	26	25	306	2	2
3.....	148	4	2	690	86	160	306	6	5
4.....	148			832	58	130	290	7	5
5.....	154			898	49	119	285	4	3
6.....	134			1,060	171	489	280	5	4
7.....	134	2	1	2,300	348	2,160	285	7	5
8.....	115			1,260	73	248	469	10	13
9.....	115			930	38	95	683	49	90
10.....	158			768	30	62	494	16	21
11.....	197	6	3	676	20	36	421	9	10
12.....	344			832	19	43	409	8	9
13.....	285	6	a5	696	13	24	427	5	6
14.....	195	11	a6	598	10	16	1,830	333	s2,270
15.....	185	7	a3	566	10	15	2,800	266	s2,080
16.....	185			540	8	12	1,590	70	301
17.....	181			494	8	11	1,810	79	386
18.....	165	4	2	527	7	10	1,340	36	130
19.....	169			520	8	11	1,160	24	75
20.....	201			463	5	6	1,060	15	43
21.....	205	27	13	427	5	6	898	18	44
22.....	162			391	5	5	800	15	32
23.....	155			367	7	7	742	18	36
24.....	137			350	19	18	696	12	23
25.....	118	6	2	379	5	5	631	14	24
26.....	173			451	6	7	586	9	14
27.....	127			391	12	13	560	11	17
28.....	130			361	11	11	520	10	14
29.....	193	8	5	333	5	4	508	8	11
30.....	311			--	--	--	540	9	13
31.....	514	13	18	--	--	--	482	6	8
Total.	5,705	--	139	18,888	--	3,766	23,314	--	5,696

s Computed by subdividing day.

t Less than 0.50 ton.

a Computed from estimated concentration graph.

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

RAPPAHANNOCK RIVER BASIN--Continued

RAPPAHANNOCK RIVER AT REMINGTON, VA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	433	7	8	290	9	7	151	8	3
2.....	403	8	9	280	10	8	158	6	3
3.....	403	6	7	333	8	7	255	17	12
4.....	421	11	12	355	8	8	232	6	4
5.....	379	8	8	306	7	6	173	5	2
6.....	373	10	10	280	4	3	151	5	2
7.....	1,160	101	s 431	275	7	5	137	5	2
8.....	2,080	145	s 864	275	5	4	127	5	2
9.....	1,340	55	199	255	3	2	118	5	2
10.....	1,030	24	67	236	6	4	112	13	4
11.....	865	19	44	246	5	3	112	19	6
12.....	780	12	25	250	4	3	109	4	1
13.....	676	15	27	250	4	3	95	3	1
14.....	612	16	26	232	3	2	85	4	1
15.....	592	15	24	205	3	2	78	3	1
16.....	728	28	55	197	4	2	78	8	2
17.....	624	15	25	193	3	2	103	29	8
18.....	514	12	17	201	3	2	106	12	3
19.....	482	9	12	228	3	2	109	16	5
20.....	439	11	13	197	3	2	115	12	4
21.....	409	9	10	185	3	1	118	6	2
22.....	385	9	9	177	2	1	121	6	2
23.....	367	8	8	173	4	2	127	3	1
24.....	350	10	9	165	2	1	103	5	1
25.....	344	12	11	148	2	1	85	4	1
26.....	338	8	7	140	4	2	71	2	(at)
27.....	333	9	8	154	5	a 2	61	2	(t)
28.....	322	8	7	210	5	3	55	3	(t)
29.....	311	12	10	223	4	2	45	6	1
30.....	311	7	6	165	5	2	39	6	1
31.....	--	--	--	151	4	2	--	--	--
Total.	17,804	--	1,968	6,975	--	96	3,429	--	78
	July			August			September		
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	39	8	1	322	16	14	88		
2.....	38	4	(t)	566	73	s 151	85	4	1
3.....	43	72	8	514	61	85	80		
4.....	164	122	54	355	20	19	75		
5.....	930	626	s 1,670	409	32	35	71		
6.....	638	307	529	1,120	199	602	164	3	1
7.....	494	219	292	1,030	72	200	205	3	a 2
8.....	228	84	52	735	36	71	173	2	a 1
9.....	154	31	13	527	22	31	137		
10.....	232	84	53	409	14	15	109	1	(t)
11.....	158	56	24	333	12	11	92		
12.....	115	18	6	285	13	10	90		
13.....	95	19	5	250	11	7	109	3	1
14.....	85	10	2	250	10	7	106		
15.....	80	14	3	270	7	5	110		
16.....	71	10	2	241	3	2	140	6	2
17.....	165	47	s 50	210			155		
18.....	473	520	s 711	193		1	169		
19.....	158	73	31	173	2		137	9	3
20.....	1,320	422	s 3,480	165	7	a 3	121		
21.....	7,890	499	10,600	205	7	a 4	118		
22.....	2,000	202	1,090	241			106	2	1
23.....	4,240	434	4,970	197	5	3	95		
24.....	4,360	242	s 3,480	169			124	7	2
25.....	1,740	87	409	151			173	6	3
26.....	1,090	53	156	134	4	1	130	6	2
27.....	800	34	73	124			1,090	251	s 1,410
28.....	696	32	60	115			2,220	320	s 2,160
29.....	527	22	31	109			930	48	121
30.....	451	19	23	100	4	1	572	23	36
31.....	373	14	14	95			--	--	--
Total.	29,847	--	27,692	9,997	--	1,291	7,974	--	3,765
Total discharge for year (cfs-days)									143,001
Total load for year (tons)									44,906

s Computed by subdividing day.

t Less than 0.50 ton.

a Computed from estimated concentration graph.

RAPPAHANNOCK RIVER BASIN--Continued
RAPIDAN RIVER NEAR CULPEPER, VA.

LOCATION.--At bridge on U. S. Highway 522, 0.7 mile downstream from gaging station, and 8 miles south of Culpeper, Culpeper County.
DRAINAGE AREA.--465 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1945 to September 1946, October 1951 to September 1952, October 1955 to September 1956 (discontinued).
Water temperatures: October 1945 to September 1946, May 1951 to September 1956 (discontinued).
Sediment records: May 1951 to September 1956 (discontinued).
EXTREMES, 1955-56.--Specific conductance: Maximum daily, 62.3 micromhos Sept. 22; minimum daily, 44.5 micromhos Apr. 27.
Water temperatures: Maximum, 88°F July 2; minimum, freezing point Dec. 21-23, Jan. 9, 31.
Sediment concentrations: Maximum daily, 931 ppm July 22; minimum daily, 1 ppm Jan. 13-15, June 9, 13.
Sediment loads: Maximum daily, 4,990 tons July 22; minimum daily, less than 0.50 ton on many days.
EXTREMES, 1945-46, 1951-56.--Dissolved solids (1945-46): Maximum, 47 ppm Sept. 21-30, 1946; minimum, 34 ppm Mar. 1-10, 1946.
Hardness (1945-46): Maximum, 19 ppm July 21-31, Sept. 11-20, 1946; minimum, 13 ppm Jan. 11-20, 1946.
Specific conductance (1945-46): Maximum daily, 76.9 micromhos Oct. 15, 1954; minimum daily, 34.1 micromhos Mar. 24, 1953.
Water temperatures (1945-46): Maximum, 81°F Aug. 9, 1951; minimum, freezing point on several days during winter months.
Sediment loads (1951-56): Maximum daily, 1,505 ppm May 6, 1955; minimum daily, 1 ppm Oct. 2, 1952, Jan. 13-15, June 9, 13, 1956.
REMARKS.--Records of specific conductance of daily samples available in district office at Haleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1432.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg-nesium	Non-carbonate			
Oct. 22, 1955	150	9.1	0.18	5.0	0.8	2.9	1.2	23	1.5	2.4	0.1	0.7	34	16	0	49.9	7.6	18
Nov. 17	159	11	.07	5.4	1.4	2.8	1.3	24	2.8	2.7	.0	.2	40	19	0	50.5	7.5	8
Dec. 16	120	10	.06	4.9	1.0	3.0	1.0	23	.5	3.7	.1	.7	35	16	0	50.5	7.3	10
Jan. 20, 1956	120	11	.02	3.7	1.5	3.0	1.0	21	2.5	2.5	.0	.7	36	15	0	49.3	7.5	9
Feb. 16	390	11	.00	3.8	1.4	2.3	.8	16	2.4	2.2	.1	1.6	38	15	2	44.2	7.1	10
Mar. 22	504	11	.14	3.9	1.2	2.0	.9	16	3.0	2.3	.2	1.8	42	15	0	45.6	7.2	7
Apr. 26	270	11	.11	3.6	1.1	2.5	.9	19	2.5	1.8	.0	.1	33	14	0	43.2	7.3	9
July 13	71	9.4	.03	4.5	1.6	2.8	2.0	27	1.7	2.2	.1	.8	37	18	0	54.4	7.4	5
Aug. 23	92	8.4	.03	4.0	2.0	2.7	1.7	25	1.3	2.2	.1	.6	34	17	0	51.4	7.4	7
Sept. 18	94	11	.12	5.1	1.2	2.3	2.5	22	1.3	2.8	.0	2.0	46	18	0	57.3	7.2	30

NORTH ATLANTIC SLOPE BASINS, NEW YORK TO YORK RIVER

RAPPAHANNOCK RIVER BASIN--Continued

RAPIDAN RIVER NEAR CULPEPER, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	57	36	34	37	47	50	--	73	85	80	85
2	68	56	37	35	35	50	54	61	--	88	--	81
3	--	45	38	38	39	50	57	63	69	82	79	79
4	66	48	45	37	40	54	63	--	71	85	76	81
5	64	42	45	36	45	55	64	65	74	82	77	78
6	70	48	43	37	39	54	57	71	75	79	79	78
7	72	--	39	34	44	55	54	68	78	80	78	78
8	66	--	42	35	46	54	50	67	79	82	80	75
9	65	46	39	32	46	--	52	66	73	81	--	76
10	66	42	42	34	48	54	55	65	--	78	84	75
11	66	46	--	36	44	54	50	65	81	79	83	73
12	66	45	36	37	46	49	55	63	81	81	84	70
13	60	54	36	40	45	45	60	--	84	77	83	73
14	61	56	35	--	44	48	57	--	84	81	81	75
15	--	54	36	--	46	46	--	70	86	82	82	73
16	62	59	34	--	--	43	58	72	85	83	83	--
17	59	52	33	39	44	44	55	69	--	80	84	74
18	57	--	34	39	50	40	52	70	76	79	--	75
19	58	45	34	34	48	43	56	71	74	78	82	70
20	--	44	33	35	49	44	55	69	69	74	74	66
21	--	47	32	35	44	46	--	72	72	77	70	68
22	54	45	32	37	43	46	60	72	--	77	74	65
23	48	48	32	35	42	50	60	72	83	78	--	61
24	54	48	36	34	--	49	57	70	86	76	75	68
25	49	42	39	34	44	49	56	69	83	75	78	65
26	43	43	--	33	45	52	62	65	86	80	78	--
27	49	42	34	34	48	52	--	65	87	84	79	54
28	51	44	33	33	49	49	--	72	79	84	80	56
29	54	39	34	36	47	45	73	73	72	83	82	50
30	56	34	33	--	--	--	69	75	80	86	83	54
31	49	--	35	32	--	--	--	80	--	83	84	--
Average	59	47	36	35	44	49	57	69	78	81	80	71

RAPPAHANNOCK RIVER BASIN--Continued

RAPIDAN RIVER NEAR CULPEPER, VA.--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	204	2	1	144	2	1	136	2	1
2.....	194			144			142		
3.....	190			142			153		
4.....	177			147			153		
5.....	177	3	1	139	2	1	159	2	1
6.....	177			130			147		
7.....	174			142			147		
8.....	234			156			139		
9.....	285	2	a1	162	5	3	144	2	1
10.....	208			153			142		
11.....	180			251			128		
12.....	168			219			120	4	1
13.....	162	2	a1	177	2	1	128		
14.....	198			171			128		
15.....	290			159			144		
16.....	204	2	1	159	2	1	120	2	1
17.....	187			159			122		
18.....	171			142			139		
19.....	168			153			139		
20.....	156	2	1	201	3	2	120	2	1
21.....	153			194			120		
22.....	150			177			133		
23.....	144			166			133	2	1
24.....	153	2	1	162	2	1	120		
25.....	139			166			128		
26.....	139			156			133		
27.....	142	3	1	150	2	1	122	3	a1
28.....	142			156			108		
29.....	142			150			115		
30.....	150			139			125		
31.....	156			--	--	--	110	3	1
Total..	5,514	--	36	4,870	--	41	4,097	--	31
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.....	120	3	1	184	5	2	201	3	2
2.....	125			165	3	1	201	5	3
3.....	125			280	18	14	190	4	2
4.....	122			548	48	71	194	3	2
5.....	120	2	1	655	54	95	194	2	1
6.....	128			844	123	s371	187	3	2
7.....	115			1,470	224	889	219	9	5
8.....	120			812	54	118	227	16	10
9.....	120	2	1	631	16	27	315	11	9
10.....	125			548	10	15	270	8	6
11.....	139			493	9	12	243	4	3
12.....	147			570	10	15	239	2	1
13.....	133	1	(t)	504	8	11	251	2	1
14.....	120	1	(at)	449	5	6	1,100	162	s767
15.....	105	1	(at)	422	5	6	1,430	189	s824
16.....	115	2	1	390	4	4	990	32	86
17.....	115	2	1	370	3	3	1,150	32	99
18.....	112	2	1	385	6	6	824	20	44
19.....	110			365	5	5	727	10	20
20.....	120			345	3	3	614	8	13
21.....	110			315	5	4	548	6	9
22.....	108	2	1	275	4	3	504	6	7
23.....	125	2	1	255	4	3	471		
24.....	108	2	1	247	6	4	444		
25.....	96	3	1	270	5	4	410		
26.....	105	2	1	280	4	3	395	3	3
27.....	100	3	1	247	2	1	375		
28.....	100	7	2	231	2	1	350		
29.....	122	5	2	215	2	1	330		
30.....	156	5	2	--	--	--	345	3	a3
31.....	187	5	3	--	--	--	310	3	a3
Total..	3,753	--	34	12,765	--	1,698	14,248	--	1,955

s Computed by subdividing day.

t Less than 0.50 ton.

a Computed from estimated concentration graph.

RAPPAHANNOCK RIVER BASIN--Continued

RAPIDAN RIVER NEAR CULPEPER, VA.--Continued

Suspended sediment, water year October 1955 to September 1956--Continued

Day	April			May			June		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	280	3	2	218	4	2	107	2	1
2.....	275	3	2	222	7	4	131	5	2
3.....	270	3	2	256	7	5	218	9	5
4.....	270	3	2	265	6	4	171	7	3
5.....	247	3	a 2	235	6	4	134	5	2
6.....	239	6	a 4	199	4	2	117	4	1
7.....	615	33	s 68	248	16	11	102	4	1
8.....	860	50	s 123	226	80	49	89	3	1
9.....	580	17	27	192	22	11	96	1	(t)
10.....	487	6	8	177	6	3	73	2	(t)
11.....	434	5	6	188	4	2	97	2	1
12.....	406	5	5	184	4	2	80	2	(t)
13.....	374	5	5	184	4	a 2	71	1	(t)
14.....	348	5	5	181	4	2	64	2	(t)
15.....	348	5	5	164	7	3	59	2	(t)
16.....	626	33	s 61	158	6	3	61	2	(t)
17.....	529	30	43	145	3	1	57	5	a 1
18.....	429	13	15	151	5	2	194	14	7
19.....	379	7	7	148	4	2	158	24	10
20.....	348	6	6	134	4	1	117	18	6
21.....	327	6	a 5	139	4	2	95	12	3
22.....	303	5	4	122	3	1	158	18	8
23.....	303	4	3	125	3	1	128	10	3
24.....	284	5	4	122	3	1	91	10	2
25.....	278	4	3	104	3	1	91	17	4
26.....	270	4	3	97	2	1	65	6	1
27.....	261	4	3	104	3	1	50	4	1
28.....	256	4	a 3	125	2	1	58	3	(t)
29.....	244	5	3	125	3	1	48	2	(t)
30.....	244	5	3	110	2	1	45	2	(t)
31.....	--	--	--	100	2	1	--	--	--
Total.	11,115	--	432	5,148	--	127	3,025	--	66
Day	July			August			September		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	43	4	(t)	117	8	3	74		
2.....	34	3	(t)	256	40	s 35	40	7	1
3.....	43	2	(t)	225	103	63	47		
4.....	38	4	(t)	150	47	19	47	6	1
5.....	138	6	2	136	37	14	46	6	1
6.....	171	28	13	174	28	13	62	3	1
7.....	312	204	172	239	27	17	221	5	3
8.....	177	228	109	231	25	16	172	48	22
9.....	128	116	40	184	12	a 6	78	33	7
10.....	219	394	s 210	142	7	a 3	80	13	3
11.....	94	266	68	128	6	2	40	19	2
12.....	78	58	12	115	5	2	185	39	s 24
13.....	71	36	7	120	5	2	142	126	48
14.....	58	20	3	96	4	1	58	74	12
15.....	38	10	1	92	5	1	58	27	4
16.....	52	9	1	100	6	2	62	24	a 4
17.....	49	7	1	82	5	1	78	26	5
18.....	47	5	1	67	3	1	94	24	6
19.....	62	7	1	69	4	1	80	22	5
20.....	94	64	s 23	80	3	1	69	17	3
21.....	1,230	643	s 2,320	95	3	1	55	11	2
22.....	1,320	931	s 4,990	108			52	9	1
23.....	643	210	365	92	4	1	38	8	1
24.....	510	82	113	80			55	17	3
25.....	385	88	91	71			65	6	1
26.....	300	44	36	29			82	5	1
27.....	223	23	14	57	3	(t)	1,120	413	s 2,330
28.....	187	14	7	98			1,860	360	s 2,020
29.....	156	11	5	98			758	73	149
30.....	153	10	4	58	3	1	510	25	34
31.....	136	11	4	49			--	--	--
Total.	7,689	--	8,614	3,638	--	212	6,308	--	4,596
Total discharge for year (cfs-days).....									82,170
Total load for year (tons).....									17,842

s Computed by subdividing day.

t Less than 0.50 ton.

a Computed from estimated concentration graph.

RAPPAHANNOCK RIVER BASIN--Continued
RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA.

LOCATION.--At dam of Virginia Electric & Power Company, 1.6 miles downstream from gaging station, 3.8 miles downstream from Motts Run, 2.2 miles upstream from Fredericksburg, Spotsylvania County, and at mile 2.8.

DRAINAGE AREA.--1,999 square miles above gaging station.

RECORDS AVAILABLE.--Chemical analyses: April 1929-1936 (discontinued).

EXTREMES: Maximum, 27 ppm Oct. 10, 1955; minimum, 40 ppm June 11-20, 1955.

SARDESS: Maximum, 27 ppm Oct. 10, 1955; minimum, 40 ppm June 11-20, 1955.

Specific conductance: Maximum, 49.6 microhos Apr. 29, July 22, 1955; minimum, 33.3 microhos Apr. 29, July 22, 1955.

WATER TEMPERATURES: Maximum, 87.7° F. June 27, 1955; minimum, 33.3° F. on several days during December and January, 1955.

EXTREMES 1929-30: 1955-56.--Dissolved solids: Maximum, 64 ppm June 1-10, 1955; minimum, 37 ppm Mar. 21-31, 1930.

HARDNESS: Maximum, 27 ppm Oct. 1-10, 1955; minimum, 14 ppm June 21-30, 1929.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N.C. Records of discharge for water year October 1955 to September 1956 given in WSP 1432. No inflow between gaging station and sampling point. 1929-30 samples were collected at gaging station, 1.6 miles upstream from present sampling point.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955.....	493	12	0.07	5.8	3.0	3.7	1.5	32	2.3	4.5	0.1	0.4	46	27	1	87.4	7.4	9
Oct. 11-20.....	585	--	.04	5.5	2.1	--	--	32	5.2	--	--	--	--	22	0	71.8	7.4	10
Oct. 21-31.....	407	14	.08	5.7	2.0	--	--	33	4.0	--	--	--	48	22	0	69.8	7.1	8
Nov. 1-10.....	424	--	.09	5.6	2.1	3.9	1.6	32	3.0	2.0	.1	.2	--	24	0	67.9	7.5	10
Nov. 11-20.....	522	--	.09	5.7	2.3	--	--	31	5.4	--	--	--	--	24	0	66.9	7.5	10
Nov. 21-30.....	499	--	.05	6.2	2.0	--	--	32	3.8	--	--	--	--	24	0	67.6	7.6	5
Dec. 1-10.....	359	--	.08	5.6	1.8	--	--	29	4.0	--	--	--	--	21	0	63.9	7.4	8
Dec. 11-20.....	346	--	.04	6.9	1.7	--	--	31	4.8	--	--	--	--	24	0	84.8	7.4	7
Dec. 21-31.....	344	11	.10	6.0	1.6	3.1	1.0	27	3.3	2.8	.0	.7	43	22	0	80.6	7.3	10
Jan. 1-10, 1956.....	445	--	.05	6.7	2.0	--	--	30	5.4	--	--	--	--	25	0	68.4	7.6	5
Jan. 11-20.....	399	11	.09	5.4	1.5	3.3	1.1	25	3.4	3.2	.0	.7	47	20	0	61.1	7.3	10
Jan. 21-31.....	2,350	13	.18	6.4	2.1	3.0	1.5	22	6.3	3.8	.0	2.4	64	25	7	74.4	7.1	45
Feb. 1-10.....																		
Feb. 11-20.....	1,250	12	.09	5.2	1.7	3.0	1.2	19	5.5	3.4	.1	1.6	52	20	4	63.0	7.2	20
Feb. 21-29.....	778	13	.15	5.2	1.7	3.0	1.0	22	4.5	3.0	.1	1.3	43	20	2	60.9	7.1	5
Mar. 1-10.....	718	12	.16	5.3	1.5	3.4	1.1	24	3.5	2.8	.1	1.1	43	19	0	59.3	7.1	5
Mar. 11-20.....	2,890	11	.15	4.9	1.8	2.4	1.3	19	5.1	2.9	.0	1.8	52	20	4	61.8	6.9	40
Mar. 21-31.....	1,230	11	.14	4.9	1.7	2.8	.9	19	4.9	3.1	.0	1.5	48	19	4	59.6	7.1	15
Apr. 1-10.....	1,730	10	.14	5.2	1.9	2.8	1.1	21	4.1	3.0	.1	1.5	48	21	4	59.1	7.1	20
Apr. 11-20.....	1,370	11	.13	5.2	1.8	2.8	1.1	22	4.0	2.6	.1	1.4	48	20	2	57.2	7.1	20
Apr. 21-30.....	807	9.9	.12	4.8	1.6	2.9	.9	23	3.0	2.4	.1	.7	41	19	0	52.6	7.2	10
May 1-10.....	661	4.9	.10	5.3	2.1	2.8	1.1	25	3.5	2.6	.0	.6	50	22	1	59.3	6.8	7
May 11-20.....	475	5.1	.08	5.4	2.3	2.8	1.5	28	2.8	2.8	.0	.6	45	23	0	62.4	6.8	7

RAPPAHANNOCK RIVER BASIN--Continued
RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA.--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
May 21-31, 1956	355	9.4	0.03	5.2	2.5	3.3	1.3	30	2.7	2.6	0.1	0.5	44	23	0	61.8	7.2	5
June 1-10	370	8.6	.04	5.4	2.0	3.2	1.4	28	2.7	2.6	.1	.5	43	22	0	60.7	7.2	7
June 11-20	239	6.5	.02	4.6	2.4	3.3	1.5	28	2.8	2.5	.1	.5	40	21	0	58.5	7.1	7
June 21-30	236	9.2	.01	5.6	1.7	3.2	2.0	27	1.9	3.2	.1	.8	43	21	0	65.1	7.0	5
July 1-10	771	9.6	.10	5.1	1.6	2.7	2.3	23	2.4	2.6	.1	1.7	51	19	0	60.2	6.9	45
July 11-20	412	10	.17	5.9	1.7	2.0	2.8	24	2.4	2.8	.0	2.9	58	22	2	67.3	7.1	55
July 21-31	2,980	12	.12	5.5	1.4	2.1	2.0	20	3.7	2.9	.0	2.0	52	19	3	61.1	7.3	35
Aug. 1-10	1,180	12	.14	6.6	1.2	2.5	1.9	25	2.3	2.6	.1	1.4	42	21	1	62.4	7.1	36
Aug. 11-20	433	10	.06	6.1	1.8	2.6	1.6	28	2.1	2.6	.1	.4	45	23	0	63.0	7.5	7
Aug. 21-31	308	7.9	.03	5.7	1.9	3.1	1.7	29	2.6	3.0	.1	.4	41	22	0	63.4	7.3	5
Sept. 1-10	268	7.6	.03	5.5	1.9	3.3	1.9	30	2.3	2.9	.1	.6	42	22	0	66.3	7.5	7
Sept. 11-20	264	8.1	.04	5.5	1.7	2.9	2.3	27	3.0	3.4	.1	.7	44	21	0	65.4	7.2	10
Sept. 21-30	1,300	8.5	.10	5.3	1.8	2.7	2.3	24	3.4	3.0	.0	1.1	46	21	1	63.0	7.2	30
Average	806	10	0.09	5.6	1.9	3.0	1.5	26	3.6	2.9	0.1	1.1	47	22	1	63.6	--	16

RAPPAHANNOCK RIVER BASIN--Continued

RAPPAHANNOCK RIVER NEAR FREDERICKSBURG, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	--	--	34	35	46	51	69	73	85	78	85
2	69	--	40	34	35	47	53	65	--	86	77	83
3	79	51	42	34	35	--	61	64	78	87	77	81
4	79	49	44	34	36	50	63	69	--	86	76	83
5	79	--	46	34	40	52	62	68	84	80	76	82
6	78	47	44	34	36	--	--	72	84	76	75	82
7	78	46	41	33	40	53	61	70	86	78	74	79
8	79	47	40	34	42	52	51	68	--	80	77	73
9	79	46	38	33	43	51	51	67	77	80	79	69
10	76	45	35	33	45	--	53	65	80	80	83	79
11	66	45	35	34	44	52	50	67	82	80	82	72
12	64	48	35	35	45	53	53	82	85	82	84	72
13	64	49	34	36	44	50	55	76	--	81	82	76
14	65	52	34	35	43	46	56	78	84	81	81	78
15	63	52	35	35	45	45	--	75	85	83	79	77
16	63	55	34	35	46	44	58	76	83	86	81	77
17	65	54	33	34	44	43	55	76	--	81	83	79
18	59	50	34	35	47	40	53	76	82	78	85	76
19	57	50	33	34	47	40	55	--	71	77	85	73
20	58	44	33	35	46	43	54	70	78	75	84	71
21	58	43	33	35	45	43	--	73	73	73	74	69
22	--	42	33	--	--	45	--	75	78	74	73	67
23	58	--	34	35	40	46	59	--	83	74	75	68
24	58	48	34	34	38	46	57	74	83	--	76	69
25	56	43	--	34	43	46	55	--	85	74	75	69
26	54	41	34	33	45	48	58	70	83	76	77	67
27	54	41	33	33	45	50	--	--	87	--	78	66
28	56	42	33	33	46	48	70	72	82	76	78	65
29	56	38	34	34	45	46	72	73	83	78	83	69
30	58	38	33	35	--	49	74	74	--	77	83	68
31	--	--	34	35	--	--	--	--	--	77	86	--
Average	65	46	36	34	42	47	58	72	81	79	79	74

YORK RIVER BASIN--Continued

HUDSON CREEK NEAR BOSWELLS TAVERN, VA.--Continued

Periodic determinations of suspended-sediment discharge, water year October 1955 to September 1956

Date	Discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Discharge (pounds per day)
Oct. 3, 1955.....	0.70	2	8
Oct. 10.....	.70	1	4
Oct. 17.....	.93	2	10
Oct. 24.....	.77	4	17
Oct. 31.....	.93	2	10
Nov. 8.....	1.1	5	30
Nov. 14.....	1.1	3	18
Nov. 21.....	1.2	3	19
Nov. 28.....	1.0	2	11
Dec. 5.....	1.0	1	5
Dec. 12.....	.85	5	23
Dec. 19.....	1.1	2	12
Dec. 26.....	.93	12	60
Jan. 2, 1956.....	.85	5	23
Jan. 9.....	1.4	2	15
Jan. 16.....	1.0	2	11
Jan. 23.....	1.1	4	24
Jan. 30.....	1.2	3	19
Feb. 6.....	3.9	5	105
Feb. 13.....	2.4	4	52
Feb. 20.....	3.1	3	50
Feb. 27.....	2.0	3	32
Mar. 5.....	1.5	17	137
Mar. 12.....	1.9	4	41
Mar. 19.....	4.5	4	97
Mar. 26.....	2.2	2	24
Apr. 2.....	1.9	4	41
Apr. 7.....	26	114	16,000
Apr. 9.....	4.1	12	265
Apr. 16.....	17	30	2,750
Apr. 23.....	2.4	5	65
Apr. 30.....	1.9	6	61
May 7.....	1.9	6	61
May 14.....	1.2	3	19
May 21.....	1.0	5	27
May 28.....	.93	4	20
June 4.....	1.4	7	53
June 11.....	.63	5	17
June 18.....	.93	7	35
June 25.....	.40	5	11
July 2.....	.16	3	3
July 9.....	1.4	7	53
July 16.....	.37	7	14
July 23.....	2.0	10	108
July 30.....	1.2	5	32
Aug. 6.....	2.2	6	71
Aug. 13.....	.50	2	5
Aug. 20.....	.50	1	3
Aug. 27.....	.40	6	13
Sept. 3.....	.63	2	7
Sept. 10.....	.34	3	5
Sept. 17.....	.40	2	4
Sept. 24.....	.22	1	1

PART 2A. SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

JAMES RIVER BASIN

JAMES RIVER AT BUCHANAN, VA.

LOCATION.--At bridge on U. S. Highway 11, 300 feet downstream from gaging station at Buchanan, Botetourt County, 700 feet upstream from Purgatory Creek, 1½ miles downstream from Looney Creek, and at mile 301.2.

DRAINAGE AREA.--2,084 square miles.

RECORDS AVAILABLE.--Chemical analyses: April 1929 to March 1930, October 1947 to September 1948, October 1951 to September 1952, October 1955 to September 1956 (discontinued).

Water temperatures: October 1948, May 1951 to September 1956 (discontinued).

Sediment records: May 1951 to September 1956 (discontinued).

EXTREMES, 1955-56.--Dissolved solids: Maximum, 275 ppm Oct. 1-10; minimum, 70 ppm Mar. 11-20.

Hardness: Maximum, 156 ppm Sept. 1-10; minimum, 48 ppm Apr. 11-20.

Specific conductance: Maximum daily, 538 micromhos Sept. 22; minimum, 82.1 micromhos Apr. 17.

Water temperatures: Maximum, 86°F July 3, 23, 26; minimum, 33°F Dec. 16, 17, 21.

Sediment concentrations: Maximum daily, 198 ppm Mar. 15; minimum daily, 1 ppm on many days.

Sediment loads: Maximum daily, 7,480 tons Mar. 15; minimum daily, 1 ton on many days.

EXTREMES, 1929-30, 1947-48, 1951-56.--Dissolved solids (1929-30, 1947-48, 1955-56): 289 ppm Sept. 21-30, 1929; minimum, 70 ppm Mar. 11-20, 1956.

Hardness (1929-30, 1947-48, 1951-56): Maximum, 163 ppm Sept. 21-30, 1929; minimum, 48 ppm Apr. 11-20, 1956.

Specific conductance (1953-56): Maximum daily, 945 micromhos Sept. 27, 1954; minimum daily, 73.1 micromhos Mar. 25, 1953.

Water temperatures (1947-48, 1951-56): Maximum, 87°F July 5, 1955; minimum, freezing point Dec. 20, 1951, Dec. 21, 22, 1954.

Sediment concentrations (1951-56): Maximum daily, 980 ppm Oct. 15, 1954; minimum daily, 1 ppm on several to many days during each year.

Sediment loads (1951-56): Maximum daily, 76,300 tons Mar. 7, 1955; minimum daily, 1 ton Oct. 26-31, Nov. 5-9, 1952, Jan. 1-3, 6-10, 1954, Sept. 11, 1955, and on many days during 1956 water year.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955	332	5.3	0.07	46	8.8	37	2.8	134	64	42	0.3	0.6	275	151	41	465	8.1	48
Oct. 11-20	406	6.3	.16	46	8.6	32	2.3	134	56	36	.0	.4	271	155	45	442	7.6	50
Oct. 21-30	342	5.9	.08	43	8.9	--	2.7	--	62	19	--	--	--	--	--	475	--	50
Nov. 1-10	488	--	.12	44	8.7	--	--	136	62	17	--	--	--	146	34	446	7.7	66
Nov. 11-20	455	--	.12	44	7.8	--	2.3	140	53	29	.1	.6	273	142	27	416	8.2	50
Dec. 1-10	456	--	.07	46	7.0	--	--	128	56	33	--	--	--	144	39	417	7.8	50
Dec. 11-20	404	9.7	.14	44	8.5	26	2.1	130	54	29	.1	.6	245	145	38	406	7.9	50
Dec. 21-31	386	--	.08	46	7.8	--	--	132	57	33	--	--	--	147	39	434	7.7	50
Jan. 1-10, 1956	356	5.0	.19	44	7.9	25	2.1	133	56	24	.2	.6	235	142	33	404	7.9	48
Jan. 11-20	354	--	.20	46	8.9	--	--	130	65	--	--	--	--	151	45	455	7.9	52
Jan. 21-31	400	--	.18	44	8.4	--	--	129	65	--	--	--	--	144	39	457	7.8	60
Feb. 1-10	4,900	10	.12	22	3.9	8.7	1.3	69	25	3.6	.0	1.2	118	71	14	202	7.3	25
Feb. 11, 13, 19, 20	3,920	5.9	.04	17	2.6	4.8	1.1	48	16	6.1	.1	1.1	85	53	14	139	7.4	20

Feb. 12, 14-18, 1956 ..	2,330	6.9	0.03	21	3.6	7.7	1.2	64	20	8.3	0.1	0.9	102	67	15	179	7.5	20
Feb. 21-29	2,040	6.2	.07	18	2.7	5.7	1.1	53	16	6.0	.0	.8	82	57	13	146	7.5	10
Mar. 1-10	2,170	4.2	.07	20	2.2	7.6	1.1	61	18	8.1	.1	.5	74	63	14	138	7.3	10
Mar. 11-20	6,060	6.3	.05	19	2.7	4.0	1.0	49	13	4.2	.1	.8	70	48	12	121	7.1	10
Mar. 21-31	2,480	5.6	.07	19	3.0	5.7	1.0	57	15	6.2	.1	.6	84	60	13	150	7.5	10
Apr. 1-10	3,030	4.7	.07	20	3.5	6.4	1.2	64	17	7.0	.0	.6	96	64	12	166	7.4	15
Apr. 11-20	5,700	6.6	.04	15	2.6	3.6	1.0	48	12	3.8	.0	.8	74	48	9	118	7.5	7
Apr. 21-30	2,100	5.0	.06	20	3.6	5.8	1.0	64	16	6.8	.0	.4	93	65	12	161	7.5	10
May 1-10	1,470	4.6	.01	25	4.2	8.7	1.4	76	23	9.2	.0	.3	116	80	17	199	7.5	17
May 11-20	1,020	5.3	.06	27	4.6	11	1.5	85	27	12	.0	.4	146	86	17	227	7.7	21
May 21-31	807	5.7	.02	32	5.2	15	1.7	94	33	17	.0	.3	161	96	19	273	7.8	28
June 1-10	1,260	6.4	.05	26	4.3	10	1.3	78	25	11	.1	.7	138	83	19	211	7.7	20
June 11-20	748	5.2	.08	31	5.3	14	1.6	89	31	18	.1	.6	171	99	26	266	7.6	25
June 21-30	864	5.5	.03	28	5.8	12	1.8	85	27	15	.0	.7	147	94	24	245	7.5	20
July 1-10	764	6.2	.03	33	5.7	16	2.0	99	31	20	.0	.9	167	106	25	287	7.7	20
July 11-20	509	5.6	.03	35	6.5	16	1.9	100	34	21	.0	.7	175	114	32	306	8.2	20
July 21-31	519	5.5	.04	38	7.6	22	2.1	106	44	30	.1	.8	226	126	39	370	7.8	30
Aug. 10-20	413	6.2	.04	39	4.9	19	2.1	111	40	23	.0	.5	208	117	26	334	7.8	27
Aug. 21-31	351	5.6	.06	46	6.0	28	2.2	114	52	36	.0	.5	255	139	46	417	7.8	30
Sept. 1-10	380	5.4	.07	48	8.8	32	2.5	115	59	45	.0	.8	268	156	62	460	7.6	40
Sept. 11-20	323	3.6	.04	48	6.9	29	2.4	121	59	37	.0	.5	264	148	49	436	7.8	27
Sept. 21-30	814	5.0	.08	46	7.6	30	2.6	112	60	41	.0	.8	257	146	54	443	7.8	33
Average	1,340	5.8	0.08	34	6.0	16	1.7	97	40	20	0.05	0.6	174	107	28	313	--	31

JAMES RIVER BASIN--Continued

JAMES RIVER AT BUCHANAN, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

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

JAMES RIVER BASIN--Continued

JAMES RIVER AT BUCHANAN, VA.--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	355	3	3	355	2	2	385	1	1
2.....	350	4	a 4	350			375	1	1
3.....	340			355			410	1	1
4.....	340			355			435	3	4
5.....	336	4	4	345	2	2	470		
6.....	327			345			476	4	5
7.....	327			360	2	2	494		
8.....	395			375	1	a 1	500		
9.....	446	3	3	385	1	1	506	4	5
10.....	405			395	1	1	513		
11.....	390			446	3	4	482		
12.....	375	3	3	476	2	3	446	3	4
13.....	380			464	1	1	400		
14.....	390			458	1	1	370		
15.....	446	4	5	470	2	3	390	3	3
16.....	464	4	5	500	2	3	380		
17.....	440			482	2	3	380		
18.....	415	3	3	458	1	1	400	4	4
19.....	390			458	1	1	410		
20.....	375			482	1	1	385		
21.....	365			500	1	1	365	4	4
22.....	360	2	2	494	1	1	360		
23.....	355			482	1	1	355		
24.....	350			464	1	a 1	400		
25.....	331			458	2	2	400	3	3
26.....	327	2	2	452	1	1	415		
27.....	322			440	1	1	435	3	4
28.....	327			435	1	1	385	4	4
29.....	340			420	1	1	370	3	3
30.....	355	2	2	405	1	1	400	1	1
31.....	355			--	--	--	360	4	4
Total.	11,473	--	91	12,864	--	49	12,852	--	110
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.....	345	3	3	1,730	57	266	2,400	6	39
2.....	370	1	1	1,230	54	179	2,140	5	29
3.....	365	5	a 5	1,210	33	108	1,960	5	26
4.....	390	7	7	4,780	154	1,990	1,840	8	40
5.....	375	3	3	7,760	143	3,000	1,620	5	22
6.....	370	2	2	5,700	50	770	1,470	4	16
7.....	370	2	2	10,000	125	3,380	1,420	4	15
8.....	336	3	3	8,500	78	1,790	1,960	6	32
9.....	275	4	3	4,710	32	407	3,440	13	a 121
10.....	360	4	4	3,360	13	118	3,440	15	139
11.....	365	4	4	2,620	9	64	2,860	9	69
12.....	360	4	4	2,260	8	49	2,400	7	45
13.....	360	3	3	2,260	6	37	2,200	7	42
14.....	355	3	3	2,080	3	17	4,670	37	a 742
15.....	340	3	3	1,840	2	10	14,000	198	7,480
16.....	340	3	3	1,730	3	14	9,000	72	1,750
17.....	350	5	5	1,840	8	40	7,760	22	461
18.....	336	4	4	4,250	28	321	6,360	14	240
19.....	365	3	3	5,700	32	492	5,920	11	176
20.....	365	3	3	5,090	18	247	5,290	6	86
21.....	375	3	3	4,340	13	152	4,160	5	56
22.....	355	3	3	3,360	7	64	3,440	6	56
23.....	365	2	2	2,700	4	29	3,020	4	33
24.....	370	2	2	2,260	3	18	2,700	2	15
25.....	345	2	2	2,080	3	17	2,470	3	20
26.....	345	2	2	2,620	7	50	2,260	2	12
27.....	340	3	3	3,980	15	161	2,080	1	6
28.....	309	2	2	3,180	8	a 69	1,960	1	5
29.....	340	2	a 2	2,860	9	69	1,780	1	5
30.....	410	2	2	--	--	--	1,730	1	5
31.....	850	9	21	--	--	--	1,680	1	5
Total.	11,496	--	112	106,030	--	13,928	109,430	--	11,788

s Computed by subdividing day.

a Computed from estimated concentration graph.

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

JAMES RIVER BASIN--Continued

JAMES RIVER AT BUCHANAN, VA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	1,570	1	4	1,280	5	17	903	4	a10
2.....	1,470	1	a4	1,280	9	31	889	5	12
3.....	1,470	1	4	1,320	4	14	1,140	11	34
4.....	1,520	1	4	1,520	5	21	2,020	31	169
5.....	1,520	1	4	1,780	7	34	1,960	24	127
6.....	1,520	2	8	1,730	8	37	1,520	9	37
7.....	3,140	11	s112	1,620	5	22	1,230	9	30
8.....	7,050	68	1,290	1,520	5	21	1,140	8	a25
9.....	6,360	40	687	1,370	5	a18	945	4	10
10.....	4,710	10	127	1,280	4	14	868	4	9
11.....	3,710	8	80	1,180	4	13	805	4	9
12.....	3,180	5	43	1,140	4	12	756	4	8
13.....	2,860	4	31	1,060	3	9	672	3	5
14.....	2,470	4	27	1,010	3	8	617	3	5
15.....	2,620	43	s337	980	3	8	610	3	5
16.....	10,800	126	3,670	980	4	11	637	7	12
17.....	13,300	110	s4,150	1,010	3	8	672	5	9
18.....	8,000	32	691	980	3	8	714	5	10
19.....	5,700	13	200	945	4	10	900	8	19
20.....	4,340	8	94	896	4	10	1,100	12	36
21.....	3,440	5	46	819	3	7	1,140	10	31
22.....	2,860	5	39	812	2	4	988	7	19
23.....	2,540	5	34	833	3	7	988	7	19
24.....	2,200	3	18	833	5	11	1,020	9	25
25.....	2,020	3	16	798	4	9	973	8	a21
26.....	1,840	4	20	756	4	8	910	6	15
27.....	1,680	3	14	707	5	10	791	5	11
28.....	1,570	3	13	714	5	10	679	5	9
29.....	1,470	7	28	742	4	8	604	5	8
30.....	1,370	4	15	882	5	12	546	4	6
31.....	--	--	--	960	4	11	--	--	--
Total.	108,300	--	11,810	33,757	--	423	28,737	--	745
	July			August			September		
1.....	546	5	7	558	5	a8	322	2	2
2.....	637	6	10	513	5	a7	405	2	a2
3.....	546	10	18	500	5	a7	370	3	3
4.....	558			464	5	a8	365	9	10
5.....	532			440	6	a7	355		
6.....	1,000	10	26	520	8	a11	385		
7.....	1,180			728	9	a18	458	6	6
8.....	938			896	7	a17	405		
9.....	889			777	7	a15	375		
10.....	812			624	4	7	355		
11.....	756	6	10	506	3	4	331	3	2
12.....	644			446	5	6	314		
13.....	552			410	4	4	305		
14.....	500			390			296		
15.....	464			385			296	4	4
16.....	440	4	5	385	2	2	314		
17.....	440			370			318		
18.....	435			365	3	3	331		
19.....	425			340			360	5	4
20.....	430			327			365		
21.....	420	5	6	360	2	2	336		
22.....	420			385			336		
23.....	420			395			327	4	4
24.....	430			415			322		
25.....	450			370			327		
26.....	500	8	11	340	3	3	331	8	7
27.....	617	5	8	322			1,380		
28.....	610	5	8	322			2,400		
29.....	565	6	9	322			1,470		
30.....	651	8	a10	314			959		
31.....	624	6	a10	318			--	--	--
Total.	18,431	--	362	13,807	--	164	15,213	--	1,446
Total discharge for year (cfs-days)									482,390
Total load for year (tons)									41,028

s Computed by subdividing day.

a Computed from estimated concentration graph.

JAMES RIVER BASIN--Continued

JAMES RIVER AT SCOTTSVILLE, VA.

LOCATION.--At gaging station at bridge on State Highway 20 at Scottsville, Albemarle County, 6.8 miles upstream from Hardware River, and at mile 184.6.

DRAINAGE AREA.--4,571 square miles.

RECORDS AVAILABLE.--Chemical analyses: April 1930 to March 1931, October 1947 to September 1948, October 1951 to September 1952 (discontinued).

Water temperatures: May 1951 to September 1956 (discontinued).

Sediment records: December 1950 to September 1956 (discontinued).

EXTREMES, 1955-56.--Specific conductance: Maximum daily, 444 micromhos Sept. 9; minimum daily, 93.9 micromhos Apr. 19.

Water temperatures: Maximum, 92°F July 4; minimum, freezing point Dec. 16, 24.

Sediment concentrations: Maximum daily, 417 ppm Sept. 28; minimum daily, 1 ppm June 13, July 4.

Sediment loads: Maximum daily, 9,640 tons Mar. 16; minimum daily, 2 tons July 4.

EXTREMES, 1950-56.--Specific conductance (1951-56): Maximum daily, 444 micromhos Sept. 9, 1956; minimum daily 70.6 micromhos Mar. 11, 1952.

Water temperatures (1951-56): Maximum, 93°F June 26-28, July 21, 1952; minimum, freezing point Jan. 15, 1954, Jan. 28, Dec. 16, 24, 1955.

Sediment concentrations: Maximum daily, 1,294 ppm Oct. 16, 1954; minimum daily, 1 ppm Sept. 2, 8, 1954, June 13, July 4, 1956.

Sediment loads: Maximum daily, 170,000 tons Mar. 2, 1954; minimum daily, 2 tons Sept. 2, 8, 1954, July 4, 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	54	36	35	39	--	50	72	78	84	79	82
2	70	55	37	33	--	46	53	64	69	88	80	84
3	88	51	41	36	40	46	56	--	68	87	79	80
4	88	50	45	35	39	50	59	67	70	92	77	80
5	69	48	45	35	41	49	60	67	72	87	79	81
6	--	46	45	35	40	54	58	71	74	85	82	78
7	74	47	41	36	43	57	59	75	74	84	82	76
8	69	46	41	34	43	54	50	67	77	81	82	72
9	66	46	41	34	--	51	53	66	76	--	84	70
10	--	44	38	35	47	53	55	66	75	81	85	68
11	76	47	38	39	45	55	58	66	79	--	83	70
12	67	50	--	--	45	52	--	72	80	--	85	72
13	86	53	--	--	45	--	55	75	82	78	85	74
14	65	55	--	40	44	47	56	79	--	81	82	71
15	64	52	--	39	47	47	54	74	82	80	82	71
16	61	56	32	39	47	46	57	74	86	83	83	74
17	59	53	33	38	45	45	53	66	84	82	82	75
18	58	--	--	39	50	47	53	68	84	79	82	73
19	88	45	36	36	49	44	52	71	74	77	85	70
20	58	45	34	36	49	44	52	--	71	76	81	70
21	59	47	34	35	--	44	52	71	71	78	74	66
22	58	46	--	38	44	46	--	73	79	82	--	67
23	57	--	34	38	44	48	--	75	82	83	--	72
24	60	49	32	36	42	49	54	--	84	82	--	69
25	54	45	--	36	46	46	55	68	84	81	--	68
26	53	44	--	36	45	49	56	69	--	83	--	62
27	55	43	36	--	45	49	61	68	--	82	80	57
28	57	45	33	35	46	48	66	71	83	84	80	53
29	57	37	--	--	44	--	70	70	81	80	82	61
30	60	38	36	42	--	49	72	75	81	76	82	65
31	55	--	34	39	--	49	--	--	--	76	85	--
Average	63	48	37	37	44	49	57	70	78	82	82	71

JAMES RIVER BASIN--Continued

JAMES RIVER AT SCOTTSVILLE, VA.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	1,240	4	13	1,030	11	31	1,020	12	33
2.....	1,240	4	13	1,020	9	25	992	11	29
3.....	1,110	4	12	1,020	9	25	1,100	12	36
4.....	1,210			981	10	26	1,230	14	46
5.....	1,300			1,020	14	39	1,150	12	37
6.....	1,180	3	9	1,000	13	35	1,180	13	41
7.....	935			1,110	14	42	1,110	15	45
8.....	935			1,130	13	40	1,170	16	51
9.....	1,050			1,100	11	33	1,130	15	46
10.....	1,290			1,130	12	37	1,250	17	57
11.....	1,210	4	13	1,270	17	58	1,350	15	55
12.....	1,360			1,450	17	67	1,280	14	a 48
13.....	1,290			1,370	15	55	1,120	14	a 42
14.....	1,220			1,350	13	47	1,150	15	a 47
15.....	1,150	3	9	1,340	10	36	1,210	14	a 46
16.....	1,130			1,330	10	36	1,160	13	41
17.....	1,070			1,270	13	45	1,230	13	43
18.....	1,000			1,190	14	a 45	1,190	14	a 45
19.....	1,190	6	18	1,270	13	45	1,090	15	44
20.....	1,120			1,310	13	46	1,060	15	43
21.....	1,030			1,420	17	65	1,060	16	46
22.....	1,100	7	a 19	1,440	14	54	1,870	24	121
23.....	1,110	10	30	1,210	10	33	1,750	17	80
24.....	992	5	13	1,190	10	32	1,300	17	60
25.....	958	2	23	1,160	12	38	1,100	17	a 50
26.....	1,000	17	46	1,190	10	32	1,090	16	a 47
27.....	992	12	32	1,220	12	40	1,030	15	42
28.....	981	9	24	1,160	12	38	970	15	39
29.....	992	11	29	1,190	12	39	904	16	a 39
30.....	1,070	12	35	1,170	12	38	1,100	16	48
31.....	1,000	10	27	--	--	--	1,120	14	42
Total.	34,455	--	532	36,041	--	1,222	36,466	--	1,489
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	1,030	17	47	1,170	24	76	4,720	12	a 153
2.....	1,060	16	46	1,640	40	177	4,260	13	150
3.....	1,040	16	45	2,780	78	585	3,990	13	140
4.....	958	16	41	3,280	67	593	3,630	13	127
5.....	946	16	41	6,220	220	s 3,960	3,370	13	118
6.....	1,030	15	42	10,400	221	6,210	3,200	12	104
7.....	1,000	16	43	12,100	169	5,520	3,030	11	90
8.....	1,070	16	46	14,000	152	5,750	2,780	11	83
9.....	1,050	17	48	12,700	105	a 3,600	3,200	19	164
10.....	1,040	18	51	8,400	60	1,360	4,820	27	351
11.....	1,100	15	45	7,280	37	727	5,810	21	329
12.....	1,040	15	a 42	3,900	34	358	4,720	17	217
13.....	958	16	41	5,010	28	379	4,440	17	a 204
14.....	914	13	32	4,350	18	211	4,260	18	207
15.....	914	13	32	3,900	12	126	6,220	53	s 1,010
16.....	882	15	36	3,370	11	100	18,500	193	9,640
17.....	924	13	32	3,460	11	103	15,300	135	5,580
18.....	935	15	38	3,720	17	171	12,400	85	2,850
19.....	914	14	35	4,540	24	294	10,900	41	1,210
20.....	992	16	43	7,280	29	570	9,600	22	570
21.....	981	17	45	7,500	29	a 587	8,870	17	407
22.....	970	21	55	7,060	25	477	7,940	16	343
23.....	1,000	14	38	5,610	27	409	6,640	21	376
24.....	1,030	13	36	5,010	18	243	3,810	20	206
25.....	1,020	14	39	3,900	16	168	3,810	19	195
26.....	946	13	33	4,080	17	187	4,630	16	200
27.....	992	16	a 43	4,080	16	176	4,540	12	147
28.....	1,070	17	49	5,010	18	243	4,170	11	124
29.....	1,030	13	a 36	5,610	14	212	4,080	11	a 121
30.....	1,190	12	39	--	--	--	3,540	11	105
31.....	1,050	18	51	--	--	--	3,630	11	108
Total.	31,076	--	1,290	167,360	--	33,572	184,810	--	25,629

s Computed by subdividing day.

a Computed from estimated concentration graph.

JAMES RIVER BASIN--Continued

JAMES RIVER AT SCOTTSVILLE, VA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	3,460	11	103	3,200	16	138	1,660	2	9
2.....	3,200	10	86	3,120	21	177	1,880	9	46
3.....	3,280	11	97	2,860	21	a 162	2,100	16	91
4.....	3,120	11	93	3,120	17	143	1,950	13	68
5.....	2,940	11	87	2,940	16	127	1,810	7	34
6.....	3,030	16	131	3,030	17	139	2,400	36	233
7.....	4,630	25	313	3,120	18	152	2,700	18	131
8.....	5,210	37	520	3,370	24	218	2,320	5	31
9.....	8,870	64	1,530	3,200	30	259	2,020	3	16
10.....	9,600	47	1,220	2,860	18	139	1,660	4	18
11.....	7,940	31	665	2,700	13	95	1,440	5	19
12.....	7,940	29	a 622	2,400	13	84	1,670	5	23
13.....	5,410	21	307	2,400	12	78	1,340	1	4
14.....	5,810	18	282	2,320	11	69	1,280	2	a 7
15.....	5,010	26	352	2,250	12	73	1,310	4	14
16.....	9,220	114	s 3,120	2,320	10	63	1,290	2	7
17.....	14,600	232	s 9,590	1,780	11	53	1,340	3	11
18.....	18,100	159	7,770	2,180	9	53	1,230	7	23
19.....	12,400	85	2,850	2,100	10	57	1,730	18	84
20.....	9,350	49	1,240	1,880	11	a 56	1,750	28	132
21.....	8,170	27	596	1,800	6	29	1,880	31	157
22.....	7,280	27	a 531	1,880	5	25	2,400	28	181
23.....	4,350	25	a 294	1,730	5	23	1,750	17	80
24.....	4,630	21	283	1,420	4	a 15	1,670	13	59
25.....	4,540	20	245	1,240	3	10	1,480	10	40
26.....	4,080	16	176	1,290	4	14	1,480	9	a 36
27.....	3,810	16	165	1,510	4	16	1,390	6	a 23
28.....	3,630	16	157	1,490	6	24	1,360	3	11
29.....	3,370	11	100	1,500	3	12	1,290	3	10
30.....	3,120	12	101	1,500	4	16	1,110	3	9
31.....	--	--	--	1,600	4	a 17	--	--	--
Total.	190,100	--	33,606	70,110	--	2,536	50,690	--	1,607
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.....	1,050	4	11	1,230	13	43	684	4	7
2.....	1,030	6	17	1,180	11	35	754	4	8
3.....	692	4	7	1,220	10	33	620	3	5
4.....	744	1	2	1,490	7	28	667	5	9
5.....	1,710	4	18	1,220	14	46	590		
6.....	1,160	4	13	1,220	10	33	667	9	20
7.....	1,030	11	31	992	6	16	1,020		
8.....	1,000	10	27	1,000	9	24	1,020		
9.....	1,880	15	a 76	1,250	7	24	782		
10.....	1,390	27	101	1,350	6	22	744		
11.....	1,490	17	a 68	1,230	5	17	735		
12.....	1,090	5	a 15	1,040	6	17	684		
13.....	1,110	3	9	1,030	5	14	718		
14.....	1,030	3	8	872			692		
15.....	914	5	12	692	4	8	667	3	5
16.....	820	4	9	710			620		
17.....	792	4	9	710			523		
18.....	802	6	13	735	4	8	504		
19.....	820	4	9	658			498	2	3
20.....	754	3	6	735	4	8	462		
21.....	5,120	311	s 4,930	904	4	10	468		
22.....	2,400	107	693	862	4	a 9	468	4	5
23.....	1,670	54	243	914	4	a 10	498		
24.....	1,750	46	217	710	4	a 8	582		
25.....	2,020	41	224	754	4	a 8	575	9	a 14
26.....	1,950	32	168	701	4	a 8	549	11	a 16
27.....	1,500	19	77	635	4	a 7	2,700	116	s 2,040
28.....	1,280	13	45	605			6,850	417	7,710
29.....	1,290	12	42	590	4	7	4,540	148	1,810
30.....	1,290	15	52	620			3,370	60	546
31.....	1,210	16	52	735			--	--	--
Total.	42,788	--	7,204	28,594	--	496	34,251	--	12,337

Total discharge for year (cfs days) 906,741

Total load for year (tons) 121,520

s Computed by subdividing day.

a Computed from estimated concentration graph.

JAMES RIVER BASIN--Continued

JAMES RIVER AT RICHMOND, VA.

LOCATION.--At filtration plant of Richmond Waterworks half a mile west of city limits of Richmond, Henrico County, and 2½ miles downstream from gaging station near Richmond.

DRAINAGE AREA.--6,757 square miles above gaging station.

RECORDS AVAILABLE.--Chemical analyses: October 1947 to September 1951, October 1952 to September 1956 (discontinued).

Water temperatures: October 1947 to September 1951, October 1952 to September 1956 (discontinued).

EXTREMES, 1955-56.--Dissolved solids: Maximum, 181 ppm Sept. 21-30; minimum, 67 ppm Apr. 21-30.

Hardness: Maximum, 85 ppm Sept. 21-30; minimum, 38 ppm Feb. 11-20.

Specific conductance: Maximum daily, 286 micromhos Sept. 3, 23; minimum daily, 87.2 micromhos Apr. 22.

Water temperatures: Maximum, 86°F June 18; minimum, freezing point Jan. 9, Feb. 24, 25.

EXTREMES, 1947-51, 1952-56.--Dissolved solids (1947-51, 1955-56): Maximum, 181 ppm Sept. 21-30, 1956; minimum, 58 ppm Apr. 1-10, Dec. 1-10, 1948.

Hardness: Maximum, 110 ppm Oct. 1-10, 1954; minimum, 33 ppm Mar. 1-10, 1955.

Specific conductance (1948-51, 1952-56): Maximum daily, 358 micromhos Oct. 2, 15, 1954; minimum daily, 47.0 micromhos Aug. 17, 1949.

Water temperatures: Maximum, 89°F Aug. 28, 1948; minimum, freezing point Feb. 8, 9, 1951, Jan. 19, 1954, Jan. 9, Feb. 24, 25, 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for gaging station near Richmond for water year October 1955 to September 1956 given in WSP 1433. No appreciable inflow between gaging station and sampling point.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
Oct. 1-10, 1955.....	1,080	7.8	0.87	16	4.0	9.2	2.0	47	31	6.0	0.1	0.5	107	56	18	174	7.5	28
Oct. 11-20.....	1,068	11	.25	14	2.7	--	--	45	28	6.8	--	--	--	46	19	161	7.6	40
Oct. 21-30.....	970	13	.14	18	3.2	--	--	58	31	10	--	--	--	62	15	222	7.7	30
Nov. 1-10.....	970	11	.14	18	3.9	--	--	58	31	11	--	--	--	61	18	212	7.6	40
Nov. 11-20.....	1,440	--	.24	16	4.2	--	--	49	31	9.9	--	--	--	57	17	191	6.9	28
Nov. 21-30.....	1,180	--	.20	21	4.9	--	--	64	31	10	--	--	--	73	20	223	7.1	35
Dec. 1-10.....	982	--	.54	21	4.9	--	--	67	34	12	--	--	--	73	18	238	7.2	40
Dec. 11-20.....	1,020	--	.72	20	5.0	--	--	65	31	10	--	--	--	70	17	228	7.2	50
Dec. 21-31.....	90	--	.795	19	4.7	--	--	59	37	11	--	--	--	67	18	219	7.1	50
Jan. 1-10, 1956.....	764	11	1.1	21	4.3	15	1.6	57	40	11	.0	.6	144	70	23	229	7.3	55
Jan. 11-20.....	1,010	--	1.2	19	4.4	--	--	53	34	9.4	--	--	--	66	22	208	7.0	85
Jan. 21-31.....	899	--	1.4	19	4.7	--	--	52	42	--	--	--	--	67	24	217	7.6	65
Feb. 1-10.....	8,880	--	.98	16	3.8	--	--	47	35	--	--	--	--	56	17	183	7.4	70
Feb. 11-20.....	5,650	--	.50	11	2.5	--	--	36	15	--	--	--	--	--	8	114	7.4	42
Feb. 21-29.....	5,720	9.3	.11	15	3.0	7.7	1.2	48	20	4.8	.1	.6	90	50	10	139	7.4	30
Mar. 1-10.....	3,980	8.6	.14	14	2.9	6.9	1.3	45	20	4.6	.1	.5	91	47	10	138	7.5	40
Mar. 11-20.....	10,600	9.2	.09	14	2.8	7.1	1.2	45	18	4.8	.1	.6	86	46	10	132	7.4	25
Mar. 21-31.....	6,310	11	.32	13	2.7	4.8	1.1	43	14	3.6	.1	.7	74	44	8	118	7.4	25

Apr. 1-10, 1956.....	5,200	9.1	0.40	14	3.0	5.9	1.3	43	17	4.2	0.1	0.8	80	47	12	127	7.4	30
Apr. 11-20.....	1,700	8.1	.17	13	2.7	4.6	1.1	40	14	3.8	.1	.6	76	38	6	100	7.3	24
Apr. 21-30.....	3,730	9.2	.19	15	3.2	4.0	1.4	39	14	3.6	.1	.7	76	38	7	102	7.3	24
May 1-10.....	1,330	11.4	.14	13	3.0	6.3	1.1	40	14	4.2	.1	.5	86	47	10	132	7.4	23
May 11-20.....	2,390	9.2	.04	18	3.6	2.9	1.5	56	25	5.6	.2	.8	100	60	15	163	7.4	19
May 21-31.....	1,460	7.5	.16	18	4.1	9.5	1.9	51	31	6.0	.2	.5	118	62	20	174	7.4	15
June 1-10.....	2,440	9.1	.10	16	4.1	10	2.0	50	29	6.3	.2	1.0	127	57	16	171	7.7	15
June 11-20.....	1,090	8.2	.04	22	5.1	12	2.0	64	38	9.8	.2	1.0	139	76	23	215	7.6	20
June 21-31.....	1,260	7.7	.05	18	4.2	10	2.0	49	34	6.4	.2	.8	120	62	22	179	7.5	20
July 1-10.....	1,702	7.4	.01	20	5.2	14	2.1	60	38	11	.2	1.1	152	76	27	225	7.8	10
July 11-20.....	632	6.2	.00	20	5.0	11	2.1	51	38	9.5	.2	1.2	126	70	29	208	7.4	5
July 21-31.....	2,620	7.1	.04	14	3.5	7.8	2.3	34	27	7.0	.1	1.5	89	49	22	153	7.0	25
Aug. 1-10.....	926	9.0	.00	17	4.3	10	2.2	43	37	8.1	.1	.5	130	60	25	186	7.2	18
Aug. 11-20.....	459	8.9	.00	19	5.2	13	2.4	50	43	11	.1	.6	134	69	28	219	7.2	12
Aug. 21-31.....	325	8.4	.00	21	6.7	15	2.5	55	55	13	.1	.5	148	80	35	240	7.3	25
Sept. 1-10.....	526	8.9	.00	22	5.3	16	2.6	51	52	12	.1	1.6	158	77	35	255	7.3	25
Sept. 11-20.....	203	8.3	.00	26	3.7	16	2.9	55	53	10	.1	.7	160	80	35	251	7.2	35
Sept. 21-30.....	1,980	7.5	.01	27	4.3	16	2.8	60	57	8.3	.1	.6	181	85	36	266	7.2	25
Average.....	2,670	9.0	0.31	18	4.0	10.0	1.9	51	32	8.0	0.1	0.8	116	61	19	187	--	32

JAMES RIVER BASIN--Continued

JAMES RIVER AT RICHMOND, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

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

CHOWAN RIVER BASIN

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 1956.

Water temperatures: October 1954 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 85 ppm Nov. 1-30; minimum, 50 ppm Apr. 1-30.

Hardness: Maximum, 23 ppm Sept. 1-30; minimum, 16 ppm Mar. 1-31, Apr. 1-30.

Specific conductance: Maximum daily, 114 micromhos Sept. 12-13; minimum daily, 50.9 micromhos Mar. 25.

Water temperatures: Maximum, 85°F June 29; minimum, 37°F Dec. 29, Jan. 1.

EXTREMES, 1954-56.--Dissolved solids: Maximum, 150 ppm Dec. 21-31, 1954; minimum, 50 ppm Apr. 1-30, 1956.

Hardness: Maximum, 27 ppm Feb. 1-10, July 11-20, 1955; minimum, 16 ppm Mar. 1-31, Apr. 1-30, 1956.

Specific conductance: Maximum daily, 240 micromhos Feb. 1-2, 1955; minimum daily, 50.9 micromhos Mar. 25, 1956.

Water temperatures: Maximum, 87°F Aug. 5, 7-8, 1955; minimum, 37°F Feb. 13, Dec. 29, 1955, Jan. 1, 1956.

REMARKS.--Records of specific conductance of daily samples from October 1954 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 1955 to September 1956

Date of collection	Mean discharge (cfs)	Temperature (°F)	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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
															Calcium, magnesium	Non-carbonate			
Oct. 1-31, 1955			13	0.34	5.1	1.1	5.3	2.0	22	3.6	5.0	0.1	0.9	71	17	0	73.3	7.1	90
Nov. 1-30			16	.89	5.0	1.1	8.9	1.4	32	3.3	8.0	.2	1.0	85	22	0	95.7	6.8	110
Dec 1-31			15	.81	5.6	1.0	8.0	1.4	26	4.3	8.8	.1	.2	78	18	0	85.0	6.9	85
Jan. 1-31, 1956			13	.68	5.2	1.7	8.7	1.4	23	6.3	8.5	.1	.5	69	20	1	86.8	6.7	70
Feb. 1-29			8.5	.13	4.4	2.2	4.8	1.4	16	7.7	5.8	.1	.1	56	20	7	66.6	6.9	45
Mar. 1-31			7.3	.12	4.4	1.2	4.5	1.0	15	5.8	5.0	.1	.9	55	16	4	61.3	6.6	45
Apr. 1-30			7.9	.09	4.8	1.0	4.8	1.4	17	4.1	5.2	.1	.7	50	16	2	63.8	6.6	45
May 1-31			9.6	.20	6.0	1.0	6.2	1.6	26	2.0	5.8	.1	1.0	62	19	0	74.6	6.5	60
June 1-30			11	.60	6.8	.6	6.9	.5	26	4.5	5.0	.2	1.5	65	20	0	76.4	6.6	85
July 1-31			10	.17	6.0	1.5	8.4	1.7	33	4.5	6.0	.0	1.1	72	21	0	89.9	6.8	55
Aug. 1-31			12	.22	7.1	1.1	8.2	1.6	30	7.7	5.8	.1	2.1	81	22	0	89.0	6.7	80
Sept. 1-30			11	.22	6.8	1.4	11	1.8	34	6.0	6.9	.1	2.6	83	23	0	105	6.7	100

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

CHOWAN RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 9 a. m./

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

CHOWAN RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN CHOWAN RIVER BASIN IN NORTH CAROLINA

Chemical analyses, in parts per million, water year October 1955 to September 1956																		
Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (calculated)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium,	Non- mag- nesium			
AHOSKIE CREEK AT AHOSKIE																		
Feb. 1, 1955	47.8	10	0.40	2.9	0.6	4.6	1.2	7	2.4	8.5	0.0	0.1	34	10	4	54.1	5.9	20
Aug. 1	1.07	19	.06	7.2	1.9	7.3	2.1	8	24	5.5	.2	1.6	73	26	19	97.9	5.5	17

ROANOKE RIVER BASIN

ROANOKE RIVER AT ALTAVISTA, VA.

LOCATION.--At gaging station at bridge on U. S. Highway 29, a quarter of a mile south of Altavista, Campbell County, half a mile downstream from Sycamore Creek, 3½ miles upstream from Otter River, and at mile 286.5.

DRAINAGE AREA.--1,802 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1950 to September 1951, October 1955 to August 1956 (discontinued).

Water temperatures: February 1953 to September 1956 (discontinued).

Sediment records: February 1953 to September 1956 (discontinued).

EXTREMES, 1955-56.--Specific conductance: Maximum daily, 357 micromhos Aug. 17; minimum daily, 84.8 micromhos Apr. 16.

Water temperatures: Maximum, 81°F July 1; minimum, freezing point on many days during November to January.

Sediment concentrations: Maximum daily, 1,220 ppm Sept. 27; minimum, 4 ppm Jan. 29.

Sediment loads: Maximum daily, 27,800 tons Apr. 16; minimum daily, 4 tons Sept. 22-25.

EXTREMES, 1950-51, 1953-56.--Dissolved solids (1950-51): Maximum, 150 ppm Sept. 21-30, 1951; minimum, 70 ppm Apr. 1-10, 1951.

Hardness (1950-51): Maximum, 70 ppm Sept. 10-20, 21-31, 1951; minimum, 44 ppm Dec. 1-10, 1950, Apr. 1-10, 1951.

Specific conductance: Maximum daily, 388 micromhos Aug. 19, 1954; minimum daily, 34.2 micromhos Aug. 18, 1955.

Water temperatures: Maximum, 86°F Aug. 10, 1951; minimum, freezing point on from one to many days during each winter.

Sediment concentrations (1953-56): Maximum daily, 1,830 ppm Mar. 6, 1953; minimum daily, 4 ppm Jan. 29, 1956.

Sediment loads (1953-56): 141,000 tons Oct. 16, 1954; minimum daily, 4 tons Sept. 22-25, 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Chemical analyses, in parts per million, October 1955 to August 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium-magnesium	Non-carbonate			
Oct. 19, 1955	570	6.6	0.09	14	10	10	2.1	69	15	22	0.0	1.1	133	76	20	218	7.6	9
Nov. 16	714	8.9	0.03	15	6.5	18	2.3	71	22	16	0	0.7	132	72	13	217	7.6	8
Dec. 14	522	11	0.12	15	5.5	17	1.8	66	21	19	0	1.7	125	60	6	210	7.3	5
Jan. 18, 1956	539	12	0.12	13	5.4	14	1.4	59	20	14	0	1.5	109	55	6	187	7.4	6
Feb. 15	1,150	9.0	0.09	16	5.0	5.9	1.4	64	14	5.3	1	2.0	94	60	9	150	7.5	20
Mar. 21	1,880	11	0.02	14	5.4	6.9	1.5	58	15	6.1	0	1.4	101	57	10	146	7.8	6
July 12	450	9.8	0.00	15	7.0	13	2.6	73	19	11	1	3.2	116	66	6	198	7.7	5
Aug. 8	330	5.0	0.00	16	7.7	17	2.5	83	21	17	1	1.7	128	72	4	232	7.6	7

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT ALTAVISTA, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

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

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT ALTAVISTA, VA.--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	580	23	36	636	11	19	546	23	34
2.....	598	23	37	646	11	19	579	8	13
3.....	555	19	28	622	7	12	660	9	16
4.....	565	21	32	642	10	17	670	9	16
5.....	580	26	41	650	8	14	720	12	23
6.....	560	20	30	621	7	12	722	15	27
7.....	550	21	31	627	7	12	672		
8.....	575	25	39	686	16	30	642		
9.....	742	41	82	714	68	131	638	8	15
10.....	712	34	65	712	54	104	688		
11.....	616	20	33	897	22	53	716		
12.....	575	19	29	1,020	23	a 63	624	9	a 15
13.....	540	17	25	832	32	72	522	15	a 21
14.....	555	19	28	739	35	70	522	22	a 31
15.....	646	21	37	684	21	39	580	25	39
16.....	670	23	42	714	19	37	588		
17.....	598	14	23	716	19	37	528		
18.....	570	11	17	654	14	25	641	26	45
19.....	570	12	18	662	14	25	739		
20.....	560	10	15	740	14	28	614		
21.....	554	9	13	713	12	23	551	19	31
22.....	546	10	15	690	9	17	553		
23.....	548	12	18	680	20	37	628		
24.....	540	12	17	644	20	35	662	17	30
25.....	537	15	22	636	14	24	654		
26.....	576	14	22	642	13	23	614	15	25
27.....	552	10	15	654	18	32	562	12	19
28.....	572	12	19	632	18	31	529	12	a 17
29.....	600	14	23	608	16	26	568	17	26
30.....	658	17	30	578	24	37	536	25	36
31.....	646	15	26	--	--	--	490	50	66
Total.	18,248	--	908	20,689	--	1,104	18,978	--	898
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.....	536	40	58	546	5	7	1,100	30	89
2.....	534	13	a 19	586	6	9	1,000	28	76
3.....	570	12	18	719	13	25	978	32	84
4.....	583	16	25	1,240	75	251	1,020	30	83
5.....	567	17	26	2,240	208	1,260	1,020	30	83
6.....	552	63	94	2,380	161	1,030	968	24	63
7.....	538	72	105	4,600	456	5,660	934	35	86
8.....	494	20	27	3,510	293	2,780	936	35	88
9.....	418	24	27	2,300	160	994	1,130	39	119
10.....	540	71	104	1,670	70	316	1,190	40	129
11.....	646	16	28	1,510	50	204	1,160	58	182
12.....	599	12	19	1,440	43	167	1,120	39	118
13.....	555	11	16	1,410	40	152	1,140	38	117
14.....	532	7	10	1,260	29	99	1,390	45	169
15.....	513	7	a 10	1,150	30	93	1,870	83	419
16.....	519	6	8	1,100	29	86	2,460	119	790
17.....	536	14	20	1,060	26	74	4,500	273	3,820
18.....	539	13	19	1,310	47	166	3,020	156	1,290
19.....	520	11	15	1,530	63	260	2,540	87	597
20.....	568	13	20	1,470	60	236	2,250	62	377
21.....	584	14	22	1,400	65	246	1,880	56	264
22.....	524	23	33	1,280	36	124	1,680	40	181
23.....	544	7	10	1,150	26	81	1,520	40	184
24.....	586	8	13	1,080	22	64	1,410	37	141
25.....	558	5	8	1,120	18	54	1,300	34	119
26.....	542	7	10	1,330	37	133	1,200	33	107
27.....	522	5	7	1,420	45	173	1,150	24	75
28.....	480	10	13	1,310	45	159	1,080	28	82
29.....	512	4	6	1,200	48	156	1,060	26	76
30.....	552	6	9	--	--	--	1,100	24	71
31.....	570	9	14	--	--	--	1,070	24	69
Total.	18,833	--	813	44,321	--	15,061	46,196	--	9,650

a Computed by subdividing day.

a Computed from estimated concentration graph.

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT ALTAVISTA, VA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	997	17	46	1,160	52	163	606	40	65
2.....	949	23	59	1,190	43	138	692	47	88
3.....	934	26	66	1,220	49	161	1,480	223	891
4.....	956	27	70	1,320	51	182	1,260	164	558
5.....	936	32	81	1,310	59	209	940	80	203
6.....	870	21	49	1,170	48	152	778	65	137
7.....	1,530	62	256	1,130	42	128	715	47	91
8.....	2,620	206	1,460	1,180	45	a 143	660	54	96
9.....	2,200	126	748	1,010	49	134	610	37	61
10.....	1,810	81	396	952	52	134	620	37	62
11.....	1,620	38	166	921	37	92	575	54	84
12.....	3,340	176	s 1,700	872	34	a 80	595	64	103
13.....	3,340	178	1,610	846	39	a 89	550	24	36
14.....	2,620	100	707	776	49	103	500	42	57
15.....	2,300	180	1,120	756	38	78	485	39	51
16.....	8,960	1,080	s 27,800	810	44	96	490	86	114
17.....	8,940	1,040	25,100	780	47	99	540	53	77
18.....	4,600	407	5,050	715	31	60	600	83	134
19.....	3,340	148	1,330	682	32	59	580	113	a 177
20.....	2,700	112	816	652	27	48	748	105	212
21.....	2,260	72	439	612	25	41	685	60	111
22.....	1,980	70	374	610	25	41	715	93	180
23.....	1,760	68	323	634	27	46	710	83	159
24.....	1,600	53	229	761	46	95	640	68	118
25.....	1,480	54	216	716	38	73	540	42	61
26.....	1,400	48	181	587	26	41	490	38	50
27.....	1,350	49	179	564	18	27	476	37	48
28.....	1,320	41	146	563	21	32	452	40	49
29.....	1,210	41	134	610	21	35	432	28	33
30.....	1,150	44	137	624	35	59	412	37	41
31.....	--	--	--	600	27	44	--	--	--
Total.	71,072	--	70,988	26,333	--	2,882	19,576	--	4,147

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.....	400	23	25	380	40	41	252	42	29
2.....	416	32	36	450	37	45	252	15	10
3.....	440	26	31	540	100	146	240	15	a 10
4.....	408	54	59	520	87	122	240	15	a 10
5.....	590	182	290	450	55	67	292	40	a 32
6.....	700	225	425	400	52	56	530	201	s 324
7.....	630	193	328	350	30	28	850	457	1,050
8.....	565	152	232	330	25	22	645	278	484
9.....	464	106	133	300	14	11	510	111	153
10.....	640	298	515	280	17	13	400	58	63
11.....	550	186	276	290	14	11	332	38	32
12.....	450	124	151	280	24	18	312		
13.....	400	72	78	320	23	20	300		
14.....	370	62	62	290	31	24	284		
15.....	350	53	50	300	20	16	276	18	13
16.....	330	45	40	310	27	23	256		
17.....	320	25	22	320	35	30	232		
18.....	310	24	20	350	66	62	232		
19.....	350	35	33	400	30	32	200	9	5
20.....	1,600	155	670	450	58	70	216		
21.....	1,000	250	675	500	56	76	212		
22.....	700	127	240	520	162	227	212		
23.....	650	136	239	490	84	111	204	7	4
24.....	600	88	143	396	45	48	236		
25.....	580	83	130	356	35	34	276		
26.....	560	81	122	304	22	18	468	33	a 42
27.....	540	78	114	280	22	17	6,190	1,220	s 23,000
28.....	500	54	73	256	26	18	6,340	793	s 15,100
29.....	470	60	76	264	96	68	2,460	328	s 2,320
30.....	430	56	65	248	21	14	1,390	150	563
31.....	400	115	124	228	25	15	--	--	--
Total.	16,713	--	5,477	11,152	--	1,503	24,839	--	43,374

Total discharge for year (cfs days) 334,950

Total load for year (tons) 156,805

s Computed by subdividing day.

a Computed from estimated concentration graph.

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT RANDOLPH, VA.

LOCATION.--At gaging station at bridge on State Highway 746 (old 26), 2.8 miles northwest of Randolph, Charlotte County, 3.6 miles upstream from Roanoke Creek, and at mile 227.3.

DRAINAGE AREA.--3,000 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses: April 1929 to March 1930, October 1950 to September 1956 (discontinued).

Water temperatures: January 1954 to September 1956.

Sediment records: January 1954 to September 1956.

EXTREMES, 1953-56.--Dissolved solids: Maximum, 125 ppm June 21-30; minimum, 59 ppm Mar. 16-20.

Hardness: Maximum, 71 ppm Sept. 21-27; minimum, 32 ppm Mar. 16-20.

Specific conductance: Maximum daily, 230 micromhos Sept. 9; minimum daily, 76.6 Apr. 17. December and January.

Water temperatures: Maximum, 82°F July 3; minimum, freezing point on several days during

Sediment concentrations: Maximum daily, 1,100 ppm Sept. 28; minimum daily, 6 ppm Dec.

Sediment loads (1954-56): Maximum daily, 3,108 tons Apr. 17; minimum daily, 43 tons Sept. 21-22.

EXTREMES, 1929-30, 1930-56.--Dissolved solids (1929-30, 1935-56): Maximum, 125 ppm June 21-30, 1956; minimum, 59 ppm Feb. 1-10, 1952, Mar. 16-20, 1956.

Hardness: Maximum, 71 ppm Sept. 21-27, 1956; minimum, 30 ppm Dec. 1-10, 1950, Mar. 21-31, 1952.

Specific conductance (1950-56): Maximum daily, 264 micromhos Oct. 11, 1954; minimum daily, 48.4 micromhos Dec. 23, 1951.

Water temperatures (1950-56): Maximum, 83°F Aug. 7, 1955; minimum, freezing point on several days during some winters.

Sediment concentrations (1954-56): Maximum daily, 1,717 ppm July 13, 1955; minimum daily, 6 ppm Dec. 28-31, 1955.

Sediment loads (1954-56): Maximum daily, 71,500 tons Mar. 2, 1954; minimum daily, 13 tons, Sept. 21, 22, 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October

1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955	1,120	9.2	0.01	14	4.3	10	2.0	61	11	8.8	0.1	0.4	91	53	3	154	7.5	5
Oct. 11-20	1,100	12	.10	13	4.7	12	1.8	62	14	9.6	.1	.5	98	52	1	165	7.5	5
Nov. 1-20	1,300	--	.06	12	4.4	--	--	57	18	--	--	--	--	48	1	154	7.5	9
Nov. 21-30	1,220	--	.09	12	4.0	11	1.9	57	19	--	--	--	--	46	0	150	7.3	5
Dec. 1-10	1,160	--	1.1	13	3.8	13	1.6	62	16	--	--	--	--	48	0	157	7.9	5
Dec. 11-20	1,100	--	.12	15	4.6	12	1.7	63	15	--	--	--	--	56	5	160	7.6	5
Dec. 21-31	1,110	--	.02	11	4.6	--	--	53	16	--	--	--	--	46	3	148	7.5	6
Jan. 1-10, 1956	1,000	15	.09	11	4.1	9.0	1.6	54	12	6.4	.0	1.0	82	44	0	135	7.8	5
Jan. 11-20	1,040	--	.05	9.8	4.0	--	--	52	12	--	--	--	--	41	0	142	7.6	5
Jan. 21-31	1,040	--	.12	10	4.6	--	--	54	12	--	--	--	--	44	0	140	7.7	4
Feb. 1-10	3,390	--	.26	9.7	3.8	--	--	45	12	--	--	--	--	40	3	129	7.5	62
Feb. 11-20	2,220	--	.11	11	3.8	--	--	47	10	--	--	--	--	43	5	122	7.6	30
Feb. 21-29	2,080	14	.07	12	4.7	6.6	1.2	54	13	5.0	.0	1.2	87	49	5	136	7.4	5
Mar. 1-15	1,960	12	.08	12	4.5	7.5	1.4	53	12	5.4	.1	1.0	82	48	5	134	7.5	17
Mar. 16-20	5,310	12	.29	8.1	2.9	4.5	1.5	35	7.5	3.4	.0	1.8	59	32	3	94.5	7.2	100
Mar. 21-31	2,240	14	.10	11	4.1	4.9	1.4	49	8.5	4.3	.0	1.0	75	44	4	116	7.4	10
Apr. 1-10	2,460	11	.07	11	4.1	6.5	1.3	52	11	4.8	.1	1.0	94	44	2	125	7.4	10
Apr. 11-20	6,240	11	.18	10	3.5	3.9	1.5	44	7.7	3.1	.0	2.0	79	39	3	105	7.2	55

Apr. 21-30, 1956	2,540	15	0.08	12	4.2	4.8	1.4	52	8.6	4.2	0.1	1.6	82	47	5	120	7.5	12
May 1-10	1,880	5.4	.04	12	4.9	6.2	1.6	58	11	5.2	.0	1.0	81	50	3	135	7.0	5
May 11-20	1,380	3.9	.03	12	5.1	7.6	1.8	60	13	5.9	.0	.6	85	51	2	143	7.0	5
May 21-31	1,080	8.9	.00	13	5.9	9.7	1.7	66	14	6.7	.1	.9	94	57	3	158	7.3	5
June 1-10	1,350	12	.00	13	4.8	9.8	1.8	59	14	7.1	.1	1.5	107	52	4	152	7.4	5
June 11-20	861	11	.00	13	4.8	13	1.8	62	17	8.4	.1	.8	101	52	1	165	7.5	5
June 21-30	900	11	.00	14	4.7	14	2.3	62	22	8.8	.1	1.2	125	54	3	186	7.1	7
July 1-10	718	9.6	.00	14	5.4	15	2.4	67	24	8.5	.1	.8	114	57	2	190	7.4	8
July 11-20	645	11	.03	14	4.9	9.8	2.5	64	16	8.7	.1	1.3	100	55	3	166	7.3	10
July 21-31	1,010	12	.00	13	3.7	10	2.2	54	14	9.0	.1	1.3	98	48	3	157	7.2	15
Aug. 1-10	676	9.3	.00	14	5.2	11	2.2	65	18	9.2	.1	.6	104	56	3	179	7.4	5
Aug. 11-20	489	9.5	.03	15	5.0	12	2.3	72	15	11	.1	.6	110	58	0	189	7.3	10
Aug. 21-31	547	8.6	.00	14	5.7	15	2.4	67	16	15	.1	.6	114	58	4	201	7.3	5
Sept. 1-10	604	9.9	.00	14	6.0	13	2.5	70	16	13	.1	.9	114	60	2	198	7.3	5
Sept. 11-20	426	9.8	.00	14	8.5	15	2.6	71	21	17	.0	.9	117	70	12	199	7.2	15
Sept. 21-27	442	7.6	.00	16	7.5	15	2.5	73	20	13	.0	.6	121	71	7	209	7.3	5
Sept. 28-30	5,510	8.5	.34	9.5	3.8	8.6	2.2	38	13	7.2	--	1.6	83	39	8	123	6.7	65
Average	1,490	11	0.07	12	4.7	10	1.9	58	14	8.0	0.1	1.0	96	50	3	152	--	15

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT RANDOLPH, VA.--Continued

Temperature (°F) of water year October 1955 to September 1956

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

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT RANDOLPH, VA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	1,660	34	152	1,860	51	256	1,190	66	212
2.....	1,580	44	188	1,780	55	284	1,260	64	218
3.....	1,540	45	187	1,940	53	278	1,470	79	314
4.....	1,540	34	141	1,980	48	257	2,100	126	714
5.....	1,500	39	158	2,020	56	a 305	1,820	136	668
6.....	1,580	40	171	1,980	62	331	1,400	103	389
7.....	2,100	87	493	1,860	39	196	1,190	73	235
8.....	3,200	112	968	1,900	42	a 215	1,080	61	178
9.....	3,800	132	1,350	1,820	55	270	1,020	55	151
10.....	3,000	94	761	1,620	46	201	960	55	143
11.....	3,000	83	672	1,500	45	182	930	55	138
12.....	5,320	155	2,230	1,470	46	183	900	51	124
13.....	5,640	168	2,560	1,440	43	167	870	48	113
14.....	4,640	166	2,080	1,360	45	165	840	55	125
15.....	3,800	139	1,430	1,330	62	223	810	49	107
16.....	7,610	319	s 7,900	1,620	93	407	750	48	97
17.....	14,100	818	s 1,100	1,360	78	286	780	55	116
18.....	7,840	605	12,800	1,300	60	211	870	67	157
19.....	5,800	403	a 6,310	1,220	63	208	900	70	170
20.....	4,640	221	2,770	1,190	44	141	960	87	226
21.....	3,800	134	1,370	1,120	43	130	1,050	75	213
22.....	3,300	113	1,010	1,080	48	140	1,050	65	184
23.....	2,900	108	946	1,060	40	117	1,080	62	181
24.....	2,620	56	467	1,080	35	102	1,050	57	162
25.....	2,350	56	355	1,190	43	138	990	60	160
26.....	2,260	52	317	1,190	48	a 154	840	45	102
27.....	2,180	50	204	1,050	48	136	810	51	112
28.....	2,100	63	357	990	39	104	780	66	139
29.....	2,020	50	273	1,020	39	107	700	44	83
30.....	1,900	45	231	1,050	48	136	650	43	75
31.....	--	--	--	1,080	57	166	--	--	--
Total.	109,320	--	79,941	44,480	--	6,176	31,100	--	6,006
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.....	630	34	58	675	35	64	370	23	23
2.....	600	33	53	640	32	55	380	18	18
3.....	575	33	51	615	37	61	400	97	105
4.....	585	36	57	700	52	98	370	66	66
5.....	645	57	99	780	52	110	400	38	41
6.....	700	65	123	810	50	109	500	41	55
7.....	780	70	147	725	40	78	675	103	188
8.....	870	80	188	675	38	69	1,300	252	885
9.....	870	54	127	640	38	66	840	97	220
10.....	930	73	183	500	26	35	810	99	217
11.....	930	103	259	480	23	30	610	68	112
12.....	840	89	202	460	26	32	525	48	68
13.....	700	65	123	450	19	23	470	41	52
14.....	640	50	86	460	59	73	450	34	41
15.....	595	47	76	500	67	90	430	31	a 36
16.....	555	43	64	460	45	56	400	29	31
17.....	550	35	52	480	32	41	380	25	26
18.....	550	61	91	500	34	46	360	25	a 24
19.....	550	93	138	520	38	53	330	29	a 26
20.....	540	36	52	580	56	88	300	26	21
21.....	1,280	126	s 716	640	50	86	310	15	13
22.....	1,780	283	1,360	680	40	a 73	330	15	13
23.....	1,080	189	551	740	143	286	330	18	16
24.....	1,020	112	308	810	89	195	350	16	15
25.....	1,020	104	286	635	55	94	400	21	23
26.....	950	116	298	545	44	65	415	32	36
27.....	900	85	207	495	31	41	960	165	s 502
28.....	850	60	138	400	26	28	7,360	1,100	21,900
29.....	800	54	117	370	24	24	6,080	716	11,800
30.....	750	56	113	350	22	21	3,100	314	2,630
31.....	700	45	85	350	21	20	--	--	--
Total.	24,765	--	6,408	17,665	--	2,210	29,935	--	39,203

Total discharge for year (cfs-days) 549,215

Total load for year (tons) 193,649

s Computed by subdividing day.

a Computed from estimated concentration graph.

ROANOKE RIVER BASIN--Continued

ROANOKE RIVER AT RANDOLPH, VA.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	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.....	1,330	70	251	1,050	17	48	1,120	17	51
2.....	1,160	48	150	1,050	12	34	1,080	18	52
3.....	1,080	31	90	1,050	13	a 37	1,050	8	23
4.....	1,080	25	73	1,050	14	a 40	1,120	12	36
5.....	1,050	23	65	1,050	14	40	1,190	14	45
6.....	1,050	21	60	1,050	15	43	1,220	19	63
7.....	1,050	25	71	1,050	18	51	1,260		
8.....	1,020	19	52	1,050	15	43	1,220		
9.....	1,160	40	125	1,050	22	62	1,190		
10.....	1,220	35	115	1,080	12	35	1,190	16	51
11.....	1,260	28	95	1,360	25	92	1,190		
12.....	1,160	23	72	1,540	34	141	1,190		
13.....	1,080	23	67	1,500	32	130	1,160		
14.....	1,050	27	77	1,360	24	88	1,080	37	111
15.....	1,020	22	61	1,260	22	75	1,020		
16.....	1,050	19	54	1,220	21	69	1,020	10	28
17.....	1,120	23	70	1,190	18	58	1,020		
18.....	1,120	19	57	1,190	19	61	1,020		
19.....	1,080	16	47	1,190	17	55	1,020		
20.....	1,050	15	43	1,220	14	46	1,260	12	37
21.....	1,020	15	41	1,300	14	49	1,220		
22.....	990	16	43	1,300	16	56	1,080		
23.....	990	16	43	1,260	16	54	1,050		
24.....	960	13	34	1,220	14	46	1,080	15	48
25.....	990	14	37	1,190	15	48	1,260		
26.....	990	13	34	1,190	13	42	1,260		
27.....	960			1,190	14	45	1,160		
28.....	960			1,190	11	35	1,080		
29.....	990			1,190	11	35	1,020	6	17
30.....	990	18	48	1,160	15	47	990		
31.....	1,020	16	44	--	--	--	1,050	--	--
Total.	33,050	--	2,121	35,750	--	1,705	34,870	--	1,513
Day	January			February			March		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	990	19	52	1,080	16	54	1,900	41	210
2.....	990			1,080			1,780	39	187
3.....	1,020			1,120			1,660	39	175
4.....	1,050			1,740			1,740	43	202
5.....	1,050	15	42	3,100	125	1,050	1,860	48	241
6.....	1,050			4,460			1,740	40	188
7.....	1,050			6,430			1,660	42	188
8.....	1,020			6,710			1,660	51	229
9.....	960	12	32	4,820	147	1,350	1,980	57	305
10.....	870			3,400			2,020	51	278
11.....	930			2,620			1,980	54	289
12.....	1,160			2,440			1,940	50	262
13.....	1,190	12	35	2,260	52	317	1,860	47	236
14.....	1,080			2,180			2,260	49	299
15.....	1,020			1,980			3,400	84	771
16.....	990			1,820	34	167	4,730	132	s 1,780
17.....	960	8	21	1,780			7,280	285	5,600
18.....	990			2,100			6,430	227	3,940
19.....	1,020			2,440			5,000	146	1,970
20.....	1,020	13	37	2,530	66	451	4,100	97	1,070
21.....	1,050			2,350			3,500	70	662
22.....	1,080			2,180			3,000	57	462
23.....	1,050			1,940			2,620	52	368
24.....	1,050	17	48	1,780	23	116	2,350	53	a 336
25.....	1,080			1,860			2,180	51	300
26.....	1,050			2,020			2,020	35	191
27.....	1,020			2,260	36	220	1,900	36	185
28.....	990	9	24	2,260			1,820	41	a 201
29.....	960			2,100			1,740	36	169
30.....	990			--			1,780	28	135
31.....	1,080			--			1,740	27	127
Total.	31,810	--	1,143	74,840	--	25,867	81,630	--	21,556

s Computed by subdividing day.

a Computed from estimated concentration graph.

ROANOKE RIVER BASIN--Continued
DAN RIVER AT PACES, VA.

LOCATION.--At gaging station at highway bridge, 0.5 mile southeast of Paces, Halifax County, 0.5 mile upstream from Big Toby Creek, 2.7 miles upstream from Birch Creek and at mile 36.0.

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 1956.

EXTREMES, 1955-56.--Specific conductance: Maximum daily, 260 micromhos Sept. 7; minimum daily, 44.4 micromhos Apr. 17.

Water temperatures: Maximum, 90°F July 2; minimum, freezing point Dec. 16.

Sediment concentrations: Maximum daily, 1,324 ppm Sept. 28, 1956; minimum daily, 10 ppm Jan. 17.

EXTREMES, 1954-56.--Specific conductance: Maximum daily, 54,700 tons Sept. 28; minimum daily, 11 tons Sept. 23.

Water temperatures: Maximum, 91°F July 3, 14, 1954; minimum, freezing point Dec. 7, 8, 1954, Feb. 12, Dec. 16, 1955.

Sediment concentrations: Maximum daily, 2,263 ppm July 13, 1955; minimum daily, 10 ppm Jan. 17, 1956.

Sediment loads: Maximum daily, 76,900 tons Oct. 16, 1954; minimum daily, 11 tons Sept. 23, 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, October 1955 to August 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 18, 1955	850	14	0.14	6.9	2.5	9.3	1.9	45	2.5	5.0	0.2	1.7	74	28	0	100	7.1	5
Nov.	975	12	.19	6.1	2.3	7.8	2.1	42	4.9	5.1	.1	.8	75	27	0	83.1	7.2	20
Dec. 12	1,020	11	.07	6.7	2.1	6.7	1.6	38	2.5	5.5	.1	1.1	88	25	0	88.9	7.3	9
Jan. 16, 1956	925	16	.04	6.2	2.6	8.5	1.5	40	6.2	5.2	.1	1.2	88	26	0	95.1	7.3	8
Feb. 14	2,250	16	.13	4.2	3.2	7.0	1.7	32	6.0	4.4	.0	1.6	86	24	0	84.0	6.7	25
Mar. 20	3,080	13	.20	4.1	1.4	5.4	1.7	22	5.7	3.5	.0	1.5	48	16	0	65.4	7.4	70
July 10	1,730	12	.38	4.4	1.6	4.6	2.4	25	3.3	3.1	.0	3.2	47	18	0	67.8	7.3	160
Aug. 9	1,650	14	.13	6.0	1.7	13	2.5	49	5.6	5.0	.0	3.0	92	22	0	118	7.6	55

ROANOKE RIVER BASIN--Continued

DAN RIVER AT PACES, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	59	42	40	34	50	57	70	79	89	84	84
2	69	56	41	41	--	52	57	66	70	90	83	85
3	69	55	48	40	44	51	65	66	69	89	80	82
4	68	53	50	41	42	53	63	70	79	80	75	82
5	70	52	50	42	46	58	64	66	73	87	80	80
6	74	53	49	42	43	60	61	71	75	84	84	80
7	74	51	43	41	45	64	57	73	76	82	82	77
8	70	52	42	38	41	58	53	70	80	--	85	75
9	71	52	44	37	46	57	55	69	78	79	85	72
10	69	47	42	37	50	56	56	70	82	78	87	71
11	68	49	42	41	49	59	51	75	82	80	87	74
12	68	59	40	44	50	55	51	77	82	83	84	75
13	69	56	39	44	48	50	55	81	87	81	87	75
14	65	58	40	44	49	55	57	82	87	83	87	78
15	69	--	40	--	51	50	58	79	87	82	87	84
16	62	64	32	41	50	40	58	76	86	82	86	83
17	--	59	38	41	48	46	54	70	85	82	86	76
18	68	55	38	42	55	47	53	71	--	83	87	76
19	59	52	41	39	54	45	56	74	76	80	81	75
20	60	50	39	41	53	47	56	75	72	84	80	73
21	62	53	37	40	49	50	56	76	84	83	73	70
22	62	52	40	41	48	51	60	76	85	89	75	71
23	62	--	40	41	47	54	61	70	87	86	77	80
24	62	54	--	40	45	50	58	74	88	86	78	69
25	57	49	41	41	50	51	59	73	88	84	78	69
26	60	50	40	--	49	54	63	72	85	88	80	62
27	62	48	42	42	48	57	68	75	86	85	80	58
28	63	49	40	40	50	53	75	75	87	84	82	58
29	63	48	39	44	49	50	74	75	86	84	83	59
30	62	41	--	42	--	55	75	81	87	83	83	83
31	59	--	40	42	--	55	--	85	--	80	94	--
Average	66	53	41	41	48	53	60	74	82	84	82	75

ROANOKE RIVER BASIN--Continued

DAN RIVER AT PACES, VA.--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	5,560	361	s 8,140	900	28	68	1,200	21	a 68
2.....	5,400	429	6,250	1,050	26	74	1,100	18	53
3.....	2,250	302	1,830	950	25	64	1,120	15	45
4.....	1,250	177	597	1,020	23	63	1,250	22	74
5.....	1,220	130	428	1,000	19	51	1,150		
6.....	1,120	94	284	1,000	18	49	1,080	20	63
7.....	1,100	70	208	900	17	41	1,220		
8.....	1,020	67	185	800	18	39	1,200		
9.....	1,300	71	249	1,000	19	51	1,180		
10.....	1,180	66	210	1,120	21	64	1,150	14	43
11.....	1,150	56	174	1,500	45	182	1,220		
12.....	1,100	49	146	1,610	45	196	1,020		
13.....	1,080	45	131	1,500	43	174	925		
14.....	1,000	41	111	1,150	41	127	900	14	38
15.....	1,020	36	99	975	22	58	1,020		
16.....	1,120	35	106	1,120	26	79	1,150		
17.....	1,000	26	70	1,180	34	108	1,080	14	39
18.....	850	22	50	1,100	27	80	1,050		
19.....	1,020	26	72	1,100	22	65	1,000		
20.....	1,020	22	61	1,220	24	79	950		
21.....	1,100	20	59	1,080	19	55	1,150	14	42
22.....	1,120	20	60	1,020	17	47	1,100		
23.....	1,020	22	61	1,150	21	65	1,120		
24.....	850	32	73	1,120	21	64	1,100	17	a 50
25.....	725	27	53	1,150	22	68	1,120		
26.....	975	29	76	1,350	31	113	1,100	22	62
27.....	975	33	87	1,450	40	157	900		
28.....	975	29	76	1,350	30	109	1,080		
29.....	1,020	26	72	1,080	19	55	1,080	16	46
30.....	1,080	27	79	1,220	19	63	1,020		
31.....	900	26	63	--	--	--	1,100		
Total.	42,500	--	18,160	34,165	--	2,508	33,835	--	1,518
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.....	1,120	18	45	1,150	30	93	1,910	43	222
2.....	950			1,220	31	102	1,730	34	159
3.....	950			1,400	90	340	1,610	32	139
4.....	700			3,320	209	s 2,010	1,730	38	178
5.....	1,150	16	47	6,740	477	8,680	1,500	37	150
6.....	1,120			6,920	421	7,870	1,550	33	138
7.....	1,050			9,830	697	18,500	1,610	43	187
8.....	1,050			8,170	615	s 15,000	1,670	50	225
9.....	900	13	34	3,960	223	2,380	2,250	75	456
10.....	800			2,840	108	828	2,530	123	640
11.....	950			2,530	90	615	1,970	99	527
12.....	1,180			3,080	104	865	1,610	69	300
13.....	1,200	16	48	2,680	81	586	1,450	54	211
14.....	1,100			2,250	54	328	1,730	46	215
15.....	1,050			2,040	41	226	1,910	58	299
16.....	925	16	40	1,850	35	175	5,050	314	s 5,190
17.....	825	10	22	1,790	35	169	14,500	806	31,600
18.....	1,000	11	30	1,850	43	215	10,300	420	s 12,900
19.....	1,080	12	35	1,970	47	250	4,360	234	2,750
20.....	1,150	14	43	1,910	41	211	3,080	117	973
21.....	1,200	16	52	2,320	57	357	2,680	68	492
22.....	1,180	14	45	2,250	58	352	2,320	49	307
23.....	925	13	32	1,970	44	234	2,040	41	226
24.....	875	14	33	1,790	29	140	1,970	35	186
25.....	1,150	16	50	1,850	31	155	1,850	30	150
26.....	1,220	18	59	2,320	74	464	1,550	22	92
27.....	1,180	20	64	2,180	88	506	1,450	26	102
28.....	1,120	21	64	1,910	90	464	1,670	32	144
29.....	1,100	17	a 50	1,970	78	404	1,610	29	126
30.....	975	20	53	--	--	--	1,610	26	113
31.....	950	25	a 64	--	--	--	1,550	24	100
Total.	32,125	--	1,384	86,060	--	62,519	84,350	--	59,697

s Computed by subdividing day.

a Computed from estimated concentration graph.

ROANOKE RIVER BASIN--Continued

DAN RIVER AT PACES, VA.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	1,500	21	85	1,550	58	243	900	48	117
2.....	1,450	30	117	1,790	87	420	1,220	104	343
3.....	1,220	52	171	3,240	446	3,900	2,320	301	1,890
4.....	1,910	59	304	4,040	295	3,220	2,180	194	1,140
5.....	1,850	47	235	3,800	184	1,890	1,400	135	a 510
6.....	2,110	160	s 1,080	2,760	116	864	1,220	124	408
7.....	8,390	658	14,900	1,910	72	371	1,150	91	283
8.....	6,740	484	s 9,410	1,790	75	362	1,100	87	199
9.....	3,480	225	2,110	1,970	79	420	1,080	78	227
10.....	2,530	94	642	1,850	79	395	1,000	78	211
11.....	3,640	191	s 2,180	1,610	68	296	775	57	119
12.....	11,700	468	14,800	1,550	58	243	725	54	106
13.....	9,960	366	9,842	1,450	51	200	1,000	68	184
14.....	5,000	183	2,470	1,250	45	152	950	61	156
15.....	3,560	117	1,120	1,120	46	139	900	56	136
16.....	6,180	374	s 8,210	1,350	51	186	850	76	174
17.....	16,000	1,093	47,200	1,400	54	204	800	63	136
18.....	8,500	445	10,200	1,450	58	227	800	60	a 130
19.....	4,280	207	2,390	1,250	42	142	750	76	154
20.....	3,480	104	977	1,200	33	107	1,020	105	289
21.....	2,760	92	686	975	37	97	1,000	76	205
22.....	2,460	75	498	875	45	106	1,000	45	122
23.....	2,110	59	336	2,120	753	s 4,760	1,000	54	146
24.....	2,040	50	275	1,300	281	986	975	50	132
25.....	1,970	52	277	1,180	104	331	775	44	92
26.....	1,970	45	239	1,100	108	321	615	36	60
27.....	1,970	37	197	1,050	90	255	1,000	99	267
28.....	1,910	44	227	900	60	146	1,020	146	402
29.....	1,850	49	245	825	62	138	925	61	152
30.....	1,450	64	251	1,080	68	198	850	47	108
31.....	--	--	--	1,150	59	183	--	--	--
Total.	123,970	--	131,674	50,885	--	21,502	31,300	--	8,598
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.....	700	58	110	1,150	135	419	750	83	168
2.....	595	40	64	925	166	415	675	86	157
3.....	750	44	89	1,560	488	s 2,500	800	140	302
4.....	900	655	1,590	1,790	687	3,320	244	36	24
5.....	850	249	571	1,200	292	946	400	122	132
6.....	1,050	234	663	775	256	536	950	196	503
7.....	1,910	710	3,660	550	248	368	1,000	184	497
8.....	2,320	1,011	6,330	635	186	319	1,050	153	434
9.....	1,450	461	1,800	650	138	242	800	123	266
10.....	1,730	477	2,230	675	112	204	595	129	207
11.....	1,450	227	889	635	158	271	415	76	85
12.....	1,300	214	751	775	99	207	455	70	86
13.....	975	130	342	800	162	350	400	54	58
14.....	900	96	233	510	94	129	425	56	64
15.....	875	84	198	640	144	249	400	50	54
16.....	675	90	164	675	130	237	388	57	60
17.....	565	71	108	1,080	144	420	308	70	58
18.....	750	79	160	1,250	228	770	332	72	65
19.....	850	117	269	925	234	584	450	43	52
20.....	950	126	323	1,350	929	3,390	288	20	16
21.....	1,080	108	315	1,020	394	1,080	320	27	23
22.....	975	90	237	1,670	457	2,060	274	18	13
23.....	825	86	192	1,790	410	1,980	288	14	11
24.....	555	81	121	1,250	243	820	304	25	21
25.....	875	324	765	975	248	653	372	22	22
26.....	900	286	695	825	227	506	610	90	148
27.....	875	101	239	575	151	234	7,420	1,260	32,700
28.....	1,100	108	321	460	74	92	15,300	1,324	54,700
29.....	900	135	a 328	600	120	194	7,120	498	s 11,500
30.....	700	150	284	700	104	197	2,680	220	1,590
31.....	490	120	159	850	61	186	--	--	--
Total.	30,820	--	24,200	29,265	--	23,878	45,813	--	104,016
Total discharge for year (cfs-days).....									625,088
Total load for year (tons).....									459,654

s Computed by subdividing day.

a Computed from estimated concentration graph.

ROANOKE RIVER BASIN--Continued

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 1956.

EXTREMES. 1955-56. --Dissolved solids: Maximum, 91 ppm June 1-10; minimum, 64 ppm Apr. 11-20.

Hardness: Maximum, 45 ppm Sept. 21-30; minimum, 29 ppm Oct. 1-10, 11-20.

Water temperature: Maximum, 89°F July 1, 6; minimum, 37°F Jan. 9.

Specific conductance: Maximum, 153 micromhos June 23; minimum daily, 81.5 micromhos Oct. 10.

REMARKS. --Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Calcium (mg./100 ml. at 25°C)	Non-carbonate (mg./100 ml. at 25°C)			Unfiltered	Filtered
Oct. 1-10, 1955		9.2	0.33	8.0	2.2	5.2	2.3	38	4.7	4.0	0.0	1.2	68	29	0	89.3	55	13	9.0
Oct. 11-20		9.3	0.10	8.5	2.0	5.5	2.1	39	5.6	4.0	0.0	1.1	65	29	0	91.6	32	9.2	7.0
Oct. 21-31		9.3	0.23	8.7	1.9	6.0	2.0	39	4.2	4.0	0.0	1.1	67	30	0	93.1	45	9.4	5.8
Nov. 1-10		10	0.18	9.9	1.8	6.2	2.0	44	5.7	4.5	0.0	1.4	71	32	0	101	40	9.4	6.2
Nov. 11-20		10	0.23	9.6	2.3	7.3	2.3	44	5.6	5.0	0.0	1.3	79	34	0	109	50	11	6.2
Nov. 21-30		9.9	0.13	9.6	2.3	7.3	2.2	49	5.3	5.0	0.0	1.2	74	33	0	111	22	8.8	6.4
Dec. 1-10		9.3	0.03	10	2.4	7.9	2.2	50	6.3	5.5	0.0	1.2	80	36	0	117	20	6.6	5.0
Dec. 11-20		10	0.26	9.5	2.3	8.0	2.0	48	4.8	5.0	0.0	1.0	75	33	0	116	38	7.8	5.6
Dec. 21-31		9.3	0.19	9.8	2.3	8.1	2.2	48	6.2	5.0	0.0	1.4	81	34	0	114	32	7.4	4.8
Jan. 1-10, 1956		11	0.16	10	2.8	7.8	1.7	48	6.8	5.0	0.0	1.8	83	37	0	118	32	7.0	5.2
Jan. 11-20		9.5	0.04	10	3.2	8.6	1.9	52	6.5	5.5	0.0	1.9	84	39	0	124	17	9.0	5.0
Jan. 21-31		11	0.14	10	2.4	8.2	1.8	48	6.8	5.0	0.0	1.0	82	35	0	120	27	8.4	5.2
Feb. 1-10		8.5	0.30	9.8	2.3	8.8	1.9	49	8.1	5.2	0.0	1.1	80	34	0	122	50	11	7.4
Feb. 11-20		9.5	0.28	8.7	2.2	7.4	1.7	40	8.1	5.0	0.0	0.9	73	31	0	107	50	10	7.6
Feb. 21-29		10	0.06	9.8	2.1	8.3	1.6	45	8.9	5.8	0.0	0.8	79	33	0	115	20	9.2	6.4
Mar. 1-10		11	0.06	9.4	2.3	8.5	1.6	46	8.0	6.8	0.0	1.6	75	33	0	115	6.8	4.6	5.7
Mar. 11-20		10	0.02	9.2	2.5	8.9	1.6	46	8.1	6.0	0.0	1.1	79	33	0	117	6.8	22	6.1
Mar. 21-31		9.7	0.03	8.3	2.2	7.2	1.5	38	6.1	5.5	0.0	1.0	70	30	0	99.5	25	9.1	5.7
Apr. 1-10		11	0.03	8.4	2.1	7.6	1.3	43	6.6	6.0	0.0	1.3	74	32	0	113	6.7	25	5.3
Apr. 11-20		9.3	0.03	8.2	2.0	7.5	1.4	41	6.2	5.0	0.0	1.2	64	31	0	108	11	10	8.3
Apr. 21-30		10	0.03	9.0	2.5	8.2	1.8	40	7.8	5.0	0.0	1.2	76	31	0	109	20	8.1	5.1
May 1-10		9.9	0.10	9.5	2.5	6.2	1.8	43	4.9	4.2	0.0	1.5	76	34	0	108	15	8.2	5.0
May 11-20		11	0.03	8.8	2.7	6.5	1.7	43	4.3	3.8	0.0	1.1	87	33	0	105	7.2	15	4.6
May 21-31		9.5	0.31	10	2.1	7.9	1.9	50	5.2	4.5	0.0	1.4	87	38	0	123	30	9.6	6.2
June 1-10		9.1	0.05	12	2.7	9.0	1.8	55	9.0	4.9	0.0	1.3	91	42	0	132	20	11	6.0

ROANOKE RIVER BASIN--Continued
 ROANOKE RIVER AT JAMESVILLE, N. C.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956.--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Calcium, mg./l.	Non-carbonate, mg./l.				Unfiltered	Filtered
June 11-20, 1956		10	0.04	11	2.6	7.5	1.8	51	9.6	4.3	0.1	1.3	80	38	0	118	7.0	20	9.2	5.6
June 21-30		8.2	.06	12	2.9	8.9	1.6	56	9.8	3.2	.1	1.1	88	41	0	128	7.1	27	10	5.7
July 1-10		6.0	.02	12	2.7	8.5	1.8	56	7.2	4.5	.1	1.6	79	41	0	128	6.9	17	9.5	5.5
July 11-20		6.3	.08	10	2.2	7.1	1.8	44	5.3	4.0	.1	1.5	69	34	0	111	6.8	25	8.9	4.9
July 21-31		6.5	.02	12	2.1	6.1	1.6	52	6.1	3.7	.1	1.3	77	39	0	119	6.9	17	8.1	5.4
Aug. 1-10		6.1	.01	12	2.1	7.7	1.6	49	7.4	4.0	.1	1.8	72	37	0	113	7.3	20	11	5.3
Aug. 11-20		5.7	.06	11	2.1	8.2	1.5	49	6.7	4.0	.1	2.3	72	37	0	113	6.9	35	11	5.7
Aug. 21-31		6.9	.10	12	2.9	7.6	1.7	53	7.8	4.4	.1	1.7	83	41	0	121	7.2	50	9.1	6.1
Sept. 1-10		2.8	.03	13	2.4	8.7	1.8	60	5.9	4.1	.3	1.3	79	42	0	127	6.8	7	8.3	5.1
Sept. 11-20		3.2	.06	12	3.2	8.5	2.0	58	4.8	4.6	.2	1.6	81	44	0	128	7.0	15	7.1	5.1
Sept. 21-30		6.6	.08	13	3.1	9.5	2.0	62	4.3	4.3	.3	1.6	83	45	0	131	7.0	10	8.7	5.9
Average		8.8	0.11	10	2.4	7.7	1.8	48	6.5	4.7	0.1	1.3	77	35	0	114	--	23	9.2	5.8

ROANOKE RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 4:30 p. m./

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

ROANOKE RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN ROANOKE RIVER BASIN IN NORTH CAROLINA

Chemical analyses, in parts per million, water year October 1955 to September 1956

Chemical analyses, in parts per million, water year October 1953 to September 1955

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (calculated)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium	Non- carbon- ate			
MAYO RIVER NEAR PRICE																		
Jan. 12, 1956	114	22	0.16	3.6	1.5	2.7	0.8	24	1.9	1.0	0.1	0.2	46	15	0	44.1	7.0	12
July 19	83	14	.01	4.4	1.4	3.4	1.2	27	1.8	1.1	.0	.7	41	17	0	61.8	6.7	5
DAN RIVER NEAR WENTWORTH																		
Jan. 12, 1956	384	16	0.26	4.1	1.3	3.3	1.1	26	1.9	1.6	0.1	0.3	43	16	0	51.1	7.3	27
July 18	286	14	.01	4.3	2.0	3.5	1.6	29	2.2	1.2	.0	.7	44	19	0	63.4	6.8	5
HOGAN CREEK NEAR MADISON																		
Feb. 1, 1956	7.72			3.8	1.0			26	0.7	1.0		0.0		14	0	46.3	7.2	
Sept. 18	.235							31	1.8	1.5				15	0	57.9	7.2	
SMITH RIVER AT SPRAY																		
Oct. 28, 1955		12	0.02	6.1	1.9	6.0	1.7	34	3.9	4.0	0.1	0.6	53	23	0	78.6	6.8	7
Jan. 12, 1956		12	.13	5.5	2.2	5.8	1.3	32	4.0	4.1	.1	.4	52	23	0	80.0	6.9	15
July 19	252	11	.00	5.7	1.8	7.3	1.4	30	4.6	5.8	.0	1.1	54.	21	0	84.2	6.7	3
WOLF ISLAND CREEK NEAR PELHAM																		
Feb. 1, 1956	19.4			6.4	1.0			41	2.5	3.0		1.4		20	0	85.6	6.9	
Sept. 19	5.92							52	1.5	6.0				34	0	112	7.3	
HOGAN CREEK NEAR PROVIDENCE																		
Jan. 31, 1956	30.5			7.6	3.2			44	3.5	3.0		0.3		32	0	91.0	7.0	
Sept. 19	1.28							59	1.4	3.2				35	0	107	7.5	

MOON CREEK NEAR PROVIDENCE

Year	Jan. 31, 1956	Feb. 28, 1956	Mar. 31, 1956	Apr. 30, 1956	May 31, 1956	June 30, 1956	July 31, 1956	Aug. 31, 1956	Sept. 30, 1956	Oct. 31, 1956	Nov. 30, 1956	Dec. 31, 1956
1955	11.6	10.2	6.4	2.0	2.6	38	0.9	34	0	78.8	6.9	
1956	10.2	7.6	2.8	2.9	2.6	45	1.7	31	0	87.0	7.0	
1957	9.56	--	--	--	1.8	48	--	28	0	88.7	7.3	

COUNTRYLINE CREEK NEAR SEMORA

	Jan. 31, 1956	May 18, 1956	Sept. 19, 1956	Dec. 31, 1956	Mar. 31, 1957	June 30, 1957	Sept. 30, 1957	Dec. 31, 1957	Mar. 31, 1958	June 30, 1958	Sept. 30, 1958	Dec. 31, 1958	Mar. 31, 1959	June 30, 1959	Sept. 30, 1959	Dec. 31, 1959	Mar. 31, 1960	June 30, 1960	Sept. 30, 1960	Dec. 31, 1960	Mar. 31, 1961	June 30, 1961	Sept. 30, 1961	Dec. 31, 1961	Mar. 31, 1962	June 30, 1962	Sept. 30, 1962	Dec. 31, 1962	Mar. 31, 1963	June 30, 1963	Sept. 30, 1963	Dec. 31, 1963	Mar. 31, 1964	June 30, 1964	Sept. 30, 1964	Dec. 31, 1964	Mar. 31, 1965	June 30, 1965	Sept. 30, 1965	Dec. 31, 1965	Mar. 31, 1966	June 30, 1966	Sept. 30, 1966	Dec. 31, 1966	Mar. 31, 1967	June 30, 1967	Sept. 30, 1967	Dec. 31, 1967	Mar. 31, 1968	June 30, 1968	Sept. 30, 1968	Dec. 31, 1968	Mar. 31, 1969	June 30, 1969	Sept. 30, 1969	Dec. 31, 1969	Mar. 31, 1970	June 30, 1970	Sept. 30, 1970	Dec. 31, 1970	Mar. 31, 1971	June 30, 1971	Sept. 30, 1971	Dec. 31, 1971	Mar. 31, 1972	June 30, 1972	Sept. 30, 1972	Dec. 31, 1972	Mar. 31, 1973	June 30, 1973	Sept. 30, 1973	Dec. 31, 1973	Mar. 31, 1974	June 30, 1974	Sept. 30, 1974	Dec. 31, 1974	Mar. 31, 1975	June 30, 1975	Sept. 30, 1975	Dec. 31, 1975	Mar. 31, 1976	June 30, 1976	Sept. 30, 1976	Dec. 31, 1976	Mar. 31, 1977	June 30, 1977	Sept. 30, 1977	Dec. 31, 1977	Mar. 31, 1978	June 30, 1978	Sept. 30, 1978	Dec. 31, 1978	Mar. 31, 1979	June 30, 1979	Sept. 30, 1979	Dec. 31, 1979	Mar. 31, 1980	June 30, 1980	Sept. 30, 1980	Dec. 31, 1980	Mar. 31, 1981	June 30, 1981	Sept. 30, 1981	Dec. 31, 1981	Mar. 31, 1982	June 30, 1982	Sept. 30, 1982	Dec. 31, 1982	Mar. 31, 1983	June 30, 1983	Sept. 30, 1983	Dec. 31, 1983	Mar. 31, 1984	June 30, 1984	Sept. 30, 1984	Dec. 31, 1984	Mar. 31, 1985	June 30, 1985	Sept. 30, 1985	Dec. 31, 1985	Mar. 31, 1986	June 30, 1986	Sept. 30, 1986	Dec. 31, 1986	Mar. 31, 1987	June 30, 1987	Sept. 30, 1987	Dec. 31, 1987	Mar. 31, 1988	June 30, 1988	Sept. 30, 1988	Dec. 31, 1988	Mar. 31, 1989	June 30, 1989	Sept. 30, 1989	Dec. 31, 1989	Mar. 31, 1990	June 30, 1990	Sept. 30, 1990	Dec. 31, 1990	Mar. 31, 1991	June 30, 1991	Sept. 30, 1991	Dec. 31, 1991	Mar. 31, 1992	June 30, 1992	Sept. 30, 1992	Dec. 31, 1992	Mar. 31, 1993	June 30, 1993	Sept. 30, 1993	Dec. 31, 1993	Mar. 31, 1994	June 30, 1994	Sept. 30, 1994	Dec. 31, 1994	Mar. 31, 1995	June 30, 1995	Sept. 30, 1995	Dec. 31, 1995	Mar. 31, 1996	June 30, 1996	Sept. 30, 1996	Dec. 31, 1996	Mar. 31, 1997	June 30, 1997	Sept. 30, 1997	Dec. 31, 1997	Mar. 31, 1998	June 30, 1998	Sept. 30, 1998	Dec. 31, 1998	Mar. 31, 1999	June 30, 1999	Sept. 30, 1999	Dec. 31, 1999	Mar. 31, 2000	June 30, 2000	Sept. 30, 2000	Dec. 31, 2000	Mar. 31, 2001	June 30, 2001	Sept. 30, 2001	Dec. 31, 2001	Mar. 31, 2002	June 30, 2002	Sept. 30, 2002	Dec. 31, 2002	Mar. 31, 2003	June 30, 2003	Sept. 30, 2003	Dec. 31, 2003	Mar. 31, 2004	June 30, 2004	Sept. 30, 2004	Dec. 31, 2004	Mar. 31, 2005	June 30, 2005	Sept. 30, 2005	Dec. 31, 2005	Mar. 31, 2006	June 30, 2006	Sept. 30, 2006	Dec. 31, 2006	Mar. 31, 2007	June 30, 2007	Sept. 30, 2007	Dec. 31, 2007	Mar. 31, 2008	June 30, 2008	Sept. 30, 2008	Dec. 31, 2008	Mar. 31, 2009	June 30, 2009	Sept. 30, 2009	Dec. 31, 2009	Mar. 31, 2010	June 30, 2010	Sept. 30, 2010	Dec. 31, 2010	Mar. 31, 2011	June 30, 2011	Sept. 30, 2011	Dec. 31, 2011	Mar. 31, 2012	June 30, 2012	Sept. 30, 2012	Dec. 31, 2012	Mar. 31, 2013	June 30, 2013	Sept. 30, 2013	Dec. 31, 2013	Mar. 31, 2014	June 30, 2014	Sept. 30, 2014	Dec. 31, 2014	Mar. 31, 2015	June 30, 2015	Sept. 30, 2015	Dec. 31, 2015	Mar. 31, 2016	June 30, 2016	Sept. 30, 2016	Dec. 31, 2016	Mar. 31, 2017	June 30, 2017	Sept. 30, 2017	Dec. 31, 2017	Mar. 31, 2018	June 30, 2018	Sept. 30, 2018	Dec. 31, 2018	Mar. 31, 2019	June 30, 2019	Sept. 30, 2019	Dec. 31, 2019	Mar. 31, 2020	June 30, 2020	Sept. 30, 2020
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SOUTH HYCO CREEK NEAR CONCORD

	18.3	8.7	3.4		50	3.8	6.0		0.1	36	0	109	7.2
Jan. 31, 1956	18.9	8.3	3.3		50	4.9	3.1		.7	34	0	101	7.1
May 17	19.3	--	--		56	2.4	3.8		--	30	0	103	7.4
Sept. 19	1.93	--	--										

MAHO CREEK NEAR WOODSDALE

Nov. 13, 1955	10.9	5.8	2.2	37	2.6	4.2	0.6	24	0	76.6	6.8
Jan. 13, 1956	11.0	5.8	1.7	33	2.5	3.5	.4	21	0	68.5	7.1
May 17	12.7	5.4	1.9	33	2.3	2.8	.4	21	0	67.3	6.9
Sept. 19	284	--	--	38	1.1	2.7	--	25	0	72.3	6.8

AARONS CREEK NEAR OAK HILL

[illegible]

LITTLE GRASS CREEK NEAR STOVALL

Jan. 13, 1956	5.76		6.5	2.6		36	2.9	6.0	0.3	27	0	78.9	7.0
May 17	7.22		5.9	2.0		34	1.4	2.8	.4	23	0	69.1	6.8

ROANOKE RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN ROANOKE RIVER BASIN IN NORTH CAROLINA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued																			
Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (calculated)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color	
														Calcium, mag- nesium	Non- carbon- ate				
SMITH CREEK NEAR NORLINA																			
Jan. 11, 1956	26.1			3.9	1.8			26	2.3	3.0		0.8			17	0	61.4	6.8	
Sept. 18	8.16			4.0	1.7			33	1.4	3.0		1.2			17	0	64.4	6.7	
SIX POUND CREEK NEAR OAKVILLE																			
Nov. 17, 1955	6.39			3.2	1.7			29	2.6	3.0		0.4			15	0	56.1	6.8	
Jan. 11, 1956	11.3			3.2	1.6			22	1.8	3.0		.5			15	0	50.6	6.7	
Sept. 18	7.60			2.8	1.2			22	1.6	2.0		1.2			12	0	48.1	6.8	
STONEHOUSE CREEK NEAR LITTLETON																			
Nov. 11, 1955	4.02			5.4	3.3			45	4.5	3.5		0.5			27	0	87.0	6.9	
Jan. 12, 1956	11.7			6.1	2.5			33	4.6	3.5		1.0			26	0	78.7	6.8	
Sept. 18	1.12			5.2	2.4			40	1.1	3.0		1.0			23	0	73.6	6.7	
ROANOKE RIVER NEAR ROANOKE RAPIDS																			
Feb. 1, 1956	6,250	12	0.23	11	2.2	13	2.0	59	13	7.0	0.0	0.7	90	37	0	146	7.1	20	
Aug. 1	4,880	7.6	.04	20	2.7	15	2.2	87	13	6.0	.1	1.5	111	61	0	189	7.0	23	
ROANOKE RIVER NEAR SCOTLAND NECK																			
Feb. 7, 1956	7,610	13	0.32	8.8	2.4	7.4	1.8	41	11	5.8	0.0	0.8	71	32	0	108	6.9	80	
Mar. 1	5,390	12	.03	8.4	2.5	8.4	1.4	47	9.2	2.0	.0	.9	68	31	0	118	7.0	7	
Aug. 1	3,230	7.7	.05	11	2.3	11	1.9	56	9.6	4.5	.0	2.1	78	38	0	131	7.2	55	

PAMLICO RIVER BASIN

FISHING CREEK NEAR ENFIELD, N. C.

LOCATION.--Temperature recorder at gaging station on right bank, 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, 4½ miles downstream from Rocky Creek, and at mile 27.7.

DRAINAGE AREA.--521 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1948 to September 1949, October 1953 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 82°F July 2-7; minimum, 39°F Dec. 17-26, 31, Jan. 1-12.

EXTREMES, 1948-49, 1953-55.--Water temperatures: Maximum, 86°F July 27-29, 1955; minimum, 33°F Dec. 28, 1948.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, February and August 1956

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 (micro- mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Feb. 1, 1956	257	15	0.60	4.7	1.8	5.4	1.0	33	1.9	4.5	0.0	0.1	51	19	0	73.0	7.3	8
Aug. 1, 1956	398	15	.02	4.6	1.7	4.1	1.5	24	2.2	2.2	.1	1.4	45	18	0	56.7	6.4	10

Temperature (°F) of water, water year October 1955 to September 1956
/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.....	71	71	56	55	46	45	39	39	42	42	48	48	53	52	70	69	72	72	81	81	75	73	78	77
2.....	71	70	55	54	45	44	39	39	42	42	48	48	54	53	69	68	72	72	82	81	73	73	78	78
3.....	70	69	53	52	44	43	39	39	43	43	48	48	58	58	68	68	72	68	82	81	73	73	78	78
4.....	68	67	53	53	45	44	39	39	44	43	49	48	61	58	68	68	68	65	82	81	73	73	78	78
5.....	67	66	53	52	46	45	39	39	44	44	51	49	62	61	68	68	65	64	82	81	74	73	78	78
6.....	66	66	52	50	46	46	39	39	45	44	52	51	62	62	68	68	65	64	82	82	75	74	78	78
7.....	66	66	50	49	46	46	39	39	46	45	57	52	63	62	68	67	66	65	82	81	75	75	78	76
8.....	66	66	49	48	46	46	39	39	46	46	58	57	63	62	67	65	67	66	81	76	76	75	76	74
9.....	66	66	48	48	46	46	39	39	46	46	58	58	62	60	65	64	68	67	76	76	77	76	74	72
10.....	66	66	48	48	46	45	39	39	47	46	57	57	60	59	64	64	70	68	76	75	78	77	72	69
11.....	66	64	48	48	45	45	39	39	48	47	57	56	59	57	64	64	71	70	75	75	78	77	69	68
12.....	64	63	48	48	46	44	40	39	49	48	57	56	57	54	66	64	71	71	75	75	78	78	68	68
13.....	63	63	48	48	44	42	41	40	49	49	56	56	54	54	68	66	72	71	75	75	78	76	68	68
14.....	63	63	48	48	42	41	41	41	49	49	58	56	54	54	71	68	74	72	78	75	78	75	69	68
15.....	63	63	49	48	41	40	41	41	49	49	58	56	57	54	72	71	76	74	76	76	75	75	71	69

PAMLICO RIVER BASIN--Continued
FISHING CREEK NEAR ENFIELD, N. C.--Continued

Temperature (° F) of water, water year October 1955 to September 1956.--Continued
/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
16.....	63	62	51	49	40	40	41	41	49	49	56	52	60	57	72	72	76	76	76	76	75	75	72	71
17.....	62	60	52	51	40	39	41	41	49	49	52	50	60	60	72	71	77	76	76	76	75	73	72	72
18.....	60	59	52	52	39	39	41	41	50	49	50	49	60	59	71	71	78	77	76	76	77	76	73	73
19.....	59	58	52	52	39	39	41	41	51	50	49	49	59	59	71	69	78	77	76	76	78	77	73	71
20.....	58	58	52	50	39	39	41	41	51	51	49	48	59	58	70	70	76	75	76	76	78	71	71	71
21.....	58	58	50	48	39	39	41	41	51	51	48	48	58	58	70	69	75	73	76	74	78	76	71	69
22.....	58	57	48	48	39	39	41	41	51	50	48	48	58	58	69	69	74	73	74	74	76	74	69	66
23.....	57	57	48	48	39	39	41	41	50	48	49	48	59	58	70	69	76	74	75	74	74	72	69	66
24.....	57	57	48	48	39	39	41	41	48	48	49	49	59	59	70	70	77	76	77	75	72	71	69	69
25.....	57	57	48	48	39	39	41	41	48	46	49	49	59	59	70	70	79	77	77	77	71	69	67	67
26.....	57	56	48	48	40	39	41	41	48	46	49	49	60	59	70	69	80	79	78	77	72	71	67	65
27.....	56	56	48	48	40	40	41	41	48	48	50	49	62	60	69	69	81	80	78	78	73	72	65	63
28.....	56	56	48	47	40	40	41	41	48	48	50	50	65	62	69	69	81	81	79	79	73	73	65	63
29.....	56	56	47	47	40	40	41	41	48	48	50	50	67	65	70	69	81	81	79	78	74	73	62	62
30.....	56	56	47	46	40	40	41	41	48	48	51	50	70	67	69	68	81	81	78	77	76	74	62	62
31.....	56	56	--	--	40	39	42	41	--	--	52	51	--	--	72	68	--	--	77	75	77	76	--	--
Average.....	62	62	50	49	42	42	40	40	48	47	52	51	60	58	69	68	74	73	78	77	75	74	71	70

PAMLICO RIVER BASIN--Continued

TAR RIVER AT GREENVILLE, N. C.

LOCATION.--At bridge on N. C. Highway 11, 600 feet downstream from Atlantic Coast Line Railroad bridge at Greenville, Pitt County, and at mile 21.0. DRAINAGE AREA.--2,620 square miles.

RECORDS AVAILABLE.--Chemical analyses:

Water temperatures: October 1948 to September 1949, January 1955 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 79 ppm Oct. 1-10; minimum, 51 ppm Feb. 21-29, Apr. 1-10.

Hardness: Maximum, 24 ppm Sept. 11-20; minimum, 13 ppm Mar. 21-31.

Specific conductance: Maximum daily, 107 micromhos July 3, Sept. 21; minimum daily, 43.5 micromhos July 24.

Water temperatures: Maximum, 87°F June 28, July 2-3; minimum, 35°F Jan. 8-10, 27-28.

EXTREMES, January 1955 to September 1956.--Dissolved solids: Maximum, 79 ppm Aug. 1-10, Oct. 1-10, 1955; minimum, 51 ppm Feb. 21-29, Apr. 1-10, 1956.

Hardness: Maximum, 25 ppm June 1-10, 1955; minimum, 13 ppm Mar. 21-31, 1956.

Specific conductance: Maximum daily, 107 micromhos July 3, Sept. 21, 1956; minimum daily, 43.4 micromhos July 15, 1955.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955.....		15	0.08	5.6	1.6	6.6	2.1	22	5.7	7.5	0.0	2.9	79	20	2	81.6	6.9	120
Oct. 11-20.....		17	.10	6.2	1.8	7.2	2.0	26	4.7	7.5	.0	2.4	77	23	2	88.6	6.8	120
Oct. 21-31.....		16	.11	5.8	1.7	7.2	2.0	27	5.7	7.5	.0	2.0	76	21	0	90.5	6.9	75
Nov. 1-10.....		13	.24	5.9	2.8	7.6	1.9	26	5.2	8.8	.0	1.8	72	22	1	92.1	6.9	55
Nov. 11-20.....		16	.43	5.6	2.2	7.3	1.9	23	4.9	8.2	.1	1.6	69	23	0	88.6	6.8	60
Nov. 21-30.....		15	.33	5.2	1.8	6.8	2.2	24	6.1	8.5	.0	1.4	67	20	1	83.1	6.7	70
Dec. 1-10.....		16	.68	5.2	1.8	7.1	1.9	24	5.1	8.2	.0	2.1	72	20	1	84.2	6.8	55
Dec. 11-20.....		18	.70	5.2	1.6	7.2	1.8	23	5.0	8.0	.0	1.9	69	20	1	83.4	6.8	50
Dec. 21-31.....		15	.65	5.2	1.7	7.5	1.6	24	6.1	8.0	.0	1.9	68	20	0	85.1	7.0	30
Jan. 1-10, 1956.....		14	.55	5.6	1.5	6.2	1.3	25	3.3	6.2	.1	1.3	56	20	0	81.1	7.1	25
Jan. 11-20.....		13	.53	5.9	1.3	6.4	1.3	23	4.4	6.0	.1	1.4	59	19	0	80.8	6.9	31
Jan. 21-31.....		12	.44	5.2	1.4	6.4	1.4	21	5.0	6.5	.1	1.4	59	19	2	80.4	6.6	32
Feb. 1-10.....		10	.15	4.8	1.5	5.9	1.5	18	7.0	6.5	.0	1.8	54	18	3	76.8	6.7	22
Feb. 11-20.....		10	.10	4.4	1.0	4.8	1.5	12	8.4	5.5	.1	1.7	57	15	5	65.6	6.6	23
Feb. 21-29.....		10	.08	4.6	1.0	5.2	1.5	17	6.3	4.5	.0	1.5	51	15	1	70.6	6.7	22
Mar. 1-10.....		9.9	.07	4.5	1.5	6.0	1.6	17	6.0	7.8	.0	1.0	59	17	3	74.6	6.8	38
Mar. 11-20.....		9.3	.04	4.5	1.1	5.4	1.6	18	4.7	7.0	.0	.9	58	16	1	71.6	6.8	35
Mar. 21-31.....		8.9	.09	4.0	.8	4.5	1.6	14	6.1	5.5	.0	1.2	57	13	2	63.1	6.7	40
Apr. 1-10.....		9.7	.41	4.6	1.2	6.2	1.4	21	5.5	6.0	.0	2.5	51	16	0	74.6	6.5	50
Apr. 11-20.....		8.4	.08	4.2	1.0	5.1	1.7	17	6.3	5.5	.0	2.0	44	15	1	65.8	6.6	50
Apr. 21-30.....		10	.54	5.2	.9	5.7	1.5	19	5.3	6.5	.0	2.3	53	17	1	73.5	6.6	65
May 1-10.....		9.2	.14	5.2	1.1	5.1	1.6	20	2.7	5.2	.0	2.6	65	18	1	72.9	7.0	45
May 11-20.....		13	.71	5.4	1.9	5.6	1.7	25	3.3	5.2	.0	2.8	73	21	1	75.2	6.7	80
May 21-31.....		12	.52	6.3	1.8	7.6	1.6	31	4.7	7.2	.0	2.0	67	23	0	87.4	7.1	36

PAMLICO RIVER BASIN--Continued
TAR RIVER AT GREENVILLE, N. C.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956.--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
June 1-10, 1956		9.9	0.10	5.8	1.9	6.1	1.6	25	6.1	6.0	0.0	2.3	61	22	2	79.3	6.9	20
June 11-20		14	.22	5.6	1.6	6.3	1.6	24	6.2	6.0	0.0	3.0	65	21	1	79.5	7.4	40
June 21-30		12	.23	6.0	1.9	7.7	1.7	32	4.5	7.0	.0	2.2	62	23	0	91.2	6.7	14
July 1-10		11	.12	5.8	1.8	7.9	2.1	26	6.7	6.0	.1	2.8	63	22	0	89.6	7.0	30
July 11-20		8.9	.02	4.8	1.2	5.1	1.8	16	7.0	5.0	.1	2.5	52	17	4	71.5	7.1	35
July 21-31		12	.26	5.0	1.4	5.3	1.9	19	7.3	4.5	.0	1.9	64	18	3	65.2	6.6	60
Aug. 1-10		13	.03	3.7	1.7	5.2	1.7	19	5.0	5.2	.1	2.2	55	16	1	68.9	6.8	27
Aug. 11-20		11	.09	4.0	1.7	5.5	1.7	20	4.2	5.8	.2	1.8	56	17	1	65.7	7.0	40
Aug. 21-31		14	.22	4.8	1.0	6.5	1.9	22	2.5	6.5	.1	2.3	66	16	0	77.3	6.6	50
Sept. 1-10		12	.15	5.5	1.9	6.7	2.0	24	5.8	7.2	.1	2.1	64	22	2	82.5	7.0	40
Sept. 11-20		12	.22	5.4	2.6	6.9	2.0	23	8.2	8.0	.1	2.3	70	24	5	86.9	7.0	40
Sept. 21-30		9.8	.18	5.5	2.3	8.0	2.1	25	8.7	8.8	.1	1.8	71	23	2	95.2	6.7	28
Average		12	0.27	5.2	1.6	6.3	1.7	22	5.5	6.6	0.0	2.0	63	20	2	79.0	--	45

PAMLICO RIVER BASIN--Continued

TAR RIVER AT GREENVILLE, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 3 p.m./

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

PAMLICO RIVER BASIN--Continued

TAR RIVER AT GRIMESLAND, N. C.

LOCATION.--At bridge on county road, 1 mile northeast of Grimesland, Pitt County, 0.3 mile upstream from Chicod Creek, and 1.8 miles upstream from Grinde Creek.

DRAINAGE AREA.--2,740 square miles.

RECORDS AVAILABLE.--Chemical analyses: September 1954 to September 1956.

Water temperatures: October 1954 to September 1956.

EXTREMES, 1955-56.--Hardness: Maximum, 72 ppm Sept. 28; minimum, 16 ppm Feb. 12-20, Mar. 21-31.

Specific conductance: Maximum daily, 621 micromhos Sept. 28; minimum daily, 56.2 micromhos Mar. 23.

Water temperatures: Maximum, 80 F on many days during summer months; minimum, 35 F Dec. 19.

EXTREMES, 1954-56.--Hardness: Maximum, 1,940 ppm Oct. 15 (p.m.), 1955; minimum, 13 ppm July 21, 1955.

Specific conductance: Maximum daily, 1,500 micromhos Oct. 15 (p.m.), 1955; minimum daily, 149.9 micromhos July 21, 1955.

Water temperatures: Maximum, 92 F July 28, Aug. 3, 1955; minimum, 35 F Dec. 23 (a.m.), 1954, Dec. 19, 1955.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. NO discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium-magnesium	Non-carbonate			
Oct. 1-10, 1955	15	0.16	5.9	2.2	7.0	2.2	24	6.7	7.5	0.0	2.5	85	89.0	24	4	89.0	6.7	180
Oct. 11-20	16	.15	6.6	1.7	8.0	2.0	27	6.5	8.5	.1	2.5	83	83	23	1	95.6	6.9	90
Oct. 21-31	18	.43	6.7	1.8	8.4	2.0	27	6.0	9.2	.0	2.4	81	77	24	2	98.7	6.5	60
Nov. 1-10	16	.38	6.4	2.2	8.8	1.9	29	6.4	10	.0	1.8	77	75	25	1	100	6.6	55
Nov. 11-20	17	.36	6.4	1.8	8.3	1.9	30	4.9	8.2	.0	1.6	75	71	24	0	95.4	6.8	50
Nov. 21-30	16	.37	6.0	1.6	7.7	2.0	26	5.7	8.8	.0	1.3	71	90	22	0	88.6	6.6	60
Dec. 1-10	17	.31	8.4	2.4	8.8	2.0	37	9.8	9.2	.0	.6	71	71	31	1	116	6.8	32
Dec. 11-20	15	.49	6.0	1.5	7.8	1.6	25	5.5	9.0	.0	2.5	88.9	88	21	0	91.3	7.1	45
Dec. 21-31	15	.53	5.9	1.7	7.7	1.6	25	5.0	7.8	.0	2.7	71	87	22	1	88.9	6.7	33
Jan. 1-10, 1956	15	.50	5.9	1.4	7.0	1.4	25	4.8	8.5	.0	1.8	87	87	20	0	89.1	7.0	28
Jan. 11-20	13	.52	6.0	2.1	6.9	1.2	28	5.7	8.0	.0	1.8	87	87	24	2	86.2	6.7	25
Jan. 21-31	13	.45	5.6	1.5	7.0	1.3	21	5.7	9.0	.0	1.6	83	83	20	3	87.3	6.7	30
Feb. 1-9	10	.16	5.6	1.2	6.7	1.8	19	9.1	8.2	.0	1.7	57	57	19	3	83.0	6.7	45
Feb. 10	--	--	--	--	--	--	12	11	16	--	--	--	--	18	8	106	6.8	--
Feb. 11	--	--	--	--	--	--	14	11	18	--	--	--	--	19	8	111	6.9	--
Feb. 12-20	9.2	.09	4.5	1.2	5.3	1.8	12	9.9	7.0	.0	1.8	52	52	16	6	69.1	6.8	90
Feb. 21-29	11	.09	5.1	1.5	6.5	1.9	14	9.8	8.8	.0	3.7	80	84	19	8	80.2	6.5	45
Mar. 1-10	9.2	.11	5.8	1.3	6.8	1.6	13	6.6	9.0	.0	1.9	60	64	20	5	85.8	7.1	45
Mar. 11-15, 18-20	9.8	.63	7.6	1.7	9.3	2.3	30	11	7.0	--	2.0	65	65	19	2	85.1	6.9	45
Mar. 16-17	7.9	.04	4.7	1.0	7.0	2.0	14	6.4	7.0	.0	2.3	60	60	16	5	119	6.8	--
Mar. 21-31	7.9	.04	4.7	1.0	7.0	2.0	14	6.4	7.0	.0	2.3	60	60	16	5	71.3	6.8	--

Apr. 1-10, 1956	9.7	0.48	5.2	1.0	6.9	1.8	20	6.2	8.0	0.0	2.9	64	17	1	81.5	6.8	55
Apr. 11-20	8.1	.51	5.1	1.1	2.9	2.0	18	6.5	7.2	.0	2.7	58	17	3	70.1	6.7	55
Apr. 21-28, 28-30	9.9	.58	4.9	1.1	2.9	2.0	23	7.3	7.0	.0	3.0	58	17	1	70.2	7.0	75
Apr. 21-28	11	.63	7.8	3.1	18.5	3.0	22	7.3	7.0	.0	2.9	61	33	0	18.2	6.3	55
May 1-10	10	.24	4.9	1.2	5.6	1.7	22	7.4	5.2	.0	2.9	60	17	0	71.2	6.3	55
May 11-20	12	.08	5.1	1.5	5.7	1.9	22	4.4	6.0	.0	2.4	60	13	1	74.9	7.2	40
May 21-28, 30-31	13	.29	6.3	1.8	7.4	2.2	28	4.6	7.5	.0	3.9	66	23	0	95.0	6.8	36
May 29	--	--	--	--	--	--	42	7.5	20	--	--	--	34	0	157	7.2	--
June 1-10	9.4	.12	5.9	1.8	7.1	1.7	27	7.2	7.0	.0	2.5	71	22	0	86.9	6.9	22
June 11-20	14	.28	4.8	2.2	5.7	2.0	25	6.3	5.0	.1	3.6	69	21	0	79.0	6.7	37
June 21-30	12	.12	6.2	1.9	7.0	1.8	30	7.7	6.0	.1	2.4	85	23	0	88.9	7.2	23
July 1-10	8.9	.00	6.3	1.7	7.7	2.0	30	6.0	7.0	.0	2.3	59	23	0	87.5	7.2	15
July 11-20	13	.23	6.0	1.0	6.1	1.9	19	10	5.5	.0	2.2	64	19	3	77.8	7.0	45
July 21-31	13	.22	5.6	1.0	5.8	1.9	20	6.6	4.5	.0	1.6	63	18	2	68.4	6.7	50
Aug. 1-10	13	.04	4.4	1.8	5.4	1.6	20	5.8	6.0	.1	1.9	59	18	2	70.0	6.9	32
Aug. 11-20	13	.20	6.0	.5	6.9	1.9	20	6.3	7.0	.0	2.5	68	17	1	79.2	6.8	40
Aug. 21-31	12	.05	4.4	1.9	6.2	1.7	20	6.3	6.2	.1	2.1	59	19	2	74.1	6.9	30
Sept. 1-10	12	.06	6.1	1.8	8.0	1.8	27	7.4	6.8	.1	1.7	87	23	1	88.9	6.8	30
Sept. 11-20	11	.09	5.6	1.0	5.6	2.2	19	6.3	6.0	.0	2.6	63	18	3	77.0	6.6	45
Sept. 21-27	12	.08	6.5	1.4	8.1	1.9	23	8.4	7.9	.1	2.0	69	22	3	91.9	6.8	27
Sept. 28	--	--	9.9	11	--	--	26	28	154	--	2.1	--	72	51	621	6.9	--
Sept. 28-30	13	.05	7.6	2.9	20	2.5	26	11	31	--	1.9	--	31	10	185	7.0	45
Weighted average	12	0.25	5.8	1.6	7.1	1.8	23	6.7	8.0	0.0	2.3	67	21	2	87.6	--	45

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

PAMLICO RIVER BASIN--Continued

TAR RIVER AT GRIMESLAND, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 9 a. m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	54	40	60	35	45	60	65	75	80	75	80
2	73	54	47	55	40	45	60	65	75	80	75	80
3	72	55	49	50	40	50	60	70	75	80	75	80
4	71	52	38	40	40	50	65	70	75	80	75	80
5	70	53	38	46	40	55	65	70	75	80	75	80
6	71	51	48	40	50	55	65	70	75	80	75	80
7	70	57	38	42	50	60	60	70	70	80	75	80
8	70	56	40	41	50	60	60	63	70	80	75	80
9	70	59	47	38	50	50	60	70	70	80	80	80
10	67	58	36	40	50	--	60	65	70	80	80	80
11	70	59	45	38	50	--	60	65	75	80	80	80
12	70	57	40	38	--	55	60	70	75	80	80	80
13	70	57	41	38	--	60	60	70	75	75	80	80
14	66	60	40	38	--	60	60	70	75	75	80	80
15	67	58	40	40	--	60	60	70	75	75	80	75
16	62	58	41	40	--	60	60	70	75	75	80	75
17	61	59	38	38	--	60	60	70	75	75	80	75
18	61	56	36	40	--	60	60	75	75	75	80	75
19	62	54	35	40	--	55	60	70	75	75	80	75
20	63	52	36	40	--	55	60	75	75	75	80	75
21	62	50	36	40	50	60	55	75	80	80	80	75
22	62	49	38	40	--	60	55	75	80	80	80	75
23	61	48	36	40	--	60	55	75	80	80	80	75
24	60	40	45	40	--	60	60	75	80	75	80	75
25	61	42	45	40	--	60	60	75	80	75	80	75
26	61	51	55	40	--	55	60	75	80	75	80	75
27	60	--	40	40	--	60	60	75	80	75	80	75
28	60	55	40	35	--	60	60	75	80	75	80	75
29	61	47	--	35	--	60	65	75	80	80	80	75
30	60	44	41	35	--	55	65	75	80	75	80	65
31	61	--	40	35	--	60	--	75	--	75	80	--
Average	65	53	41	41	--	57	60	71	76	78	79	77

PAMLICO RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN PAMLICO RIVER BASIN IN NORTH CAROLINA

Chemical analyses, in parts per million, water year October 1955 to September 1956

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro- mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
TABBS CREEK NEAR KITTRELL																		
Nov. 23, 1955	22.8			6.4	3.1			44	4.6	6.0		1.0		29	0	98.5	7.0	
Jan. 11, 1956	25.3			7.6	2.7			45	3.2	6.0		.6		30	0	96.2	7.0	
CEDAR CREEK NEAR LOUISBURG																		
Nov. 19, 1955	19.9	24	0.97	4.5	1.7	6.7	1.7	35	1.7	3.5	0.0	0.2	62	18	0	70.7	6.7	37
Jan. 12, 1956	25.8			4.2	1.2		30	30	1.6	3.5		.5		16	0	62.0	6.8	
CROOKED CREEK NEAR BUNN																		
Nov. 19, 1955	13.5	22	1.5	2.8	1.2	6.7	1.4	28	1.2	3.5	0.0	0.1	54	12	0	58.5	6.6	80
Jan. 12, 1956	17.3			2.2	.7		20	20	.8	3.5		.7		8	0	46.9	6.8	
Sept. 20	4.49			--	--		26	26	1.2	3.2		--		10	0	53.2	7.1	
CYPRESS CREEK NEAR BUNN																		
Nov. 19, 1955	12.2	21	1.1	3.0	1.5	6.6	2.1	27	1.4	4.0	0.1	0.1	54	14	0	61.0	6.7	75
Jan. 12, 1956	22.1			2.5	.9		22	22	1.2	3.5		.8		10	0	49.3	6.8	
Sept. 20	1.71			--	--		29	29	.2	3.2		--		14	0	57.5	7.0	
SANDY CREEK NEAR ALERT																		
Nov. 23, 1955	33.5			3.2	1.5			25	2.7	4.5		0.9		14	0	59.7	6.8	
Jan. 11, 1956	36.0			3.9	1.2			24	1.8	3.5		1.0		15	0	56.7	6.8	
Sept. 20	9.06			--	--			27	1.1	3.5		--		13	0	55.7	6.8	
SAPONY CREEK NEAR NASHVILLE																		
Feb. 1, 1956	256	8.7	0.58	5.8	1.8	5.5	0.8	28	1.6	6.0	0.0	0.3	45	22	0	75.2	6.7	18
July 31	70.5	10	.42	5.2	1.9	2.1	.8	23	2.4	3.1	.1	2.4	39	21	2	58.0	6.9	130

PAMLICO RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN PAMLICO RIVER BASIN IN NORTH CAROLINA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 (micro- mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
TAR RIVER NEAR NASHVILLE																		
Feb. 1, 1956	256	17	0.44	5.0	1.7	6.1	1.0	30	2.6	4.8	0.0	0.2	54	19	0	71.4	7.0	28
July 31	860	17	.01	4.6	1.1	5.0	1.5	25	2.9	3.2	.2	1.2	49	16	0	58.6	6.6	7
SHOCCO CREEK NEAR ELBERON																		
Nov. 22, 1955	10.9			3.2	1.4			27	2.4	3.4		1.3		14	0	54.2	6.7	
Jan. 11, 1956	16.8			3.6	1.2			24	1.9	3.0		.3		14	0	53.0	6.7	
Sept. 20	3.88			--	--			29	.8	3.0		--		16	0	60.1	7.1	
TAR RIVER AT TARBORO																		
Feb. 1, 1956	1,160	12	0.48	4.8	1.2	6.6	1.3	25	5.3	5.8	0.0	0.7	50	17	0	74.4	7.0	8
July 31	1,300	13	.02	5.1	1.1	4.8	1.7	19	4.9	3.8	.0	2.3	46	17	1	61.5	6.6	20
GRINDLE CREEK NEAR PACTOLUS																		
Feb. 2, 1956	34.5			8.8	1.0			12	21	11		1.9		26	16	116	6.1	
Sept. 19	6.26			10	2.1			23	22	10		2.2		34	15	135	6.3	
HERRING RUN NEAR WASHINGTON																		
Jan. 26, 1956	12.5	11	0.71	2.8	1.0	4.9	1.4	2	11	7.8	0.0	0.5	42	11	9	67.9	5.0	15
July 11	29.5	7.5	.38	2.6	.4	3.4	1.1	3	8.0	2.5	.1	.5	27	8	6	50.8	4.9	100
DURHAM CREEK AT EDWARD																		
Feb. 2, 1956	28.4			3.2	1.3			5	4.5	8.5		0.0		13	10	48.0	5.7	
Sept. 19	0			43	5.1			174	2.3	6.5		3.0		129	0	289	7.1	

NEUSE RIVER BASIN
FLAT RIVER AT DAM, NEAR BAHAMA, N. C.

LOCATION.--At gaging station on right bank, 900 feet downstream from Durham municipal dam, 3 miles southeast of Bahama, Durham County, and 5 miles upstream from confluence of Eno River.

DRAINAGE AREA.--11 square miles.

RECORDS AVAILABLE.--October 1955 to September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on rapid filtration at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 14, 1955	46	7.5	0.05	3.4	1.0	2.1	1.8	14	3.1	2.5	0.0	1.0	43	13	1	45.4	6.2	35
Nov. 16	28	11	.26	4.6	.9	3.8	2.2	23	4.3	3.8	.0	.4	61	15	0	57.2	6.6	50
Dec. 20	50	12	.06	4.8	1.2	2.3	1.5	21	2.4	3.2	.0	.6	49	17	0	57.2	6.9	40
Jan. 17, 1956	12	12	.02	4.6	1.2	3.6	1.6	22	3.6	3.0	.0	.2	59	16	0	68.4	6.6	35
Feb. 16	48	10	.02	4.6	.9	3.4	1.2	17	6.0	4.2	.0	.6	48	15	0	59.8	6.8	40
Mar. 15	223	12	.05	4.8	1.1	3.9	1.0	18	4.6	4.2	.0	.4	49	16	2	74.9	6.8	30
Apr. 17	296	9.4	.06	4.0	1.0	2.6	.8	15	5.1	3.0	.0	.1	47	14	2	50.4	6.5	40
May 15	87	8.1	.06	3.8	1.0	2.3	1.3	16	2.0	2.2	.0	.6	36	14	0	46.9	6.4	40
June 14	13	9.6	.02	4.4	1.0	3.2	1.2	18	2.2	2.5	.0	.8	41	15	0	53.0	6.3	30
July 16	15	10	.07	4.4	.8	4.6	1.6	20	4.8	2.8	.0	1.2	49	14	0	55.2	6.4	25
Aug. 15	39	11	.04	4.8	1.0	4.9	2.3	27	2.8	2.8	.0	.6	48	18	0	61.8	6.5	18
Sept. 17	6.8	9.5	.00	4.8	.8	3.5	1.5	24	2.8	2.5	.1	.5	45	15	0	58.9	6.4	8

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR NORTHSIDE, N. C.

LOCATION.--At gaging station on right bank, 10 feet downstream from Fish Dam Bridge, 1½ miles downstream from Rocky Creek, 2½ miles downstream from Seaboard Airline Railroad bridge, and 2½ miles south of Northside, Granville County.

DRAINAGE AREA.--526 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180° C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25° C)	pH	Color
														Calcium	Non-carbonate			
Oct. 14, 1955	552	12	0.09	5.9	1.7	11	2.5	32	4.6	7.8	0.0	2.6	75	22	0	105	6.5	30
Nov. 16	84	17	.12	7.6	2.6	12	2.8	43	7.1	10	.1	3.0	95	30	0	134	6.6	20
Dec. 9	120	14	.07	6.8	2.2	11	2.1	39	5.4	9.0	.1	2.1	81	26	0	112	6.7	20
Jan. 17, 1956	65	14	.03	8.4	2.4	16	2.5	55	5.7	9.2	.1	2.0	101	31	0	151	6.9	40
Feb. 16	342	14	.04	6.6	1.6	7.6	1.4	27	8.1	7.2	.1	.1	70	23	1	95.9	6.6	40
Mar. 15	416	12	.04	6.4	1.8	7.6	1.2	34	7.7	7.0	.1	.9	66	23	0	95.3	6.8	20
Apr. 17	1,100	12	.05	4.8	1.5	3.9	1.0	23	5.5	4.0	.1	.2	57	18	0	66.2	6.7	32
May 15	199	13	.04	5.9	1.8	6.1	1.4	27	3.4	5.0	.1	3.6	58	22	0	83.7	6.7	30
June 14	81	14	.01	7.3	1.8	12	2.3	37	5.1	9.2	.1	3.8	80	25	0	125	6.5	20
July 16	51	13	.02	9.2	1.9	25	3.6	67	7.1	14	.1	6.0	126	31	0	201	6.8	25
Aug. 15	319	10	.01	6.4	1.0	12	3.4	40	4.6	7.5	.1	4.7	72	20	0	118	6.8	18
Sept. 18	36	13	.10	8.8	1.7	22	4.8	65	8.2	14	.4	4.7	116	29	0	206	6.6	36

NEUSE RIVER BASIN--Continued
NEUSE RIVER NEAR SELMA, N. C.

LOCATION.--At bridge on county road, 2.1 miles northwest of Selma, Johnston County, and 9.9 miles downstream from gaging station near Clayton. DRAINAGE AREA.--1,175 square miles.

RECORDS AVAILABLE. --Chemical analyses: October 1955 to September 1956.

Water temperatures: October 1955 to September 1956.

water temperatures, 1955 to September 1956. Maximum, 123 ppm Sept. 1-5; minimum, 35 ppm Mar. 17-20. EXTREMES, 1955-56. --Dissolved solids: Maximum, 123 ppm Sept. 1-5; minimum, 35 ppm Mar. 17-20.

Hardness: Maximum, 28 ppm June 21-30; minimum, 14 ppm Mar. 17-20.

Specific conductance: Maximum daily, 245 micromhos Sept. 5; minimum daily, 52.8 micromhos Mar. 17.

Water temperatures: Maximum, 86°F July 3-6; minimum, 33°F Dec. 16.

REMARKS.—During period October 1955 to March 1956, samples collected 9.9 miles upstream at bridge on State Highway 42, 3 miles east of Clayton, N. C. Records of specific conductance of daily samples and suspended matter of composite samples available in district office at Raleigh, N. C. Records of discharge for gaging station near Clayton for water year 1955 to September 1956 given in WSP 1433. No appreciable inflow between gaging station and sampling point except during periods of heavy local runoff.

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Calcium, magnesium	Non-carbonate				Unfiltered	Filtered
Oct. 1-2, 7-8, 10, 1955.	588	17	0.13	6.0	2.2	13	2.3	34	4.3	14	0.2	2.8	89	24	0	122	7.1	30	8.2	7.0
Oct. 3-6, 9	1,960	13	.24	5.6	1.3	12	2.1	24	3.6	6.0	.1	1.8	82	19	0	76.7	7.1	45	9.4	8.0
Oct. 11-20	320	16	.22	3.4	2.3	16	2.4	32	3.9	17	.0	2.1	92	20	0	111	7.1	25	9.4	8.1
Oct. 21-31	393	19	.21	3.4	2.0	18	2.5	42	3.9	17	.0	3.2	99	25	0	141	6.7	23	6.2	4.5
Nov. 1-20	286	16	.25	1.1	2.6	16	2.6	43	4.1	16	.1	4.1	102	25	0	156	7.0	22	6.4	4.4
Nov. 21-30	489	19	.20	6.8	2.9	16	2.7	46	4.3	15	.1	3.8	92	25	0	142	6.5	21	8.0	4.8
Nov. 21-30	561	17	.32	6.0	2.0	12	2.2	32	3.4	13	.1	2.7	80	23	0	121	6.6	32	8.0	5.0
Dec. 1-10	407	16	.37	6.0	1.7	13	2.2	34	6.2	13	.0	3.7	89	22	0	125	7.1	30	6.9	4.3
Dec. 11-20	400	16	.19	6.3	1.5	13	2.6	33	4.2	13	.1	3.6	88	22	0	119	6.7	30	4.9	4.0
Dec. 21-31	320	15	.23	6.0	1.7	14	1.9	34	4.5	12	.1	3.1	86	22	0	122	6.9	20	6.1	3.7
Dec. 1-10, 1956	296	18	.13	5.8	2.2	16	1.8	36	5.5	16	.1	4.1	103	23	0	138	6.8	12	6.0	3.2
Jan. 1-20	289	18	.23	6.0	2.2	18	1.8	38	4.5	16	.1	3.8	101	24	0	145	6.8	15	5.2	3.4
Jan. 21-31	418	16	.10	5.8	2.3	17	1.8	36	5.3	16	.1	3.6	103	24	0	142	6.7	18	7.0	3.4
Feb. 1-4	492	16	.12	6.4	2.1	15	1.7	37	6.4	15	.1	3.5	91	25	0	141	6.6	7	5.3	3.3
Feb. 5-10	4,510	11	.04	4.4	1.8	5.3	1.6	17	8.4	6.0	.0	1.3	62	18	4	76.0	6.6	27	13	7.8
Feb. 11-20	1,890	12	.09	4.8	1.8	6.3	1.5	20	7.5	5.8	.0	1.8	65	21	3	84.2	6.5	20	8.8	6.2
Feb. 21-29	1,860	12	.02	4.8	2.2	6.9	1.5	22	7.1	6.4	.1	1.3	67	21	0	86.0	6.6	20	9.4	5.5
Mar. 1-10	968	14	.02	5.4	1.7	9.6	1.5	26	5.6	11	.1	1.8	74	24	0	103	6.6	20	7.4	5.4
Mar. 11-16	1,980	15	.03	5.2	2.1	8.1	1.4	29	4.3	7.6	.1	1.8	66	22	0	89.0	7.2	20	6.3	4.1
Mar. 17-30	7,760	18	.05	3.9	1.0	3.2	1.2	13	6.5	3.5	.2	1.3	35	14	3	53.7	6.6	37	—	—
Mar. 21-31	1,720	15	.01	4.5	1.8	9.4	1.4	24	5.1	9.4	.1	2.0	68	18	0	93.0	6.5	20	5.9	4.9
Apr. 1-10	1,030	12	.06	5.6	1.6	8.6	1.2	28	4.1	8.8	.0	1.6	70	21	0	92.1	6.6	25	8.7	4.7
Apr. 11-20	3,460	11	.07	4.4	1.7	6.1	1.1	20	4.3	5.7	.1	1.1	61	18	2	73.2	6.8	45	9.9	6.9
Apr. 21-30	733	15	.03	5.1	2.0	11	1.2	30	4.3	10	.1	2.2	75	21	0	102	6.8	20	5.1	4.5

a Calculated from determined constituents.

NEUSE RIVER BASIN--Continued
NEUSE RIVER NEAR SELMA, N. C.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180° C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Calcium, mg-nesium	Non-carbonate				Unfiltered	Filtered
May 1-3, 8-10, 1956 ..	1,350	14	0.12	5.1	1.8	8.7	1.6	29	5.7	8.5	0.0	1.7	a 62	20	0	90.5	7.0	33	--	--
May 4-7 ..	3,460	9.7	.07	5.0	1.3	4.8	1.4	21	4.0	4.5	.0	1.3	a 42	18	1	73.4	6.2	40	--	--
May 11-20 ..	576	14	.03	5.9	1.9	11	1.8	33	2.6	10	.1	2.0	83	23	0	110	6.8	25	8.0	5.3
May 21-31 ..	341	15	.08	6.1	2.1	12	2.0	36	2.6	11	.0	3.6	85	24	0	119	6.9	20	7.4	4.4
June 1-10 ..	1,560	13	.09	5.2	1.8	9.4	1.6	28	4.6	1	.1	1.9	76	20	0	97.6	6.6	28	8.4	5.9
June 11-20 ..	269	16	.06	6.0	2.3	19	1.4	41	4.8	18	.0	3.2	103	25	0	150	6.9	20	7.6	4.5
June 21-30 ..	220	16	.04	6.8	2.7	20	2.5	44	4.4	22	.1	2.8	112	28	0	165	6.9	20	6.8	4.6
July 1-4 ..	178	15	.03	7.1	2.1	26	2.6	48	3.8	31	.1	2.0	a 115	27	0	201	6.9	20	--	--
July 5-10 ..	399	16	.25	6.4	1.9	12	2.7	39	3.5	8.0	.1	3.2	78	24	0	121	7.4	27	6.3	5.3
July 11-20 ..	309	14	.03	6.5	1.9	13	2.1	39	3.4	13	.1	3.5	75	17	0	131	6.6	27	10	5.3
July 21-24, 30-31 ..	873	12	.04	4.5	1.3	7.8	2.1	37	3.4	10	.1	2.9	63	17	0	84.4	6.6	25	9.9	4.7
July 25-29 ..	309	16	.25	6.5	1.9	16	2.5	37	6.0	16	.1	2.9	a 87	24	0	140	7.0	35	--	--
Aug. 1-10 ..	315	14	.01	6.2	1.9	15	2.4	33	4.9	14	.1	4.5	82	23	0	132	6.7	20	7.9	5.3
Aug. 11-20 ..	324	15	.16	6.8	1.9	17	2.6	37	5.2	18	.1	4.1	103	25	0	154	6.5	35	7.9	5.7
Aug. 21-31 ..	281	15	.02	7.1	1.8	18	2.5	36	4.6	20	.1	3.5	102	25	0	151	6.6	20	8.3	4.9
Sept. 1-5 ..	231	17	.11	7.2	1.8	29	2.7	44	5.6	32	.2	4.3	a 123	25	0	208	7.1	13	--	--
Sept. 6-10 ..	317	14	.02	7.0	1.5	14	2.9	36	7.5	13	.2	4.0	a 83	24	0	127	6.8	9	--	--
Sept. 11-20 ..	147	17	.08	7.2	2.2	23	2.9	45	3.8	22	.2	4.8	116	27	0	173	6.7	10	7.1	4.9
Sept. 21-30 ..	460	20	.03	6.8	1.7	20	2.6	37	5.3	18	.2	4.2	104	24	0	151	6.8	7	7.5	6.0
Average	874	15	0.12	5.9	1.8	13	2.0	32	4.8	13	0.1	2.8	84	22	0	121	--	24	7.6	5.1

a Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR SELMA, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 12 m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	63	46	42	47	--	58	--	73	85	78	83
2	70	54	--	43	53	50	58	69	70	--	79	84
3	72	53	--	47	52	50	58	--	68	86	79	84
4	70	52	--	38	52	52	--	65	68	86	80	82
5	69	49	44	51	52	54	60	67	68	86	82	81
6	69	47	--	42	51	56	60	67	68	86	83	78
7	71	49	44	41	52	58	60	--	70	85	80	76
8	68	49	46	37	54	60	60	66	72	84	79	75
9	66	49	44	36	49	52	58	65	72	82	79	72
10	65	47	42	38	58	55	56	67	73	80	82	75
11	67	48	43	38	52	55	55	68	75	81	83	75
12	66	49	43	41	55	55	54	68	77	82	85	76
13	65	50	37	45	55	52	--	70	80	82	82	78
14	66	55	37	45	60	50	54	72	82	82	84	79
15	64	56	37	48	58	52	55	73	83	83	85	79
16	60	60	33	48	56	50	56	74	84	83	83	79
17	63	59	35	42	63	45	54	73	85	80	83	78
18	59	53	41	42	65	48	55	74	83	76	84	76
19	59	53	39	38	58	45	56	74	83	75	84	75
20	58	47	39	42	60	--	56	74	84	77	82	75
21	58	47	39	45	50	46	56	73	84	79	79	75
22	59	49	35	44	45	48	--	73	84	81	76	75
23	58	50	38	42	47	50	55	72	83	83	75	75
24	56	49	38	38	50	50	55	70	84	85	77	72
25	56	49	39	44	65	50	57	71	83	85	78	70
26	56	48	38	46	51	55	60	72	84	85	79	68
27	57	47	43	47	44	55	62	72	84	85	80	65
28	58	50	41	48	50	54	68	74	85	83	81	62
29	59	48	43	45	47	55	68	74	85	73	82	--
30	63	45	38	51	--	55	70	73	85	75	84	--
31	58	--	36	47	--	52	--	73	--	76	83	--
Average	63	51	40	43	53	52	58	71	79	82	81	76

NEUSE RIVER BASIN--Continued

LITTLE RIVER NEAR PRINCETON, N. C.

LOCATION.--On highway bridge a quarter of a mile upstream from gaging station, half a mile upstream from Little Creek, and 2½ miles north of Princeton, Johnston County, N. C.

DRUDGE AREA: 12.9 square miles.

RECORDS AVAILABLE: Chemical analyses: October 1950 to September 1951, October 1955 to September 1956.

EXTREMES: Temperature: October 1950 to September 1951, October 1955 to September 1956.

Hardness: Maximum 16 degrees, minimum 5 degrees; Dissolved solids: Maximum 65 ppm Oct 1-10, 11-20, 21-31, minimum, 32 ppm Apr. 21-30.

Specific conductance: Maximum daily, 93.8 microhmhos Sept. 3; minimum daily, 36.6 microhmhos Mar. 22.

Water temperature: Maximum 89°F June 26, July 1; minimum, freezing point Dec. 14.

REMARKS.--Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Calcium	Non-carbonate			Unfiltered	Filtered
Oct. 1-10, 1955	189	15	0.47	3.6	1.1	5.7	1.9	23	1.0	6.0	0.0	1.1	65	14	0	63.4	70	15	12
Oct. 11-20	106	16	1.6	3.4	1.4	6.0	2.1	23	1.5	5.0	.0	.9	65	14	0	61.5	100	11	11
Oct. 21-31	72.7	15	1.5	3.3	1.2	6.1	2.0	22	.5	6.5	.1	.7	65	13	0	62.9	7.0	100	9.4
Nov. 1-10	67.2	15	.94	3.2	1.2	6.1	2.0	24	.3	6.0	.1	.9	61	13	0	65.3	6.5	75	12
Nov. 11-20	94.9	15	.96	3.2	1.2	6.1	2.1	22	1.1	5.0	.1	1.0	60	13	0	62.6	6.6	75	11
Nov. 21-30	143	15	.92	2.8	1.0	5.8	2.2	20	1.6	6.0	.1	.7	59	11	0	60.4	6.5	85	12
Dec. 1-10	102	14	1.3	2.8	1.2	6.0	2.0	20	1.3	6.5	.0	1.1	63	12	0	60.7	6.9	80	8.7
Dec. 11-20	84.9	15	1.2	3.2	1.0	6.0	1.6	22	.9	6.0	.1	.7	58	12	0	60.6	6.9	75	8.9
Dec. 21-31	78.6	14	1.1	3.2	.7	6.3	1.6	22	2.6	5.5	.0	.5	54	11	0	57.5	6.8	70	7.7
Jan. 1-10, 1956	90.0	12	.87	2.4	1.2	6.1	1.4	20	1.9	5.2	.1	.6	56	11	0	58.5	6.2	70	8.3
Jan. 11-20	89.6	11	.76	2.6	1.1	5.9	1.4	20	2.4	5.0	.0	.5	64	11	0	56.5	6.3	65	8.1
Jan. 21-31	128	11	.57	2.6	1.1	5.9	1.4	18	2.3	5.2	.0	.5	62	12	0	56.8	6.6	65	7.2
Feb. 1-10	326	10	.19	2.4	1.4	5.1	1.5	14	3.6	5.8	.1	.5	51	12	0	57.2	6.8	40	9.4
Feb. 11-20	595	9.7	.13	2.4	1.0	4.3	1.4	11	4.7	4.0	.1	.6	52	10	1	52.8	6.2	50	17
Feb. 21-30	473	8.7	.10	2.2	.8	4.3	1.2	12	5.3	4.2	.0	.5	49	9	0	49.2	6.8	45	14
Mar. 1-10	316	8.9	.09	3.2	1.0	5.1	1.3	16	3.4	6.5	.0	.8	52	12	0	57.0	6.8	40	12
Mar. 11-20	825	8.0	.11	2.4	.7	5.6	1.2	11	2.6	4.0	.1	.6	a47	9	0	45.7	6.7	50	16
Mar. 21-31	445	9.1	.09	2.2	.8	4.4	1.2	12	2.5	4.5	.0	.8	46	9	0	46.7	6.2	40	9.1
Apr. 1-10	283	8.1	.65	2.4	1.3	5.2	1.4	16	2.0	5.0	.0	1.5	b52	11	0	53.7	6.4	100	14
Apr. 11-20	604	7.2	.09	2.4	1.2	4.6	1.2	14	2.0	4.6	.0	.7	38	11	0	49.6	6.6	50	13
Apr. 21-30	189	6.6	.08	2.6	1.1	4.8	1.2	17	1.4	4.1	.0	.7	32	11	0	49.6	6.6	35	11
May 1-10	477	8.9	1.2	2.7	1.0	4.8	1.5	16	1.3	4.0	.0	1.4	c62	12	0	54.4	6.3	100	16
May 11-20	114	10	1.5	2.8	1.2	5.2	1.7	22	1.5	3.7	.0	1.4	58	12	0	57.8	6.6	90	12
May 21-31	46.2	9.5	1.2	3.1	1.4	5.8	1.8	24	.1	5.3	.0	1.2	57	13	0	60.3	6.6	75	8.0

c Organic matter present; calculated from mineral constituents 35 parts per million.

a Organic matter present; calculated from mineral constituents 28 parts per million.

b Organic matter present; calculated from mineral constituents 36 parts per million.

June 1-10, 1956	158	9.9	0.03	3.2	1.2	5.2	1.6	18	4.5	3.2	0.1	1.2	58	13	0	58.3	6.5	32	11	7.4
June 11-20	42.2	8.0	.21	2.8	1.2	5.7	1.7	20	2.4	4.0	.1	1.4	57	12	0	57.0	6.6	60	10	8.0
June 21-30	22.4	4.2	.28	2.8	1.5	6.0	1.6	24	1.8	5.0	.1	.8	50	13	0	58.0	6.8	60	10	7.6
July 1-10	28.9	6.3	.33	2.4	1.2	6.1	1.8	20	2.5	4.5	.1	1.3	43	11	0	58.1	7.2	40	7.9	6.3
July 11-20	159	8.5	.10	3.2	1.0	5.0	1.8	14	5.5	4.5	.1	1.9	53	12	1	58.0	6.8	40	16	10
July 21-31	71.7	12	.07	2.4	1.0	5.7	1.8	16	2.7	4.8	.1	1.5	48	10	0	53.5	6.9	25	11	7.7
Aug. 1-10	117	9.3	.02	2.8	.7	6.4	1.5	17	4.7	4.0	.0	2.2	49	10	0	53.4	6.5	35	11	8.1
Aug. 11-20	239	9.1	.04	2.8	.2	5.2	1.8	13	3.9	4.0	.1	2.3	48	8	0	52.0	6.2	45	16	9.3
Aug. 21-31	109	13	.09	4.0	.5	5.1	1.8	17	3.1	4.5	.1	1.9	58	12	0	58.9	6.5	40	15	8.9
Sept. 1-2, 4, 6-10	144	11	.27	2.6	1.2	5.1	1.6	17	1.5	4.2	.1	1.3	d62	11	0	53.7	6.2	70	14	11
Sept. 3, 5	47.5	25	.76	4.7	1.1	9.5	2.5	38	3.1	5.5	.0	2.3	--	16	0	87.5	6.6	45	--	--
Sept. 11-20	43.1	23	.29	2.8	1.4	5.8	1.5	20	1.2	4.5	.1	1.9	58	13	0	55.8	6.5	50	9.7	8.3
Sept. 21-30	98.2	11	.29	2.6	1.2	5.8	1.8	19	2.1	5.0	.1	1.9	57	11	0	55.9	6.6	50	9.3	7.5
Average	195	11	0.55	2.9	1.1	5.6	1.7	19	2.4	4.9	0.1	1.1	55	12	0	57.3	--	60	12	9.0

d Organic matter present; calculated from mineral constituents 37 parts per million.

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

NEUSE RIVER BASIN--Continued

LITTLE RIVER NEAR PRINCETON, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 4:30 p. m. /

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

NEUSE RIVER BASIN--Continued

NEUSE RIVER AT KINSTON, N. C.

LOCATION.--At bridge on N. C. Highway 11, 600 feet upstream from gaging station at Kinston, Lenoir County.

DRAINAGE AREA.--2,690 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses: October 1950 to September 1950, January 1955 to September 1956.

Water temperatures: October 1949 to September 1950, January 1955 to September 1956.

EXTREMES 1955-56.--Dissolved solids: Maximum, 84 ppm Oct. 11-20; minimum, 50 ppm Mar. 21-31.

Hardness: Maximum, 24 ppm June 21-31; minimum, 12 ppm Mar. 21-31.

Specific conductance: Maximum daily, 150 micromhos Dec. 21; minimum daily, 47.3 micromhos Mar. 25.

Water temperatures: Maximum, 92°F July 3; minimum, 36°F Jan. 5.

EXTREMES 1949-50, 1955-56.--Dissolved solids: Maximum, 86 ppm May 11-20, 1955; minimum, 50 ppm Mar. 21-31, 1956.

Hardness: Maximum, 30 ppm Apr. 21-30, 1950, Sept. 11-20, 1955; minimum, 12 ppm Mar. 21-31, 1956.

Water temperatures: Maximum, 92°F July 3, 1956; minimum, 36°F Jan. 18, Feb. 14, 1955, Jan. 5, 1956.

REMARKS.--Records of specific conductance of daily samples in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg./l.	Non-carbonate			
Oct. 1-10, 1955	3,330	13	0.27	5.6	1.2	7.5	2.1	20	6.8	7.8	0.0	3.5	78	19	3	88.6	6.8	80
Oct. 11-20	1,900	13	.41	6.0	1.5	8.6	2.2	26	10	9.8	.0	4.9	84	21	8	92.9	6.6	70
Oct. 21-31	1,290	13	.58	5.6	1.9	8.9	2.2	24	7.1	9.8	.0	3.5	81	23	2	94.5	6.8	60
Nov. 1-10	1,160	13	.43	4.8	1.4	9.0	2.0	19	5.1	9.8	.1	3.4	70	18	2	90.0	6.7	75
Nov. 11-20	1,270	13	.21	4.4	1.6	9.4	1.9	22	4.2	10	.0	2.4	69	17	0	91.9	6.8	55
Nov. 21-30	1,730	12	.24	4.4	1.1	8.0	1.8	17	4.8	9.0	.0	2.7	67	16	2	80.2	6.4	60
Dec. 1-10	1,410	11	.30	4.9	1.3	8.2	1.8	18	5.6	9.0	.0	1.8	--	17	3	85.3	6.4	37
Dec. 11-20	1,210	12	.24	5.1	1.2	8.6	1.9	23	4.8	8.5	.0	2.9	--	18	0	85.8	7.0	40
Dec. 21-31	1,150	12	.61	4.7	1.2	10	1.7	21	7.1	11	.1	2.3	--	17	0	93.9	6.8	40
Jan. 1-10, 1956	1,090	11	.44	4.7	.8	7.8	1.4	21	5.3	8.0	.1	1.4	57	15	0	82.3	6.5	40
Jan. 11-20	1,050	10	.43	4.6	1.1	8.4	1.4	20	3.6	9.0	.0	2.6	58	16	0	87.1	6.9	30
Jan. 21-31	1,530	9.2	.34	4.4	.7	8.3	1.4	16	4.1	9.0	.1	2.5	55	14	1	83.2	6.6	30
Feb. 1-10	2,370	9.1	.08	4.6	1.1	7.8	1.6	15	6.9	9.2	.0	3.2	58	16	4	87.1	6.6	25
Feb. 11-20	6,150	9.5	.18	4.0	1.2	5.7	1.4	13	7.0	7.0	.0	2.2	56	15	4	65.6	6.6	40
Feb. 21-29	4,460	9.5	.10	4.4	.9	6.2	1.5	16	6.5	6.0	.0	.9	57	15	2	71.4	6.7	23
Mar. 1-10	4,050	8.9	.07	4.5	1.2	6.3	1.5	16	5.2	7.8	.0	1.8	63	16	3	75.0	6.8	40
Mar. 11-20	2,820	9.3	.03	4.0	1.4	7.2	1.6	16	6.8	9.0	.0	2.2	58	16	2	78.4	6.8	36
Mar. 21-31	7,440	8.3	.05	3.4	.8	4.4	1.6	12	4.8	6.0	.0	.7	50	12	2	58.6	6.6	45
Apr. 1-10	2,300	9.5	.08	4.1	1.3	6.7	1.4	18	5.4	8.0	.0	1.4	51	16	1	74.4	6.9	37
Apr. 11-20	5,050	8.5	.34	3.6	1.0	5.1	1.4	15	3.0	6.0	.0	1.9	56	13	1	62.4	6.6	80
Apr. 21-30	4,230	9.1	.41	4.0	1.2	5.6	1.4	18	3.4	6.2	.0	1.7	53	15	0	68.4	6.6	80
May 1-10	4,160	9.1	.63	3.9	.9	5.9	1.5	16	3.4	6.5	.0	2.8	67	13	0	66.7	6.5	90
May 11-20	3,130	11	.51	4.8	1.0	6.3	1.7	18	4.8	6.8	.0	3.2	73	16	1	73.2	6.6	90
May 21-31	921	13	.46	5.3	1.4	8.3	1.6	25	4.6	9.0	.0	2.9	73	19	0	92.7	6.8	45

NEUSE RIVER BASIN--Continued
 NEUSE RIVER AT KINSTON, N. C.--Continued
 Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
June 1-10, 1956	2,140	12	0.13	5.2	1.4	9.2	1.5	24	5.4	9.5	0.0	2.6	74	19	0	90.6	6.8	23
June 11-20	985	12	.38	5.2	1.8	8.0	1.7	23	8.9	8.0	.0	3.2	75	20	2	86.1	6.5	37
June 21-30	640	7.2	.11	6.0	2.2	10	1.9	29	7.7	10	.0	2.7	77	24	0	105	7.3	16
July 1-10	685	8.7	.04	5.1	1.7	13	2.6	32	6.8	14	.0	3.1	76	22	0	123	6.8	20
July 11-20	1,730	10	.26	5.1	1.5	7.4	1.9	15	9.3	7.0	.0	2.6	69	19	6	72.6	6.5	65
July 21-31	1,200	14	.33	4.6	.7	9.1	2.3	19	8.4	9.0	.0	3.0	69	14	0	86.2	6.8	65
Aug. 1-10	1,290	12	.13	4.7	.8	8.8	2.0	18	7.2	8.2	.1	3.2	67	15	0	84.2	6.9	40
Aug. 11-20	1,120	12	.11	4.5	.7	10	2.4	20	5.2	11	.1	2.9	68	14	0	91.9	6.9	40
Aug. 21-31	1,420	11	.10	4.4	.7	8.3	2.0	17	7.8	8.8	.1	2.4	55	14	0	83.1	6.7	36
Sept. 1-10	1,140	11	.06	4.5	.9	8.5	.8	18	6.1	9.2	.0	2.3	60	15	0	85.6	6.7	45
Sept. 11-20	1,140	11	.07	4.2	1.2	7.9	1.6	18	4.8	8.8	.0	2.3	62	15	1	79.8	6.5	45
Sept. 21-30	867	11	.10	5.8	1.5	11	2.2	24	7.2	12	.0	2.8	70	21	1	105	6.5	50
Average	2,200	11	0.26	4.7	1.2	8.0	1.8	19	6.0	8.7	0.0	2.6	65	17	1	84.0	--	50

NEUSE RIVER BASIN--Continued

NEUSE RIVER AT KINSTON, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 (Once-daily measurement at approximately 3 p. m.)

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

NEUSE RIVER BASIN--Continued

CONTENTNEA CREEK NEAR WILSON, N. C.

LOCATION.--At bridge on U. S. Highway 301, 250 feet downstream from municipal powerplant, 1 mile upstream from Atlantic Coast Line Railroad bridge, and 3 miles southwest of Wilson, Wilson County.

DRAINAGE AREA.--236 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Temperature (°F)	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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
															Calcium, mg-nesium	Non-carbonate			
Oct. 3, 1955			11	0.35	3.3	1.1	4.8	1.8	15	2.2	6.0	0.0	0.7	57	13	0	54.3	6.1	60
Nov. 1			10	.24	3.2	1.0	5.9	1.4	20	3.7	5.5	.0	.1	53	12	0	71.0	6.6	40
Dec. 1			11	.20	3.5	1.0	5.5	1.8	19	1.9	6.2	.1	.4	55	13	0	61.5	6.8	40
Jan. 4, 1956			11	.29	3.5	1.0	5.5	1.1	20	1.5	5.8	.1	.4	49	13	0	57.7	6.7	35
Feb. 1			10	.06	3.4	.6	5.2	1.1	18	2.0	6.5	.1	.4	44	11	0	57.5	6.6	45
Mar. 1			6.9	.11	2.6	.4	3.8	1.3	10	3.3	5.0	.1	.4	46	8	0	48.0	6.1	45
Apr. 3			7.1	.09	3.0	.5	4.6	1.0	14	3.0	5.2	.1	.4	46	10	0	52.3	6.6	33
May 2			5.9	.13	3.4	1.0	4.8	1.2	18	1.8	5.0	.1	.3	41	13	0	53.4	6.6	30
June 1			6.1	1.1	3.9	1.0	5.3	1.6	21	1.1	4.5	.1	.7	50	14	0	58.5	6.3	110
July 2			6.4	.16	4.4	.7	5.1	2.0	25	3.5	4.5	.1	.7	50	14	0	72.1	6.2	20
Aug. 1			8.5	.25	3.2	.5	3.8	1.4	14	3.7	3.5	.1	.9	50	10	0	48.2	6.1	55
Sept. 4			9.5	.20	3.6	.6	4.8	2.0	15	2.4	4.5	.1	.6	48	11	0	55.2	6.1	55

a Organic matter present; calculated mineral constituents 39 parts per million.

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR FORT BARNWELL, N. C.

LOCATION --At county bridge off State Highway 55 between Fort Barnwell and Vanceboro, Craven County.

DRAINAGE AREA --3,897 square miles.

RECORDS AVAILABLE --Chemical analyses: September 1954 to September 1956.

Water temperatures: October 1954 to September 1956.

EXTREMES 1955-56 --Dissolved solids: Maximum, 85 ppm Oct. 11-20; minimum, 52 ppm Mar. 21-31, Apr. 11-20.

Hardness: Maximum, 25 ppm July 1-10; minimum, 12 ppm Mar. 21-31.

Specific conductance: Maximum daily, 129 micromhos July 5; minimum daily, 49.1 micromhos Mar. 27.

Water temperatures: Maximum, 91°F Aug. 12-13; minimum, 40°F Dec. 19-20, 30-31, Jan. 1.

EXTREMES 1954-56 --Dissolved solids: 186 ppm Sept. 26-27, 1954; minimum, 52 ppm Mar. 21-31, Apr. 11-20, 1956.

Hardness: Maximum, 171 ppm Oct. 12, 15, 1954; minimum, 12 ppm Mar. 21-31, Apr. 11-20, 1956.

Specific conductance: Maximum daily, 673 micromhos Aug. 21, 1955; minimum daily, 49.1 micromhos Mar. 27, 1956.

Water temperatures: Maximum, 91°F Aug. 12-13, 1956; minimum, freezing point Jan. 13, 1955.

REMARKS --Records of specific conductance of daily samples available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955		12	0.25	5.5	1.8	6.6	2.2	23	6.0	7.0	0.0	2.6	84	21	2	77.2	6.8	150
Oct. 11-20		14	.25	6.1	1.4	8.2	1.9	23	8.0	8.0	.0	3.0	85	21	2	86.4	6.9	120
Oct. 21-31		14	.13	6.4	1.5	8.4	1.8	26	5.6	8.8	.0	2.6	94	22	1	94.4	6.9	100
Nov. 1-10		12	.74	5.6	1.5	8.4	2.0	24	9.4	10	.1	2.2	76	20	0	93.5	6.8	100
Nov. 11-20		12	.74	5.6	1.4	10	1.9	25	7.0	10	.1	1.8	76	20	0	96.3	6.8	70
Nov. 21-30		12	.68	5.1	1.3	7.9	1.9	20	7.5	9.2	.1	1.9	73	18	2	84.2	6.7	80
Dec. 1-10		12	.58	6.0	1.1	8.6	1.6	20	5.8	11	.0	2.1	72	19	3	93.3	6.7	45
Dec. 11-20		11	.95	5.5	1.2	9.7	1.8	21	5.9	12	.0	2.6	72	19	1	98.6	6.7	45
Dec. 21-31		11	.97	5.3	1.4	8.8	1.5	21	6.1	10	.0	1.8	69	19	2	92.0	6.7	45
Jan. 1-10, 1956		11	.47	5.2	1.3	8.5	1.5	20	7.0	9.8	.0	1.8	59	18	2	88.1	6.7	55
Jan. 11-20		10	.47	5.4	1.3	8.5	1.5	20	7.6	9.8	.0	1.5	58	19	2	87.9	6.7	40
Jan. 21-31		9.5	.44	5.2	1.2	8.0	1.5	15	9.2	10	.0	1.1	59	18	6	86.0	6.6	45
Feb. 1-10		8.7	.48	5.9	.9	7.2	1.6	15	8.7	7.5	.0	2.1	68	18	6	87.3	6.7	65
Feb. 11-20		9.3	.09	4.7	1.0	5.5	1.6	11	10	6.5	.1	1.1	58	16	7	69.7	6.5	45
Feb. 21-29		8.5	.48	4.5	.9	5.7	1.6	12	8.1	6.5	.1	1.7	60	15	5	75.8	6.6	80
Mar. 1-10		7.8	.19	4.0	1.2	6.1	1.5	12	7.9	8.0	.0	1.9	61	15	5	71.7	6.7	50
Mar. 11-20		8.1	.62	4.6	1.1	6.5	1.4	10	7.1	8.5	.0	2.1	66	18	6	76.9	6.6	75
Mar. 21-31		7.3	.19	3.4	.9	4.0	1.3	10	5.1	6.0	.0	1.1	52	12	4	55.0	6.6	70
Apr. 1-10		7.3	.11	4.4	.8	6.3	1.3	16	4.5	8.2	.0	2.2	68	14	1	73.1	6.8	60
Apr. 11-20		7.7	.09	4.1	1.0	5.0	1.3	14	5.4	6.5	.0	2.1	52	14	3	63.7	6.8	55
Apr. 21-30		7.8	.35	3.8	1.1	5.1	1.3	16	5.3	6.0	.0	1.6	55	14	1	65.6	6.6	75
May 1-10		7.9	.35	4.7	1.1	6.2	1.7	14	8.2	7.5	.0	2.3	54	16	5	70.8	6.9	75

NEUSE RIVER BASIN--Continued
NEUSE RIVER NEAR FORT BARNWELL, N. C.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on rapid evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos/cm at 25°C)	pH	Color
														Calcium	Non-carbonate			
May 11-20, 1956.....		9.6	0.73	4.5	1.3	6.3	1.5	19	5.5	7.0	0.0	2.6	58	16	1	72.9	6.8	90
May 21-31.....		11	.53	6.0	1.4	8.4	1.8	26	6.0	8.5	.0	2.7	62	21	0	82.8	7.8	50
June 1-10.....		9.5	.01	4.9	1.4	8.4	1.9	23	7.3	8.5	.1	3.5	71	18	0	89.9	6.9	48
June 11-20.....		9.7	.35	5.6	1.5	7.4	1.8	22	8.0	8.0	.1	3.2	71	20	2	87.4	6.7	43
June 21-30.....		7.3	.06	6.8	1.7	9.7	2.1	31	5.6	10	.1	2.6	74	24	0	108	6.7	25
July 1-10.....		5.2	.07	7.4	1.6	11	2.2	32	9.1	12	.1	3.1	78	25	0	121	7.0	22
July 11-20.....		8.1	.10	6.6	1.1	6.2	1.9	20	12	5.8	.0	2.3	68	21	5	84.8	6.8	45
July 21-31.....		10	.19	6.3	.8	7.8	2.0	20	4.2	8.5	.0	2.3	68	23	6	86.6	6.7	40
Aug. 1-10.....		11	.18	4.6	.9	8.2	1.9	18	7.3	6.5	.0	3.0	66	15	0	80.9	7.1	40
Aug. 11-20.....		10	.17	4.6	.6	7.6	1.9	19	6.1	6.5	.0	2.7	62	14	0	80.3	6.9	38
Aug. 21-31.....		8.8	.22	4.4	.8	6.7	1.9	14	6.7	6.2	.1	2.7	57	14	3	71.2	6.8	45
Sept. 1-10.....		11	.30	4.4	1.1	8.1	2.1	18	7.4	8.5	.1	3.1	76	15	1	86.1	6.9	50
Sept. 11-20.....		9.9	.37	4.6	.6	8.0	2.0	16	8.2	7.8	.0	2.7	74	14	1	77.3	6.5	65
Sept. 21-30.....		10	.37	6.0	.2	11	2.0	24	7.7	9.5	.0	2.6	82	16	0	99.2	6.6	40
Average.....		9.8	0.35	5.2	1.2	7.6	1.7	19	7.1	8.3	0.0	2.3	67	18	2	84.1	--	60

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR FORT BARNWELL, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 2 p.m./

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

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR (COWEN LANDING) VANCEBORO, N. C.

LOCATION.--At Cowen Landing about 6 miles southeast of Vanceboro, Craven County.

DRAINAGE AREA.--4,027 square miles.

RECORDS AVAILABLE.--Chemical analyses: September 1954 to September 1956.

Water temperatures: October 1954 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 4,760 ppm Sept. 26; minimum, 54 ppm Mar. 21-31.

Hardness: Maximum, 846 ppm Sept. 26; minimum, 13 ppm Mar. 21-31.

Specific conductance: Maximum daily, 8,330 micromhos Sept. 26 (p.m.); minimum daily, 54.1 micromhos Mar. 26 (p.m.).

Water temperatures: Maximum, 89°F on several days during June and August; minimum, 35°F Dec. 17 (a.m.).

EXTREMES, 1954-56.--Dissolved solids: Maximum, 6,270 ppm Oct. 15 (p.m.), 1954; minimum, 54 ppm Mar. 21-31, 1956.

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, 41.1 micromhos Sept. 20 (p.m.), 1955.

Water temperatures: Maximum, 92°F July 28 (p.m.), 1955; minimum, 35°F Jan. 21 (a.m.), 1955, Dec. 17 (a.m.), 1955.

REMARKS.--Samples collected twice daily (8 a.m. and 6 p.m.). Samples collected in morning and afternoon were composited unless otherwise noted. Records of specific conductance of samples collected twice daily available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg./nesium	Non-carbonate			
Oct. 1-10, 1955		10	0.13	5.5	1.6	6.6	2.2	23	3.6	7.8	0.0	1.9	81	20	1	79.9	6.6	150
Oct. 11-20		12	.14	6.5	1.2	8.2	2.0	25	4.2	9.2	-.0	2.0	80	21	0	92.4	6.6	80
Oct. 21-31		13	.16	6.6	1.4	9.4	1.9	26	6.5	10	-.0	2.3	81	22	1	99.7	6.6	90
Nov. 1-10		12	.87	6.0	1.4	8.9	1.9	22	8.5	11	-.1	2.1	77	21	3	97.5	6.8	75
Nov. 11-20		12	.76	6.0	1.7	10	1.8	26	7.2	12	-.1	2.1	77	22	1	103	6.7	65
Nov. 21-30		12	.73	5.5	1.6	9.2	2.0	24	6.4	12	-.1	1.9	73	20	1	97.0	7.0	75
Dec. 1-10		12	.71	6.0	1.1	8.5	1.6	22	5.5	11	-.0	1.8	71	19	1	92.0	6.6	75
Dec. 11-20		11	.61	5.9	1.3	9.4	1.5	22	5.9	11	-.0	2.5	71	20	2	96.2	6.6	50
Dec. 21-31		11	.74	6.0	1.4	9.6	1.6	21	7.2	12	-.0	2.3	73	21	3	97.6	6.6	55
Jan. 1-10, 1956		11	.61	6.3	1.1	10	1.5	22	7.0	12	-.0	1.8	65	20	2	101	6.6	45
Jan. 11-20		10	.53	6.2	1.2	9.1	1.5	22	7.4	11	-.1	1.8	60	20	2	96.5	6.8	40
Jan. 21-31		8.7	.44	6.0	1.0	9.1	1.3	18	8.8	12	-.0	1.2	60	19	4	95.8	6.8	40
Feb. 1-10		8.3	.37	6.4	1.1	7.9	1.5	18	8.0	10	-.0	1.8	62	21	6	97.1	6.8	37
Feb. 11-16, 17 (a.m.), 18-20		9.7	.08	5.9	1.3	6.7	2.1	14	10	8.5	-.0	1.5	70	20	9	76.8	6.6	40
Feb. 17 (p.m.)		--	--	--	--	--	--	12	9.0	16	--	--	--	16	6	113	6.4	--
Feb. 21-29		8.4	.34	5.5	.9	5.9	1.5	13	9.4	8.5	-.0	2.0	66	18	8	76.8	6.4	55
Mar. 1-10		7.5	.46	4.6	1.2	6.3	1.5	13	9.4	8.0	-.0	2.5	60	16	6	73.2	6.7	80
Mar. 11-13, 14 (p.m.), 15-20		7.8	.66	5.2	1.1	7.2	1.3	15	8.4	9.5	-.0	2.4	61	18	5	81.3	6.6	80
Mar. 14 (a.m.)		--	--	--	--	--	--	16	8.9	14	--	--	--	18	5	109	6.9	--
Mar. 21-31		7.3	.23	4.0	.8	5.7	1.5	10	7.6	7.5	-.0	2.5	54	13	5	66.6	6.3	90

Apr. 1-10, 1956	8.0	0.24	4.8	0.8	7.2	1.7	16	5.7	9.2	0.0	3.2	59	15	2	83.1	6.7	70
Apr. 11-20	7.5	.40	4.4	1.1	6.9	1.9	17	4.6	9.2	.0	2.8	70	16	2	81.0	6.5	80
Apr. 21-30	7.7	.22	4.2	1.1	5.8	1.6	18	4.3	7.5	.0	1.8	63	15	0	73.1	6.5	75
May 1-10	7.7	.56	5.4	.9	6.3	1.6	18	4.5	7.0	.0	3.0	65	17	2	74.2	6.4	70
May 11-20	8.8	.66	5.5	1.2	6.6	1.8	18	6.2	7.8	.0	3.9	73	19	4	77.4	6.6	100
May 21-31	11	.54	6.8	1.5	8.7	1.8	28	3.6	10	.0	3.2	80	23	0	103	6.7	55
June 1-10	10	.14	6.3	1.3	9.2	1.9	27	5.0	10	.0	3.1	67	21	0	98.9	7.0	45
June 11-20	9.7	.25	6.2	1.1	8.2	2.2	24	5.4	9.0	.0	3.4	63	20	0	94.0	6.8	50
June 21-30	8.0	.08	7.9	1.3	10	2.3	31	6.4	11	.0	2.7	73	25	0	114	7.8	36
July 1-10	4.1	.02	8.1	1.8	12	2.4	36	7.3	12	.1	3.6	74	28	0	123	7.0	20
July 11-20	8.0	.05	5.5	1.6	7.1	2.1	17	11	6.9	.1	3.5	70	20	6	87.2	6.5	37
July 21-31	10	.29	5.6	1.5	8.4	2.1	20	6.6	8.0	.1	3.2	75	20	4	87.4	6.9	60
Aug. 1-10	11	.20	5.4	.8	9.1	2.0	21	5.3	8.2	.1	3.2	62	17	0	91.0	6.8	50
Aug. 11-20	10	.05	4.8	.5	9.1	2.0	19	7.0	9.2	.1	3.0	63	14	0	88.8	6.9	33
Aug. 21-31	9.5	.14	5.2	.7	7.4	2.0	18	7.1	7.2	.1	2.8	62	16	1	78.7	6.7	45
Sept. 1-10	11	.11	5.8	1.1	9.1	2.2	21	8.2	9.8	.0	2.9	60	19	2	78.2	6.7	60
Sept. 11-20	19.9	.07	6.7	1.0	8.1	2.0	27	6.5	10	.0	3.0	62	20	2	79.8	6.8	45
Sept. 21-28, 28-30	18.6	.08	6.1	1.0	10	2.1	22	33.6	10	.0	3.2	83	21	3	103	6.8	45
Sept. 26	18.6	.09	6.1	1.0	10	2.1	22	33.6	10	.0	3.2	83	21	3	103	6.8	45
Sept. 27	11	.06	8.0	3.9	40	3.2	22	15	64	--	2.2	4,760	846	813	8,093	6.6	32
Weighted average	9.6	0.35	5.9	1.7	12	2.0	21	7.6	17	0.0	2.5	82	22	4	113	--	60

a Calculated from determined constituents.

NEUSE RIVER BASIN--Continued
NEUSE RIVER NEAR (COWEN LANDING) VANCEBORO, N. C.--Continued
Temperature (°F) of water, water year October 1955 to September 1956
Twice-daily measurements at approximately 8 a.m. and 9 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.....	74	75	56	68	41	46	40	43	44	48	50	55	51	52	68	68	75	78	83	88	80	85	81	--
2.....	76	78	56	62	43	47	--	--	49	54	54	54	--	--	68	69	76	78	83	88	80	85	--	--
3.....	71	73	60	60	47	52	--	--	50	50	50	52	55	56	66	67	75	78	83	84	80	82	--	--
4.....	71	73	55	54	46	52	44	46	49	50	52	53	60	61	67	69	74	78	85	88	78	80	85	83
5.....	68	73	51	56	48	51	45	47	51	52	51	52	62	63	67	67	75	76	85	89	79	83	85	82
6.....	70	73	54	61	48	50	46	48	53	56	54	55	60	62	67	69	73	76	85	88	79	83	80	84
7.....	70	70	53	55	52	56	43	45	54	56	57	60	61	68	69	73	77	84	89	80	81	80	80	80
8.....	72	71	50	56	45	48	39	40	53	58	58	60	50	51	56	60	70	72	85	89	80	83	78	80
9.....	69	70	51	55	47	50	39	41	50	52	56	58	50	51	62	67	71	73	84	86	79	81	79	77
10.....	68	68	51	54	44	48	38	40	53	55	56	58	50	52	64	68	73	75	84	85	81	84	71	74
11.....	68	71	50	54	45	48	40	41	53	54	56	57	55	56	65	68	73	77	80	84	82	85	70	75
12.....	69	70	55	40	42	41	41	45	56	57	58	60	50	51	60	61	70	73	80	84	82	85	70	74
13.....	69	69	57	59	42	43	45	46	52	54	57	59	50	51	69	70	79	80	80	84	82	84	70	74
14.....	70	70	59	61	38	43	44	46	53	54	58	60	51	53	70	76	78	82	81	83	83	84	70	75
15.....	68	68	57	62	41	43	43	44	53	55	50	51	60	63	72	74	80	88	78	81	83	86	73	77
16.....	67	68	59	62	49	50	44	45	53	55	51	52	60	61	72	64	81	85	80	80	82	86	75	78
17.....	66	66	61	63	35	38	43	44	53	54	50	--	52	55	69	71	83	86	79	81	80	84	76	79
18.....	65	67	48	59	46	40	41	42	54	55	51	52	54	56	70	74	83	88	79	82	80	83	76	78
19.....	66	64	54	58	40	42	42	44	52	54	50	51	50	53	71	74	82	81	80	83	81	84	75	77
20.....	60	67	59	50	40	41	42	45	54	55	48	50	50	54	71	73	79	87	79	83	81	83	75	78
21.....	57	61	52	59	39	41	42	44	50	52	51	52	48	50	70	74	78	80	81	84	81	80	73	74
22.....	58	58	48	50	41	43	44	46	50	51	48	50	51	54	70	75	78	79	80	83	79	81	71	75
23.....	58	59	52	51	40	43	42	44	46	48	48	49	55	58	71	76	81	89	83	86	78	78	71	79
24.....	64	65	60	61	43	46	40	42	52	53	50	52	51	56	74	83	88	84	83	76	79	73	74	74
25.....	56	60	50	52	40	49	39	42	54	55	48	49	52	56	72	74	85	89	82	84	75	76	72	73
26.....	56	61	49	52	45	49	42	44	50	51	50	51	58	63	71	73	85	88	82	84	75	76	71	72
27.....	68	63	48	51	45	48	41	43	50	50	51	52	60	65	70	73	85	89	83	86	75	78	70	70
28.....	58	62	56	60	41	46	40	42	50	50	52	53	63	68	73	75	83	89	81	83	76	78	69	69
29.....	60	64	48	50	41	45	42	45	51	52	50	51	65	68	73	75	85	87	80	85	76	80	--	--
30.....	54	42	48	43	47	43	47	43	47	43	52	52	68	70	73	75	85	86	82	85	78	81	--	--
31.....	53	62	--	--	40	42	43	46	--	--	51	52	68	--	69	71	--	--	86	89	83	84	--	--
Average.....	65	67	53	57	43	46	42	44	51	53	52	54	55	58	62	71	78	82	82	85	79	82	74	76

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR (STREETS FERRY) VANCEORO, N. C.

LOCATION --At Streets Ferry about 1½ miles east of Lima, Craven County.

DRAINAGE AREA --4,040 square miles.

RECORDS AVAILABLE --Chemical analyses: September 1954 to September 1956.

WATER TEMPERATURES --October 1954 to September 1956.

EXTREMES 1954-56 --Dissolved solids: Maximum, 8,750 ppm Sept. 26; minimum, 50 ppm Apr. 21-30.

Hardness: Maximum, 1,610 ppm Sept. 26; minimum, 14 ppm Mar. 21-28, 29 (a.m.), 70-30.

Specific conductance: Maximum, 15,400 micromhos Oct. 15 (a.m.); minimum daily, 51.9 micromhos Mar. 27 (a.m.).

Water temperatures: Maximum, 87°F July 5, 40°F Oct. 15 (a.m.); minimum daily, 51.9 micromhos Mar. 27 (a.m.).

EXTREMES 1954-56 --Dissolved solids: Maximum, 17,800 micromhos Oct. 15 (a.m.); minimum, 50 ppm Apr. 21-30, 1956.

Hardness: Maximum, 2,220 ppm Oct. 15 (a.m.); minimum, 14 ppm Mar. 21-28, 29 (a.m.), 30-31, 1956.

Specific conductance: Maximum, 17,800 micromhos Oct. 15 (a.m.); minimum daily, 51.9 micromhos Mar. 27 (a.m.), 1956.

WATER TEMPERATURES: Maximum, 90°F July 28 (p.m.); minimum, 39°F Dec. 8 (a.m.), 1954.

REMARKS --Samples collected three times daily (6 a.m., 12 m., 6 p.m.). Three daily samples were composited unless otherwise noted. Records of specific conductance of samples collected three times daily available in district office at Raleigh, N.C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955		11	0.19	5.6	1.5	7.2	2.3	22	6.5	8.2	0.0	2.4	80	20	2	82.1	6.5	160
Oct. 11-20		12	.18	6.2	1.6	8.0	2.0	23	5.5	10	.0	2.4	86	23	4	91.3	6.7	140
Oct. 21-31		12	.20	6.7	1.8	9.9	2.0	23	6.6	13	.0	2.4	86	24	5	103	6.7	80
Nov. 1-10		12	.73	6.1	1.8	9.7	2.0	23	7.0	13	.1	1.9	82	23	4	105	6.3	70
Nov. 11-20		12	.61	6.0	1.8	11	2.0	25	5.4	12	.1	1.6	78	22	2	112	6.6	65
Nov. 21-30		11	.74	5.3	1.8	9.1	1.9	21	6.7	12	.0	1.5	72	21	4	96.5	6.8	75
Dec. 1-10		11	.74	6.0	1.2	9.4	1.6	22	5.5	12	.0	1.1	77	20	2	108	6.4	70
Dec. 11-20		11	.75	6.0	1.4	9.7	1.6	22	4.8	12	.0	2.0	74	21	3	101	6.7	65
Dec. 21-31		11	.67	6.1	1.4	9.3	1.4	23	5.6	12	.0	2.1	70	21	2	97.6	6.7	55
Jan. 1-10, 1956		11	.69	6.0	1.4	9.1	1.5	21	7.8	12	.1	1.3	84	21	3	97.0	6.4	40
Jan. 11-20		8.7	.38	6.4	1.0	9.1	1.5	22	7.2	12	.1	1.4	82	20	2	97.7	6.6	40
Jan. 21-31		8.2	.49	5.6	1.0	8.8	1.5	19	9.2	12	.0	.9	60	4	4	94.8	6.5	40
Feb. 1-10		8.3	.34	6.3	1.2	8.0	1.5	18	9.5	9.5	.1	1.4	87	20	6	94.8	6.5	33
Feb. 11-20		8.6	.19	2.0	1.1	5.9	1.8	12	9.7	7.6	.0	1.0	86	17	7	77.1	6.4	80
Feb. 21-29		8.5	.49	8	1.0	5.8	1.4	13	9.7	7.7	.0	1.1	84	16	5	77.7	6.4	80
Mar. 1-10		7.4	.42	4.5	1.2	5.6	1.2	13	8.1	7.5	.0	1.6	83	18	6	72.5	6.4	70
Mar. 11-20		7.6	.64	5.1	1.3	6.7	1.2	15	8.4	9.2	.0	2.0	80	18	6	79.9	6.5	75
Mar. 21-28, 29 (a.m., m.), 30-31		6.6	.30	3.5	1.3	5.4	1.4	11	8.9	6.8	.0	1.6	55	14	5	80.5	6.2	80
Mar. 29 (p.m.)		--	--	--	--	--	--	12	10	23	--	--	--	15	5	114	6.3	--

NEUSE RIVER BASIN—Continued
 NEUSE RIVER NEAR (STREETS FERRY) VANCEBORO, N. C.—Continued
 Chemical analyses, in parts per million, water year October 1955 to September 1956—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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Apr. 1-10, 1956.....		8.3	0.36	5.2	0.6	6.5	1.5	16	6.0	8.2	0.0	1.1	61	15	15	77.2	6.7	65
Apr. 11-20.....		7.5	.18	4.4	.9	5.8	1.5	16	4.7	7.5	.0	1.7	51	15	2	71.3	6.6	80
Apr. 21-30.....		7.5	.16	4.7	.9	5.1	1.2	17	4.9	6.5	.0	1.6	50	15	1	66.4	6.5	80
May 1-10.....		7.5	.58	6.0	1.0	6.4	1.5	18	4.7	8.2	.0	2.3	67	19	4	77.8	6.6	70
May 11-20.....		9.4	.51	5.2	.8	6.0	1.5	19	5.3	6.8	.0	2.3	69	16	1	71.1	6.3	90
May 21-31.....		11	.72	7.1	1.2	8.3	1.7	26	4.7	9.2	.0	2.2	75	23	1	94.6	6.7	80
June 1-10.....		11	--	--	--	9.4	1.6	24	5.4	9.5	.0	2.5	--	23	3	96.6	7.2	18
June 11-20.....		10	.12	6.2	1.9	8.2	1.6	26	5.4	8.5	.1	2.5	72	23	2	89.8	6.7	45
June 21-30.....		8.7	.17	8.3	1.2	9.1	1.8	28	6.4	9.5	.0	2.6	72	26	3	104	6.3	26
July 1-10.....		3.5	.00	8.1	1.8	12	2.1	36	4.8	12	.1	2.5	68	28	0	120	6.6	18
July 11-20.....		7.9	.47	5.4	1.1	6.9	1.9	16	9.1	6.5	.0	2.9	56	18	5	83.4	6.3	50
July 21-31.....		10	.33	5.8	1.5	7.6	1.9	20	6.8	8.0	.0	2.6	72	20	4	84.1	6.3	75
Aug. 1-10.....		10	.34	5.3	.6	7.8	1.9	21	5.8	7.5	.0	2.0	70	16	0	83.7	6.7	65
Aug. 11-20.....		10	.26	5.6	1.6	8.1	1.9	21	5.1	8.0	.0	2.1	70	20	3	85.4	6.9	55
Aug. 21-31.....		9.5	--	5.2	1.6	6.8	1.7	19	7.4	7.5	--	1.2	69	20	4	73.6	6.2	--
Sept. 1-10.....		11	.04	5.6	1.2	9.1	1.9	20	6.7	10	.0	2.2	73	19	3	91.3	6.7	40
Sept. 11-20.....		9.9	.06	4.4	1.0	7.5	1.8	16	7.1	7.5	.0	1.9	65	15	2	75.7	6.3	55
Sept. 21(a.m.), 27(p.m.)		10	.24	8.7	8.5	72	3.6	22	23	122	--	1.7	--	57	39	498	6.8	--
Sept. 21(m., p.m.), 22-25, 29-30.....		11	.05	6.3	3.5	28	2.6	20	11	4.3	.0	1.9	134	30	14	209	6.5	55
Sept. 26.....		6.6	.00	116	322	2,700	102	58	584	4,890	--	1.7	a 8,150	1,610	1,565	13,800	6.8	--
Sept. 27(a.m., m.).....		9.9	.20	17	21	206	8.6	22	46	372	--	1.7	--	12	100	1,340	6.7	--
Sept. 28.....		11	.28	8.3	3.8	33	2.8	25	14	60	--	2.0	--	36	16	281	6.7	35
Weighted average.....		9.5	0.40	6.1	2.3	16	2.0	20	8.3	24	0.0	1.9	94	25	8	132	--	65

a Calculated from determined constituents.

NEUSE RIVER BASIN--Continued

NEUSE RIVER NEAR (STREETS FERRY) VANCEBORO, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Average of thrice-daily measurements at approximately 6 a.m., 12 m., and 6 p.m./

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

NEUSE RIVER BASIN--Continued

SWIFT CREEK NEAR VANCEBORO, N. C.

LOCATION.--At gaging station at highway bridge, 2½ miles upstream from bridge on State Highway 118, 2½ miles downstream from Clayroot Swamp and 3½ miles northwest of Vanceboro, Craven County.

DRAINAGE AREA.--182 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1950 to September 1952, January 1955 to September 1956.

Water temperatures: October 1951 to September 1952, October 1954 to September 1956.

EXTREMES, 1955-56.--Hardness: Maximum, 59 ppm Sept. 24; minimum, 24 ppm May 3-10.

Specific conductance: Maximum daily, 485 micromhos Sept. 24; minimum daily, 78.4 micromhos July 12.

Water temperatures: Maximum, 81°F July 3; minimum, 37°F Dec. 13-15, Jan. 25, 28.

EXTREMES, 1950-52, 1955-56.--Hardness: Maximum, 96 ppm Jan. 1-10, 1955; minimum, 15 ppm Sept. 21-30, 1955.

Specific conductance (1955-56): Maximum daily, 865 micromhos June 21, 1955; minimum daily, 29.5 micromhos Sept. 21, 1955.

Water temperatures (1951-52, 1954-56): Maximum, 87°F July 29, 1952; minimum, 36°F Dec. 23, 1954.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955.....	194	13	0.28	11	1.5	9.4	1.9	22	15	14	0.0	2.5	113	34	16	125	6.7	160
Oct. 11-20.....	69.2	14	.26	14	2.0	13	2.1	33	17	18	.0	1.9	124	42	15	163	7.0	75
Oct. 21-31.....	37.8	15	.24	16	2.1	16	2.0	42	21	20	.0	1.8	139	50	16	192	7.0	80
Nov. 1-10.....	53.5	13	.33	14	1.9	12	1.9	36	19	16	.0	1.5	118	44	14	157	6.9	75
Nov. 11-20.....	38.9	14	.39	17	1.8	12	1.9	46	17	16	.0	1.5	123	49	12	168	7.2	80
Nov. 21, 23-30.....	87.2	12	.33	14	1.8	10	1.9	32	20	14	.0	1.4	110	42	16	146	6.7	75
Nov. 22.....	84	--	--	--	--	--	--	36	21	29	--	--	--	48	18	211	7.1	--
Dec. 1-10.....	59.9	12	.33	14	1.8	11	1.5	29	20	15	.0	.9	111	41	18	151	6.9	50
Dec. 11-20.....	42.2	13	.25	16	1.8	13	1.5	35	22	18	.0	1.0	119	46	18	173	7.1	40
Dec. 21-31.....	31.5	12	.33	17	2.0	12	1.4	40	24	15	.0	1.0	120	51	19	175	7.1	40
Jan. 1-10, 1956.....	33.7	13	.45	17	1.9	13	1.4	38	23	16	.0	1.6	127	51	20	175	6.9	40
Jan. 11-20.....	51.5	10	.50	17	1.7	12	1.4	35	23	17	.0	1.4	128	49	20	173	7.0	60
Jan. 21-31.....	233	9.8	.80	12	1.2	7.6	1.6	15	21	11	.2	1.1	83	34	22	127	6.2	28
Feb. 1-10.....	335	8.7	.20	10	1.4	7.3	1.4	14	21	9.7	.0	1.8	84	31	20	122	6.7	38
Feb. 11-20.....	356	9.3	.22	10	1.0	6.8	1.0	12	20	9.8	.0	2.6	82	29	21	114	6.5	38
Feb. 21-28.....	316	8.4	.21	9.2	1.1	7.0	1.2	10	20	9.5	.0	1.9	80	28	18	110	6.8	32
Mar. 1-10.....	298	8.7	.34	9.4	1.4	6.8	1.1	13	19	10	.0	2.3	84	29	18	109	6.6	80
Mar. 11-20.....	238	8.8	.31	11	1.6	7.5	1.1	16	21	11	.0	2.4	89	30	20	120	6.8	80
Mar. 21-31.....	149	8.5	.32	12	1.5	7.9	.9	17	21	12	.0	2.1	86	35	21	125	7.0	70

Apr. 1-10, 1956	63.0	8.5	0.23	13	1.9	8.7	1.2	27	22	13	0.0	2.1	99	41	19	143	6.8	60
Apr. 11-20	351	8.3	.09	8.7	1.6	6.3	1.1	15	16	10	.0	2.0	73	28	16	104	6.6	65
Apr. 21-30	61.5	10	.24	13	2.0	9.6	1.2	16	19	14	.0	1.8	102	40	18	143	6.7	65
May 1-2	154	9.0	.52	13	1.5	12	2.1	28	17	18	.0	2.3	88	38	15	156	6.7	--
May 3-10	333	8.5	.48	8.5	.7	6.2	1.3	13	12	8.5	.0	2.8	--	24	14	92.5	6.4	100
May 11-18	65.9	11	.70	12	1.2	8.7	1.3	24	14	12	.0	2.9	108	35	15	126	6.8	100
May 19-20	25.0	13	.80	16	1.7	30	1.8	36	19	46	.0	2.7	--	47	18	263	7.3	--
May 21-22, 24-25, 27, 29	19.0	12	.66	18	1.6	18	1.9	42	19	26	.0	3.3	146	50	16	208	6.7	90
May 23, 26, 28, 30-31	16.4	12	.54	19	1.9	31	2.1	47	21	48	.0	2.4	--	55	17	287	7.1	50
June 1, 4, 10	19.0	13	.49	19	1.8	36	2.5	48	18	54	.1	1.8	--	54	14	314	6.9	60
June 2-3, 5-9	20.7	12	.35	17	1.9	19	2.2	40	20	25	.0	3.4	142	50	17	208	7.1	55
June 11-14	11.2	12	.49	18	1.9	39	2.4	50	15	58	.2	1.8	--	54	13	328	7.0	50
June 15-20	16.8	10	.32	18	1.7	24	2.2	47	19	32	.0	4.0	154	51	12	234	7.1	45
June 21-30	15.4	9.1	.20	16	1.9	18	2.7	36	20	24	.0	4.4	137	48	11	201	7.1	38
July 1-4, 8-10	15.6	10.6	.60	16	1.7	23	3.1	41	17	30	.1	3.4	130	52	13	284	7.2	30
July 5-7	7.9	10	.34	18	2.0	33	3.5	14	18	9.2	.1	2.0	--	52	16	105	6.6	--
July 11-14	373.9	7.1	.10	18.7	1.9	7.4	1.7	14	16	9.2	.1	2.0	--	38	18	159	6.7	90
July 15-20	60.2	12	.34	14	.9	13	1.7	29	21	17	.0	2.6	135	--	--	--	--	--
July 21-31	41.7	11	.35	13	.9	15	2.1	29	13	20	.1	2.8	135	36	12	161	6.9	70
Aug. 1-3	32.3	13	.34	14	1.1	16	2.1	34	17	21	--	3.2	--	39	12	179	6.8	50
Aug. 4-10	122.3	9.5	.17	8.9	1.2	9.9	2.2	19	16	13	.1	2.3	87	27	11	119	6.9	45
Aug. 11-20	24.5	13	.48	14	1.7	13	1.9	37	19	18	.1	2.7	113	43	12	168	7.0	45
Aug. 21, 26-31	22.1	13	.48	15	1.7	14	2.0	34	21	18	.1	3.0	119	44	17	176	6.7	50
Aug. 22-25	106	9.0	.20	10	.5	8.6	2.7	19	17	12	--	2.3	--	28	12	120	6.7	60
Sept. 1-4, 6-7, 10	13.6	13	.05	15	2.0	18	2.9	40	19	24	.0	2.2	134	45	12	193	6.9	37
Sept. 5	24.0	--	--	--	--	--	--	48	18	38	--	--	--	53	14	264	7.4	--
Sept. 8-9	15.0	11	.34	15	1.6	43	4.1	40	18	65	--	2.3	--	44	11	332	6.8	--

NEUSE RIVER BASIN--Continued

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

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg/l.	Non-carbonate			
Sept. 11-12, 18-20, 1956	6.8	13	0.25	17	2.1	36	3.3	44	20	55	--	2.2	--	51	15	303	6.9	20
Sept. 13-17	6.8	12	.33	14	2.0	22	3.6	42	19	28	--	2.8	--	44	10	205	6.8	37
Sept. 21-23, 25-26	5.9	11	.13	19	2.1	56	3.4	53	21	82	--	2.5	--	56	13	397	7.1	28
Sept. 24	4.2	--	--	--	--	--	--	54	18	104	--	--	--	59	15	485	7.2	--
Sept. 27-30	43.2	9.1	.19	16	1.5	15	3.0	31	28	18	--	2.0	--	45	20	188	7.2	--
Weighted average	112	11	0.33	14	1.6	14	1.8	30	19	20	0.0	2.2	111	42	17	168	--	60

NEUSE RIVER BASIN--Continued

Temperature (°F) of water, water year October 1955 to September 1956

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	
1.....	71	71	57	55	43	43	39	38	46	44	50	48	58	52	68	64	72	70	78	77	75	73	78	
2.....	71	55	54	43	43	43	38	38	49	44	50	50	61	55	64	62	72	71	79	77	74	73	78	
3.....	71	68	57	53	47	43	40	38	52	49	50	50	65	61	65	62	71	68	81	79	74	74	78	
4.....	68	68	55	53	47	40	40	52	49	54	50	66	64	65	65	68	68	80	79	74	70	78		
5.....	68	66	53	50	55	53	40	40	50	48	55	51	66	65	65	65	68	80	79	74	72	78		
6.....	68	37	50	47	55	50	40	40	51	49	60	54	65	64	65	65	68	80	80	76	72	76		
7.....	69	68	49	48	50	47	40	40	52	51	64	59	67	65	66	65	68	80	80	76	74	76		
8.....	69	69	49	49	47	45	40	38	52	50	68	66	58	68	68	62	68	80	79	74	74	76		
9.....	69	66	50	49	46	46	38	38	51	51	58	52	58	54	62	59	69	68	79	79	75	74		
10.....	66	62	50	50	46	43	38	38	53	51	56	51	58	54	63	60	70	69	79	77	75	70		
11.....	62	61	50	43	42	40	38	38	53	53	60	55	57	54	66	63	72	70	77	75	77	68		
12.....	63	61	51	50	42	39	41	40	53	52	61	58	57	51	69	68	73	72	75	73	77	66		
13.....	63	63	54	51	39	37	42	41	53	50	60	55	57	53	71	69	74	73	74	73	77	66		
14.....	66	63	58	54	37	37	42	41	53	48	61	54	59	56	74	71	75	74	75	74	78	67		
15.....	66	64	58	58	39	37	41	40	52	49	61	53	63	59	74	73	76	75	76	75	78	71		
16.....	64	60	61	58	39	39	40	40	53	52	53	51	65	63	73	71	77	76	77	76	78	73		
17.....	61	59	61	60	39	38	40	40	53	51	51	48	64	60	73	68	78	77	76	77	75	73		
18.....	59	57	60	54	38	38	40	39	57	51	50	48	60	55	68	68	78	77	76	75	75	74		
19.....	58	57	54	51	40	38	39	39	57	54	50	48	59	55	68	68	77	72	75	75	77	73		
20.....	58	56	51	48	40	40	41	39	56	55	50	48	59	55	68	68	72	70	75	75	77	70		
21.....	57	56	48	45	40	38	41	41	55	50	50	48	58	53	68	66	72	70	76	75	77	70		
22.....	58	57	49	47	38	38	41	39	51	48	51	47	60	54	66	68	75	72	78	76	74	68		
23.....	58	57	53	49	39	38	40	40	48	46	55	48	62	58	69	68	77	75	79	78	71	68		
24.....	60	58	55	53	43	39	40	38	46	45	54	52	62	58	69	69	78	77	79	79	72	68		
25.....	60	57	55	51	48	43	38	37	53	45	52	47	56	56	69	68	79	78	79	78	72	68		
26.....	57	55	51	48	48	47	39	38	53	50	52	48	62	58	66	65	79	79	78	76	72	68		
27.....	56	55	48	45	47	43	39	38	52	49	57	51	65	62	66	65	79	79	76	75	74	67		
28.....	56	55	42	47	43	40	38	37	55	49	57	54	68	65	67	66	79	79	78	76	74	65		
29.....	59	56	52	45	40	39	44	38	53	49	54	51	68	67	68	67	79	79	78	78	74	64		
30.....	62	59	47	43	40	39	49	44	--	--	57	52	68	68	68	68	79	78	76	75	74	65		
31.....	63	61	--	--	39	39	49	46	--	--	57	52	--	--	68	68	--	--	76	75	75	--		
Average.....	63	61	53	50	43	42	41	39	52	49	55	51	62	58	68	66	74	73	78	77	75	74	70	

NEUSE RIVER BASIN--Continued

SWIFT CREEK AT VANCEBORO, N. C.

LOCATION --At bridge on county road in Vanceboro, Craven County, 50 feet southwest of U. S. Highway 17.

DRAINAGE AREA --226 square miles.

RECORDS AVAILABLE --Chemical analyses: January 1955 to September 1956.

Water temperatures: January 1955 to September 1956.

EXTREMES, 1955-56 --Dissolved solids: Maximum, 148 ppm June 1-10; minimum, 76 ppm Mar. 21-31.

Hardness: Maximum, 51 ppm June 11-20; minimum, 25 ppm May 4-10, Aug. 6-10.

Specific conductance: Maximum, 282 micromhos June 9; minimum daily, 80.7 micromhos May 9.

Station temperatures: Maximum, 80 F on many days during summer months; minimum, 34 F Dec. 14, 17.

EXTREMES, January 1955 to September 1956: Hardness: Maximum, 124 ppm Jan. 11, 1955; minimum, 17 ppm Sept. 21-30, 1955.

Specific conductance: Maximum daily, 608 micromhos Jan. 11, 1955; minimum daily, 116 micromhos Sept. 24, 1955.

Station temperatures: Maximum, 80 F on many days during summer months; minimum, 34 F Dec. 14, 17, 1956.

REMARKS --Records of specific conductance of daily samples available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955	12	0.56	9.2	2.1	7.4	2.1	25	12	10	0.0	2.7	106	32	11	101	6.4	180
Oct. 11-20	14	31	13	1.3	11	2.0	35	11	15	0	1.8	118	39	10	137	6.7	120
Oct. 21-31	14	28	15	1.5	12	1.9	39	13	17	0	1.8	125	43	11	154	7.1	100
Nov. 1-10	12	67	12	1.6	11	2.0	35	12	15	0	1.0	111	37	9	139	7.1	80
Nov. 11-20	12	69	13	2.3	11	1.9	40	13	15	0	1.1	115	43	10	146	7.2	80
Nov. 21-30	12	74	12	1.8	10	1.9	35	12	14	0	1.1	108	38	9	137	7.2	80
Dec. 1-10	12	45	12	1.5	9.0	1.7	28	16	14	0	1.4	106	36	13	129	7.0	80
Dec. 11-20	12	53	12	1.6	9.8	1.4	28	15	13	0	1.7	106	37	14	134	6.9	75
Dec. 21-31	11	57	14	1.4	11	1.5	31	19	15	0	1.2	111	41	15	149	6.9	70
Jan. 1-10, 1956	12	58	15	1.6	11	1.5	34	20	14	0	1.1	102	43	15	148	7.1	50
Jan. 11-20	11	61	14	1.5	10	1.4	32	19	14	0	1.0	100	41	15	146	7.1	45
Jan. 21-31	10	41	11	1.6	8.3	1.4	18	19	12	0	1.9	87	33	19	124	6.7	50
Feb. 1-10	8.7	25	11	1.0	7.4	1.4	19	18	8.0	0	1.4	95	31	15	116	6.9	35
Feb. 11-20	8.7	19	8.8	1.2	6.4	1.2	12	18	9.0	0	2.1	83	27	17	105	6.8	32
Feb. 21-29	7.7	21	8.8	0.9	6.1	1.2	12	15	9.0	0	1.4	89	26	16	97.3	6.6	37
Mar. 1-10	7.1	32	8.8	1.0	6.5	1.3	13	17	10	0	2.2	77	26	16	100	6.6	100
Mar. 11-20	6.4	56	10	1.2	6.9	1.2	18	17	10	0	1.9	82	30	15	109	7.1	100
Mar. 21-31	5.2	38	9.9	1.3	7.1	1.0	16	17	10	0	1.9	76	30	17	109	6.6	80
Apr. 1-10	6.7	26	10	1.8	7.1	1.2	23	16	10	0	1.9	83	33	14	114	6.9	75
Apr. 11-20	6.3	08	10	1.7	7.1	1.2	23	15	10	0	1.8	83	32	14	112	7.0	70
Apr. 21-30	6.7	23	11	1.5	8.4	1.1	24	14	12	0	3.2	94	34	14	122	6.8	75
May 1-3	6.6	53	13	1.6	9.5	1.3	32	13	13	0	1.6	--	40	14	146	6.8	80
May 4-10	6.9	48	8.3	1.1	6.0	1.4	17	8.4	9.2	0	2.8	86	25	11	90.4	6.8	120
May 11-20	9.1	46	11	1.3	8.0	1.4	24	8.9	13	0	2.9	103	32	12	113	6.7	120

May 21-31, 1955	12	0.60	15	1.8	20	1.8	40	12	30	0.0	2.5	144	46	13	202	6.8	75
June 1-10	16	.36	17	1.8	22	1.8	46	18	30	.0	3.1	148	50	13	222	7.1	45
June 11-20	11	.14	17	2.1	19	2.1	46	16	28	.0	3.0	137	51	13	207	6.9	45
June 21-30	10	.15	16	2.5	15	2.5	30	28	22	.0	2.6	127	50	25	191	6.8	38
July 1-10	11	.47	16	1.7	14	2.2	44	18	16	.1	2.6	115	46	10	170	6.9	50
July 11-20	9.8	.35	12	.9	10	2.3	24	14	14	.0	2.4	118	33	13	136	6.7	90
July 21-31	10	.43	12	1.1	10	1.7	29	8.4	14	.1	2.4	113	35	11	125	6.9	110
Aug. 1-5	14	.38	14	1.4	13	1.8	37	15	16	--	2.5	--	40	10	152	7.4	70
Aug. 6-10	9.0	.10	8.6	.9	8.3	1.9	21	11	11	.1	2.0	78	25	8	104	6.9	45
Aug. 11-20	13	.19	13	.9	11	1.7	32	14	13	.1	2.0	106	36	10	138	7.0	75
Aug. 21-31	11	.50	12	1.4	9.9	2.0	31	15	13	.2	2.1	106	36	11	135	7.0	50
Sept. 1-10	15	.26	15	1.7	13	2.0	40	18	16	.0	2.1	117	44	11	163	7.0	50
Sept. 11-20	11	.25	14	1.7	17	2.8	40	16	23	.1	1.7	134	43	10	182	7.2	45
Sept. 21-30	11	.21	14	1.7	17	2.6	38	17	24	.0	1.6	121	42	11	182	6.9	50
Average	10	0.39	12	1.5	11	1.7	29	15	15	0.0	2.0	106	36	12	139	--	75

NEUSE RIVER BASIN--Continued

SWIFT CREEK AT VANCEBORO, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 12 m. 7

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	60	40	40	45	50	55	66	74	74	75	78
2	70	55	42	40	36	50	56	63	70	75	78	78
3	70	56	42	40	50	50	60	63	70	80	75	78
4	70	55	50	40	50	50	65	65	70	80	72	78
5	68	50	52	40	50	50	65	65	70	78	73	78
6	70	50	52	40	50	58	65	65	70	78	72	78
7	70	48	50	40	53	60	65	80	70	80	75	76
8	70	50	48	35	54	65	60	80	68	80	75	73
9	66	50	45	35	53	57	58	60	70	78	75	70
10	60	50	44	35	55	55	55	60	70	78	75	68
11	62	50	40	36	55	58	55	62	74	78	78	66
12	60	50	38	40	50	58	55	65	77	75	78	65
13	62	54	36	40	50	58	55	68	78	75	80	70
14	65	55	34	40	50	58	55	70	80	75	80	70
15	65	58	36	42	50	58	60	73	80	70	80	73
16	60	60	36	42	54	55	60	70	80	76	78	74
17	60	62	34	40	53	48	60	78	78	75	78	74
18	58	48	36	40	55	50	60	66	80	75	78	70
19	58	48	38	38	58	48	55	66	75	75	80	70
20	58	48	38	40	58	48	55	67	75	75	80	70
21	58	48	38	40	50	45	55	63	75	76	76	70
22	58	50	38	40	48	48	55	65	78	78	78	68
23	58	48	40	40	45	50	60	64	76	76	75	70
24	60	54	40	38	45	55	60	65	80	78	73	70
25	58	50	40	35	50	38	58	65	80	78	73	70
26	60	50	44	40	54	48	60	66	80	74	73	65
27	58	48	45	38	50	54	60	68	--	78	73	60
28	58	50	45	35	55	58	65	68	78	74	75	66
29	58	48	40	40	50	55	68	70	80	75	76	65
30	50	42	38	45	--	55	68	70	80	77	75	--
31	58	--	38	50	--	55	--	70	--	75	78	--
Average	62	52	41	39	51	53	59	66	75	76	76	71

NEUSE RIVER BASIN--Continued

TRENT RIVER NEAR TRENTON, N. C.

LOCATION.--At gaging station, at Free Bridge, on first road crossing Trent River upstream from N. C. Highway 12, about 800 feet downstream from Little Chinquapin Branch, 1½ 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 1956.

Water temperatures: October 1951 to September 1956: Maximum, 149 ppm July 11-20; minimum, 64 ppm Jan. 21-31, Feb. 11-20, Feb. 21-29.

EXTREMES, 1953-56.--Dissolved solids: Maximum, 149 ppm July 11-20; minimum, 64 ppm Jan. 21-31, Feb. 11-20, Feb. 21-29.

Hardness: Maximum, 106 ppm Sept. 21-30; minimum, 20 ppm May 5-10.

Specific conductance: Maximum daily, 289 micromhos Sept. 23, 27; minimum daily, 51.5 micromhos May 10.

Water temperatures: Maximum, 82°F Aug. 9, 12-13, 15, 19; minimum, freezing point Jan. 6-10, 17.

EXTREMES, 1951-53, 1955-56.--Dissolved solids: Maximum, 149 ppm Feb. 1-10, 1956; minimum, 59 ppm Mar. 1-10, 1952.

Hardness: Maximum, 12 ppm Nov. 1-10, 1952; minimum, 20 ppm May 5-10, 1956.

Water temperatures: Maximum, 85°F July 27, 1952; minimum, freezing point Jan. 9-10, 17, 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg./l.	Non-carbonate			
Oct. 1-10, 1955.....	166	7.9	0.77	18	1.0	4.9	0.9	51	4.4	7.0	0.0	3.5	114	49	7	116	7.0	220
Oct. 11-20.....	74.3	8.7	.50	25	1.5	4.6	.8	73	7.1	7.5	.0	3.2	126	69	10	158	7.1	130
Oct. 21-31.....	48.8	8.8	.54	21	2.9	5.1	.8	66	6.6	8.2	.0	3.0	120	65	11	149	7.1	130
Nov. 1-10.....	82.9	8.1	.21	17	1.2	4.7	.9	46	5.3	8.5	.0	2.2	99	48	10	113	7.2	140
Nov. 11-20.....	53.9	8.3	.18	19	1.4	5.0	.8	54	4.7	8.5	.0	2.2	100	54	9	130	6.9	130
Nov. 21-30.....	132	7.9	.24	14	1.0	4.7	.7	35	5.3	9.0	.0	1.8	90	39	10	102	6.7	140
Dec. 1-10.....	132	7.5	.36	13	.9	4.4	.7	32	4.5	8.0	.0	1.8	86	36	10	97.8	7.0	120
Dec. 11-20.....	114	6.4	.33	13	1.2	4.6	.5	33	5.1	8.2	.0	1.8	83	37	10	98.5	7.0	110
Dec. 21-31.....	65.0	6.1	.32	16	.7	4.6	.6	41	9.3	8.2	.0	1.8	87	43	9	114	7.1	90
Jan. 1-10, 1956.....	71.2	4.9	.37	15	1.0	4.9	.6	38	7.2	8.0	.0	1.9	80	42	11	110	7.3	90
Jan. 11-20.....	88.4	5.3	.40	14	1.0	4.6	.6	34	8.0	8.5	.0	1.8	75	39	11	103	7.0	100
Jan. 21-31.....	228	5.2	.30	8.0	1.8	4.2	.5	22	8.4	7.5	.0	1.4	64	28	10	82.7	6.8	100
Feb. 1-10.....	264	3.9	.19	11	.6	4.1	.6	26	7.5	7.8	.1	.9	66	31	9	88.7	6.9	80
Feb. 11-20.....	322	3.8	.27	9.8	.5	3.6	.5	22	6.5	6.0	.1	.7	64	26	8	77.7	6.8	120
Feb. 21-29.....	346	3.6	.24	8.8	.5	3.6	.5	20	7.5	5.0	.0	.6	64	24	8	73.2	6.8	120
Mar. 1-10.....	244	3.5	.30	11	.4	4.0	.4	26	6.9	6.5	.0	1.8	67	30	8	81.0	7.2	110
Mar. 11-20.....	281	3.5	.38	12	.5	3.7	.5	28	5.6	6.8	.0	2.1	70	31	8	84.0	6.9	120
Mar. 21-31.....	224	3.5	.30	12	.6	3.8	.4	28	6.9	6.8	.0	1.8	65	32	9	86.5	7.1	110
Apr. 1-10.....	90.7	3.2	.40	14	1.0	3.9	.4	38	4.3	7.0	.0	2.4	80	39	7	102	7.1	140
Apr. 11-20.....	251	3.8	.34	10	.5	3.7	.5	26	3.2	6.2	.0	2.0	69	27	6	77.5	7.1	140
Apr. 21-30.....	76.3	3.9	.43	15	1.2	4.0	.4	43	5.3	7.0	.0	2.6	82	43	8	107	6.9	130

NEUSE RIVER BASIN--Continued
TRENT RIVER NEAR TRENTON, N. C.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956.--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 on evaporation at 180°C)	Hardness as CaCO ₃ Calcium, magnesium	Hardness as CaCO ₃ Non-carbonate	Specific conductance (micro-mhos at 25°C)	pH	Color
May 1-4, 1956	261	4.2	0.34	12	0.9	4.3	0.5	33	5.7	6.0	0.1	1.4	--	35	8	94.3	7.2	110
May 5-10	1,030	4.1	.27	7.3	.3	3.1	.7	18	2.3	4.8	.0	2.0	.866	20	5	58.3	6.6	140
May 11-16	650	5.1	.35	8.4	.4	3.5	.6	21	2.1	5.0	.0	2.0	.572	23	6	63.6	6.9	140
May 17-20	97.2	6.0	.54	17	1.6	5.4	1.2	46	5.9	7.0	.0	2.9	.118	48	10	123.6	6.9	70
May 21-31	38.4	6.2	.43	26	1.0	5.0	.8	71	7.1	7.0	.0	4.3	.118	69	11	160	7.4	110
June 1-10	64.4	7.6	.21	22	.8	5.0	.4	58	8.6	6.5	.0	4.0	.105	57	9	140	7.3	90
June 11-20	29.4	5.4	.35	24	1.4	6.0	.6	59	13	8.0	.0	7.4	.117	65	17	159	7.3	80
June 21-30	18.6	5.8	.38	25	2.5	6.0	.6	75	9.4	8.5	.0	4.2	.118	73	12	175	7.1	60
July 1-10	13.0	6.8	.24	31	.5	5.3	1.0	85	6.6	8.0	.0	3.5	.137	80	10	188	7.3	45
July 11-20	9.4	7.1	.06	37	1.9	5.4	.9	107	9.6	7.0	.0	2.6	.149	100	12	222	7.3	30
July 21-31	19.0	6.0	.17	31	.8	5.3	.9	88	7.8	7.0	.0	2.6	.140	81	9	193	7.2	50
Aug. 1-10	13.3	6.0	.08	31	.9	6.1	1.0	86	12	7.5	.1	2.2	.119	80	10	189	7.1	37
Aug. 11-20	13.6	6.6	.08	27	1.1	5.8	.9	71	16	6.8	.2	1.9	.118	73	15	176	7.1	35
Aug. 21-31	11.7	6.9	.08	30	1.6	5.6	.8	84	14	6.8	.1	1.7	.124	81	12	189	7.4	40
Sept. 1-10	28.0	6.5	.02	31	1.6	5.0	.9	87	13	6.5	.0	1.4	.126	85	13	195	7.0	18
Sept. 11-20	15.0	7.0	.05	30	1.6	4.4	.9	74	21	6.0	.0	2.3	.127	83	22	188	7.4	26
Sept. 21-30	9.3	6.1	.07	39	2.2	5.0	.8	105	21	6.0	.0	2.5	.144	106	20	230	7.1	29
Average	132	5.8	0.29	19	1.1	4.7	0.7	51	8.0	7.1	0.0	2.4	.98	52	10	129	--	100

a Organic matter present; calculated mineral constituents 34 parts per million.

b Organic matter present; calculated mineral constituents 39 parts per million.

NEUSE RIVER BASIN--Continued

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

Temperature (°F) of water, water year October 1955 to September 1956
/Once-daily measurement at approximately 8 a. m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	60	45	40	42	--	60	68	72	70	80	80
2	72	50	45	38	45	50	58	69	69	71	--	81
3	70	55	50	38	40	45	65	70	65	78	80	81
4	71	55	50	--	45	48	65	70	68	79	78	--
5	72	55	48	35	48	45	65	70	68	71	79	79
6	71	54	46	38	55	58	60	79	68	75	80	80
7	72	55	45	38	55	60	65	78	65	74	80	70
8	72	55	45	35	45	68	50	50	68	75	81	70
9	70	54	40	32	50	40	45	65	69	76	82	69
10	72	54	41	32	55	40	50	60	68	78	80	70
11	70	55	40	40	55	60	60	62	73	76	81	68
12	70	54	40	38	45	60	60	65	72	72	82	69
13	71	55	40	41	45	50	48	65	69	78	82	79
14	71	59	40	42	40	60	60	65	69	79	80	78
15	68	59	48	42	45	58	66	66	70	79	82	79
16	65	60	40	42	60	45	68	68	70	79	81	76
17	69	60	35	32	46	42	50	68	70	75	80	79
18	62	50	38	40	55	45	50	70	69	75	81	80
19	58	50	38	40	55	48	50	65	69	75	82	67
20	58	50	38	39	55	45	48	65	69	75	81	66
21	60	42	35	40	40	40	48	60	70	75	79	64
22	60	45	38	35	40	40	58	68	71	78	80	60
23	60	45	35	38	40	40	55	69	70	79	69	72
24	60	47	48	38	38	58	58	70	71	80	70	71
25	60	46	48	38	60	40	56	68	70	79	80	70
26	60	52	48	38	45	45	55	58	70	77	80	69
27	60	52	40	38	45	55	64	60	69	78	79	69
28	60	55	40	45	55	55	64	68	69	80	79	69
29	64	45	40	45	45	55	68	69	71	81	78	68
30	65	45	45	40	--	50	69	69	76	80	80	--
31	60	--	40	40	--	50	--	68	--	79	79	--
Average	66	52	42	38	48	50	58	67	70	77	80	73

NEUSE RIVER BASIN--Continued

TRENT RIVER AT POLLOCKSVILLE, N. C.

LOCATION.--At bridge on U. S. Highway 17 in Pollocksville, Jones County, 0.4 mile upstream from Jones-Craven County line.
DRAINAGE AREA.--370 square miles.

RECORDS AVAILABLE.--Chemical analyses: January 1955 to September 1956.

Water temperatures: January 1955 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 253 ppm Sept. 22-30; minimum, 66 ppm Mar. 21-31.

Hardness: Maximum, 103 ppm Sept. 22-30; minimum, 22 ppm May 2-10.

Specific conductance: Maximum daily, 427 microhmhos Sept. 24; minimum daily, 60.3 microhmhos May 8.

Water temperatures: Maximum, 88°F June 7; minimum, 39°F Dec. 26-28, 30-31.

EXTREMES, January 1955 to September 1956.--Hardness: Maximum, 1,200 ppm Jan. 19, 1955; minimum, 19 ppm Sept. 21-30, 1955.

Specific conductance: Maximum daily, 9,230 microhmhos Jan. 19, 1955; minimum daily, 36.1 microhmhos Sept. 22-23, 1955.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (microhmhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 11-20, 1955.....	7.7	7.7	0.58	20	1.2	5.7	1.1	57	4.7	8.2	0.0	2.6	111	54	7	134	6.9	160
Oct. 21-31.....	8.1	8.1	.52	26	1.5	6.5	.9	77	4.9	9.5	.0	2.3	124	71	8	168	7.2	120
Oct. 21-31.....	8.7	8.7	.34	28	1.4	6.2	.9	81	7.4	9.2	.0	2.3	124	75	8	176	7.0	90
Nov. 1-10.....	7.6	7.6	.42	21	1.3	5.4	1.0	61	8.8	7.8	.0	1.9	102	58	8	145	7.2	100
Nov. 11-20.....	7.9	7.9	.52	23	1.6	5.7	.8	68	8.5	8.8	.0	1.4	108	65	9	155	7.3	100
Nov. 21-30.....	7.5	7.5	.38	23	1.2	5.5	.9	68	9.2	8.8	.0	1.2	108	63	7	156	7.2	80
Dec. 1-10.....	7.5	7.5	.33	20	1.0	5.2	.8	56	4.6	8.8	.0	1.8	92	55	9	139	7.1	90
Dec. 11-20.....	7.2	7.2	.30	20	1.0	4.8	.6	56	6.7	8.2	.0	1.9	99	54	8	135	7.1	80
Dec. 21-31.....	6.9	6.9	.31	20	1.1	4.7	.5	57	6.9	8.0	.0	1.6	99	55	8	136	7.1	75
Jan. 1-10, 1956.....	6.7	6.7	.30	23	1.0	4.6	.5	64	9.1	7.5	.0	1.5	104	61	9	149	7.3	60
Jan. 11-20.....	6.3	6.3	.28	19	1.2	4.4	.5	53	8.2	8.0	.0	1.5	97	53	9	131	7.0	60
Jan. 21-31.....	5.9	5.9	.28	15	.7	4.7	.6	37	8.0	8.0	.0	1.7	86	41	11	113	6.9	80
Feb. 1-10.....	5.1	5.1	.18	13	.6	4.0	.5	32	8.2	7.0	.0	.9	75	36	10	99.5	6.9	90
Feb. 11-20.....	4.4	4.4	.22	11	.5	4.6	1.2	28	6.5	7.5	.1	2.9	72	31	6	95.6	6.8	110
Feb. 21-29.....	4.3	4.3	.27	13	.4	4.9	1.2	29	7.1	7.2	.0	3.2	76	35	8	106.8	6.7	120
Mar. 1-10.....	4.5	4.5	.24	12	1.0	3.8	.4	32	7.6	7.5	.0	2.8	73	30	7	100	6.9	110
Mar. 11-20.....	4.4	4.4	.24	14	1.0	3.5	.4	32	7.6	7.5	.0	1.8	66	40	10	103	6.8	100
Mar. 21-31.....	4.5	4.5	.31	11	1.0	3.5	.4	28	6.4	6.5	.0	1.8	66	32	9	92.7	6.8	160
Apr. 1-10.....	5.4	5.4	.20	20	.6	4.9	1.0	57	6.5	8.0	.0	2.7	93	53	7	140	7.1	80
Apr. 11-20.....	4.4	4.4	.12	15	1.0	4.0	.7	41	5.2	7.0	.0	2.7	79	41	7	108	6.9	90
Apr. 21-30.....	4.6	4.6	.14	18	.7	4.7	.5	51	4.8	8.0	.0	2.0	82	48	6	122	7.0	90
May 1.....	4.5	4.5	---	---	---	---	---	52	6.8	9.0	---	---	---	51	8	124	7.5	---
May 2-10.....	4.5	4.5	.21	7.5	.8	3.1	.8	20	4.3	4.8	.0	1.3	a69	22	6	64.5	6.7	120
May 11-18.....	4.3	4.3	.27	9.9	.8	3.4	.6	21	3.8	5.2	.0	1.5	b73	23	6	65.6	6.7	150

a Organic matter present; calculated mineral constituents 37 parts per million.

b Organic matter present; calculated mineral constituents 38 parts per million.

May 19-20, 1956	5.7	0.62	17	1.1	3.9	0.6	47	5.3	5.5	0.0	1.2	--	47	8	109	7.5	--
May 21-26	5.9	.69	16	.9	4.2	.7	46	5.3	6.5	.0	1.9	100	44	6	109	7.0	130
May 27-31	8.0	.55	24	1.5	5.1	.6	71	7.7	7.0	.0	1.8	--	67	8	152	7.2	90
June 1-10	6.2	.30	24	.9	4.6	.6	67	6.1	6.5	.0	1.8	109	63	8	147	7.2	75
June 11-20	9.9	.17	26	1.6	4.9	.5	74	7.2	7.0	.0	3.1	119	72	11	163	7.0	55
June 21-30	6.5	.35	30	1.0	5.0	.6	86	7.7	6.5	.0	1.1	--	79	8	179	7.3	70
July 1-10	6.9	.02	35	1.5	6.4	.8	102	7.7	7.5	.0	1.7	126	93	9	208	7.3	27
July 11-20	4.6	.00	35	1.5	5.3	.8	104	7.3	6.5	.1	1.4	119	94	9	206	7.2	20
July 21-31	6.4	.04	36	1.0	6.1	1.0	111	5.4	7.0	.0	1.5	142	94	3	218	7.3	28
Aug. 1-10	5.8	.02	36	1.5	6.5	1.2	111	9.1	8.2	.1	1.9	136	97	6	223	7.3	17
Aug. 11-20	6.1	.02	36	.7	6.2	1.1	108	7.6	8.0	.2	1.7	132	93	4	219	7.4	17
Aug. 21-31	5.5	.02	33	1.3	6.3	1.4	101	8.2	8.8	.1	2.7	145	86	5	219	7.5	17
Sept. 1-10	6.2	.12	28	1.2	6.8	3.3	70	13	12	.0	6.4	135	75	18	202	7.2	21
Sept. 11-20	5.8	.04	28	1.6	6.1	3.1	73	13	11	.0	5.5	131	74	18	201	6.8	21
Sept. 21-30	--	--	--	--	--	--	86	1	10	--	--	--	74	3	205	6.9	--
Sept. 22-30	7.1	.04	32	5.6	40	2.4	77	23	70	.0	2.3	253	103	40	415	7.0	36
Average	6.2	0.27	22	1.2	6.1	0.9	62	7.8	9.3	0.0	2.1	106	60	9	153	--	80

NEUSE RIVER BASIN--Continued

TRENT RIVER AT POLLOCKSVILLE, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 [Once-daily measurement at approximately 7:30 a.m.]

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

NEUSE RIVER BASIN--Continued
 MISCELLANEOUS ANALYSES OF STREAMS IN NEUSE RIVER BASIN IN NORTH CAROLINA--Continued
 Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (calculated)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25° C)	pH	Color	
														Calcium, mag- nesium	Non- carbon- ate				
SOUTHWEST CREEK AT WOODINGTON																			
Nov. 21, 1955				1.6	1.2			5	3.4	8.0					9	5	50.3	5.3	
Sept. 19, 1956	0.223			1.2	.8			6	1.5	6.5					6	2	42.2	6.1	
NAHANTA SWAMP NEAR SHINE																			
Jan. 26, 1956	82	11	0.45	5.6	0.5	6.0	1.5	10	11	8.5	0.0	1.2	51	16	8	77.6	6.1	10	
July 13	40.1	11	.99	5.5	.8	5.5	1.5	11	10	7.0	.0	1.6	49	17	8	72.7	6.5	90	
CONTENTNEA CREEK AT HOOKERTON																			
Jan. 26, 1956		9.1	0.65	3.6	1.1	6.5	1.2	12	8.8	8.0	0.0	1.2	52	13	4	70.9	6.3	55	
Aug. 16	590	8.7	.09	3.2	.1	4.2	1.7	10	5.2	3.6	.0	.7	32	9	0	56.1	6.6	50	
LITTLE CONTENTNEA CREEK NEAR FARMVILLE																			
Feb. 1, 1956				8.8	0.9			18	15	11		0.7		26	11	109	6.8		
May 10				5.5	.7			14	4.0	7.5		1.4		17	5	70.7	6.0		
CORE CREEK NEAR FORT BARNWELL																			
July 12, 1956	5.96			31	1.3			99	4.8	5.5		1.4		83	2	186	7.2		
Sept. 11	3.86			35	.5	4.9	1.9	101	14	5.5		1.7		90	7	210	6.9		
UPPER BROAD CREEK NEAR OLYMPIA																			
Feb. 1, 1956	15.6			2.4	0.5			4	1.5	6.0		0.5		8	5	44.2	5.2		
Sept. 20	0			2.4	1.5			17	.8	7.5		4.5		12	0	62.8	5.9		

WHITEOAK RIVER BASIN
MISCELLANEOUS ANALYSES OF STREAMS IN WHITEOAK RIVER BASIN IN NORTH CAROLINA

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium, mag- nesium	Non- carbon- ate			

WHITEOAK RIVER AT BELGRADE

Feb. 1, 1956	82.6			8.1	0.5			16	3.5	4.5		0.1		22	9	61.0	6.2	
Sept. 20				44	10			181	1.4	7.0		1.3		151	4	316	7.0	

HUNTERS CREEK AT KUHN'S

Feb. 1, 1956	22.9			4.4	1.0			10	2.7	7.0		0.1		15	7	55.2	6.0	
Sept. 20				6.6	2.8			23	5.5	7.7		3.2		28	9	75.8	6.1	

NEW RIVER BASIN

MISCELLANEOUS ANALYSES OF STREAMS IN NEW RIVER BASIN IN NORTH CAROLINA

NEW RIVER NEAR GUM BRANCH

Jan. 27, 1956	180	5.8	0.29	12	0.3	4.7	0.8	29	7.9	7.5	0.0	0.6	a 54	32	8	98.1	6.7	45
July 11	10.2	6.9	.22	47	1.7	6.6	1.3	143	7.2	8.0	.0	2.0	a 151	124	7	272	7.7	33

SOUTHWEST CREEK NEAR JACKSONVILLE

Jan. 31, 1956	43.2			11	1.0			30	5.7	6.5		0.1		30	5	88.2	7.0	
Sept. 20	1.96			25	2.8			88	2.3	6.0		1.6		73	1	164	6.8	

a Calculated from determined constituents.

CAPE FEAR RIVER BASIN

HAW RIVER NEAR BENAJA, N. C.

LOCATION.--500 feet upstream from highway bridge, $\frac{1}{2}$ mile upstream from county line, 6 miles downstream from Troublesome Creek, and 6 miles east of Benaja, Rockingham County.

DRAINAGE AREA.--168 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1952 to September 1953, July 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 74° F July 2-4; minimum, freezing point on several days during December and January.

EXTREMES, 1952-53, 1954-56.--Water temperatures: Maximum, 84° F Aug. 2, 1952; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, January and June 1956

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 (micro-mhos at 25°C)	pH	Color
															Calcium	Non-carbonate			
Jan. 12, 1956	65.2	20	0.62	5.4	2.2	5.1	2.2	33	2.4	2.8	0.1	1.4	58	23	23	0	72.3	6.9	37
June 17	21.9	20	.22	6.8	1.7	5.3	1.8	38	2.2	2.9	.0	2.4	62	24	24	0	83.3	7.4	33

Temperature, (°F) of water, water year October 1955 to September 1956
[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	67	67	52	49	37	35	32	39	37	44	43	48	48	48	66	62	66	66	73	71	70	69	71	70
2	67	65	50	48	36	35	32	37	37	45	43	48	48	48	62	59	66	63	74	72	70	68	71	71
3	65	64	50	48	39	36	33	32	38	37	45	45	55	49	60	59	63	61	74	73	70	70	71	70
4	64	63	49	47	43	39	34	33	38	38	46	45	59	55	63	60	61	60	74	73	70	70	70	70
5	63	62	47	44	45	43	34	34	39	38	46	46	59	58	63	63	60	60	73	72	70	69	70	70
6	64	62	43	43	45	43	34	34	40	39	50	46	58	56	64	63	62	60	72	72	71	69	70	70
7	65	64	43	44	43	40	34	34	40	40	55	50	56	55	64	64	63	60	72	72	71	70	70	70
8	65	63	46	45	40	39	34	33	40	40	56	54	56	53	64	62	64	63	73	72	71	70	68	68
9	63	63	46	45	39	39	33	32	41	40	54	50	53	51	62	59	64	64	73	72	71	70	68	65
10	59	57	45	44	39	36	32	32	43	41	50	48	51	51	60	59	64	64	72	71	69	68	65	63
11	57	56	44	44	36	35	35	32	43	43	50	48	51	49	62	60	66	64	71	69	72	71	63	62
12	57	56	45	44	35	33	38	35	43	43	50	50	50	48	65	62	68	66	70	68	72	71	63	62
13	58	56	48	45	33	32	39	37	43	42	50	48	53	50	67	65	69	68	69	69	73	72	64	62
14	58	58	52	48	32	32	37	36	42	41	48	48	54	52	68	66	69	68	70	69	73	73	66	64
15	58	56	53	52	32	32	36	34	43	41	43	47	54	54	68	68	70	69	70	69	73	73	67	66
16	56	54	56	53	32	32	35	34	45	43	47	44	54	54	68	65	70	70	70	70	73	72	67	66
17	56	54	56	53	32	32	35	34	45	45	46	42	54	53	65	62	70	70	70	70	73	72	66	66
18	54	51	53	49	32	32	34	33	47	44	44	43	53	51	62	60	70	70	70	70	73	72	66	66
19	52	51	50	47	32	32	34	33	47	47	44	43	52	51	62	60	68	70	69	70	73	73	66	63
20	52	50	47	45	32	32	34	33	47	47	44	43	53	53	62	62	66	65	70	69	73	72	63	63

21.....	52	50	45	44	32	32	34	34	47	46	44	43	53	52	63	62	65	64	71	70	72	69	63	61
22.....	53	52	45	44	32	32	34	33	46	43	44	43	53	52	63	62	67	65	72	71	69	68	61	59
23.....	53	52	46	45	32	32	34	33	43	41	45	44	55	53	64	63	70	67	72	71	68	67	63	60
24.....	55	53	48	46	35	32	34	34	41	41	46	45	55	54	64	64	70	70	72	72	67	66	63	63
25.....	55	52	48	46	39	35	34	34	44	41	46	45	54	53	64	62	72	70	72	72	67	67	63	62
26.....	52	50	46	44	39	39	34	34	44	44	44	45	57	54	62	60	72	71	72	72	68	67	62	59
27.....	52	50	44	43	39	35	34	34	44	44	47	45	60	57	62	60	72	71	72	72	69	68	59	57
28.....	53	51	44	43	35	33	34	33	45	44	48	47	63	60	63	62	71	70	72	71	69	68	57	56
29.....	53	54	44	39	33	32	35	33	45	44	48	47	66	63	63	63	71	70	72	72	69	69	56	56
30.....	54	54	39	37	33	32	41	35	--	--	47	46	66	66	64	63	72	70	72	71	70	69	56	56
31.....	55	52	--	--	33	33	41	39	--	--	48	47	--	--	66	64	--	--	71	70	70	70	--	--
Average.....	58	56	48	46	36	35	35	34	43	42	47	46	55	53	64	62	68	66	72	71	71	70	65	64

CAPE FEAR RIVER BASIN--Continued
SOUTH BUFFALO CREEK NEAR GREENSBORO, N. C.

LOCATION.--At gaging station on left bank, 5 feet downstream from bridge on McConnell Road, 3.8 miles east of post office in Greensboro, Guilford County, and 6 miles upstream from North Buffalo Creek.
DRAINAGE AREA.--33.6 square miles.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.
REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180° C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25° C)	pH
														Calcium, magnesium	Non-carbonate		
Oct. 14, 1955.....	13	54	0.76	22	8.5	136	14	28	40	244		0.7	639	91	68	1,130	5.9
Nov. 16.....	13	77	3.9	21	8.3	135	18	a. 99	91	180		.0	633	87	87	1,060	3.7
Dec. 9.....	13	55	1.6	19	9.5	130	21	0	34	214		2.3	571	86	86	1,020	4.5
Jan. 17, 1956.....	12	36	.30	22	7.1	122	21	52	53	205		.2	550	84	41	979	5.9
Feb. 16.....	25	36	.36	17	7.3	44	8.8	26	26	82		.4	280	73	52	482	5.8
Mar. 15.....	35	36	2.9	18	7.3	64	8.2	3	66	112		.5	367	76	74	623	4.8
Apr. 17.....	244	14	.04	11	3.4	9.5	2.8	19	28	16		.6	111	40	25	164	6.1
May 15.....	12	20	.39	18	5.3	102	6.6	107	36	115	7.6	.3	379	66	0	796	6.6
June 14.....	8.2	61	.12	16	9.9	184	15	88	36	270		1.0	661	81	9	1,280	6.3
July 16.....	7.8	60	.93	22	9.4	86	16	25	48	170		1.0	502	94	73	837	5.8
Aug. 15.....	11	32	.52	14	9.1	162	22	158	38	211		.5	591	73	0	1,110	6.8
Sept. 17.....	6.7	63	.37	16	9.2	80	12	1	43	118		.6	438	79	78	721	4.6

a Acidity as H⁺.

CAPE FEAR RIVER BASIN--Continued
NORTH BUFFALO CREEK NEAR GREENSBORO, N. C.

LOCATION.--At gaging station on left bank 5 feet downstream from highway bridge, 4.2 miles upstream from mouth, and 5.8 miles northeast of post office in Greensboro, Guilford County, N. C.

DRAINAGE AREA.--37.0 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Carbonate (CO ₃)	Hydroxide (OH)	Sulfate (SO ₄)	Chloride (CL)	Nitrate (NO ₃)	Dissolved solids (residue on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH
															Calcium, mg./nestum	Non-carbonate		
Oct. 14, 1955	40	22	--	12	0.7	295	16	170	226	--	55	65	1.0	862	34	0	1,320	10.3
Nov. 16	25	24	0.02	6.3	.3	472	22	14	485	--	63	80	.3	1,320	17	0	2,210	11.1
Dec. 9	25	28	.08	2.4	.1	335	17	--	295	30	43	92	.5	931	6	0	1,860	11.2
Jan. 17, 1956	23	23	.00	6.0	.5	346	17	--	314	8	44	115	.4	1,030	17	0	1,660	11.1
Feb. 16	34	28	.00	10	.5	252	12	--	258	13	70	60	.4	817	27	0	1,310	11.1
Mar. 15	91	20	.03	13	.7	222	11	95	198	--	54	58	.4	745	36	0	1,070	10.4
Apr. 17	67	17	.05	12	2.1	90	5.4	86	71	--	44	20	.4	337	39	0	507	9.9
May 15 a	31	12	.19	15	2.5	150	10	263	36	--	37	30	.6	--	47	0	777	9.4
June 14	21	20	.04	14	.3	335	21	178	229	--	86	112	1.2	1,050	36	0	1,600	10.4
July 16	16	21	.06	20	6.8	65	9.3	230	0	--	11	34	.6	285	77	0	560	7.4
Aug. 15	27	22	.05	10	.0	350	22	--	310	18	47	96	1.2	975	26	0	1,530	11.3
Sept. 17	18	24	.02	11	.7	268	18	209	152	--	56	70	.6	768	31	0	1,150	10.0

a Includes 0.7 part per million of fluoride (F).

CAPE FEAR RIVER BASIN--Continued

STONY CREEK NEAR BURLINGTON, N. C.

LOCATION.--At gaging station on right bank, a quarter of a mile upstream from highway bridge, half a mile upstream from Buttermilk Creek, 4½ miles upstream from mouth, and 6 miles north of Burlington, Alamance County.

DRAINAGE AREA.--44.2 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on rapid filtration at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg-nesium	Non-carbonate			
Oct. 14, 1955	3.6	21	0.10	9.1	4.0	6.1	1.6	55	4.3	4.2	0.1	0.4	83	39	0	115	7.0	12
Nov. 16	6.0	23	.08	9.8	4.6	6.6	1.8	62	5.8	4.5	.0	.0	92	43	0	125	7.0	15
Dec. 9	6.8	22	.09	9.6	4.6	6.8	1.2	61	5.3	5.0	.0	.1	87	43	0	124	7.0	8
Jan. 17, 1956	5.6	22	.01	9.7	4.6	6.6	1.0	61	5.8	4.2	.1	.0	89	43	0	119	7.1	15
Feb. 16	23	19	.01	6.8	2.9	5.1	1.1	36	9.5	5.0	.0	.2	60	29	0	102	6.9	20
Mar. 15	38	20	.04	8.5	3.6	5.6	.8	47	6.4	4.2	.1	.2	75	26	0	105	7.2	25
Apr. 17	85	16	.05	6.4	2.2	3.2	1.2	27	8.1	2.5	.1	.1	67	25	3	76.0	6.8	40
May 16	7.2	21	.03	8.4	5.0	5.5	1.2	54	4.3	2.0	.1	.6	76	41	0	110	7.2	10
June 14	1.4	19	.01	9.9	5.0	5.9	1.6	64	3.6	3.0	.1	.3	82	45	0	138	6.9	8
July 17	3.0	17	.01	7.9	3.3	3.6	1.6	44	4.0	2.2	.1	1.1	72	33	0	90.1	6.8	18
Aug. 15	.94	18	.00	8.1	3.8	4.2	1.8	50	3.2	3.0	.1	.5	71	36	0	98.2	6.9	10
Sept. 17	.51	18	.01	10	4.6	6.3	2.1	62	2.3	3.5	.1	.2	78	44	0	126	6.7	5

CAPE FEAR RIVER BASIN--Continued

HAW RIVER AT BYNUM, N. C.

LOCATION.--At millrace to textile mill, 100 yards downstream from bridge at Bynum, Chatham County, and 5½ miles upstream from gaging station near Pittsboro.

DRAINAGE AREA.--280 square miles.

RECORDS AVAILABLE.--October 1955 to September 1956.

EXTREMES.--Chemical analyses: October 1955 to September 1956.

Temperature: Maximum 31.3° C. (88.3° F.) on Oct. 15, 1955; minimum 20.0° C. (68.0° F.) on Oct. 16, 1955.

Hardness: Maximum 355 ppm Aug. 24-25; minimum 50 ppm Mar. 16-20.

Specific conductance: Maximum 450 micromhos/cm on July 9; minimum 20 micromhos/cm on Aug. 24; minimum daily, 69.5 micromhos Feb. 7.

Water temperatures: Maximum 48° F. July 5; minimum 33° F. Dec. 22.

REMARKS.--Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C. Records of discharge for gaging station near Pittsboro for water year October 1955 to September 1956 given in WSP 1433. No appreciable inflow between station and sampling point except during periods of heavy local runoff.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180° C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25° C)	pH	Color	Oxygen consumed	
														Calcium, mg./l.	Non-carbonate				Unfiltered	Filtered
Oct. 1, 1955.....	3,520	--	--	10	3.2	--	--	102	44	31	--	--	--	39	0	338	7.2	--	--	--
Oct. 2-10.....	1,320	14	0.13	6.0	2.2	12	2.7	35	10	8.0	0.3	1.6	83	24	0	118	7.3	35	10	7.0
Oct. 11-15.....	331	18	.26	7.9	3.2	19	2.7	50	11	13	.2	1.7	a102	33	0	162	7.5	60	--	--
Oct. 16-20.....	279	18	.28	8.8	2.5	35	3.3	79	16	22	.4	2.2	a147	32	0	240	7.3	40	--	--
Oct. 21-26.....	201	16	.29	9.0	2.8	46	3.7	95	17	27	.9	1.9	178	34	0	283	7.5	37	7.2	6.2
Oct. 27-31.....	221	16	.22	9.3	3.2	58	4.2	115	19	36	1.0	2.0	a206	36	0	351	7.6	45	--	--
Nov. 1-10.....	216	7.5	.28	9.5	3.2	58	4.3	117	17	33	1.0	2.8	210	37	0	343	7.6	36	8.8	6.3
Nov. 11-18.....	446	18	.24	8.0	3.6	52	4.4	110	18	28	1.5	2.9	194	35	0	322	7.7	40	--	7.0
Nov. 19-20.....	366	13	.16	7.9	2.5	31	4.6	71	14	16	1.0	4.2	a129	30	0	237	6.9	50	--	--
Nov. 21-30.....	477	17	.05	8.4	2.9	35	3.7	78	13	22	.9	3.0	144	33	0	239	7.5	25	8.0	6.0
Dec. 1-10.....	329	18	.04	8.3	3.2	32	3.2	74	11	20	1.3	3.0	136	32	0	225	7.4	25	8.0	5.2
Dec. 11-20.....	224	19	.28	8.6	2.9	41	3.3	88	12	24	.9	3.3	162	33	0	264	7.0	30	5.8	4.5
Dec. 21-31.....	247	19	.31	8.4	3.4	52	3.7	104	14	31	1.1	3.3	193	35	0	316	7.0	32	4.6	4.6
Jan. 1-10, 1956.....	249	16	.16	8.7	3.2	38	3.3	92	11	23	1.3	4.4	153	35	0	254	6.9	22	7.0	4.4
Jan. 11-20.....	226	16	.15	8.4	3.4	46	3.2	100	14	26	1.2	3.4	182	35	0	289	7.2	22	5.6	4.0
Jan. 21-30.....	395	16	.25	8.8	3.4	45	3.2	86	16	28	1.3	3.3	166	34	0	301	7.3	30	6.4	4.2
Feb. 1-5.....	2,480	14	.02	8.4	3.1	38	2.2	85	13	19	1.3	3.1	141	34	0	223	7.2	22	8.4	3.2
Feb. 6-10.....	5,360	9.6	.08	5.6	2.1	5.6	1.7	21	8.4	8.0	.0	1.6	69	23	6	85.6	6.8	36	13	7.8
Feb. 11-20.....	1,650	14	.06	6.1	2.1	9.4	1.8	29	9.1	8.0	.3	1.7	78	24	0	109	6.7	37	7.4	5.6
Feb. 21-29.....	1,460	15	.02	6.4	2.4	11	1.6	37	10	8.5	.4	1.7	84	26	0	124	6.8	27	6.2	5.3
Mar. 1-10.....	792	18	.08	6.8	2.7	15	1.8	46	10	10	.7	1.8	94	28	0	140	6.9	25	7.0	3.9
Mar. 11-15.....	704	15	.22	7.9	2.3	18	1.8	52	9.1	12	.7	2.6	a96	29	0	158	7.2	28	--	--
Mar. 16-20.....	6,170	11	.04	4.9	1.9	5.6	1.2	22	7.0	5.0	.2	2.2	a50	20	2	79.1	6.8	33	--	--

a Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued
HAW RIVER AT BYNUM, N. C.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Calcium	Non-carbonate				Unfiltered	Filtered
Mar. 21-26, 1956	1,010	15	0.02	5.2	2.3	8.7	1.4	30	6.4	6.5	0.4	1.5	58	23	0	92.7	7.4	15	5.1	3.9
Mar. 27-31	696	16	.02	6.7	2.3	18	1.6	47	8.9	10	.7	1.8	a89	26	0	149	7.3	17	5.4	--
Apr. 1-10	917	14	.02	7.1	2.7	18	1.8	50	11	11	.7	1.8	101	29	0	154	7.0	15	5.4	4.9
Apr. 11-20	2,540	12	.06	5.6	2.3	8.2	1.0	30	5.6	6.2	.2	1.5	80	23	0	95.3	6.7	28	11	6.6
Apr. 21-30	645	12	.04	6.0	3.6	14	1.2	45	6.8	9.0	.2	1.6	93	30	0	131	7.1	13	7.7	4.7
May 1-10	2,110	13	.04	6.6	2.6	12	1.5	41	5.3	8.0	.3	2.3	89	27	0	122	6.7	17	8.3	5.5
May 11-20	475	14	.11	7.9	2.6	15	2.0	48	9.7	10	.5	2.2	106	30	0	144	7.0	35	7.4	4.7
May 21-30	231	11	.01	8.6	3.4	26	2.6	67	12	19	.8	1.7	134	36	0	209	7.3	17	7.2	4.4
May 31	195	--	--	8.5	3.6	40	3.7	89	18	26	--	--	--	39	0	211	7.0	--	--	--
June 1-10	335	13	.00	8.2	3.6	40	3.7	87	17	24	1.3	3.6	173	33	0	266	7.1	20	8.0	5.5
June 11-20	235	11	.03	7.5	2.9	22	2.7	54	10	17	.6	3.1	a137	23	0	163	7.1	24	--	--
June 21-30	156	11	.03	8.4	3.4	27	2.9	64	11	20	1.0	2.6	132	35	0	208	6.8	20	--	3.6
June 21-24	85.8	11	.05	9.1	3.4	33	3.1	77	14	24	.8	1.5	a139	37	0	242	7.8	19	--	--
June 25-30	129	9.9	.05	8.8	3.6	55	3.8	112	14	35	.7	1.5	203	37	0	338	7.2	25	--	5.2
July 1-8, 10	209	9.1	.04	10	3.8	66	4.6	130	15	44	1.2	2.7	241	41	0	404	7.3	22	--	5.5
July 9	385	--	--	11	4.2	--	--	196	16	51	--	7	--	45	0	507	7.2	--	--	--
July 11-20	335	13	.02	8.4	2.9	30	3.6	65	9.7	20	1.0	4.5	138	33	0	216	7.5	22	8.3	6.3
July 21-27-31	121	16	.02	10	3.3	46	4.4	92	15	32	1.0	3.3	187	38	0	305	7.6	17	16	7.5
July 22-26	158	12	.02	8.0	2.9	30	3.4	61	13	20	.8	3.4	129	32	0	209	7.0	22	--	--
Aug. 1-4	562	16	.03	11	3.6	69	5.4	109	23	52	1.2	8.3	245	43	0	413	7.0	25	--	--
Aug. 5-10	281	10	.00	6.6	2.0	12	2.8	36	5.8	9.8	.2	3.5	80	25	0	122	7.1	20	8.9	6.1
Aug. 11-20	92.7	12	.02	7.6	2.7	26	3.5	56	9.9	18	.7	3.6	119	30	0	184	6.5	7	6.9	5.4
Aug. 21-22	210	7.8	.03	6.7	1.8	32	3.3	61	13	20	.6	2.1	a118	24	0	213	6.8	20	--	--
Aug. 23, 26-31	184	14	.04	9.5	3.0	78	5.7	148	16	44	.7	5.6	265	36	0	429	7.2	17	8.5	6.5
Aug. 24-25	241	15	.10	11	2.8	115	7.2	204	31	64	.7	4.5	a355	39	0	605	7.1	34	--	--
Sept. 1-10	161	13	.03	8.4	2.7	52	4.8	93	15	36	.8	4.4	195	32	0	319	7.1	15	7.9	5.9
Sept. 11-20	97.3	11	.03	9.2	2.8	70	5.5	122	19	44	1.5	4.4	244	35	0	400	7.6	16	7.7	6.3
Sept. 21-27	1,260	9.4	.05	8.4	2.6	60	4.6	107	19	37	1.2	2.6	205	32	0	336	7.2	20	8.7	5.8
Sept. 28-30	3,870	8.3	.01	5.1	1.7	7.2	2.1	18	13	5.0	.8	3.4	a86	20	5	81.3	6.5	17	--	--
Average	776	14	0.09	8.0	2.9	34	3.2	77	14	23	0.8	2.8	145	32	0	241	--	26	--	--

a Calculated from determined constituents.

CAPE FEAR RIVER BASIN--Continued

HAW RIVER AT BYNUM, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
/Once-daily measurement at approximately 12 m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	55	38	35	40	48	60	69	80	86	80	83
2	70	55	36	37	39	46	61	66	75	75	81	84
3	68	52	47	38	43	45	60	67	69	86	83	82
4	68	50	45	38	41	48	64	65	70	87	79	82
5	68	51	48	39	45	50	63	66	69	88	80	81
6	68	48	45	37	42	51	68	65	70	87	81	81
7	70	49	42	39	44	56	65	68	71	86	83	80
8	69	50	41	36	45	58	55	66	72	83	80	75
9	64	48	42	35	44	50	59	65	75	82	80	74
10	65	49	39	35	45	54	60	66	76	80	82	72
11	64	49	40	36	48	56	52	68	79	79	84	73
12	66	50	38	39	48	58	55	69	80	80	84	74
13	65	50	34	41	46	59	56	73	81	81	85	76
14	65	54	35	41	45	53	58	75	83	82	86	76
15	64	53	35	40	48	55	60	76	82	79	85	78
16	64	55	34	39	50	44	62	76	81	80	84	81
17	60	58	36	38	47	50	60	72	83	82	82	80
18	59	52	36	37	49	49	58	73	84	83	85	79
19	58	48	35	37	50	48	54	73	80	79	83	75
20	58	47	36	38	49	50	55	72	74	75	82	--
21	59	49	35	40	47	49	53	75	75	79	76	71
22	62	48	33	37	47	50	55	76	80	82	76	72
23	59	49	35	38	45	53	56	77	83	84	74	79
24	60	50	38	37	44	52	55	75	85	85	77	72
25	59	47	42	39	46	51	56	70	85	84	79	70
26	56	45	43	38	48	52	59	71	85	83	80	65
27	69	43	42	38	45	50	63	73	88	84	79	59
28	59	47	37	36	48	56	66	75	84	85	80	57
29	58	43	35	38	45	55	69	74	85	83	81	59
30	59	40	36	43	--	54	71	73	86	84	82	60
31	57	--	35	42	--	58	--	78	--	79	83	--
Average	63	49	38	38	46	52	60	71	79	82	81	74

CAPE FEAR RIVER BASIN--Continued

NEW HOPE RIVER NEAR PITTSBORO, N. C.

LOCATION --At gaging station on right bank at downstream side of bridge on U. S. Highway 64, a quarter of a mile downstream from Whiteoak Creek, and 8½ miles east of Pittsboro, Chatham County.

DRAINAGE AREA --285 square miles.

RECORDS AVAILABLE --Chemical analyses: October 1953 to September 1954, October 1955 to September 1956.

WATER TEMPERATURES --October 1954, October 1955 to September 1956.

EXTREMES, 1955-56 --Dissolved solids: Maximum, 154 ppm July 11-20; minimum, not determined.

Hardness: Maximum, 35 ppm July 11-20; minimum, 12 ppm Mar. 19.

Specific conductance: Maximum, 807 μ , 282 micromhos July 19; minimum daily, 49.2 micromhos Mar. 19.

Water temperature: Maximum, 80° F., July 2; minimum, freezing point Dec. 17, 19, 29.

REMARKS. Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Calcium, mg-nesium	Non-carbonate				Unfiltered	Filtered
Oct. 1-10, 1955	152	14	0.10	7.2	2.3	9.4	2.4	30	8.4	9.0	0.5	2.0	84	28	3	108	7.1	45	10	8.4
Oct. 11-20	107	14	.08	8.3	2.5	10	2.7	33	8.8	11	.6	2.0	91	31	4	124	7.5	40	11	10
Oct. 21-31	23.3	14	.16	9.2	2.7	12	2.9	35	11	13	.8	2.7	101	31	5	139	7.8	40	10	7.8
Nov. 1-10	22.0	15	.19	11	3.3	18	4.0	29	13	20	.8	4.9	124	42	2	185	7.2	40	8.8	7.4
Nov. 11-12, 14	96.3	13	.07	12	3.5	20	3.2	51	13	20	.8	4.9	119	44	3	201	6.9	30		
Nov. 13, 15-20	105	13	.10	7.5	3.0	12	2.5	40	7.2	15	.3	2.8	89	36	3	147	7.0	40	10	8.6
Nov. 21-30	194	12	.09	7.3	2.8	9.4	2.2	30	5.6	12	.3	2.3	84	30	5	119	6.9	50	12	9.6
Dec. 1-10	52.7	14	.06	8.0	2.5	11	2.3	32	7.5	13	.8	1.3	89	30	4	128	6.9	35	7.4	6.4
Dec. 11-20	35.5	14	.24	8.0	4.1	15	2.9	38	9.1	16	.9	5.8	103	37	6	163	7.2	25	7.0	8.1
Dec. 21-31	29.0	14	.09	13	1.5	18	3.2	47	8.9	18	1.0	8.7	122	39	0	179	7.3	18	--	--
Jan. 1-10, 1956	31.3	9.9	11	10	3.2	17	2.8	40	8.6	11	1.1	6.6	102	38	5	171	6.7	28	7.0	3.7
Jan. 11-20	28.5	9.1	.07	11	3.5	17	2.8	42	10	18	1.3	7.6	117	41	7	185	7.0	17	5.4	4.6
Jan. 21-31	65.9	10	.13	13	1.9	16	2.8	38	9.2	18	1.4	6.5	117	40	9	182	6.8	22	7.0	4.8
Feb. 1-5	290	12	.06	9.2	3.0	12	2.1	29	11	16	1.6	4.4	86	35	12	150	6.9	20	--	--
Feb. 6-10	1,690	9.0	.11	5.3	1.8	5.4	2.1	16	8.9	6.5	1.5	1.1	81	24	8	81.8	6.2	65	--	--
Feb. 11-20	648	9.0	.10	6.0	2.1	6.0	1.6	17	11	7.3	.4	1.2	71	21	10	89.5	7.0	37	12	8.7
Feb. 21-29	403	8.9	.08	7.0	2.0	7.2	1.4	20	8.6	7.7	.4	1.6	69	24	8	92.0	6.6	32	11	7.3
Mar. 1-10	176	13	.05	6.0	2.8	8.5	1.6	28	7.9	9.4	.8	2.0	78	29	6	107	6.8	23	7.4	5.8
Mar. 11-18, 20	1,010	12	.02	7.5	2.8	8.9	1.4	31	5.6	10	.8	2.6	71	30	5	113	6.9	20	9.5	5.3
Mar. 19	3,130	--	--	3.2	1.0	--	--	12	5.6	3.0	--	--	--	12	2	49.5	6.2	6.2	--	--
Mar. 21-31	289	11	.01	6.7	2.1	7.8	1.5	27	8.3	8.4	.4	2.1	78	26	3	102	7.2	25	9.3	6.9

a Calculated from determined constituents.

	276	12	0.03	7.3	2.2	7.7	1.4	28	8.2	8.6	0.4	2.1	75	27	4	106	7.2	30	9.5	7.0
Apr. 1-3, 5-10, 1956.																				
Apr. 4.....	82	--	--	3.5	1.0	--	--	12	4.6	3.5	--	--	--	13	3	52.8	6.0	--	--	--
Apr. 11-20.....	987	9.6	.09	6.4	1.8	5.8	1.6	25	6.4	5.5	.5	1.0	a51	23	0	87.2	6.4	45	--	--
Apr. 21-30.....	106	11	.16	6.4	2.4	7.4	1.1	29	4.4	8.0	.6	1.7	80	26	2	99.5	6.7	37	10	7.7
May 1-10.....	184	11	.03	7.4	3.1	8.6	1.7	35	4.0	8.1	.5	2.2	86	31	2	114	6.9	27	10	8.1
May 11-20.....	50.2	14	.46	11	1.8	9.8	2.0	40	6.3	9.5	.8	3.3	91	36	2	128	6.6	160	7.8	6.7
May 21-31.....	36.5	12	.10	12	1.5	12	2.7	40	9.5	12	1.0	4.2	97	35	2	148	7.1	30	8.2	6.1
June 1, 7, 9-10.....	3.8	13	.07	7.9	2.9	8.5	2.2	30	9.8	9.0	.9	2.5	473	32	7	116	7.2	35	--	--
June 15-8.....	486	3	.06	4.0	1.5	5.1	2.6	18	7.3	1.4	.3	1.9	95	16	2	144.6	6.7	20	--	--
June 11-20.....	16.5	11	.42	11	1.9	17	2.6	48	8.0	1.1	.3	2.3	98	32	0	143	6.7	20	11	13
June 21-30.....	18.5	8.7	.12	11	4.4	21	4.7	63	5.9	20	1.3	2.3	128	43	0	208	6.9	25	--	6.3
July 1-10.....	8.7	6.8	.12	13	4.1	25	4.7	71	8.3	24	2.2	2.2	147	53	0	240	7.1	27	--	6.4
July 11-20.....	22.7	8.7	.04	14	4.1	28	5.4	76	9.8	26	2.2	2.7	154	53	0	254	7.0	22	11	7.3
July 21-26.....	26.0	9.5	.02	7.8	2.3	14	3.1	37	11	13	1.0	2.5	95	29	0	142	7.0	25	12	7.2
July 27-31.....	20.6	11	.03	12	3.9	24	4.5	61	10	22	1.2	5.2	134	47	0	225	7.0	35	--	--
Aug. 1.....	76	--	--	14	4.1	28	5.5	64	15	27	1.7	6.3	--	51	0	262	6.7	--	--	--
Aug. 2-10.....	22.2	9.3	.05	10	3.3	14	3.6	32	18	14	2.1	3.7	115	39	13	165	7.1	27	12	9.2
Aug. 11-20.....	28.0	12	.03	11	3.0	15	3.9	37	13	14	1.9	5.0	118	40	10	170	6.9	15	9.7	6.9
Aug. 21-31.....	47.7	12	.06	9.2	2.2	11	3.2	31	8.7	10	1.1	3.2	96	32	6	125	6.3	17	13	8.9
Sept. 1-10.....	25.4	14	.03	9.6	2.9	13	3.4	40	7.9	11	1.3	4.0	101	36	3	143	6.4	10	10	7.2
Sept. 11-14, 17-20.....	9.0	13	.03	10	2.9	15	3.6	40	13	11	1.6	4.7	108	38	5	161	7.0	7	8.9	6.4
Sept. 15-16.....	8.5	12	.06	14	4.0	23	5.2	52	18	22	2.0	6.7	a136	51	8	236	6.8	22	--	--
Sept. 21-30.....	76.1	11	.03	10	2.9	18	4.0	43	11	16	2.0	4.1	119	37	1	178	6.5	18	8.9	6.7
Average.....	185	12	0.09	9.1	2.7	13	2.9	37	9.3	13	1.1	3.5	98	34	4	145	--	33	--	--

a Calculated from determined constituents.

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

CAPE FEAR RIVER BASIN--Continued

NEW HOPE RIVER NEAR PITTSBORO, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 (Once-daily measurement at approximately 6:30 a. m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	51	41	33	34	41	48	66	70	77	73	76
2	68	51	42	33	33	40	48	65	65	78	74	77
3	66	51	40	34	34	41	49	65	63	79	74	76
4	65	50	40	33	34	45	50	66	64	79	73	77
5	65	50	41	34	--	48	52	66	63	80	74	75
6	65	49	41	34	38	48	52	65	65	79	75	75
7	68	49	40	34	--	49	53	66	65	79	75	74
8	67	48	39	33	42	50	52	66	66	79	75	72
9	65	49	40	33	42	49	53	63	65	78	74	66
10	65	48	39	33	--	49	53	62	65	77	75	64
11	59	49	40	34	33	50	--	61	69	78	76	64
12	59	49	39	34	45	50	--	65	71	75	76	63
13	60	50	41	34	45	50	--	62	71	75	77	64
14	61	49	37	--	--	51	--	67	71	75	79	66
15	54	49	36	36	--	50	--	67	72	76	79	66
16	58	53	34	37	45	--	--	70	74	75	77	66
17	52	50	32	36	47	--	--	68	75	76	78	67
18	55	51	33	34	47	43	--	65	75	75	78	69
19	53	51	32	35	46	44	49	66	74	75	79	66
20	54	50	33	34	46	44	50	67	72	76	76	65
21	53	50	33	34	45	45	49	66	71	74	74	63
22	52	49	33	34	44	45	50	67	73	75	72	62
23	53	49	33	35	40	44	51	68	75	76	71	63
24	53	49	34	34	39	43	50	67	75	75	70	66
25	53	--	35	33	41	44	--	66	76	77	70	66
26	52	48	35	33	43	45	54	65	75	77	70	65
27	52	45	35	33	43	44	55	65	77	78	71	62
28	53	49	33	33	43	44	55	66	77	76	73	60
29	54	--	32	34	42	45	60	68	76	76	75	60
30	53	--	34	35	--	46	65	67	76	77	76	60
31	52	--	33	34	--	46	--	69	--	74	76	--
Average	58	49	36	34	41	46	--	66	71	77	75	67

CAPE FEAR RIVER BASIN--Continued

BEAR CREEK AT ROBBINS, N. C.

LOCATION.--At bridge on N. C. Highway 705 in Robbins, Moore County, half a mile downstream from gaging station which is 300 feet downstream from Cabin Creek. DRAINAGE AREA.--135 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433. No appreciable inflow between gaging station and sampling point except during periods of heavy local runoff.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Temperature (°F)	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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
															Calcium, magnesium	Non-carbonate			
Oct. 14, 1955	47		14	0.09	4.0	0.6	5.1	1.2	21	1.5	4.5	0.0	0.3	50	13	0	56.7	6.8	25
Nov. 16	40		13	.10	3.2	1.1	6.0	1.1	22	3.6	3.5	.0	.0	53	12	0	58.7	6.8	35
Dec. 16	34		15	.09	3.6	.7	5.1	.6	22	2.0	3.8	.0	.2	45	12	0	56.1	6.8	25
Jan. 16, 1956	30		12	.02	4.0	.8	5.0	.6	25	1.7	4.2	.0	.1	46	13	0	55.6	6.9	20
Feb. 17	64		11	.04	3.5	.6	4.5	.6	20	2.5	4.0	.0	.0	38	11	0	48.9	6.9	35
Mar. 16	3,420		8.7	.10	3.7	.5	3.4	.8	14	3.3	3.0	.0	.2	47	11	0	47.9	6.4	70
Apr. 16	150		10	.06	3.2	.5	2.9	.5	14	2.3	2.5	.0	.1	42	10	0	48.4	6.7	45
May 16	52		12	.10	3.6	.7	4.2	.7	21	1.7	2.8	.0	.4	36	12	0	50.2	6.7	30
June 15	12		8.5	.07	4.1	1.1	5.2	.8	26	1.5	3.2	.0	.2	38	15	0	58.6	6.8	25
July 17	4.0		7.3	.06	4.8	.7	6.9	1.3	30	2.1	3.2	.0	.7	53	15	0	75.7	6.8	35
Aug. 16	28		8.3	.05	3.1	.6	3.1	.8	14	2.1	2.6	.0	.3	41	10	0	42.0	6.6	35
Sept. 23	23		3.8	.02	6.8	2.4	18	2.7	46	5.3	16	.0	.8	79	27	0	147	6.7	8

CAPE FEAR RIVER BASIN--Continued

DEEP RIVER AT MONCURE, N. C.

LOCATION.--At power station millrace, 200 feet upstream from bridge on U. S. Highway 1, 2 miles downstream from gaging station, and three-quarters of a mile west of Moncure, Chatham County.

DRAINAGE AREA.--1,412 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1943 to September 1944, October 1955 to September 1956.

Water temperatures: October 1943 to September 1944, October 1955 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 74 ppm June 21-31; minimum, 44 ppm May 21-31.

Hardness: Maximum, 29 ppm Jan. 11-20; minimum, 12 ppm July 21-31.

Specific conductance: Maximum daily, 124 micromhos Nov. 22; minimum daily, 25.2 micromhos July 21.

Water temperatures: Maximum, 94° F July 3; minimum, 36° F Dec. 17, 28-29, 31.

EXTREMES, 1943-44, 1955-56.--Dissolved solids: Maximum, 106 ppm Dec. 11-20, 1943; minimum, 38 ppm Mar. 21-31, 1944.

Hardness: Maximum, 32 ppm Nov. 21-30, 1943; minimum, 12 ppm Dec. 11-20, 21-31, Apr. 11-20, July 11-20, Aug. 1-10, 1944, July 21-31, 1956.

Water temperatures: Maximum, 94° F July 3, 1956; minimum, 33° F Dec. 17-19, 1943.

REMARKS.--Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C.

Records of discharge for gaging station near Moncure for water year October 1955 to September 1956 given in WSP 1435. No appreciable inflow between

gaging station and sampling point except during periods of heavy local runoff.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180° C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25° C)	pH	Color	Oxygen consumed	
														Calcium	Non-carbonate				Unfiltered	Filtered
Oct. 1-10, 1955	2,920	9.5	0.07	4.6	1.7	3.5	1.4	20	3.9	4.0	0.0	1.1	52	18	2	58.0	7.3	40	11	8.2
Oct. 11-20	348	12	.19	5.0	1.7	4.8	1.4	24	4.9	4.0	.0	1.1	60	20	0	65.8	7.5	45	9.0	7.4
Oct. 21-31	198	11	.22	7.2	1.5	5.9	1.3	32	3.9	5.0	.0	1.7	59	24	0	76.4	7.2	40	6.6	5.4
Nov. 1-10	209	8.6	.17	6.4	1.9	7.8	1.4	36	3.8	7.0	.0	.4	60	24	0	90.2	7.0	30	7.2	4.8
Nov. 11-20	502	11	.11	6.4	2.2	8.5	1.6	39	2.7	8.8	.0	.1	68	25	0	101	7.0	20	--	5.5
Nov. 21-30	579	12	.06	6.0	2.1	8.6	1.9	33	3.5	9.8	.0	.4	71	23	0	99.3	6.8	30	6.7	5.8
Dec. 1-10	352	11	.04	6.1	1.9	8.4	1.6	33	3.6	9.0	.0	.5	68	23	0	97.1	6.9	15	6.2	5.1
Dec. 11-20	276	9.3	.30	5.8	2.8	9.0	1.4	37	2.7	9.0	.1	.5	63	26	0	102	6.7	35	4.2	3.3
Dec. 21-31	252	6.5	.33	6.3	2.8	10	1.2	39	2.8	8.5	.1	.2	58	27	0	102	6.8	23	4.6	2.7
Jan. 1-10, 1956	239	4.3	.28	6.4	2.2	10	1.2	40	2.8	8.0	.0	.5	56	25	0	99.5	7.0	20	5.4	2.2
Jan. 11-20	217	6.9	.15	5.1	3.9	11	1.1	42	3.4	9.5	.0	.6	67	29	0	116	7.2	16	3.8	3.6
Jan. 21-31	417	5.5	.18	6.6	2.6	9.5	1.0	39	3.7	8.5	.0	.7	63	27	0	108	7.1	10	5.9	2.9
Feb. 1-6	2,840	8.5	.06	6.0	2.4	8.2	1.3	34	5.8	8.0	.1	.2	67	25	0	97.5	6.8	20	7.4	5.9
Feb. 7-10	6,880	8.7	.08	4.7	1.2	3.7	1.4	17	6.1	4.8	.1	1.8	67	17	3	65.6	6.7	50	--	--
Feb. 11-20	1,950	11	.06	4.6	1.5	4.4	1.9	16	6.4	4.8	.1	1.7	56	20	5	72.9	6.8	22	8.6	6.0
Feb. 21-30	2,450	10	.07	5.2	1.2	4.7	1.8	17	7.5	5.1	.1	1.6	53	18	2	63.6	6.8	27	11.7	7.6
Mar. 1-10	1,170	10	.12	4.8	1.2	4.6	1.8	21	5.3	5.5	.1	.8	59	21	1	69.8	6.8	35	7.8	6.6
Mar. 11-16	2,140	9.9	.01	5.2	1.9	5.7	1.8	26	4.2	6.4	.1	1.2	58	21	0	77.6	6.5	18	6.5	4.3
Mar. 17-20	10,500	7.9	.05	4.5	1.4	3.4	.7	12	6.3	3.5	.2	1.2	--	13	3	49.6	6.2	40	--	--
Mar. 21-31	9,880	11	.03	4.4	1.5	4.1	.7	20	4.8	4.1	.0	.6	50	17	1	61.2	7.2	20	5.1	4.7

Apr. 1-10, 1956	1,230	8.1	0.02	4.8	1.7	4.6	0.7	22	3.6	5.1	0.1	0.5	51	19	1	66.7	7.1	25	7.3	5.3
Apr. 11-20	2,650	11	.02	4.7	1.7	4.7	1.0	21	2.9	4.8	.1	1.0	48	19	1	65.8	6.5	25	7.2	5.9
Apr. 21-30	717	10	.03	5.0	1.4	4.4	.8	22	3.0	4.2	.1	.6	47	18	0	66.1	6.6	26	6.3	4.5
May 1-10	2,210	9.7	.03	4.9	1.4	4.6	1.2	21	2.4	4.2	.1	.9	50	18	1	66.6	6.5	32	8.4	6.6
May 11-20	500	9.2	.04	4.4	2.0	4.8	.8	24	3.3	3.2	.1	1.1	45	19	0	53.1	6.5	27	7.0	5.9
May 21-31	294	2.8	.17	6.1	1.4	6.2	.9	31	3.4	4.6	.2	.9	44	21	0	75.6	7.0	25	5.8	4.6
June 1-10	741	3.9	.03	6.0	1.4	6.3	1.0	29	3.6	4.7	.1	.9	47	21	0	76.7	6.7	23	7.8	6.1
June 11-20	114	1.9	.08	5.8	2.8	9.3	1.2	41	2.3	3.0	.1	1.0	64	23	0	105	6.9	20	7.9	3.9
June 21-30	214	2.3	.08	5.4	2.8	11	1.2	40	2.3	3.0	.1	1.2	74	23	0	121	6.9	17	4.5	3.7
July 1-10	320	2.8	.03	3.6	2.4	6.9	1.0	30	2.3	5.7	.1	2.5	64	22	0	84.5	6.6	27	6.3	5.5
July 11-20	989	8.2	.02	4.4	1.0	4.7	1.6	21	2.4	5.4	.1	2.3	52	15	0	67.8	6.9	20	8.1	6.0
July 21-31	2,260	6.1	.05	4.0	.5	3.4	1.4	16	2.6	3.0	.1	1.6	46	12	0	51.8	6.8	35	12	9.5
Aug. 1-10	308	7.9	.04	3.6	1.5	5.4	1.2	19	3.0	5.0	.1	1.5	51	15	0	61.2	6.9	27	11	7.3
Aug. 11-20	212	8.0	.02	5.0	2.1	5.7	1.4	25	4.0	5.8	.1	1.3	55	21	0	73.2	6.8	20	10	5.3
Aug. 21-31	385	7.5	.03	4.0	1.5	6.0	1.8	21	3.5	5.3	.1	1.9	55	16	0	65.3	6.8	17	8.5	5.5
Sept. 1-10	258	7.7	.03	4.2	1.2	5.1	1.6	20	3.0	6.0	.0	1.0	66	15	0	61.1	6.6	20	9.1	4.6
Sept. 11-20	127	7.6	.03	4.0	1.9	6.3	1.5	26	2.7	5.1	.1	1.7	57	18	0	67.7	6.6	20	9.3	6.5
Sept. 21-30	3,150	6.3	.07	3.6	1.7	5.5	1.8	18	3.7	5.3	.1	2.9	56	16	1	67.9	6.7	20	13	7.2
Average	1,079	8.1	0.09	5.2	1.8	6.3	1.3	27	3.7	6.0	0.1	1.0	57	20	0	78.5	--	26	7.5	5.4

CAPE FEAR RIVER BASIN--Continued

DEEP RIVER AT MONCURE, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 8:30 a.m./

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

CAPE FEAR RIVER BASIN--Continued

BLACK RIVER NEAR CURRIE, N. C.

LOCATION.--At bridges on Highway 210, 100 feet downstream from confluence of Colly Creek, about 3½ miles southwest of Currie, Pender County.
DRAINAGE AREA.--1,400 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

Water temperatures: October 1955 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 89 ppm Oct. 1-10; minimum, 57 ppm Jan. 21-31.

Hardness: Maximum, 10 ppm Nov. 11-20; minimum, 6 ppm Mar. 11-20, Mar. 21-31, Apr. 1-10, Apr. 21-30.

Specific conductance: Maximum, 111, 67.7 micromhos July 3; minimum, 38.2 micromhos May 11.

Water temperatures: Maximum, 86, June 30; July 24, 26; minimum, 38 F Jan. 17. Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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)	Dissolved solids (residue on evaporation at 180° C)	Calculated mineral constituents	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Calcium magnesium	Non-carbonate			Unfiltered	Filtered
Oct. 1-10, 1955	8.4	1.5	2.3	0.5	4.0	1.7	7	3.2	6.0	0.0	0.6	89	32	8	2	45.6	5.3	36	35
Oct. 11-20	9.3	1.4	1.9	0.5	4.7	1.4	6	1.5	8.0	0.0	0.7	79	32	7	2	48.2	5.4	300	--
Oct. 21-31	9.5	1.0	2.5	0.4	4.7	1.2	6	1.7	7.0	0.0	0.7	75	32	8	3	48.2	5.5	230	27
Nov. 1-10	6.7	7.9	1.8	0.9	5.4	1.2	7	2.5	8.4	0.0	0.3	66	31	8	2	49.4	6.0	170	25
Nov. 11-20	9.1	6.5	2.6	0.8	5.4	1.1	8	2.3	7.6	0.0	0.6	61	34	10	3	50.4	5.8	150	23
Nov. 21-30	8.6	6.2	2.0	1.0	5.2	1.1	7	3.2	8.4	0.0	0.4	64	34	9	3	51.4	5.9	160	23
Dec. 1-10	6.9	4.8	2.4	0.5	5.1	1.2	6	3.8	7.8	0.0	1.0	65	32	8	3	47.5	6.4	160	23
Dec. 11-20	7.3	4.7	2.3	0.5	4.6	1.0	6	3.2	8.0	0.0	0.5	61	29	8	3	46.2	5.7	160	26
Dec. 21-31	6.3	4.1	2.8	0.5	4.6	0.9	6	3.2	8.0	0.0	0.4	64	30	9	4	48.1	5.8	160	22
Jan. 1-10, 1956	6.1	3.4	2.4	0.6	4.6	0.8	6	3.1	7.0	0.1	0.4	68	29	9	4	48.0	6.0	130	18
Jan. 11-20	5.9	3.9	2.8	0.3	4.7	0.8	7	2.6	6.5	0.1	0.3	60	28	8	3	50.6	6.1	120	17
Jan. 21-31	5.9	3.3	2.4	0.7	4.2	0.8	3	4.8	7.2	0.1	0.3	57	28	9	7	48.0	7.0	120	19
Feb. 1-10	5.0	3.0	2.4	0.3	4.3	0.9	5	4.3	6.1	0.2	0.5	60	26	7	3	48.8	5.7	160	29
Feb. 11-20	4.8	3.8	2.4	0.2	4.1	1.0	5	4.0	5.5	0.2	0.5	67	25	7	3	47.1	5.3	180	28
Feb. 21-29	4.2	4.0	2.2	0.5	4.1	0.9	4	3.7	5.9	0.2	0.5	65	25	7	4	51.5	5.3	220	31
Mar. 1-10	3.6	3.1	2.0	0.7	3.7	0.8	5	3.4	6.0	0.1	0.3	67	23	8	4	45.0	5.3	180	27
Mar. 11-20	1.9	3.6	2.0	0.2	3.9	0.8	5	2.6	6.0	0.0	0.4	64	20	6	2	43.9	5.3	160	25
Mar. 21-31	2.2	3.1	1.8	0.3	4.1	0.8	6	3.2	5.8	0.0	0.3	67	22	6	1	42.5	5.4	180	24
Apr. 1-10	2.0	3.9	1.6	0.5	4.0	0.6	4	4.1	5.5	0.0	0.6	66	21	6	3	42.9	5.5	150	27
Apr. 11-20	3.1	4.4	1.6	0.7	3.9	0.7	3	5.4	5.3	0.0	0.6	74	23	7	5	43.4	5.5	150	27
Apr. 21-30	2.5	4.9	1.6	0.5	4.0	0.7	4	1.8	5.7	0.0	0.6	70	20	6	3	41.8	5.4	150	28
May 1-10	4.1	6.3	1.6	0.7	4.2	1.0	5	2.0	6.0	0.0	0.6	67	23	7	3	42.0	6.2	200	27
May 11-20	5.0	7.6	1.6	0.7	3.9	1.2	5	3.6	6.0	0.0	0.6	75	23	7	3	42.0	5.3	220	30
May 21-31	5.9	5.9	1.6	0.7	4.5	1.2	7	1.6	6.0	0.0	1.1	73	27	7	1	47.2	5.7	200	29

CAPE FEAR RIVER BASIN--Continued
BLACK RIVER NEAR CURRIE, N. C.--Continued

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)	Dissolved solids (residue on evaporation at 180°C)	Calculated from mineral constituents	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Calcium, magnesium	Non-carbonate			Unfiltered	Filtered
June 1-10, 1956	6.5	0.58	2.4	1.0	5.0	0.9	8	5.5	6.0	0.1	0.6	62	33	10	3	49.5	160	28	22
June 21-20	7.1	.73	2.2	.9	5.7	.8	8	4.9	6.9	.1	.6	60	35	8	2	53	180	26	22
June 21-20	6.3	.76	2.4	.7	5.3	.8	8	4.0	6.9	.0	.7	71	32	8	2	52.3	180	26	22
July 1-10	7.1	.59	2.4	.4	5.2	.8	5	3.7	6.5	.1	.9	68	30	8	4	53.5	150	24	23
July 11-20	6.7	.74	2.8	.2	5.6	.9	8	3.9	6.0	.1	1.1	71	32	8	1	53.0	150	23	22
July 21-31	6.7	.63	2.3	.4	4.5	.9	6	3.4	6.2	.1	.8	68	29	7	2	47.7	160	26	23
Aug. 1-10	8.2	.35	2.6	.5	5.2	.9	7	3.2	6.0	.0	2.5	63	33	9	3	50.4	100	22	18
Aug. 11-20	7.7	.34	2.8	.4	4.9	.7	6	4.6	5.5	.0	3.2	65	33	9	4	47.0	120	22	18
Aug. 21-31	8.5	.39	2.4	.9	4.6	.8	7	2.8	6.5	.0	2.8	70	33	10	4	48.1	120	24	23
Sept. 1-10	8.7	.36	2.4	.5	5.3	.9	8	1.1	6.4	.1	2.2	70	32	8	1	48.3	120	21	20
Sept. 11-20	9.4	.38	2.8	.5	5.7	.9	7	4.3	6.7	.1	1.3	75	35	9	3	47.3	130	24	23
Sept. 21-30	9.0	.45	2.4	1.0	6.3	1.0	9	2.6	7.8	.1	2.3	74	37	10	3	51.8	130	24	22
Average	6.3	0.56	2.2	0.6	4.7	1.0	6	3.3	6.5	0.0	0.9	68	29	8	3	47.8	160	25	23

CAPE FEAR RIVER BASIN--Continued

BLACK RIVER NEAR CURRIE, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 5 p.m./

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

CAPE FEAR RIVER BASIN--Continued
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 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 100 ppm Nov. 1-10; minimum, 64 ppm Feb. 11-20.

Water temperatures: October 1954 to September 1956.

Hardness: Maximum, 27 ppm Aug. 11-20, 21-30; minimum, 13 ppm Oct. 1-10.

Specific conductance: Maximum daily, 112 micromhos Sept. 20; minimum daily, 44.8 micromhos Oct. 2.

Water temperatures: Maximum, 90° F Aug. 10; minimum, 40° F Dec. 21.

EXTREMES, 1954-56.--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, 34.5 micromhos Sept. 25, 1955.

Water temperatures: Maximum, 90° F Aug. 10, 1956; minimum, 40° F Dec. 21, 1955.

REMARKS.--Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C.

No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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)	Dissolved solids (residue on evap- oration at 180° C)	Calculated from mineral constitu- ents	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25° C)	pH	Color	Oxygen consumed	
														Calcium	Non- carbon- ate				Unfil- tered	Fil- tered
Oct. 1-10, 1955	6.0	1.0	3.9	0.8	4.1	1.6	12	1.1	8.0	0.0	0.9	90	33	13	3	54.8	6.5	340	34	33
Oct. 11-20	7.7	.93	5.6	.7	5.4	1.4	15	1.5	12	.0	.8	97	43	17	5	67.3	6.6	320	34	34
Oct. 21-31	8.9	.95	5.5	1.1	6.6	1.2	19	1.5	10	.0	.8	98	46	18	3	76.7	7.0	280	32	32
Nov. 1-10	9.2	.69	7.2	1.2	7.5	1.1	20	1.7	12	.0	.6	100	51	23	6	85.3	6.7	210	29	28
Nov. 11-20	9.2	.58	8.4	.7	7.7	1.2	20	5.3	11	.1	.8	92	55	24	8	87.4	6.8	200	26	23
Nov. 21-30	8.7	.62	8.8	.5	7.2	.9	22	3.0	12	.0	.6	96	53	24	8	86.0	6.8	210	27	26
Dec. 1-10	7.2	.47	6.7	.7	7.3	1.1	14	3.9	13	.0	1.6	85	49	19	8	82.3	6.7	150	25	23
Dec. 11-20	6.9	.45	6.4	.9	6.9	.9	14	5.7	11	.1	1.2	87	47	20	7	78.1	6.5	150	24	21
Dec. 21-31	7.9	.38	5.2	1.5	6.4	.8	15	4.4	10	.1	.6	81	44	20	7	80.2	6.7	160	22	22
Jan. 1-10, 1956	7.1	.31	6.5	1.2	6.6	.6	17	4.4	11	.0	.7	86	47	21	7	80.4	6.7	150	26	19
Jan. 11-20	7.5	.34	6.6	1.0	6.8	.6	16	4.1	11	.0	.7	86	46	21	8	80.4	6.7	150	35	34
Jan. 21-31	6.3	.27	6.3	.9	6.3	.9	13	5.3	10	.0	.8	83	45	19	5	78.3	6.5	130	24	18
Feb. 1-10	5.6	.23	6.0	.6	5.6	.7	13	5.8	9.0	.2	.8	66	41	18	7	72.0	6.6	130	19	16
Feb. 11-20	5.9	.33	4.5	1.2	5.7	.7	12	6.3	9.0	.2	.5	64	38	17	9	65.7	6.4	140	23	18
Feb. 21-31	5.7	.30	5.3	.7	5.2	.7	12	4.7	8.4	.2	.5	72	38	16	6	62.7	6.6	160	27	18
Mar. 1-10	5.7	.28	4.8	1.0	5.2	.4	10	6.4	8.0	.0	.9	75	36	16	8	63.3	6.2	110	24	20
Mar. 11-20	5.1	.29	5.8	.8	5.5	.5	13	3.5	9.0	.0	.7	77	35	17	6	66.6	6.5	130	25	22
Mar. 21-31	5.5	.26	5.0	.6	4.9	.2	11	4.1	8.8	.0	.5	76	33	15	6	60.0	6.4	110	23	22
Apr. 1-10	5.0	.23	5.6	.7	5.6	.6	14	5.4	7.8	.1	.3	73	37	17	6	69.9	6.6	160	--	21
Apr. 11-20	3.3	.42	5.6	.8	5.5	.8	14	3.0	9.2	.1	.3	87	36	17	6	68.0	6.5	160	--	22
Apr. 21-30	3.7	.54	5.2	1.0	5.5	.8	15	1.8	10	.1	.3	81	36	17	5	67.1	6.5	160	27	23
May 1-10	3.2	.45	6.0	1.0	5.9	1.0	14	3.0	9.4	.0	2.6	82	40	19	8	73.9	6.5	160	25	22
May 11-20	4.2	.59	4.6	1.0	4.4	.8	11	2.5	6.3	.0	1.2	80	31	15	6	55.9	6.2	190	31	26
May 21-31	5.0	.68	5.2	.7	5.2	1.0	14	3.1	7.8	.0	1.0	82	37	16	5	63.2	6.3	220	29	27

June 1-10, 1956	4.4	0.49	5.7	0.7	5.8	0.7	14	5.0	8.2	0.1	0.9	74	39	17	6	68.0	6.2	180	27	22
June 11-20	5.5	.38	6.0	.7	6.2	.6	16	7.1	8.2	.1	1.9	72	44	18	5	74.1	6.3	140	23	20
June 21-30	5.5	.42	6.4	.6	5.9	.7	18	6.0	8.0	.0	1.1	72	44	19	4	74.2	6.3	140	26	20
July 1-10	6.2	.47	7.3	.4	6.5	.5	19	2.7	9.0	.0	1.1	77	43	20	5	79.8	6.7	150	23	20
July 11-20	5.4	.38	8.0	.7	6.1	.6	21	5.3	8.0	.0	1.4	81	46	23	6	84.2	6.8	150	23	20
July 21-31	5.4	.48	7.4	.9	7.1	.6	18	6.6	9.0	.1	1.0	88	48	22	7	87.9	6.7	200	28	26
Aug. 1-10	6.8	.26	8.8	1.0	8.9	1.0	18	7.9	13	.0	2.9	83	60	26	11	100	6.4	130	26	19
Aug. 11-20	6.9	.18	8.4	1.3	7.8	.8	18	9.2	12	.0	2.5	85	58	27	12	87.4	6.6	130	21	19
Aug. 21-31	7.1	.28	8.4	1.3	7.8	1.2	19	7.5	12	.2	3.2	90	58	27	12	86.1	6.3	110	23	21
Sept. 1-10	6.5	.19	8.4	.8	8.9	.9	21	7.0	19	.1	3.8	86	57	24	7	89.4	6.5	100	22	20
Sept. 11-20	6.5	.11	8.4	1.1	8.7	1.1	21	6.3	13	.1	3.8	86	57	25	8	89.2	6.7	100	23	18
Sept. 21-30	6.9	.15	8.3	1.1	8.9	.9	20	5.1	13	.1	2.8	85	57	25	9	96.0	6.7	100	21	16
Average	6.0	0.43	6.4	0.9	6.4	8.2	16	4.6	9.9	0.1	1.2	83	45	20	7	76.9	--	160	26	23

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

CAPE FEAR RIVER BASIN--Continued

NORTHEAST CAPE FEAR RIVER AT CASTLE HAYNE, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 6 p.m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	75	--	48	45	45	55	59	67	75	85	85	85
2	73	63	48	43	51	54	60	68	75	85	84	80
3	74	63	54	48	50	54	61	63	74	85	83	80
4	74	--	54	44	49	53	61	64	74	87	88	79
5	74	59	50	43	52	58	62	64	71	84	84	82
6	74	58	48	44	49	60	63	65	73	84	84	82
7	74	60	48	44	50	60	62	64	71	83	84	82
8	74	60	48	42	54	59	63	64	73	83	84	84
9	73	60	47	42	55	59	63	64	76	84	84	79
10	70	56	46	43	55	59	63	64	75	84	90	79
11	70	56	46	43	55	60	62	64	73	85	85	82
12	70	58	45	43	54	60	62	64	73	84	85	81
13	70	60	46	43	54	61	60	65	79	84	86	82
14	72	62	48	43	55	64	61	64	74	85	85	83
15	70	60	46	42	55	60	63	64	74	85	85	83
16	69	64	42	44	56	59	63	68	79	85	83	84
17	66	62	42	45	56	56	63	67	79	83	84	83
18	68	58	43	45	57	56	62	67	80	83	84	79
19	66	58	45	45	58	54	64	68	79	83	85	78
20	65	55	41	45	58	53	63	68	79	85	85	76
21	65	55	40	45	56	56	62	68	79	84	80	74
22	64	56	41	43	55	56	64	69	80	84	72	75
23	64	58	43	42	54	56	63	70	81	84	87	78
24	66	57	45	42	54	50	63	72	83	83	86	80
25	62	55	48	43	55	50	--	72	80	85	84	82
26	63	55	45	43	--	50	--	70	80	94	85	82
27	65	55	45	43	54	50	68	72	81	96	87	82
28	65	57	44	43	45	53	63	70	83	97	81	81
29	65	50	43	45	54	55	62	70	82	96	82	80
30	65	52	43	45	--	--	--	--	83	95	81	81
31	65	--	45	45	--	--	--	72	--	84	82	--
Average	69	58	46	44	53	56	62	67	77	84	84	81

CAPE FEAR RIVER BASIN --Continued
MISCELLANEOUS ANALYSES OF STREAMS IN CAPE FEAR RIVER BASIN IN NORTH CAROLINA
Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (calculated)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium, mag- nesium	Non- carbon- ate			
HAW RIVER NEAR SUMMERFIELD																		
Feb. 1, 1956	7.17			5.5	1.8			35	1.2	2.0		0.4		21	0	65.1	7.2	
May 22	6.23			6.3	2.5			40	1.9	2.0		.9		26	0	72.5	6.9	
HORSEPEN CREEK AT BATTLE GROUND																		
Jan. 11, 1956	5.66	19	0.24	8.6	3.6	5.2	1.6	52	3.4	2.8	0.0	0.6	71	36	0	100	6.5	15
July 11	2.38	20	.01	8.5	3.1	5.6	2.2	50	2.9	2.7	.0	.7	71	34	0	96.7	7.5	7
REEDY FORK NEAR OAK RIDGE																		
Jan. 11, 1956		19	0.63	5.6	2.2	4.8	1.6	33	2.5	2.5	0.1	1.1	56	23	0	77.7	6.9	34
July 11	6.19	7.8	.07	5.1	1.9	4.5	2.2	33	1.6	2.8	.0	1.1	43	20	0	70.1	6.6	20
REEDY FORK NEAR GIBSONVILLE																		
Jan. 13, 1956	9.80	19	0.71	5.9	2.5	4.4	2.2	38	2.8	2.1	0.1	0.4	59	25	0	74.2	7.3	25
July 17	4.68	17	.00	7.3	2.0	5.0	1.8	43	2.3	2.0	.0	1.0	59	27	0	89.8	6.5	7
HAW RIVER AT HAW RIVER																		
Jan. 13, 1956	115	23	0.92	9.6	4.5	97	6.7	152	29	60		11	325	43	0	561	7.2	
July 13	110	14	.04	9.7	2.6	34	4.2	60	19	31	1.1	1.5	147	35	0	257	6.6	20
CANE CREEK NEAR CARBORO																		
May 21, 1956	10.3			5.5	1.7			32	1.9	2.3		0.9		21	0	67.3	6.9	
Sept. 18 .....	.606							38	1.2	2.5				24	0	73.2	6.9	
NEW HOPE CREEK NEAR DURHAM																		
May 21, 1956	4.82			7.3	2.5			40	3.2	3.0		0.6		29	0	79.9	6.9	
Sept. 18 .....	.594							42	2.1	3.0				30	0	82.8	7.3	

CAPE FEAR RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN CAPE FEAR RIVER BASIN IN NORTH CAROLINA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (calculated)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium, mag- nesium	Non- carbon- ate			
WEST FORK DEEP RIVER NEAR HIGH POINT																		
Jan. 10, 1956	15.9	23	0.44	6.4	2.3	7.1	1.0	44	2.4	2.5	0.2	0.5	68	25	0	81.1	7.4	27
July 10	18.0	18	.03	5.9	1.6	4.1	2.5	32	5.6	2.4	.0	.6	57	21	0	72.3	6.6	12
EAST FORK DEEP RIVER NEAR HIGH POINT																		
Jan. 10, 1956	4.4	27	0.24	8.8	3.5	5.6	1.1	56	1.3	2.5	0.1	0.4	79	36	0	100	7.3	22
July 19	4.6	26	.10	8.4	3.1	5.8	1.7	54	1.0	3.0	.2	.9	77	33	0	97.2	7.0	28
DEEP RIVER NEAR RANDLEMAN																		
Jan. 10, 1956	21.2	18	0.30	12	4.6	60	4.5	78	23	64	0.8	12	237	49	0	417	6.8	37
July 10	82.5	12	.00	9.5	1.8	5.8	2.5	36	8.3	4.3	.0	2.7	65	31	2	108	6.4	10
POLECAT CREEK NEAR CLIMAX																		
May 22, 1956	4.39			7.9	3.4			51	2.6	2.8		0.8		34	0	93.3	7.0	
Sept. 18 .....	.033							51	5.8	2.3				37	0	97.4	7.3	
DEEP RIVER AT RAMSEUR																		
Jan. 10, 1956	173	15	0.24	9.2	3.0	23	2.3	58	9.4	19	0.1	2.7	113	35	0	191	6.8	27
July 9	183	9.1	.01	9.5	2.7	24	3.0	56	9.3	26	.0	1.3	113	35	0	202	6.6	11
BRUSH CREEK NEAR COLERIDGE																		
Feb. 2, 1956	11.1			5.5	2.0			30	2.5	5.0		0.0		22	0	73.6	7.1	
May 23	7.92			5.7	2.2			35	1.1	3.3		.4		23	0	69.6	6.9	
Sept. 18 .....	.81			4.8	1.3			26	1.9	2.5		3.9		17	0	56.1	6.7	

FORK CREEK NEAR COVERIDGE

Feb. 2, 1956	10.4		5.6	2.3			37	2.6	4.0		0.8		23	0	77.1	7.0
May 23	8.35		5.9	1.5			37	1.2	2.9		.2		21	0	69.0	7.0
Sept. 18	2.24		4.8	2.4			37	1.7	2.0		--		22	0	69.3	7.0

TICK CREEK NEAR BONLEE

May 22, 1956	1.78		7.5	2.9			42	3.8	3.0		1.0		31	0	86.2	7.1
Sept. 18 .....	.068		7.8	3.5			51	2.3	3.5		1.8		34	0	95.3	6.8

CAPE FEAR RIVER AT LILLINGTON

Jan. 17, 1956	930	5.0	0.22	7.6	2.8	20	1.8	54	6.6	15	0.7	0.7	87	31	158	7.4
July 9	906	3.4	.00	6.7	3.7	46	3.7	92	10	30	.0	2.5	151	32	281	6.8

CRANE CREEK NEAR VASS

Oct. 25, 1955	7.66		2.5	0.9			15	2.8	4.2		0.6		10	0	40.2	6.4
May 22, 1956	12.2		2.2	.6			12	2.8	3.2				8	0	33.7	6.5

LITTLE RIVER AT LINDEN

Jan. 17, 1956	202	9.3	0.25	1.8	0.3	3.3	0.7	5	2.8	3.5	0.0	3.2	27	6	38.5	6.2
July 11	338	3.6	.29	1.0	.8	3.3	1.4	3	1.3	5.5	.4	1.9	20	6	36.6	5.3

CAPE FEAR RIVER AT LOCK 3 NEAR TARHEEL

Jan. 18, 1956	1,440	5.6	0.30	4.3	1.2	15	1.6	33	5.5	10	0.1	1.2	61	16	112	6.7
July 13	1,760	2.3	.19	3.5	1.5	12	1.8	27	4.7	8.5	.5	1.2	49	15	85.5	6.5

LITTLE COHARIE CREEK NEAR ROSEBORO

Jan. 20, 1956	75.1	6.7	0.43	0.6	0.2	6.5	0.8	8	3.1	6.8	0.0	0.5	30	2	43.0	6.3
July 20	6.9	6.9	.37	.4	.1	4.5	1.2	3	2.5	4.2	.0	.7	22	1	35.7	5.0

CAPE FEAR RIVER BASIN--Continued
 MISCELLANEOUS ANALYSES OF STREAMS IN CAPE FEAR RIVER BASIN IN NORTH CAROLINA--Continued
 Chemical analyses, in parts per million, water year October 1955 to September 1956--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 (micro- mhos at 25° C)	pH	Color
														Calcium, mg-nestum	Non-carbonate			
BLACK RIVER NEAR TOMAHAWK																		
Jan. 19, 1956	388	6.5	0.49	3.4	0.3	4.7	1.0	8	5.2	6.5	0.0	0.4	32	10	3	52.2	6.9	20
July 20	900	7.3	.58	2.2	.3	3.8	1.0	4	5.2	4.0	.0	1.1	27	7	3	43.3	5.1	140
SOUTH RIVER NEAR PARKERSBURG																		
Jan. 19, 1956	177	5.0	0.43	1.0	0.4	5.0	0.8	4	2.6	7.0	0.1	0.3	25	4	1	43.2	5.2	110
July 20	471	6.5	.54	.6	.1	4.2	1.3	2	5.3	4.4	.0	.5	24	2	0	35.0	5.0	140
COLLY CREEK NEAR KELLY																		
Jan. 19, 1956		4.3	0.40	1.8	0.9	2.8	1.4	1	5.1	5.5	0.0	0.4	24	8	7	54.2	4.6	360
July 19	23.6	7.7	1.0	1.4	.4	3.6	1.8	0	3.4	5.0	.0	4.5	29	5	5	53.9	4.6	700
NORTHEAST CAPE FEAR RIVER NEAR CHINQUAPIN																		
Jan. 27, 1956	859	6.0	0.25	4.2	0.6	6.2	1.0	8	7.0	9.8	0.1	0.3	39	13	6	69.1	6.0	70
July 11	85.9	7.4	.74	8.1	.6	13	1.5	22	4.4	23	.0	1.2	71	23	5	131	6.8	130
ROCKFISH CREEK AT WALLACE																		
Jan. 20, 1956	54.6	6.7	0.40	5.4	0.7	5.7	0.9	12	8.0	8.5	0.0	0.3	43	16	6	70.1	6.3	25
July 20		9.5	.11	12	.4	4.2	.7	6	29	4.2	.4	.3	64	32	28	105	5.8	40
MISCELLANEOUS ANALYSES OF STREAMS IN WACCAMAW RIVER BASIN IN NORTH CAROLINA																		
WACCAMAW RIVER AT FREELAND																		
Jan. 18, 1956	182	4.2	0.44	4.0	0.4	5.3	0.7	5	6.3	9.0	0.0	0.4	33	12	8	57.3	5.5	50
July 19	144	7.4	1.1	3.8	.6	6.4	1.2	5	4.7	10	.0	.8	38	12	8	70.9	4.9	

PEE DEE RIVER BASIN
 YADKIN RIVER AT YADKIN COLLEGE, N. C.

LOCATION --At bridge on U. S. Highway 64, 1½ miles south of Yadkin College, Davidson County, and 6½ 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 1956.
 Water temperatures: October 1943 to September 1944, October 1950 to September 1951, October 1955 to September 1956.
 Sediment loads: January 1951 to September 1956.
 EXTREMES 1955-56: Dissolved solids: Maximum, 66 ppm Aug. 1-31; minimum, 37 ppm Apr. 1-30.
 Hardness: Maximum, 22 ppm Aug. 1-31; minimum, 13 ppm Apr. 1-30.
 Specific conductance: Maximum daily, 136 micromhos Aug. 17; minimum daily, 36.4 micromhos Apr. 17.
 Water temperatures: Maximum, 83° F., July 2-4; Aug. 14; minimum, freezing point on many days in December.
 Sediment concentrations: Maximum daily, 1,730 ppm Sept. 27; minimum daily, 4 ppm Jan. 13-31.
 Sediment loads: Maximum daily, 91,500 tons Sept. 27; minimum daily, 9 tons Jan. 13-17.
 EXTREMES 1943-44, 1950-56 --Dissolved solids: Maximum, 185 ppm Nov. 1-10, 1950; minimum, 32 ppm Mar. 21-31, 1944.
 Hardness: Maximum 22 ppm Sept. 1-30, 1956; minimum, 10 ppm July 11-20, 1944.
 Water temperatures: Maximum 87° F. June 18, 1944; minimum, freezing point on many days during winter months.
 Sediment concentrations: Maximum daily, 2,970 ppm Mar. 28, 1952; minimum daily, 1 ppm Dec. 3, 1953.
 Sediment loads: Maximum daily, 108,000 tons Jan. 23, 1954; minimum daily, 3 tons Dec. 3, 1953.
 REMARKS --Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on 0.45 micron filter at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
Oct. 1-31, 1955	924	13	0.02	4.6	1.3	6.9	2.2	30	5.0	5.2	0.1	0.0	56	17	0	75.3	6.5	5
Nov. 1-30	944	14	.08	4.8	1.0	6.6	2.1	30	2.2	5.2	.1	.8	54	16	0	73.7	6.7	18
Dec. 1-31	910	13	.07	5.2	1.5	5.5	1.6	26	2.6	4.5	.0	.8	49	15	0	71.5	6.8	10
Jan. 1-31, 1956	891	13	.02	5.1	1.1	5.7	1.4	26	3.0	5.0	.0	1.4	52	17	0	74.9	6.4	2
Feb. 1-28	2,340	11	.00	4.0	1.2	3.5	1.4	19	3.9	2.8	.1	1.5	40	16	0	55.8	6.6	10
Mar. 1-31	2,240	12	.01	3.8	1.1	3.6	1.2	20	2.5	3.0	.1	.8	43	14	0	55.1	6.9	9
Apr. 1-30	3,300	11	.01	2.6	1.0	2.8	1.4	20	1.6	2.8	.1	1.4	37	13	0	53.1	6.6	5
May 1-31	1,600	9	.00	5.5	1.5	5.9	1.6	24	2.8	3.0	.2	1.4	41	16	0	63.1	6.7	7
June 1-30	1,927	9.1	.00	5.5	1.5	6.6	2.0	20	2.4	4.0	.0	2.3	54	17	0	75.5	6.6	12
July 1-31	1,050	11	.02	4.5	1.1	5.8	2.0	24	2.5	4.0	.0	2.3	52	17	0	70.7	7.2	10
Aug. 1-31	584	11	.00	6.0	1.6	9.1	2.9	35	4.5	5.9	.3	3.7	86	22	0	82.3	7.6	2
Sept. 1-30	2,510	11	.02	5.9	1.6	8.3	2.7	29	2.7	5.5	.3	3.7	61	19	0	88.2	6.6	2
Average	1,516	11	0.02	4.7	1.1	5.4	1.7	24	2.8	4.0	0.1	1.7	47	18	0	67.0	--	7

SOUTH ATLANTIC SLOPE BASINS, JAMES RIVER TO SAVANNAH RIVER

PEE DEE RIVER BASIN--Continued

YADKIN RIVER AT YADKIN COLLEGE, N. C. Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 8:30 a.m./

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

PEE DEE RIVER BASIN--Continued

YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	2,140	1,410	s 8,560	902			880		
2.....	1,230	340	1,130	817			866	5	12
3.....	1,110	180	539	817	14	32	992		
4.....	940	70	178	810			955		
5.....	852			838			1,010	6	16
6.....	803	48	107	789	10	22	1,020		
7.....	789			817			1,010		
8.....	895			859			962		
9.....	1,110	47	118	885	12	29	955		
10.....	1,350			902			985	7	18
11.....	1,070	52	154	1,110	20	60	978		
12.....	880			1,150	26	79	910		
13.....	831	30	68	1,110			880	6	14
14.....	838			978			782		
15.....	940			955			796		
16.....	918	23	55	940	14	38	910		
17.....	838			888			754	10	24
18.....	824			895			831		
19.....	824			918			1,010		
20.....	810	20	43	970	12	31	1,030		
21.....	796			1,010			948	7	17
22.....	782			978			852		
23.....	775			932	10	25	838		
24.....	761	16	33	932			902		
25.....	775			932			940	6	15
26.....	740			1,070			902		
27.....	734			1,150	11	32	888		
28.....	740			1,070			859		
29.....	803	16	35	1,000			845	6	14
30.....	880			925	5	12	859		
31.....	880			--	--	--	866		
Total.	28,658	--	12,272	28,330	--	1,000	28,215	--	508
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	831			1,070	5	14	1,480	90	380
2.....	817			1,190	5	16	1,430	90	347
3.....	824	6	14	1,390	50	187	1,350		
4.....	918			2,900	358	s 3,100	1,520	32	126
5.....	888			3,550	325	s 3,160	1,520		
6.....	852	6	14	3,450	264	s 2,710	1,480		
7.....	845			6,140	728	s 12,000	1,350	42	160
8.....	824			4,580	578	s 7,320	1,390		
9.....	682			2,750	319	s 2,310	1,610		
10.....	722	6	13	2,060	120	667	1,740	62	276
11.....	873			1,880	80	406	1,610		
12.....	925			2,060	100	556	1,520	38	153
13.....	859			2,500	120	810	1,480		
14.....	845			2,150	90	522	1,480		
15.....	831	4	9	1,790	50	242	1,790	50	242
16.....	817			1,610	40	174	4,630	374	s 8,780
17.....	866			1,560	50	a 210	10,700	915	s 26,700
18.....	831			2,100	200	a 1,100	5,920	372	s 5,960
19.....	866			3,150	450	a 3,800	3,650	250	2,460
20.....	955	4	10	3,050	130	a 1,070	2,850	210	1,620
21.....	948			2,550	50	340	2,350	170	1,080
22.....	918			2,100	35	198	2,060	100	556
23.....	895			1,790			1,880		
24.....	1,020	4	11	1,660	28	129	1,790		
25.....	1,070			1,660			1,700	43	202
26.....	1,070			2,100			1,610		
27.....	992	4	11	1,790	80	406	1,560		
28.....	970			1,740			1,480	43	175
29.....	940			1,560	45	190	1,480		
30.....	955			--	--	--	1,480		
31.....	985	4	10	--	--	--	1,430	29	114
Total.	27,634	--	357	67,880	--	42,707	69,320	--	51,811

s Computed by subdividing day.

a Computed from estimated concentration graph.

PEE DEE RIVER BASIN--Continued

YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Suspended sediment, water year October 1955 to September 1956--Continued

Day	April			May			June		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	1,390			1,840	142	705	1,190	65	209
2.....	1,310	30	112	1,880	140	s 711	1,830	253	s 1,530
3.....	1,430			2,900	386	s 3,240	2,360	512	s 3,340
4.....	1,480	42	170	3,750	514	5,300	1,560	220	927
5.....	1,520			2,850	265	2,040	1,150	120	373
6.....	1,630	48	s 223	2,300	100	621	1,020		
7.....	3,750	409	s 4,280	2,020	80	436	955	44	114
8.....	3,250	270	2,370	2,450	135	893	902		
9.....	2,400	145	940	1,880	80	406	902		
10.....	1,920			1,700			978		
11.....	1,970	69	361		101	444	940	93	236
12.....	3,150	207	1,760	1,560			925		
13.....	3,650	316	3,110	1,430			880	57	132
14.....	2,950			1,350	38	144	775		
15.....	2,400	172	1,240	1,310			747		
16.....	13,500	1,390	s 60,200	1,350			704	16	31
17.....	19,500	1,030	s 57,170	1,700	49	197	716		
18.....	6,730	400	s 7,510	1,430			716		
19.....	4,150	230	2,580	1,270			824		
20.....	3,350	140	1,270	1,150	36	116	1,010		
21.....	2,850			1,150			817	33	77
22.....	2,450	92	626	1,150			824		
23.....	2,250			1,110	24	73	789		
24.....	2,060			1,110			728		
25.....	1,920			1,150			674	22	42
26.....	1,880	54	284		30	87	620		
27.....	1,790			1,070			626		
28.....	1,740	59	277	1,020			585	36	55
29.....	1,700			1,010	25	69	550		
30.....	1,610	142	617	1,010			505		
31.....	--	--	--	1,030	50	139	--	--	--
Total..	101,680	--	149,469	49,480	--	17,581	27,802	--	8,645
Day	July			August			September		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	485			692	410	766	495		
2.....	555	18	27	754	338	s 746	470	35	46
3.....	595			864	378	s 944	540		
4.....	555			789	130	277	761	80	140
5.....	620			680	90	165	662	85	152
6.....	940	92	228	615	75	124	638	130	224
7.....	1,190			585	67	106	754	170	346
8.....	1,480	260	1,040	525			1,110	205	614
9.....	1,740	480	2,260	490	41	55	761	170	349
10.....	1,350	510	1,860	475			605	140	229
11.....	1,520	330	1,350	460			535	130	188
12.....	1,030	250	695	435			500	100	135
13.....	782	210	443	455	33	41	485	60	79
14.....	704	130	247	505			470	40	51
15.....	722	80	156	445			435		
16.....	1,070	200	578	420			420	25	28
17.....	1,190	200	643	380	24	26	390		
18.....	970	130	340	365			370		
19.....	824	125	278	455	16	18	355	23	23
20.....	747	160	323	801	230	497	405		
21.....	1,890	358	s 1,820	962	300	779	375		
22.....	2,100	510	s 2,990	978	440	1,160	345	24	23
23.....	1,190	310	996	789	330	703	330		
24.....	1,010	230	627	710	190	384	360		
25.....	925	180	450	560	125	189	400	20	21
26.....	1,570	620	s 2,670	510			2,980	757	s 11,000
27.....	1,020	205	565	430	66	87	21,200	1,750	s 91,500
28.....	817	300	662	460			27,600	474	s 36,000
29.....	796	120	258	460	96	119	7,490	341	s 6,810
30.....	1,070	300	867	475			3,050	240	1,980
31.....	992	360	964	530	36	49	--	--	--
Total..	32,449	--	23,874	18,094	--	7,788	75,291	--	150,293
Total discharge for year (cfs-days)									554,833
Total load for year (tons)									466,305

s Computed by subdividing day.

PEE DEE RIVER BASIN--Continued

YADKIN RIVER AT YADKIN COLLEGE, N. C.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956

(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;

W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment											Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters								1.000		
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350		0.500
Apr. 16, 1956 ...	10:00 a. m.	14,900		1,930	2,950	42	56	64	75	85	91				BWCM	
Apr. 17	12:00 p. m.	22,200		1,410	1,740	53	58	69	78	85	86				BSWCM	
July 16	12:00 m.	1,280		226	1,190	20	42	57	79	87	92		98		BN	
Sept. 28	6:30 a. m.	30,500		604	1,180	42	49	60	63	65	72				BWCM	

PEE DEE RIVER BASIN--Continued

SOUTH YADKIN RIVER AT COOLEEMEE, N. C.

LOCATION --At filter plant at Erwin Cotton Mill in Cooleeemee, Davie County, and about 0.3 miles upstream from gaging station.

RAINAGE AREA --569 square miles.

RECORDS AVAILABLE --Chemical analyses: October 1947 to September 1948, October 1955 to September 1956.

Water temperatures: October 1947 to September 1956.

EXTREMES 1955-56 --Dissolved solids: Maximum, 49 ppm June 1-30; minimum, 33 ppm Apr. 1-30.

Hardness: Maximum, 18 ppm Oct. 1-31; minimum, 12 ppm Apr. 1-30.

Specific conductance: Maximum daily, 66 micromhos; minimum, 55 micromhos Sept. 28.

Water temperatures: Maximum, 82°F July 25; minimum, 34°F Dec. 19-20, 22.

EXTREMES 1947-48 1955-56 --Dissolved solids: Maximum, 49 ppm Jan. 1-30, 1956; minimum, 30 ppm Feb. 1-10, 1948.

Hardness: Maximum, 18 ppm Oct. 1-31, 1955; June 1-30, 1956; minimum, 10 ppm Mar. 21-31, 1948.

Water temperatures: Maximum, 80°F July 22-24, 1948; July 25, Aug. 13-14, 1956; minimum, freezing point Jan. 25, 1948.

REMARKS --Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Temperature (°F)	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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
															Calcium-magnesium	Non-carbonate			
Oct. 1-31, 1955	175		14	0.12	4.2	1.8	2.6	1.6	26	1.6	2.5	0.0	0.6	42	18	0	52.1	7.3	11
Nov. 1-30	182		15	.03	4.2	1.2	2.5	1.4	25	1.2	2.0	0.0	.2	47	16	0	52.4	6.5	26
Dec. 1-7, 5-31	183		16	.06	4.4	1.2	2.8	1.0	23	1.0	1.5	0.0	.1	41	16	0	48.8	6.5	5
Dec. 8a	190		16	..	4.0	1.7	..	..	26	32	2.0	..	.4	..	17	0	127	6.8	..
Jan. 1-31, 1956	181		16	.21	4.0	1.8	2.5	.9	25	2.2	1.8	0.0	.6	42	17	0	50.1	7.0	8
Feb. 1-29	624		13	.00	4.2	1.6	2.2	1.2	20	2.8	2.0	0.0	.5	40	17	1	49.3	6.8	8
Mar. 1-31	481		14	.04	4.0	1.4	2.3	1.0	23	1.8	2.0	.1	.8	44	16	0	55.0	6.7	18
Apr. 1-30	888		12	.02	3.4	.7	2.5	1.4	19	1.3	2.0	0.0	.9	33	12	0	48.9	6.5	5
May 1-9, 11-31	364		12	.00	5.2	1.0	3.0	1.2	24	1.9	1.5	.2	.9	39	17	0	52.8	6.5	10
May 10a	407		..	..	..	..	..	..	13	22	16	..	..	..	16	5	129	6.7	..
June 1-30	190		13	.02	4.4	1.7	3.0	1.5	24	.5	2.3	.1	.6	49	18	0	54.2	6.5	10
July 1-31	178		13	.01	4.4	1.6	2.7	1.4	26	.8	1.0	.1	1.4	43	17	0	52.0	7.0	20
Aug. 1-31	122		14	.00	4.6	1.6	3.1	1.9	27	.3	1.5	.1	1.6	45	18	0	54.7	6.4	2
Sept. 1-30	873		12	.08	3.6	1.7	2.8	1.7	23	1.4	1.8	.1	1.4	47	16	0	50.7	7.1	15
Average	387		13	0.04	4.0	1.4	2.6	1.4	23	1.5	1.9	0.1	0.9	42	16	0	50.8	..	11

a Not believed to be representative of stream. Values not included in the extremes and averages.

PEE DEE RIVER BASIN--Continued

SOUTH YADKIN RIVER AT COOLEEMEE, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
/Once-daily measurement at approximately 1 p. m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	55	38	38	42	46	52	70	74	80	--	79
2	68	54	36	37	40	48	54	66	70	78	79	80
3	68	--	40	36	40	50	56	62	66	80	77	79
4	67	53	45	36	42	50	58	64	66	80	75	77
5	67	48	48	37	46	50	--	66	68	80	77	76
6	68	48	48	37	45	54	61	68	69	--	73	77
7	69	50	46	36	45	58	58	68	70	--	80	77
8	68	50	44	36	45	62	56	68	72	81	78	76
9	67	50	42	37	47	59	54	64	72	80	79	72
10	64	50	41	36	48	54	54	64	72	81	80	68
11	63	47	39	37	50	54	54	66	72	78	80	68
12	62	48	38	38	49	56	50	68	74	75	80	69
13	62	52	36	40	48	54	54	72	76	80	82	72
14	62	52	35	41	45	--	56	74	--	72	82	74
15	62	58	35	39	46	52	58	75	78	78	81	76
16	60	60	36	38	47	47	58	73	78	72	81	76
17	58	60	35	38	50	46	56	69	78	78	80	76
18	56	58	35	37	50	48	54	70	78	76	81	75
19	54	53	34	39	52	48	54	69	74	74	80	71
20	56	50	34	38	52	44	57	70	72	73	79	73
21	66	49	35	40	50	46	56	70	72	76	75	69
22	63	50	34	40	48	48	56	72	73	78	71	69
23	66	49	35	38	44	50	57	74	78	80	73	67
24	58	50	38	--	42	51	58	70	79	80	73	68
25	58	--	43	38	49	48	59	73	79	82	73	68
26	59	48	42	38	48	50	60	66	79	80	74	60
27	54	47	42	39	46	52	64	68	81	78	--	59
28	56	46	42	38	48	54	69	68	80	80	77	59
29	57	46	40	38	48	--	70	70	80	80	78	62
30	59	42	38	42	--	52	72	72	80	77	77	64
31	59	--	38	41	--	54	--	76	--	76	78	--
Average	62	51	39	38	47	51	58	69	74	78	78	71

PEE DEE RIVER BASIN--Continued

ROCKY RIVER NEAR NORWOOD, N. C.

LOCATION --At bridge on county road, 2 miles upstream from gaging station, half a mile downstream from Crips, and 5½ miles southwest of Norwood, Stanley County.

DRAINAGE AREA --1,231 square miles.

RECORDS AVAILABLE --Chemical analyses: October 1955 to September 1956.

Water temperatures: October 1955 to September 1956.

EXTREMES 1955-56 --Dissolved solids: Maximum, 392 ppm Sept. 21-25; minimum, 45 ppm Mar. 14, 16-20.

Hardness: Maximum, 55 ppm Sept. 21-25; minimum, 18 ppm Sept. 26-30.

Specific conductance: Maximum, 886 micromhos daily, 44.7 micromhos Mar. 6.

Water temperatures: Maximum, 89°F July 22; minimum, freezing point Dec. 17-18, 22.

REMARKS --Records of specific conductance of daily samples and records of suspended matter of composite samples available in district office at Raleigh, N. C. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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		pH	Color	Oxygen consumed	
														Calcium, nesium	Non-carbonate			Unfiltered	Filtered
Oct. 1, 9-10, 1955..		14	0.31	8.8	2.7	35	4.6	70	19	20	0.1	3.8	143	33	0	6.9	31	--	--
Oct. 2-5.....		11	.11	5.6	1.9	6.5	2.6	20	9.2	6.0	.1	3.1	56	22	6	6.5	34	--	--
Oct. 6-8.....		14	.05	6.4	2.8	22	3.4	46	18	16	.0	2.2	108	27	0	7.2	17	--	--
Oct. 11, 15-20.....		14	.10	9.5	3.7	45	4.5	103	19	28	.1	.8	176	39	0	7.6	30	6.0	6.0
Oct. 12-14.....		14	.11	8.8	4.4	25	3.6	67	15	18	.1	.8	123	40	0	7.0	31	--	--
Oct. 21-22, 29.....		11	.05	10	4.3	40	4.4	97	15	27	.0	.7	161	43	0	7.1	22	--	--
Oct. 23-26, 30-31.....		13	.04	12	4.4	73	6.0	154	26	42	.1	.8	253	47	0	7.7	29	6.2	6.0
Nov. 1-3, 7-10.....		18	.16	13	4.3	99	7.3	182	29	51	.1	.8	303	49	0	511	35	8.2	7.0
Nov. 4-6.....		17	.16	12	5.1	55	5.7	128	20	35	.1	1.5	214	50	0	361	7.4	38	--
Nov. 11, 13-19.....		14	.15	10	3.6	37	4.8	126	16	24	.1	1.5	196	40	0	259	7.5	27	4.9
Nov. 21-23.....		17	.21	10	3.8	60	5.7	130	22	30	.1	1.5	215	41	0	373	7.1	--	--
Nov. 21-24, 30.....		14	.01	6.4	3.4	19	3.3	60	13	14	.1	1.3	107	35	0	177	7.2	20	--
Nov. 25-29.....		15	.14	9.2	4.9	38	4.1	91	19	25	.1	1.3	162	39	0	262	7.3	35	--
Dec. 1-3, 8-9.....		16	.07	9.9	3.0	28	3.4	78	12	16	.2	1.0	135	43	0	220	7.4	7	--
Dec. 3-7, 10.....		14	.07	10	4.2	48	4.2	108	27	30	.0	1.0	195	40	0	316	7.4	20	4.3
Dec. 11-14, 18-20.....		17	.13	11	3.7	87	5.2	142	27	37	.0	1.0	238	40	0	406	7.5	27	6.9
Dec. 15-17.....		16	.08	11	4.4	42	4.0	103	18	26	.2	1.2	173	45	0	296	7.1	12	5.5
Dec. 21-22, 24-27.....		13	.11	11	4.3	62	5.0	133	26	36	.0	1.0	224	45	0	386	7.6	21	5.0
Dec. 23, 28-31.....		13	.07	11	4.4	30	3.8	92	13	16	.0	1.0	137	45	0	240	7.3	20	4.2
Jan. 1, 6-7, 1956.....		11	.06	12	4.1	38	5.0	93	13	28	.2	1.2	157	46	0	287	7.1	14	--
Jan. 2-5, 8-10.....		14	.13	11	4.2	68	5.0	140	26	40	.0	1.0	240	44	0	408	7.2	22	5.0
Jan. 11-20.....		14	.12	11	4.7	64	4.7	137	24	36	.2	1.7	226	47	0	391	7.5	20	6.2
Jan. 21-31.....		16	.05	9.3	4.3	44	3.6	99	21	27	.1	.6	175	41	0	299	7.4	25	4.7
Feb. 1-3.....		14	.08	10	3.8	32	3.0	86	14	20	.2	1.2	141	41	0	245	7.3	13	--

Feb. 4-5, 1956	11	0.08	9.5	1.8	6.9	2.2	22	43	8.5	0.2	2.6	67	31	13	116	6.5	22	--	5.7
Feb. 6-10	9.7	0.02	5.4	2.6	6.8	1.8	20	13	6.5	.0	2.4	58	24	8	97.1	6.8	20	17	5.7
Feb. 11-10	13	.01	6.4	3.0	13	1.8	37	12	12	--	1.6	81	28	0	134	6.8	20	5.4	4.0
Feb. 20	--	--	4.9	1.9	--	--	15	8.3	5.5	--	--	--	20	8	74.9	6.1	--	--	--
Feb. 21-29	10	.03	5.6	2.4	9.4	1.4	31	10	8.0	--	1.5	64	24	0	108	7.2	20	6.2	4.7
Mar. 1-10	13	.01	6.8	3.1	15	1.8	48	11	11	.1	1.5	87	30	0	146	7.0	15	5.4	3.6
Mar. 11-13, 15	13	.13	7.7	3.4	23	1.9	63	12	16	.2	.8	109	33	0	188	6.9	31	--	--
Mar. 14, 16-20	8.9	.03	4.6	2.0	5.2	1.0	20	6.8	5.2	.1	1.6	45	20	3	74.0	7.1	25	7.9	5.1
Mar. 21-31	13	.00	6.4	2.7	16	1.6	42	12	12	.0	.9	86	27	0	143	7.5	14	4.1	3.1
Apr. 1-5, 6	12	.12	7.5	2.9	20	1.8	61	8.1	13	.2	.5	96	31	0	179	7.3	25	--	--
Apr. 4, 7-10	11	.05	6.7	2.3	12	1.4	43	5.3	7.0	.2	.9	68	26	0	121	7.3	29	--	--
Apr. 11-15, 19-20	10	.05	6.2	2.4	11	1.1	38	9.6	7.9	.2	1.4	69	25	0	113	7.1	18	9.5	4.3
Apr. 16-18	9.8	.01	5.9	1.3	6.6	1.5	20	11	4.8	.5	1.5	53	20	4	85.0	6.8	30	--	--
Apr. 21-26	14	.02	7.1	3.0	17	1.6	53	9.1	12	.2	.8	91	30	0	151	7.2	10	4.9	3.9
Apr. 27-30	12	.10	8.7	3.4	31	2.8	85	13	19	.0	.5	133	36	0	234	6.9	20	--	--
May 1-3, 9-10	12	.03	6.3	2.9	12	1.4	43	6.2	9.0	.1	1.6	43	28	0	122	7.1	27	--	--
May 1-6	13	.04	5.2	2.4	23	1.1	35	5.6	5.5	.1	1.2	49	33	2	81.7	6.5	25	--	4.0
May 11-17	13	.06	7.6	3.4	28	2.2	65	16.5	12	.0	1.7	101	33	0	163	7.5	25	--	--
May 18-20	7.9	.05	8.9	3.6	38	2.9	97	16	26	.1	.7	133	40	0	279	7.3	17	--	--
May 21-23, 28-31	9.1	.00	10	4.6	53	3.8	128	17	32	.1	.9	194	45	0	342	7.4	17	6.8	4.6
May 24-25	9.4	.02	10	3.9	27	2.8	91	13	16	.3	.5	121	41	0	213	7.3	22	--	--
June 1-9	6.5	.03	11	4.2	32	3.3	100	13	19	.1	.7	139	44	0	280	7.3	20	--	--
June 2-3, 10	11	.08	11	4.5	58	4.2	133	20	34	.1	.9	210	45	0	358	7.3	23	--	--
June 4-8	12	.02	8.4	3.2	18	2.7	61	13	11	.2	2.3	101	34	0	166	7.0	18	--	--
June 11-12, 14-17	9.6	.02	10	4.6	54	4.3	133	17	30	.4	1.8	198	44	0	345	7.6	22	4.1	4.1
June 13, 18-20	8.0	.03	11	4.0	75	5.0	165	20	42	.2	1.0	248	43	0	452	7.7	30	--	--
June 21-26, 30	8.5	.03	10	4.9	81	5.6	165	23	48	.4	2.4	266	46	0	466	7.5	25	6.5	5.5
June 27-28, 30	7.0	.08	9.6	3.6	41	6.5	105	9.8	22	.2	2.4	153	39	0	279	7.2	39	--	--
July 1, 4-7, 9	5.3	.04	10	4.4	100	4.0	191	29	60	.3	2.2	313	44	0	560	7.5	27	6.5	6.3
July 2-3, 8	5.9	.03	11	4.2	65	6.0	147	20	38	.2	1.5	225	45	0	412	7.7	28	--	--
July 10	--	--	8.9	3.2	--	--	61	12	13	--	1.8	--	35	0	175	6.7	--	--	--
July 11-15, 19	9.9	.00	6.0	2.2	15	2.6	39	11	10	.1	2.7	79	24	0	130	7.4	10	8.5	5.2

PEE DEE RIVER BASIN--Continued
 ROCKY RIVER NEAR NORWOOD, N. C.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 (calculated)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Calcium, magnesium	Non-carbonate			Unfiltered	Filtered
July 16-18, 20, 1956.		11	0.02	8.4	3.0	40	3.9	77	21	25	0.1	3.9	155	33	0	257	7.3	20	--
July 21-24, 30-31	8.2	11	.04	5.4	1.6	9.4	2.4	30	8.0	7.0	.2	2.2	60	20	0	98.1	7.3	10	8.9
July 25-29	11		.02	8.0	1.7	25	3.3	56	15	16	.2	3.9	112	27	0	189	6.9	20	--
Aug. 1-2	9.5		.03	6.3	1.8	9.7	2.5	29	11	6.7	.4	2.8	65	23	0	113	6.4	12	--
Aug. 3-5	12		.03	8.8	2.8	39	3.6	60	21	34	.3	4.1	156	33	0	269	6.8	17	--
Aug. 6-10	5.6		.04	9.6	3.6	66	4.8	128	22	44	.2	2.5	222	39	0	390	7.2	35	--
Aug. 11-13, 17-20	2.1		.02	9.5	4.0	58	5.4	124	18	39	.3	1.2	199	40	0	357	7.5	27	8.7
Aug. 14-16	2.7		.03	12	3.5	100	6.3	182	31	66	.4	1.2	314	44	0	564	7.1	17	--
Aug. 21-23, 29	6.6		.03	5.9	1.6	17	3.4	41	9.9	12	.2	3.5	80	21	0	136	6.9	18	--
Aug. 24-28	8.0		.03	8.4	3.2	44	4.2	85	18	29	.2	2.9	160	34	0	269	7.4	30	9.1
Aug. 30-31	11		.04	10	3.1	77	6.4	144	22	50	.4	4.0	255	38	0	463	8.0	22	--
Sept. 1-2, 4, 10	12		.03	8.8	2.5	60	5.3	109	22	38	.3	3.3	207	32	0	352	7.5	20	--
Sept. 3, 5-9	9.2		.04	6.6	2.1	17	3.5	40	12	12	.2	2.9	86	25	0	149	6.9	30	11
Sept. 11-17	11		.02	8.4	3.4	44	4.6	86	19	28	.3	3.2	164	35	0	277	7.1	10	9.1
Sept. 18-20	2.4		.01	13	4.6	96	6.1	163	37	66	.4	1.7	308	50	0	550	7.3	18	--
Sept. 21-25	1.9		.00	13	5.4	131	7.1	228	38	81	.6	1.5	392	55	0	689	7.8	20	--
Sept. 26-30	8.7		.00	5.3	1.2	11	2.5	23	12	8.5	.3	2.9	64	18	0	97.9	6.6	17	--
Average	11	0.06	8.8	8.8	3.4	39	3.7	88	16	24	0.2	1.7	154	36	0	262	--	22	--

PEE DEE RIVER BASIN--Continued

ROCKY RIVER NEAR NORWOOD, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 5 p. m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	56	41	39	45	49	62	73	77	86	79	83
2	87	55	43	33	45	51	62	79	75	87	84	81
3	87	55	43	42	42	50	65	73	73	88	78	76
4	69	53	52	44	45	55	68	70	72	88	81	79
5	68	52	52	43	47	56	65	71	75	86	82	79
6	72	52	51	42	48	62	66	73	73	84	84	81
7	74	51	49	41	48	62	64	74	78	84	83	71
8	70	54	47	39	48	63	61	70	75	84	83	75
9	69	52	46	--	49	58	61	70	79	87	84	71
10	68	43	43	38	52	58	59	72	82	81	86	69
11	67	51	42	41	53	61	58	73	83	77	87	70
12	67	53	40	42	52	61	57	81	84	88	86	70
13	66	55	33	44	51	57	59	83	83	79	86	72
14	66	58	34	39	49	62	63	85	85	80	84	76
15	64	61	38	38	52	66	64	86	83	83	84	77
16	61	65	36	41	53	50	61	72	85	82	84	79
17	61	62	32	43	52	51	61	74	88	85	78	73
18	59	55	32	43	56	49	60	76	84	83	83	76
19	60	52	42	42	55	51	62	73	73	78	81	75
20	59	49	41	41	56	49	63	74	79	80	81	76
21	60	49	39	42	51	52	64	72	82	77	73	72
22	64	50	32	40	49	53	63	79	83	89	72	73
23	63	51	42	41	48	56	63	80	81	83	76	76
24	64	54	46	42	43	50	64	75	86	84	77	73
25	59	50	51	41	52	58	66	73	88	82	78	67
26	58	50	49	42	50	56	70	72	87	82	79	57
27	60	49	42	40	48	60	76	76	83	85	82	58
28	61	51	42	40	52	62	77	73	81	85	81	59
29	62	46	40	49	50	52	78	74	81	82	78	61
30	--	43	41	48	--	60	80	77	83	79	83	65
31	--	--	40	46	--	61	--	81	--	77	84	--
Average	65	53	42	42	50	56	65	75	81	83	81	72

PEE DEE RIVER BASIN--Continued

LYNCES RIVER AT EFFINGHAM, S. C.

LOCATION.--Temperature recorder at gaging station on left bank 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.--Water temperatures: October 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 84°F July 29, 30, Aug. 13, 14; minimum, 41°F Dec. 17-19.

EXTREMES, 1954-56.--Water temperatures: Maximum, 84°F July 29, 30, Aug. 13, 14, 1956; minimum, 38°F Dec. 23, 24, 1954, Feb. 1, 2, 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Temperature (°F) of water, water year: October 1955 to September 1956

/Recorder with temperature attachment/

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

PEE DEE RIVER BASIN--Continued

DROWNING CREEK NEAR HOFFMAN, N. C.

LOCATION.--Temperature recorder at gaging station, 10 feet downstream from bridge on U. S. Highway 1, three-quarters of a mile downstream from Deep Creek, 1 mile upstream from Seaboard Airline Railroad bridge, and 4 miles northeast of Hoffman, Richmond County.

DRAINAGE AREA--178 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1946 to September 1947, October 1953 to September 1956.

EXTREMES, 1935-56.--Water temperatures: Maximum, 75° F. July 6, 24-25, 28-30, Aug. 13-14; minimum, 36° F. Dec. 15, 17-18.

EXTREMES, 1946-47, 1953-56.--Water temperatures: Maximum, 77° F. June 9-12, 30, Aug. 23, 1947; minimum, 36° F. Dec. 19-20, 1953, Feb. 14, Dec. 15, 17-18, 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, February and July 1956

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 (micro-mhos at 25°C)	pH	Color
															Calcium, mg./l.	Non-carbonate, mg./l.			
Feb. 3, 1956	148	7.0	0.16	1.0	0.2	1.8	0.0	4	1.8	2.0	0.0	0.2	16	13	3	0	18.1	5.8	50
July 18	190	5.2	.17	.4	.0	2.4	.3	2	.3	2.0	.1	1.2			1	0	25.5	5.3	50

Temperature, (°F) of water, water year October 1955 to September 1956

/Continuous ethyl alcohol-actuated thermometer/

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	69	56	53	41	39	40	39	45	43	47	44	54	50	68	65	69	68	73	72	71	73	72	72
2.....	69	68	53	52	40	39	39	39	44	43	48	47	54	53	65	62	69	66	73	72	73	71	73	73
3.....	68	67	52	52	44	40	40	39	45	44	48	47	58	54	64	62	66	63	73	72	73	71	73	72
4.....	67	66	52	51	48	44	41	40	45	44	50	47	61	58	65	64	64	61	73	72	72	71	72	71
5.....	67	66	51	50	50	48	41	41	46	44	51	46	60	60	64	63	64	62	72	72	72	70	72	71
6.....	67	66	50	48	50	49	41	41	47	46	54	49	60	59	64	63	64	62	73	72	74	72	72	71
7.....	68	67	48	48	46	41	40	46	47	58	54	51	58	66	64	64	65	63	74	73	74	73	72	72
8.....	68	67	49	48	46	44	41	40	46	43	58	54	61	58	66	64	65	63	75	72	74	73	72	70
9.....	67	65	49	49	44	44	40	39	47	43	58	52	57	52	64	59	65	63	74	72	74	72	70	66
10.....	65	62	49	47	44	42	39	49	47	46	52	49	56	51	62	60	67	65	73	70	74	72	66	63
11.....	62	60	48	47	42	41	39	50	49	53	51	54	52	65	61	69	67	72	70	74	73	68	61	
12.....	61	59	49	47	41	39	43	41	50	48	54	53	55	50	67	64	70	68	70	69	74	73	62	61
13.....	60	60	52	49	39	38	44	43	49	46	54	53	56	51	70	66	70	68	71	70	75	73	64	62
14.....	61	60	53	52	38	37	44	43	48	44	55	52	57	52	71	67	70	69	71	70	75	74	66	64
15.....	61	60	55	53	37	36	43	41	48	46	55	52	58	56	71	69	70	70	71	74	72	68	66	
16.....	60	58	57	55	37	37	41	41	49	48	52	48	62	58	71	70	71	70	72	72	73	71	69	68
17.....	58	57	57	57	36	36	41	41	49	49	49	46	60	55	71	66	72	70	73	71	73	71	69	68
18.....	58	57	53	53	37	36	41	40	54	49	48	46	58	53	66	63	72	71	73	72	73	72	69	68
19.....	56	55	53	50	40	39	40	40	54	51	49	46	57	53	64	62	72	68	71	73	72	72	68	66
20.....	56	55	50	48	40	39	41	40	54	53	47	44	57	54	64	62	68	67	72	71	72	71	66	66

PEE DEE RIVER BASIN--Continued

DROWNING CREEK NEAR HOFFMAN, N. C.--Continued

Temperature (°F) of water, water year October 1955 to September 1956--Continued

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
21.....	55	54	48	46	39	39	41	41	53	48	47	43	56	52	64	63	68	67	72	70	72	69	86	64
22.....	56	55	47	46	39	39	41	40	49	46	47	43	56	53	66	64	71	68	73	71	69	68	84	62
23.....	56	56	49	47	40	39	40	40	46	43	49	44	58	55	68	66	73	70	74	73	68	67	84	62
24.....	58	56	51	49	44	40	40	40	44	43	49	48	58	56	68	67	73	72	75	74	69	67	85	64
25.....	58	57	51	49	47	44	40	39	49	44	48	45	57	55	67	64	74	72	75	74	69	68	85	64
26.....	57	54	49	48	47	47	40	39	49	46	50	46	59	56	64	61	74	72	74	72	70	69	84	61
27.....	54	54	48	45	47	46	40	39	48	46	54	49	62	58	63	62	74	73	74	73	70	70	81	60
28.....	55	54	48	46	46	42	39	38	50	46	56	53	64	62	65	63	74	73	75	73	71	70	80	59
29.....	57	55	48	44	42	40	41	39	50	45	56	52	66	63	66	65	74	74	75	74	72	71	80	59
30.....	58	57	44	41	41	40	45	41	--	--	54	51	68	66	66	65	74	73	75	74	72	71	81	60
31.....	58	56	--	--	41	40	45	45	--	--	54	50	--	--	68	66	--	--	74	71	72	71	--	--
Average.....	61	60	51	49	42	41	41	40	49	46	52	49	59	55	66	64	70	68	73	72	72	71	87	66

PEE DEE RIVER BASIN--Continued
 MISCELLANEOUS ANALYSES OF STREAMS IN PEE DEE RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA
 Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (residue on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro- mhos at 25°C)	pH	Color
														Calcium, mg-nestum	Non-carbonate			
YADKIN RIVER AT PATTERSON, N. C.																		
Oct. 12, 1955	9.85	12	0.09	2.8	1.2	2.5	1.0	18	1.1	1.5	0.1	0.9	a32	12	0	38.2	6.8	6
Mar. 21, 1956		9.8	.04	3.2	.2	1.8	.8	14	1.7	1.5	.0	1.0	a27	9	0	33.3	6.9	8
ELK CREEK AT ELKVILLE, N. C.																		
Jan. 13, 1956	17.0	9.5		2.4	0.7	6.6	1.2	14	0.3	1.0		0.5		9	0	27.6	6.7	
Aug. 30	11.3			2.9	.8 ^a			18	3.1	6.2		1.2		10	0	59.9	7.0	
REDDIES RIVER AT NORTH WILKESBORO, N. C.																		
Nov. 17, 1955	51.4			2.0	0.7			17	2.0	0.6		0.3		8	0	30.5	6.8	
Mar. 20, 1956	111	9.6	0.05	2.2	1.5	1.7	0.5	12	3.5	1.0	0.0	.5	a27	12	2	27.0	6.8	8
YADKIN RIVER AT WILKESBORO, N. C.																		
Nov. 17, 1955	223			2.6	0.7			20	2.7	1.0		0.4		9	0	35.4	6.8	
Mar. 20, 1956	596	12	0.05	2.6	.4	1.7	0.5	12	1.5	1.2	0.0	1.0	a27	8	0	31.6	6.8	13
BUGABOO CREEK AT RONDA, N. C.																		
June 7, 1956	9.62			1.8	0.4			12	0.5	0.8		0.5		6	0	22.7	6.5	
Aug. 25	3.45	9.2		1.8	.8	2.5	0.8	11	2.1	3.0		.6		8	0	31.1	6.8	
MITCHELL RIVER NEAR STATE ROAD, N. C.																		
Jan. 13, 1956	35.3			1.8	1.4			15	1.3	1.0		0.4		10	0	24.9	6.5	
May 23	47.8			1.8	.8			14	1.2	1.5		.5		8	0	28.9	6.5	
Aug. 24	18.0	7.7		2.2	.6	2.2	0.7	14	2.0	.9		.0		8	0	30.1	6.9	

^a Calculated from determined constituents.

PEE DEE RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN PEE DEE RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 (residue on evap- oration at 180° C)	Hardness as CaCO ₃		Specific conductance (micro- mhos at 25° C)	pH	Color
														Calcium	Non-carbonate			

ARARAT RIVER AT MOUNT AIRY, N. C.

May 23, 1956.....	30.7			3.6	0.7			20	1.4	2.2		0.3		12	0	39.3	6.6	
Aug. 24.....	12.1	11		3.7	.7	3.0	1.3	18	2.3	1.5		1.8		12	0	44.1	6.9	

TOMS CREEK AT PILOT MOUNTAIN, N. C.

May 23, 1956.....	10.8			3.6	0.8			22	1.3	2.0		0.3		12	0	43.2	6.6	
Aug. 24.....	4.02	13		3.1	.9	3.6	1.5	21	1.5	1.6		1.0		11	0	44.7	7.2	

LITTLE YADKIN RIVER NEAR DONNAHA, N. C.

June 14, 1956.....	15.1			4.9	1.5			31	2.0	2.0		0.3		18	0	60.0	7.1	
Aug. 24.....	8.73	16		4.4	1.7	3.3	2.4	26	1.5	1.8		1.0		18	0	57.8	7.1	

DEEP CREEK AT SHACKTOWN, N. C.

May 23, 1956.....	18.8			3.4	1.1			20	0.2	1.7		0.5		13	0	39.8	6.5	
Aug. 26.....	9.19	12		2.6	.7	2.2	2.1	15	.6	1.3		1.5		10	0	39.4	7.0	

MUDDY CREEK NEAR CLEMMONS, N. C.

June 6, 1956.....	39.1			7.6	2.9			42	1.8	3.6		1.0		31	0	85.1	6.9	
Aug. 26.....	20.0	20		8.5	3.1	6.5	2.7	49	2.5	3.5		2.1		34	0	104	7.4	
Sept. 24.....	9.73			9.6	4.1			55	4.0	2.7		1.4		41	0	104	6.9	

SOUTH FORK MUDDY CREEK NEAR WINSTON-SALEM, N. C.

June 11, 1956.....	15.5			6.0	1.7			32	2.7	2.5		1.1		22	0	69.3	6.8	
Aug. 26.....	7.46	22		6.1	1.8	6.7	1.6	36	2.8	4.1		.9		23	0	76.8	7.3	
Sept. 24.....	4.89			6.4	1.8			38	2.5	2.9		1.5		23	0	77.9	6.5	

SOUTH YADKIN RIVER NEAR STATESVILLE, N. C.

June 7, 1955.....	28.1		3.6	1.1	3.8	1.5	20	1.4	1.8		0.6		13	0	44.4	6.6
Aug. 6, 1955.....	12.4	13	3.1	1.2			21	2.3	3.1		.3		13	0	49.0	7.1
Sept. 20.....	9.86		6.0	.6			22	2.6	2.0		1.0		18	0	63.9	6.5

FIFTH CREEK AT COOLSPRING NEAR STATESVILLE, N. C.

Dec. 20, 1955.....	10.4		4.2	1.3			32	1.0	2.0		1.0		16	0	60.0	6.8
June 6, 1956.....	8.51		5.1	1.8			31	.7	2.0		.9		20	0	58.8	6.8
Aug. 24.....	6.00	19	4.8	2.0	4.7	1.8	32	2.9	2.0		1.4		20	0	64.3	7.3
Sept. 20.....	2.82		4.6	1.7			34	1.1	1.6		1.1		19	0	54.1	6.8

BEAR CREEK AT MOCKSVILLE, N. C.

Dec. 20, 1955.....	7.09		8.8	2.0			57	0.7	2.3		1.0		30	0	103	6.9
June 6, 1956.....	4.80		8.3	3.3			52	1.7	2.4		1.7		34	0	94.9	6.9
Aug. 23.....	.29	21	9.2	3.2	11	3.2	52	4.7	6.8		5.2		36	0	128	7.3
Sept. 20.....	.12		9.9	4.2			70	2.0	5.5		4.2		42	0	141	7.4

I. L. CREEK AT TROUTMANS, N. C.

Nov. 1, 1955.....	0.36	19	0.07	5.9	2.3	3.5	2.7	39	1.4	2.0	0.0	0.2	a56	24	0	74.0	6.9
Mar. 20, 1956.....	1.23	13	.02	6.8	1.9	4.6	2.4	22	11	5.0	.0	1.2	a57	25	7	63.0	6.9

THIRD CREEK AT CLEVELAND, N. C.

Oct. 28, 1955.....	23.5	22	0.14	7.2	2.7	5.0	1.8	43	3.2	2.2	0.0	1.1	a66	29	0	86.3	6.9
Mar. 20, 1956.....	79	19	.19	6.7	1.9	3.9	1.4	31	3.9	3.0	.3	1.3	a57	25	0	77.9	6.8

SECOND CREEK NEAR BARBER, N. C.

June 6, 1956.....	40.2		9.0	3.1				47	3.9	3.0		0.7		35	0	97.6	6.9
Aug. 27.....	24.1							52						16	0	111	7.5

a Calculated from determined constituents.

PEE DEE RIVER BASIN --Continued

MISCELLANEOUS ANALYSES OF STREAMS IN PEE DEE RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956.--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 (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbon- ate			
GRANTS CREEK AT SALISBURY, N. C.																		
June 6, 1956	13.3	26		11	3.6			60	3.2	5.2		1.2		41	0	121	7.0	
Aug. 25	5.61			12	3.7	12	2.1	84	4.2	8.7		2.0		45	0	151	7.6	
RICH FORK NEAR HOLLY GROVE, N. C.																		
June 11, 1956	8.15			16	5.6			98	16	24		1.6		62	0	272	7.1	
Aug. 26	2.52	19		16	6.1	95	8.9	114	36	100		13		65	0	624	7.6	
UWHARRIE RIVER NEAR ELDORADO, N. C.																		
Feb. 1, 1956	87.7	18	0.19	7.6	3.3	5.4	0.8	44	4.1	4.0	0.0	0.0	a 65	32	0	95.1	7.2	45
July 17	26.0	13	.07	6.9	2.6	5.3	1.7	43	1.1	3.5	.1	1.0	a 56	28	0	86.7	6.7	33
CLARKE CREEK AT WALLACE CROSSROADS, N. C.																		
June 11, 1956	3.63			11	3.7			66	3.6	5.5		0.7		44	0	127	7.3	
Aug. 25	1.37	30		11	3.2	10	2.0	65	5.3	6.1		.0		41	0	128	7.7	
Sept. 21 .....	.84			12	5.4			70	4.2	4.5		.3		51	0	131	7.2	
ROCKY RIVER NEAR ROBERTA MILL, N. C.																		
June 14, 1956	14.6			9.7	5.1			224	17	70		0.4		45	0	592	7.7	
Aug. 25	9.20	21		8.4	2.4	170	5.3	b 304	29	83		6.9		31	0	784	8.6	
Sept. 21	6.91			10	3.2			298	28	100		7.6		38	0	833	7.1	
MALLARD CREEK NEAR HARRISBURG, N. C.																		
Aug. 24, 1956	2.25	24		10	4.4	6.8	1.9	62	4.1	3.2		1.0		43	0	120	7.4	
Sept. 21 .....	.79			11	5.4			66	2.8	4.3		.9		49	0	123	7.1	

a Calculated from determined constituents.

b Includes equivalent of 20 parts per million of carbonate (CO₃).

CIDDLE CREEK NEAR CONCORD, N. C.

June 14, 1956	11.9	22			8.0	2.6		46	41.0	2.5		1.0		31	0	91.4	7.1
Aug. 25	7.29				7.4	2.7	7.6	1.9	47	2.3	4.5	.9		29	0	102	7.5
Sept. 21	3.98				8.1	2.7		49	2.9	2.7		.8		31	0	98.4	7.0

REEDY CREEK AT ROCKY RIVER, N. C.

Aug. 24, 1956	4.16	22			9.7	3.9	6.4	2.1	58	3.3	3.6		0.8	40	0	113	7.6
Sept. 22	3.51				11	5.3		67	2.4	4.3		1.5		49	0	125	6.9

ROCKY RIVER NEAR NORWOOD, N. C.

Feb. 2, 1956	224	15	0.03		9.9	3.4	30	3.0	76	23	17	0.0	0.9	a140	39	0	241	6.9
July 18	452	11	1.0	8.3	3.8	68		3.8	130	25	38	.3	1.2	a224	36	0	391	7.1

LITTLE RIVER NEAR STAR, N. C.

Nov. 1, 1956	36	20	0.27	4.8	1.3	4.6		0.4	28	2.8	2.5	0.0	0.1	a51	17	0	59.7	6.9
July 17	11.5	13	.14	4.4	1.6	4.4		1.4	28	.8	3.0	.1	.5	a43	18	0	56.2	6.9

PEE DEE RIVER NEAR ROCKINGHAM, N. C.

Feb. 2, 1956	2,640	13	0.19	6.0	11.7	13		1.9	42	6.7	8.5	0.0	1.0	a73	22	0	115	7.1
July 18	2,500	7.3	.10	5.5	11.2	11		1.9	29	7.4	7.0	.1	1.5	a57	18	0	78.2	6.6

PEE DEE RIVER NEAR SOCIETY HILL, S. C.

Nov. 3, 1955	3,430	7.7	0.06	4.2	1.6	12		1.8	38	4.9	5.0	0.1	1.2	70	17	0	94.7	6.8
June 12, 1956	1,70	6.9	.02	3.6	1.6	9.9		2.5	31	5.8	5.4	.1	1.6	61	16	0	88.3	6.6
Sept. 19	1,210	4.3	.13	4.4	1.7	12		2.0	35	5.2	6.5	.1	1.4	60	18	0	95.9	6.6

a Calculated from determined constituents.

c Collected at gaging station.

PEE DEE RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN PEE DEE RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbon- ate			
LYNCHEES RIVER NEAR BETHUNE, S. C.																		
Nov. 2, 1955	44.3	7.5	0.27	1.2	1.0	2.8	0.6	11	0.9	3.0	0.0	0.4	34	7	0	30.9	6.1	37
June 11, 1956	27.6	6.9	.37	1.9	1.0	3.3	.8	14	1.1	3.3	.1	1.3	34	9	0	38.5	6.2	33
Sept. 18	24.1	4.2	.23	1.2	1.0	2.3	.4	8	2.0	2.0	.1	1.0	21	7	0	24.2	6.2	40
LITTLE LYNCHES RIVER NEAR BETHUNE, S. C.																		
Nov. 2, 1955	36.5	8.1	0.33	1.6	0.7	5.9	0.8	6	11	3.0	0.0	0.4	39	7	2	50.0	5.7	35
June 11, 1956	59.5	8.5	.51	1.6	.6	3.4	.6	6	5.0	3.5	.1	1.3	41	6	1	40.7	5.7	40
Sept. 18	30.2	4.4	.25	.8	.2	2.3	.3	4	1.3	2.0	.0	1.3	22	3	0	20.5	5.4	25
LYNCHEES RIVER NEAR BISHOPVILLE, S. C.																		
Mar. 7, 1956	d 656	8.0	0.04	2.6	1.3	3.5	0.6	10	3.8	4.7	0.1	1.0	39	12	4	44.7	6.1	20
Apr. 27	d 461	8.3	.08	2.4	.5	3.2	.4	8	1.8	4.2	.0	.6	34	8	1	41.0	6.3	25
Daily mean discharge.																		

d Daily mean discharge.

SANTEE RIVER BASIN

INDIAN CREEK NEAR LABORATORY, N. C.

LOCATION.--Temperature recorder at gaging station on left bank 250 feet upstream from remains of Rudisill Mill dam, half a mile upstream from highway bridge, 1½ miles upstream from mouth, 1¼ miles south of Laboratory, Lincoln County, and ¾ miles south of Lincolnton.

DRAINAGE AREA.--68.4 square miles.

RECORDS AVAILABLE.--Water temperatures: January 1953 to September 1956. 34°F Jan. 9.

EXTREMES, 1955-56.--Water temperatures: Maximum, 80°F Aug. 13; minimum, 33°F Jan. 13-15, 1954.

EXTREMES, 1953-56.--Water temperatures: Maximum, 84°F Aug. 1-2, 5, 1953; minimum, 33°F Jan. 13-15, 1954.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1433.

Chemical analyses, in parts per million, October and March 1956

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (calculated)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25° C)	pH		Color
														Calcium	Non- mag- nesium		max	min	
Oct. 11, 1955	28.4	15	0.27	4.2	2.0	3.0	1.9	28	1.3	2.0	0.2	0.8	45	19	0	56.7	6.8	32	
Mar. 21, 1956	70	14	.00	4.0	1.4	2.7	1.1	20	2.8	2.5	.0	1.4	40	16	0	50.1	6.8	3	

Temperature (°F) of water, water year October 1955 to September 1956

Continuous ethyl alcohol-actuated thermography

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
	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max	min	max
1.....	71	69	54	51	41	40	37	35	44	40	47	46	55	49	68	63	71	68	76	70	77	73	78	72
2.....	69	68	52	51	41	40	36	35	41	40	50	47	55	53	63	60	68	62	71	70	77	75	78	73
3.....	68	66	53	51	45	41	38	35	44	41	50	48	57	52	62	59	63	60	79	71	76	73	76	73
4.....	66	65	52	50	48	45	39	37	44	43	52	47	64	56	65	61	63	59	77	73	75	71	73	71
5.....	67	65	51	48	48	44	38	35	44	43	51	46	62	57	65	62	66	61	77	73	78	72	75	71
6.....	69	67	49	47	49	47	37	36	47	44	59	51	57	56	64	63	67	63	74	74	79	74	74	71
7.....	69	68	50	49	47	44	38	36	46	46	62	57	59	54	67	65	68	63	74	74	78	72	73	71
8.....	69	66	50	49	44	42	37	35	46	46	61	54	56	50	66	61	69	64	77	74	77	71	71	68
9.....	66	63	49	47	45	43	35	34	47	46	54	47	56	49	61	56	69	66	76	73	77	71	68	62
10.....	63	59	48	42	43	41	37	35	49	47	52	46	53	50	63	58	71	66	73	70	79	73	65	59
11.....	61	58	48	47	41	40	40	37	49	49	54	51	53	49	66	60	72	67	73	70	78	72	66	59
12.....	61	59	49	48	40	38	41	39	49	47	53	52	54	48	69	63	72	69	73	69	79	73	69	63
13.....	61	59	53	49	38	37	41	39	47	46	53	51	57	52	71	65	72	69	73	71	80	74	71	64
14.....	61	61	55	53	37	37	40	37	47	45	53	49	57	52	87	82	87	82	71	79	75	72	65	65
15.....	61	57	57	54	37	37	37	35	51	47	53	49	57	55	73	69	71	69	74	71	77	74	73	66
16.....	58	55	59	56	37	37	37	36	51	50	49	45	56	56	72	66	73	68	74	72	78	72	73	67
17.....	56	55	59	56	37	36	37	35	50	49	47	46	56	54	66	59	74	69	75	72	77	73	72	67
18.....	56	54	56	51	37	36	38	36	53	49	49	45	55	52	65	60	75	69	75	72	79	73	71	67
19.....	54	53	51	50	39	37	37	37	53	51	49	46	56	51	66	60	74	67	75	73	77	73	68	64
20.....	54	52	50	48	39	39	39	37	53	52	46	44	57	53	67	62	67	64	75	72	77	73	70	64

SANTÉE RIVER BASIN--Continued
INDIAN CREEK NEAR LABORATORY, N. C.--Continued

Temperature (° F) of water, water year October 1955 to September 1956--Continued
/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
21.....	55	53	48	46	39	35	40	38	52	47	47	43	55	50	67	63	68	64	77	73	76	70	65	59
22.....	37	55	48	47	37	36	39	38	47	45	48	43	55	51	70	65	73	67	77	73	70	67	67	59
23.....	58	56	50	48	58	36	40	39	45	43	51	45	59	52	71	66	75	70	78	73	70	65	69	63
24.....	59	57	52	51	44	38	40	39	48	45	51	49	58	54	70	64	77	71	78	73	72	65	68	67
25.....	59	55	52	50	47	44	39	38	51	46	49	44	58	54	66	61	78	72	77	74	71	69	67	61
26.....	56	52	50	48	47	44	40	39	50	47	52	46	61	54	63	59	77	72	78	73	73	69	61	57
27.....	55	53	48	46	44	42	39	38	48	46	58	50	65	59	65	60	77	72	77	73	75	70	58	57
28.....	55	53	48	47	42	37	40	39	49	47	59	54	67	63	68	63	76	69	79	73	75	72	59	58
29.....	58	55	48	44	38	37	43	40	48	45	57	51	68	65	67	65	77	71	79	74	76	70	61	59
30.....	58	56	44	41	39	38	49	43	--	--	55	49	69	64	67	65	76	71	78	73	78	71	65	61
31.....	57	53	--	--	38	36	48	44	--	--	55	48	--	--	71	66	--	--	75	72	76	71	--	--
Average.....	61	59	51	49	41	41	39	37	48	47	52	49	58	55	67	62	72	67	76	72	76	71	69	65

SANTÉE RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN SANTÉE RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA

Chemical analyses, in parts per million, water year October 1955 to September 1956																		
Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved Solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
CURTIS CREEK NEAR OLD FORT, N. C.																		
May 16, 1956	23.5			1.4	0.5			8	2.2	0.3		0.4			6	0	20.8	6.4
June 12	11.6			1.4	.6			10	1.0	1.1		.0			6	0	20.6	6.6
July 31	31.0			2.0	.4			12	1.5	1.0		1.2			7	0	33.4	6.4
CATAWBA RIVER NEAR MARION, N. C.																		
Oct. 20, 1955	91.2	13	0.06	3.0	1.0	15	1.1	23	4.6	14	0.1	1.2	a.64	12	0	102	7.1	9
Mar. 28, 1956	260	11	.02	2.6	.2	9.5	.6	14	2.2	10	.1	1.3	a.45	7	0	59.3	6.4	
NORTH FORK CATAWBA RIVER AT PITTS, N. C.																		
Jan. 13, 1956	9.45			7.2	2.3			44	2.9	0.5		0.4		27	0	74.0	7.1	
May 15	26.7			5.4	2.6			30	2.4	1.0		.7		24	0	56.7	7.0	
June 12	9.05			6.6	3.6			38	1.5	1.6		.2		31	0	87.9	6.9	
July 31	7.26			7.8	3.9			48	.3	1.0		1.0		36	0	83.1	6.9	
Aug. 21	5.44			6.8	3.2			44	2.6	.5		.5		30	0	79.3	6.9	
MUDDY CREEK AT BRIDGEWATER, N. C.																		
Jan. 13, 1956	44.2			3.6	1.4			27	3.0	18		1.2		15	0	115	6.9	
May 14	67.2			4.0	1.1			26	1.8	3.0		1.1		15	0	55.2	6.8	
May 24	58.2			3.9	1.4			28	2.3	7.8		1.1		15	0	79.2	6.8	
June 15	43.2			4.4	.8			16	2.4	22		.5		14	1	112	8.2	
June 30	32.3			5.0	1.1			32	2.3	5.0		2.1		17	0	81.0	6.5	
Aug. 22	42.0			4.7	.9			29	1.8	9.0		2.3		15	0	90.1	6.6	
LINVILLE RIVER AT BRANCH, N. C.																		
Oct. 20, 1955	31.7	8.7	0.11	2.4	0.6	1.6	0.8	14	1.4	1.0	0.0	0.2	a.24	8	0	28.0	6.7	8
Mar. 28, 1956	101	6.6	.06	1.4	.8	1.1	.4	10	.4	1.0	.0	.5	a.17	7	0	25.2	6.9	3

a Calculated from determined constituents.

SANTÉE RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN SANTÉE RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium, mg- per liter of solution	Non- carbon- ate			
SILVER CREEK NEAR GLEN ALPINE, N. C.																		
May 24, 1956	14.6			3.4	1.2			25	1.4	0.9		0.2		13	0	43.8	7.0	
June 15	9.56			3.7	1.0			24	1.7	1.0		.4		13	0	41.9	7.1	
Aug. 22	11.1			3.4	.4			24	.3	.5		1.0		10	0	47.6	6.9	
WARRIOR FORK NEAR MORGANTON, N. C.																		
June 8, 1956	40.6			2.5	0.2			13	1.5	3.0		0.5		7	0	37.9	7.1	
Aug. 21				2.4	.3			17	4.6	.8		.8		7	0	34.1	6.5	
JOHNS RIVER AT COLLETTSVILLE, N. C.																		
May 22, 1956	75.4			3.1	0.3			16	1.1	0.3		0.4		9	0	32.2	6.7	
Aug. 23	16.9			2.8	.2			18	2.5	2.5		.7		8	0	39.3	6.8	
Sept. 21	9.81			2.6	.8			49	1.0	1.0		.6		10	0	36.4	6.7	
WILSON CREEK NEAR ADAKO, N. C.																		
May 22, 1956	59.8			1.4	0.3			10	0.7	0.1		0.1		5	0	18.4	6.6	
June 8	44.7			1.5	.1			10	1.4	.5		.1		4	0	18.1	6.5	
Aug. 23	27.5			1.0	.1			10	6.1	.1		.4		3	0	21.4	6.6	
LOWER CREEK AT LENOIR, N. C.																		
May 22, 1956	4.82			6.1	1.6			32	2.6	1.2		0.9		22	0	64.8	6.9	
Aug. 23	1.03			5.7	1.6			34	2.2	2.0		.8		21	0	69.4	6.8	
MIDDLE LITTLE RIVER NEAR TAYLORSVILLE, N. C.																		
June 8, 1956	16.0			2.2	0.4			13	1.6	3.0		0.3		7	0	36.1	6.9	
Aug. 23	13.6			1.8	.3			15	1.0	.6		1.2		6	0	31.6	6.5	

LOWER LITTLE RIVER NEAR TAYLORSVILLE, N. C.

June 15, 1956	17.9			2.5	0.4		16	1.5	1.2		8		31.3	7.0
Aug. 23	10.6			2.2	.3		17	.6	1.0		7		37.6	6.7

LYLE CREEK AT CATAWBA, N. C.

June 23, 1956	21.0			5.9	2.1	--	36	0.2	3.0		23		70.3	7.0
July 20	200			4.2	.9	2.8	3.0	18	2.9	3.0	14	0	67.0	6.2
Aug. 8	21.2			6.0	1.7	--	39	.3	3.0		22	0	78.1	6.8
Aug. 29	19.0			5.9	1.3	4.2	1.6	36	1.0	2.0	20	0	73.4	6.8

MOUNTAIN CREEK NEAR TERRELL, N. C.

Aug. 24, 1956	7.31			7.1	1.6	3.1	38	1.7	1.0		24	0	72.4	6.7
Aug. 30	5.86			6.4	2.1		36	1.7	1.0		25	0	71.2	6.7

DAVIDSON CREEK NEAR CORNELIUS, N. C.

Dec. 20, 1955	9.81			0.8	1.8		56	2.5	2.0		32	0	75.5	7.1
June 15, 1956	5.97			10	2.5		54	.5	2.4		37	0	103	7.1
Aug. 27	2.75			9.6	1.5	5.1	2.2	49	3.0	2.0	30	0	96.9	7.2

DUTCHMANS CREEK NEAR STANLEY, N. C.

Dec. 20, 1955	33.0			5.6	1.0		34	2.1	1.5		18	0	66.7	6.8
June 15, 1956	54.8			5.8	1.8		33	2.7	2.0		22	0	67.0	6.8
Aug. 29	15.6			6.7	.5	4.1	1.6	36	2.4	2.0	19	0	71.3	7.0

HENRY FORK NEAR HENRY RIVER, N. C.

Oct. 12, 1955	56.0	10	0.02	2.0	1.2	1.6	1.1	12	3.1	1.0	0.1	1.7	28.4	7.2
Mar. 21, 1956	82	8.7	.03	2.6	.3	1.4	1.0	9	4.2	2.0	.1	.3	29.4	6.5

a Calculated from determined constituents.

SANTÉE RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN SANTÉE RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA--Continued
Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium,	Non-carbon- ate			
JACOB FORK NEAR STARTOWN, N. C.																		
Aug. 7, 1956	32.5			2.4	0.5	1.3	1.2	15	1.3	1.0		0.6		8	0	33.2	6.5	
Aug. 27	30.4			1.9	.3			14	1.1	1.0		.8		6	0	31.8	6.5	
LONG CREEK NEAR BESSEMER CITY, N. C.																		
Nov. 3, 1955	7.95	11	0.21	5.0	2.7	3.5	1.5	34	2.8	1.5	0.1	0.2	a.46	23	0	66.6	6.9	19
Mar. 21, 1956	25	17	.03	5.5	1.3	4.7	1.0	25	6.8	3.8	.0	.9	a.53	19	0	70.7	6.6	12
Apr. 12	77.3	11	.05	4.7	1.5	2.7	1.6	20	3.2	2.2	.2	1.1	a.38	18	2	58.0	6.5	32
SOUTH FORK CATAWBA RIVER AT LOWELL, N. C.																		
Nov. 3, 1955	279	24	0.23	4.8	1.9	8.3	2.2	31	3.5	6.5	0.2	1.1	a.68	20	0	86.3	6.7	20
Mar. 21, 1956	647	14	.02	5.1	.9	4.5	1.3	22	6.1	5.2	.2	1.7	a.50	16	0	66.1	6.8	5
Apr. 12	2,266	9.0	.04	5.1	1.4	3.4	1.8	15	3.9	4.2	.0	2.8	a.39	18	6	66.7	6.8	25
CROWDERS CREEK NEAR GASTONIA, N. C.																		
Dec. 21, 1955	20.5	22		12	0.8			b.162	53	2.2		0.7		32	0	512	9.4	
Aug. 30, 1956	11.3			37	3.9	56	11	80	140	18		1.1		108	42	547	6.8	
MCALPINE CREEK NEAR PINEVILLE, N. C.																		
Dec. 20, 1955	9.94			13	2.9			78	5.3	5.5		0.5		44	0	154	7.1	
Aug. 30, 1956	1.86			10	4.2	5.9	2.5	60	4.4	5.0		.7		43	0	129	6.9	
LITTLE SUGAR CREEK NEAR CHARLOTTE, N. C.																		
Oct. 5, 1955	12.4	24	0.15	21	5.4	36	4.3	105	39	17	0.4	0.3	a.200	74	0	313	6.9	19
Mar. 20, 1956	32	21	.07	17	4.5	48	3.4	101	78	15	.3	.7	a.238	60	0	380	6.8	20
Apr. 12	55.0	17	.01	21	4.8	28	3.2	19	103	9.5	.0	2.6	a.198	73	57	322	5.9	11

a. Calculated from determined constituents.
b. Includes equivalent of 50 parts per million of carbonate (CO₃).

TWELVEMILE CREEK NEAR WAXHAW, N. C.

[illegible]

WATEREE RIVER NEAR CAMDEN, S. C.

Mar. 16, 1956.....	c10, 200	9.3	0.03	4.6	1.8	7.9	1.6	28	9.1	5.4	0.0	0.9	68	19	0	87.9	6.5	22
May 18, 1956.....	c2, 190	7.5	.03	4.4	1.6	6.7	1.6	27	5.1	4.0	.0	1.1	54	18	0	77.8	7.0	27

BROAD RIVER NEAR CHIMNEY ROCK, N. C.

Oct. 19, 1955	169	13	0.00	3.2	0.7	2.7	0.8	18	2.4	2.5	0.1	0.4	235	11	0	37.7	6.6	6
Mar. 29, 1956	310	12	0.00	2.4	0.3	3.4	1.0	15	0.9	3.0	0.1	0.7	231	7	0	31.0	6.6	3

COVE CREEK NEAR LAKE LURE, N. C.

Oct. 19, 1955	42.2	17	0.09	2.4	1.2	2.8	0.9	20	1.8	0.0	0.1	37	11	0	36.7	7.0	11
.....
Mar. 29, 1956	75.5	15	.04	2.4	.5	3.7	1.2	17	1.2	2.5	.6	35	8	0	36.4	6.6	.....

SECOND BROAD RIVER AT CLIFFSIDE, N. C.

Oct. 19, 1955	96.9	16	0.06	4.6	2.3	28	1.4	39	4.3	32	0.2	2.0	a110	21	0	189	6.8	11
Mar. 29, 1956	150	15	.06	4.0	1.0	18	1.6	32	8.6	12	.1	1.7	a78	14	0	107	6.7	

BROAD RIVER NEAR BOILING SPRINGS, N. C.

Oct. 16, 1955	879	14	0.05	2.8	1.2	4.2	1.1	24	1.6	1.5	0.0	0.5	239	12	0	47.4	6.8	11
Mar. 30, 1956	1,250	12	.06	3.0	.6	2.6	.9	16	.3	1.8	.0	.6	230	10	0	38.4	7.1	13

a Calculated from determined constituents.

c. Daily mean discharge.

SANTÉE RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN SANTÉE RIVER BASIN IN NORTH CAROLINA AND SOUTH CAROLINA--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 (residue on evap- oration at 180 C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25 C)	pH	Color
														Calcium	Non- carbon- ate			

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

FIRST BROAD RIVER NEAR LAWDALE, N. C.

Oct. 18, 1955	69.8	14	0.15	3.6	0.7	4.0	1.3	21	3.1	1.5	0.1	0.4	2.39	12	0	45.4	6.8	8
Mar. 30, 1956	149	11	.13	2.8	.3	9.1	1.2	23	2.4	5.5	.1	.9	2.44	8	0	60.6	6.8	

BUFFALO CREEK NEAR BLACKSBURG, S. C.

Nov. 3, 1955	59.5	16	0.05	4.4	1.2	7.6	2.0	28	1.6	8.0	0.1	0.4	58	16	0	77.8	6.9	7
May 15, 1956	122	19	.01	4.2	1.2	4.4	1.6	24	.8	4.3	.1	.9	47	16	0	62.3	6.8	10

TYGER RIVER NEAR DELTA, S. C.

Nov. 8, 1955	188	15	0.09	4.8	1.7	37	3.5	94	10	10	0.6	1.0	134	19	0	207	7.4	15
May 24, 1956	429	14	.06	4.4	1.5	20	2.5	58	4.9	6.5	.4	1.7	86	17	0	132	7.0	15
Sept. 20	89.4	13	.03	5.6	2.2	42	3.6	110	12	10	.8	2.3	148	23	0	239	7.3	10

CONGAREE RIVER AT COLUMBIA, S. C.

Mar. 26, 1956	14,720	13	0.01	5.0	0.9	6.4	1.6	25	5.7	4.0	0.5	0.8	51	16	0	72.0	6.6	7
May 15	18,640	12	.01	4.2	1.5	7.5	1.5	31	3.5	4.0	.4	1.2	51	16	0	76.6	7.0	7

a Calculated from determined constituents.

d Provisional discharge subject to revision.

EDISTO RIVER BASIN
MISCELLANEOUS ANALYSES OF STREAMS IN EDISTO RIVER BASIN IN SOUTH CAROLINA

Chemical analyses, in parts per million, water year October 1955 to September 1956																		
Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mag- mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbon- ate			
NORTH FORK EDISTO RIVER NEAR NORTH																		
Nov. 8, 1955	241	6.5	0.07	0.8	0.1	1.3	0.4	4	0.7	2.5	0.0	0.6	19	2	0	17.5	5.9	10
Sept. 19, 1956	188	4.3	.08	.8	.2	1.4	.2	3	1.1	1.7	.0	.8	13	3	1	15.5	5.5	10

SAVANNAH RIVER BASIN

SAVANNAH RIVER AT BURTONS FERRY BRIDGE, NEAR MILLHAVEN, GA.

LOCATION.--Temperature recorder at gaging station on downstream side of left pier of drawspan of bridge on U. S. Highway 301, 2 miles downstream from Rocky Creek, 9 miles east of Millhaven, Screven County, and at mile 114.3 upstream from Savannah.

DATA.--Temperature recorder in operation from January to September 1956.

RECORDS AVAILABLE.--Water temperature Maximum, 82°F on many days during June to September; minimum, 47°F Jan. 27-29.

EXTREMES, January to September 1956.--Water temperature Maximum, 82°F on many days during June to September 1956 given in WSP 1433.

REMARKS.--Records for water year October 1955 to September 1956 given in WSP 1433.

Temperature (°F) of water, January to September 1956
/Recorder with temperature attachment/

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
1.....							50	56	52	71	74	71	81	79
2.....							52	56	52	71	74	71	81	79
3.....							51	55	51	70	72	70	82	79
4.....							52	56	52	72	72	70	81	80
5.....							53	57	53	72	72	70	80	79
6.....							54	58	54	72	72	71	79	77
7.....							54	58	54	72	72	71	80	78
8.....							54	58	54	72	72	71	82	79
9.....							53	57	53	71	74	72	82	80
10.....							54	58	54	69	74	73	82	80
11.....							54	58	54	67	75	73	82	81
12.....							56	60	56	68	76	73	81	80
13.....							56	60	56	68	76	73	81	80
14.....							56	60	56	71	77	73	81	80
15.....							57	61	57	72	77	73	82	80
16.....							57	61	57	72	77	73	82	80
17.....							59	63	59	73	75	75	81	79
18.....							60	64	60	74	77	75	81	79
19.....							61	65	61	75	77	75	82	80
20.....							61	65	61	75	77	75	82	80
21.....							61	65	61	75	77	75	82	80
22.....							60	64	60	74	77	75	81	79
23.....							58	62	58	73	79	78	82	80
24.....							57	61	57	72	79	78	82	80
25.....							57	61	57	72	79	78	82	80
26.....							58	62	58	73	79	78	82	80
27.....							57	61	57	72	79	78	82	80
28.....							57	61	57	72	79	78	82	80
29.....							47	57	47	68	80	81	82	80
30.....							47	57	47	68	80	81	82	80
31.....							49	59	49	71	82	81	82	80
Average.....							55	59	55	71	77	77	82	80

SAVANNAH RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN SAVANNAH RIVER BASIN IN SOUTH CAROLINA

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue on evap- oration at 180° C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25° C)	pH	Color
														Calcium, mg- nesium	Non- carbon- ate			
SENECA RIVER AT CLENSON																		
Nov. 2, 1955	338	13	0.10	2.4	1.1	2.7	1.2	20	0.5	1.0	0.0	0.5	32	11	0	36.7	6.5	22
Sept. 18, 1956	310	12	.05	2.3	.5	2.6	.8	16	1.1	1.0	.0	.6	29	8	0	29.4	6.5	10
CONERROSS CREEK AT RICHLAND																		
Apr. 4, 1956	50.2	14	0.03	3.0	1.1	4.8	1.1	21	0.8	3.8	0.1	0.9	45	12	0	51.2	6.5	18
May 29	42.6	14	.17	2.8	1.0	5.2	1.5	20	1.0	4.0		1.4	42	11	0	55.7	6.6	20
CHAUGA RIVER NEAR WESTMINSTER																		
Nov. 3, 1955	52.4	13	0.07	2.6	0.9	2.2	1.0	18	0.9	1.0	0.0	0.4	32	10	0	34.7	6.5	16
May 29, 1956	90.1	12	.07	2.1	.8	2.3	.9	16	.6	.5	.0	.4	28	8	0	29.8	6.7	12
Sept. 18	39.7	11	.08	2.4	1.0	2.3	.8	18	1.6	.5	.0	.5	32	10	0	31.3	6.5	30
SAVANNAH RIVER NEAR CALHOUN FALLS																		
Mar. 29, 1956	b5,060	9.9	0.02	2.7	0.7	2.7	1.5	14	3.4	2.2	0.0	0.8	43	10	0	43.4	6.3	18
May 9	b5,860	11	.00	2.6	.6	3.0	1.2	16	.7	1.5	.2	1.2	31	9	0	41.6	6.6	10

a Calculated from determined constituents.

b Daily mean discharge.

PART 2-B. SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS, OGEECHEE RIVER TO PEARL RIVER

ST. JOHNS RIVER BASIN

JANE GREEN CREEK NEAR DEER PARK, FLA.

LOCATION --at gaging station, 1½ miles southeast of Deer Park, Osceola County, and 2 miles downstream from confluence of Crabgrass and Bull Creeks.
 DRAINAGE AREA --248 square miles.

RECORDS AVAILABLE --Chemical analyses: November 1954 to August 1956.

REMARKS --Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 13, 1955.....	440	5.9	0.06	6.3	1.2	3.2		16	0.5	10		0.3	35	21	8	58.2	6.6	200
Nov. 19.....	11	6.8	.01	11	1.7	9.1		24	0	24		.1	65	34	15	112	6.6	180
Dec. 21.....	8.8	4.2	.09	13	2.3	8.7		21	2.5	29		.1	70	42	25	148	6.7	90
Jan. 27, 1956.....	51	5.3	.03	14	1.7	11		27	1.2	31		.1	76	42	20	149	6.8	25
Mar. 14.....	0	4	.04	14	4.1	8.2		32	1.0	30		.2	74	52	26	171	6.9	465
May 16.....	90	5.4	.03	11	1.1	14		27	1.2	26		1.1	80	33	17	170	6.7	300
Aug. 30.....	119	5.7	.13	11	1.3	6.9		22	2.8	19		.1	58	33	15	116	6.6	300

Chemical analyses, in parts per million, October 1955 to August 1956

ST. JOHNS RIVER BASIN--Continued
ST. JOHNS RIVER NEAR MELBOURNE, FLA.

LOCATION.--At gaging station, 10 feet upstream from bridge, on U. S. Highway 192, 1.0 mile downstream from Savgrass Lake, 1.8 miles upstream from Lake Washington, and 9.2 miles west of Melbourne, Brevard County.

DRAINAGE AREA.--874 square miles.

RECORDS AVAILABLE.--Chemical analyses: November 1954 to August 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, October 1955 to August 1956.

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 14, 1955....	967	7.1	0.06	9.5	3.5	8.0		24	0.5	25		0.2	66	38	18	99.2	6.7	150
Nov. 23.....	167	4.2	.03	11	2.1	12		27	4.0	27		.2	70	36	14	137	6.8	110
Dec. 21.....	103	3.7	.07	12	3.4	12		26	4.3	31	0.4	.1	80	44	23	164	6.8	90
Jan. 27, 1956....	101	2.0	.08	15	3.3	17		31	7.5	38		.1	98	51	26	203	7.3	75
Mar. 14.....	a0	2.2	.11	17	3.8	20		41	1.0	47		.1	111	58	24	242	6.9	75
Apr. 26.....	a0	4.0	.01	24	2.9	28		36	2.0	71		.3	150	72	42	311	6.8	55
June 19.....	a0	1.7	.07	35	5.0	52		38	12	125		.2	250	108	77	498	6.9	45
July 6.....	a30	2.9	.00	40	5.9	47		40	2	113		.2	230	102	81	426	7.1	85
July 20.....	a0	5.1	.00	26	6.6	41		40	1.5	104		.6	205	192	59	426	6.8	65
Aug. 30.....	a50	6.0	.10	26	3.6	24		34	4.0	70		1.1	152	80	52	311	7.0	250

a Stage-discharge relation indefinite; discharge estimated on basis of records for other stations in St. Johns River basin.

ST. JOHNS RIVER BASIN--Continued

ST. JOHNS RIVER NEAR COCOA, FLA.

LOCATION.--At State Highway 520, approximately half a mile downstream from outlet of Lake Poinsett, 10.5 miles west of Cocoa, Brevard County.

DRAINAGE AREA.--1,237 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1956.

Water temperatures: October 1953 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 998 ppm July 11-20; minimum, 170 ppm Sept. 11-13.

Hardness: Maximum, 294 ppm June 11-20; minimum, 46 ppm Sept. 11-13.

Specific conductance: Maximum daily, 1,620 micromhos June 18; minimum daily, 140 micromhos Sept. 12.

Water temperatures: Maximum, 95°F Aug. 9; minimum, 46°F Jan. 9, 12.

EXTREMES, 1953-56.--Dissolved solids: Maximum, 998 ppm July 11-20, 1956; minimum, 103 ppm Oct. 21-31, 1953.

Hardness: Maximum, 294 ppm June 11-20, 1956; minimum, 30 ppm Oct. 21-31, 1953.

Specific conductance: Maximum daily, 1,620 micromhos June 18, 1956; minimum daily, 107 micromhos Oct. 10, 1953.

Water temperatures: Maximum, 95°F Aug. 9, 1956; minimum, 46°F Jan. 9, 12, 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla. Records of discharge for water year October 1955 to September 1956 were computed from a stage-discharge relation based on stage record for Lake Poinsett near Cocoa, Fla., and are available in Surface Water district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955.	2,166	9.3	0.10	19	2.9	24	0.6	33	9.2	52	0.1	0.0	131	59	32	252	6.8	160
Oct. 11-20, 1955.	1,907	6.5	0.13	17	2.9	23	.6	31	10.8	32	.1	.0	187	57	31	253	6.9	140
Oct. 21-31, 1955.	1,907	6.5	0.13	17	2.9	23	.6	31	10.8	32	.1	.0	187	57	31	253	6.9	140
Nov. 1-10, 1955.	1,526	5.0	0.10	15	3.7	22	.4	30	7.8	46	.1	.0	184	53	28	225	7.0	140
Nov. 11-20, 1955.	1,373	5.2	0.14	16	3.2	22	.4	30	7.5	48	.1	.0	184	53	28	228	6.9	140
Nov. 21-30, 1955.	1,050	5.9	0.10	18	2.8	24	.6	32	8.8	54	.1	.0	198	56	30	253	7.0	140
Dec. 1-10, 1955.	771	7.0	0.08	22	2.9	30	.5	35	12	63	.1	.3	200	67	38	283	6.9	110
Dec. 11-20, 1955.	404	6.3	0.07	26	3.4	40	.6	38	15	4	.1	.4	229	73	44	368	6.7	100
Dec. 21-30, 1955.	404	6.3	0.07	26	3.4	40	.6	38	15	4	.1	.4	229	73	44	368	6.7	100
Jan. 1-10, 1956.	320	4.5	0.08	27	4.0	46	.8	39	18	92	.1	.3	270	84	55	397	6.8	90
Jan. 11-20, 1956.	265	5.2	0.07	29	5.0	50	.9	38	20	104	.1	.3	297	93	62	449	6.9	90
Jan. 21-31, 1956.	287	5.8	0.06	31	6.0	55	1.1	39	25	116	.1	.3	324	102	70	498	6.8	85
Feb. 1-10, 1956.	291	3.6	0.06	32	9.8	63	1.6	38	33	139	.1	.4	378	120	90	588	7.0	75
Feb. 11-20, 1956.	291	3.6	0.06	32	9.8	63	1.6	38	33	139	.1	.4	378	120	90	588	7.0	75
Feb. 21-29, 1956.	216	2.4	0.13	37	11	71	2.9	42	0	150	.1	.6	414	134	101	651	7.1	65
Mar. 1-10, 1956.	187	1.4	0.03	37	12	73	2.2	42	40	160	.1	1.1	428	142	108	651	7.2	60
Mar. 11-20, 1956.	162	1.3	0.07	41	13	83	2.3	48	44	178	.1	.6	491	156	116	752	7.3	60
Mar. 21-31, 1956.	142	1.4	0.03	44	14	92	2.4	54	47	198	.1	.6	525	168	123	823	7.3	60

Apr. 1-10, 1956.	120	0.5	0.00	49	16	118	3.2	60	54	231	0.1	0.4	575	188	140	962	7.4	60
Apr. 11-20.....	110	.5	.03	50	17	124	3.4	60	58	231	.1	.4	584	183	156	1,040	7.4	52
Apr. 21-30.....	98	.5	.03	54	17	124	3.4	60	58	258	.1	.4	684	204	156	1,040	7.4	65
May 1-10.....	87	3.6	.00	64	14	130	3.1	64	62	272	.2	.6	709	217	164	1,100	7.3	55
May 11-20.....	78	3.6	.02	69	14	136	3.2	67	65	285	.2	.4	745	230	174	1,160	7.2	50
May 21-31.....	56	4.1	.06	78	16	156	3.5	74	74	330	.2	.7	845	260	200	1,320	7.3	45
June 1-10.....	47	5.3	.02	70	26	171	3.8	75	77	362	.2	.9	901	282	220	1,430	7.4	45
June 11-20.....	41	3.5	.12	72	28	190	5.0	82	79	462	.2	.9	901	282	220	1,430	7.4	90
June 21-30.....	58	3.5	.01	72	24	180	5.0	78	79	395	.1	.0	931	278	214	1,530	7.1	55
July 1-10.....	105	4.9	.00	68	26	150	5.0	56	112	326	.0	.0	873	276	228	1,360	6.9	90
July 11-20.....	132	9.0	.03	73	26	170	5.0	75	98	376	.2	.0	998	289	224	1,480	7.1	55
July 21-31.....	116	5.3	.08	71	26	165	6.0	74	83	366	.2	.0	953	284	220	1,440	7.1	55
Aug. 1-10.....	104	3.3	.09	69	23	160	6.0	70	80	354	.2	.0	900	265	206	1,390	7.1	60
Aug. 11-20.....	103	4.6	.10	65	23	150	6.0	68	75	333	.2	.0	846	256	196	1,310	7.0	90
Aug. 21-31.....	124	5.7	.10	57	20	130	5.0	58	70	283	.1	.0	751	224	174	1,150	6.9	120
Sept. 1-10.....	154	9.2	.09	66	24	155	6.0	64	88	340	.1	.0	860	263	208	1,360	6.9	90
Sept. 11-13.....	220	6.6	.26	13	3.3	24	1.0	23	18	41	.1	.2	170	46	26	217	6.4	--
Sept. 14-20.....	232	7.7	.20	32	9.7	65	1.7	41	44	130	.0	.0	409	120	85	586	6.8	200
Sept. 21-25, 1956.....	300	5.5	.09	53	18	111	2.9	58	71	237	.1	.0	655	206	156	991	7.1	100
Sept. 26.....	283	5.2	---	24	6.6	44	1.0	34	--	31	.0	.0	---	87	58	420	6.6	---
Time-weighted average.....	451	4.7	0.07	45	13	95	2.7	51	48	203	0.1	0.3	544	166	124	831	--	90

294 SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS, OGEECHEE RIVER TO PEARL RIVER

ST. JOHNS RIVER BASIN--Continued

ST. JOHNS RIVER NEAR COCOA, FLA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	82	68	72	64	65	60	65	78	81	88	88	83
2	82	69	72	55	65	62	70	80	82	90	86	86
3	83	69	68	58	67	65	72	80	83	87	92	84
4	83	69	70	50	69	66	70	85	80	80	86	85
5	82	68	70	50	71	69	72	85	80	79	90	82
6	82	68	69	54	70	69	75	83	82	84	93	83
7	82	72	68	56	67	72	78	80	80	85	87	83
8	82	73	68	56	65	72	76	82	81	90	86	84
9	82	74	60	46	65	60	76	75	80	86	95	81
10	80	76	60	48	67	66	75	72	87	83	91	79
11	80	73	61	49	70	68	64	80	82	84	85	85
12	79	73	61	46	64	70	60	79	87	92	88	84
13	78	76	61	47	60	75	67	80	85	85	90	78
14	78	76	64	49	61	80	67	80	82	91	85	80
15	72	76	64	48	63	74	68	80	85	85	90	78
16	73	86	54	56	67	74	75	82	80	90	88	80
17	74	70	55	55	68	66	69	78	80	85	83	79
18	70	70	59	55	70	59	72	75	80	85	80	82
19	68	73	60	63	78	62	68	78	90	90	90	81
20	69	72	60	58	72	58	66	81	81	84	85	80
21	72	72	60	56	68	55	68	82	82	90	84	81
22	75	73	60	59	65	57	78	79	88	85	80	81
23	75	73	60	60	58	66	73	82	82	87	83	82
24	76	72	60	63	61	63	72	80	93	85	85	82
25	76	70	60	65	62	60	74	80	86	90	88	80
26	76	73	64	60	65	57	74	80	85	90	88	79
27	76	72	64	56	71	61	82	75	84	86	90	75
28	76	73	64	58	68	65	78	78	86	86	85	77
29	75	70	64	65	80	69	80	82	85	90	85	78
30	74	70	64	62	--	69	80	80	84	88	85	80
31	69	--	64	65	--	68	--	81	--	90	85	--
Average	77	72	63	56	66	66	72	80	83	87	87	81

ST. JOHNS RIVER BASIN--Continued
SURFACE WATER SLOUGH NEAR COCOA, FLA.

LOCATION.--At culvert on graded road, 2.0 miles north of City of Cocoa Water Plant and 2.5 miles northwest of Cocoa, Brevard County.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to April 1956.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, October 1955 to April 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 10, 1955...		2.9	0.13	2.0	1.7	11		2	3.2	22		0.0	44	12	10	101	4.9	240
Nov. 11, 1955...		2.1	.00	3.2	1.2	13.6		4	.0	26	0.4	.3	52	15	12	123	5.2	280
Dec. 19, 1955...		2.1	.00	3.2	1.2			4	.0	20		.2	37	13	10	92.9	5.0	220
Jan. 28, 1956...		3.3	.14	2.0	2.2	8.5		3	3.0	19		.1	40	14	12	96.0	4.9	260
Apr. 25, 1956...		2.4	.00	3.4	.4	9.8		0	3.0	20		.1	39	10	10	93.9	4.4	400

CLEAR LAKE NEAR COCOA, FLA.

LOCATION.--At staff gage on southeast shore of Clear Lake, 2.75 miles northwest of Cocoa, Brevard County.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to August 1956.

Chemical analyses, in parts per million, October 1955 to August 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 10, 1955...		3.6	0.12	18	11	63		18	27	182	--	0.2	314	90	75	936	6.9	110
Nov. 11, 1955...		2.1	.00	22	13	95		22	30	188	0.2	.1	361	108	90	721	6.8	180
Dec. 19, 1955...			.00	7.2	5.4	31		8	9.2	64	.2	.2	123	40	34	246	6.4	25
Jan. 28, 1956...		.8	.04	38	22	170		34	52	335	--	.0	635	186	158	1,240	7.0	70
Mar. 13, 1956...		4.1	.27	65	39	232		62	88	578	--	.3	1,100	322	272	2,060	7.3	55
Apr. 25, 1956...		7.0	.02	104	58	418		94	139	840	--	.6	1,610	498	471	2,970	7.2	40
June 4, 1956...		5.1	.03	170	35	495		114	162	980	--	.0	1,900	568	424	3,450	7.5	20
July 20, 1956...		5.3	.01	92	55	389		66	155	770	--	.4	1,500	456	402	2,820	7.3	5
Aug. 28, 1956...		2.2	.01	84	46	346		44	170	685	--	.2	1,340	398	362	2,480	7.2	5

ST. JOHNS RIVER BASIN--Continued

ST. JOHNS RIVER NEAR CHRISTMAS, FLA.

LOCATION.--At gaging station, 15 feet downstream from bridge on State Highway 50, 2 miles upstream from Lake Cone and Toschatchee Creek, and 4.5 miles east of Christmas, Orange County.

DRAINAGE AREA--1,418 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1954 to August 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, October 1955 to August 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium, as nearest	Non-carbonate			
Oct. 10, 1955...	2,160	7.2	0.07	18	8.3	49		32	3.2	110		0.1	212	79	53	406	6.9	160
Nov. 14.....	1,370	3.1	.09	18	5.9	44		31	13	89		.1	188	69	44	383	7.1	130
Dec. 19.....	566	2.9	.08	25	10	65		35	26	134		.1	280	104	75	566	7.0	120
Jan. 31, 1956...	393	1.3	.06	40	18	125		39	59	250		.1	512	174	142	1,030	7.0	80
Mar. 13.....	186	1.0	.01	42	15	80		45	32	286		.3	426	186	190	1,030	7.1	85
Apr. 24.....	75	.6	.04	62	21	155		62	73	320		.5	683	241	190	1,260	7.2	55
June 5.....	33	.2	.02	98	16	201		76	89	420		.3	862	310	248	1,640	7.2	45
July 18.....	98	2.1	.01	92	38	294		60	185	555		.8	1,200	386	337	2,150	7.4	45
Aug. 29.....	161	4.9	.06	70	28	199		44	143	380		1.0	848	290	254	1,580	7.1	130

ST. JOHNS RIVER BASIN--Continued
ECONLOCKHATCHEE RIVER NEAR CHULUOTA, FLA.

LOCATION.--At gaging station, 10 feet downstream from highway bridge, 2.6 miles northeast of Chuluota, Seminole County, and 10 miles upstream from mouth.
DRAINAGE AREA.--260 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to August 1956.
REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, October 1955 to August 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 10, 1955...	368	7.6	0.18	8.7	5.7	13		18	1.0	41		0.2	86	45	30	157	6.4	300
Nov. 14, 1955...	187	6.3	0.15	11	3.8	18		20	12	37		1.0	99	43	27	191	6.5	120
Dec. 19, 1955...	55	8.0	0.12	21	8.7	44		50	24	88		3.4	216	88	47	424	6.9	110
Feb. 1, 1956...	99	7.3	0.09	15	6.0	28		32	16	56		1.6	146	62	36	293	7.1	140
Mar. 13, 1956...	25	7.2	0.05	34	14	90		83	46	152		9.9	394	142	74	764	6.9	50
Apr. 24, 1956...	18	7.5	0.05	42	14	112		112	58	179		7	468	162	70	873	7.3	40
June 5, 1956...	19	5.6	0.04	51	4.6	110		108	52	167		9.6	453	146	58	895	7.4	40
July 16, 1956...	39	8.9	0.09	28	9.7	64		82	33	115		1.4	141	117	59	603	7.1	130
Aug. 29, 1956...	177	8.8	0.20	16	4.1	29		60	23	50		1.1	146	57	32	278	6.5	300

ST. JOHNS RIVER ABOVE LAKE HARNEY NEAR GENEVA, FLA.

LOCATION.--At site of former gaging station at bridge on State Highway 46, 1 mile upstream from Lake Harney, 5.5 miles southeast of Geneva, Seminole County, and 16.9 miles southeast of Sanford.
DRAINAGE AREA.--1,910 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to June 1956.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, October 1955 to June 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 11, 1955...	7.1	0.09	0.24	13	13	100		34	14	204		0.2	379	114	86	762	6.8	180
Nov. 15, 1955...	3.1	0.12	0.23	12	12	94		33	31	176		0.2	367	114	86	735	7.1	107
Dec. 20, 1955...	2.0	0.11	0.34	20	20	143		44	54	274		0.1	549	167	131	1,100	6.8	110
Feb. 1, 1956...	1.8	0.05	0.53	29	29	220		43	104	415		1.3	845	251	216	1,730	7.0	90
Mar. 4, 1956...	2.0	0.09	0.57	32	32	199		62	101	390		1.3	812	274	262	1,720	6.8	55
Mar. 23, 1956...	3.4	0.03	1.06	46	46	388		104	163	710		1.4	1,460	412	328	2,640	7.2	40
June 6, 1956...	3.5	0.09	1.12	42	42	416		94	172	780		0.8	1,370	452	375	2,880	7.3	45

ST. JOHNS RIVER BASIN--Continued

MISCELLANEOUS ANALYSES OF STREAMS AND LAKES IN ST. JOHNS RIVER BASIN IN FLORIDA

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium magnesium	Non-carbonate			
ST. JOHNS RIVER AT CREST GAGE NO. 4, NEAR BONAVENTURE																		
Nov. 15, 1955...		4.8	0.00	10	2.0	9.4	26	54	1.2	22		0.0	62	33	12	119	6.9	110
June 18, 1956...		2.7	.03	44	7.3	62			19	149		.0	311	140	96	657	7.1	45
LAKE WINDER NEAR BONAVENTURE																		
Nov. 15, 1955...		4.3	0.03	12	2.3	14	29	64	6.2	28		0.0	81	39	16	146	7.0	120
June 18, 1956...		.5	.04	58	6.7	93			47	193		.0	430	172	120	809	7.4	45
ST. JOHNS RIVER AT CREST GAGE NO. 7, NEAR ROCKLEDGE																		
Nov. 15, 1955...		5.1	0.02	13	1.6	13	28	84	3.2	29		0.0	79	39	16	147	6.9	120
June 18, 1956...		2.7	.04	92	11	159			69	340		.0	715	274	206	1,340	7.4	45
ST. JOHNS RIVER AT CREST GAGE NO. 9 (AT KYSER RANCH) NEAR MIMS																		
Nov. 15, 1955...		2.6	0.00	32	17	150	44	48	276			0.0	548	150	114	1,040	7.3	120
June 18, 1956...		8.0	.05	344	175	1,250	152	870	2,320			2.1	5,040	1,580	1,450	8,220	7.3	45
SALT LAKE AT HWY. 46, NEAR MIMS																		
Nov. 15, 1955...		4.3	0.13	59	45	440	56	110	800			0.0	1,490	332	286	2,760	7.1	240
June 18, 1956...		.8	.06	537	425	3,890	198	1,180	7,200			10	13,300	3,120	2,960	20,500	7.2	120
LOUGHMAN'S LAKE NEAR MIMS																		
Nov. 15, 1955...		2.8	0.00	115	101	894	108	249	1,630			0.0	3,050	702	614	5,410	7.5	120
June 18, 1956...		6.5	.07	1,270	941	8,300	238	3,050	15,400			34	29,100	7,040	6,840	39,200	7.0	180

MOULTRIE CREEK BASIN
MOULTRIE CREEK NEAR ST. AUGUSTINE, FLA.

LOCATION -- Approximately 0.5 mile upstream from gaging station, which is 6 feet downstream from bridge on Kings Road, 0.4 mile upstream from Fort Peyton Branch, and 5 miles southwest of St. Augustine, St. Johns County.

DRAINAGE AREA -- 23.3 square miles (above gaging station).

RECORDS AVAILABLE -- Chemical analyses: October 1955 to September 1956.

Water temperatures: October 1955 to September 1956.

EXTREMES 1955-56 -- Dissolved solids: Maximum 460 ppm Apr. 11-20; minimum 162 ppm Aug. 1, 2, 5-10.

Hardness: Maximum 234 ppm Apr. 11-20; minimum 15 ppm Aug. 3, 4, Sept. 14, 16.

Specific conductance: Maximum daily, 899 micromhos Apr. 27; minimum daily, 94.2 micromhos July 6.

Water temperatures: Maximum 76° on several days during July; minimum 42° Jan. 9, 11, 14.

REMARKS -- Records of specific conductance of daily samples available in district office at Ocala, Fla. Records of discharge for water year October 1955 to September 1956 given in WSP 1434. No appreciable inflow between sampling point and gaging station except during periods of local rain.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955.	21	11	0.36	20.9	3.7	20	1.3	47	4.0	37	0.2	0.0	218	95	27	226	6.5	450
Oct. 11-20.....	44	10	1.1	19.9	4.8	20	1.3	44	2	36	.1	.0	220	97	24	203	6.8	400
Nov. 1-10.....	5.6	13	.38	17	4.5	20	.5	39	3.2	38	.2	.0	219	66	30	202	6.7	400
Nov. 11-20.....	2.1	18	.30	28	5.6	23	.5	77	.5	44	.1	.0	247	93	30	265	7.1	400
Nov. 21-30.....																		
Dec. 1-10.....	1.4	14	.11	40	5.2	26	.6	114	.2	46	.1	.0	262	121	28	338	7.3	220
Dec. 11-20.....	1.2	18	.24	49	7.9	26	1.6	146	4.0	46	.1	.0	279	142	43	482	7.4	210
Dec. 21-31.....	1.4	18	.18	46	6.9	26	1.6	147	20	46	.0	.0	280	143	28	392	7.2	110
Jan. 1-10, 1956.	1.4	18	.18	46	6.9	26	1.6	147	20	46	.0	.0	280	143	28	392	7.2	110
Jan. 11-20.....	1.6	17	.15	49	7.5	35	1.2	137	19	62	.1	.0	326	153	41	484	7.1	100
Jan. 21-31.....	5.7	15	.20	26	5.1	26	.9	64	12	51	.0	.1	247	86	33	295	6.7	220
Feb. 1-10.....	14	12	.25	14	4.9	22	1.0	26	9.0	44	.0	.3	232	55	34	215	6.3	280
Feb. 11-20.....	17	11	.30	13	3.9	21	.7	24	6.5	40	.1	.1	226	56	26	208	6.2	360
Feb. 21-29.....	5	12	.20	14	5.1	23	.7	52	7.0	42	.2	.1	211	66	24	258	6.8	300
Mar. 1-10.....	5.2	12	.18	26	5.1	23	.6	78	5.0	42	.1	.1	223	86	22	283	6.9	290
Mar. 11-20.....	2.2	12	.18	26	5.1	23	.6	78	5.0	42	.1	.1	223	86	22	283	6.9	290
Mar. 21-31.....	1.0	15	.07	47	9.5	38	1.2	130	28	70	.2	.1	338	156	50	485	7.4	160
Apr. 1-10.....	.8	17	.00	60	13	49	1.6	167	36	84	.1	.1	404	203	66	602	7.5	90
Apr. 11-20.....	1.8	19	.00	69	13	56	2.3	170	52	102	.2	.1	465	234	76	632	7.6	60
Apr. 21-30.....	1.8	18	.06	46	14	33	1.8	143	24	58	.1	.1	304	154	37	453	7.3	100
May 1-10.....	1.0	15	.08	44	7.6	30	1.1	139	10	48	.1	.1	274	142	28	389	7.4	150
May 11-20.....	1.4	17	.00	57	8.9	24	1.0	198	4.0	37	.1	.0	267	178	16	426	7.6	60
May 21-31.....	.4	17	.00	57	8.9	24	1.0	198	4.0	37	.1	.0	267	178	16	426	7.6	60

MOULTRIE CREEK BASIN--Continued

MOULTRIE CREEK NEAR ST. AUGUSTINE, FLA.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium magnesium	Non-carbonate			
June 1-10, 1956.	0.5	16	0.00	61	8.3	22	1.0	212	1.0	33	0.1	0.1	264	186	12	432	7.7	45
June 11-20, .....	.5	15	.29	46	6.4	18	.8	160	1.0	29	.2	.1	210	142	10	343	7.2	40
June 21-30, .....	.6	14	.27	43	6.4	18	.8	153	1.0	28	.2	.1	202	134	8	331	7.3	40
July 1-10,	1.0	14	--	31	5.8	20	.8	108	3.0	32	.1	.1	187	102	13	288	7.1	75
July 11-20, .....	.7	14	.90	46	8.1	20	.8	164	2.0	34	.1	.2	214	142	12	349	7.1	30
July 21-31, .....	.4	14	.16	46	6.7	19	.8	157	2.0	30	.1	.1	212	140	12	341	7.5	38
Aug. 1-2, 5-10.	.4	12	.41	32	4.6	17	.8	115	3.0	26	.1	.1	162	99	5	266	7.1	45
Aug. 3-4, .....	.4	8.9	--	1.4	2.8	14	.5	16	4.0	22	--	--	--	15	2	101	5.8	--
Aug. 5-10, .....	.4	15	.06	46	5.6	23	1.0	160	3.0	27	.1	.1	202	136	7	334	7.3	30
Aug. 11-20, .....	.4	14	.29	38	4.9	18	.8	132	2.0	27	.1	.1	183	115	7	297	7.1	30
Sept. 1-10, .....	.4	15	.14	47	5.8	20	.9	164	2.0	28	.1	.1	215	142	7	343	7.3	30
Sept. 11-13, 15, 17-20, .....	.4	17	.03	66	4.7	21	.8	226	.2	32	.2	.1	266	184	0	439	7.6	25
Sept. 14, 16, .....	.3	8.2	--	2.4	2.2	--	--	11	.5	26	.1	1.8	--	15	6	108	5.7	--
Sept. 22-27, .....	.4	18	.00	66	5.7	21	.8	224	.5	32	.2	.2	276	186	4	439	7.4	20
230-day weighted average,	4.1	15	0.19	39	6.6	26	1.0	121	9.8	44	0.1	0.1	257	125	26	352	--	170

a Represents 93 percent of runoff for water year October 1955 to September 1956.

MOULTRIE CREEK BASIN--Continued

MOULTRIE CREEK NEAR ST. AUGUSTINE, FLA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

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

INDIAN RIVER BASIN
ELLIS CANAL NEAR INDIAN RIVER CITY, FLA.

LOCATION --At gaging station in Delephine Grant, Brevard County, near center of span on downstream side of bridge, 1 mile upstream from Indian River, and 1.5 miles south of Indian River City.
RECORDS AVAILABLE --Chemical analyses: September 1954 to August 1956
REMARKS --No discharge records available for this station.

Chemical analyses, in parts per million, October 1955 to August 1956

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)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
													Calcium magnesium	Non-carbonate			
Oct. 10, 1955...		9.7	0.02	209	37	336		242	285	658		2.1	674	475	2,830	7.6	55
Nov. 16.....		11	.03	198	44	333		248	252	660		1.8	675	472	2,800	7.8	45
Dec. 19.....		9.7	.00	197	41	320		254	250	628	0.4	2.3	660	452	2,740	7.6	45
Jan. 30, 1956...		8.9	.06	197	42	318		248	245	635		1.0	664	461	2,770	7.5	45
Mar. 12.....		8.8	.00	194	37	311		256	236	607		.4	636	426	2,690	7.7	50
Apr. 23.....		8.7	.04	196	32	307		264	229	590		.4	620	404	2,570	7.5	35
June 4.....		8.7	.03	182	40	270		270	200	590		.4	618	397	2,420	7.9	45
July 18.....		7.4	.01	184	46	274		281	200	586		.5	608	396	2,400	7.8	45
Aug. 28.....		9.4	.01	186	35	312		274	220	590		.5	608	384	2,360	7.8	45

INDIAN RIVER BASIN--Continued
CRANE CREEK AT MELBOURNE, FLA.

LOCATION.--At gaging station, 24 feet upstream from bridge on U. S. Highway 192, 1.5 miles west of City Hall in Melbourne, Brevard County, and 2.5 miles upstream from Indian River.

DRAINAGE AREA.--12.6 square miles.

RECORDS AVAILABLE.--Chemical analyses: November 1954 to August 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, October 1955 to August 1956

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)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
													Calcium	Non-carbonate			
Oct. 14, 1955...	22.9	10	0.12	82	17	76		165	51	179		0.1	274	140	915	7.5	65
Nov. 14.....	5.8	14	.08	124	21	52		234	51	180		1.1	412	204	1,720	7.7	47
Dec. 21.....			.09	134	21	97		264	60	250	0.4	.1	421	204	1,250	7.6	45
Jan. 27, 1956...	7.7	10	.03	120	31	105		223	77	278		.8	427	244	1,370	7.6	45
Mar. 12.....	4.9	12	.00	136	23	110		260	70	275		.1	434	221	1,400	7.4	45
Apr. 27.....	8.3	11	.10	128	22	108		210	74	280		.0	410	238	1,310	7.8	35
June 5.....	3.4	15	.01	168	8.0	119		268	65	300		1.2	452	332	1,410	7.9	40
July 18.....	6.5	20	.01	136	23	106		270	59	270		1.6	434	212	1,360	7.6	45
Aug. 31.....	3.9	16	.00	138	23	115		276	59	285		.4	439	213	1,410	7.8	30

INDIAN RIVER BASIN--Continued
NORTH CANAL NEAR VERO BEACH, FLA.

LOCATION --At gaging station at bridge on U. S. Highway 1, 3.9 miles north of Vero Beach, Indian River County.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1956.
REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 6, 1955...	7	8.1	0.00	54	10	40	48	158	27	75		0.1	292	176	46	528	7.6	55
Nov. 16.....	7	5.9	.04	63	8.0	48	48	175	30	83		1.0	325	190	46	561	8.0	50
Dec. 29.....	9	7.1	.01	66	13	52	52	178	40	102		.0	368	218	72	671	7.7	45
Feb. 15, 1956..	6	6.7	.02	56	10	45	45	154	35	92		.0	311	190	54	578	7.4	50
Mar. 28.....	5	6.2	.07	68	13	50	50	184	39	92		.0	325	203	68	565	7.7	50
May 12.....	6	6.3	.09	70	7.2	50	50	170	41	93		.0	332	204	64	602	7.9	45
June 22.....	4	9.7	.16	79	10	52	52	120	33	108		.1	391	238	74	709	8.1	45
Aug. 8.....	6	8.9	.02	66	11	46	46	184	35	86		.1	344	210	58	619	7.6	43
Sept. 22.....	42	13	.03	82	13	61	61	203	58	116		.6	444	258	92	784	7.6	55

MAIN CANAL AT VERO BEACH, FLA.

LOCATION --At gaging station, 8 feet upstream from dam and 0.6 miles northwest of Vero Beach, Indian River County.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1956.
REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 5, 1955....	22	12	0.03	86	14	63	63	221	53	122		0.1	459	272	91	802	7.9	65
Nov. 15.....	5.5	7.7	.04	84	14	67	67	224	48	125		.0	459	267	87	804	8.0	55
Dec. 28.....	8.8	5.7	.00	48	12	43	43	132	32	87		.0	293	170	62	548	8.0	45
Feb. 15, 1956..	44	18	.05	102	23	90	90	231	90	185		.0	622	349	160	1,110	7.2	45
Mar. 28.....	45	8.3	.02	100	31	125	125	232	96	255		.0	729	377	19	1,330	7.7	45
May 12.....	43	11	.01	106	22	102	102	264	76	200		.0	647	355	138	1,150	7.9	50
June 20.....	29	12	.03	100	23	116	116	220	88	230		.0	677	344	164	1,180	8.1	45
Aug. 7.....	43	18	.02	88	28	115	115	218	79	230		.3	665	334	156	1,190	7.7	45
Sept. 22.....	90	12	.05	62	12	53	53	153	54	98		.3	366	204	78	655	7.4	95

INDIAN RIVER BASIN--Continued
SOUTH CANAL NEAR VERO BEACH, FLA.

LOCATION --At gaging station, 20 feet upstream from bridge on State Highway 605, 2.5 miles south of Vero Beach, Indian River County.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1956.
REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium magnesium	Non-carbonate			
Oct. 6, 1955...	23	12	0.07	82	16	70		212	56	135		0.1	475	270	97	842	8.0	60
Nov. 16.....	53	14	.03	91	30	116		222	86	235		.2	681	350	168	1,230	7.9	45
Dec. 28.....	77	9.7	.00	86	27	107		198	91	213		.0	632	326	163	1,120	8.1	45
Feb. 15, 1956...	6	7.2	.03	58	12	41		185	33	80		.1	312	194	59	566	8.0	70
Mar. 28.....	5	7.0	.05	75	8.5	48		209	31	86		.1	359	222	50	651	7.7	60
May 12.....	6	8.4	.01	72	6.9	54		170	40	103		.0	368	208	68	653	7.8	65
June 20.....	4	9.4	.02	75	10	57		222	31	98		.1	390	228	46	699	7.7	45
Aug. 7.....	6	8.8	.02	55	16	65		192	42	126		.1	413	228	79	764	7.9	50
Sept. 23.....	36	14	.03	89	17	73		216	68	143		.0	511	252	114	911	7.7	50

ST. LUCIE RIVER BASIN

NORTH FORK ST. LUCIE RIVER AT WHITE CITY, FLA.

LOCATION.--At gaging station, 10 feet upstream from bridge on State Road 712 at White City, St. Lucie County, 1.7 miles downstream from confluence of Flamingo and Genmie creeks, and 4 miles south of Ft. Pierce.

RECORDS AVAILABLE.--Chemical analyses November 1954 to September 1956.

REMARKS.--Records of miscellaneous discharge measurements of maximum and minimum flow during tidal cycles for water year October 1955 to September 1956 are available in district office at Ocala, Fla.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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)	Hardness as CaCO ₃		Specific conductance (micro- mhos at 25°C)	pH	Color
													Calcium, magnesium	Non-carbonate			
Oct. 6, 1955....	47.5	14	0.01	110	24	110		244	134	193		0.1	373	173	1,200	7.8	40
Nov. 16.....	230	14	.00	109	35	158		242	140	295		.4	416	218	1,540	8.2	30
Dec. 29.....	257	10	.00	102	33	169		218	149	300		.0	390	212	1,500	7.9	30
Feb. 16, 1956...	32.6	9.5	.07	102	33	146		224	131	275		.0	390	208	1,470	7.5	45
Mar. 29.....	106	12	.00	115	26	190		223	159	320		.4	397	209	1,460	8.0	40
May 13.....	240	13	.03	120	27	152		214	151	290		.0	410	235	1,900	7.6	30
June 21.....	33.9	14	.01	107	32	174		227	141	315		.2	398	212	1,490	7.6	28
Aug. 8.....	--	17	.00	114	31	171		242	143	310		.1	412	214	1,570	7.6	23
Sept. 23.....	--	14	.03	88	17	83		193	101	147		.0	290	132	946	7.6	60

ST. LUCIE RIVER BASIN--Continued

RIM DITCH NEAR WHITE CITY, FLA.

(Formerly published as Diversion Canal near White City, Fla.)

LOCATION --At gaging station, 10 feet downstream from bridge on Ideal Holding Co. Road, and 12 miles west of White City, St. Lucie County.
 RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1956.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (calcu- lated)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium	Non- carbon- ate			
Oct. 6, 1955....	12.5	9.4	0.02	89	17	68		231	65	130		0.2	493	292	102	879	7.7	60
Oct. 12.....	12.22	8.6	.03	102	19	77		278	76	137		.2	558	332	104	971	8.1	55
Dec. 29.....	13.0	8.6	.00	104	39	233		228	182	390		.0	1,070	420	233	1,790	8.3	40
Feb. 16, 1956..	9.36	7.8	.02	108	41	202		224	145	385		.1	999	438	254	1,830	7.8	45
Mar. 29.....	3.84	10	.01	106	32	175		240	132	314		.3	887	396	200	1,580	7.7	50
May 13.....	17.4	75	.07	148	4.5	189		198	150	340		.0	937	388	226	1,630	7.6	45
June 21.....	6.82	11	.01	88	35	210		202	142	360		.1	946	364	198	1,670	7.6	45
Aug. 8.....	1.90	15	.00	101	52	248		232	273	576		1.0	1,438	240	198	2,460	7.6	45
Sept. 23.....	--	8.3	.05	56	22	106		127	75	198		.0	528	230	126	981	7.1	110

LAKE OKEECHEE AND THE EVERGLADES

HARNEY POND CANAL AT STATE HIGHWAY 78, NEAR MOORE HAVEN, FLA.

LOCATION --At bridge on State Highway 78, approximately 14.5 miles northeast of Moore Haven, Glades County.

RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1956.

REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 6, 1955...		6.2	0.10	19	2.6	9.3		48	9.0	21		0.1	91	58	19	173	7.1	150
Nov. 28, 1955...		5.0	.10	45	4.6	23		130	10	41		.2	200	132	26	350	7.9	95
Jan. 6, 1956...		4.5	.13	64	4.5	31		169	30	56		.1	274	182	43	486	7.7	120
Feb. 9, 1956...		2.2	.04	39	4.1	18		114	17	35		.0	167	114	27	321	7.3	110
Mar. 22, 1956...		4.0	.03	73	6.3	37		195	30	70		.0	352	208	48	579	7.5	95
Apr. 30, 1956...		1.5	.05	82	11	62		228	29	118		.0	416	250	82	779	7.6	95
June 14, 1956...		5.1	.03	79	7.5	56		220	19	106		.0	381	228	48	702	8.0	65
July 26, 1956...		7.2	.06	71	2.2	19		87	5	32		.1	129	88	16	284	7.6	150
Sept. 4, 1956...		9.2	.71	22	3.2	9.7		49	20	20		.2	109	68	28	190	7.6	150

LAKE OKEECHEE AND THE EVERGLADES--Continued

INDIAN PRAIRIE CANAL AT STATE HIGHWAY 78, NEAR OKEECHEE, FLA.

LOCATION --At bridge on State Highway 78, approximately 16 miles southwest of Okeechobee, Okeechobee County.

RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1956.

REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 6, 1955...		11	0.26	33	7.2	3.9		47	54	18		0.3	151	112	73	261	6.8	360
Nov. 28, 1955...		3.9	.15	29	5.3	11		73	29	20		.2	137	9.4	34	250	7.1	130
Jan. 6, 1956...		3.8	.18	47	5.8	21		123	36	34		.0	209	141	40	330	7.7	180
Feb. 9, 1956...		3.5	.07	44	6.4	18		110	42	29		.0	197	136	46	355	7.2	90
Mar. 22, 1956...		3.1	.05	28	6.4	12		123	38	21		.0	168	106	33	275	7.3	110
Apr. 30, 1956...		1.4	.07	29	14	21		114	38	31		.0	190	130	36	355	8.0	65
June 14, 1956...		1.4	.00	37	5.2	16		92	40	22		.0	167	114	38	301	7.5	50
July 25, 1956...		9.4	.11	32	4.1	15		79	33	22		.0	155	97	32	266	7.2	100
Sept. 4, 1956...		8.2	.44	13	3.3	6.7		22	26	11		.2	80	46	28	127	6.6	280

LAKE OKEECHOBEE AND THE EVERGLADES--Continued
ISTOKOCHA CANAL NEAR CORNWELL, FLA.

LOCATION.--At gaging station at bridge on U. S. Highway 98, 100 feet downstream from Seaboard Air Line Railroad bridge, 1.5 miles upstream from Kissimmee River, and 4.5 miles northwest of Cornwell Post Office, Highlands County.

DRAINAGE AREA.--24 square miles.

RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 6, 1955...	42	1.8	0.04	8.4	3.4	3.7	3.7	12	12	11		0.2	44	30	20	170	6.4	65
Nov. 25, 1955...	3	5.8	0.04	7.2	3.7	11	11	33	5.0	14		.2	62	29	2	120	6.9	30
Jan. 5, 1956...	.2	3.9	.27	14	3.2	17	17	58	8.2	20		.1	96	48	1	170	7.2	35
Feb. 9, 1956...	.1	2.7	.00	14	4.1	14	14	62	4.0	20		.2	90	52	1	186	7.3	40
Mar. 22, 1956...	0	17	.03	20	3.4	18	18	76	7.0	24		.0	126	64	2	206	7.2	45
May 1, 1956...	0	2.7	.01	19	4.0	25	25	80	8.8	31		.2	130	64	0	238	7.6	25
June 13, 1956...	2	4.6	.03	18	3.2	24	24	78	9.8	26		.3	124	58	0	221	7.3	15
July 25, 1956...	1.8	7.7	.00	20	4.4	26	26	95	10	28		.0	141	68	0	253	7.3	30
Sept. 11, 1956...	6.0	6.5	.09	10	3.2	10	10	29	2.0	24		.4	70	38	14	160	6.6	150

LAKE OKEECHEEBE AND THE EVERGLADES--Continued

KISSIMEE RIVER NEAR OKEECHEEBE, FLA.

LOCATION.--At gaging station at 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 1956.

Water temperatures: October 1953 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 136 ppm May 11-20; minimum, 70 ppm Nov. 1-10.

Hardness: Maximum, 56 ppm July 21-31; minimum, 24 ppm Oct. 11-20, Nov. 1-10.

Specific conductance: Maximum daily, 266 microhos June 16; minimum daily, 70.9 microhos Dec. 29.

Water temperatures: Maximum, 90°F July 20; minimum, 53°F Jan. 12.

EXTREMES, 1940-41, 1953-56.--Dissolved solids: Maximum, 136 ppm May 11-20, 1956; minimum, 51 ppm Oct. 21-31, 1953.

Hardness: Maximum, 56 ppm July 21-31, 1956; minimum, 12 ppm Oct. 11-20, 1953.

Specific conductance: Maximum daily, 266 microhos June 16, 1956; minimum daily, 42.4 microhos Oct. 18, 1953.

Water temperatures (1953-56): Maximum, 90°F July 20, 1956; minimum, 53°F Jan. 12, 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla. Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg-nestum	Non-carbonate			
Oct. 1-10, 1955.	802	6.0	0.07	5.9	2.6	8.1	0.6	20	3.8	13	0.2	0.0	74	25	9	88.0	6.4	100
Oct. 11-20.....	855	5.2	.11	5.5	2.6	8.1	.4	19	15	13	.2	.1	77	24	9	86.0	6.6	90
Oct. 21-31.....	754	5.0	.08	5.7	2.6	8.5	.4	18	3.2	14	.2	.1	76	25	10	88.0	6.4	90
Nov. 1-10.....	598	2.9	.07	5.5	2.5	8.4	.4	16	2.8	14	.2	.0	70	24	11	86.6	6.5	95
Nov. 11-20.....	570	5.4	.05	6.1	2.6	9.2	.4	20	2.8	14	.2	.0	79	26	10	93.6	6.6	90
Nov. 21-30.....	502	3.7	.05	5.9	2.6	8.1	.4	16	3.8	15	.2	.0	77	25	11	91.5	6.5	95
Dec. 1-10.....	487	2.5	.09	5.9	2.5	7.8	.4	17	5.5	14	.2	.0	74	25	11	89.5	6.5	90
Dec. 11-20.....	474	3.2	.06	6.3	2.3	7.8	.9	17	4.5	14	.2	.0	73	25	11	87.6	6.5	90
Dec. 21-31.....	444	3.0	.06	6.1	2.5	8.0	.4	18	5.5	14	.2	.0	74	26	11	89.5	6.6	95
Jan. 1-10, 1956.	425	7.0	.09	9.6	2.0	9.8	.4	24	4.5	22	.2	.1	82	32	12	104	7.0	50
Jan. 11-20.....	397	4.3	.05	7.2	2.4	9.8	.6	22	4.2	18	.2	.2	80	28	10	109.4	6.7	47
Jan. 21-30.....	366	5.0	.04	8.0	2.0	10	.6	24	4.8	19	.2	.2	86	26	8	106	6.7	45
Feb. 1-10.....	334	4.7	.03	8.0	2.4	10	.7	24	4.2	19	.2	.1	90	30	10	107	6.7	47
Feb. 11-20.....	334	5.5	.50	8.0	3.4	10	.8	26	5.0	20	.2	.2	89	34	13	112	6.7	50
Feb. 21-29.....	307	5.9	.25	8.0	2.9	11	.7	26	5.0	19	.2	.2	89	32	11	113	6.9	45
Mar. 1-10.....	283	4.4	.36	9.6	2.0	11	.7	28	4.8	22	.2	.1	92	32	9	114	6.8	47
Mar. 11-20.....	270	4.2	.07	8.8	2.4	11	.7	28	5.5	18	.2	.2	91	32	10	115	6.8	45
Mar. 21-31.....	258	4.1	.00	8.0	2.4	11	.7	24	5.2	16	.2	.0	94	30	10	112	6.8	45

Apr. 1-10, 1956.	186	4.6	0.01	8.8	2.9	11	0.7	28	5.2	18	0.2	0.1	98	34	11	117	7.0	50
Apr. 11-20.....	175	2.9	.04	8.8	2.9	11	.7	28	4.0	19	.2	.2	95	34	11	119	7.0	47
Apr. 21-30.....	152	2.6	.00	9.6	2.4	11	.7	26	5.2	19	.2	.0	92	34	12	121	7.0	45
May 1-10.....	128	7.7	.08	18	1.4	13	1.6	38	13	22	.1	.6	136	50	20	167	7.0	65
May 11-20.....	140	7.7	.08	18	1.4	13	1.6	38	13	22	.1	.6	136	50	20	167	7.0	65
May 21-31.....	83	5.8	.28	16	1.1	14	.8	39	9.2	21	.1	.5	105	44	12	148	7.0	55
June 1-10.....	80	5.4	.58	16	1.2	14	.8	39	10	21	.1	.7	132	45	13	152	7.0	65
June 11-20.....	114	8.5	.20	16	1.1	13	.8	37	11	21	.1	.4	108	44	14	149	7.0	55
June 21-30.....	103	18.5	.00	14	1.3	10	1.0	34	19.5	19	.1	.5	111	40	12	164	6.8	90
July 1-10.....	146	18.6	.32	14	4.3	12	1.4	49	19.5	21	.0	1.8	139	52	12	171	6.9	120
July 11-20.....	86	9.8	.16	15	4.5	14	1.0	54	10	22	.1	.6	130	56	12	162	6.8	70
July 21-31.....																		
Aug. 1-10.....	74	6.0	.16	14	3.9	13	.8	47	10	23	.1	.8	135	51	11	176	6.7	50
Aug. 11-20.....	299	5.6	.17	11	3.5	12	.8	37	10	21	.2	.9	114	42	10	156	6.8	55
Aug. 21-30.....	621	6.9	.39	13	2.9	9.0	1.1	26	17	16	.0	.4	103	33	10	130	6.5	150
Sept. 1-10.....	489	8.0	.38	11	3.0	11	.7	32	6.5	19	.0	.3	117	40	12	134	6.7	260
Sept. 11-20.....	304	6.5	.30	10	3.0	10	.6	33	6.8	18	.1	.0	106	38	9	129	6.7	180
Sept. 21-30.....																		
Average.....	326	5.6	0.16	9.9	2.5	11	0.7	29	7.0	18	0.2	0.3	97	35	12	122	--	80

312 SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS, OGEECHEE RIVER TO PEARL RIVER

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

KISSIMMEE RIVER NEAR OKEECHOBEE, FLA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	83	72	65	65	70	64	70	77	84	87	85	80
2	83	72	66	64	70	67	71	78	85	87	86	82
3	83	73	69	64	72	67	73	78	85	86	88	80
4	83	71	70	60	72	66	75	78	84	85	88	81
5	84	70	71	59	73	72	75	80	85	85	87	80
6	83	71	72	60	76	74	77	78	83	82	88	81
7	83	70	72	64	73	75	76	78	84	80	89	80
8	83	70	73	54	72	74	70	78	85	75	88	81
9	83	70	63	54	73	73	67	75	84	77	86	80
10	82	71	63	54	72	75	70	76	80	75	86	78
11	80	72	65	54	70	76	66	77	84	75	88	80
12	80	73	65	53	70	77	--	77	83	86	87	77
13	78	73	66	54	68	77	64	80	82	87	88	85
14	78	74	67	55	68	78	66	80	85	88	88	80
15	74	74	66	55	70	77	70	80	82	85	87	82
16	76	75	64	58	72	77	74	--	82	87	86	85
17	75	75	64	60	73	65	70	80	83	86	84	85
18	75	75	65	65	74	65	72	78	85	85	85	82
19	73	75	65	62	75	64	70	78	84	--	--	85
20	73	73	66	65	75	60	71	76	86	90	86	84
21	73	72	66	61	72	63	71	78	85	89	86	80
22	73	71	66	65	65	63	70	78	88	89	86	80
23	74	72	65	68	67	65	71	80	86	88	87	80
24	75	74	65	68	68	67	--	80	86	88	85	80
25	76	73	66	67	73	64	75	82	89	89	--	82
26	76	73	66	65	73	66	75	80	--	88	84	83
27	77	73	67	65	73	65	75	81	86	86	80	80
28	78	73	69	63	73	69	76	81	85	89	82	80
29	76	68	66	65	69	70	77	82	87	89	--	82
30	75	65	66	66	--	73	77	84	87	85	85	80
31	74	--	66	70	--	69	--	82	--	85	82	--
Average	78	72	67	61	71	70	72	79	85	85	86	81

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

ST. LUCIE CANAL AT LAKE OKEECHOBEE, FLA.

LOCATION.--At bridge on U. S. Highways 98 and 441, at outlet of Lake Okeechobee, three-quarters of a mile west of Port Mayaca, Martin County.
 RECORDS AVAILABLE.--Chemical analyses: March 1940 to February 1942, November 1954 to September 1956.
 EXTREMES, 1940-42.--Dissolved solids: Maximum, 297 ppm Sept. 21-30, 1940; minimum, 142 ppm Aug. 21-31, Nov. 1-7, 1941.
 Hardness: Maximum, 163 ppm Sept. 21-30, 1940; minimum, 102 ppm Aug. 1-10, 1941.
 Specific conductance: Maximum daily, 382 micromhos Sept. 21, 1940; minimum daily, 253 micromhos Aug. 26, 1941.
 REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium, mg./ml.	Non-carbonate			
Oct. 18, 1955....		7.3	0.00	50	7.1	35		151	28	55		0.1	286	154	30	462	7.5	65
Nov. 12,		4.8	.10	42	9.0	23		139	24	36		.1	207	143	28	374	7.5	45
Dec. 23,		6.6	.00	44	9.3	25		146	26	39	0.4	.0	222	148	28	400	7.7	25
Feb. 2, 1956....		7.8	.05	70	12	44		211	42	73		.0	353	224	51	642	7.7	40
Mar. 22,		6.8	.05	46	11	25		154	33	38		.1	236	160	34	418	7.9	45
May 10,		7.4	.01	61	12	25		194	36	42		.1	280	202	42	496	7.5	38
June 20,		8.6	.06	50	13	47		174	30	48		.1	283	178	36	486	7.6	25
Aug. 9,		11	.03	73	15	60		231	44	97		.4	414	244	54	717	7.8	40
Sept. 19,		11	.06	67	8.5	54		202	39	80		.1	360	202	36	623	7.6	110

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

ST. LUCIE CANAL AT LOCK NEAR STUART, FLA.

LOCATION.--At gaging station, 6 miles southwest of Stuart, St. Lucie County.

RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1956. Flow consists of leakage and lockage, generally less than 10 cfs.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium, as nearest	Non-carbonate			
Oct. 7, 1955...		9.7	0.00	71	4.6	31		212	26	44		0.1	290	196	22	499	8.0	45
Nov. 17.....		11	.02	41	33	38		243	31	63		.1	338	238	39	613	7.7	35
Dec. 30.....		7.0	.00	75	13	84		219	44	140	0.4	.0	471	240	61	841	8.1	45
Feb. 17, 1956...		7.6	.03	86	12	81		246	47	134		.0	482	264	62	882	7.7	40
Mar. 30.....		11	.04	92	12	65		266	45	110		.0	466	279	61	828	7.4	40
May 13.....		13	.01	100	30	213		278	82	370		.1	945	373	145	1,750	7.8	33
June 22.....		14	.02	103	53	356		274	116	640		.4	1,420	475	250	2,640	7.5	30
Aug. 6.....		14	.03	90	25	196		278	72	320		.3	854	328	100	1,500	7.6	38
Sept. 23.....		13	.02	86	14	96		271	41	156		.1	541	272	50	937	7.7	38

LAKE OKEECHOBEE AND THE EVERGLADES--Continued
WEST PALM BEACH CANAL AT CANAL POINT, FLA.

LOCATION.--At bridge on U. S. Highway 441, 200 feet downstream from gaging station in hurricane gate structure 5, at Lake Okeechobee, in Canal Point, Palm Beach County.

RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 18, 1955...	0	5.4	0.00	42	8.1	21		136	28	32		0.1	202	136	.27	334	7.8	35
Nov. 13.....	207	6.1	.01	42	8.9	22		146	30	36		.1	237	141	.30	403	7.7	25
Dec. 22.....	178	7.7	.36	43	11	26		147	30	40	0.4		230	153	32	404	7.5	23
Feb. 2, 1956...	181	6.6	.00	41	11	24		148	26	36		.0	218	148	26	387	7.7	29
Mar. 22.....	211	7.2	.01	49	12	26		169	34	39		.4	251	172	33	440	7.5	35
May 10.....	a-273	13	.05	58	16	30		208	36	48		.8	304	210	40	540	7.5	85
June 20.....	404	7.0	.02	49	11	28		167	30	42		.0	249	168	31	474	7.6	25
Aug. 9.....	60	7.2	.03	49	13	36		180	37	48		.7	280	176	28	484	7.8	28
Sept. 19.....	a-824	31	.10	127	41	102		369	153	150		.42	828	486	183	1,320	8.2	340

a Negative figures indicate flow toward Lake Okeechobee.

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

WEST PALM BEACH CANAL AT RANGELINE ROAD NEAR LOXAHATCHEE, FLA.

LOCATION.--At downstream side of bridge on State Highway 7, 5.3 miles east of Loxahatchee, Palm Beach County.
 RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1956.
 REMARKS.--No discharge records available for this station.

Chemical analyses in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 18, 1955...	18	20	0.01	74	18	119		286	47	164		2.5	586	268	24	1,010	8.1	110
Nov. 13, 1955...	22	23.0	.00	60	25	91		322	69	140	0.4	2.5	604	156	32	953	7.6	145
Dec. 22, 1955...	77	23	.00	94	25	91		322	69	140				338	74	1,020	7.8	150
Feb. 17, 1956...	a-95	16	.06	86	19	71		286	52	110		4.6	500	292	58	866	8.3	140
Mar. 21, 1956...	a-64	6.1	.03	56	17	33		188	39	61		1.1	306	210	56	541	7.5	40
Apr. 20, 1956...	a-138	7.2	.03	82	9.6	75		239	30	102		1.2	424	244	48	757	7.8	60
June 20, 1956...	a-26	13	.01	61	14	55		208	34	87		1	362	210	39	663	7.7	35
Aug. 9, 1956...	a-69	10	.02	85	13	98		291	38	142			532	266	27	929	8.0	65
Sept. 13, 1956...	a-242	7.4	.10	59	7.5	33		181	22	56		1.3	274	178	30	478	7.4	180

HILLSBORO CANAL AT BELLE GLADE, FLA.

LOCATION.--At gaging station at bridge on State Highway 717 in Belle Glade, Palm Beach County, 2 miles southeast of Lake Okeechobee.
 RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1956.
 REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 19, 1955...	18	20	0.00	86	34	292		410	111	381		2.1	1,130	354	18	1,940	8.2	110
Nov. 12, 1955...	22	12.6	.03	61	18	54		232	39	80	0.4	1.6	379	226	36	868	7.8	100
Dec. 23, 1955...	77	12	.03	61	18	54		232	39	80				226	36	868	7.8	100
Feb. 1, 1956...	a-95	16	.09	74	27	98		316	56	136		.3	563	296	36	993	7.6	150
Mar. 21, 1956...	a-64	6.1	.03	43	14	35		151	35	42		1.1	239	165	41	426	7.8	30
Apr. 20, 1956...	a-138	7.2	.03	60	18	27		200	51	59		3.9	334	224	60	590	8.0	65
June 20, 1956...	a-26	14	.04	61	21	47		241	38	74		1	374	238	41	674	7.6	75
Aug. 10, 1956...	a-69	10	.03	50	15	42		186	43	56			308	198	34	524	8.0	45
Sept. 20, 1956...	a-242	16	.04	122	28	60		408	94	83		1.7	606	420	85	972	7.7	170

a Negative figures indicate flow toward Lake Okeechobee.

LAKE OKEECHOBEE AND THE EVERGLADES--Continued
HILLSBORO CANAL AT RANGELINE ROAD, NEAR DEERFIELD BEACH, FLA.

LOCATION.--At bridge on U. S. Highway 441, 4.4 miles upstream from gaging station and 6.3 miles northwest of Deerfield Beach, Broward County.

RECORDS AVAILABLE.--Chemical analyses: October 1953 to August 1956.

REMARKS.--Records of discharge for gaging station near Deerfield Beach for water year October 1955 to September 1956 given in WSP 1434. No appreciable inflow or outflow between gaging station and sampling point except during periods of heavy local rain.

Chemical analyses, in parts per million, October 1955 to August 1956

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)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
													Calcium, mg./l.	Non-carbonate, mg./l.			
Oct. 5, 1955.....	65	15	0.04	86	22	123		330	60	170		0.9	305	34	1,110	8.0	130
Nov. 23.....	40	10	.01	82	14	117		280	48	170		.7	262	32	1,010	7.8	85
Jan. 5, 1956.....	30	11	.04	100	18	156		346	59	225	0.4	1.4	324	40	1,210	8.1	70
Feb. 17.....	30	14	.12	106	21	132		386	39	200		.1	351	34	1,270	7.8	90
Mar. 22.....	30	14	.07	100	19	144		358	47	211		2.1	328	34	1,270	7.7	65
May 9.....	30	10	.10	67	17	51		262	53	116		.1	237	22	822	7.8	50
June 21.....	30	11	.05	78	22	135		358	30	180		.0	285	0	1,100	8.0	55
Aug. 8.....	30	14	.02	101	15	136		366	40	190		.4	314	14	1,150	7.9	70

NORTH NEW RIVER CANAL AT SOUTH BAY, FLA.

LOCATION.--At bridge on State Highway 80, 410 feet upstream from gaging station in South Bay, Palm Beach County, and 2.4 miles south of Lake Okeechobee.

RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
													Calcium, mg./l.	Non-carbonate, mg./l.			
Oct. 19, 1955.....	285	14	0.02	68	23	136		284	66	179		0.6	259	28	1,090	8.0	90
Nov. 12.....	332	10	.04	46	19	44		186	48	61		.1	193	36	586	7.6	220
Dec. 23.....	376	8.0	.04	51	12	35		186	35	55		.7	177	39	486	7.8	40
Feb. 1, 1956.....	340	12	.01	56	19	63		210	58	86		.0	218	46	704	7.8	45
Mar. 21.....	207	6.1	.08	49	14	31		170	41	46		.2	180	40	476	7.6	45
May 10.....	494	7.6	.03	57	18	46		206	49	68		1.4	216	47	623	7.6	50
June 20.....	91	13	.02	82	20	49		241	40	74		.1	236	39	680	7.6	70
Aug. 2.....	291	10	.04	42	15	45		186	43	55		.5	192	36	508	8.1	45
Sept. 20.....	a 50	20	.04	124	44	129		536	145	122		9.1	490	51	1,220	7.9	230

a Estimated. Negative figures indicate flow toward Lake Okeechobee.

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

NORTH NEW RIVER CANAL AT HOLLOWAY LATERAL, NEAR FORT LAUDERDALE, FLA.

LOCATION.--About 50 feet above confluence with Holloway Lateral, 4 miles upstream from gaging station near Ft. Lauderdale and approximately 10 miles upstream from Ft. Lauderdale, Broward County.

RECORDS AVAILABLE.--Chemical analyses: July 1950 to June 1952, October 1953 to August 1956.

EXTREMES, 1950-52.--Dissolved solids: Maximum, 864 ppm Mar. 3-7, 1952; minimum, 269 ppm Mar. 6-10, 1951.

Hardness: Maximum, 438 ppm Feb. 6-10, 1952; minimum, 145 ppm Mar. 6-10, 1951.

Specific conductance: Maximum daily, 1,210 micromhos Mar. 6, 1952; minimum daily, 395 micromhos Apr. 22, 1952.

REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, October 1955 to August 1956

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 (micro-mhos at 25°C)	pH	Color
													Calcium	Non-magnesium	Calcium	Non-magnesium			
Oct. 17, 1955...	...	5.6	0.00	62	5.2	21	193	11	36	1.2	237	18	425	7.5	110				
Nov. 21.....	...	5.3	.00	57	4.1	24	179	10	38	1.2	214	12	395	7.6	90				
Dec. 27.....	...	3.6	.11	58	5.2	22	182	6.0	41	.6	227	17	412	8.1	90				
Feb. 13, 1956...	...	5.1	.03	60	6.4	24	192	12	41	.5	244	176	19	438	7.7	65			
Mar. 26.....	...	6.5	.10	66	12	40	223	31	61	.4	327	214	32	581	7.9	75			
May 7.....	...	7.9	.02	46	12	29	164	29	45	.1	250	164	30	453	7.4	45			
June 18.....	...	6.4	.01	58	13	25	197	21	48	.4	269	198	36	505	7.6	50			
Aug. 13.....	...	7.7	.04	56	13	39	206	33	52	.0	302	193	24	522	7.6	60			

SOUTH NEW RIVER CANAL AT DAVIE, FLA.

LOCATION.--At lock, 1.25 miles west of Davie, Broward County.

RECORDS AVAILABLE.--Chemical analyses: October 1953 to August 1956.

REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, October 1955 to August 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-magnesium			
Oct. 17, 1955.....		7.3	0.06	90	5.7	16		258	32	26		2.0	306	248	36	511	7.9	130
Nov. 21.....		7.3	.00	91	6.3	17		284	10	32	0.3	.3	304	253	20	542	7.8	90
Dec. 27.....		6.8	.05	88	7.4	17		272	14	35		.4	303	250	27	522	8.2	100
Feb. 13, 1956...		7.7	.02	90	7.2	18		282	13	34		.5	309	254	23	543	7.8	90
Mar. 19.....		7.0	.02	91	9.0	20		294	14	35		1.6	323	264	23	567	7.8	85
May 7.....		11	.07	77	7.8	24		255	17	35		.9	299	224	15	512	8.3	65
June 18.....		9.5	.02	90	10	14		283	13	35		.1	311	266	34	558	7.6	80
Aug. 13.....		9.4	.01	87	9.0	31		300	19	38		1.6	343	254	8	568	7.9	75

LAKE OKEECHOBEE AND THE EVERGLADES.--Continued

MIAMI CANAL AT LAKE HARBOR, FLA.

LOCATION.--At bridge on U. S. Highway 27, in Lake Harbor, Palm Beach County, a quarter of a mile south of hurricane gate structure 3 at Lake Okeechobee.
 RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1956.

REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 19, 1955...		11	0.22	78	17	40		256	57	58		0.1	387	264	54	652	7.5	180
Nov. 12.....		5.8	.04	46	11	30		156	32	44		.1	246	180	32	424	7.6	35
Dec. 23.....		7.3	.27	50	12	33		171	34	49		.3	270	174	34	471	7.7	40
Feb. 1, 1956...		5.5	.03	48	15	24		169	34	42		.1	252	181	43	460	7.7	32
Mar. 31.....		4.6	.10	41	12	29		141	36	43		.2	235	152	36	419	7.4	35
May 10.....		3.0	.03	94	25	36		274	93	62		9.4	457	338	113	784	7.5	150
June 20.....		4.5	.02	58	15	33		196	39	54		.2	301	206	46	545	7.6	40
Aug. 10.....		11	.02	46	14	34		294	44	60		2.2	420	286	48	677	8.2	120
Sept. 20.....		27	.06	111	46	138		404	121	180		16	871	474	94	1,400	8.0	280

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

MIAMI CANAL AT WATER PLANT, HIALEAH, FLA.

LOCATION.--At 54th Street Bridge, half a mile downstream from gaging station, at water plant in Hialeah, Dade County.
 RECORDS AVAILABLE.--Chemical analyses: March 1941 to February 1942; October 1953 to September 1956. Dade County.
 EXTREMES, 1941-42.--Dissolved solids: Maximum, 328 ppm Feb. 20-28, 1942; minimum, 282 ppm Sept. 21-30, 1941.
 Hardness: Maximum, 254 ppm Feb. 20-28, 1942; minimum, 207 ppm Sept. 21-30, 1941.
 Specific conductance: Maximum daily, 506 micromhos July 1, 1941; minimum daily, 405 micromhos Oct. 1, 1941.
 REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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	Non-carbonate			
Oct. 26, 1955...	742	6.5	0.00	78	7.6	8.9		255	6.0	21		0.4	254	226	17	448	7.8	90
Nov. 12.....	711	3.4	.02	83	4.1	11		259	7.0	20	0.3	.1	237	224	12	456	7.8	75
Dec. 23.....	660	4.9	.13	83	7.5	17		268	9.0	32		.3	286	238	18	507	7.9	75
Mar. 22, 1956...	850	5.1	.11	82	11	19		283	10	34		.4	301	250	50	535	7.8	90
May 24.....	840	3.0	.01	82	10	5.3		272	3.0	22		.1	259	246	22	487	7.7	65
June 20.....	a40	4.7	.01	84	9.8	8.3		278	5.0	25		.2	274	250	22	503	7.7	70
Aug. 16.....	a105	5.4	.02	86	11	27		299	24	34		.4	335	260	14	554	8.1	90
Sept. 12.....	395	6.8	.01	86	8.6	14		293	9.0	22		.5	291	250	10	502	7.8	100

a Stage-discharge relation indefinite because of operation of N.W. 36th Street dam; discharge computed on basis of 10 discharge measurements and record of dam operation.

LAKE OKEECHOBEE AND THE EVERGLADES--Continued
TAMIAMI CANAL AT BRIDGE 45, 27 MILES WEST OF MIAMI, FLA.

LOCATION.--At bridge on U. S. Highway 41, 27 miles west of Miami, Dade County.
RECORDS AVAILABLE.--Chemical analyses: October 1953 to August 1956.

REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, October 1955 to August 1956

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)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
													Calcium magnesium	Non-carbonate			
Oct. 20, 1955...		4.8	0.00	41	2.8	4.1		126	1.0	13		0.1	114	11	236	7.8	60
Nov. 16.....		8.2	.06	51	2.6	6.4		153	1.5	18	0.2	.0	138	13	293	7.5	65
Dec. 20.....		1.9	.00	64	3.5	192		192	1.0	21		.1	174	17	359	8.0	65
Feb. 15, 1956...		51	.02	72	5.9	8.8		220	5.0	26		1.2	204	24	425	7.5	50
Mar. 29.....		4.3	.01	120	6.9	7.8		368	5.0	24		5.4	328	26	635	7.6	65
May 15.....		19	.03	99	1.7	22		320	5.0	23		1.6	254	0	545	8.1	60
June 13.....		.6	.02	82	7.2	8.5		260	4.0	25		.7	234	21	473	7.9	55
Aug. 15.....		5.4	.03	87	3.6	16		260	2.2	22		.1	232	19	463	8.3	90

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

CALOOSAHATCHEE CANAL AT MOORE HAVEN, FLA.

LOCATION.--At gaging station at Moore Haven, Glades County, 0.5 miles downstream from hurricane gate and lock 1, at Lake Okeechobee Outlet and 15 miles upstream from lock 2.

RECORDS AVAILABLE.--Chemical analyses: March 1941 to February 1942, November 1954 to September 1956.

EXTREMES, 1941-42.--Dissolved solids: Maximum, 236 ppm Dec. 12-20, 1941; minimum, 38 ppm Sept. 1-10, 1941.

Hardness: Maximum, 167 ppm Dec. 12-20, 1941; minimum, 28 ppm Sept. 1-10, 1941.

Specific conductance: Maximum daily, 556 micromhos Apr. 1, 1941; minimum daily, 63 micromhos Sept. 11, 13, 1941.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs) ^a	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 (micro-mhos at 25°C)	pH	Color
														Calcium magnesium	Non-carbonate			
Oct. 6, 1955.....		5.2	0.05	32	6.8	13		97	21	25		0.1	151	108	28	271	7.3	110
Nov. 28.....		3.4	.03	38	11	17		126	24	35		.3	191	140	37	360	7.4	55
Jan. 6, 1956.....		4.6	.00	50	9.3	30		159	40	40		.3	252	163	33	417	7.6	45
Feb. 9.....	685	1.7	.03	50	11	31		166	34	46		.1	256	170	34	456	8.1	40
Mar. 22.....		27.7	.00	43	12	27		151	31	42		.0	258	157	33	426	7.5	35
Apr. 30.....			.01	39	12	40		140	42	54		.3	257	147	32	456	8.0	20
June 15.....		2.2	.02	30	12	40		114	42	52		.3	235	124	31	419	7.6	10
July 26.....		7.2	.00	44	8.3	23		142	16	43		.0	212	144	28	417	7.6	30
Sept. 4.....		11	.01	51	8.8	21		205	12	37		.0	252	188	13	455	7.7	95

^a On days for which no discharge is shown, flow consists of leakage and lockage (about 10 cfs).

LAKE OKEECHOBEE AND THE EVERGLADES--Continued
CALOOSAHATCHEE CANAL AT ORTONA LOCK NEAR LABELLE, FLA.

LOCATION.--At gaging station, 350 feet upstream from upstream end of lock chamber, 1.75 miles south of Ortona Station and 9.0 miles from Labelle, Hendry County.
RECORDS AVAILABLE.--Chemical analyses: November 1954 to September 1956.
REMARKS.--No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium, nesium	Non-carbonate			
Oct. 6, 1955.....		3.9	0.02	30	4.2	7.7		92	9.0	17		0.1	117	92	17	218	7.2	100
Nov. 28.....		6.8	.05	61	11	19		190	30	36		.2	258	197	42	461	7.5	90
Jan. 6, 1956.....		5.8	.03	68	13	37		218	54	49		.1	334	223	44	542	7.8	65
Feb. 9.....		5.2	.00	70	13	32		226	41	49		.0	321	228	43	575	7.6	60
Mar. 22.....		7.2	.00	57	12	32		193	33	48		.0	284	192	33	510	7.7	45
Apr. 30.....		5.5	.00	46	12	37		172	33	49		.1	268	164	24	468	7.4	25
June 15.....		5.6	.00	50	12	37		178	32	54		.0	279	174	28	502	7.6	25
July 26.....		7.5	.00	54	13	40		186	36	59		.0	302	188	34	541	7.8	45
Sept. 4.....		12	.01	58	12	36		204	28	54		.0	300	194	27	529	7.7	45

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

ORANGE RIVER NEAR FORT MYERS, FLA.

LOCATION --At old staff gage site, 1½ miles southeast of Buckingham, and 8 miles northeast of Fort Myers, Lee County.
 DRAINAGE AREA --83.4 square miles.
 RECORDS AVAILABLE --Chemical analyses: November 1954 to September 1956.
 REMARKS --No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium, mg-nesium	Non-carbonate			
Oct. 28, 1955		26	0.03	78	11	23		262	14	43		0.2	324	240	25	529	7.8	30
Nov. 30,		22	.03	76	9.8	23		261	12	37		.1	309	230	16	505	7.8	25
Dec. 30,		8.3	.01	82	10	30		248	35	50		.1	337	246	42	540	8.1	15
Jan. 31, 1956		9.3	.00	77	13	24		246	22	52		.1	318	246	44	568	7.8	25
Mar. 6,		7.5	.08	54	10	22		189	12	40		.2	239	176	21	428	8.0	22
Mar. 4,		8.1	.02	86	13	34		204	23	84		.0	387	268	69	702	7.8	35
May 3,		8.7	.02	86	13	41		244	23	84		.1	310	244	43	578	7.8	30
June 5,		9.0	.01	78	12	22		245	12	56		.1	310	244	43	578	7.8	30
July 3,		9.9	.02	79	9.5	40		257	14	69		.1	349	236	26	611	8.1	32
Aug. 2,		8.2	.01	79	7.5	38		250	17	62		.1	335	228	23	578	8.0	45
Sept. 1,		7.4	.02	51	7.5	19		169	9.0	36		.5	213	138	20	390	7.4	60
Sept. 24,		7.0	.02	62	7.7	26		203	11	46		.4	250	186	20	494	7.5	50

LAKE OKEECHOBEE AND THE EVERGLADES--Continued
MISCELLANEOUS ANALYSES IN LAKE OKEECHOBEE AND THE EVERGLADES IN FLORIDA

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (micro-mhos at 25°C)	pH	Color
														Calcium, non-magnesium	Carbonate			
ALLIGATOR LAKE NEAR ASHTON																		
Nov. 10, 1955...		0.2	0.01	1.8	1.0	4.0		5	0.5	9.0		0.0	19	9	4	49.9	5.7	42
Apr. 12, 1956...		1.2	.04	2.0	1.2	7.0		6	3.0	12		.4	30	10	5	58.6	5.8	45
July 17.....		1.3	.00	2.4	1.2	6.2		6	2.5	12		.1	29	11	6	63.8	6.3	12
HART LAKE NEAR NARCOSSEE																		
Nov. 9, 1955...		0.6	0.02	2.6	1.2	3.6		6	0.2	10		0.0	21	11	7	58.3	5.6	150
Apr. 12, 1956...		1.5	.02	4.1	1.2	4.2		6	4.2	12		.1	32	14	7	64.3	6.1	110
July 17.....		1.1	.02	4.0	.5	6.7		6	4.2	12		.1	32	12	7	67.3	5.9	35
EAST TOHOPEKALIGA LAKE AT ST. CLOUD																		
Nov. 10, 1955...		0.3	0.02	2.8	1.5	5.2		7	1.8	12		0.0	27	13	7	65.1	6.1	50
Apr. 10, 1956...		5.5	.16	7.6	3.2	10		6	26	16		.2	72	32	27	123	5.8	25
July 16.....		.8	.01	6.4	1.9	9.2		6	16	16		.1	53	24	19	115	6.7	20
TOHOPEKALIGA LAKE AT KISSIMEE																		
Nov. 10, 1955...		1.4	0.25	5.4	1.8	4.4		14	2.0	12		0.0	34	21	9	80.1	6.3	200
Apr. 11, 1956...		2.1	.11	9.6	2.9	9.7		30	8.0	17		.1	65	36	11	118	6.5	50
CYPRESS LAKE NEAR ST. CLOUD																		
Nov. 15, 1955...		2.7	0.07	3.6	1.9	5.2		10	4.0	11		0.3	34	17	9	73.2	6.4	65
July 23, 1956...		.7	.00	6.4	2.4	15		19	12	22		.3	68	26	10	118	7.0	20
LAKE HATCHINEHA NEAR HAINES CITY																		
Nov. 15, 1955...		4.2	0.11	5.6	2.9	3.4		18	4.0	10		0.2	39	26	11	77.8	6.7	95
July 24, 1956...		1.0	.00	9.6	3.6	8.3		26	14	14		.0	64	39	16	125	7.2	25
LAKE KISSIMEE NEAR LAKE WALES																		
Nov. 15, 1955...		4.4	0.09	5.6	2.7	3.5		18	3.5	10		0.3	39	25	10	78.2	6.7	110
July 27, 1956...		1.7	.02	9.6	2.7	11		25	14	17		.3	68	35	14	123	6.6	15
WEOHYAKPA-ROSALIE CANAL NEAR LAKE WALES																		
Nov. 15, 1955...		9.2	0.05	4.0	2.4	4.6		18	3.0	8.5		0.0	41	20	5	68.7	6.8	45
Apr. 24, 1956...		5.9	.01	5.6	2.7	4.1		22	3.5	9.0		.1	42	25	7	79.5	7.2	15
July 11.....		8.9	.02	5.6	2.2	8.3		23	4.5	12		.4	53	23	4	82.6	6.7	65

LAKE OKEECHOBEE AND THE EVERGLADES--Continued

MISCELLANEOUS ANALYSES IN LAKE OKEECHOBEE AND THE EVERGLADES IN FLORIDA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 (calculated)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-magnesium			
LAKE ARBUCKLE NEAR AVON PARK																		
Nov. 15, 1955.....		1.0	0.02	6.4	4.4	2.2		12	14	10		0.3	44	34	24	108	6.4	45
July 25, 1956.....		.7	.03	8.8	4.9	12		22	29	14		.3	81	42	24	141	6.6	25
EVERGLADES STATION 1-7 (SEC. 26, T. 45 S., R. 40 E.)																		
May 17, 1956.....		10	0.03	20	2.5	20		58	6.0	36		0.0	124	60	13	231	6.8	50
Sept. 18.....		3.2	.03	6.4	1.9	9.2		16	1.0	21		.9	52	24	11	109	6.5	150
EVERGLADES STATION 1-8 (SEC. 35, T. 45 S., R. 41 E.)																		
Feb. 7, 1956.....		16	0.01	120	31	271		429	82	410		2.4	1,140	427	76	2,050	8.0	90
Mar. 22.....		11	.12	102	17	153		306	63	241		.8	739	324	74	1,320	7.8	55
May 9.....		14	.03	133	11	62		408	18	112		.4	551	377	42	990	7.8	70
June 18.....		14	.02	122	7.2	55		366	20	94		.1	492	334	34	871	7.7	65
Aug. 8.....		13	.04	138	22	309		413	100	470		3.3	1,260	435	96	2,140	8.1	110
EVERGLADES STATION 1-9 (SEC. 19, T. 46 S., R. 41 E.)																		
May 17, 1956.....		10	0.03	34	2.2	17		88	1.0	40		2.2	149	94	22	293	7.0	45
Sept. 18.....		1.9	.07	8.0	1.5	4.8		10	1.0	18		2.3	42	26	18	97.4	5.7	180
EVERGLADES STATION 2-16 (SEC. 15, T. 47 S., R. 40 E.)																		
Jan. 31, 1956.....		2.2	0.07	43	15	66		177	23	101		0.9	338	169	24	653	7.5	130
June 15.....		14	.09	142	9.1	73		439	22	115		6.2	597	392	32	1,070	7.5	80
Sept. 7.....		13	.08	63	11	37		198	42	53		3.0	320	202	40	540	7.3	280

WITLACOCHEE RIVER BASIN
WITLACOCHEE RIVER NEAR HOLDER, FLA.

LOCATION.--At gaging station, 100 feet downstream from bridge, on State Highway 200, and 4.5 miles northeast of Holder, Citrus County.
DRAINAGE AREA.--1,710 square miles, approximately.
RECORDS AVAILABLE.--Chemical analyses: January 1950 to December 1951, September 1954 to September 1956.
Water temperatures: January 1950 to December 1951.
EXTREMES, January 1950 to December 1951.--Dissolved solids: Maximum, 275 ppm July 11-20; minimum, 119 ppm Sept. 21-30, 1950.
Hardness: Maximum, 191 ppm July 11-20, 1950; minimum, 65 ppm Sept. 21-30, 1950.
Specific conductance: Maximum daily, 430 micromhos July 16, 1950; minimum daily, 136 micromhos Sept. 28, 1950.
Water temperatures: Maximum, 82 F July 17, 1950; minimum, 56 F Jan. 9-12, 1951.
REMARKS.--Records of discharge for water year October 1955 to September 1956 given in NSP 1434.

Chemical analyses, in parts per million, November 1955 to September 1956

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 on evaporation at 180° C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25° C)	pH	Color
														Calcium	Non-magnesium carbonate			
Nov. 10, 1955...	498	3.6	0.06	40	4.3	4.9	0.4	105	22	8.0	0.1	0.1	181	118	31	240	7.2	110
Dec. 21.....	368	4.8	.08	48	4.8	5.7	.2	122	28	10	.1	.3	205	140	40	280	7.4	65
Mar. 22, 1956...	255	1.3	.04	50	5.9	6.7	.5	135	24	10	.4	.2	201	153	42	307	7.4	25
May 2.....	185	1.3	.01	44	7.0	5.7	.3	127	27	9.2	.2	.1	181	139	34	280	7.5	23
June 13.....	134	3.6	.01	39	5.9	5.7	.2	118	18	8.5	.2	.1	154	122	25	251	7.5	23
July 25.....	146	7.0	.00	39	4.7	5.5	.3	114	27	9.5	.3	.5	157	117	24	251	7.2	18
Sept. 10.....	265	6.3	.00	54	6.2	5.3	.5	119	60	10	.2	.3	238	160	61	332	8.0	15

SUWANNEE RIVER BASIN

ALAPAHA RIVER NEAR ALAPAHA, GA.

LOCATION.--Temperature recorder at gaging station near left bank on downstream side of bridge on State Highway 50, 2 miles east of Alapaha, Berrien County, and 6 miles upstream from Wilcox River.

DRAINAGE AREA--344 square miles.

RECORDS AVAILABLE.--Water temperatures: March 1953 to September 1956.

EXTREMES, 1953-56.--Water temperatures: Maximum, 84°F Aug. 26, 28, Sept. 1, 2; minimum, 43°F Jan. 11, 14, 15, 17, 18.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

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

SUWANNEE RIVER BASIN--Continued

SUWANNEE RIVER AT BRANFORD, FLA.

LOCATION --At gaging station at bridge on U. S. Highways 27 and 129 at Branford, Suwannee County, 10½ miles upstream from Santa Fe River.

DRAINAGE AREA --7,090 square miles, approximately.

RECORDS AVAILABLE --Chemical analyses, January 1954 to September 1956.

Water temperatures: January 1954 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 211 ppm Dec. 11-20; minimum, 74 ppm May 11-20.

Hardness: Maximum, 170 ppm Dec. 11-20, 21-31, Jan. 1-10, 11-20; minimum, 26 ppm May 11-20.

Specific conductance: Maximum daily, 331 micromhos Jan. 1; minimum daily, 54.9 micromhos May 14.

Water temperatures: Maximum, 83°F Aug. 11, 18; minimum, 55°F Jan. 9-11, 14.

EXTREMES, 1954-56.--Dissolved solids: Maximum, 224 ppm Aug. 11-20, Dec. 11-20, 1954; minimum, 74 ppm May 11-20, 1956.

Hardness: Maximum, 177 ppm Dec. 11-20, 1954; Jan. 1-10, 11-20, 1955; minimum, 26 ppm May 11-20, 1956.

Specific conductance: Maximum daily, 435 micromhos Dec. 13, 1954; minimum daily, 54.2 micromhos Jan. 10, 1954.

Water temperatures: Maximum, 84°F on several days during summer months; minimum, 52°F Jan. 12, 1954.

REMARKS.--Records of specific conductance of daily samples available in district office at Ocala, Fla. Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg./nestum	Non-carbonate			
Oct. 1-10, 1955.	3,102	10	0.32	36	3.5	2.4	0.9	103	18	7.0	0.2	0.7	189	104	20	217	7.3	190
Oct. 11-20.	2,583	13	.27	37	6.7	3.0	.6	124	16	7.5	.2	.1	205	120	18	251	7.4	190
Oct. 21-31.	2,170	11	.19	43	7.2	2.6	.6	142	17	6.8	.2	.0	205	137	21	281	7.5	160
Nov. 1-10.	1,947	10	.13	45	7.8	2.4	.6	154	19	5.5	.1	.0	205	144	17	296	7.7	110
Nov. 11-20.	1,855	9.9	.12	43	13	4.3	.4	160	17	5.0	.2	.0	193	161	30	296	7.6	92
Nov. 21-30.	1,743	11	.09	47	11	4.3	.4	159	17	5.8	.1	.0	195	162	32	303	7.6	80
Dec. 1-10.	1,700	10	.04	53	8.7	4.4	.4	170	20	6.0	.3	.2	203	168	29	319	7.8	37
Dec. 11-20.	1,656	11	.03	50	11	4.2	.4	172	21	6.0	.3	.2	211	170	29	325	7.8	35
Dec. 21-31.	1,613	11	.05	52	9.8	3.6	.4	172	22	6.0	.3	.3	209	170	29	327	7.8	25
Jan. 1-10, 1956.	1,572	11	.03	50	11	4.4	.4	174	20	6.0	.3	.2	209	170	27	329	7.8	25
Jan. 11-20.	1,554	11	.06	50	11	4.2	.4	174	21	5.0	.3	.3	210	170	27	325	7.8	25
Jan. 21-31.	1,731	11	.09	49	11	4.5	.4	168	22	6.0	.4	.3	207	168	30	278	7.8	15
Feb. 1-10.	1,896	9.7	.07	42	9.0	5.0	.4	140	20	7.0	.4	.3	191	142	27	284	7.7	45
Feb. 11-20.	2,764	10	.11	28	5.9	6.0	.6	92	11	9.0	.2	.1	145	94	19	203	7.4	100
Feb. 21-28.	4,094	8.9	.12	14	2.7	5.3	.8	44	5.8	9.0	.2	.2	149	46	10	114	7.0	110
Mar. 1-10.	4,344	11	.20	16	3.9	4.8	.8	54	5.8	9.0	.2	.2	106	56	12	128	7.2	120
Mar. 11-20.	4,199	7.7	.28	23	2.6	5.0	.8	68	6.8	10	.2	.2	120	68	12	132	7.4	110
Mar. 21-31.	4,366	6.8	.18	20	2.9	5.0	.8	64	6.8	9.0	.2	2.1	114	62	9	142	7.4	110

SUWANNEE RIVER BASIN--Continued

SUWANNEE RIVER AT BRANFORD, FLA.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
Apr. 1-10, 1956.	3,385	9.2	0.20	30	6.6	4.3	0.5	104	10	8.0	0.2	0.2	139	102	17	206	7.8	80
Apr. 11-20.....	2,795	8.9	.14	38	7.1	4.8	.5	128	14	8.0	.2	.2	166	124	19	252	7.8	55
Apr. 21-30.....	2,801	9.4	.16	34	6.6	5.3	.5	114	14	8.0	.3	.2	151	112	19	228	7.7	90
May 1-10.....	3,793	9.2	.21	24	5.6	5.7	.6	90	10	8.5	.4	.8	127	83	9	174	7.1	140
May 11-20.....	3,797	9.2	.24	24	5.6	5.9	.6	74	8.5	6.0	.4	1.2	144	103	10	166.9	7.5	130
May 21-31.....	6,105	10	.24	33	5.0	4.8	.6	114	8.8	7.0	.4	1.3	148	103	10	249	7.2	180
June 1-10.....	4,058	13	.06	44	7.1	5.1	.4	154	16	6.5	.4	.8	177	139	13	276	7.5	60
June 11-20.....	3,122	9.3	.02	47	8.3	4.6	.3	168	16	6.0	.4	.7	175	152	14	237	7.8	45
June 21-30.....	2,831	9.6	.03	46	10	4.8	.4	170	18	5.5	.4	.6	182	156	16	303	7.6	30
July 1-10.....	3,589	9.2	.11	34	7.5	4.9	.4	122	13	7.0	.4	.3	154	116	16	232	7.4	110
July 11-20.....	3,589	9.7	.14	36	7.3	4.8	.4	134	13	6.5	.4	.3	147	120	12	247	7.4	110
July 21-31.....	3,319	9.1	.16	36	7.3	4.8	.4	132	13	6.0	.4	.9	152	120	12	242	7.4	110
Aug. 1-10.....	3,238	8.9	.19	34	8.0	4.6	.4	127	13	6.5	.4	.9	156	118	14	238	7.4	110
Aug. 11-20.....	2,895	10	.17	36	8.5	4.6	.5	136	16	6.5	.4	1.1	166	125	14	246	7.6	140
Aug. 21-31.....	2,419	11	.04	44	9.2	4.4	.4	164	18	6.0	.4	.9	180	148	14	282	7.7	45
Sept. 1-10.....	2,710	11	.03	46	10.2	4.0	.4	172	20	5.5	.4	.8	185	153	12	303	7.6	45
Sept. 11-20.....	2,771	11	.04	46	10.2	4.0	.4	172	20	5.5	.4	.8	185	153	12	303	7.6	45
Sept. 21-30.....	2,096	14	.01	46	9.7	4.4	.4	172	20	5.0	.4	.9	191	155	14	305	7.7	35
Average.....	2,992	10	0.13	38	7.6	4.4	0.5	131	15	6.8	0.3	0.5	169	126	19	251	--	90

SUWANNEE RIVER BASIN--Continued

SUWANNEE RIVER AT BRANFORD, FLA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	80	67	63	59	63	60	--	75	76	78	80	79
2	80	67	63	59	65	63	--	76	75	78	80	79
3	76	69	63	58	66	63	--	76	75	78	82	78
4	76	65	68	59	67	63	--	76	76	79	82	79
5	76	64	68	58	69	65	--	75	75	78	82	80
6	79	65	66	61	69	67	--	75	75	78	82	80
7	79	64	67	63	66	68	--	75	75	79	82	80
8	77	65	65	59	65	63	--	75	76	80	82	80
9	76	64	64	55	65	63	--	72	77	80	82	75
10	74	65	59	55	65	64	--	73	79	78	81	74
11	77	66	59	55	65	65	65	73	78	79	83	76
12	75	62	60	58	63	66	65	73	77	79	81	75
13	78	70	57	56	64	67	67	75	76	79	80	76
14	74	69	58	55	64	--	68	74	78	82	81	76
15	71	70	63	58	64	--	70	75	78	81	81	78
16	70	73	57	60	69	--	71	75	78	80	80	79
17	70	71	58	58	66	--	70	74	78	80	--	71
18	69	70	59	59	68	--	69	75	77	80	83	76
19	67	70	62	62	68	--	68	75	78	80	82	78
20	70	67	63	60	69	--	69	75	78	80	80	76
21	70	68	64	58	65	--	68	76	78	79	79	77
22	69	67	63	59	64	--	68	75	78	80	77	78
23	70	66	61	--	64	--	69	75	79	81	79	76
24	71	68	63	60	64	--	70	78	79	82	80	76
25	71	66	65	60	64	--	65	76	78	82	80	75
26	69	66	69	59	63	--	69	74	79	81	80	71
27	71	67	68	--	64	--	72	75	79	81	80	72
28	70	68	67	60	65	--	72	75	77	80	80	73
29	70	62	63	63	61	--	--	76	73	81	79	74
30	69	58	69	67	--	--	73	76	78	80	79	75
31	66	--	60	64	--	--	--	79	--	80	80	--
Average	73	67	63	59	65	--	--	75	87	80	81	76

ESCAMBIA RIVER BASIN

ESCAMBIA RIVER NEAR CENTURY, FLA.

LOCATION.--At gaging station, 16 feet downstream from bridge, on State Highway 4, 1.2 miles downstream from Escambia Creek and 1½ miles east of Century, Escambia County, Florida.

DRAINAGE AREA: 3,817 square miles

RECORDS AVAILABLE: Chemical analyses: January 1952 to December 1953, September 1954 to September 1956.

Water temperatures: January 1952 to December 1953.

EXTREMES: Maximum, 1952 to December 1953.--Dissolved solids: Maximum, 101 ppm Sept. 11-20, 1953; minimum, 51 ppm Apr. 1-6, 9-10, 1952, Dec. 21-30, 1953.

Hardness: Maximum, 43 ppm Aug. 3, 6-10, 11-14, 1953; minimum, 6 ppm Feb. 15, 1953.

Specific conductance: Maximum daily, 178 micromhos Aug. 27, 1953; minimum daily, 22.4 micromhos Feb. 15, 1953.

Water temperatures: Maximum 98°F July 1, 1952; minimum, 35°F Dec. 30, 1953.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)		Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
															Calcium, magnesium	Non-carbonate			
Oct. 6, 1955.....	1,200	9.2	0.16	11	1.8	5.2	0.8	37	3.5	9.2	0.1	1.2	64	35	35	5	89.7	6.9	17
Nov. 18, 1954.....	954	9.4	.23	10	1.7	5.1	.6	34	2.5	9.5	.0	.5	59	32	32	4	91.8	6.9	14
Dec. 21, 1953.....	1,250	9.4	.23	8.8	1.3	4.9	.5	29	3.0	9.0	.0	.7	55	27	27	4	82.6	6.9	18
Feb. 8, 1956.....	6,290	8.9	.44	7.4	1.3	3.0	.6	23	6.0	6.2	.0	.8	66	24	24	5	65.1	6.8	90
Mar. 23, 1955.....	12,000	5.6	.23	5.6	1.0	2.9	.9	18	5.2	4.2	.6	.5	54	18	18	3	51.4	6.3	20
May 3, 1955.....	1,780	6.7	.30	12	1.1	4.5	.7	38	3.5	7.2	.3	.6	61	34	34	3	91.1	6.9	25
June 15, 1955.....	2,440	6.7	.07	8.4	1.5	4.7	.4	29	3.0	9.0	.2	.4	52	27	27	3	78.0	6.8	19
July 27, 1955.....	1,660	9.3	.29	10	1.8	4.8	.6	36	3.2	9.5	.2	.4	61	32	32	3	87.9	6.9	25
Sept. 6, 1955.....	1,110	9.4	.16	8.4	1.2	6.4	.6	28	2.5	13	.2	.3	59	26	26	3	87.2	7.0	20

ESCAMBIA RIVER BASIN--Continued

PINE BARREN CREEK NEAR BARTH, FLA.

LOCATION.--At gaging station, 10 feet downstream from Wiggins Bridge on private road, 0.3 mile upstream from Blue Water Creek, 2.2 miles northeast of Mount Calvary Camp Grounds, and 4 miles northeast of Barth, Escambia County.

DRAINAGE AREA.--75.3 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1952 to July 1956.

Water temperatures: March 1953 to April 1955.

EXTREMES, 1953-55.--Water temperatures: Maximum, 78°F Aug. 6, 7, 9, 10, 1954; minimum, 45°F Feb. 13, 14, 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Chemical analyses, in parts per million, October 1955 to July 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium magnesium	Non-carbonate			
Oct. 8, 1955.....	119	5.3	0.01	0.8	1.2	2.2	0.3	8	0.0	2.8	0.1	0.1	16	7	0	18.5	6.4	7
Nov. 18.....	61	6.1	.22	.6	.4	1.8	.2	6	.0	3.2	.1	.2	18	3	0	18.2	5.9	50
Dec. 24.....	62	7.1	.24	.6	.6	2.2	.2	5	.0	3.2	.1	.3	18	3	0	18.2	5.9	9
Feb. 8, 1956.....	108	5.6	.07	.6	.6	2.2	.2	5	.2	3.2	.0	.1	20	4	0	22.6	5.8	13
Mar. 23.....	94	1.7	.08	.6	.1	2.4	.4	5	.0	3.2	.0	.1	12	2	0	16.4	6.4	10
May 4.....	99	3.7	.12	.6	.1	2.3	.4	6	.0	2.8	.0	.0	13	2	0	16.5	6.2	15
June 15.....	148	4.4	.14	.8	.2	2.4	.5	4	1.0	3.5	.0	.1	22	3	0	20.8	5.7	18
July 28.....	80	6.5	.18	.8	.2	1.9	.2	6	.5	4.5	.4	.0	18	3	0	18.7	6.1	10

334 SOUTH ATLANTIC SLOPE AND EASTERN GULF OF MEXICO BASINS, OGEECHEE RIVER TO PEARL RIVER

MOBILE RIVER BASIN

ALABAMA RIVER AT SELMA, ALA.

LOCATION.--Temperature recorder at gaging station at Edmund Pettus Bridge on U. S. Highway 80 in Selma, Dallas County, 1 mile upstream from Valley Creek.

DRAINAGE AREA.--17,100 square miles, approximately.

RECORDS AVAILABLE.--Water temperatures: October 1955 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 85°F Aug. 7-11; minimum, 46°F Jan. 13-18.

REMARKS.--Only daily mean temperatures published since the maximum and minimum on the majority of days would be the same or indicating only one degree variation. Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Temperature (°F) of water, water year October 1955 to September 1956												
Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	--	63	54	50	50	56	58	65	78	83	81	82
2	--	63	53	49	50	56	58	65	78	83	83	81
3	--	63	53	49	49	56	59	65	77	83	84	81
4	--	62	53	49	50	56	60	66	76	83	84	81
5	--	61	54	49	51	56	60	66	76	83	84	81
6	--	61	55	49	51	56	61	66	76	82	84	81
7	--	61	55	49	50	57	62	66	76	82	85	81
8	--	61	55	49	50	58	62	66	77	81	85	81
9	--	60	54	49	51	58	62	66	77	80	85	80
10	--	60	52	48	51	57	62	67	78	80	85	79
11	--	60	51	48	52	56	62	67	78	80	85	77
12	73	59	47	52	56	62	68	78	80	80	84	76
13	73	60	50	46	52	57	62	70	78	80	84	75
14	73	61	50	46	51	58	62	71	78	80	83	75
15	72	62	50	46	51	59	62	72	78	81	83	76
16	71	63	50	46	52	59	62	73	77	81	83	77
17	70	64	49	46	53	59	62	73	77	81	83	77
18	69	63	49	46	54	59	62	73	77	81	83	77
19	68	62	49	47	55	59	62	73	78	81	83	77
20	67	61	49	47	55	58	62	73	79	82	83	77
21	66	60	49	47	56	57	62	74	79	81	82	76
22	66	59	49	47	55	56	62	75	79	80	81	75
23	66	59	49	47	55	56	62	76	80	80	80	75
24	66	59	50	47	56	56	62	77	80	80	80	75
25	66	60	51	47	56	56	62	77	81	80	80	73
26	66	60	52	47	56	56	62	77	82	81	80	70
27	66	59	53	47	56	56	62	77	83	81	80	68
28	65	58	53	47	56	57	63	77	83	81	80	67
29	65	56	53	48	56	57	63	76	83	81	80	67
30	65	55	52	49	--	58	64	76	83	81	80	67
31	64	--	51	49	--	58	--	77	--	81	81	--
Average	--	60	52	48	53	57	62	71	79	81	82	76

MOBILE RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN MOBILE RIVER BASIN IN ALABAMA

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (residue on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg- mhos/l	Non-carbonate			
BUTTAHATCHEE RIVER NEAR HAMILTON																		
Feb. 7, 1956...	1,270	5.6	0.02	0.8	0.9	1.2	0.6	6	1.0	2.2	0.1	0.9	21	6	1	21.4	6.0	15
May 17,	180	7.2	.00	1.2	2.1	1.3	1.3	9	.8	1.5	.0	.4	24	12	4	28.8	6.0	10
Sept. 11,	41	6.5	.85	3.0	1.0	1.4	1.1	18	2.0	2.0	.4	.9	30	12	0	33.7	7.2	50
LUXAPALILA CREEK NEAR FAYETTE																		
Feb. 7, 1956...	386	8.0	0.07	2.0	0.6	1.9	0.6	6	4.2	3.0	0.2	1.7	30	7	2	31.2	5.9	20
May 17,	79	8.9	.00	1.4	.7	1.8	.8	8	.8	2.0	.0	.8	31	6	0	27.0	6.1	5
Sept. 11,	30	9.0	.14	.8	.6	1.6	.7	16	2.0	2.0	.1	.9	26	4	0	20.7	6.7	25
COALFIRE CREEK NEAR PICKENSVILLE																		
Feb. 8, 1956...	634	8.5	0.10	2.0	0.7	1.9	1.2	8	0.0	2.5	0.1	0.0	33	8	1	31.8	5.8	55
May 15,	42	12	.33	2.2	1.3	2.0	.9	13	.8	2.0	.0	.4	35	11	0	33.7	6.3	45
Sept. 11,	9.4	8.7	.11	1.6	.9	1.3	.9	11	.5	2.9	.0	.2	22	8	0	26.5	6.9	15
LUBBUB CREEK NEAR CARROLLTON																		
Feb. 8, 1956...	610	7.7	0.01	2.0	0.4	1.9	1.0	6	0.2	2.8	0.3	0.1	35	7	2	28.3	5.7	45
May 15,	31	10	--	2.6	1.2	2.1	.9	14	1.0	2.2	--	.0	45	12	0	37.3	6.1	100
Sept. 11,	5.4	9.5	b1.0	2.0	1.2	1.9	1.3	18	3.5	2.8	.6	.5	39	10	0	33.1	6.8	55
SIPSEY RIVER NEAR FAYETTE																		
Feb. 7, 1956...	3,010	6.8	0.04	2.8	1.3	1.9	1.0	6	9.8	3.0	0.1	0.1	36	12	7	41.8	5.9	25
May 17,	27	6.8	.38	3.6	2.2	1.9	1.0	12	9.5	2.0	.9	.1	36	12	2	41.8	6.1	25
Sept. 11,	17	6.1	.38	3.6	2.2	1.9	1.0	18	11	2.0	.3	.3	36	18	3	50.2	7.1	25
SIPSEY RIVER NEAR ELROD																		
Feb. 8, 1956...	2,570	7.7	0.04	2.6	0.6	1.6	1.2	6	4.5	2.8	0.1	0.0	37	9	4	35.0	5.6	40
May 17,	790	4.6	.27	3.2	1.2	1.4	.7	15	6.8	3.0	.6	.3	29	13	0	42.4	6.3	5
Sept. 11,	33	6.8	.27	3.6	1.9	2.2	1.3	18	12	2.5	.3	.3	41	17	2	55.2	7.1	35
NOXUBEE RIVER NEAR GEIGER																		
Feb. 8, 1956...		6.2	0.12	14	1.0	2.1	2.0	44	6.0	2.0	0.2	0.3	86	39	3	91.9	6.7	90
May 14,		8.8	.00	19	1.8	4.8	1.2	64	1.1	4.8	.6	.8	87	55	2	133	7.0	5
Sept. 10,		6.3	.00	30	1.6	5.0	1.2	100	4.5	6.0	.0	.1	101	82	0	181	7.5	15
a Calculated from determined constituents. b Colloidal iron.																		

a Calculated from determined constituents.

b Colloidal iron.

MOBILE RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN MOBILE RIVER BASIN IN ALABAMA--Continued
Chemical analyses, in parts per million, water year October 1955 to September 1956--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 (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Calcium	Non-carbon- ate			
TOMBIGHEE RIVER NEAR GAINESVILLE																		
Feb. 8, 1956...		5.2	0.14	12	1.0	1.8	1.6	38	0.8	2.0	0.1	0.1	78	34	3	80.5	6.7	80
May 14.....		8.6	.02	14	.9	2.0	.9	47	6.2	3.0	.6	.5	63	38	0	91.6	7.0	5
Sept. 10.....		4.3	.00	14	1.2	5.7	1.5	51	5.8	6.8	.1	.4	72	39	0	113	7.0	10
HURRICANE CREEK NEAR HOLT																		
Feb. 8, 1956...	367	7.3	0.03	2.2	1.6	1.8	0.4	4	12	2.2	0.1	0.3	38	12	9	40.8	5.6	10
May 18.....	36	9.2	.00	4.6	4.0	1.8	.8	7	27	1.8	.0	.3	67	28	22	78.6	6.1	5
Sept. 11.....	6.7	6.8	.00	8.0	7.1	1.9	1.3	10	49	2.2	.1	.3	89	49	41	126	6.0	9
NORTH RIVER NEAR TUSCALOOSA																		
Feb. 7, 1956...	2,060	8.4	0.06	1.6	1.0	2.1	0.6	7	0.0	2.8	0.1	0.0	33	8	2	29.1	6.2	40
May 18.....	159	8.9	.05	1.8	1.2	2.2	.8	13	.8	2.0	.0	.4	32	10	0	34.4	6.5	15
Sept. 11.....	26	8.2	.34	1.5	1.0	1.5	1.2	16	2.0	2.2	.1	.4	33	8	0	27.0	6.8	55
FIVE MILE CREEK NEAR GREENSBORO																		
Feb. 8, 1956...	236	8.9	0.10	1.8	0.5	1.6	0.6	5	0.2	3.0	0.1	0.2	28	7	2	31.6	5.7	40
May 14.....	13	9.2	.78	2.4	.7	1.5	.6	12	5	2.9	.6	1.1	35	7	0	26.6	6.0	50
Sept. 10.....	3.6	11	.75	1.8	.6	1.2	.9	10	2.5	3.2	.0	.2	41	7	0	26.4	6.2	
BLACK WARRIOR RIVER NEAR EUTAW																		
Feb. 9, 1956...		6.0	0.08	7.6	2.6	5.8	1.6	14	27	4.0	0.1	0.4	69	30	18	101	6.3	35
May 14.....		.0	.00	9.6	2.4	.9	.0	26	24	7.0	.6	.2	73	34	12	118	7.9	5
Sept. 10.....		6.0	.00	14	4.9	27	2.1	61	46	16	.2	.3	147	55	5	251	6.9	5

PEARL RIVER BASIN

PEARL RIVER AT JACKSON, MISS.

LOCATION.--Temperature recorder at gaging station on left bank at downstream side of bridge on U. S. Highway 80 (old) at eastern city limits of Jackson, Hinds County, 0.2 mile upstream from Illinois Central Railroad bridge, a quarter of a mile upstream from Town Creek, and 4½ miles upstream from Richland Creek.

DRAINAGE AREA.--3,100 square miles, approximately.

RECORDS AVAILABLE.--Water temperatures: January 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 86°F on several days during July and August; minimum, 40°F Jan. 14.

EXTREMES, 1954-56.--Water temperatures: Maximum, 92°F Aug. 17, 18, 1954; minimum, 40°F Jan. 14, 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1434.

Temperature (°F) of water, water year October 1955 to September 1956
[Recorder with temperature attachment, 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.....	77	77	58	53	48	47	49	48	50	50	58	58	62	62	69	68	77	77	85	85	82	81	82	80
2.....	77	77	60	57	47	47	48	47	51	50	58	58	62	62	70	69	77	77	85	85	82	82	82	80
3.....	77	76	60	54	49	47	49	48	52	51	58	58	62	62	71	70	77	77	85	85	83	83	82	79
4.....	76	75	54	51	49	49	49	48	52	52	58	58	63	62	71	71	77	77	86	85	84	83	81	79
5.....	76	74	52	50	51	51	49	48	52	52	58	58	63	63	71	71	77	76	86	85	84	83	80	79
6.....	77	75	56	53	51	51	49	48	52	52	58	58	64	63	72	71	77	77	86	85	85	83	80	79
7.....	76	74	56	54	51	50	50	49	52	51	59	58	65	64	72	71	77	77	85	85	86	85	80	79
8.....	74	63	54	51	50	50	50	48	51	51	59	58	66	65	73	72	77	77	85	85	86	85	80	79
9.....	69	65	52	50	50	49	48	48	51	51	59	58	66	66	74	73	78	78	85	84	86	86	78	76
10.....	70	67	53	52	49	47	47	45	51	51	59	58	66	66	74	74	79	78	85	84	86	86	78	75
11.....	70	67	54	51	47	46	45	44	51	51	59	58	66	66	75	74	79	79	85	84	86	86	77	74
12.....	69	66	58	54	46	45	44	43	51	51	60	59	66	65	74	74	79	79	85	84	86	85	76	74
13.....	68	67	60	58	45	44	43	41	51	50	60	60	65	65	75	74	79	78	85	84	86	84	77	74
14.....	67	62	62	60	44	44	42	40	50	50	60	59	65	65	76	75	78	77	85	84	85	83	78	75
15.....	63	60	64	62	45	44	43	41	51	50	60	60	65	65	76	76	77	76	85	84	84	82	78	76
16.....	63	60	64	64	45	44	44	43	52	51	60	60	66	66	76	76	77	76	85	84	85	82	78	76
17.....	63	59	64	59	44	43	44	43	52	52	60	59	66	66	76	75	77	77	86	84	85	83	78	76
18.....	60	58	59	56	46	43	44	43	53	52	59	58	66	66	75	75	78	77	86	84	85	84	78	76
19.....	59	56	57	56	47	46	44	44	54	53	59	58	66	66	76	75	78	78	85	84	85	84	77	75
20.....	59	56	56	53	47	46	44	44	55	54	59	58	66	66	77	76	79	78	85	84	85	84	75	74
21.....	60	57	54	52	46	46	45	44	56	55	59	58	66	66	78	77	80	79	85	82	84	80	75	72
22.....	61	58	57	54	46	45	45	45	56	56	59	58	66	66	78	77	81	80	83	81	81	78	75	74
23.....	62	59	59	57	47	45	45	45	56	56	58	58	66	66	78	78	82	81	83	80	80	77	75	74
24.....	62	60	58	57	50	47	45	45	56	56	58	58	66	66	78	78	82	83	83	80	80	78	75	74
25.....	60	55	57	56	52	50	45	44	57	56	58	58	66	66	78	78	--	--	83	81	81	79	75	72
26.....	57	53	56	55	53	52	44	43	57	57	58	58	66	66	79	78	--	--	84	82	81	80	74	70
27.....	57	53	55	54	53	53	44	43	57	57	58	58	66	66	78	77	--	--	84	82	80	78	72	70
28.....	60	56	54	52	53	53	47	44	57	57	58	58	67	66	77	77	--	--	83	82	79	78	72	70
29.....	59	56	52	50	53	53	49	47	57	57	59	58	67	67	77	77	--	--	83	82	80	78	72	70
30.....	57	53	50	48	53	52	50	49	--	--	59	58	67	67	77	77	--	--	83	82	81	79	72	71
31.....	54	50	--	--	52	49	50	50	--	--	62	59	--	--	77	77	--	--	82	80	81	80	--	--
Average.....	66	63	57	54	49	48	46	45	53	53	59	58	65	65	75	75	--	--	84	83	83	82	77	75

OHIO RIVER MAIN STEM

ALLEGHENY RIVER AT RED HOUSE, N. Y.

LOCATION.--At highway bridge about 400 feet downstream from gaging station at Red House, Cattaraugus County.

DRAINAGE AREA.--1,690 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1956.

Water temperatures: October 1953 to September 1956.

EXTREMES, 1955-56.--Specific conductance: Maximum, 1,260 micromhos Oct. 7; minimum daily, 70.0 micromhos Mar. 6.

Chloride concentration: Maximum, 308 ppm Oct. 7; minimum, 7.2 ppm Mar. 10.

Water temperatures: Maximum, 80°F July 3; minimum, freezing point Dec. 22, Jan. 8, Feb. 22.

EXTREMES, 1953-56.--Dissolved solids: Maximum 669 ppm Oct. 1-3, 6-9, 1954; minimum, 75 ppm Mar. 1-10, 1955.

Hardness: Maximum, 277 ppm Sept. 26, 1955; minimum, 28 ppm Mar. 2-5, 1954.

Specific conductance: Maximum daily, 1,510 micromhos Sept. 26, 1955; minimum daily, 70.0 micromhos Mar. 6, 1956.

Chloride concentrations: Maximum, 376 ppm Sept. 26, 1955; minimum, 7.2 ppm Mar. 10, 1956.

Water temperatures: Maximum, 83°F July 5, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Record of discharge for water year October 1955 to September 1956 given in WSP 1435.

Specific conductance (micromhos at 25°C), chloride and pH, water year October 1955 to September 1956

Day	October				November				December			
	Specific conductance (micromhos at 25°C)	Chloride		pH	Specific conductance (micromhos at 25°C)	Chloride		pH	Specific conductance (micromhos at 25°C)	Chloride		pH
		concentration (ppm)	tons per day			concentration (ppm)	tons per day			concentration (ppm)	tons per day	
1.....	1,210	295	169	7.2	208	34	364	7.0	208	34	260	6.9
2.....	1,040	245	131	7.5	217	35	308	7.0	219	36	254	7.0
3.....	976	227	108	7.5	234	36	277	7.1	228	38	268	7.1
4.....	965	224	99	7.3	247	41	291	7.1	128	18	297	6.9
5.....	912	208	92	7.4	255	42	271	7.2	143	20	511	8.4
6.....	932	214	131	7.2	264	45	262	7.1	150	23	407	6.8
7.....	1,260	308	349	7.3	265	43	225	7.3	163	25	330	7.1
8.....	1,040	252	755	6.6	271	46	220	7.2	187	31	347	6.9
9.....	657	150	567	6.6	313	57	255	7.2	185	29	283	6.9
10.....	547	120	315	6.8	316	58	249	7.2	199	32	270	7.4
11.....	505	108	203	7.1	328	62	261	7.2	207	32	238	7.0
12.....	539	114	172	7.1	323	59	252	7.3	214	32	213	7.3
13.....	532	112	154	7.2	330	60	246	7.4	225	35	215	7.2
14.....	499	107	994	6.4	262	48	367	7.1	253	41	227	7.5
15.....	161	23	987	6.6	227	38	367	7.1	--	--	--	--
16.....	138	18	710	6.5	125	16	471	6.9	260	42	170	7.2
17.....	143	18	544	6.7	138	14	707	7.4	317	56	234	7.1
18.....	170	27	651	6.6	121	15	506	6.8	299	52	225	7.3
19.....	190	31	503	6.6	156	19	433	7.5	310	54	226	7.4
20.....	208	34	408	6.7	152	21	361	7.0	301	51	162	7.5
21.....	213	34	322	7.0	152	23	352	7.3	316	54	166	7.3
22.....	227	37	297	6.7	224	35	423	8.2	326	57	179	7.1
23.....	251	43	291	6.8	190	31	377	7.1	356	65	214	7.1
24.....	256	44	297	6.9	189	27	506	8.0	376	71	278	7.4
25.....	224	34	497	7.0	156	21	343	7.3	184	28	495	6.7
26.....	196	31	491	6.9	171	26	355	7.3	160	23	362	7.0
27.....	210	31	429	7.1	211	30	360	8.5	173	26	246	7.2
28.....	212	33	371	7.0	174	26	286	7.2	207	32	216	7.2
29.....	216	34	322	7.0	192	31	292	7.2	244	40	248	7.3
30.....	225	37	411	6.9	199	32	270	7.1	247	42	255	7.2
31.....	165	21	281	7.1	--	--	--	--	248	40	211	7.4
Total .	484	104	376	--	220	36	342	--	234	39	267	--

OHIO RIVER MAIN STEM--Continued

ALLEGHENY RIVER AT RED HOUSE, N. Y.--Continued

Specific conductance (micromhos at 25°C), chloride and pH, water year October 1955 to September 1956--Continued

Day	January				February				March			
	Specific conductance (micro-mhos at 25°C)	Chloride		pH	Specific conductance (micro-mhos at 25°C)	Chloride		pH	Specific conductance (micro-mhos at 25°C)	Chloride		pH
		concentration (ppm)	tons per day			concentration (ppm)	tons per day			concentration (ppm)	tons per day	
1.....	258	43	209	7.4	538	111	192	7.7	173	28	318	7.0
2.....	287	50	209	7.3	490	100	173	7.6	171	28	423	6.9
3.....	281	48	206	7.2	511	104	177	7.6	128	18	434	6.8
4.....	297	53	223	7.4	515	105	170	7.6	131	19	463	6.8
5.....	335	56	212	8.0	469	98	159	7.5	129	17	344	7.0
6.....	328	58	204	7.8	519	107	173	7.5	94.0	12	570	6.7
7.....	341	63	201	7.5	460	92	242	7.4	70.0	7.3	684	6.6
8.....	356	66	157	7.5	363	71	282	7.2	70.4	7.5	921	6.5
9.....	326	54	111	7.5	304	56	275	7.2	72.1	7.5	846	6.6
10.....	380	70	193	7.9	294	54	315	7.1	72.1	7.2	653	6.7
11.....	393	76	263	7.4	269	50	316	6.8	94.4	11	713	6.6
12.....	382	76	259	7.2	288	50	305	7.1	92.8	10	454	6.8
13.....	376	73	215	7.5	247	44	253	7.1	107	12	382	6.9
14.....	363	66	153	7.4	261	46	224	7.1	122	16	405	6.8
15.....	356	63	122	7.6	262	47	260	7.2	131	17	352	7.0
16.....	376	71	146	7.3	268	48	337	7.0	146	22	367	7.0
17.....	419	80	160	7.5	235	40	265	7.2	155	22	299	6.9
18.....	408	76	140	7.5	228	38	253	7.2	167	25	323	7.1
19.....	426	81	131	7.5	240	42	318	7.3	171	24	267	7.2
20.....	433	83	139	7.3	209	35	274	7.1	182	26	249	7.1
21.....	483	96	171	7.7	196	32	207	7.1	211	32	278	7.3
22.....	496	101	185	7.5	216	35	180	7.1	195	28	234	7.4
23.....	478	97	173	7.4	234	40	173	7.3	214	32	257	7.4
24.....	492	97	162	7.7	287	47	190	7.3	219	34	267	7.3
25.....	475	94	147	7.7	189	31	314	7.0	211	32	245	7.4
26.....	523	106	155	7.8	130	19	575	6.7	212	32	234	7.3
27.....	483	95	139	7.6	119	16	404	6.8	233	38	303	7.3
28.....	534	110	160	7.7	137	19	353	7.1	219	35	294	7.3
29.....	533	107	156	7.6	156	23	320	7.1	203	30	242	7.3
30.....	524	108	166	7.6	--	--	--	--	210	33	290	7.3
31.....	568	122	204	7.6	--	--	--	--	207	31	266	7.3
Total..	410	79	176	--	296	55	268	--	155	22	399	--
Day	April				May				June			
	Specific conductance (micro-mhos at 25°C)	Chloride		pH	Specific conductance (micro-mhos at 25°C)	Chloride		pH	Specific conductance (micro-mhos at 25°C)	Chloride		pH
		concentration (ppm)	tons per day			concentration (ppm)	tons per day			concentration (ppm)	tons per day	
1.....	216	34	262	7.1	157	22	271	7.1	245	42	434	7.0
2.....	175	24	259	7.5	166	25	268	7.4	201	33	364	7.0
3.....	121	16	510	7.4	173	28	322	7.4	172	26	300	7.4
4.....	76.4	7.5	431	6.5	182	29	312	7.1	145	20	325	7.1
5.....	79.2	8.7	540	6.6	187	30	292	7.8	166	25	340	7.2
6.....	83.9	9.6	505	6.6	191	29	266	7.8	171	27	308	7.7
7.....	89.3	10	500	6.7	186	30	309	7.3	178	26	247	7.1
8.....	92.6	12	567	6.7	180	29	303	7.3	184	28	221	7.2
9.....	93.3	11	428	6.7	187	28	253	7.3	196	28	191	7.3
10.....	101	13	418	6.9	172	30	440	6.9	215	34	201	7.4
11.....	117	10	257	6.9	146	20	376	6.6	224	34	179	7.6
12.....	126	16	329	7.0	111	14	435	6.4	236	36	172	7.8
13.....	139	20	332	6.9	85.2	8.5	450	6.4	273	46	186	8.0
14.....	148	20	284	7.2	104	11	552	6.5	304	52	188	8.0
15.....	160	23	304	7.0	104	12	463	6.6	295	48	171	7.4
16.....	127	17	361	6.8	101	12	379	6.8	302	53	242	7.5
17.....	114	14	404	6.8	122	15	369	7.0	218	35	320	6.9
18.....	120	16	375	7.1	134	18	348	7.0	193	29	240	7.0
19.....	134	17	328	7.2	149	20	313	7.1	193	27	155	7.2
20.....	138	19	307	7.1	162	23	297	7.1	245	41	184	7.5
21.....	152	22	302	7.0	170	24	259	7.1	273	45	177	7.5
22.....	150	22	318	7.1	191	30	284	7.1	280	48	168	7.5
23.....	148	20	264	7.1	209	31	255	7.3	306	52	177	7.7
24.....	174	27	311	7.2	209	32	233	7.2	308	52	176	7.7
25.....	184	30	302	7.2	206	30	190	7.4	334	64	261	7.6
26.....	195	32	306	7.2	218	33	187	7.5	288	49	209	7.4
27.....	189	30	281	7.1	243	38	209	7.3	257	42	159	7.5
28.....	191	31	287	7.1	246	40	229	7.5	279	48	162	7.5
29.....	182	29	311	7.0	241	38	198	7.5	306	53	156	7.8
30.....	155	21	280	7.1	259	42	194	7.5	329	58	152	8.0
31.....	--	--	--	--	283	48	237	7.3	--	--	--	--
Total..	139	19	355	--	177	26	306	--	244	40	226	--

OHIO RIVER MAIN STEM--Continued

ALLEGHENY RIVER AT RED HOUSE, N. Y.--Continued

Specific conductance (micromhos at 25°C), chloride and pH, water year October 1955 to September 1956--Continued

Day	July				August				September			
	Specific conductance (micromhos at 25°C)	Chloride		pH	Specific conductance (micromhos at 25°C)	Chloride		pH	Specific conductance (micromhos at 25°C)	Chloride		pH
		concentration (ppm)	tons per day			concentration (ppm)	tons per day			concentration (ppm)	tons per day	
1.....	351	63	148	7.7	358	62	138	8.0	234	39	431	6.9
2.....	342	59	147	7.7	415	76	160	8.0	182	27	281	7.1
3.....	473	92	241	7.8	421	78	150	7.9	178	27	241	6.8
4.....	361	65	150	7.5	419	77	139	7.8	192	27	194	7.0
5.....	388	72	164	7.9	427	79	154	7.9	211	33	200	7.1
6.....	457	93	362	7.6	467	94	520	7.4	117	15	238	7.5
7.....	364	71	243	7.5	162	26	576	7.2	157	22	374	6.9
8.....	351	66	180	7.7	150	21	451	7.2	184	27	286	6.9
9.....	439	90	569	7.3	150	22	317	7.3	205	29	212	7.1
10.....	194	31	260	7.4	149	20	257	7.2	215	32	184	7.2
11.....	221	36	214	7.4	178	27	260	6.9	233	35	168	7.4
12.....	156	19	170	7.4	216	34	217	7.1	266	44	188	7.5
13.....	154	19	272	7.4	212	32	166	7.2	277	46	176	7.7
14.....	180	24	334	7.5	255	41	219	7.4	323	57	188	7.5
15.....	196	30	308	7.4	264	44	220	7.4	365	69	225	7.3
16.....	182	23	170	7.5	282	48	188	7.5	344	65	421	7.1
17.....	202	28	169	7.5	296	52	176	7.8	211	35	384	7.0
18.....	252	41	204	7.7	335	61	183	7.7	227	37	307	7.2
19.....	264	42	172	7.7	368	69	248	7.5	232	39	266	7.1
20.....	289	46	171	7.7	299	54	241	7.4	235	40	332	7.0
21.....	326	57	203	7.6	331	62	241	7.7	202	32	278	7.3
22.....	289	53	316	7.2	305	57	179	7.6	212	33	246	7.4
23.....	235	36	179	7.5	339	63	177	7.7	221	35	233	7.3
24.....	251	38	161	7.6	392	79	290	7.5	230	37	245	7.3
25.....	297	49	172	7.7	348	69	328	7.5	228	35	192	7.5
26.....	304	50	161	7.6	291	53	199	7.4	271	46	210	7.8
27.....	374	70	284	7.6	302	54	172	7.5	281	47	184	8.0
28.....	323	57	203	7.7	313	60	181	7.6	313	56	191	7.8
29.....	348	64	199	7.8	348	66	349	7.3	341	62	187	7.8
30.....	342	62	163	7.9	251	42	304	7.2	344	63	175	7.6
31.....	345	61	146	7.9	243	42	280	7.1	--	--	--	--
Total..	298	52	220	--	300	54	248	--	241	40	248	--

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	63	48	33	33	34	37	40	55	61	78	71	74
2	62	50	34	34	36	37	42	--	57	78	73	72
3	63	49	37	34	--	38	42	56	54	80	72	70
4	64	46	37	35	35	37	44	53	53	72	69	71
5	63	45	37	35	36	38	48	55	57	69	71	71
6	63	44	37	36	35	37	49	54	62	68	68	66
7	66	42	37	33	33	35	45	57	65	74	64	64
8	62	41	38	32	37	38	42	57	67	76	66	62
9	62	40	36	33	35	36	42	54	67	74	68	60
10	63	40	33	34	34	38	44	55	72	68	69	60
11	62	40	33	34	35	40	48	55	74	69	69	60
12	62	42	33	34	36	40	50	57	76	64	72	63
13	58	44	35	34	36	41	49	61	77	64	68	66
14	58	44	35	34	35	38	52	62	77	68	71	66
15	55	48	--	33	35	38	51	61	78	66	72	62
16	53	50	33	36	36	34	46	55	--	68	--	59
17	52	41	34	34	35	37	44	50	71	69	73	60
18	52	39	33	35	35	36	42	49	71	70	68	58
19	51	38	33	34	38	37	44	52	70	70	70	56
20	--	39	33	34	35	39	42	54	72	68	68	53
21	52	40	--	34	33	39	43	57	71	68	68	55
22	53	40	32	34	32	40	44	61	74	72	66	57
23	51	40	33	33	33	39	46	61	71	72	67	58
24	49	40	37	33	34	38	45	60	70	73	66	60
25	46	40	35	33	35	40	43	61	72	73	68	60
26	47	39	34	34	34	40	47	60	74	72	67	59
27	52	39	33	33	35	41	47	60	76	74	67	58
28	50	36	33	34	33	39	53	62	69	76	68	60
29	51	34	34	37	39	40	55	65	72	73	71	62
30	50	33	33	34	--	37	52	67	74	71	72	58
31	49	--	34	33	--	38	--	67	--	68	71	--
Average	56	42	34	34	35	38	46	58	69	71	69	62

OHIO RIVER MAIN STEM--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN OHIO RIVER BASIN IN PENNSYLVANIA

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Col- or
							Calcium, mag- nesium	Non- carbon- ate			

OHIO RIVER MAIN STEM

ALLEGHENY RIVER AT KINZUA

Mar. 14, 1956	9.3	23	15	14	1.2	35	16	124	6.9	5
Apr. 19	8.5	18	13	16	.9	33	18	116	6.7	5
May 25	14	35	14	34	.8	58	29	195	7.0	4
June 21	23	37	14	42	1.4	55	25	242	7.0	5
Sept. 14	20	46	13	38	1.2	62	24	237	7.1	4

CONEWANGO CREEK BASIN

CONEWANGO CREEK AT RUSSELL

Mar. 14, 1956	2.8	43	17	3.0	2.2	53	18	123	7.0	10
Apr. 19	2.0	45	17	2.5	1.5	55	18	126	7.0	7
May 24	3.7	68	21	3.0	2.7	76	20	167	7.1	7
June 21	6.7	100	22	4.5	4.2	100	18	228	7.4	8
Aug. 9	2.1	57	13	2.0	1.9	60	13	139	7.0	23

FRENCH CREEK BASIN

FRENCH CREEK AT UTICA

Apr. 26, 1956	8.2	55	29	3.0	1.7	63	18	146	7.0	5
May 11	9.3	53	21	3.5	2.4	52	9	152	7.0	3
May 31	6.7	78	19	3.0	2.1	75	11	188	7.2	7
July 12	6.5	82	17	1.1	2.0	74	7	165	7.7	16
Aug. 20	14	40	67	39	3.3	130	97	352	6.7	1
Sept. 20	8.0	69	25	3.8	1.9	72	15	164	7.3	6

FRENCH CREEK BASIN

FRENCH CREEK AT FRANKLIN

Feb. 7, 1956	8.6	37	29	6.7	3.5	54	24	137	6.9	7
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OHIO RIVER MAIN STEM

ALLEGHENY RIVER AT FRANKLIN

Feb. 7, 1956	21	50	21	39	1.1	72	31	259	6.9	5
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CLARION RIVER BASIN

CLARION RIVER NEAR CLARION

Feb. 7, 1956	12	24	65	26	0.6	98	78	289	6.6	10
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CLARION RIVER AT PINEY DAM

June 18, 1956	11	10	39	12	0.6	42	34	154	6.0	5
Sept. 12	7.2	9.0	47	10	1.4	56	49	167	6.3	1

CLARION RIVER NEAR PINEY

Apr. 16, 1956	2.7	4.0	40	6.0	0.5	48	45	131	5.5	5
May 21	3.5	4.0	36	5.5	.2	41	38	118	5.6	3
Aug. 16	10	4.0	54	7.0	.4	47	44	144	5.6	22

REDBANK CREEK BASIN

REDBANK CREEK AT NEW BETHLEHEM

Feb. 7, 1956	3.4	1.0	47	2.5	2.6	48	47	138	4.7	5
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OHIO RIVER MAIN STEM--Continued

MISCELLANEOUS ANALYSES OF STREAMS IN OHIO RIVER BASIN IN PENNSYLVANIA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Col- or
							Calcium, mag- nesium	Non- carbon- ate			

MAHONING CREEK BASIN

MAHONING CREEK NEAR NEW BETHLEHEM

Feb. 7, 1956 ^a			0	70	2.2	0.1	55	55	228	3.80	2
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OHIO RIVER MAIN STEM

ALLEGHENY RIVER AT KITTANNING

Feb. 7, 1956	8.1	18	43	13	2.2	62	47	190	6.8	4
Apr. 2	4.7	22	30	5.0	1.6	53	35	143	6.6	2
May 7	6.3	24	31	10	1.0	53	33	150	6.7	3
May 12	12	34	32	14	.9	56	28	176	7.2	7
July 23	15	26	39	10	.2	64	43	176	6.7	7
Aug. 27	7.3	34	34	14	1.2	68	40	183	6.9	9

ALLEGHENY RIVER AT NATRONA

Apr. 16, 1956	6.3	8	55	7.5	1.6	62	55	175	6.1	2
Aug. 10	9.2	9	48	9.1	2.1	52	45	165	6.0	1
Aug. 24	8.2	3	76	8.5	2.8	78	76	222	5.2	2
Sept. 12	6.0	7	50	9.9	2.7	61	55	182	6.7	2

CHARTIERS CREEK BASIN

CHARTIERS CREEK AT CARNEGIE

Aug. 3, 1956	185	6	730	49	3.2	436	430	1,470	5.2	6
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OHIO RIVER MAIN STEM

OHIO RIVER AT SEWICKLEY

Mar. 22, 1956	7.4	3	92	6.5	3.4	94	92	259	5.2	2
Apr. 16	10	3	91	6.0	2.5	86	84	246	5.1	2
Sept. 12	33	65	97	3.5	3.1	90	37	284	6.6	2

OHIO RIVER AT AMBRIDGE

Feb. 8, 1956	6.9	3	65	5.7	4.9	67	65	192	5.3	2
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^a Total acidity as H⁺, 0.6.

CONEMAUGH RIVER AT TUNNELTON, PA.

LOCATION.--At gaging station on right bank at single span steel highway bridge at Tunnelton, Indiana County, 0.9 mile downstream from Boatyard Run, 2 miles downstream from Conemaugh River Dam, 3½ miles southeast of Saltsburg, and 5.5 miles upstream from confluence with Loyalhanna Creek.

DRAINAGE AREA.--1,358 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1952 to June 1953, March to September 1956. Water temperatures: October 1952 to June 1953.

EXTREMES, 1952-53.--Hardness: Maximum, 540 ppm Nov. 11-20, 1952; minimum, 37 ppm March 21-31, 1953.

Specific conductance: Maximum, 1,650 micromhos Nov. 12, 1952; minimum, 193 micromhos June 2, 1953.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Chemical analyses, in parts per million, March to September 1956

Date of collection	Mean discharge (cfs)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Calcium, magnesium	Non-carbonate	Total acidity as H ⁺	Specific conductance (micromhos at 25°C)	pH	Color
Mar. 28, 1956	4,070	141	3.0	4.2	126	126	1.2	381	3.80	2
May 2	3,780	152	3.0	1.2	126	126	.9	377	4.10	2
June 5	3,480	181	4.0	.5	138	138	.9	413	4.20	3
July 17	5,350	110	3.0	.8	90	90	.7	352	3.80	2
Aug. 21	1,270	273	9.0	.2	240	240	--	801	3.40	4
Sept. 28	1,230	247	5.2	.4	184	184	.8	574	3.95	1

MISCELLANEOUS ANALYSES OF STREAMS IN KISKIMINETAS RIVER BASIN IN PENNSYLVANIA

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Nitrate (NO ₃)	Hardness as CaCO ₃		Total acidity as H ₂ SO ₄	Specific conductance (micromhos at 25°C)	pH	Color
					Calcium, magnesium	Non-carbonate				

CONEMAUGH RIVER AT SALTSBURG

Feb. 7, 1956	0	91	3.7	0.7	90	90	0.7	286	3.90	0
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LOYALHANNA CREEK AT SALTSBURG

Feb. 7, 1956	0	105	5.2	0.8	89	89	0.9	329	3.25	2
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KISKIMINETAS RIVER AT VANDERGRIFF

Feb. 7, 1956	0	78	3.7	1.9	69	69	0.5	231	4.00	2
Mar. 27	0	168	4.0	.9	134	134	1.4	454	3.60	7
May 1	0	160	2.5	.4	127	127	1.0	410	3.80	2
June 5	0	206	6.0	.3	134	134	1.1	480	3.70	2
July 17	0	141	5.0	.8	120	120	.8	435	3.70	3
Aug. 21	0	296	8.0	.3	220	220	--	792	3.50	3
Sept. 25	0	353	10	.7	250	250	.7	684	3.60	2

MONONGAHELA RIVER BASIN

TYGART RIVER AT ELKINS, W. VA.

LOCATION.--At city waterplant, at Elkins, Randolph County, 4 miles upstream from Leading Creek, and 2½ miles upstream from gaging station near Elkins, W. Va.
 DRAINAGE AREA.--268 square miles above waterplant; 272 square miles above gaging station.
 RECORDS AVAILABLE.--Water temperatures: January 1947 to September 1956.
 EXTREMES, 1955-56.--Water temperatures: Maximum, 78°F June 15, July 4, 5; minimum, freezing point Nov. 29, 30, Dec. 1, 2, 11.
 EXTREMES, 1947-56.--Water temperatures: Maximum, 92°F July 22, 1952; minimum, freezing point on many days during winter months.
 REMARKS.--No appreciable inflow between waterplant and gaging station except during periods of heavy local rains. During flood periods part of flow is diverted around the waterplant through a flood by-pass channel. Records of discharge for gaging station near Elkins for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

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

MONONGAHELA RIVER BASIN--Continued

SALEM FORK AT SALEM, W. VA.

LOCATION.--At wire weight gage at bridge, 0.4 mile downstream from gaging station, 0.6 mile downstream from Dog Run, 0.4 mile upstream from Cherrycamp Run, 1.4 miles northeast of Salem, Harrison County.

DRAINAGE AREA.--8.32 square miles.

RECORDS AVAILABLE.--Sediment records: October 1954 to August 1956.

REMARKS.--Flow partly regulated by 4 detention reservoirs having combined temporary storage capacity of 346.4 acre-feet. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Suspended-sediment, November 1955 to August 1956

Date	Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Discharge (tons per day)
Nov. 2, 1955.....	2.5	19	0.1
Nov. 3.....	3.0	--	
Nov. 4.....	2.7	--	
Nov. 5.....	2.2	--	e .1
Nov. 6.....	1.8	--	
Nov. 7.....	1.4	--	
Nov. 8.....	1.1	--	
Nov. 9.....	.9	--	(t)
Nov. 10.....	1.1	12	
Dec. 6.....	7.5	10	.2
Dec. 7.....	5.2	--	
Dec. 8.....	4.3	--	
Dec. 9.....	3.7	11	
Dec. 10.....	3.3	--	e .1
Dec. 11.....	2.3	--	
Dec. 12.....	1.9	--	
Dec. 13.....	1.7	--	
Dec. 14.....	1.6	--	
Dec. 15.....	1.8	--	
Dec. 16.....	1.1	--	
Dec. 17.....	1.1	--	
Dec. 18.....	1.1	--	(t)
Dec. 19.....	1.1	--	
Dec. 20.....	.8	--	
Dec. 21.....	.7	9	
Dec. 22.....	.7	--	
Dec. 23.....	.9	12	
Dec. 27.....	1.4	--	
Dec. 28.....	1.1	--	
Dec. 29.....	1.3	--	
Dec. 30.....	1.5	5	(t)
Dec. 31.....	.9	--	
Jan. 1, 1956.....	.8	--	
Jan. 2.....	.8	--	
Jan. 3.....	1.1	--	
Jan. 4.....	.9	9	
Jan. 5.....	.8	--	
Jan. 6.....	.8	10	
Jan. 7.....	.8	--	
Jan. 8.....	.6	--	(t)
Jan. 9.....	.6	--	
Jan. 10.....	.7	--	
Jan. 11.....	1.0	--	
Jan. 12.....	1.7	--	
Jan. 13.....	1.8	--	
Jan. 14.....	1.9	--	
Jan. 15.....	2.8	--	
Jan. 16.....	3.3	--	e 0.1
Jan. 17.....	3.1	--	
Jan. 18.....	2.3	--	
Jan. 19.....	3.8	--	
Jan. 20.....	8.9	15	
Jan. 29.....	134	725	
Jan. 30.....	188	424	
Jan. 31.....	42	70	

e Estimated.

t Less than 0.05 ton.

MONONGAHELA RIVER BASIN--Continued

SALEM FORK AT SALEM, W. VA.--Continued

Suspended-sediment, November 1955 to August 1956--Continued

Date	Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Discharge (tons per day)
Feb. 1, 1956	19	40	e 2
Feb. 2	161	351	s 201
Feb. 3	82	--	e 18
Feb. 4	34	--	e 4
Feb. 5	28	--	e 2
Feb. 6	71	176	s 73
Feb. 7	112	125	s 52
Feb. 8	28	--	e 1
Feb. 9	14	--	e .5
Feb. 10	10	12	.3
Feb. 14	12	3	.1
Feb. 15	55	88	s 15
Feb. 16	39	--	e 3
Feb. 17	42	22	2.5
Feb. 18	120	172	s 68
Feb. 19	36	--	4
Feb. 20	16	15	.6
Feb. 21	10	10	.3
Feb. 22	7.5	--	e .2
Feb. 23	5.6	--	e .1
Feb. 24	6.9	8	0.1
Feb. 25	105	850	s 396
Mar. 13	35	22	2.1
Mar. 14	159	192	131
Mar. 15	44	50	5.9
Mar. 20	28	7	.5
Mar. 21	21	--	}
Mar. 22	16	--	
Mar. 23	12	--	
Mar. 24	21	--	
Mar. 25	16	--	}
Mar. 26	14	--	
Mar. 27	11	7	
Mar. 28	14	8	
Apr. 10	14	8	.3
Apr. 11	10	--	}
Apr. 12	8.0	--	
Apr. 13	6.3	--	
Apr. 14	5.2	--	
Apr. 15	6.3	--	}
Apr. 16	15	--	
Apr. 17	13	18	.6
July 10	6.1	27	.4
July 11	3.1	--	e .2
July 12	1.8	--	e .1
July 13	2.0	17	.1
Aug. 1	34	175	112
Aug. 2	70	233	69

e Estimated.

s Computed by subdividing day.

MONONGAHELA RIVER BASIN--Continued

SALEM FORK AT SALEM, W. VA.--Continued

Particle size analyses of suspended sediment, water year October 1955 to September 1956

(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (° F)	Suspended sediment												Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters											
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Jan. 29, 1956.....	3:00 p.m.	248		1,220	1,960	30	43	60	76	92	97	99	100				BSWCM
Jan. 29.....	5:30 p.m.	231		918	2,160	28	40	54	70	86	86	96	99			100	BSWCM
Jan. 30.....	8:30 a.m.	350		1,140	2,410	27	36	50	65	78	95	99	100				BSWCM
Feb. 2.....	3:40 p.m.	338		825	1,410	30	41	51	67	79	90	96	99			100	BSWCM
Feb. 7.....	12:15 a.m.	280		457	875	28	35	43	55	65	79	92	98			100	BSWCM
Feb. 18.....	11:15 a.m.	150		191	478	--	49	54	73	85	92	96	100			--	BSWCM
Feb. 25.....	2:00 p.m.	152		2,010	1,840	26	39	55	68	84	92	98	100			--	BSWCM
Feb. 28.....	2:00 p.m.	152		2,010	1,690	20	32	50	68	84	92	98	100			--	BSNM
Mar. 14.....	8:50 a.m.	388		880	1,110	25	42	50	63	74	86	94	99			100	BSWCM
Apr. 3.....	9:00 a.m.	185		265	431	37	48	58	71	82	91	97	100			--	BSWCM
June 18.....	1:55 p.m.	128		1,880	1,440	48	62	78	91	98	99	99	100			--	BSWCM
Aug. 5.....	10:00 p.m.	1,890		502	1,130	44	60	74	85	90	93	96	98			100	BSWCM

MONONGAHELA RIVER BASIN--Continued

MONONGAHELA RIVER AT MORGANTOWN, W. VA.

LOCATION.--At Morgantown public water supply intake at Morgantown, Monongahela County, 800 feet upstream from Cobun Creek, and 1.5 miles upstream from Deckers Creek.

DRAINAGE AREA.--2,572 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

REMARKS.--Integrated samples collected 12 feet from right bank at intake to River Station treatment plant. River receives industrial waste above station. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- ga- nese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Immed- iate acidity (H ⁺)	Poten- tial free acidity (H ⁺)	Specific conduct- ance (micro- mhos at 25°C)	pH	Color
															Calcium, mg- num	Non- carbon- ates					
Oct. 14, 1955	5.5	1.3	0.76	1.0	33	9.8	10	2.2	0	165	9.0	0.3	1.0	250	123	123	0.3	0.4	416	4.15	1
Nov. 15	8.5	1.6	2.7	1.4	45	14	25	2.3	0	221	14	.2	.8	331	170	170	.5	.6	515	4.10	3
Dec. 15	5.3	.3	1.9	.50	16	6.0	7.8	.8	0	76	5.0	.1	2.2	126	65	65	.2	.2	221	4.9	1
Jan. 17, 1956	5.5	.9	5.2	.89	31	11	26	1.5	2	174	14	.2	1.2	270	123	121	.5	.5	425	4.7	8
Feb. 17	6.0	1.7	1.5	.46	22	7.2	5.5	1.4	0	96	2.8	.0	2.5	147	84	84	.2	.2	251	4.35	1
Mar. 15	5.4	.5	1.2	.58	21	7.2	4.8	1.3	2	87	3.0	.1	1.3	136	82	80	.1	.0	214	4.8	2
Apr. 17	6.8	2.1	7.8	.84	32	10	16	1.0	0	163	3.5	.2	.3	248	121	121	.4	.5	400	4.00	0
May 17	7.3	.7	32.7	a.39	21	6.9	8.3	1.4	0	96	4.9	.4	.7	156	81	81	.4	.4	267	4.15	1
June 15	8.3	1.2	.34	.62	23	7.1	13	1.2	0	116	5.6	.3	.8	181	87	87	.2	.2	290	4.40	2
July 17	6.1	.6	.34	.50	19	6.1	7.8	1.3	0	86	5.4	.2	.4	135	72	72	.1	.1	233	4.5	2
Aug. 16	6.6	1.4	a.71	a.32	15	4.9	5.0	1.8	0	78	1.8	.1	.7	126	56	56	.3	.3	217	3.95	2
Sept. 21	7.7	1.2	31.5	.99	40	11	26	2.1	0	196	7.2	.4	.2	324	143	145	--	--	491	3.90	2

a Total

MONONGAHELA RIVER BASIN--Continued

MONONGAHELA RIVER AT LOCK AND DAM 8, AT POINT MARION, PA.

LOCATION --About 750 feet upstream from dam, lock and dam 8 (mile 90.8) at Point Marion, Fayette County, and 1.5 miles upstream from Cheat River. DRAINAGE AREA --2,720 square miles.

RECORDS AVAILABLE --Chemical analyses: October 1955 to September 1956.

Water temperatures: October 1955 to September 1956.

EXTREMES, 1955-56 --Dissolved solids: Maximum, 464 ppm Oct. 21-29, 31; minimum, 105 ppm June 1-10.

Hardness: Maximum, 233 ppm Oct. 21-29, 31; minimum, 54 ppm June 1-10.

Specific conductance: Maximum daily, 1,080 microhos Oct. 21; minimum daily, 136 microhos June 6.

Water temperatures: Maximum, 79 F July 11, 12; minimum, freezing point Dec. 26, Jan. 14.

REMARKS --Acidity determined to pH 7.0. Records of specific conductance of daily samples available in district office at Columbus, Ohio. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- gan- ese (Mn)	Cal- cium (Ca)	Mag- nesium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)		Hardness as CaCO ₃		Imme- diate acidity (H ⁺)	Poten- tial free acidity (H ⁺)	Specific conduct- ance (micro- hos at 25°C)	pH	Color
														Calcium, mag- nesium	Non- carbon- ate							
Oct. 1-10, 1955 ...	7.4	3.2	1.7	1.8	35	13	30	1.4	0	212	10	0.4	0.1	344	141	141	1.3	1.5	630	3.70	0	
Oct. 11-20, 1955 ...	8.6	2.9	2.3	1.6	51	17	35	2.8	0	287	12	.5	.0	438	197	197	.9	1.1	732	3.80	--	
Oct. 21-29, 31, ...	8.7	3.5	5.7	1.8	62	19	35	2.7	0	320	15	.4	.8	464	233	233	.8	1.1	762	3.70	1	
Nov. 1-10, 1955 ...	9.2	2.3	5.7	1.6	54	18	27	3.2	0	261	13	.4	.9	403	209	209	.5	.6	639	4.20	1	
Nov. 11-20, 1955 ...	7.9	2.0	4.5	1.4	44	15	31	3.1	0	232	18	.3	1.4	356	172	172	.8	.8	586	3.80	1	
Nov. 21-30, 1955 ...	6.4	.5	2.2	.75	33	9.8	14	1.3	0	134	8.5	.2	1.5	212	123	123	.2	.2	341	4.40	1	
Dec. 1-10, 1955 ...	6.2	.6	2.7	.44	24	7.4	11	.3	0	106	8.5	.2	1.3	167	90	90	.2	.2	282	4.30	1	
Dec. 11-20, 1955 ...	5.8	.6	3.2	.33	17	6.0	9.3	1.6	0	83	8.0	.2	1.9	133	67	67	.2	.3	234	3.95	2	
Dec. 21-31, 1955 ...	6.8	.9	5.3	.65	25	7.6	19	1.7	0	128	11	.2	1.4	207	94	94	.3	.4	364	3.80	1	
Jan. 1-10, 1956 ...	8.5	2.5	7.7	1.0	44	12	33	2.0	0	235	17	.6	1.8	352	159	159	.6	.8	583	3.70	4	
Jan. 11-20, 1956 ...	7.2	2.0	5.8	.89	32	12	23	1.8	0	180	12	.4	1.2	263	133	133	.4	.5	474	3.80	2	
Jan. 21-31, 1956 ...	7.3	1.8	6.0	1.1	38	11	26	1.5	0	186	11	.5	1.6	293	140	140	.3	.4	469	3.90	1	
Feb. 1, 2, 4-10, 1956 ...	5.3	.3	2.6	.49	21	6.2	5.0	2.1	0	79	5.0	.1	3.5	130	78	78	.0	.0	208	4.35	3	
Feb. 11-20, 1956 ...	5.6	1.2	2.1	.08	18	6.5	5.5	1.7	0	85	3.5	.3	1.1	134	72	72	.3	.3	238	3.80	2	
Feb. 21-29, 1956 ...	7.2	.8	2.6	.46	22	6.4	6.1	.6	0	89	3.0	.3	2.3	142	81	81	.3	.3	239	4.10	0	
Mar. 1-10, 1956 ...	6.0	1.9	3.1	.14	23	8.1	8.2	1.3	0	113	3.5	.2	.8	168	91	91	.4	.4	289	3.80	1	
Mar. 11-20, 1956 ...	5.8	1.5	1.8	.55	20	6.8	6.4	1.3	0	93	2.8	.2	.5	145	78	78	.3	.3	252	4.30	1	
Mar. 21-31, 1956 ...	6.8	1.3	4.2	.42	25	8.6	8.8	1.7	0	113	3.5	.1	1.1	175	98	98	.4	.4	300	4.00	3	
Apr. 1-10, 1956 ...	6.4	1.7	2.6	.49	25	7.8	8.7	1.3	0	118	3.2	.2	.5	180	94	94	.3	.4	288	4.10	0	
Apr. 11-20, 1956 ...	7.1	2.7	4.6	.68	27	9.0	12	1.1	0	140	4.0	.2	1.2	209	104	104	.5	.6	388	3.80	1	
Apr. 21-25, 30, ...	8.7	4.2	7.5	1.0	39	15	21	1.4	0	221	7.2	.4	.4	324	159	159	.8	.7	557	3.50	4	
May 1-10, 1956 ...	8.0	3.5	5.7	.15	34	11	19	1.7	0	194	7.5	.3	.2	287	130	130	1.1	.5	472	3.40	2	
May 11-20, 1956 ...	7.4	1.3	4.2	.67	27	9.6	12	1.0	0	134	6.2	.2	.4	206	107	107	.5	.4	355	4.10	2	
May 21-31, 1956 ...	7.1	1.4	1.7	.62	22	7.3	9.7	1.5	0	112	3.8	.2	1.1	162	85	85	.2	.2	283	4.10	1	

MONONGAHELA RIVER BASIN--Continued

MONONGAHELA RIVER AT LOCK AND DAM 8, AT POINT MARION, PA.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- ga- nese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Imme- diate acidity (H ⁺)	Poten- tial free acidity (H ⁺)	Specific conduct- ance (micro- mhos at 25°C)	pH	Color
															Calcium	Non- carbon- ate					
June 1-10, 1956....	6.6	0.6	2.0	0.37	14	4.7	6.6	1.2	0	87	3.6	0.1	0.8	105	54	54	0.1	0.2	187	4.30	1
June 11-20.....	8.5	3.5	5.8	.72	27	9.4	16	1.4	0	165	5.0	.3	.7	242	106	106	.7	.8	447	3.50	1
June 21-30.....	8.3	1.9	3.0	.76	36	9.6	16	1.8	0	177	4.8	.3	.9	256	129	129	.4	.4	436	3.85	1
July 1-10.....	7.9	3.0	2.0	.53	30	9.1	16	1.7	0	171	2.5	.3	.2	231	112	112	.6	.1	533	3.65	1
July 11-20.....	8.8	3.7	2.20	1.2	43	12	22	1.8	0	230	6.8	.4	.9	334	197	197	.6	.8	566	3.60	1
July 21-28, 30-31..	9.2	1.4	2.2	.91	32	7.3	16	2.4	0	147	5.5	.2	.9	228	110	110	.2	.3	364	4.15	2
Aug. 1-10.....	6.4	.5	1.5	.20	20	5.5	7.0	1.8	1	86	2.5	.1	1.7	135	72	72	.1	.1	220	4.9	3
Aug. 11-20.....	8.4	2.7	4.6	.92	22	6.2	9.8	1.6	0	152	3.4	.2	.7	181	80	80	.5	.6	354	3.65	2
Aug. 21-31.....	9.3	2.5	3.3	1.0	30	8.2	13	2.1	0	155	4.3	.2	.9	229	108	108	.5	.8	408	3.70	2
Sept. 1-10.....	8.5	4.1	4.4	.96	36	11	27	2.1	0	209	7.3	.3	.8	314	135	135	.8	.8	543	3.50	0
Sept. 11-20.....	8.7	3.3	6.7	.92	34	10	18	2.4	0	186	6.3	.2	1.0	269	126	126	.7	.8	514	3.60	1
Sept. 21-24, 26-30	9.7	4.4	9.0	1.3	41	11	24	2.7	0	238	9.2	.2	.6	349	148	148	.9	1.0	589	3.46	1
Time-weighted average ^a	7.6	2.1	3.9	0.80	31	9.8	17	1.7	0	161	7.1	0.3	1.0	245	118	118	0.5	0.5	418	--	2

^a Represents 99 percent of days.

MONONGAHELA RIVER BASIN--Continued

MONONGAHELA RIVER AT LOCK AND DAM 8, AT POINT MARION, PA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at varying hours/

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

MONONGAHELA RIVER BASIN--Continued

CHEAT RIVER AT LAKE LYNN, PA.

LOCATION.--At the Lake Lynn hydroelectric plant of the West Penn Power Company at Lake Lynn, Fayette County, 3 miles upstream from mouth, and 13.8 miles downstream from gaging station near Pisgah.

DRAINAGE AREA.--1,411 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1948 to September 1958.

EXTREMES, 1955-56.--Water temperatures: Maximum, 80°F July 3, 5, 6; minimum, 34°F on several days during December to January.

EXTREMES, 1948-56.--Water temperatures: Maximum, 85°F July 30, 1949, July 28, 1952, and Aug. 6, 1955; minimum, 33°F on several days during winter months.

REMARKS.--Temperature records furnished by the West Penn Power Company. Measurements are made as water passes through plant. Records of discharge for Cheat River near Pisgah for water year October 1955 to September 1956 are given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	58	44	34	35	40	44	54	61	79	75	75
2	70	58	44	34	35	40	44	53	62	78	75	76
3	69	58	43	35	35	40	46	60	60	80	73	75
4	69	56	44	35	36	42	46	60	59	79	73	75
5	69	56	42	35	36	43	44	60	60	80	74	76
6	69	56	38	35	38	42	49	61	58	80	65	76
7	69	56	37	34	38	44	51	61	58	79	73	75
8	69	56	38	35	38	44	50	59	64	78	63	75
9	69	56	38	35	40	44	49	59	65	79	67	73
10	68	56	37	35	40	46	49	60	66	78	69	71
11	68	54	38	35	39	46	46	60	69	76	71	72
12	68	54	38	35	39	44	49	62	70	76	72	71
13	68	55	38	35	41	43	49	62	72	76	74	71
14	67	57	38	35	40	43	49	63	75	76	73	72
15	67	54	38	35	41	43	48	64	77	76	74	72
16	67	55	37	35	42	43	48	64	78	77	74	71
17	65	55	38	35	42	42	47	63	77	76	74	71
18	64	54	36	34	42	42	47	62	77	76	78	70
19	64	54	37	34	42	42	47	62	75	75	77	69
20	64	52	35	34	43	42	48	62	75	75	76	69
21	63	52	36	34	43	42	48	62	75	76	76	67
22	62	51	36	34	43	42	50	64	75	77	76	66
23	62	51	36	34	42	41	48	64	75	78	76	67
24	62	50	36	34	41	41	47	61	76	77	74	67
25	62	49	36	34	41	39	48	61	76	76	74	66
26	62	48	36	34	40	39	50	63	79	77	72	66
27	61	46	37	--	38	40	50	61	77	76	71	66
28	61	45	36	34	38	41	54	58	76	76	71	66
29	60	44	36	34	38	42	54	58	74	76	72	66
30	59	44	36	36	--	42	54	58	75	74	74	67
31	58	--	34	36	--	42	--	61	--	74	74	--
Average	65	53	38	35	40	42	48	61	71	77	73	71

MONONGAHELA RIVER BASIN

MONONGAHELA RIVER AT CHARLEROI, PA.

LOCATION.--At Merchantile Bridge Company toll bridge approximately 1½ miles downstream from gaging station at Charleroi, Washington County, and 1 mile downstream from Lock 4.

DRAINAGE AREA.--5,213 square miles (above gaging station).

RECORDS AVAILABLE.--Chemical analyses: October 1944 to June 1953.

Water temperatures: October 1944 to June 1953.

EXTREMES, 1944-53.--Dissolved solids (1944-47): Maximum, 749 ppm Sept. 11-20, 1946; minimum, 99 ppm Feb. 11-20, 1946.

Hardness: Maximum, 399 ppm Sept. 11-20, 1946; minimum, 44 ppm Dec. 1-10, 1949.

Specific conductance: Maximum, 1,210 micromhos Sept. 11-20, 1946; minimum, 149 micromhos Dec. 1-10, 1949.

Water temperatures: Maximum, 86°F Sept. 1, 1948, June 29, 1952; 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. Discharge records for water year October 1955 to September 1956 given in WSP 1435.

Chemical analyses, in parts per million, February to September 1956

Date of collection	Mean discharge (cfs)	Temperature (°F)	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 on evaporation at 180°C)	Hardness as CaCO ₃		Total acidity as H+	Specific conductance (micro-mhos at 25°C)	pH	Color
																	Calcium, magnesium	Non-carbonate				
Feb. 9, 1956	36,900		--	--	--	--	--	--	--	--	0	77	2.3	--	2.5	--	68	68	0.4	213	4.30	2
Mar. 28	18,200		10	1.9	0.06	0.00	20	4.3			0	93	1.5	0.1	1.9	169	68	68	.5	255	4.20	1
Apr. 13	12,900		--	--	--	--	--	--			0	105	3.5	--	1.6	--	89	89	.4	258	4.5	2
May 18	12,900		--	--	--	--	--	--			1	110	4.5	--	2.2	--	98	97	--	291	4.7	2
June 16	3,500		--	--	--	--	--	--	9.3	1.6	0	149	5.0	--	9	--	103	103	.8	395	4.10	2
June 27	15,400		7.9	1.1	.01	.60	23	4.1			9	100	2.5	2	1.6	180	87	87	.2	268	4.45	2
Aug. 2	11,100		--	--	--	--	--	--			0	78	5.0	--	1.6	--	68	68	--	228	4.40	2
Sept. 7	10,700		--	--	--	--	--	--			0	249	8.5	--	.6	--	162	162	.6	540	4.20	5

MONONGAHELA RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN MONONGAHELA RIVER BASIN IN PENNSYLVANIA
Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Discharge (cfs)	Tem- pera- ture (°F)	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Men- ga- nese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	Sod- ium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 100° C)	Hardness as CaCO ₃ Calcium, mag- nesium	Total acid- ity as H ₂ SO ₄	Specific conduct- ance (micro- mhos at 25° C)	pH	Color
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CHEAT RIVER AT POINT MARION

June 28, 1956											0	273	1.8		0.1		38	38	0.6	218	3.80	4
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MONONGAHELA RIVER AT POINT MARION

Mar. 27, 1956			6.6	2.9	0.06	0.00	24	7.2	11	1.1	0	131	2.5	0.1	0.1	191	90	90	0.5	379	3.70	1
June 28			10	.9	.03	.23	22	9.5	8.4	1.6	0	97	2.0	.1	1.7	167	74	74	.2	261	4.30	3

DUNKARD CREEK NEAR DUNKARD

Mar. 27, 1956											0	130	8.5		0.8		108	108	0.9	357	3.90	2
June 28											25	64	6.5		.7		80	80		215	6.8	2

GEORGE CREEK AT NEW GENEVA

June 28, 1956											0	529	10		0.0		280	280	5.1	1,370	2.85	5
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WHITELEY CREEK NEAR MAPLETOWN

June 28, 1956											0	388	4.0		0.0		310	310	2.3	916	3.50	2
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MUDDY RUN AT CARMICHAELS

June 28, 1956	11.9									102	146	162	52		1.0		140	20		755	8.1	6
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TENMILE CREEK NEAR MILLSBORO

Mar. 27, 1956			8.2		0.03		37	6.0	13	88	60	6.0	0.1	3.3	200	117	45			300	7.9	1
June 28									27	96	72	16		1.6		118	39			365	8.2	5

MONONGAHELA RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN MONONGAHELA RIVER BASIN IN PENNSYLVANIA--Continued

Date of collection	Discharge (cfs)	Tem- pera- ture (°F)	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- ga- nese (Mn)	Cal- cium (Ca)	Mag- nium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Total acid- ity as H ₂ SO ₄	Specific conduct- ance (micro- mhos at 25°C)	pH	Color	
																	Calcium	Non-carbon- ate					
DUNLAP CREEK AT BROWNSVILLE																							
Mar. 28, 1956.....									296	354	703	55				4.3		460	170		1,850	7.8	2
June 28.....									219	177	531	50				2.7		295	150		1,600	8.1	4
MONONGAHELA RIVER AT BROWNSVILLE																							
Mar. 28, 1956.....											0	103	2.5			0.2		76	76	1.3	295	3.90	4
June 29.....											0	92	3.0			.4		80	80	.4	248	4.10	3
REDSTONE CREEK AT WALTERSBURG																							
June 28, 1956.....											0	538	11			0.3		410	410	3.1	1,340	3.00	4
REDSTONE CREEK NEAR BROWNSVILLE																							
June 28, 1956.....											0	735	22			0.1		490	490	3.5	1,540	3.25	1
REDSTONE CREEK AT BROWNSVILLE																							
Mar. 28, 1956.....			21	3.4	1.5	0.01	96	23			0	625	8.0	0.4	0.3	920	334	334	334	3.8	1,410	3.10	1
PIKE RUN AT COAL CENTER																							
Mar. 28, 1956.....									142	124	674	20			3.8		525	423		1,560	7.6	2	
PIGEON CREEK NEAR MONONGAHELA																							
Mar. 28, 1956.....									117	154	372	26			4.9			300	174		946	7.5	2
June 29.....									81	168	269	26			2.9			280	142		890	7.2	1

PETERS CREEK NEAR CLAIRTON

June 29, 1956								91	28	532	19		3.8		460	437		1,160	6.2	3
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PETERS CREEK AT CLAIRTON

Mar. 28, 1956								64	3	522	14		5.5		430	428		971	5.1	2
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MONONGAHELA RIVER NEAR DRAVOBSBURG

June 29, 1956								17	1	122	5.5		1.6		100	99		315	4.6	4
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MONONGAHELA RIVER AT DRAVOBSBURG

Mar. 29, 1956								15	0	106	4.0		2.1		85	85	0.3	283	4.40	2
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YOUGHIOGHENY RIVER AT YOUGHIOGHENY DAM

Mar. 27, 1956								5.2		0.04		4.7	1.5		2.2	6	13	1.0	0.1	3.1	46	18	13		55	6.6	2
June 30 .....															.3	6	10	1.5		1.5		18	13		48	6.3	6

CASSELMAN RIVER AT HARNEDSVILLE

Feb. 9, 1956								--								0	33	2.0	--	2.7	--	34	34	0.2	126	4.5	1
Mar. 27								6.1	0.1	0.00		13	5.5			0	48	25	0.1	3.0	216	55	55	.6	147	4.40	2
June 30								6.9	.01	.01		16	3.8	1.7	0.6	2	63	1.5	.1	1.3	110	56	54	--	177	4.6	4

CASSELMAN RIVER AT MARKLETON

Apr. 19, 1956																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
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MONONGAHELA RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN MONONGAHELA RIVER BASIN IN PENNSYLVANIA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued																							
Date of collection	Discharge (cfs)	Tem- pera- ture (°F)	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- gan- ese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Total acid- ity as H ₂ SO ₄	Specific conduct- ance (micro- mhos at 25°C)	pH	Color	
																	Calcium	Non- carbon- ate					
LAUREL HILL CREEK AT URSINA																							
Feb. 9, 1956									2.0		4	12	1.0		3.7			20	17		68	6.1	2
June 30											10	9.0	2.5		1.2			18	10		50	6.9	5
LAUREL HILL CREEK AT CONFLUENCE																							
Mar. 27, 1956			4.8		0.04		47	1.1	6.1	8	12	6.0	0.1		2.3	49		16	10		51	6.8	2
BIG MEADOW RUN AT OHIOPILE																							
Mar. 27, 1956									2.1	7	17	1.2			1.7			22	16		51	6.2	4
CUCUMBER CREEK NEAR OHIOPILE																							
Mar. 27, 1956									3.5	4	16	1.5			3.1			17	14		57	5.4	1
YOUGHIOGHEN RIVER AT OHIOPILE																							
Feb. 9, 1956									1.5	2	23	2.1			3.5			28	26		96	5.0	2
Mar. 27									3.4	1	41	2.0			2.6			41	40		123	4.8	2
INDIAN CREEK NEAR CHAMPTON																							
June 27, 1956									2.3	20	13	2.5			2.0			30	14		80	6.7	3
CHAMPTON CREEK AT MELCROFT																							
June 27, 1956									4.0	2	52	4.5			3.1			56	54		156	5.0	1

POPLAR RUN NEAR INDIAN HEAD

June 27, 1956					0.5	2	35	1.5	1.0	40	38	104	5.1	2
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BACK CREEK AT INDIAN HEAD

[illegible]

INDIAN CREEK AT WHITE BRIDGE

Mar. 27, 1956.....	5.3	0.01	8.3	2.2	2.6	10	21	2.5	0.1	2.0	75	30	22	1	81	6.8	1
June 27.....	6.3	.05	9.8	3.1	1.2	11	25	1.0	.1	2.7	80	37	28	28	92	6.3	5

RAMBLER RUN NEAR NORMALVILLE

[illegible]

DUNBAR CREEK NEAR DUNBAR

June 30, 1956					4.5	18	42	3.5		3.0	56	41		140	6.6	5
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DUNBAR CREEK NEAR CONNELLSVILLE

Mar. 26, 1956		6.5	0.02	11	2.4	3.4	7	32	1.5	0.1	4.1	72	37	32		105	6.6	3
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MOUNTS CREEK NEAR CONNELLSVILLE

[illegible]

MONONGAHELA RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN MONONGAHELA RIVER BASIN IN PENNSYLVANIA--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956—Continued

Date of collection	Discharge (cfs)	Tem- pera- ture (°F)	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- ga- nese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Total acid- ity as H ₂ SO ₄	Specific conduct- ance (micro- mhos at 25°C)	pH	Color	
																	Calcium	Non- mag- nesium					
YOUGHIOGHENY RIVER AT CONNELLSVILLE																							
Feb. 9, 1956										0.7	2	28	2.4			4.1		36	34		90	5.2	2
Mar. 27			6.1		0.01		7.9	2.6	4.0	5	30	.5		0.1	3.4	75		30	26		95	5.2	1
June 28 .....								.8		6	29	2.5			1.5			38	33		91	6.2	3
YOUGHIOGHENY RIVER NEAR DAWSON																							
Mar. 26, 1956											3	36	2.0		3.0			46	44		111	5.3	1
JACOBS CREEK AT JACOBS CREEK																							
Mar. 26, 1956			8.3		0.02		24	6.8	7.6	2	92	2.5	0.1	4.1	4.1	146		88	86		237	5.7	3
JACOBS CREEK NEAR SMITHTON																							
June 30, 1956									4.1	8	98	5.0			4.1			110	103		282	6.0	5
SEWICKLEY CREEK NEAR SUTERSVILLE																							
Feb. 9, 1956									34	2	278	8.0			9.6			236	234		634	4.7	2
Mar. 26			18	3.4	0.13	0.00	84	30		0	461	6.5	0.3	2.1	.9	692		333	333	1.7	994	3.70	8
June 30										0	999	21						605	605	3.3	2,360	3.20	3
YOUGHIOGHENY RIVER AT SUTERSVILLE																							
Feb. 9, 1956 ^a									4.1	4	43	2.3			4.6			46	43		134	5.6	1
Feb. 9 ^b								6.6		4	61	2.5			5.1			60	57		177	5.6	2
Feb. 9 ^c								11		2	108	4.5			6.0			102	100		288	5.6	2
Mar. 26								3.8		4	60	2.5			3.7			64	61	1.3	175	5.8	2
May 16										0	253	5.0			5.5			166	166		664	3.50	2
May 18								4.5		5	51	2.0			2.2			52	48		152	6.5	3
June 30								11		1	71	2.5			1.4			55	54		201	4.7	1
Sept. 12								30		5	88	2.5			2.1			72	31		230	6.1	1

BEAVER RIVER BASIN--Continued
MAHONING RIVER AT LOWELLVILLE, OHIO

LOCATION.--Temperature recorder at gaging station on left bank 300 feet upstream from Washington Street Bridge at Lowellville, Mahoning County, 1 mile upstream from Ohio-Pennsylvania State line, and 3 miles downstream from Yellow Creek.

DRAINAGE AREA.--1,076 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1951 to September 1953.

Water temperatures: October 1943 to September 1944 incomplete, October 1949 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 104°F Oct. 4; minimum, 39°F Feb. 27.

EXTREMES, 1949-56.--Water temperatures: Maximum, 112°F Aug. 19, 1955; minimum, freezing point Dec. 5, 1950.

REMARKS.--Water temperatures affected by cooling water from steel mills. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, seven-day gas-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	
1.....	103	100	93	90	74	73	79	78	69	65	49	46	58	55	72	67	--	--	84	80	76	78	95	94
2.....	102	100	95	93	76	74	79	79	66	65	49	47	59	57	72	71	--	--	81	80	77	78	94	93
3.....	102	99	95	89	77	76	79	79	65	62	49	47	59	52	72	71	--	--	82	80	77	77	93	92
4.....	104	100	93	91	78	77	80	79	64	64	47	46	57	53	72	70	--	--	82	77	78	77	93	93
5.....	103	85	92	91	78	78	80	80	64	63	50	47	62	57	72	69	--	--	77	77	78	78	94	90
6.....	101	96	92	92	78	77	82	80	63	54	50	50	64	62	74	72	--	--	77	77	78	76	91	90
7.....	99	94	92	92	77	76	82	80	58	53	50	50	64	56	73	71	--	--	78	77	77	76	91	89
8.....	94	92	92	91	76	76	82	80	57	56	50	48	56	52	74	71	--	--	81	78	81	77	89	88
9.....	94	92	91	91	77	76	80	80	56	53	48	46	55	52	76	74	--	--	80	77	85	81	88	86
10.....	98	94	91	91	77	77	80	80	53	51	48	46	61	55	76	69	--	--	77	76	86	85	86	85
11.....	101	95	93	91	77	77	80	79	51	50	50	48	66	61	69	65	88	86	76	76	87	85	85	84
12.....	102	98	95	93	77	77	81	80	50	50	50	70	66	65	63	93	87	76	78	85	82	89	85	84
13.....	101	99	99	95	77	76	80	80	46	50	50	50	71	70	68	65	100	93	76	78	83	82	90	89
14.....	99	94	100	95	78	77	80	78	46	45	50	50	73	70	71	68	102	96	76	78	84	82	90	89
15.....	98	91	99	65	78	78	78	76	45	45	53	50	72	68	71	71	100	93	76	73	85	84	90	88
16.....	98	96	95	69	78	77	77	77	47	45	53	49	68	64	71	66	93	88	76	74	89	85	88	81
17.....	96	95	87	80	77	77	78	77	47	47	50	49	64	60	66	63	88	76	75	72	91	89	81	81
18.....	95	93	80	76	78	77	77	76	47	47	50	50	60	60	63	63	86	77	72	72	91	91	81	80
19.....	95	95	76	69	78	78	77	76	47	47	50	50	63	60	64	63	77	77	72	71	91	88	81	80
20.....	97	95	74	69	78	78	78	76	48	47	50	50	63	62	65	64	80	77	72	71	88	88	81	81
21.....	97	96	75	74	78	77	78	76	47	47	51	50	64	62	69	65	90	80	73	72	88	87	83	81
22.....	97	95	75	75	78	78	76	74	47	47	51	51	64	63	72	69	95	88	74	73	89	87	83	83
23.....	97	96	76	66	79	78	75	75	48	47	51	50	65	63	77	72	95	78	74	74	90	89	85	83
24.....	97	80	74	74	79	78	75	73	49	48	50	45	66	65	78	75	84	78	74	74	90	86	86	85
25.....	92	91	74	74	80	79	73	72	49	43	45	43	68	66	80	76	80	78	74	74	86	84	86	85
26.....	92	91	74	73	80	79	73	71	49	42	50	43	68	67	83	80	79	78	76	74	85	84	85	85
27.....	92	90	73	73	79	79	73	71	42	39	54	50	68	67	83	82	81	78	76	76	86	85	85	84
28.....	93	91	73	73	79	76	71	70	45	42	54	53	71	68	89	83	82	81	76	76	91	86	84	84
29.....	96	93	73	73	76	76	70	69	46	45	53	52	71	68	--	--	85	82	76	76	93	91	86	84
30.....	96	70	73	73	78	76	69	66	--	--	53	53	68	67	--	--	85	84	76	76	93	93	86	86
31.....	91	90	--	--	78	77	69	69	--	--	55	52	--	--	--	--	--	--	76	76	95	93	--	--
Average.....	97	93	85	82	78	77	77	76	52	50	50	49	65	62	73	70	--	--	76	75	86	84	87	86

BEAVER RIVER BASIN--Continued
MISCELLANEOUS ANALYSES OF STREAMS IN BEAVER RIVER BASIN IN PENNSYLVANIA

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Tem- perature (° F)	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- ga- nese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bio- car- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180° C)	Hardness as CaCO ₃		Total acid- ity as H ₂ SO ₄	Specific conduct- ance (micro- mhos at 25° C)	pH	Color
																	Calcium, mag- nesium	Non- carbon- ate				
BEAVER RIVER AT NEW BRIGHTON																						
Feb. 8, 1956			--	--	--	--	--	--	7.5	38	59	9.3	--	--	0.9	--	90	59		238	7.1	2
Mar. 6			7.0	--	0.12	--	31	8.2	12	45	76	12		0.2	4.2	179	111	74		284	7.2	10
Apr. 4			6.1	0.0	.09	0.00	29	5.7	4.2	2.4	44	59	8.3	--	6.0	170	96	60		231	7.2	20
May 1			5.1	.0	.12	.00	30	6.9	8.0	1.9	42	73	9.6	.0	4.0	191	104	69		265	7.0	10

OHIO RIVER MAIN STEM

OHIO RIVER AT LOCK AND DAM 8, AT NEWELL, W. VA.

LOCATION --About 1,000 feet upstream from dam, lock and dam 8 (mile 46.4) at Newell, Hancock County, 2,500 feet upstream from Rowes Run, and 3,300 feet downstream from dam, lock and dam 8 (mile 46.4) at Newell, Hancock County, 2,500 feet upstream from Rowes Run, and DRAINAGE AREA --23,500 square miles.

RECORDS AVAILABLE --Chemical analyses: October 1954 to September 1956.

Water temperatures: October 1954 to September 1956.

EXTREMES, 1955-56 --Dissolved solids: Maximum, 440 ppm Oct. 1-10; minimum, 135 ppm Mar. 11-20.

Sardens: Maximum, 210 ppm Oct. 1-10; minimum, 77 ppm Mar. 11-20.

Specific conductance: Maximum daily, 731 micromhos Oct. 12; minimum daily, 158 micromhos Mar. 10.

Water temperatures: Maximum, 82°F July 3; minimum, freezing point Dec. 31, Jan. 7, 8, 10.

EXTREMES 1954-56 --Dissolved solids: Maximum, 440 ppm Oct. 1-10, 1955; minimum, 113 ppm Jan. 1-10, 1955.

Sardens: Maximum, 210 ppm Oct. 1-10, 1955; minimum, 66 ppm Jan. 1-10, 1955.

Specific conductance: Maximum daily, 731 micromhos Oct. 12, 1955; minimum daily, 158 micromhos Mar. 10, 1956, 8, 10, 1956.

Water temperatures: Maximum, 82°F July 3, 1955; minimum, freezing point Jan. 29, Dec. 31, 1955, and Jan. 7, 8, 10, 1956.

REMARKS: Specific conductance of daily samples available in district office at Columbus, Ohio. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	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 on evaporation at 180°C)		Hardness as CaCO ₃		Immediate acidity (H ⁺)	Potential acidity (H ⁺)	Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-magnesium	Calcium	Non-carbonate					
Oct. 1-10, 1955 ...	9.3	0.3	0.03	1.7	56	16	45	5.8	7	238	35	0.8	6.7	440	210	205	0.1	0.0	0.0	649	5.8	2
Oct. 11-20 ...	7.7	.3	.03	1.2	52	15	37	4.4	11	205	33	.6	5.0	384	191	182	.1	.1	.1	376	6.1	2
Oct. 21-31 ...	6.7	.1	.02	.01	32	8.4	21	3.2	11	114	20	.4	5.7	228	114	108	.2	.2	.2	360	6.0	2
Nov. 1-10 ...	7.1	.0	.02	.00	31	8.5	19	2.9	17	100	21	.3	4.8	211	112	106	.1	.1	.1	352	6.3	2
Nov. 11-20 ...	7.8	.2	.06	.18	35	9.9	23	2.6	17	120	21	.4	4.8	254	124	110	.1	.1	.1	382	6.3	1
Nov. 21-30 ...	6.6	.3	.02	.20	26	7.1	13	2.7	12	93	14	.2	3.2	176	94	84	.1	.1	.1	287	6.3	5
Dec. 1-10 ...	6.2	.3	.06	.08	24	6.9	12	2.1	11	87	12	.2	3.6	168	88	79	.1	.1	.1	273	6.2	3
Dec. 11-20 ...	5.9	.2	.06	.07	23	6.3	12	2.1	12	82	13	.2	3.8	180	84	74	.1	.1	.1	281	6.2	5
Dec. 21-31 ...	7.7	.5	.08	.07	29	7.3	17	2.7	20	98	18	.2	4.8	201	102	86	.1	.1	.1	324	6.3	2
Jan. 1-10, 1956 ...	5.2	.2	.04	.17	26	8.1	18	2.5	17	97	18	.3	4.8	193	106	92	.1	.1	.1	315	6.4	2
Jan. 11-20 ...	5.2	.7	.03	.43	32	9.6	20	2.9	18	114	20	.3	4.5	221	119	105	.0	.0	.0	357	6.6	2
Jan. 21-31 ...	6.7	.5	.02	.91	41	11	28	2.4	17	153	24	.5	3.2	290	148	134	.1	.2	.2	458	6.3	2
Feb. 1-10 ...	4.8	.1	.04	.64	23	6.3	7.3	1.5	8	79	8.2	.2	3.7	147	83	77	.0	.1	.1	232	6.1	2
Feb. 11-20 ...	5.8	.5	.02	.52	23	8.0	9.1	1.2	8	84	10	.2	2.4	157	90	84	.1	.1	.1	248	6.0	0
Feb. 21-29 ...	6.2	.3	.02	.49	22	6.7	8.3	1.8	8	79	7.8	.2	3.0	145	82	76	.1	.1	.1	227	6.3	2
Mar. 1-10 ...	5.6	.2	.10	.60	21	6.3	7.2	1.8	11	74	7.5	.6	.9	147	78	69	.0	.0	.0	216	6.4	8
Mar. 11-20 ...	5.8	.1	.10	.51	20	6.5	6.9	1.8	7	76	3.2	.2	2.0	135	77	71	.1	.1	.1	228	6.1	1
Mar. 21-31 ...	5.5	.4	.04	.48	25	9.3	9.8	1.7	8	100	7.8	.2	2.3	171	101	94	.1	.1	.1	270	6.3	3
Apr. 1-10 ...	7.1	.0	.03	.61	21	6.5	6.7	1.4	9	75	7.2	.1	2.8	139	79	72	.0	.0	.0	219	6.2	1
Apr. 11-13, 15-20 ...	7.9	.4	.02	.61	23	8.2	8.2	1.7	7	90	9.4	.2	1.9	159	91	85	.0	.0	.0	248	6.2	2
Apr. 21-30 ...	6.4	.2	.03	.42	26	8.2	11	1.5	5	102	8.5	.2	2.6	179	99	94	.1	.1	.1	276	5.7	0

OHIO RIVER MAIN STEM—Continued

OHIO RIVER AT LOCK AND DAM 8, AT NEWELL, W. VA.—Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956—Continued

Date of collection	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- gan- ese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Imme- diate acidity (H ⁺)	Poten- tial free acidity (H ⁺)	Specific conduct- ance (micro- mhos at 25°C)	pH	Color
															Calcium, mg./ nesium	Non- carbon- ate					
May 1-10, 1956...	7.1	0.2	0.01	0.07	26	8.0	10	1.4	9	96	8.8	0.3	2.3	170	98	90	0.1	0.0	268	6.1	1
May 11-20	7.7	.3	.01	.06	22	7.2	9.7	1.1	8	84	8.4	.2	2.1	158	84	78	.1	.0	239	6.2	1
May 21-31	6.8	.1	.01	.17	23	6.2	9.5	1.5	11	84	7.2	.2	2.5	153	83	74	.1	.1	239	6.1	1
June 1-10	7.7	.5	.01	.25	22	6.5	9.0	1.4	7	86	6.8	.2	2.5	154	82	76	.1	.0	241	6.0	1
June 11-20	6.9	.2	.01	.25	29	7.7	14	1.9	11	106	13	.3	3.8	154	104	95	.1	.0	307	6.1	0
June 21-30	9.6	.2	.02	.33	34	8.4	14	2.4	12	125	15.5	.2	3.0	225	119	110	.0	.0	307	6.1	0
July 1-10	7.5	.2	.01	.04	30	8.4	14	2.0	14	125	12.8	.2	2.3	156	108	96	.0	.0	308	6.6	2
July 11-20	7.4	.2	.01	.06	28	8.2	13	1.7	12	107	9.8	.2	2.2	185	98	89	.0	.0	289	6.5	1
July 21-31	8.0	.2	.01	.12	28	7.6	14	2.2	12	106	8.7	.3	2.7	190	101	91	.0	.0	296	6.3	7
Aug. 1-10	8.3	.3	.03	.25	26	7.3	11	1.8	14	90	8.5	.2	2.4	170	95	83	.0	.0	265	6.3	2
Aug. 11-20	7.1	.2	.03	.32	23	6.6	9.7	1.6	9	84	8.0	.2	2.2	156	84	77	.0	.0	246	6.2	3
Aug. 21-31	9.4	.4	.01	.51	29	8.3	14	1.7	10	111	11	.3	2.9	209	106	98	.1	.0	316	6.3	2
Sept. 1-10	7.8	.3	.02	.00	29	7.0	15	2.4	18	96	12	.3	2.5	189	101	86	.0	.0	295	6.5	1
Sept. 11-20	7.7	.2	.02	.00	28	8.1	15	2.4	11	104	15	.4	3.5	196	103	94	.0	.0	305	6.4	1
Sept. 21-30	8.7	.6	.03	.04	31	8.4	18	2.9	16	112	14	.4	3.5	216	112	99	.0	.0	334	6.5	2
Time-weighted average	7.0	0.3	0.03	0.26	28	8.1	15	2.2	12	104	13	0.3	3.2	197	104	94	0.1	0.0	307	--	2

OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT LOCK AND DAM 8, AT NEWELL, W. VA.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Chromium (Cr)		Nickel (Ni)	Copper (Cu)	Lead (Pb)	Zinc (Zn)	Cobalt (Co)	Arsenic (As)	Cadmium (Cd)
	Hexa-valent	Total							
Oct. 1-10, 1955	0.00	0.00	0.13	0.00	0.02	0.44	0.00	0.00	0.0
Oct. 11-20	.00	.00	.09	.00	.01	.64	.00	.01	.0
Oct. 21-31	.01	.01	.00	.00	.00	.15	.00	.01	.1
Nov. 1-10	.00	.00	.00	.00	.00	.10	.01	--	.2
Nov. 11-20	.00	.00	.00	.00	.02	1.1	.01	.00	.1
Nov. 21-30	.00	.00	.00	.00	.00	.59	.00	.00	.0
Dec. 1-10	.00	.00	.00	.00	.00	.50	.01	.00	.0
Dec. 11-20	.00	.00	.00	.00	.00	.03	.00	.00	.1
Dec. 21-31	.00	.00	.00	.00	.00	.71	.01	.00	.1
Jan. 1-10, 1956	--	--	--	--	--	--	--	.02	--
Jan. 11-20	--	--	--	--	--	--	--	.02	--
Jan. 21-31	--	--	--	--	--	--	--	.02	--
Feb. 1-10	--	--	--	--	--	--	--	.00	--
Feb. 11-20	--	--	--	--	--	--	--	.00	--
Feb. 21-29	--	--	--	--	--	--	--	.00	--
Mar. 1-10	--	--	--	--	--	--	--	.01	--
Mar. 11-20	--	--	--	--	--	--	--	.00	--
Mar. 21-31	--	--	--	--	--	--	--	.01	--
Apr. 1-10	--	--	--	--	--	--	--	.00	--
Apr. 11-13, 15-20	--	--	--	--	--	--	--	.00	--
Apr. 21-30	--	--	--	--	--	--	--	.00	--
May 1-10	--	--	--	--	--	--	--	.00	--
May 11-20	--	--	--	--	--	--	--	.00	--
May 21-31	--	--	--	--	--	--	--	.00	--
June 1-10	--	--	--	--	--	--	--	.00	--
June 11-20	--	--	--	--	--	--	--	.00	--
June 21-30	--	--	--	--	--	--	--	.00	--
July 1-10	--	--	--	--	--	--	--	.00	--
July 11-20	--	--	--	--	--	--	--	.00	--
July 21-31	--	--	--	--	--	--	--	.00	--
Aug. 1-10	--	--	--	--	--	--	--	.00	--
Aug. 11-20	--	--	--	--	--	--	--	.00	--
Aug. 21-31	--	--	--	--	--	--	--	.00	--
Sept. 1-10	--	--	--	--	--	--	--	.00	--
Sept. 11-20	--	--	--	--	--	--	--	.00	--
Sept. 21-30	--	--	--	--	--	--	--	.00	--

Date of collection	Phenols as C_6H_5OH	Cyanides as CN
Oct. 5, 1955	0.002	0.01
Oct. 15	.000	.00
Oct. 25	.003	.00
Nov. 5	.003	.02
Nov. 15	.002	.03
Nov. 25	.025	.00
Dec. 5	.057	.03
Dec. 15	.033	.02
Dec. 25	.082	.06
Jan. 5, 1956	.044	--
Jan. 15	.124	--
Jan. 25	.050	--
Feb. 5	.024	--
Feb. 15	.078	--
Feb. 25	.024	--

OHIO RIVER BASIN EXCEPT CUMBERLAND AND TENNESSEE RIVER BASINS

OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT LOCK AND DAM 8, AT NEWELL, W. VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

(Once-daily measurement at approximately 1 p.m.)

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

MUSKINGUM RIVER BASIN
TUSCARAWAS RIVER AT NEWCOMERTOWN, OHIO

LOCATION.--At gaging station at highway bridge three-quarters of a mile south of Newcomertown, Tuscarawas County, 2 miles upstream from Buckhorn Creek, and 4 miles downstream from Dualap Creek.

DRAINAGE AREA.--2 436 square miles.

RECORDS AVAILABLE.--Chemical analyses: July 1946 to September 1948, October 1955 to September 1956.

Chloride and specific conductance: October 1948 to May 1949.

Water temperatures: July 1946 to September 1948, October 1955 to May 1956.

EXTREMES: 1955-56.--Dissolved solids: Maximum, 3,787 ppm Oct. 20; minimum, 253 ppm May 28-30.

Hardness: Maximum, 1,782 ppm Oct. 20; minimum, 153 ppm Feb. 26-29, May 28-30.

Specific conductance: Maximum daily, 6,070 micromhos Oct. 20; minimum daily, 363 micromhos Mar. 9.

Water temperatures: Minimum, freezing point on several days during November to January, 253 ppm May 28-30, 1956.

EXTREMES: 1946-48, 1955-56.--Dissolved solids: Maximum, 3,787 ppm Oct. 20, 1955; minimum, 253 ppm May 28-30, 1956.

Hardness: Maximum, 1,782 ppm Oct. 20, 1955; minimum, 153 ppm Feb. 26-29, May 28-30, 1956.

Specific conductance (1946-49, 1955-56): Maximum daily, 6,530 micromhos Sept. 21, 1948; minimum, 232 micromhos May 9, 1947.

Water temperatures: Maximum, 82°F Aug. 29, 1948; minimum, freezing point on several days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Ohio Canal diverts small amount of water from river at Portage Lakes, 3 miles south of Akron; part of diverted water flows into Cuyahoga River basin. Flow regulated by eight flood-control reservoirs.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	
														Calcium, magnesium	Non-carbonate				
Oct. 1-6, 1955	343	8.3	0.01	229	30	250	9.0	130	224	612	3.1	17	1,606	695	588	805	2,550	7.1	3
Oct. 7-17	459	13	.04	322	29	298	7.2	113	236	832	2.4	17	2,056	923	830	1,890	3,190	7.1	4
Oct. 18-19	462	17	.03	340	38	451	8.4	119	233	1,448	2.2	22	3,022	1,504	1,406	1,890	4,980	7.0	5
Oct. 20-19	470	17	.10	645	42	579	6.0	108	235	1,840	1.9	21	3,787	1,782	1,694	1,890	6,070	7.0	1
Oct. 21-27	457	16	.02	562	27	479	14	114	236	1,520	1.9	26	3,042	1,512	1,419	1,890	5,170	7.1	3
Oct. 28-30	996	9.2	.01	322	21	248	8.3	104	218	800	1.4	12	1,786	890	805	2,940	7.2	4	
Oct. 31-Nov. 6	1,336	6.5	.04	203	17	139	5.8	86	130	490	1.3	9.2	1,136	576	506	1,890	7.2	4	
Nov. 7-12	1,505	6.7	.03	308	17	249	9.4	88	146	820	1.4	11	1,787	838	766	2,940	7.2	4	
Nov. 13-17	1,030	9.4	.03	530	27	414	13	120	217	1,450	1.1	15	2,970	1,433	1,335	4,870	7.2	4	
Nov. 18-20	439	5.3	.08	84	15	41	6.2	84	105	115	1.2	11	451	271	202	760	7.1	4	
Nov. 21-23	1,833	6.1	.10	160	16	108	6.8	78	150	330	1.1	14	888	465	401	1,420	6.9	5	
Nov. 24-28	1,640	11	.01	200	17	130	6.3	75	176	424	.9	13	1,116	569	507	1,820	6.9	2	
Nov. 29-Dec. 3	1,963	12	.11	270	19	177	7.0	88	186	606	.9	14	1,526	752	680	2,400	7.0	2	
Dec. 4-21	734	12	.03	329	19	254	8.2	108	201	800	1.7	18	1,839	899	810	3,040	7.0	5	
Dec. 22-31	521	14	.02	413	18	331	9.6	124	206	1,044	2.0	26	2,405	1,104	1,003	3,820	6.8	5	
Jan. 1-4, 1956	428	13	.03	326	28	240	6.4	130	194	780	2.2	21	1,706	928	822	2,980	6.9	1	
Jan. 5-18	434	14	.06	422	32	343	7.3	130	215	1,090	2.7	22	2,288	1,184	1,078	3,920	6.9	4	
Jan. 19-30	571	12	.02	367	38	288	12	129	211	960	2.8	20	2,197	1,072	966	3,480	6.8	1	
Jan. 31	4,040	--	--	--	--	67	7.4	--	110	190	--	--	--	--	--	--	992	--	--
Feb. 1-2	3,410	6.6	.06	60	12	33	5.6	44	92	96	--	9.4	389	199	163	603	6.7	8	

MUSKINGUM RIVER BASIN--Continued
TUSCARAWAS RIVER AT NEWCOMERTOWN, OHIO--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180° C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25° C)	pH	Color
														Calcium, mg./l.	Non-carbonate			
Feb. 3-7, 1955	4,430	6.8	0.33	88	12	56	4.2	40	104	170	0.6	7.2	565	269	236	862	6.6	8
Feb. 8	8,640	5.5	.03	65	9.6	32	3.7	58	72	103	--	4.7	367	202	154	587	6.5	--
Feb. 9-25	7.6	7.6	.15	84	13	46	4.6	42	111	144	.5	6.7	473	263	229	789	6.5	5
Feb. 26-29	10,600	6.6	.03	68	8.1	19	3.8	31	85	155	.2	6.8	262	153	128	420	6.7	3
Mar. 1-6	9,118	8.0	.01	71	11	31	3.5	40	110	95	.3	9.0	393	222	190	628	6.8	2
Mar. 7	7,240	--	--	--	--	60	3.5	--	134	195	--	--	--	340	--	976	--	--
Mar. 8-16	9,080	8.4	.03	58	11	20	3.1	38	101	70	.3	7.8	313	190	159	511	6.7	2
Mar. 17-Apr. 3	6,344	9.7	.09	82	15	43	2.9	51	122	129	.4	7.1	467	266	224	758	6.6	1
Apr. 4	5,510	9.5	--	123	14	80	3.3	54	122	254	--	8.0	756	364	320	1,150	6.6	--
Apr. 5-12	5,025	11	.01	77	14	39	3.2	62	120	109	.4	7.8	453	250	199	689	6.9	4
Apr. 13-28	3,432	11	.01	119	17	68	3.6	62	142	216	.6	7.1	697	364	314	1,070	7.0	3
Apr. 29-May 10	6,108	8.7	.01	71	13	35	3.1	54	102	101	.4	6.6	420	231	186	642	7.0	4
May 11-27	7,986	9.6	.02	76	13	36	3.3	60	105	111	.4	6.3	395	243	194	714	7.0	6
May 28-30	8,840	9.6	.02	63	13	36	3.2	63	137	166	.5	3.1	312	260	207	714	6.9	1
May 31-June 12	7,886	8.8	.00	47	8.8	39	2.8	42	88	80	.3	3.1	265	153	119	436	6.9	5
June 13-16	2,815	12	.01	133	17	77	4.1	87	167	232	.6	6.5	700	402	330	1,220	6.8	4
June 17-18	2,925	11	.01	209	17	151	5.6	87	168	476	.7	4.5	1,268	591	520	1,970	6.7	4
June 19-24	3,287	11	.06	117	15	67	4.6	86	139	199	.7	6.6	681	354	283	1,080	6.9	4
June 25-29	7,294	10	.05	58	11	25	3.5	58	100	167	.3	3.1	356	190	144	534	6.9	2
June 30-July 13	3,345	10	.04	106	15	57	3.1	78	136	170	.4	5.4	326	262	262	963	7.0	1
July 14-17	1,760	13	.05	177	20	119	4.4	93	170	368	.3	3.2	1,098	524	448	1,660	7.1	1
July 18-21	1,568	15	.02	210	36	182	5.2	100	186	544	.2	3.9	1,340	672	590	2,220	7.1	1
July 22-29	2,480	11	.03	144	25	108	4.6	82	155	340	--	4.0	906	462	395	1,520	6.8	--
July 30-Aug. 14	3,261	11	.03	94	14	61	4.5	80	117	160	.1	2.9	655	292	226	896	7.1	5
Aug. 15-16	3,110	11	.02	75	12	50	6.1	80	104	128	--	4.0	428	236	171	727	6.9	--
Aug. 17-26	1,241	15	.02	145	34	120	6.1	106	173	342	.5	6.8	964	502	415	1,610	7.1	4
Aug. 27-31	1,150	14	.02	300	20	251	9.6	96	190	756	.6	7.4	1,608	831	752	2,860	7.1	3
Sept. 1-7	2,388	10	.02	130	21	101	6.0	60	148	298	.4	5.0	808	411	362	1,360	6.9	1
Sept. 8-12	1,072	14	.03	219	18	168	8.1	100	170	516	1.3	7.8	1,260	620	538	2,130	7.3	2
Sept. 13-23	920	14	.02	153	35	233	7.8	107	195	364	1.4	9.3	1,010	526	438	1,690	7.3	2
Sept. 24-30	666	14	.05	225	43	201	9.8	124	202	614	1.6	10	1,560	738	637	2,540	7.3	2
Time-weighted average	3,365	11	0.04	190	20	141	5.9	83	155	437	1.0	10	1,110	556	488	1,800	--	3

a represents 99 percent of days and 99 percent of runoff.

MUSKINGUM RIVER BASIN--Continued

TUSCARAWAS RIVER AT NEWCOMERSTOWN, OHIO--Continued

Temperature (°F) of water, October 1955 to May 1956
 /Once-daily measurement at approximately 6 p.m./

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

MUSKINGUM RIVER BASIN--Continued

MUSKINGUM RIVER AT DRESDEN, OHIO

LOCATION.--At gaging station at bridge on State Highway 208, half a mile east of Dresden, Muskingum County, and half a mile downstream from Wakatomika Creek.

DRAINAGE AREA.--5,982 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1952 to September 1956.

Sediment records: October 1952 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 78°F July 27; minimum, freezing point on several days during December to February.

Sediment concentrations: Maximum daily, 870 ppm Nov. 17; minimum daily 2 ppm Nov. 9-11, Jan. 4, 5, 29.

Sediment loads: Maximum daily, 45,500 tons Feb. 26; minimum daily, 5 tons Nov. 10, 11, Jan. 29.

EXTREMES, 1952-56.--Water temperatures: Maximum, 88°F Aug. 4, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 870 ppm Nov. 17, 1955; minimum daily, 1 ppm

Dec. 26, 27, 1952, Nov. 11, 12, 17, 1954.

Sediment loads: Maximum daily, 45,500 tons Feb. 26, 1956; minimum daily, 3 tons

Dec. 26, 27, 1952, Nov. 7, 1953, Nov. 12, 17, 1954.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Flow affected by ice Dec. 16-23, Jan. 1, 24-29. Flow regulated by 14 flood-control reservoirs.

Temperature (°F) of water, water year October 1955 to September 1956

(Once-daily measurement at approximately 11 a. m.)

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

MUSKINGUM RIVER BASIN--Continued

MUSKINGUM RIVER AT DRESDEN, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	737	18	36	1,440	18	70	2,460	17	113
2.....	721	18	35	1,530	22	91	2,320	11	69
3.....	675	16	29	1,640	27	120	2,200	10	59
4.....	638	14	24	1,640	23	102	2,320	14	88
5.....	623	15	25	1,760	21	100	2,650	17	122
6.....	652	11	19	1,760	12	57	2,860	14	108
7.....	713	15	29	1,510	7	28	2,650	10	72
8.....	990	19	51	1,270	4	14	2,390	7	45
9.....	1,090	20	59	1,110	2	6	2,200	5	30
10.....	1,090	20	56	1,000	2	5	2,060	5	28
11.....	922	20	50	913	2	5	1,880	5	25
12.....	859	16	41	848	7	16	1,760	5	24
13.....	803	14	30	830	13	29	1,640	5	22
14.....	785	17	36	821	16	35	1,580	5	21
15.....	812	21	46	812	18	39	1,570	7	30
16.....	830	20	45	1,840	363	s 2,520	1,200	10	32
17.....	848	15	34	8,430	870	19,800	1,300	8	28
18.....	884	13	31	11,000	425	12,600	1,400	7	26
19.....	922	13	32	10,100	256	6,980	1,400	4	15
20.....	904	13	32	9,040	194	4,740	1,200	3	a 10
21.....	894	14	34	6,940	130	2,440	1,200	3	10
22.....	894	15	36	5,130	83	1,150	1,200	4	13
23.....	857	15	35	4,290	71	822	1,400	3	11
24.....	857	15	35	4,620	74	923	1,450	5	20
25.....	848	15	34	5,480	98	1,450	1,440	6	23
26.....	894	14	34	4,790	59	763	1,440	6	23
27.....	990	18	48	3,970	34	384	1,450	6	23
28.....	1,000	22	59	3,440	28	260	1,400	5	19
29.....	1,130	21	64	3,070	25	a 210	1,350	5	18
30.....	1,340	21	76	2,650	20	a 140	1,310	5	18
31.....	1,440	22	86	--	--	--	1,180	8	25
Total.	27,562	--	1,281	103,674	--	55,879	53,860	--	1,170
Day	January			February			March		
	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day
1.....	1,200	8	26	7,740	123	2,570	23,000	200	12,400
2.....	1,130	6	18	7,940	128	2,740	22,700	170	10,400
3.....	1,200	3	10	11,700	179	5,650	22,100	141	8,410
4.....	1,120	2	6	10,800	112	3,260	21,000	104	5,900
5.....	1,060	2	6	9,700	90	2,360	19,900	94	5,050
6.....	1,080	3	9	9,040	84	2,050	17,900	90	4,350
7.....	1,060	6	17	16,600	432	19,400	17,700	165	7,880
8.....	951	4	10	19,300	352	18,300	23,900	319	20,600
9.....	1,020	3	8	18,500	264	13,200	19,900	196	10,500
10.....	1,050	3	8	18,800	220	11,200	12,700	131	4,490
11.....	942	5	13	17,200	154	7,150	12,900	105	3,660
12.....	951	7	18	18,800	152	7,720	23,000	137	8,510
13.....	960	8	21	19,300	138	7,190	25,100	106	7,180
14.....	1,000	8	22	17,700	118	5,640	25,400	79	5,420
15.....	960	8	21	17,400	129	6,060	24,500	76	5,030
16.....	951	7	18	18,200	101	4,960	24,200	55	3,590
17.....	932	4	10	16,400	80	3,540	23,600	51	3,250
18.....	913	5	12	16,400	68	3,010	23,300	47	2,960
19.....	884	8	19	19,300	112	5,840	22,100	45	2,660
20.....	932	5	12	19,900	122	6,560	19,300	64	3,340
21.....	922	4	10	18,200	87	4,280	17,200	169	7,850
22.....	904	4	10	15,900	58	2,490	16,100	89	3,870
23.....	866	5	12	12,200	44	1,450	16,400	66	2,920
24.....	800	5	11	9,700	37	969	17,400	73	3,430
25.....	750	6	12	13,700	596	s 29,100	19,300	107	5,580
26.....	750	7	a 14	25,400	663	45,500	19,600	90	4,760
27.....	750	8	16	25,100	592	40,100	17,700	78	3,730
28.....	750	4	8	24,500	340	22,500	16,400	81	3,590
29.....	1,000	2	5	22,700	245	15,000	16,600	83	3,720
30.....	3,400	66	s 856	--	--	--	17,700	93	4,440
31.....	8,380	150	3,390	--	--	--	17,200	80	2,180
Total.	39,568	--	4,628	478,120	--	299,789	615,600	--	183,670

s Computed by subdividing day.

a Computed from estimated concentration graph.

MUSKINGUM RIVER BASIN--Continued

MUSKINGUM RIVER AT DRESDEN, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	15,300	64	2,640	11,500	87	2,700	21,800	186	11,000
2.....	13,600	56	2,060	10,800	227	s 7,080	21,000	164	9,300
3.....	14,100	75	2,860	16,900	260	11,900	22,700	95	5,820
4.....	15,900	81	3,480	18,200	157	7,710	22,100	81	4,830
5.....	17,200	112	5,200	16,900	119	5,430	22,100	87	4,000
6.....	15,900	100	4,290	14,100	86	3,270	22,100	63	3,760
7.....	14,100	74	2,820	15,300	236	9,750	21,300	52	2,990
8.....	13,400	56	2,030	16,200	450	22,100	20,500	69	3,820
9.....	13,400	48	1,740	17,700	222	10,600	18,200	97	4,770
10.....	12,700	42	1,440	17,400	166	7,800	14,800	82	3,280
11.....	11,500	39	1,210	19,900	155	8,330	11,900	71	2,280
12.....	9,920	36	964	19,900	123	6,610	10,100	69	1,880
13.....	8,600	34	789	19,300	107	5,580	8,160	61	1,340
14.....	7,540	33	672	18,200	129	6,340	6,740	63	1,150
15.....	6,740	37	673	17,200	125	5,800	5,660	52	795
16.....	7,540	38	774	16,400	118	5,220	5,300	35	501
17.....	8,380	34	769	16,100	107	4,650	5,480	50	740
18.....	8,380	31	701	15,900	87	3,730	6,940	140	2,620
19.....	7,940	20	429	15,300	72	2,970	9,920	258	6,910
20.....	7,540	18	366	13,900	64	2,400	9,040	158	3,860
21.....	7,140	17	328	11,200	59	1,780	8,380	160	3,620
22.....	6,560	20	354	8,820	67	1,600	8,160	302	6,650
23.....	6,940	23	431	9,700	94	2,460	8,160	406	8,940
24.....	7,740	22	460	11,200	194	5,870	7,540	184	3,740
25.....	8,820	36	857	10,400	123	3,450	13,100	450	s 17,400
26.....	10,100	43	1,170	8,820	74	1,760	18,800	465	23,600
27.....	11,200	49	1,480	9,920	104	s 3,160	20,500	327	18,100
28.....	11,500	52	1,610	21,000	345	19,600	19,900	215	11,600
29.....	12,200	84	2,770	20,500	196	10,800	19,100	153	7,890
30.....	12,900	166	5,780	21,000	145	8,220	16,600	144	6,450
31.....	--	--	--	22,100	116	6,920	--	--	--
Total.	324,780	--	51,147	483,760	--	205,590	426,180	--	183,636
Day	July			August			September		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	12,900	109	3,800	6,940	147	2,750	3,580	85	822
2.....	9,040	94	2,290	6,020	102	1,660	5,300	130	1,860
3.....	7,140	93	1,790	5,300	78	1,120	8,380	144	3,260
4.....	6,940	93	1,740	5,130	87	928	8,160	150	3,300
5.....	6,940	104	1,950	4,790	65	841	6,020	92	1,500
6.....	7,340	238	4,720	8,820	400	s 11,000	4,290	76	880
7.....	7,340	105	2,080	14,300	510	19,700	3,360	55	499
8.....	6,740	127	2,310	13,100	336	11,900	2,930	38	301
9.....	10,800	487	s 15,100	11,200	225	6,800	2,580	32	223
10.....	12,200	350	11,500	8,820	150	3,570	2,320	28	175
11.....	8,820	203	4,830	6,740	105	1,910	2,130	21	121
12.....	6,740	127	2,310	6,020	87	1,410	2,000	18	97
13.....	5,480	76	1,120	5,130	60	831	2,000	17	92
14.....	5,130	61	845	4,620	60	748	1,940	18	94
15.....	5,130	62	859	5,480	163	2,410	1,820	21	103
16.....	4,450	65	781	6,740	193	3,510	1,940	22	115
17.....	3,890	49	515	5,660	116	1,770	2,060	23	128
18.....	3,580	46	445	4,450	71	853	2,130	26	150
19.....	3,440	43	399	3,580	58	561	2,130	23	132
20.....	3,360	42	381	3,070	48	398	1,940	17	89
21.....	3,810	63	648	2,790	30	226	1,760	18	86
22.....	4,450	81	973	2,720	22	162	1,760	18	86
23.....	4,050	52	569	2,520	19	129	1,640	19	84
24.....	3,660	44	435	2,580	20	139	1,590	22	94
25.....	3,360	30	272	2,720	20	147	1,540	23	96
26.....	3,140	26	220	2,580	18	125	1,480	20	80
27.....	3,970	57	611	2,260	15	92	1,410	19	72
28.....	6,560	413	7,320	2,060	11	61	1,350	18	66
29.....	9,260	480	12,000	2,320	12	75	1,310	17	60
30.....	9,480	234	5,990	2,390	12	77	1,260	17	58
31.....	8,880	186	4,210	2,260	19	116	--	--	--
Total.	197,520	--	93,013	163,110	--	76,019	82,110	--	14,723
Total discharge for year (cfs-days)									2,996,044
Total load for year (tons)									1,170,545

s Computed by subdividing day.

MUSKINGUM RIVER BASIN--Continued
MUSKINGUM RIVER AT DRESDEN, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom with-trawl tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (° F)	Suspended sediment												Methods of analysis
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Nov. 17, 1955...	11:30 a. m.	9,260		947	1,260	51	65	77	89	96	99	100	--		--	BSWCM
Nov. 17, 1955...	1:10 p. m.	17,900		597	1,860	40	54	67	82	91	98	99	99		100	BSWCM
Feb. 7, 1956...	1:10 p. m.	17,900		597	1,660	14	25	46	75	91	96	98	98		100	BSNM
Feb. 25, 1956...	4:30 p. m.	16,600		1,600	1,390	43	54	85	82	94	99	100	--		--	BSWCM
Feb. 26, 1956...	9:00 a. m.	26,000		487	798	73	78	85	91	95	98	99	100		--	BSWCM
Feb. 27, 1956...	2:30 p. m.	25,400		1,040	1,720	49	64	77	90	96	99	99	99		100	BSWCM
May 3, 1956...	11:40 a. m.	17,200		238	1,010	39	49	63	79	91	96	98	99		100	BSWCM
May 28, 1956...	11:50 a. m.	22,700		389	1,360	40	54	65	81	89	93	94	96		98	BSWCM
May 28, 1956...	11:50 a. m.	22,700		389	1,370	26	35	53	71	90	92	95	96		98	BSNM
June 23, 1956...	7:30 a. m.	9,040		484	1,762	37	54	70	88	95	97	97	98		100	BSWCM
June 23, 1956...	8:00 p. m.	16,900		722	1,110	40	55	68	85	92	95	97	97		98	BSWCM
June 27, 1956...	7:10 a. m.	20,500		377	551	56	67	76	81	85	88	90	90		96	BSWCM
July 9, 1956...	4:30 p. m.	12,700		745	1,180	52	64	78	90	96	98	99	100		--	BSWCM

MUSKINGUM RIVER BASIN--Continued

MUSKINGUM RIVER AT McCONNELLSVILLE, OHIO

LOCATION --At bridge on State Highway 37 at McConnellsville, Morgan County, half a mile upstream from gaging station and dam No. 7, and 3 miles downstream from Oilspring Run.

DRAINAGE AREA 411 square miles (above gaging station).

RECORDS AVAILABLE --Chemical analyses: October 1950 to September 1951, October 1954 to September 1956.

Water temperatures: October 1950 to September 1951, July 1954 to September 1956.

EXTREMES 1955-56 --Dissolved solids: Maximum, 1,607 ppm Nov. 4; minimum, 219 ppm May 28 to June 5.

Hardness: Maximum, 807 ppm Nov. 4; minimum, 138 ppm May 28-June 5.

Specific conductance: Maximum daily, 2,650 micromhos Nov. 4; minimum daily, 296 micromhos Feb. 29.

Water temperatures: Maximum, 77°F Aug. 15, 16, 31; minimum, 34°F Dec. 22, 23.

EXTREMES: 1950-51, 1954-56 --Dissolved solids: Maximum, 2,070 ppm Oct. 13-15, 1954; minimum, 188 ppm Feb. 21-28, 1951.

Hardness: Maximum, 916 ppm Oct. 13-15, 1954; minimum, 118 ppm Feb. 21-28, 1951.

Specific conductance: Maximum daily, 3,410 micromhos Oct. 14, 1954; minimum daily, 249 micromhos Dec. 8, 1950.

Water temperatures: Maximum, 94°F Aug. 4, 1955; minimum, freezing point Feb. 2, 1951, Feb. 10, 11, 1955.

REMARKS --Records of specific conductance of daily samples available in district office at Columbus, Ohio. Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Flow regulated by 14 flood-control reservoirs.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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)	Boron (B)	Dissolved solids		Hardness as CaCO ₃	Percent non-carbonate	Sodium adsorption ratio	Specific conductance (micro-mhos at 25°C)	pH	Color
														Parts per million	Tons per acre-foot	Calcium, magnesium	Non-carbonate				
Oct. 1-18, 1955.	1,031	2.6	0.01	118	24	100	4.0	122	176	218	1.2	4.5		774		393	293		1,250	7.3	5
Oct. 19-29.	1,192	2.7	0.01	160	26	121	6.2	127	186	322	.8	6.5		1,036		3,334	506		1,590	7.3	5
Oct. 30-Nov. 3.	1,892	9.0	0.01	237	23	181	8.6	138	180	552	.9	8.2		1,424		7,274	866		2,250	7.2	3
Nov. 4.	2,090	8.5	0.01	289	21	214	8.1	132	172	675	--	7.4		1,607		9,068	807		2,650	7.1	--
Nov. 5-7.	2,157	4.9	0.01	211	21	154	7.4	120	173	482	1.0	8.7		1,251		7,286	613		1,990	7.4	1
Nov. 8-19.	3,752	3.2	0.01	143	17	88	5.7	112	121	295	.7	7.4		822		8,327	427		1,320	7.2	5
Nov. 20-24.	6,240	8.2	.02	64	12	25	4.9	93	99	59	.5	7.6		343		5,779	209		563	7.1	5
Nov. 25-Dec. 4.	3,610	10	.01	101	16	52	4.4	100	122	150	.4	9.2		551		5,370	318		912	7.1	3
Dec. 5-18.	2,312	11	.04	139	19	82	3.8	121	140	242	.5	7.6		781		4,875	425		1,270	7.1	3
Dec. 19-31.	1,596	9.6	.02	180	21	107	4.2	143	148	300	1.0	10		938		4,017	486		1,500	7.2	4
Jan. 1-10, 1956.	1,296	8.1	.02	185	26	121	3.9	146	143	376	1.2	7.9		1,048		3,667	568		1,700	7.2	4
Jan. 11-30.	1,374	8.1	.04	184	22	118	3.8	153	150	352	1.0	8.3		1,016		3,769	550		1,640	7.3	5
Jan. 31-Feb. 2.	9,473	6.2	.03	97	16	58	6.1	84	121	166	.5	11		582		14,370	308		915	6.8	5
Feb. 3-11.	17,400	5.9	.06	47	11	17	3.9	63	72	47	.4	4.2		253		11,860	162		432	6.7	5
Feb. 12-26.	9,270	7.4	.19	51	12	16	2.8	61	64	50	.3	5.4		267		14,360	153		432	6.7	5
Feb. 27-Mar. 10.	22,850	8.2	.05	45	10	14	3.1	57	75	37	.3	4.6		252		13,270	162		398	7.0	4
Mar. 11-20.	22,800	8.4	.01	45	12	15	2.6	55	75	37	.3	5.4		267		13,270	162		395	7.0	3
Mar. 21-31.	20,320	8.3	.03	41	12	15	2.2	55	86	47	.2	4.6		267		13,270	162		446	7.1	2
Apr. 1-13.	16,360	9.3	.01	51	13	17	2.3	74	86	44	.2	4.4		270		9,739	181		452	7.1	2

Apr. 14-30, 1956.	9,622	11	0.00	69	16	28	1.9	83	106	82	0.3	2.9	370	9,612	238	170	616	7.3	1
May 1-18.....	17,970	11	.00	48	12	16	2.2	76	78	44	.3	3.4	255	12,970	169	107	429	7.1	5
May 19-27.....	11,760	9.5	.01	66	14	23	2.0	90	102	66	.3	3.2	355	11,270	222	146	576	7.0	3
May 28-June 5....	25,620	9.8	.07	41	8.7	11	2.1	68	66	27	.3	3.1	219	15,150	138	82	355	7.0	3
June 6-12.....	17,030	11	.07	54	11	18	2.1	85	85	46	.2	2.2	297	13,660	180	110	474	7.2	1
June 13-26.....	9,730	11	.04	69	14	26	2.7	103	102	69	.3	2.9	388	10,190	230	145	612	7.2	1
June 27-July 6....	14,140	12	.00	50	9.7	14	3.0	87	77	32	.4	3.1	256	9,774	165	93	418	7.1	5
July 7-9.....	8,367	10	.00	76	14	32	2.7	112	100	87	--	2.9	391	8,833	247	155	670	7.4	5
July 10-18.....	7,623	13	.11	68	13	26	2.8	108	89	70	.3	2.5	347	7,142	223	135	590	7.3	7
July 19-28.....	4,382	9.9	.00	95	18	51	3.1	125	115	140	.3	2.0	523	6,188	311	209	879	7.4	4
July 29-Aug. 15..	7,892	9.3	.00	59	12	24	3.5	102	80	58	.4	2.7	308	6,563	186	113	528	7.2	5
Aug. 16-18.....	5,410	9.5	.00	82	12	42	3.9	106	92	118	.4	2.7	445	6,500	254	167	759	7.4	5
Aug. 19-22.....	3,420	11	.00	66	12	27	4.2	114	90	63	.4	2.7	344	3,176	214	120	572	7.5	7
Aug. 23-27.....	2,930	11	.00	92	16	43	3.8	134	118	113	.6	2.4	484	3,829	295	186	823	7.5	4
Aug. 28-Sept. 3..	4,497	8.4	.02	118	17	71	4.9	117	119	203	.4	3.1	662	8,038	364	268	1,070	7.4	6
Sept. 4-12.....	4,148	10	.02	80	14	44	3.8	94	101	119	.3	4.0	452	5,062	257	190	722	7.3	4
Sept. 13-30.....	2,170	6.0	.00	114	20	68	4.8	131	141	175	.6	4.5	642	3,761	367	259	1,040	7.4	4
Time-weighted average.....	9,140	8.6	0.03	94	16	53	3.6	102	112	148	0.5	5.0	534	8,225	301	217	868	--	4

MUSKINGUM RIVER BASIN--Continued
MUSKINGUM RIVER AT McCONNELLSVILLE, OHIO--Continued

Temperature (°F) of water, water year October 1965 to September 1966

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

LITTLE KANAWHA RIVER AT GLENVILLE, W. VA.

LOCATION.--At waterplant at Glenville, Gilmer County, 0.7 mile upstream from Sycamore Run, and half a mile upstream from gaging station at Glenville.

DRAINAGE AREA.--386 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1946 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 82°F July 5; minimum, freezing point Jan. 14, 23-27.

EXTREMES, 1946-56.--Water temperatures: Maximum, 86°F on several days during August

1947, July and August 1955; minimum, freezing point on many days during winter months

REMARKS.--Temperature records furnished by West Virginia Water Service Company. Records of discharge for water year October 1955 to September 1956 given in WSP 1435

Temperature (°F) of water, water year October 1955 to September 1956

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

HOCKING RIVER BASIN

HOCKING RIVER AT ATHENS, OHIO

LOCATION --At gaging station at Mill Street Bridge at Athens, Athens County, 3½ miles downstream from Margaret Creek.

DRAINAGE AREA --944 square miles

RECORDS AVAILABLE --Chemical analyses: October 1954 to September 1956.

Water temperatures: October 1954 to September 1956.

EXTREMES, 1955-56 --Dissolved solids: Maximum, 1,093 ppm Oct. 10; minimum, 157 ppm Mar. 29-30.

Hardness: Maximum, 596 ppm Oct. 10; minimum, 104 ppm Mar. 29-30.

Specific conductance: Maximum daily, 1,360 micromhos Oct. 10; minimum daily, 233 micromhos Apr. 4

Water temperatures: Maximum, 77°F July 4; minimum freezing point Dec. 20

EXTREMES, 1954-56 --Dissolved solids: Maximum, 1,093 ppm Oct. 10, 1955; minimum, 150 ppm Feb. 7-8, 1955.

Hardness: Maximum, 596 ppm Oct. 10, 1955; minimum, 84 ppm Feb. 7-8, 1955.

Specific conductance: Maximum daily, 1,360 micromhos Oct. 10, 1955; minimum daily, 221 micromhos Feb. 7, 1955.

Water temperatures: Maximum, 84°F Aug. 7, 1955; minimum, freezing point on several days during December 1954, January, February, and December 1955.

REMARKS --Acidity determined to pH 7.0. Specific conductance of daily samples available in district office at Columbus, Ohio. Records of discharge for

water year October 1955 to September 1956 given in WSP 1435. Flow affected by ice Dec. 1, 12-13, 15-16, 20, 31, Jan. 7, 8, 18, 23-28. Low flow

slightly affected by mill above station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Temperature (°F)	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 on evaporation at 180°C)	Hardness as CaCO ₃		Total acidity as H ₂ SO ₄	Specific conductance (micro-mhos at 25°C)	pH	Color
																	Calcium	Non-carbonate				
Oct. 1-9, 1955 ...	118	13	13	0.00	0.05	106	48	61	5.4	53	429	61	0.2	2.3	802	802	462	418		1,100	7.6	4
Oct. 10, 1955 ...	156	22	22	.07	8.6	117	74	65	4.7	40	711	56	--	1.0	b1,083	b1,083	598	596		1,360	4.40	--
Oct. 11-24, 1955 ...	89.4	14	.02	.02	--	106	50	56	4.7	22	450	68	--	2.3	823	823	470	452		1,120	6.7	4
Oct. 25-Nov. 5 ...	79.2	16	.00	.00	--	108	51	56	4.2	46	442	62	3.2	2.5	827	827	479	441		1,120	7.3	4
Nov. 6-16, 1955 ...	87.9	12	.08	.08	.81	110	46	58	4.6	59	430	61	3.3	5.2	802	802	404	415		1,110	7.6	4
Nov. 17-30, 1955 ...	335	9.6	.03	.03	1.1	74	30	31	3.1	39	277	39	3.4	4.1	514	514	308	276		704	7.2	3
Dec. 1-15, 1955 ...	192	11	.01	.01	.00	79	32	34	3.1	58	280	39	3.3	3.9	553	553	329	281		700	7.5	2
Dec. 16-31, 1955 ...	108	11	.02	.02	.03	92	36	41	3.0	88	320	47	1.1	5.5	628	628	376	268		905	7.5	2
Jan. 1-15, 1956 ...	78.2	9.8	.01	.01	.03	98	43	48	2.7	78	357	52	4.4	4.9	792	792	421	357		976	7.4	1
Jan. 16-29, 1956 ...	89.4	9.8	.01	.01	1.1	102	43	57	3.6	80	371	97	--	5.5	742	742	430	366		1,050	7.5	1
Jan. 30, 1956 ...	2,820	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	250	250		611	7.5	--
Jan. 31-Feb. 2, 1956 ...	3,153	6.4	.04	.04	.00	32	13	9.4	4.7	28	105	13	--	4.7	212	212	133	110		338	7.1	5
Feb. 3-4, 1956 ...	4,880	6.0	.06	.06	.01	27	11	7.5	2.8	26	84	11	2.4	4.2	174	174	113	89		278	7.2	5
Feb. 5-15, 1956 ...	3,098	7.9	.06	.06	.35	21	15	9.0	2.6	31	116	12	2.5	4.6	227	227	147	121		354	7.2	5
Feb. 16-20, 1956 ...	5,214	7.9	.11	.11	.46	29	12	6.5	2.2	32	91	9.0	1.9	3.5	184	184	132	96		230	7.0	5
Feb. 21-23, 1956 ...	1,164	7.7	.03	.03	1.0	47	21	14	2.2	43	168	18	2.1	4.0	324	324	204	168		483	6.9	5
Feb. 24-27, 1956 ...	3,100	7.7	.03	.03	.30	26	12	6.9	2.0	27	89	10	2.2	2.8	175	175	114	92		279	6.7	5
Feb. 28-Mar. 7, 1956 ...	1,616	7.9	.01	.01	.05	47	20	13	2.3	36	164	16	2.2	4.5	308	308	200	170		457	7.4	2
Mar. 8-10, 1956 ...	6,140	8.3	.06	.06	.00	29	10	6.4	2.3	36	81	9.0	--	4.4	169	169	113	84		287	7.3	4
Mar. 11-28, 1956 ...	2,657	7.6	.14	.14	.37	39	16	9.6	1.9	36	129	12	2.2	4.9	244	244	163	134		374	7.5	2

a Immediate acidity (H⁺), pH 7.0, 2.1 parts per million; potential free acidity (H⁺), pH 7.0, 2.2 parts per million.

b Includes 13 parts per million of aluminum (Al).

HOCKING RIVER BASIN--Continued

HOCKING RIVER AT ATHENS, OHIO--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at varying hours/

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

OHIO RIVER MAIN STEM

OHIO RIVER AT LOCK AND DAM 22, AT RAVENSWOOD, W. VA.

LOCATION --About 650 feet upstream from dam, lock and dam 22 (mile 220.9) at Ravenswood, Jackson County, 450 feet downstream from Sandy Creek, and 7,600 feet downstream from Turkey Run.

DRAINAGE AREA --39,840 square miles.

RECORDS AVAILABLE --Chemical analyses: October 1954 to September 1956.

Water temperatures: October 1955 to September 1956.

EXTREMES 1955-56 --Dissolved solids: Maximum 423 ppm Oct. 11-16, 18-20; minimum, 117 ppm Feb. 21-29.

Water temperatures: Maximum 213 ppm Oct. 11-16, 18-20; minimum, 72 ppm Feb. 11-20.

Hardness: Maximum 213 ppm Oct. 11-16, 18-20; minimum, 72 ppm Feb. 11-20.

Specific conductance: Maximum daily, 685 micromhos Oct. 16; minimum daily, 136 micromhos Feb. 7.

Water temperatures: Maximum 79°F July 3-5; minimum, 33°F Dec. 21.

EXTREMES 1954-56 --Dissolved solids: Maximum 423 ppm Oct. 11-16, 18-20, 1955; minimum, 117 ppm Feb. 21-29, 1956.

Hardness: Maximum 219 ppm Aug. 1-3, 5-10, 1955; minimum, 69 ppm Mar. 1-10, 1955.

Specific conductance: Maximum July 10, 1955; minimum daily, 711 micromhos July 10, 1955; minimum daily, 109 micromhos Feb. 28, 1955.

Water temperatures: Maximum, 87°F Aug. 2-8, 1955; minimum, freezing point Jan. 30, 1955.

REMARKS --Records of specific conductance of daily samples available in district office at Columbus, Ohio. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Temperature (°F)	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 on evaporation at 180°C)	Hardness as CaCO ₃		Total acidity as H ₂ SO ₄	Specific conductance (micro-mhos at 25°C)	pH	Color
																	Calcium, mg./l.	Non-carbonate				
Oct. 1-10, 1955 ..			2.5	--	0.01	0.07	50	15	38	3.8	42	171	46	0.5	2.8	362	196	152		579	6.9	2
Oct. 11-16, 18-20			3.5	--	.02	.63	59	16	45	4.7	41	197	50	.6	2.9	423	213	179		652	7.0	3
Oct. 21-23, 25-31			6.3	--	.02	.27	50	14	37	4.4	25	165	48	.4	4.6	361	182	162		569	6.5	2
Nov. 1-10, 1956 ..			5.7	--	.00	.02	45	11	32	4.0	25	126	48	.4	4.9	303	158	137		493	6.5	2
Nov. 11-20			6.8	--	.00	.07	54	11	36	3.4	34	120	68	.4	4.7	339	180	152		559	6.7	4
Nov. 21-30			7.2	0.0	.03	.15	32	8.2	16	2.6	29	90	22	.2	4.2	205	114	90		336	6.6	5
Dec. 1-9			7.4	.0	.01	.03	33	7.5	18	2.1	26	93	26	.2	4.4	212	113	92		355	6.5	4
Dec. 11-20			7.6	.3	.01	.04	32	7.7	18	2.4	26	86	31	.3	3.8	210	112	90		348	6.7	4
Dec. 21-31			7.4	--	.01	.07	38	8.6	24	2.8	24	99	42	.3	4.9	248	130	110		413	6.6	2
Jan. 1-10, 1956 ..			7.8	--	.13	.55	45	9.9	28	2.2	33	118	39	.3	5.7	283	153	126		458	6.6	4
Jan. 11-20			6.9	--	.15	.48	46	10	33	1.8	41	111	57	.2	2.8	304	156	122		500	6.6	6
Jan. 21-31			6.4	--	.05	.60	48	11	35	2.1	35	114	59	.3	5.3	307	165	136		516	6.6	5
Feb. 1-10			6.0	--	.07	.29	27	7.5	15	1.8	24	72	23	.2	4.7	173	98	79		287	6.5	3
Feb. 11-20			7.8	--	.10	.17	20	5.4	7.5	2.1	25	53	9.9	.2	3.4	124	72	52		201	6.6	3
Feb. 21-29			6.5	--	.09	.17	20	5.6	6.7	1.7	25	50	8.0	.2	3.0	117	73	52		189	6.5	5
Mar. 1-10			6.5	.1	.09	.21	26	7.2	7.7	2.1	26	68	11	.3	2.8	156	94	73		251	6.6	5
Mar. 11-13, 15-20			6.1	--	.04	.33	20	5.7	6.1	1.6	24	53	8.0	.3	2.9	124	73	54		195	6.8	1
Mar. 21-29			8.0	.1	.04	.11	29	8.2	10	1.7	23	81	14	.3	3.7	171	106	87		272	6.6	5
Apr. 1-10			8.0	.1	.05	.08	25	6.8	8.4	1.9	23	68	11	.1	3.3	147	90	72		236	6.7	4
Apr. 11-20			7.3	--	.00	.00	25	6.6	8.4	1.3	18	74	10	.1	2.6	154	90	75		241	6.0	0
Apr. 21-30			6.7	--	.00	.00	33	7.8	13	2.4	24	89	22	.2	2.9	201	114	95		323	6.4	2
May 1-10			8.3	--	.02	.00	32	7.4	13	1.6	31	89	16	.2	2.5	194	110	85		307	6.6	1

OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT LOCK AND DAM 22, AT RAVENSWOOD, W. VA.--Continued

Chemical analyses, in parts per million, water, year October, 1955 to September, 1956.—Continued																						
Date of collection	Mean discharge (cfs)	Tem- perature (° F)	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- ga- nese (Mn)	Cal- cium (Ca)	Mag- nesium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180° C)	Hardness as CaCO ₃		Total acid- ity as H ₂ SO ₄	Specific conduct- ance (micro- mhos at 25° C)	pH	Color
																	Calcium, mag- nesium	Non- carbon- ate				
May 11-20, 1956.....			7.5	--	0.02	0.00	29	5.8	9.8	2.0	29	72	12	0.1	2.2	161	96	72		256	6.7	2
May 21-24, 28-31.....			8.8	--	.02	.00	27	6.9	11	1.2	27	77	11	.2	2.6	165	96	74		264	6.6	2
June 1-10.....			8.8	--	.01	.00	27	7.0	10	1.5	27	77	11	.2	2.4	162	96	74		263	6.6	2
June 11-20.....			10	--	.01	.00	38	9.1	15	1.7	43	93	24	.2	2.7	224	132	97		360	6.9	2
June 21-30.....			8.5	--	.01	.03	40	9.8	16	2.1	47	100	23	.2	2.2	246	140	102		378	6.6	2
July 1-10.....			8.8	--	.06	.05	39	10	16	1.7	37	114	18	.2	2.4	239	138	108		374	6.6	1
July 11-20.....			8.1	--	.02	.05	35	10	17	1.9	34	105	23	.2	2.8	234	128	101		368	7.1	1
July 21-31.....			7.7	--	.03	.03	34	7.5	16	2.2	35	92	20	.2	2.7	211	116	87		333	7.0	4
Aug. 1-10.....			8.7	--	.02	.05	36	5.9	14	2.2	35	88	17	.2	2.6	201	114	85		318	6.9	3
Aug. 11-20.....			8.9	--	.02	.08	32	5.4	12	2.2	26	89	11	.3	3.1	182	102	81		286	6.8	1
Aug. 21-31.....			11	--	.06	.00	30	8.2	15	2.4	27	94	17	.3	2.4	200	108	86		310	6.7	3
Sept. 1-7, 9-10.....			8.8	--	.05	.07	40	9.7	24	2.8	33	108	36	.3	2.1	260	140	113		412	6.7	4
Sept. 11-20.....			10	--	.00	.03	33	8.1	21	2.9	31	98	24	.3	2.7	223	116	90		352	6.8	3
Sept. 21-30.....			9.5	--	.00	.00	36	8.2	22	2.7	28	106	25	.3	2.7	236	124	100		370	6.7	3
a Time-weighted average.....			7.6	--	0.04	0.13	35	8.6	19	2.3	30	97	26	0.2	3.3	224	123	98		359	--	3

a Represents 99 percent of days.

OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT LOCK AND DAM 22, AT RAVENSWOOD, W. VA.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of Collection	Chromium (Cr)		Nickel (Ni)	Copper (Cu)	Lead (Pb)	Zinc (Zn)	Cobalt (Co)	Arsenic (As)	Cadmium (Cd)
	Hexavalent	Total							
Oct. 1-10, 1955	0.00	0.00	0.00	0.00	0.12	0.08	0.00	0.06	0.0
Oct. 11-12, 14-16, 18-20 .....	.00	.00	.00	.00	.00	.04	.01	.02	.1
Oct. 21, 23, 25-31 .....	.00	.00	.00	.00	.00	.26	.00	.00	.0
Nov. 1-10 .....	.00	.00	.00	.00	.00	.20	.00	.00	.0
Nov. 11-20 .....	.00	.00	.00	.00	.00	.06	.00	.01	.0
Nov. 21-30 .....	.00	.00	.00	.00	.00	.00	.01	.00	.0
Dec. 1-9 .....	.00	.00	.00	.00	.00	.11	.01	.00	.0
Dec. 11-20 .....	.00	.00	.00	.00	.00	.74	.01	.00	.0
Dec. 21-31 .....	.00	.00	.00	.00	.00	.17	.02	.00	.0
Jan. 1-10, 1956	--	--	--	--	--	--	--	.00	--
Jan. 11-20	--	--	--	--	--	--	--	.00	--
Jan. 21-31	--	--	--	--	--	--	--	.00	--
Feb. 1-10	--	--	--	--	--	--	--	.00	--
Feb. 11-20	--	--	--	--	--	--	--	.00	--
Feb. 21-29	--	--	--	--	--	--	--	.00	--
Mar. 1-10	--	--	--	--	--	--	--	.01	--
Mar. 11-13, 15-20	--	--	--	--	--	--	--	.00	--
Mar. 21-29	--	--	--	--	--	--	--	.00	--
Apr. 1-10	--	--	--	--	--	--	--	.00	--
Apr. 11-20	--	--	--	--	--	--	--	.00	--
Apr. 21-30	--	--	--	--	--	--	--	.00	--
May 1-10	--	--	--	--	--	--	--	.00	--
May 11-20	--	--	--	--	--	--	--	.00	--
May 21-24, 28-31	--	--	--	--	--	--	--	.00	--
June 1-10	--	--	--	--	--	--	--	.00	--
June 11-20	--	--	--	--	--	--	--	.00	--
June 21-30	--	--	--	--	--	--	--	.00	--
July 1-10	--	--	--	--	--	--	--	.00	--
July 11-20	--	--	--	--	--	--	--	.00	--
July 21-31	--	--	--	--	--	--	--	.00	--
Aug. 1-10	--	--	--	--	--	--	--	.00	--
Aug. 11-20	--	--	--	--	--	--	--	.00	--
Aug. 21-31	--	--	--	--	--	--	--	.00	--
Sept. 1-7, 9-10	--	--	--	--	--	--	--	.00	--
Sept. 11-20	--	--	--	--	--	--	--	.00	--
Sept. 21-30	--	--	--	--	--	--	--	.00	--

Date of Collection	Phenols as C_6H_5OH	Cyanides as CN
Oct. 5, 1955	0.000	0.00
Oct. 15 .....	.001	.00
Oct. 25 .....	.002	.00
Nov. 5 .....	.000	.00
Nov. 15 .....	.001	.00
Dec. 5 .....	.001	.01
Dec. 15 .....	.004	.02
Dec. 25 .....	.100	.02
Jan. 5, 1956 .....	.000	--
Jan. 15 .....	.006	--
Jan. 25 .....	.004	--
Feb. 5 .....	.012	--
Feb. 15 .....	.006	--
Mar. 5 .....	.011	--

OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT LOCK AND DAM 22, AT RAVENSWOOD, W. VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
/Once-daily measurement at approximately 6 a. m./

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

KANAWHA RIVER BASIN

NEW RIVER AT RADFORD, VA.

LOCATION --At bridge on U. S. Highway 11 at Radford, Montgomery County, 2,000 feet upstream from gaging station on left bank, 4½ miles from Little River, and 5 miles downstream from Claytor Dam.

DRAINAGE AREA --2,748 square miles above gaging station.

RECORDS AVAILABLE --Chemical analyses: October 1949 to September 1950, October 1955 to September 1956.

Water temperatures: October 1949 to September 1950, October 1955 to September 1956:

EXTREMES 1955-56 --Dissolved solids: Maximum, 89 ppm Aug. 11-20; minimum, 51 ppm Apr. 1-10.

Hardness: Maximum, 58 ppm Sept. 11-20; minimum, 33 ppm Mar. 21-31, Apr. 1-10.

Specific conductance: Maximum daily, 165 microhmhos Apr. 21; minimum daily, 75.5 Apr. 5.

Water temperatures: Maximum, 81°F Aug. 27; minimum, 38°F Dec. 16, 27, 1955.

EXTREMES 1949-50, 1955-56 --Dissolved solids: Maximum, 89 ppm Aug. 11-20, 1956; minimum, 51 ppm Nov. 11-20, 1949, Apr. 1-10, 1956.

Hardness: Maximum, 58 ppm Sept. 11-20, 21-30, 1956; minimum, 33 ppm Mar. 21-31, Apr. 1-10, 1956.

Specific conductance: Maximum daily, 165 microhmhos Apr. 21, 1956; minimum daily, 57.7 microhmhos Nov. 2, 1949.

Water temperatures: Maximum, 81°F Aug. 27, 1956; minimum, 38°F Dec. 16, 27, 1955.

REMARKS --Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Samples for 1949-50 were collected at gaging station 2,000 feet downstream from present sampling site.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (microhmhos at 25°C)	pH	Color
														Calcium, mg-nestum	Non-carbonate			
Oct. 1-10, 1955	1,480	9.0	0.00	10	4.2	2.3	1.5	49	5.4	2.3	0.1	1.0	56	42	2	98.8	7.6	6
Oct. 11-20	1,830	8.8	.00	10	4.1	--	--	47	7.1	--	--	--	--	42	3	106	8.2	4
Oct. 21-31	1,960	12	.02	10	4.2	--	--	50	5.3	--	--	--	--	42	1	112	7.9	5
Nov. 1-10	1,410	--	.00	12	5.2	--	--	58	6.4	--	--	--	--	51	4	132	7.8	6
Nov. 11-20	1,480	--	.00	10	4.5	--	--	51	8.4	--	--	--	--	43	2	114	7.6	6
Nov. 21-30	1,900	--	.03	12	3.9	4.8	1.4	50	8.4	--	--	--	--	48	5	115	7.4	5
Dec. 1-10																		
Dec. 11-20	1,650	--	.08	12	4.7	--	1.6	--	9.2	5.0	.1	.9	--	49	0	--	--	5
Dec. 21-31	1,270	--	.05	13	4.8	4.3	1.4	56	9.1	--	--	--	--	52	6	124	7.5	5
Jan. 1-10, 1956	1,090	--	.08	13	4.5	--	1.4	--	9.2	5.0	.2	.9	--	51	0	--	--	5
Jan. 11-20	1,260	15	.03	12	5.1	4.8	1.3	59	8.8	5.0	.1	1.4	83	52	4	135	7.9	2
Jan. 21-31	1,270	10	.03	12	5.0	3.3	1.2	54	9.0	3.9	.1	1.5	72	50	6	122	7.6	5
Feb. 1-10	3,690	9.8	.05	13	5.2	3.8	1.1	54	9.5	7.2	.1	1.8	74	54	8	130	7.6	5
Feb. 11-20	3,440	15	.06	13	5.0	3.6	1.2	59	8.1	4.2	.1	1.6	76	53	5	129	7.7	2
Feb. 21-29	4,040	11	.08	11	4.0	3.2	1.2	49	6.8	3.6	.1	1.6	66	46	6	110	7.6	5
Mar. 1-10	3,280	10	.07	11	4.2	3.0	1.3	48	6.4	3.2	.1	1.9	67	45	5	107	7.6	5
Mar. 11-20	5,340	11	.07	9.1	3.2	2.7	1.1	38	6.3	2.8	.1	2.1	65	36	5	89.6	7.5	3
Mar. 21-31	3,470	9.7	.07	8.2	3.0	2.2	1.0	36	5.2	2.1	.1	1.8	54	33	3	80.6	7.6	8
Apr. 1-10	4,090	9.4	.06	7.9	3.3	2.0	1.1	35	5.3	2.0	.1	2.1	51	33	5	81.1	7.4	5
Apr. 11-20	9,710	9.4	.06	12	4.1	2.1	1.1	49	5.7	2.6	.1	2.0	61	47	7	107	7.5	5
Apr. 21-30	3,410	4.6	.08	11	4.6	2.1	1.2	51	6.3	2.6	.1	2.8	68	46	5	105	7.3	5
May 1-10	4,290	4.2	.04	8.4	3.6	2.0	1.2	37	5.2	2.2	.1	2.4	52	36	5	82.3	7.2	5

KANAWHA RIVER BASIN--Continued
NEW RIVER AT RADFORD, VA.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
May 11-20, 1956	2,340	4.4	0.03	8.9	4.0	1.7	1.2	42	5.0	2.1	0.1	2.2	56	30	4	88.8	7.3	5
May 21-31	1,950	8.0	.00	11	4.5	2.3	1.1	53	5.1	2.6	.1	2.1	53	36	5	97.9	7.6	5
June 1-10	2,040	8.0	.00	11	5.1	2.4	1.1	53	5.1	2.9	.1	1.9	70	48	5	107	7.3	5
June 11-20	1,530	7.7	.00	11	5.2	2.2	1.2	53	6.0	2.2	.1	1.8	65	49	5	106	7.4	5
June 21-30	1,880	7.5	.00	12	5.7	2.8	1.2	57	5.3	3.6	.1	2.0	70	53	7	115	7.4	5
July 1-10	2,080	7.1	.00	12	4.0	2.5	1.3	51	3.2	3.7	.0	1.8	67	46	5	107	7.7	0
July 11-20	2,240	7.9	.00	11	4.3	2.4	1.3	52	3.3	2.7	.0	1.4	64	45	3	104	7.6	2
July 21-31	2,380	8.5	.00	12	5.7	2.3	1.4	57	6.7	2.5	.0	2.0	71	53	7	114	7.7	0
Aug. 1-10	1,230	8.6	.12	13	5.2	2.6	1.6	61	4.3	2.9	.0	1.8	74	54	4	123	7.5	5
Aug. 11-20	1,010	8.9	.12	13	5.3	2.4	1.6	61	5.5	2.4	.0	1.8	89	54	4	123	7.5	3
Aug. 21-31	1,010	8.0	.12	13	5.5	2.4	1.6	62	5.7	2.8	.0	1.0	72	55	4	126	7.5	3
Sept. 1-10	1,580	8.6	.12	13	5.1	2.5	1.7	60	5.0	2.6	.0	1.6	70	53	4	121	7.5	5
Sept. 11-20	1,000	7.9	.11	14	5.7	2.6	1.7	65	5.7	3.2	.0	1.8	76	58	5	133	7.4	5
Sept. 21-30	4,470	7.9	.11	14	5.6	3.3	1.7	65	4.2	4.0	.0	1.8	80	58	5	136	7.3	5
Average	2,480	8.9	0.05	11	4.6	2.8	1.3	52	6.3	3.2	0.1	1.8	70	47	4	112	--	4

KANAWHA RIVER BASIN--Continued

NEW RIVER AT RADFORD, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

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

KANAWHA RIVER BASIN--Continued

NEW RIVER AT GLENLYN, VA.

LOCATION.--At gaging station at bridge on U. S. Highway 460 at Glenlyn, Giles County, 0.3 mile upstream from East River, and 6.3 miles downstream from Wolf Creek.

DRAINAGE AREA.--3,768 square miles.

RECORDS AVAILABLE.--Chemical analyses: April 1930 to March 1931, October 1949 to September 1950, October 1951 to September 1952, October 1954 to September 1956.

EXTREMES, 1930-31.--Dissolved solids: Maximum, 94 ppm Oct. 21-31, 1930; minimum, 58 ppm Mar. 21-31, 1931.

Hardness: Maximum, 80 ppm July 11-20, 1930; minimum, 42 ppm Dec. 11-20, 1930.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 5, 1955	1,900	7.5	0.00	20	6.2	2.9	1.4	68	19	2.0	--	5.8	102	75	20	169	7.8	3
Mar. 6, 1956	4,670	7.9	.01	14	4.6	2.2	1.3	50	14	2.5	0.0	4.4	77	54	13	124	7.4	3
Apr. 9	3,510	7.2	.02	16	4.4	2.1	1.6	52	14	2.4	.0	6.2	80	58	15	134	7.3	5
May 9	1,400	7.1	.00	15	5.0	1.8	1.3	57	10	2.0	.0	3.5	84	58	11	121	7.2	5
June 10	1,400	7.5	.00	20	7.0	2.0	1.3	49	16	2.7	.0	2.2	110	79	15	164	8.8	5
July 17	3,260	7.5	.02	20	7.0	2.3	1.5	81	11	2.5	.1	4.9	94	79	12	168	7.7	7
Sept. 12	1,350	7.1	.01	21	7.0	4.4	1.8	81	16	3.5	.0	5.7	112	81	15	168	7.4	5

a Includes equivalent of 6 parts per million carbonate (CO₃).

KANAWHA RIVER BASIN--Continued

NEW RIVER AT GLENLYN, VA.--Continued

LOCATION.--On the right bank at the Glenlyn steam electric plant of the Appalachian Electric Power Company at Glenlyn, Giles County.

DRAINAGE AREA.--3,768 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1950 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 78°F July 25, Aug. 6, 7, 18; minimum, freezing point several days during November to January.

EXTREMES, 1950-56.--Water temperatures: Maximum, 84°F June 28, 1952; minimum, freezing point on several days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

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

KANAWHA RIVER BASIN--Continued

NEW RIVER AT BLUESTONE DAM STILLING BASIN, NEAR HINTON, W. VA.

LOCATION --Temperature recorder on right bank, 1,000 feet upstream from gaging station, 2.2 miles upstream from Hinton, Summers County, and 0.9 mile upstream from Greenbrier River.
DRAINAGE AREA --4,604 square miles.

RECORDS AVAILABLE. --Water temperatures: May 1953 to September 1956.

EXTREMES, 1955-56: --Water temperatures: Maximum, 83° F July 6 and on several days during August; minimum, 35° F on several days during January.
 MAXIMUM: May 1956. --Ice: No ice during 1956.
 MINIMUM: May 1956. --Water temperatures: Maximum, 83° F July 6 and on several days during August; minimum, 35° F on several days during January.

EXTREMES, 1953-56. --Water temperatures: Maximum, 83°F Aug. 5, 1953 and several days during July and August 1956; minimum, 34°F on several days during December 1953, December 1954 and January 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.
during December 1955, December 1954 and January 1956.

Temperature ($^{\circ}\text{F}$) of water, water year October 1955 to September 1956

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	
1.....	73	72	56	54	42	41	39	39	37	37	45	44	53	52	66	63	72	70	79	79	80	80	78	
2.....	72	71	55	54	42	41	39	39	37	37	44	44	52	52	67	66	71	70	79	79	80	79	78	
3.....	71	71	54	54	41	40	39	39	37	37	44	44	53	51	67	67	70	70	80	79	80	79	78	
4.....	71	71	54	54	40	40	40	39	37	37	46	44	54	54	67	66	69	68	81	81	80	80	79	
5.....	71	71	54	53	40	38	40	39	39	37	46	45	58	54	66	65	68	67	81	81	82	80	78	
6.....	71	71	53	52	38	38	40	39	41	39	47	46	58	58	65	64	69	67	83	82	82	81	79	
7.....	72	71	52	52	38	38	40	39	43	41	48	47	59	57	66	64	67	66	82	82	82	81	79	
8.....	72	71	51	50	38	38	40	39	43	43	50	48	57	53	67	65	70	68	82	82	81	80	78	
9.....	71	70	50	49	40	38	39	39	43	42	51	50	53	51	66	65	71	70	82	81	82	81	77	
10.....	70	70	49	48	40	40	39	38	43	42	51	49	51	49	66	65	72	71	81	80	82	81	75	
11.....	70	69	48	47	40	40	38	38	43	43	50	49	49	49	68	65	72	71	80	79	82	81	74	
12.....	69	68	47	46	40	40	38	37	44	43	49	49	51	49	68	67	74	72	79	78	82	81	74	
13.....	68	68	46	46	40	40	39	37	44	44	50	49	53	51	70	67	75	74	79	78	83	82	74	
14.....	68	67	48	48	39	38	37	37	44	44	51	50	54	53	71	69	76	75	78	78	83	82	74	
15.....	67	66	48	48	38	37	37	37	36	45	51	51	54	54	71	69	75	75	79	77	82	81	74	
16.....	66	65	50	49	38	37	36	36	44	44	51	50	54	54	71	71	76	75	80	79	83	81	73	
17.....	64	64	50	48	38	37	35	35	44	43	50	47	54	53	71	69	75	75	79	79	83	81	74	
18.....	63	61	48	48	37	36	35	35	46	44	47	45	53	52	69	67	76	76	79	79	83	81	74	
19.....	61	59	48	48	37	36	35	35	48	46	45	45	52	51	67	67	76	76	81	79	83	81	73	
20.....	59	59	48	48	37	36	35	35	48	45	48	45	53	52	66	65	76	75	80	80	82	81	72	
21.....	58	57	48	47	36	36	35	35	48	46	45	44	54	53	69	66	75	75	80	80	81	81	72	
22.....	58	57	48	48	36	36	35	35	46	44	45	45	54	54	68	67	75	73	81	80	79	78	72	
23.....	58	57	48	47	36	36	35	35	44	42	46	45	56	54	68	67	73	73	81	81	79	78	72	
24.....	59	58	47	46	36	36	36	36	42	41	47	46	56	56	68	68	75	73	81	81	78	77	71	
25.....	58	57	46	46	36	36	36	36	42	41	49	47	57	56	70	68	77	75	81	81	77	76	70	
26.....	57	57	46	45	37	37	37	37	36	44	42	49	49	57	70	69	78	75	82	82	77	77	70	
27.....	57	56	45	44	37	37	37	37	37	44	44	49	49	58	69	68	78	77	82	81	77	77	69	
28.....	56	56	44	44	38	38	37	37	45	44	49	49	61	58	89	68	78	77	81	80	77	76	68	
29.....	57	57	44	43	38	38	37	37	45	45	52	49	63	61	89	68	77	77	80	79	78	77	65	
30.....	57	57	43	42	39	38	37	37	--	--	53	52	64	63	70	69	79	77	79	78	77	77	68	
31.....	57	57	--	--	39	38	37	37	--	--	53	53	66	--	72	70	--	--	80	78	78	78	--	
Average.....	65	64	49	48	38	38	37	37	43	42	48	47	55	54	88	67	74	73	80	80	81	80	74	

KANAWHA RIVER BASIN--Continued

KNAPP CREEK AT MARLINTON, W. VA.

LOCATION.--At city waterplant, at Marlinton, Pocahontas County, 1 mile upstream from mouth and 2 miles downstream from gaging station near Marlinton.

DRAINAGE AREA.--108 square miles (above gaging station).

RECORDS AVAILABLE.--Water temperatures: October 1946 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 72°F July 23, Aug. 11, 16, 19; minimum, freezing point on many days during November to February.

EXTREMES, 1946-56.--Water temperatures: Maximum, 82°F July 24, 1952; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for gaging station near Marlinton, for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

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

a Includes estimated temperature, 32°F on missing days.

KANAWHA RIVER BASIN--Continued

KANAWHA RIVER AT CABIN CREEK, W. VA.

LOCATION.--On the left bank at the Cabin Creek steam electric plant of the Appalachian

Electric Power Company at Cabin Creek, Kanawha County.

DRAINAGE AREA.--8,661 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1950 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 84°F July 5, Aug. 17, 30, 31, Sept. 1; minimum, 34°F Jan. 30.

EXTREMES, 1950-56.--Water temperatures: Maximum, 92°F Aug. 1-4, 6, 1955; minimum, freezing point Feb. 10, 1951.

REMARKS.--Temperature records furnished by the Appalachian Electric Power Company.

Measurements are made at the cooling water intake of the steam-driven electric generating plant.

Temperature (°F) of water, water year October 1955 to September 1956

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

KANAWHA RIVER BASIN--Continued
KANAWHA RIVER AT CHARLESTON, W. VA.

LOCATION.--Temperature recorder at gaging station on left bank at old lock 6, at Charleston, Kanawha County, 1.0 mile upstream from Davis Creek, 1½ miles downstream from Twomile Creek, and 3½ miles downstream from Elk River.

DRAINAGE AREA.--10,419 square miles.

RECORDS AVAILABLE.--Water temperatures: March 1953 to September 1956.

EXTREMES, 1953-56.--Water temperatures: Maximum, 87° F July 5; minimum, 36° F Jan. 31, Feb. 1, 1955, Jan. 31, Feb. 1, 1956.

EXTREMES, 1953-56.--Water temperatures: Maximum, 93° F Aug. 7, 1955; minimum, 36° F Feb. 1, 1955, Jan. 31, Feb. 1, 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956.

Temperature (°F) of water, water year October 1955 to September 1956

/Continuous ethyl alcohol-actuated thermometer/

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

BIG SANDY RIVER BASIN

JOHNS CREEK NEAR VAN LEAR, KY.

LOCATION.--Temperature recorder at gaging station on right bank 100 feet upstream from Long Branch, 0.3 mile upstream from Daniels Creek, 0.5 mile downstream from Dewey Dam, and 2½ miles southeast of Van Lear, Johnson County.

DRAINAGE AREA.--208 square miles.

RECORDS AVAILABLE.--Water temperatures: April 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 90°F July 3; minimum, 35°F Jan. 9-11.

EXTREMES, 1954-56.--Water temperatures: Maximum, 90°F July 3, 1956; minimum, 34°F Feb. 2, 6, 1955.

REMARKS.--Flow regulated by Dewey Reservoir. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, 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.....	60	56	42	41	37	37	40	37	40	37	48	45	51	50	55	55	74	63	78	77	76	73	82	79
2.....	61	60	57	42	42	37	39	38	39	38	50	48	52	51	56	55	64	64	82	77	76	72	80	79
3.....	61	60	57	55	44	42	38	37	39	37	50	48	53	52	57	55	65	82	90	81	76	72	79	77
4.....	61	60	55	54	45	44	38	37	39	37	50	49	57	53	57	55	68	83	83	75	72	72	78	77
5.....	60	60	54	52	45	44	37	37	41	38	52	50	56	53	57	57	71	68	81	72	72	71	78	77
6.....	60	60	52	51	44	43	38	37	45	42	53	51	56	53	57	57	76	71	82	72	73	70	81	69
7.....	60	59	52	51	43	43	37	37	47	44	56	53	56	55	60	57	71	70	72	71	76	73	75	74
8.....	59	58	52	48	43	43	37	37	46	45	55	53	54	54	59	59	71	71	69	77	76	74	72	72
9.....	59	58	51	50	43	42	37	35	45	45	53	53	54	54	59	58	71	71	74	71	78	77	72	71
10.....	59	58	50	47	42	35	35	45	45	53	53	53	54	54	58	58	71	70	74	72	79	78	72	64
11.....	59	58	49	48	42	36	35	46	45	53	52	54	54	58	58	72	71	78	72	79	72	79	70	68
12.....	59	58	50	49	42	41	37	37	45	45	52	51	54	54	59	58	72	72	81	78	79	72	70	69
13.....	59	58	51	50	41	39	37	37	45	45	51	51	55	54	60	59	72	72	81	78	79	78	75	70
14.....	58	58	50	49	39	38	37	47	45	51	50	54	54	61	60	74	72	79	78	82	70	74	68	68
15.....	58	58	50	49	39	38	38	46	46	50	50	54	54	64	64	72	72	82	78	73	70	72	69	68
16.....	58	58	52	50	39	38	37	46	46	49	48	54	52	64	62	73	72	84	71	80	73	70	70	70
17.....	58	56	52	49	38	38	37	47	46	48	47	53	52	67	63	74	73	77	70	80	78	70	70	70
18.....	56	56	49	48	38	37	37	47	46	47	46	53	52	63	62	75	74	77	73	80	79	71	70	70
19.....	56	56	48	47	37	37	47	46	47	46	45	53	53	62	61	75	74	74	73	82	78	70	65	65
20.....	60	56	47	47	37	37	47	46	48	48	45	42	53	53	61	60	81	75	75	73	82	81	78	66
21.....	60	47	46	37	37	37	47	46	48	48	42	42	53	53	60	59	84	81	73	72	81	75	86	86
22.....	60	47	47	37	37	37	47	46	47	47	42	42	53	53	59	59	87	80	73	73	76	75	86	86
23.....	60	46	47	37	37	37	47	46	47	46	45	44	53	53	60	59	86	75	83	73	78	75	86	86
24.....	61	60	46	47	37	37	47	46	47	46	45	44	53	53	61	60	73	72	73	73	76	73	88	88
25.....	61	60	47	46	38	37	38	46	46	46	44	44	54	54	61	61	72	70	72	72	77	76	88	88
26.....	60	58	46	46	38	38	37	47	46	45	44	44	54	54	64	61	77	71	79	72	77	76	88	86
27.....	59	58	46	45	38	36	39	47	46	46	45	45	55	54	64	62	73	70	80	73	77	76	86	86
28.....	59	58	45	43	36	38	37	47	46	46	45	44	54	54	67	62	73	70	80	73	77	77	85	85
29.....	59	58	43	41	36	38	37	47	45	49	48	48	55	54	68	64	75	73	74	74	79	77	85	84
30.....	59	58	41	41	36	38	37	--	--	49	48	48	55	55	69	67	75	75	75	74	79	77	84	84
31.....	58	57	--	--	38	37	40	38	--	--	50	49	--	--	75	68	--	--	78	75	79	78	--	--
Average.....	59	59	50	49	40	39	38	37	45	44	49	48	54	53	61	60	74	71	78	73	78	75	71	69

TUG FORK AT KERMIT, W. VA.

LOCATION.--At city waterplant at Kermit, Mingo County, three-quarters of a mile downstream from Wolf Creek, and 3 miles downstream from gaging station near Kermit, W. Va.

DRAINAGE AREA.--1,274 square miles above waterplant, 1,185 square miles above gaging station.

RECORDS AVAILABLE.--Water temperatures: October 1946 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 85°F July 5; minimum, 35°F on several days during December to January.

EXTREMES, 1946-56.--Water temperatures: Maximum, 90°F July 29, 1949; minimum, freezing point Feb. 5, 1947, Nov. 26, 1950, Jan. 10, Feb. 8, 9, 1951.

REMARKS.--Records of discharge for Tug Fork near Kermit for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

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

SCIOTO RIVER BASIN

OLENTANGY RIVER NEAR DELAWARE, OHIO

LOCATION --Temperature recorder at gaging station on left bank, 500 feet upstream from highway bridge, 1,000 feet downstream from Delaware Dam, 1,300 feet upstream from Pennsylvania Railroad bridge, and 4 miles north of Delaware, Delaware County.

DRAINAGE AREA --387 square miles.

RECORDS AVAILABLE --October 1946 to September 1956.

WATER TEMPERATURES --October 1946 to September 1956. Maximum, 77°F July 29, 30, minimum 34°F on several days during December and February.

EXTREMES, 1955-56 --Water temperatures: Maximum, 53°F July 29, 1952; minimum freezing point on several days during some winter months.

EXTREMES, 1946-56 --Water temperatures: Maximum, 53°F July 29, 1952; minimum freezing point on several days during some winter months.

REMARKS --Records of discharge for water year October 1955 to September 1956 given in NSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

Recorder with temperature at water, water year October 1955 to September 1956

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

SCIOTO RIVER BASIN--Continued
OLENTANGY RIVER AT WORTHINGTON, OHIO

LOCATION.--Temperature recorder at gaging station on right bank, 30 feet downstream from Wilson Road bridge, 1½ miles northwest of Worthington, Franklin County, and 2½ miles upstream from Rush Run.

DRAINAGE AREA 163 square miles.

RECORDS AVAILABLE--Maximum temperatures: October 1955 to September 1956.

EXTREMES, 1955-56.--Maximum, 84° F June 16, July 1, 2; minimum, freezing point Dec. 13, 14, 17, 24, 25.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, 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	63	49	46	35	34	--	--	33	33	39	38	46	43	57	55	68	64	84	76	76	74	77	75
2.....	65	61	50	49	34	34	--	--	33	33	40	38	50	46	57	55	64	63	84	81	75	72	75	70
3.....	65	60	50	46	38	34	--	--	35	33	41	39	56	50	60	54	63	--	--	76	73	71	67	87
4.....	65	62	46	43	42	38	--	--	36	35	41	38	56	53	60	56	61	--	--	77	75	70	67	87
5.....	65	64	43	41	42	38	--	--	37	36	45	40	55	50	59	53	68	64	--	82	76	72	68	87
6.....	66	64	44	42	38	34	--	--	36	34	47	45	54	52	64	57	69	64	--	81	78	72	71	87
7.....	68	63	44	42	34	33	--	--	38	34	49	47	53	49	63	57	72	67	--	--	79	78	70	67
8.....	63	60	43	42	35	34	--	--	38	34	47	44	49	46	61	54	73	69	--	--	78	76	67	62
9.....	61	57	42	41	35	34	--	--	35	35	46	45	51	45	60	56	72	67	--	--	78	76	65	62
10.....	61	56	42	41	34	33	--	--	35	34	45	42	50	48	60	58	74	69	--	--	78	74	65	63
11.....	61	57	42	41	33	33	--	--	34	34	42	41	52	49	67	59	77	70	--	--	78	73	67	64
12.....	61	57	46	42	33	33	--	--	34	34	42	41	56	50	67	61	78	72	77	73	80	75	69	65
13.....	63	59	51	46	33	32	--	--	35	34	42	39	57	53	69	63	79	74	77	73	79	77	72	68
14.....	59	56	52	51	34	32	--	--	36	34	42	40	56	52	68	65	82	76	73	71	80	75	72	70
15.....	58	56	52	51	34	34	--	--	37	35	43	39	53	52	67	61	82	78	77	72	80	75	70	68
16.....	56	56	52	48	34	33	33	33	35	34	43	39	52	50	62	60	84	78	77	76	80	75	72	69
17.....	56	56	52	48	33	32	33	33	38	34	39	37	50	48	61	59	81	78	77	74	81	77	72	70
18.....	56	56	44	42	33	33	33	34	33	38	36	41	39	49	46	63	57	79	75	76	72	81	70	68
19.....	56	55	44	43	33	33	33	33	38	35	41	38	52	45	66	60	75	72	74	72	80	75	67	63
20.....	59	54	43	43	33	33	33	33	37	35	41	38	53	49	65	60	74	71	76	72	75	71	64	60
21.....	56	55	44	42	33	33	33	33	36	36	42	38	54	48	67	61	73	69	77	74	71	68	60	55
22.....	56	52	46	42	33	33	34	33	37	34	42	40	54	51	71	66	77	73	76	73	70	66	64	60
23.....	57	52	48	46	33	33	34	33	37	34	44	40	52	48	71	67	79	75	76	73	72	66	65	63
24.....	57	54	48	47	33	33	34	34	39	37	44	42	54	50	67	63	81	75	76	75	72	69	65	62
25.....	53	50	47	41	37	32	34	33	43	39	42	39	52	49	66	60	79	76	74	71	68	64	60	61
26.....	53	49	41	38	37	36	34	33	42	37	46	42	52	51	65	62	77	75	79	76	72	68	64	61
27.....	54	50	39	38	36	33	34	33	38	37	43	42	59	51	64	63	78	76	82	77	75	70	63	59
28.....	55	51	39	34	33	33	33	33	38	36	43	43	63	59	66	60	78	76	82	75	78	73	64	59
29.....	55	53	34	33	35	33	33	33	38	37	47	43	62	60	68	65	76	72	78	76	78	75	65	61
30.....	53	51	34	33	35	33	33	33	38	37	46	43	61	53	69	65	78	73	78	75	77	76	67	62
31.....	51	49	--	--	33	33	33	33	--	--	45	42	--	--	68	66	--	--	78	75	79	75	--	--
Average.....	59	56	45	43	35	33	--	--	36	35	43	41	54	50	64	60	75	71	--	--	77	73	68	65

SCIOTO RIVER BASIN--Continued

SCIOTO RIVER AT CHILLICOTHE, OHIO

LOCATION.--Temperature recorder at gaging station on right bank at north end of Chillicothe, Ross County, 450 feet downstream from Bridge Street Bridge.

DRAINAGE AREA.--3,847 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1950 to September 1951.

Water temperatures: October 1950 to September 1951, October 1953 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 82°F July 2, Aug. 6; minimum, 35°F on several days during January.

EXTREMES, 1950-51.--Water temperatures: Maximum, 89°F July 14, 1954, Aug. 2-3, 1955; minimum, freezing point on several days during December 1950, January to February 1951.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

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
	Temperature (°F) of water, water year October 1955 to September 1956 /Recorder with temperature attachment, continuous ethyl alcohol-actuated thermometer/																							
1.....	68	66	52	50	37	36	38	38	36	36	41	41	48	47	58	56	68	66	80	75	75	74	77	75
2.....	68	64	53	52	38	36	38	38	36	36	43	41	50	48	58	57	66	62	82	78	77	75	77	74
3.....	68	64	53	50	40	38	40	38	36	36	44	43	54	50	57	56	62	60	81	78	78	74	76	73
4.....	68	65	50	48	42	40	39	38	36	36	44	44	57	54	57	56	61	59	78	74	78	76	75	73
5.....	68	66	48	47	42	42	39	38	36	36	46	45	57	56	58	55	62	60	78	76	82	77	76	74
6.....	66	66	48	47	42	41	39	38	37	36	49	46	56	52	60	57	66	62	77	76	81	79	76	73
7.....	66	65	48	47	41	40	39	38	37	37	53	49	52	50	61	60	69	66	77	75	80	77	73	70
8.....	65	63	47	46	40	40	38	37	37	37	53	48	50	49	61	59	70	68	78	76	80	77	71	68
9.....	64	61	47	45	40	40	37	36	38	37	48	45	49	48	60	58	73	69	77	75	79	77	70	67
10.....	64	60	46	45	40	39	36	36	38	38	47	45	49	49	60	59	74	69	76	73	79	77	69	67
11.....	64	60	45	44	39	38	37	36	38	38	47	47	51	49	62	59	75	71	75	73	80	77	70	67
12.....	64	61	47	45	38	37	37	37	38	38	47	45	54	51	64	62	74	72	75	72	81	77	72	68
13.....	64	63	51	47	38	37	38	37	38	38	46	45	56	54	68	64	75	73	75	74	80	78	73	70
14.....	63	60	52	51	37	37	36	36	38	38	46	46	55	55	69	68	76	73	76	73	80	77	72	70
15.....	61	58	52	51	37	36	36	36	40	38	46	45	55	53	69	68	76	74	76	73	81	77	72	70
16.....	59	58	55	52	36	36	36	36	40	39	45	43	53	51	65	62	79	75	76	73	80	77	71	69
17.....	58	56	55	50	36	36	37	36	39	39	43	42	51	50	62	61	78	76	76	75	81	78	72	70
18.....	56	55	51	46	37	36	37	36	41	39	42	42	50	48	62	59	78	75	77	74	80	78	71	68
19.....	55	55	46	45	37	37	36	36	41	40	43	42	50	48	63	60	75	76	73	78	76	78	69	66
20.....	56	53	45	43	37	36	37	36	40	39	43	42	52	49	64	61	75	72	76	73	76	72	66	63
21.....	57	54	43	43	37	36	37	36	39	39	44	43	53	50	66	61	73	71	77	74	74	70	64	60
22.....	57	54	44	43	36	36	37	37	40	39	44	44	54	52	68	65	75	73	78	75	73	70	65	62
23.....	58	54	46	44	37	36	37	37	39	39	45	44	55	52	68	67	75	74	77	75	74	70	67	64
24.....	58	54	46	45	41	37	37	36	40	39	46	45	54	53	68	64	77	74	76	74	74	71	66	64
25.....	54	52	45	44	42	41	36	35	45	40	46	44	55	51	66	63	78	76	78	74	74	70	66	63
26.....	54	51	44	43	42	42	35	35	45	43	44	44	53	53	66	63	78	76	79	76	74	70	65	63
27.....	55	52	43	42	42	40	35	35	43	42	46	44	55	53	64	64	79	76	81	77	76	71	64	62
28.....	55	53	42	40	40	39	35	35	43	42	46	45	59	55	64	64	79	77	81	78	78	74	64	61
29.....	55	54	40	38	40	39	36	35	42	41	46	45	61	59	64	64	78	75	78	77	78	75	65	63
30.....	54	53	40	37	40	39	36	35	--	--	46	46	61	58	67	64	78	74	78	75	77	75	65	62
31.....	54	52	--	--	39	38	36	35	--	--	47	46	--	--	68	67	--	--	75	74	79	76	--	--
Average.....	60	58	47	45	39	38	37	36	39	38	46	44	54	52	63	61	73	71	77	75	78	75	70	67

SCIOTO RIVER BASIN--Continued

SCIOTO RIVER AT HIGBY, OHIO

LOCATION.--At gaging station at highway bridge, three-quarters of a mile downstream from Walnut Creek and 1½ miles north of Higby, Ross County.

DRAINAGE AREA.--5,129 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1953 to September 1956.

Sediment records: October 1953 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 79°F July 2, Aug. 5-6; minimum, freezing point Dec. 22, Jan. 18, 27.

Sediment concentrations: Maximum daily, 1,310 ppm June 21; minimum daily, 2 ppm Dec. 26.

Sediment loads: Maximum daily, 69,900 tons Apr. 4; minimum daily, 4 tons Oct. 14, Dec. 26.

EXTREMES, 1953-56.--Water temperatures: Maximum, 83°F on several days during August 1955; minimum, freezing point on many days during most winter months.

Sediment concentrations: Maximum daily, 2,130 ppm July 21, 1954; minimum daily, 1 ppm Sept. 3-10, 1955.

Sediment loads: Maximum daily, 112,000 tons Mar. 22, 1955; minimum daily, 1 ton Sept. 3-10, 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Flow slightly regulated by O'Shaughnessy, Griggs, and Delaware Reservoirs.

Temperature (°F) of water, water year October 1955 to September 1956

Once-daily measurement at approximately 7 a.m./

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

SCIOTO RIVER BASIN--Continued

SCIOTO RIVER AT HIGBY, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day
1.....	725	60	117	344	8	7	1,530	23	95
2.....	571	32	49	348	6	6	1,530	20	83
3.....	467	12	15	375	8	8	1,390	23	86
4.....	415	10	11	425	10	11	1,690	46	210
5.....	395	8	8	578	13	20	1,970	63	335
6.....	497	15	20	515	16	22	2,060	44	245
7.....	659	33	59	467	6	8	2,010	27	146
8.....	832	24	54	431	7	8	1,890	17	87
9.....	702	11	21	405	15	16	2,250	46	s 321
10.....	584	8	13	410	10	11	1,790	52	s 267
11.....	503	13	18	420	10	11	1,270	10	34
12.....	455	7	8	400	11	12	1,070	7	20
13.....	467	4	5	395	8	8	962	6	16
14.....	443	3	4	405	7	8	962	4	10
15.....	473	4	5	420	12	14	962	7	18
16.....	443	5	6	1,670	--	e 3,100	789	9	19
17.....	437	6	7	5,150	1,280	17,800	755	11	22
18.....	443	6	7	8,950	513	12,400	740	12	24
19.....	437	6	7	7,430	250	5,020	740	10	20
20.....	461	6	7	6,100	141	2,320	702	15	28
21.....	443	5	6	5,530	102	1,520	680	10	18
22.....	415	10	11	4,780	85	1,100	652	10	18
23.....	395	12	13	4,150	80	874	662	8	14
24.....	395	8	8	3,160	80	682	659	13	23
25.....	380	9	9	3,880	87	911	666	4	7
26.....	375	10	10	4,330	84	982	666	2	4
27.....	400	11	12	3,070	62	514	659	4	7
28.....	380	10	10	2,360	57	363	652	13	23
29.....	370	7	10	1,910	47	242	638	10	17
30.....	348	6	6	1,550	35	146	631	12	20
31.....	344	8	7	--	--	--	624	9	15
Total.	14,654	--	543	70,358	--	48,144	34,241	--	2,252
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day
1.....	604	13	21	6,290	144	2,440	13,800	335	12,500
2.....	584	10	16	10,300	750	sa26,000	10,900	290	8,530
3.....	571	12	18	16,000	730	31,500	9,340	235	5,930
4.....	584	13	20	12,600	345	11,700	8,380	180	4,070
5.....	584	12	19	9,540	144	3,710	7,050	155	2,950
6.....	571	7	11	9,540	216	s 6,220	6,100	135	2,220
7.....	558	9	14	16,000	528	22,800	8,760	410	s 12,200
8.....	545	10	15	15,200	315	12,900	22,300	1,020	61,400
9.....	509	7	10	11,800	168	5,350	22,800	408	25,100
10.....	509	12	16	12,600	160	5,440	23,800	242	15,400
11.....	515	18	25	14,300	231	8,920	21,800	224	13,200
12.....	545	15	22	16,000	200	8,640	16,000	208	8,980
13.....	571	12	18	14,500	133	5,210	9,740	168	4,420
14.....	558	15	22	12,200	76	2,500	10,500	290	a 8,200
15.....	533	14	20	14,700	651	s 28,400	12,000	302	9,780
16.....	509	14	19	13,800	330	12,300	10,900	120	3,530
17.....	497	16	21	13,200	105	3,740	10,100	82	2,240
18.....	473	12	15	20,000	584	s 35,700	9,340	56	1,410
19.....	467	10	13	21,800	325	19,100	9,140	53	1,310
20.....	461	15	19	19,100	182	9,380	9,140	60	1,480
21.....	461	15	19	13,400	100	3,620	9,340	58	1,460
22.....	467	15	19	9,740	61	1,600	10,300	96	2,670
23.....	467	13	16	7,810	51	1,080	10,300	88	2,450
24.....	449	18	22	6,670	61	1,100	11,300	126	3,840
25.....	431	7	8	8,950	600	sa20,000	13,000	162	5,690
26.....	425	16	18	17,900	1,160	56,100	12,000	90	2,920
27.....	420	18	20	20,300	682	37,400	10,100	66	1,800
28.....	437	22	26	23,300	590	37,100	11,800	284	s 10,700
29.....	932	33	s 93	19,100	383	19,800	23,300	844	53,100
30.....	7,050	1,050	s 23,800	--	--	--	17,400	322	15,100
31.....	8,000	539	11,600	--	--	--	11,500	160	4,970
Total.	30,287	--	35,995	406,640	--	439,750	392,030	--	309,550

e Estimated.

s Computed by subdividing day.

a Computed from partly estimated concentration graph.

SCIOTO RIVER BASIN--Continued

SCIOTO RIVER AT HIGBY, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	9,140	105	2,590	5,340	87	1,250	8,570	399	9,230
2.....	9,740	226	s 7,030	6,480	240	sa 4,900	9,940	280	7,510
3.....	24,200	1,070	69,900	9,340	433	10,900	8,380	172	3,890
4.....	31,000	692	57,900	9,540	236	6,080	6,860	110	2,040
5.....	28,200	375	28,600	6,670	129	2,320	5,150	98	1,380
6.....	17,900	234	11,300	5,340	81	1,170	4,150	77	863
7.....	10,900	144	4,240	4,600	65	807	3,520	64	608
8.....	9,140	96	2,370	5,340	82	1,180	3,070	61	506
9.....	7,810	82	1,730	4,960	83	1,110	2,620	56	396
10.....	7,050	66	1,260	4,960	--	e 5,700	2,540	50	343
11.....	6,290	63	1,070	8,000	649	14,000	2,360	48	306
12.....	5,720	68	1,050	9,340	250	6,300	1,970	43	229
13.....	5,150	70	973	8,000	178	3,840	1,720	48	223
14.....	4,780	68	878	6,290	120	2,040	1,690	41	187
15.....	4,510	64	779	5,150	86	1,200	1,910	33	170
16.....	7,050	242	4,610	4,330	78	912	1,710	21	97
17.....	6,870	113	2,040	3,880	66	691	1,530	17	70
18.....	5,530	67	1,000	3,610	64	624	2,180	53	312
19.....	4,780	44	568	3,340	61	550	3,520	251	2,380
20.....	4,150	42	471	2,890	51	398	4,780	296	3,820
21.....	3,700	41	410	2,540	46	315	7,430	1,310	26,300
22.....	3,430	45	417	2,450	52	344	5,720	318	4,910
23.....	3,340	42	379	2,540	58	398	8,000	550	sa 13,000
24.....	3,340	37	334	2,540	57	391	6,290	492	sa 8,730
25.....	3,160	31	264	2,180	53	312	3,700	162	1,620
26.....	4,330	72	s 963	1,800	43	208	2,980	118	949
27.....	6,100	156	2,570	2,890	205	s 2,170	2,890	108	843
28.....	5,340	102	1,470	9,140	586	14,500	3,790	128	1,310
29.....	4,600	102	1,270	15,600	330	13,900	3,070	73	605
30.....	4,960	108	1,450	17,000	170	7,800	2,360	60	382
31.....	--	--	--	11,500	208	6,460	--	--	--
Total.	252,010	--	209,886	187,580	--	112,771	124,400	--	93,189

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.....	2,010	37	201	3,790	158	1,620	1,220	60	198
2.....	1,630	33	145	2,710	120	878	1,360	33	121
3.....	1,940	68	356	2,360	98	624	1,240	31	104
4.....	3,610	376	s 4,010	2,890	130	1,010	951	31	80
5.....	5,530	709	10,600	2,230	84	506	823	17	38
6.....	4,420	385	4,600	2,360	107	682	798	17	37
7.....	3,790	230	2,350	1,990	81	435	718	16	31
8.....	2,890	151	1,180	1,630	62	273	638	22	38
9.....	2,280	108	665	1,290	54	188	590	21	33
10.....	2,710	120	878	1,270	63	216	552	9	13
11.....	3,070	158	1,310	1,080	39	112	527	9	13
12.....	2,280	106	647	984	23	61	521	12	17
13.....	1,910	82	423	860	12	28	521	10	14
14.....	1,400	51	193	962	18	47	521	9	13
15.....	1,640	64	283	984	11	29	584	10	16
16.....	2,980	142	1,140	910	19	47	3,750	430	sa 5,300
17.....	3,340	174	1,570	814	22	48	3,250	426	3,740
18.....	2,360	116	739	789	26	55	1,350	75	s 309
19.....	1,860	82	412	860	19	44	780	22	46
20.....	1,640	73	323	832	17	38	666	18	32
21.....	1,710	67	309	755	25	51	610	14	23
22.....	2,130	74	426	695	23	43	578	14	22
23.....	2,080	72	404	638	22	38	558	14	21
24.....	2,180	68	400	645	27	47	539	17	25
25.....	1,920	85	441	702	31	59	521	20	28
26.....	1,770	82	296	673	38	69	515	17	24
27.....	1,340	36	130	610	32	53	515	11	15
28.....	1,260	33	112	564	40	61	497	10	13
29.....	4,960	465	s 7,310	552	37	55	479	10	13
30.....	6,100	231	3,800	610	30	49	473	8	10
31.....	5,150	215	2,990	1,050	24	88	--	--	--
Total.	83,870	--	48,643	39,069	--	7,534	26,645	--	70,387

Total discharge for year (cfs-days)

Total load for year (tons)

1,661,784

1,378,644

e Estimated.

s Computed by subdividing day.

a Computed from partly estimated concentration graph.

SCIOTO RIVER BASIN--Continued

SCIOTO RIVER AT HIGBY, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956

(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;

W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (° F)	Suspended sediment											Methods of analysis		
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters											
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350		0.500	1.000
Jan. 31, 1956 . . .	8:00 a.m.	8,190		602	941	44	65	75	91	98	99	100	--			BSWCM	
Feb. 3 . . .	2:15 p.m.	15,000		554	2,480	46	55	68	82	93	97	98	99		100	BSWCM	
Feb. 3 . . .	2:15 p.m.	15,000		554	1,990	19	24	38	58	82	95	97	99		100	BSNM	
Feb. 15 . . .	12:25 p.m.	15,400		736	2,360	33	46	59	78	92	97	99	100			BSWCM	
Feb. 15 . . .	2:30 p.m.	16,500		906	1,240	39	50	62	76	94	98	99	100			BSWCM	
Feb. 18 . . .	5:20 p.m.	25,100		935	2,930	32	46	59	76	89	94	96	98		99	BSWCM	
Feb. 28 ^a . . .	11:30 a.m.	23,800		626	--	71	81	88	94	96	98	99	99		100	BSWCM	
Mar. 8 . . .	10:00 a.m.	22,800		1,070	1,640	--	53	64	78	92	98	99	100		--	BSWCM	
Mar. 8 . . .	3:10 p.m.	26,400		1,110	2,910	46	54	67	83	94	98	99	100		--	BSWCM	
Mar. 29 . . .	1:40 p.m.	23,600		814	1,390	--	59	78	90	97	98	99	100		--	BSWCM	
Mar. 29 . . .	1:40 p.m.	23,600		814	1,400	34	45	61	84	97	98	99	100		--	BSNM	
Apr. 3 . . .	12:00 m.	25,400		1,280	2,240	42	57	67	81	93	98	100	--		--	BSWCM	
Apr. 4 . . .	11:00 a.m.	30,600		689	2,300	56	67	78	87	94	97	99	99		100	BSWCM	
May 29 . . .	11:10 a.m.	15,600		313	1,630	40	53	70	81	91	94	98	100		--	BSWCM	
June 24 . . .	7:00 a.m.	7,240		609	1,070	62	76	86	93	98	100	--	--		--	BSWCM	
Average of individual analyses of samples from 6 verticals.																	

^a Average of individual analyses of samples from 6 verticals.

LITTLE MIAMI RIVER NEAR SELMA, OHIO

LOCATION.--At gaging station at bridge on Selma Pike, 2.3 miles northwest of Selma, Clark County, and 3.1 miles upstream from North Fork.

DRAINAGE AREA.--50.6 square miles.

RECORDS AVAILABLE.--Chemical analyses: September 1952 to September 1954.

Water temperatures: August 1952 to September 1956.

Sediment records: September 1952 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 73°F June 25, July 27, 28, Aug. 5, 31; minimum, freezing point Nov. 28, 29.

Sediment concentrations: Maximum daily, 658 ppm Feb. 25; minimum daily, 1 ppm Jan. 4, 23-26.

Sediment loads: Maximum daily, 1,100 tons Nov. 16; minimum daily, less than 0.05 ton on several days during January.

EXTREMES, 1952-56.--Water temperatures: Maximum, 81°F Aug. 18, 19, 1955; minimum, freezing point on several days during January, February, and November 1955.

Sediment concentrations: Maximum daily, 658 ppm Feb. 25, 1956; minimum daily, 1 ppm on several days during May 1953, February and December 1954, January 1956.

Sediment loads: Maximum daily, 1,100 tons Mar. 22, 1955, Nov. 16, 1955; minimum daily, less than 0.05 ton on many days during October 1952, January, May, October to December 1953, January to February, July to September, and December 1954, September 1955, and January 1956.

REMARKS.--Record of discharge for water year October 1955 to September 1956 given in WSP 1435. Flow affected by ice Jan. 8.

Temperature (°F) of water, water year October 1955 to September 1956
(Once-daily measurement at approximately 8 a.m.)

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

LITTLE MIAMI RIVER BASIN--Continued

LITTLE MIAMI RIVER NEAR SELMA, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	2.7	23	0.2	3.3	7	0.1	23	7	0.4
2.....	2.4	21	.1	4.4	10	.1	27	2	.1
3.....	1.9	19	.1	12	14	.1	49	5	.7
4.....	1.9	15	.1	12	7	.2	69	17	3.2
5.....	2.1	20	.1	8.6	22	.5	53	15	2.1
6.....	3.0	33	.3	7.6	8	.2	41	12	1.3
7.....	7.7	27	.6	6.3	8	.1	35	17	1.6
8.....	10	17	.4	5.5	8	.1	31	21	1.8
9.....	6.8	5	.1	5.1	9	.1	25	23	1.6
10.....	4.7	7	.1	4.7	5	.1	21	22	1.2
11.....	4.0	10	.1	4.7	6	.1	18	17	.8
12.....	3.6	10	.1	4.7	20	.2	18	23	1.1
13.....	4.0	10	.1	4.4	18	.2	16	27	1.2
14.....	3.3	9	.1	5.1	27	.4	16	17	.7
15.....	3.0	7	.1	5.9	30	.5	15	20	.8
16.....	3.0	28	.2	562	616	s 1,100	14	30	1.1
17.....	3.6	39	.4	214	108	s 77	14	33	1.2
18.....	4.0	28	.3	103	39	11	14	28	4.0
19.....	4.0	38	.4	81	35	a 8	12	19	.6
20.....	3.6	29	.3	65	35	a 6	11	21	.6
21.....	3.3	30	.3	63	31	5.3	11	17	.5
22.....	3.3	18	.2	76	29	6.0	11	23	.7
23.....	3.3	17	.2	90	66	16	12	18	.6
24.....	4.0	27	.3	82	42	9.3	13	6	.2
25.....	4.0	14	.2	64	32	5.5	13	6	.2
26.....	3.6	14	.1	52	34	4.8	10	5	.1
27.....	3.3	24	.2	45	35	4.2	10	3	.1
28.....	3.3	29	.2	39	37	3.9	9.4	3	.1
29.....	3.3	18	.2	38	8	.8	10	5	.1
30.....	3.6	12	.1	25	4	.3	9.6	5	.1
31.....	3.3	9	.1	--	--	--	8.7	4	.1
Total.	117.6	--	6.3	1,693.3	--	1,261.4	639.7	--	25.9
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.....	9.1	4	0.1	57	2	a 0.3	81	27	5.9
2.....	9.1	2	(t)	164	86	s 67	76	18	3.7
3.....	9.1	2	(t)	152	58	s 26	67	21	3.8
4.....	8.6	1	(t)	102	30	8.3	57	18	2.8
5.....	8.6	6	.1	104	40	sb 13	51	14	1.9
6.....	8.1	9	.2	204	104	s 71	50	21	2.8
7.....	8.1	13	.3	186	92	s 57	61	45	sb 11
8.....	8	6	.1	138	40	sb 18	218	190	sb 120
9.....	7.2	9	.2	169	46	21	108	32	9.3
10.....	7.6	8	.2	135	23	8.4	84	24	5.4
11.....	8.1	2	(t)	166	70	sb 35	71	23	4.4
12.....	7.6	2	(t)	135	36	13	59	13	2.1
13.....	6.8	4	.1	96	17	4.4	53	14	2.0
14.....	7.2	5	.1	82	20	4.4	101	60	sb 20
15.....	7.2	8	.2	196	97	s 61	120	23	7.4
16.....	7.6	6	.1	121	33	11	83	11	2.5
17.....	7.2	3	.1	118	39	s 14	70	11	2.1
18.....	6.8	2	(t)	514	340	s 513	67	12	2.2
19.....	7.2	5	.1	192	45	s 25	61	11	1.8
20.....	7.6	5	a 1	128	27	9.3	59	7	1.1
21.....	7.2	4	.1	95	18	4.6	72	2	.4
22.....	7.2	3	a 1	76	10	2.0	99	5	1.3
23.....	6.3	1	(t)	64	13	2.2	99	7	1.9
24.....	6.3	1	(t)	63	24	4.1	136	59	22
25.....	6.3	1	(t)	288	658	s 668	94	7	1.8
26.....	6.3	1	(t)	166	97	43	79	3	.6
27.....	6.3	4	a 1	114	48	15	73	11	2.2
28.....	7.2	9	.2	116	68	21	312	320	sb 490
29.....	35	--	e 4	90	36	8.7	241	126	s 95
30.....	135	70	26	--	--	--	121	28	9.1
31.....	103	7	s 2.2	--	--	--	91	12	5.0
Total.	482.9	--	35.0	4,231	--	1,738.7	3,016	--	839.4

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

LITTLE MIAMI RIVER NEAR SELMA, OHIO.--Continued

Suspended sediment, water year October 1955 to September 1956.--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.....	75	11	2.2	28	12	0.9	145	75	sb 35
2.....	114	181	s 120	87	--	e 35	83	24	5.4
3.....	565	569	s 1,000	97	35	9.2	63	13	2.2
4.....	411	245	s 320	66	23	4.1	49	12	1.6
5.....	148	62	25	49	19	2.5	41	12	1.3
6.....	106	32	9.2	41	22	2.4	36	12	1.2
7.....	92	22	5.5	35	18	1.7	32	15	1.3
8.....	82	14	3.1	29	16	1.2	28	19	1.4
9.....	67	13	2.4	27	13	.9	25	58	3.9
10.....	60	13	2.1	143	220	e 120	22	53	3.1
11.....	53	11	1.6	108	53	s 16	20	58	3.1
12.....	45	11	1.3	72	16	3.1	19	52	2.7
13.....	40	10	1.1	55	13	1.9	18	47	2.3
14.....	39	11	1.2	42	12	1.4	17	52	2.4
15.....	39	15	1.6	38	6	.6	16	55	2.4
16.....	36	8	.8	38	4	.4	15	41	1.7
17.....	32	7	.6	37	2	.2	14	30	1.1
18.....	29	5	.4	35	2	.2	45	296	s 45
19.....	27	5	.4	29	4	.3	36	74	7.2
20.....	25	10	.7	26	17	1.2	25	53	3.6
21.....	24	9	.6	24	22	1.4	22	48	2.8
22.....	25	7	.5	27	41	3.0	19	42	2.2
23.....	23	7	.4	44	26	3.1	18	41	2.0
24.....	22	9	.5	34	20	1.8	15	33	1.3
25.....	22	10	.6	27	21	1.5	14	24	.9
26.....	39	14	1.5	25	20	1.4	13	29	1.0
27.....	34	10	.9	203	--	e 220	12	40	1.3
28.....	30	8	.6	190	58	s 32	11	51	1.5
29.....	35	9	.8	136	26	9.5	10	56	1.5
30.....	32	8	.7	107	28	8.1	9.8	50	1.3
31.....	--	--	--	87	--	e 18	--	--	--
Total.	2,371	--	1,506.3	1,986	--	503.0	892.8	--	143.7
Day	July			August			September		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	9.3	61	1.5	6.0	66	1.1	4.1	44	0.5
2.....	8.9	47	1.1	6.0	62	1.0	7.2	37	.7
3.....	9.3	52	1.3	5.6	38	.6	8.0	26	.6
4.....	14	50	1.9	5.2	48	.7	3.3	39	.3
5.....	12	40	1.3	5.2	62	.9	3.0	43	.3
6.....	14	48	1.8	4.8	52	.7	2.7	41	.3
7.....	11	38	1.1	4.8	70	.9	2.7	37	.3
8.....	9.8	67	1.8	4.4	67	.8	2.7	25	.2
9.....	8.9	76	1.8	4.4	60	.7	2.7	26	.2
10.....	8.9	68	1.6	4.4	46	.5	2.7	28	.2
11.....	8.0	79	1.7	4.1	24	.3	2.7	30	.2
12.....	7.2	71	1.4	4.1	38	.4	2.3	32	.2
13.....	7.2	77	1.5	3.7	32	.3	2.3	35	.2
14.....	9.3	74	1.8	9.2	37	.9	2.3	37	.2
15.....	8.5	62	1.4	6.4	38	.6	3.8	38	.4
16.....	7.6	62	1.3	4.8	49	.6	5.2	35	.5
17.....	6.8	67	1.2	4.4	42	.5	3.3	42	.4
18.....	6.4	67	1.2	4.1	27	.3	2.3	44	.3
19.....	6.4	79	1.4	3.7	31	.3	2.3	47	.3
20.....	12	86	2.8	3.7	42	.4	2.0	56	.3
21.....	11	39	1.2	3.7	40	.4	2.0	47	.2
22.....	8.5	35	.8	3.3	54	.5	1.7	32	.1
23.....	7.2	39	.8	3.0	35	.3	2.0	50	.3
24.....	7.2	49	1.0	4.4	38	.4	2.0	62	.3
25.....	7.2	52	1.0	4.1	36	.4	1.7	57	.3
26.....	6.8	49	.9	3.0	34	.3	1.7	47	.2
27.....	6.8	48	.9	2.7	54	.4	1.7	53	.2
28.....	9.1	62	1.5	2.7	45	.3	2.0	49	.2
29.....	9.8	30	.8	2.7	45	.3	2.0	42	.2
30.....	7.2	45	.9	3.0	27	.2	2.0	45	.2
31.....	6.4	76	1.3	3.3	32	.3	--	--	--
Total.	272.7	--	42.0	134.9	--	16.3	86.4	--	8.8
Total discharge for year (cfs-days).....									15,924.3
Total load for year (tons).....									6,126.8

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued
LITTLE MIAMI RIVER NEAR SELMA, OHIO--Continued

Particle size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment												Methods of analysis
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Nov. 16, 1955, . . .	10:10 a. m.	670		1,450	2,120	53	67	82	91	97	100	--	--			BSWCM
Nov. 16, . . .	2:10 p. m.	860		891	1,320	66	74	83	91	96	99	--	--			BSWCM
Nov. 16, . . .	2:19 p. m.	860		891	1,410	51	60	76	92	97	99	100	--	--		BSNM
Feb. 18, 1956, . . .	11:15 a. m.	720		283	876	57	66	72	86	96	99	99	100			BSWCM
Feb. 25, . . .	7:45 a. m.	65		568	925	49	54	64	84	98	100	--	--			BSWCM
Feb. 25, . . .	3:15 p. m.	580		1,050	1,790	66	73	84	93	98	100	--	--			BSWCM
Mar. 28, . . .	8:40 p. m.	685		671	1,050	60	69	74	83	93	99	100	--	--		BSWCM
Apr. 2, . . .	10:00 p. m.	280		1,030	1,040	61	72	80	84	85	88	89	90	95		BSNM
Apr. 2, . . .	10:00 p. m.	280		1,030	1,080	31	51	72	87	89	89	90	92	95		BSNM
Apr. 3, . . .	11:45 a. m.	930		774	1,634	74	76	83	88	94	99	100	--	--		BSWCM
June 18, . . .	6:45 a. m.	76		816	590	67	85	96	98	99	99	99	100	--		BSWCM

LITTLE MIAMI RIVER BASIN--Continued

NORTH FORK LITTLE MIAMI RIVER NEAR PITCHIN, OHIO

LOCATION.--At gaging station at bridge on Jackson Road, 1.1 miles upstream from goose Creek, and 1.3 miles southwest of Pitchin, Clark County.

DRAINAGE AREA.--29.1 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1953 to September 1954.

Water temperatures: August 1952 to September 1956.

Sediment records: August 1952 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 83°F June 11; minimum, freezing point Nov. 29, Dec. 18, 19, Jan. 15, 19.

Sediment concentrations: Maximum daily, 296 ppm Nov. 16; minimum daily, 1 ppm on several days during October, November, and January.

Sediment loads: Maximum daily, 153 tons Apr. 3; minimum daily, less than 0.05 ton on many days during October to January.

EXTREMES, 1952-56.--Water temperatures: Maximum, 89°F Aug. 5, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 669 ppm June 10, 1953; minimum daily, 1 ppm on several days during February and December 1953, October and November 1955, and January 1956.

Sediment loads: Maximum daily, 242 tons Mar. 22, 1955; minimum daily, less than 0.05 ton on many days during October to December 1952, February, September to December 1953, January to March, September to December 1954, August to December 1955, and January 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at varying hours/

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

LITTLE MIAMI RIVER BASIN--Continued

NORTH FORK LITTLE MIAMI RIVER NEAR PITCHIN, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	2.4	5	(t)	1.9	17	0.1	16	2	0.1
2.....	1.8	10	(t)	2.3	11	.1	17	2	.1
3.....	1.5	13	0.1	4.6	6	.1	25	8	.5
4.....	1.4	15	.1	5.0	6	.1	35	29	2.7
5.....	1.4	11	(t)	4.2	6	.1	28	18	1.4
6.....	1.7	13	.1	3.6	7	.1	22	18	1.1
7.....	2.5	20	.1	3.2	3		20	11	.6
8.....	5.3	16	.2	3.0	2		18	10	.5
9.....	4.2	8	.1	2.8	1		16	10	.4
10.....	3.2	6	.1	2.7	1	(t)	14	10	.4
11.....	2.8	7	.1	2.8	2		12	10	.3
12.....	2.6	8	.1	2.7	19	.1	12	15	.5
13.....	2.6	2	(t)	2.6	23	.2	11	18	.5
14.....	2.4	1	(t)	3.0	7	.1	11	17	.5
15.....	2.3	2	(t)	4.3	17	.2	10	15	.4
16.....	2.2	25	.1	156	296	125	11	17	.5
17.....	2.5	31	.2	197	14	s48	9.2	18	.4
18.....	2.7	17	.1	70	78	2.6	8.8	11	.3
19.....	2.7	27	.2	47	20	2.5	8.5	9	.2
20.....	2.6	35	.2	37	26	2.6	7.6	27	.6
21.....	2.4	34	.2	34	23	2.1	7.6	29	.6
22.....	2.3	31	.2	39	12	1.3	7.6	28	.6
23.....	2.4	42	.3	53	--	e9	7.6	19	.4
24.....	2.3	32	.2	55	32	4.8	8.1	12	.3
25.....	2.4	15	.1	38	10	1.0	8.3	26	.6
26.....	2.3	18	.1	31	6	.5	7.8	27	.6
27.....	2.2	19	.1	26	8	.6	7.2	13	.2
28.....	1.9	10	.1	23	5	.3	7.2	10	.2
29.....	1.9	17	.1	23	9	.6	7.2	12	.2
30.....	1.9	16	.1	17	5	.2	7.2	2	(t)
31.....	1.8	19	.1	--	--	--	6.8	4	.1
Total.	74.6	--	3.6	894.7	--	202.4	394.7	--	15.8
Day	January			February			March		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	7.0	8	0.2	27	2	0.1	45	8	1.0
2.....	6.8	2		73	52	s16	43	15	1.7
3.....	6.8	2	(t)	91	54	s16	37	13	1.3
4.....	6.8	2		51	24	3.3	32	13	1.1
5.....	6.8	1		48	38	s5.4	30	18	1.4
6.....	6.8	3	.1	89	78	19	28	12	.9
7.....	6.4	4	.1	108	60	s19	36	13	sb2
8.....	7.0	10	.2	65	17	3.0	130	280	sb110
9.....	7	5	.1	89	43	10	76	19	s4.3
10.....	6.4	2	(t)	73	15	3.0	55	7	1.0
11.....	6.4	4	.1	78	12	2.5	45	7	a.8
12.....	6.4	3	.1	73	7	1.4	37	9	.9
13.....	6.2	2	(t)	49	4	.5	33	12	1.1
14.....	6.2	3	.1	41	3	.3	49	17	2.2
15.....	6.2	5	.1	91	--	e18	58	15	2.3
16.....	6.2	2	(t)	73	--	e7	47	27	3.4
17.....	6.0	1	(t)	58	8	1.2	39	21	2.2
18.....	5.6	1	(t)	157	90	38	37	15	1.5
19.....	6.0	5	.1	116	26	8.1	34	5	.4
20.....	5.6	3	(t)	73	10	2.0	33	7	.6
21.....	6.0	5	.1	53	3	.4	37	23	2.3
22.....	6.0	3	(t)	43	9	1.0	47	12	1.5
23.....	5.8	2	(t)	37	7	a.7	45	11	1.3
24.....	5.8	3	(t)	35	4	.4	60	38	6.2
25.....	5.4	5	.1	97	217	s86	47	25	3.2
26.....	5.3	6	.1	108	128	s44	41	19	2.1
27.....	5.3	5	.1	65	10	1.8	38	19	1.9
28.....	6.2	2	(t)	62	5	.8	94	140	s60
29.....	33	13	1.2	49	5	.7	165	126	s68
30.....	70	8	1.5	--	--	--	79	19	4.0
31.....	70	2	.4	--	--	--	58	13	2.0
Total.	347.4	--	5.2	2,072	--	309.6	1,635	--	292.6

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

NORTH FORK LITTLE MIAMI RIVER NEAR PITCHIN, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	49	12	1.6	20	11	0.6	49	40	5.3
2.....	60	100	s22	39	28	s3.6	37	13	1.3
3.....	205	277	153	47	22	s3.0	30	10	.8
4.....	176	117	s 59	35	14	1.3	26	10	.7
5.....	100	37	10	28	20	1.5	23	8	.5
6.....	70	20	3.8	25	21	1.4	20	16	.9
7.....	65	18	3.2	22	17	1.0	18	33	1.6
8.....	60	28	4.5	19	16	.8	17	25	1.1
9.....	51	19	2.6	18	18	.9	16	62	2.7
10.....	45	17	2.1	63	190	sb40	14	61	2.3
11.....	41	16	1.8	65	46	s8.9	13	60	2.1
12.....	36	22	2.1	43	18	2.1	12	49	1.6
13.....	33	24	2.1	36	15	1.4	12	47	1.5
14.....	31	18	1.5	28	9	.7	11	45	1.3
15.....	31	10	.8	25	8	.5	10	58	1.6
16.....	30	10	.8	26	10	.7	9.7	65	1.7
17.....	27	7	.5	25	4	.3	10	55	1.5
18.....	25	7	.5	24	2	.1	15	80	3.2
19.....	22	7	.4	21	22	1.2	16	60	2.6
20.....	21	6	.3	18	29	1.4	15	59	2.4
21.....	20	5	.3	17	25	1.1	14	67	2.5
22.....	20	5	.3	18	25	1.2	13	59	2.1
23.....	19	8	.4	26	34	2.4	12	50	1.6
24.....	18	4	.2	22	20	1.2	11	50	1.5
25.....	18	4	.2	18	24	1.2	9.7	57	1.5
26.....	26	6	.4	17	27	1.2	9.4	68	1.7
27.....	24	5	.3	55	60	8.9	8.8	57	1.4
28.....	23	15	.9	76	16	3.3	8.1	60	1.3
29.....	30	7	.6	53	25	sb4	7.4	73	1.4
30.....	24	3	.2	49	30	4.0	7.2	59	1.1
31.....	--	--	--	38	12	1.2	--	--	--
Total.	1,400	--	276.4	1,016	--	101.1	474.3	--	52.8
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.....	6.8	56	1.0	5.0	102	1.4	3.0	35	0.3
2.....	6.4	82	1.4	4.8	103	1.3	2.8	23	.2
3.....	8.3	97	2.2	4.5	102	1.2	2.6	32	.2
4.....	13	82	2.9	4.3	97	1.1	2.4	45	.3
5.....	16	96	4.1	4.2	92	1.0	2.4	47	.3
6.....	16	117	5.0	3.9	89	.9	2.3	28	.2
7.....	13	118	4.1	3.7	85	.8	2.2	40	.2
8.....	11	123	3.6	3.6	82	.8	2.0	37	.2
9.....	9.7	103	2.7	3.5	80	a.8	1.9	31	.2
10.....	9.0	86	2.1	3.5	83	.8	1.9	14	.1
11.....	8.3	82	1.8	3.2	79	.7	1.9	14	.1
12.....	7.8	90	1.9	3.1	75	a.6	1.9	22	.1
13.....	8.1	95	2.1	3.2	70	a.6	1.8	50	.2
14.....	9.0	113	2.7	5.1	95	1.3	1.7	48	.2
15.....	7.4	116	2.3	3.5	57	.5	2.4	37	.2
16.....	7.0	116	2.2	3.1	49	.4	3.1	42	.4
17.....	6.8	110	2.0	3.0	40	.3	2.5	63	.4
18.....	6.3	104	1.7	2.8	31	.2	2.3	90	.6
19.....	6.2	90	1.5	3.0	23	.2	2.2	71	.4
20.....	6.8	92	2.2	3.1	24	.2	2.0	50	.3
21.....	8.3	110	2.5	3.0	28	.2	2.0	47	.2
22.....	6.4	111	1.9	2.8	63	.5	2.0	66	.4
23.....	5.8	87	1.4	3.0	55	.4	1.9	70	.4
24.....	5.8	101	1.6	3.4	38	.3	1.9	58	.3
25.....	5.4	112	1.6	2.8	31	.2	1.9	31	.2
26.....	5.3	99	1.4	2.7	45	.3	1.9	48	.2
27.....	5.1	95	1.3	2.6	60	a.4	1.7	48	.2
28.....	7.2	103	2.0	2.6	57	.4	1.7	34	.2
29.....	6.4	110	1.9	2.5	46	.3	1.7	26	.1
30.....	5.3	114	1.6	2.7	31	.2	1.6	33	.1
31.....	5.0	100	1.4	2.8	40	.3	--	--	--
Total.	250.8	--	68.1	105.0	--	18.6	63.6	--	7.4

Total discharge for year (cfs-days)..... 8,728.1

Total load for year (tons)..... 1,353.6

s Computed by subdividing day.

b Computed from partly estimated concentration graph.

a Computed from estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

NORTH FORK LITTLE MIAMI RIVER NEAR PITCHIN, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956

(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment										Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters									
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250		0.500
Nov. 16, 1955	10:30 a. m.	112		552	1,100	63	79	88	94	98	99	100	--	BSWCM	
Nov. 16	2:45 p. m.	170		441	1,150	60	67	74	79	84	86	88	91	BSWCM	
Feb. 18, 1956	2:20 p. m.	204		125	293	65	80	84	88	92	98	99	100	BSWCM	
Feb. 25	3:00 p. m.	130		359	556	71	74	90	97	98	100	--	--	BSWCM	
Mar. 28	8:30 p. m.	170		456	586	63	74	79	86	90	94	96	97	BSWCM	
Apr. 2	10:30 p. m.	104		360	1,380	48	60	70	80	91	94	96	98	BSWCM	

LITTLE MIAMI RIVER BASIN--Continued

LITTLE MIAMI RIVER NEAR OLDTOWN, OHIO

LOCATION.--At gaging station at bridge on U. S. Highway 68, 0.9 mile upstream from Massie Creek, 1.3 miles northeast of Oldtown, Greene County, and 4.5 miles north of Xenia.

DRAINAGE AREA.--129 square miles.

RECORDS AVAILABLE.--Chemical analyses: November 1947 to August 1948, August 1952 to September 1954.

Water temperatures: August 1952 to September 1956.

Sediment records: August 1952 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 75°F June 24, July 9; minimum, freezing point on many days during November to February.

Sediment concentrations: Maximum daily, 897 ppm Nov. 16; minimum daily, 1 ppm on several days during October, November, and January.

Sediment loads: Maximum daily, 2,320 tons Apr. 3; minimum daily, less than 0.5 ton Oct. 26, 31, Nov. 1, 10.

EXTREMES, 1952-56.--Water temperatures: Maximum, 81°F July 28, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 1,370 ppm June 8, 1954; minimum daily, less than 0.5 ppm on several days during October to December 1952.

Sediment loads: Maximum daily, 13,600 tons June 8, 1954; minimum daily, less than 0.05 ton on many days during October to December 1952, December 1953, January 1954, October and November 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956
(Once-daily measurement at approximately 7 a. m.)

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

LITTLE MIAMI RIVER BASIN--Continued

LITTLE MIAMI RIVER NEAR OLDTOWN, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day
1.....	15	11	0.4	15	1	(t)	65	7	1.2
2.....	13	10	.4	17	5	0.2	65	6	1.0
3.....	11	7	.2	27	6	.4	86	6	1.4
4.....	11	15	.4	30	4	.3	132	18	6.4
5.....	11	57	1.7	27	5	.4	113	17	5.2
6.....	13	66	2.3	24	5	.3	88	10	2.4
7.....	17	72	3.3	22	5	.3	76	10	2.0
8.....	22	17	1.0	20	5	.3	70	8	1.5
9.....	19	11	1.0	20	2	.1	64	7	1.2
10.....	16	8	.3	18	1	(t)	57	8	1.2
11.....	13	8	.3	18	7	.3	52	5	.7
12.....	14	8	.3	18	12	.6	51	5	.7
13.....	15	5	.2	18	12	.6	53	10	1.4
14.....	13	4	.1	18	12	.6	47	10	1.3
15.....	12	2	.1	19	41	2.1	46	5	.6
16.....	12	5	.2	633	897	s 1,820	45	3	.4
17.....	15	5	.2	787	274	s 643	47	5	.6
18.....	16	5	.2	283	58	44	43	13	1.5
19.....	15	7	.3	193	28	14	40	17	1.8
20.....	14	7	.3	145	16	6.3	38	14	1.4
21.....	14	5	.2	126	15	5.1	38	20	2.0
22.....	14	3	.1	147	17	6.7	36	25	2.4
23.....	14	2	.1	188	60	sa 35	36	17	1.7
24.....	16	3	.1	217	40	23	39	12	1.3
25.....	16	3	.1	149	20	8.0	40	7	.8
26.....	14	1	(t)	117	9	2.8	38	7	.7
27.....	14	2	.1	101	3	.8	35	10	.9
28.....	14	2	.1	86	4	.9	34	6	.6
29.....	15	2	.1	70	7	1.3	35	4	.4
30.....	15	4	.2	67	8	1.4	35	4	.4
31.....	15	1	(t)	--	--	--	331	2	.2
Total.	448	--	14.0	3,600	--	2,618.9	1,677	--	45.3
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day
1.....	34	5	0.4	157	7	3.0	204	20	11
2.....	33	3	.3	344	90	s 113	193	28	14
3.....	32	2	.2	404	60	s 70	169	32	15
4.....	32	2	.2	264	19	14	147	29	12
5.....	31	2	.2	226	17	10	134	28	10
6.....	31	1	.1	355	43	41	128	35	12
7.....	30	2	.2	430	92	s 114	144	47	s 20
8.....	26	1	.1	278	29	22	485	151	198
9.....	27	1	.1	343	41	38	320	57	49
10.....	30	2	.2	320	27	23	235	32	20
11.....	30	2	.2	331	30	27	197	26	14
12.....	30	3	.2	331	32	28	159	22	9.4
13.....	27	7	.5	230	15	9.3	144	10	3.9
14.....	28	5	.4	191	15	7.7	217	54	s 36
15.....	28	9	.7	376	250	sa 290	292	24	s 20
16.....	29	6	.5	331	52	s 53	232	18	11
17.....	29	9	.7	274	18	s 14	188	10	5.1
18.....	26	5	.4	803	312	s 703	175	11	5.2
19.....	29	1	.1	513	92	s 140	157	11	4.7
20.....	30	1	.1	320	31	27	151	10	4.1
21.....	29	1	.1	248	19	13	173	25	12
22.....	27	2	.1	195	13	6.8	232	35	22
23.....	26	3	.2	163	11	4.8	230	34	21
24.....	24	2	.1	153	11	4.5	308	40	33
25.....	28	2	.2	455	228	s 373	246	31	20
26.....	27	1	.1	471	242	s 333	204	26	14
27.....	27	4	.3	299	62	50	180	28	14
28.....	28	5	.4	287	34	26	390	101	s 159
29.....	86	23	s 8.3	232	23	14	677	278	s 562
30.....	320	72	62	--	--	--	355	53	51
31.....	241	14	9.1	--	--	--	264	30	21
Total.	1,455	--	86.7	9,324	--	2,572.1	7,330	--	1,403.4

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

LITTLE MIAMI RIVER NEAR OLDTOWN, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956--Continued

Day	April			May			June		
	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.....	217	23	13	102	14	3.6	271	112	82
2.....	255	47	s 28	164	38	s 20	193	63	33
3.....	1,150	672	s 2,320	267	54	39	149	41	16
4.....	957	279	s 798	184	30	15	128	36	12
5.....	444	84	101	145	26	10	110	42	12
6.....	320	45	39	126	24	8.2	97	37	9.7
7.....	290	27	21	111	19	5.7	84	39	8.8
8.....	267	23	16	97	14	3.7	78	30	6.3
9.....	226	24	15	92	14	3.5	71	52	10
10.....	204	27	15	169	100	sa 78	66	63	11
11.....	191	28	14	269	135	s 105	60	55	8.9
12.....	167	31	14	173	29	14	58	38	6.0
13.....	151	30	12	142	21	8.0	56	31	4.7
14.....	144	28	11	115	16	5.0	53	30	4.3
15.....	145	22	8.6	102	13	3.6	52	27	3.8
16.....	140	18	6.8	106	13	3.7	53	27	3.9
17.....	126	13	4.4	101	10	2.7	59	--	e 35
18.....	117	10	3.2	102	6	1.6	182	--	e 390
19.....	110	7	2.1	86	10	2.3	206	229	s 157
20.....	102	12	3.3	76	25	5.1	99	80	21
21.....	99	16	4.3	72	27	5.2	76	80	16
22.....	97	13	3.4	78	27	5.7	66	65	12
23.....	97	10	2.6	101	28	7.6	60	56	9.1
24.....	92	9	2.2	101	35	9.5	54	48	7.0
25.....	88	10	2.4	78	27	5.7	50	49	6.6
26.....	138	12	4.5	72	27	5.2	47	45	5.7
27.....	121	14	4.6	270	103	s 102	45	40	4.9
28.....	110	13	3.9	430	168	195	43	55	6.4
29.....	123	11	3.6	287	61	47	40	56	6.0
30.....	115	12	3.7	257	58	40	39	53	5.6
31.....	--	--	--	193	51	26	--	--	--
Total.	6,803	--	3,480.6	4,668	--	786.8	2,645	--	914.7

Day	July			August			September		
	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.....	38	44	4.5	35			27	38	2.8
2.....	37	44	4.4	31			25	41	2.8
3.....	109	--	e 250	29			23	37	2.3
4.....	102	220	60	28			20	36	1.9
5.....	66	107	19	27			19	40	2.0
6.....	69	80	15	25	--	e 3	18	33	1.6
7.....	56	65	9.8	25			18	35	1.7
8.....	47	77	9.8	24			17	37	1.7
9.....	43	85	9.9	22			17	31	1.4
10.....	40	81	8.7	22			17	25	1.1
11.....	38	72	7.4	22			17	24	1.1
12.....	36	73	7.1	21	43	2.4	17	26	1.2
13.....	39	73	7.7	22	45	2.7	17	42	1.9
14.....	43	85	9.9	49	89	s 13	17	45	2.1
15.....	38	60	6.2	32	47	4.1	19	43	2.2
16.....	35	68	6.4	25	34	2.3	22	42	2.5
17.....	35	62	5.8	22	32	1.9	18	35	1.7
18.....	33	62	5.5	21	35	2.0	17	40	1.8
19.....	32	52	4.5	23	38	2.4	16	42	1.8
20.....	45	92	s 12	23	37	2.3	16	35	1.5
21.....	41	73	8.1	21	34	1.9	15	26	1.0
22.....	35	63	6.0	21	37	2.1	15	31	1.2
23.....	32	58	5.0	20	43	2.3	15	35	1.4
24.....	30	53	4.3	20	42	2.3	15	35	1.4
25.....	29	46	3.6	21	33	1.9	15	33	1.3
26.....	29	43	3.4	20	31	1.7	15	33	1.3
27.....	28	--	e 3	19	36	1.8	14	30	1.1
28.....	83	--	e 40	18	37	1.8	14	31	1.2
29.....	48	74	9.6	18	33	1.6	14	32	1.2
30.....	36	--	5	18	34	1.6	14	31	1.2
31.....	32	--	3	20	35	1.9	--	--	--
Total.	1,404	--	554.6	744	--	87.0	523	--	49.4

Total discharge for year (cfs-days) 40,621
 Total load for year (tons) 12,613.5

e Estimated.

s Computed by subdividing day.

a Computed from partly estimated estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

LITTLE MIAMI RIVER NEAR OLDTOWN, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; F, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment												Methods of analysis
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Nov. 16, 1955 ..	10:50 a.m.	915		824	1,170	53	67	76	88	95	99	100	--			BSWCM
Nov. 16	3:45 p.m.	880		836	1,070	62	79	82	91	97	98	99	100	--		BSWCM
Nov. 16	3:45 p.m.	880		836	1,100	45	62	82	94	98	98	99	100	--		BSNM
Mar. 29, 1956 ..	7:00 a.m.	852		354	564	49	72	73	81	90	96	98	99	100		BSWCM
Apr. 3	7:55 a.m.	1,440		1,260	2,320	52	65	77	86	95	97	98	99	100		BSWCM
June 19	6:15 a.m.	250		257	420	64	78	90	98	99	100	--	--	--		BSWCM

LITTLE MIAMI RIVER BASIN--Continued

NORTH FORK MASSIE CREEK AT CEDARVILLE, OHIO

LOCATION.--At gaging station at bridge on James Barber Road, 1 mile upstream from confluence with South Fork, and 1 mile northeast of Cedarville, Greene County.

DRAINAGE AREA.--25.6 square miles.

RECORDS AVAILABLE.--Water temperatures: July 1954 to September 1956.

Sediment records: July 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 83°F Aug. 5; minimum, freezing point on several days during December and January.

Sediment concentrations: Maximum daily, 514 ppm Apr. 3; minimum daily, 1 ppm Dec. 28. Sediment loads: Maximum daily, 444 tons Apr. 3; minimum daily, less than 0.05 ton on several days during October, December, and January.

EXTREMES, 1954-56.--Water temperatures: Maximum, 87°F July 22, 27, Aug. 6, 1955;

minimum, freezing point on many days during winter months. Sediment concentrations: Maximum daily, 688 ppm Mar. 4, 1955; minimum daily, no flow on many days during July to September 1954, and August to September 1955.

Sediment loads: Maximum daily, 653 tons Mar. 5, 1955; minimum daily, no flow on many days during July to September 1954, August and September 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at varying hours/

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

LITTLE MIAMI RIVER BASIN--Continued

NORTH FORK MASSIE CREEK AT CEDARVILLE, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	3.3	5	(t)	2.4	17	0.1	15	10	0.4
2.....	2.0	2	(t)	3.6	36	.3	17	17	.8
3.....	1.2	2	(t)	22	50	sa 3	32	26	s 2.6
4.....	1.2	4	(t)	17	33	1.5	44	98	12
5.....	1.4	7	(t)	12	34	1.1	33	48	4.3
6.....	1.8	8	(t)	9.2	27	.7	26	27	1.9
7.....	13	35	sa 2	7.3	13	.2	22	28	1.7
8.....	28	30	2.3	5.9	15	.2	19	30	1.5
9.....	14	18	.7	5.2	10	.1	16	31	1.3
10.....	9.0	51	1.2	4.9	12	.2	14	30	1.1
11.....	5.9	23	.4	4.8	10	.1	13	17	.6
12.....	4.8	8	.1	4.2	12	.1	12	37	1.2
13.....	4.6	7	.1	3.8	23	.2	11	31	.9
14.....	3.8	10	.1	3.9	15	.2	11	25	.7
15.....	3.0	7	.1	4.2	12	.1	8.8	23	.5
16.....	3.0	5	(t)	156	418	s 237	10	28	.8
17.....	3.6	8	.1	119	108	s 42	10	58	1.6
18.....	4.0	12	.1	66	32	5.7	9.0	16	.4
19.....	3.6	7	.1	51	31	4.3	7.5	15	.3
20.....	3.2	5	(t)	40	32	3.4	6.8	33	.6
21.....	3.3	8	.1	39	36	3.8	6.9	32	.6
22.....	2.8	5	(t)	50	45	6.1	7.5	41	.8
23.....	2.4	6	(t)	60	81	13	7.8	10	.2
24.....	3.0	10	.1	59	85	b 14	8.0	14	.3
25.....	3.2	10	.1	43	49	5.7	7.5	13	b.3
26.....	3.0	15	.1	34	20	1.8	6.5	7	b.1
27.....	2.8	15	.1	29	18	1.4	5.8	2	(t)
28.....	2.5	16	.1	23	19	1.2	5.6	1	(t)
29.....	2.7	18	.1	22	20	1.2	5.9	4	b.1
30.....	2.8	12	.1	17	20	.9	5.4	9	b.1
31.....	2.6	10	b.1	--	--	--	5.2	10	b.1
Total..	145.5	--	8.5	918.4	--	349.6	409.2	--	37.8
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.....	5.7	10	0.2	40	21	2.3	55	38	5.6
2.....	5.4	7	.1	91	106	s 32	52	37	5.2
3.....	5.5	8	.1	103	78	22	44	25	3.0
4.....	5.2	8	.1	73	20	3.9	37	25	2.5
5.....	4.8	5	.1	7	40	sa 8	33	27	2.4
6.....	4.9	11	.1	110	86	s 30	31	23	1.9
7.....	4.4	9	.1	128	112	s 44	36	30	sa 3
8.....	4.2	16	.2	90	41	10	98	101	27
9.....	4.6	14	.2	102	40	11	67	38	6.9
10.....	5.0	11	.1	90	31	7.5	53	23	3.3
11.....	5.2	9	.1	101	43	12	44	15	1.8
12.....	4.8	5	.1	87	21	4.9	35	12	1.1
13.....	4.4	10	.1	66	17	3.0	31	8	.7
14.....	4.4	7	.1	57	23	3.5	59	34	s 6.4
15.....	4.4	10	.1	100	75	s 22	68	21	3.8
16.....	4.9	8	.1	79	27	5.8	56	4	b.6
17.....	4.4	10	.1	79	34	s 7.8	46	2	.2
18.....	4.3	12	.1	240	122	80	42	2	.2
19.....	4.6	9	.1	134	31	11	37	3	.3
20.....	5.5	4	.1	87	27	6.3	35	7	.7
21.....	4.8	3	(t)	67	16	2.9	46	12	1.5
22.....	4.2	3	(t)	53	15	2.1	67	14	2.5
23.....	3.9	6	.1	43	15	1.7	69	21	3.9
24.....	4.2	14	.2	41	12	1.3	67	42	9.9
25.....	4.0	12	.1	132	400	s 187	67	21	3.8
26.....	4.3	12	.1	121	114	s 40	56	18	2.7
27.....	4.4	8	.1	82	43	9.5	50	21	2.8
28.....	4.8	8	.1	85	40	9.2	102	108	s 43
29.....	28	50	sa 6	64	47	8.1	117	57	s 20
30.....	96	174	s 48	--	--	--	74	12	2.5
31.....	68	59	11	--	--	--	55	10	1.5
Total..	323.2	--	68.1	2,616	--	588.8	1,749	--	170.6

s Computed by subdividing day.
t Less than 0.05 ton.

a Computed from partly estimated concentration graph.
b Computed from estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

NORTH FORK MASSIE CREEK AT CEDARVILLE, OHIO.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	46	8	1.0	21	15	0.8	51	34	4.7
2.....	69	140	s 49	55	69	s 14	38	15	1.5
3.....	308	514	s 444	73	50	9.8	31	15	1.2
4.....	249	226	s 169	50	31	4.2	25	14	.9
5.....	109	67	20	38	21	2.2	20	11	.6
6.....	78	37	7.8	32	18	1.6	18	10	.5
7.....	69	31	5.8	26	19	1.3	16	26	1.1
8.....	61	24	4.0	21	11	.6	15	19	.8
9.....	51	23	3.2	19	10	.5	13	35	1.2
10.....	45	22	2.7	26	18	1.3	11	35	1.0
11.....	40	26	2.8	26	19	b 1	10	37	1.0
12.....	33	26	2.3	22	15	b .9	9.0	54	1.3
13.....	30	22	1.8	19	13	.7	8.2	68	1.5
14.....	28	16	1.2	16	10	.4	7.5	56	1.1
15.....	27	10	.7	16	10	.4	6.7	36	.6
16.....	25	12	.8	16	7	.3	6.1	42	.7
17.....	22	10	.6	15	7	.3	6.1	50	.8
18.....	20	8	.4	15	9	.4	16	76	s 4.8
19.....	17	9	.4	13	10	.4	29	47	3.7
20.....	16	11	.5	11	10	.3	18	30	1.4
21.....	16	15	.6	11	31	.9	14	40	1.5
22.....	16	12	.5	12	35	1.1	12	37	1.2
23.....	14	7	.3	15	28	1.1	9.7	42	1.1
24.....	14	12	.4	14	25	.9	8.2	33	.7
25.....	13	11	.4	11	30	.9	6.9	32	.6
26.....	28	13	1.0	12	41	1.3	6.1	32	.5
27.....	24	8	.5	73	82	s 20	5.7	31	.5
28.....	22	17	1.0	99	45	12	5.2	27	.4
29.....	27	11	.8	73	30	5.9	4.4	27	.3
30.....	24	4	.2	56	33	5.0	4.2	25	.3
31.....	--	--	--	45	27	3.3	--	--	--
Total.	1,541	--	723.7	951.	--	93.8	431.0	--	37.5
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.....	4.0	23	0.2	7.8	62	1.3	4.9	20	0.3
2.....	3.8	22	.2	5.9	48	.8	16	32	1.4
3.....	9.5	41	s 1.6	4.6	52	.6	9.0	23	.6
4.....	36	28	2.7	4.2	57	.6	4.9	14	.2
5.....	23	27	1.7	4.0	47	.5	3.8	17	.2
6.....	16	20	.9	3.4	40	.4	3.3	8	.1
7.....	11	20	.6	3.0	19	.2	2.8	18	.1
8.....	9.0	73	1.8	2.8	42	.3	2.6	17	.1
9.....	7.5	71	1.4	2.7	55	.4	2.2	11	.1
10.....	6.3	70	1.2	2.6	33	.2	2.1	16	.1
11.....	5.2	60	.8	2.4	25	.2	2.1	16	b .1
12.....	4.6	54	.7	2.1	37	.2	2.0	25	.1
13.....	5.2	46	.6	2.4	39	.2	1.9	42	.2
14.....	7.8	47	1.0	15	74	s 3.3	1.7	49	.2
15.....	5.0	33	.4	9.0	48	s 1.3	2.7	45	.3
16.....	4.6	38	.5	4.0	17	.2	3.8	26	.3
17.....	4.2	47	.5	3.4	15	.1	3.2	21	.2
18.....	3.6	46	.4	2.9	11	.1	2.4	26	.2
19.....	3.3	46	.4	4.8	35	.4	2.2	27	.2
20.....	17	95	sa 6	4.3	29	.3	2.0	23	.1
21.....	22	97	s 6.1	3.3	13	.1	1.9	39	.2
22.....	8.5	60	1.4	2.8	25	.2	1.8	30	.1
23.....	5.9	33	.5	2.5	26	.2	1.7	19	.1
24.....	5.0	33	.4	3.9	29	.3	1.7	30	.1
25.....	4.4	40	.5	3.5	29	.3	1.7	25	.1
26.....	3.8	23	.2	2.6	32	.2	1.6	23	.1
27.....	3.5	17	.2	2.2	21	.1	1.5	36	.1
28.....	27	146	s 12	2.0	20	b .1	1.4	45	.2
29.....	28	36	s 3.0	1.8	24	.1	1.4	45	.2
30.....	12	40	b 1	2.4	25	b .2	1.4	27	.1
31.....	7.5	57	1.2	2.4	19	.1	--	--	--
Total.	314.2	--	50.1	120.7	--	13.5	91.7	--	6.4
Total discharge for year (cfs-days).....									9,610.9
Total load for year (tons).....									2,148.4

s Computed by subdividing day

a Computed from partly estimated concentration graph.

b Computed from estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

NORTH FORK MASSIE CREEK AT CEDARVILLE, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956

(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature per- ature (° F)	Suspended sediment												Methods of analysis
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Nov. 16, 1955..	1:15 p. m.	236		644	1,320	66	74	83	91	97	100					BSWCM
Nov. 16	1:15 p. m.	236		644	1,350	43	54	68	87	99	100					BSNM
Feb. 18, 1956..	12:40 p. m.	281		182	426	57	63	78	90	98	100					BSWCM
Feb. 25	10:30 a. m.	99		492	463	62	76	83	92	98	100					BSWCM
Feb. 25	6:00 p. m.	236		572	520	72	83	92	97	99	100					BSWCM
Apr. 2	11:20 p. m.	158		645	933	76	83	92	96	98	100					BSWCM
Apr. 2	11:20 p. m.	158		645	926	54	74	90	97	99	100					BSNM
Apr. 3	12:15 p. m.	358		703	670	74	87	92	96	99	100					BSWCM

LITTLE MIAMI RIVER BASIN--Continued

SOUTH FORK MASSIE CREEK NEAR CEDARVILLE, OHIO

LOCATION.--At gaging station at bridge on Weimer Road, 2.3 miles east of Cedarville, Greene County, and 2.4 miles upstream from confluence with North Fork.

DRAINAGE AREA.--20.2 square miles.

RECORDS AVAILABLE.--Water temperatures: July 1954 to September 1956.

Sediment records: July 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 85°F June 24; minimum, freezing point December 12, 13.

Sediment concentrations: Maximum daily, 561 ppm Apr. 3; minimum daily, 2 ppm Mar. 16.

Sediment loads: Maximum daily, 630 tons Apr. 3; minimum daily, less than 0.05 ton on several days during November, January, and September.

EXTREMES, 1954-56.--Water temperatures: Maximum, 86°F July 1, 1954; minimum, freezing point on several days during December 1954, January, February, and December 1955.

Sediment concentrations: Maximum daily, 561 ppm Apr. 3, 1956; minimum daily, no flow on many days during August and September 1954.

Sediment loads: Maximum daily, 630 tons Apr. 3, 1956; minimum daily, 0 tons on many days during August and September 1954.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Flow affected by ice Nov. 28-30, Dec. 15-17, 22, Jan. 8-11, 13-14, 19-20, 22.

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at varying hours/

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	58	56	35	36	38	48	41	45	52	70	68	70
2	58	48	45	36	38	50	53	57	48	73	70	66
3	55	47	47	38	38	48	53	49	46	--	65	61
4	60	40	50	34	38	38	55	50	48	72	68	62
5	65	40	40	38	38	58	45	48	49	79	74	65
6	68	46	38	41	40	47	47	50	52	69	73	62
7	65	42	39	38	40	45	42	58	61	65	68	58
8	58	41	40	34	45	45	42	45	64	73	66	52
9	55	40	37	38	43	48	42	49	64	88	68	55
10	53	41	35	36	41	46	49	50	65	62	71	58
11	54	48	35	35	45	48	54	58	65	63	74	59
12	55	48	32	38	42	45	--	63	67	68	72	61
13	60	55	32	35	46	50	47	72	69	67	79	64
14	50	59	35	35	46	45	47	68	68	65	79	65
15	48	58	35	35	38	46	50	58	70	75	83	64
16	50	59	34	33	38	44	45	61	72	71	76	66
17	50	40	35	35	46	43	43	53	73	68	81	65
18	50	38	34	36	42	43	40	48	69	64	79	55
19	52	40	34	35	40	45	46	55	66	66	74	55
20	48	39	35	36	41	48	39	68	67	67	68	51
21	52	48	35	38	41	48	40	68	68	67	71	48
22	48	45	35	39	43	45	44	68	70	67	72	57
23	50	40	35	36	45	50	42	53	70	65	75	61
24	48	39	36	38	48	46	58	48	85	68	77	52
25	40	41	36	37	46	47	51	46	70	68	78	51
26	43	45	38	36	38	57	50	48	70	70	80	52
27	49	44	36	38	42	49	50	56	70	74	80	50
28	50	38	35	38	41	45	58	54	69	72	70	49
29	58	34	41	36	44	48	60	61	62	70	68	53
30	48	35	38	38	--	49	50	58	65	64	70	57
31	48	--	36	37	--	54	--	61	--	63	72	--
Average	53	44	37	36	42	47	48	56	64	68	73	58

LITTLE MIAMI RIVER BASIN--Continued

SOUTH FORK MASSIE CREEK NEAR CEDARVILLE, OHIO--Continued

Suspended sediment, water year October, 1955 to September 1956

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	18	0.1	1.9	15	0.1	10	20	0.5
2.....	1.5	26	.1	2.4	20	.1	12	20	.6
3.....	1.2	40	.1	17	25	s 1.0	26	18	1.3
4.....	1.0	34	.1	14	10	.4	33	25	2.2
5.....	1.1	35	.1	9.5	18	.5	23	28	1.7
6.....	1.3	27	.1	7.7	15	.3	18	35	1.7
7.....	9.9	--	e 2	6.0	8	.1	15	24	1.0
8.....	22	30	1.8	4.9	5	.1	13	26	.9
9.....	12	18	.6	4.3	4	(t)	11	33	1.0
10.....	7.9	16	.3	4.2	8	.1	9.0	24	.6
11.....	5.6	12	.2	4.1	7	.1	8.4	25	.6
12.....	4.6	10	.1	3.5	9	.1	7.5	42	.8
13.....	4.2	8	.1	3.2	4	(t)	8.1	36	.8
14.....	3.3	10	.1	6.4	5	.1	6.6	20	.4
15.....	2.9	10	.1	8.6	8	.2	6	40	.6
16.....	2.6	22	.2	197	520	276	6	18	.3
17.....	2.7	15	.1	121	58	s 21	6	10	.2
18.....	3.0	19	.2	53	28	4.0	5.4	20	.3
19.....	3.2	31	.3	40	17	1.8	4.9	15	.2
20.....	2.7	28	.2	30	18	1.4	5.2	15	.2
21.....	2.5	15	.1	29	15	1.2	4.5	16	.2
22.....	2.4	21	.1	38	20	2.0	5	10	.1
23.....	2.2	36	.2	62	--	e 20	4.6	10	.1
24.....	2.4	39	.2	49	40	s 5.6	4.5	27	.3
25.....	2.5	46	.3	33	16	1.4	3.9	40	.4
26.....	2.3	37	.2	25	16	1.1	3.2	24	.2
27.....	2.2	38	.2	21	14	.8	3.3	27	.2
28.....	2.1	37	.2	17	11	.5	3.9	47	.5
29.....	2.2	16	.1	14	9	.3	3.3	24	.2
30.....	2.4	27	.2	12	12	.4	3.0	33	.3
31.....	2.1	16	.1	--	--	--	4.1	27	.3
Total.	120.2	--	8.8	838.7	--	340.8	277.4	--	18.7
Day	January			February			March		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	3.4	45	0.4	28	3	0.2	31	31	2.6
2.....	3.2	27	.2	31	72	s 27	29	35	2.7
3.....	3.2	17	.1	87	53	s 14	24	38	2.5
4.....	2.9	15	.1	53	24	3.4	20	24	1.3
5.....	3.2	17	.1	52	22	3.1	18	18	.9
6.....	2.8	17	.1	98	89	s 33	18	11	.5
7.....	2.6	20	.1	105	69	s 23	23	13	.8
8.....	3	24	.2	64	27	4.7	80	--	e 20
9.....	3	25	.2	76	19	3.9	40	13	1.4
10.....	3	17	.1	63	16	2.7	31	12	1.0
11.....	3	22	.2	81	19	4.2	26	12	.8
12.....	2.9	25	.2	65	15	2.6	20	10	.5
13.....	3	46	.4	120	20	6.5	18	9	.4
14.....	3	26	.2	34	22	2.0	47	53	s 9.1
15.....	3.0	33	.3	64	20	3.4	45	16	s 2.3
16.....	2.8	30	.2	47	21	2.7	37	2	.2
17.....	2.7	26	.2	50	21	2.8	28	5	.4
18.....	3.2	27	.2	225	124	s 87	24	6	.4
19.....	3	20	.2	107	32	9.2	21	6	.3
20.....	3	15	.1	65	26	4.6	20	6	.3
21.....	3.0	14	.1	44	21	2.5	27	12	.9
22.....	3	12	.1	31	17	1.4	52	18	2.5
23.....	3.2	10	.1	25	20	1.4	54	16	2.3
24.....	2.5	5	(t)	23	23	1.4	72	45	s 9
25.....	2.8	5	(t)	121	410	s 214	45	10	1.2
26.....	3.3	7	.1	86	106	25	35	7	.7
27.....	3.2	5	(t)	51	34	4.7	30	5	.4
28.....	3.4	3	(t)	50	25	3.4	89	128	s 55
29.....	21	4	.2	37	29	2.9	90	51	s 14
30.....	118	10	3.2	--	--	--	48	15	1.9
31.....	60	16	1.6	--	--	--	33	10	.9
Total.	283.3	--	9.3	2,033	--	496.7	1,175	--	137.2

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

SOUTH FORK MASSIE CREEK NEAR CEDARVILLE, OHIO.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	26	10	0.7	11	10	0.3	26	22	1.5
2.....	95	391	s 231	50	95	sa 20	20	13	.7
3.....	366	561	s 630	47	55	7.0	16	8	.3
4.....	230	241	s 171	30	40	3.2	13	14	.5
5.....	104	85	24	20	32	1.7	11	12	.4
6.....	63	57	9.7	18	37	1.8	9.7	10	.3
7.....	50	45	6.1	14	30	1.1	8.8	10	.2
8.....	39	27	2.8	11	24	.7	7.9	21	.4
9.....	26	27	1.9	10	33	.9	7.0	44	.8
10.....	26	18	1.3	20	71	sa 4.4	8.0	45	.7
11.....	22	14	.8	20	28	1.5	5.4	41	.6
12.....	19	18	.9	15	38	1.5	4.9	41	.5
13.....	16	25	1.1	12	32	1.0	4.8	36	.5
14.....	15	25	1.0	10	14	.4	4.9	31	.4
15.....	15	17	.7	9.2	13	.3	4.5	40	.5
16.....	14	25	.9	9.0	14	.3	4.5	38	.5
17.....	12	27	.9	7.9	12	.2	4.9	36	.5
18.....	11	22	.6	7.0	10	.2	11	60	sa 2
19.....	9.2	17	.4	6.0	18	.3	49	210	sa 35
20.....	8.4	25	.6	5.4	25	.4	22	31	1.8
21.....	8.4	40	.9	5.2	29	.4	17	26	1.2
22.....	8.4	34	.8	5.7	35	.5	13	25	.9
23.....	7.5	24	.5	6.0	23	.4	11	24	.7
24.....	7.0	19	.4	5.1	27	.4	9.2	22	.5
25.....	6.4	31	.5	4.2	21	.2	7.9	20	.4
26.....	20	27	s 1.3	4.3	20	.2	6.8	26	.5
27.....	16	13	.6	56	--	e 17	6.0	25	.4
28.....	13	14	.5	77	38	7.9	5.4	36	.5
29.....	15	14	.6	49	23	3.0	4.8	37	.5
30.....	13	13	.4	33	19	1.7	4.3	28	.3
31.....	--	--	--	24	25	1.6	--	--	--
Total.	1,281.3	--	1,092.9	602.0	--	80.5	326.7	--	54.0
Day	July			August			September		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	4.1	26	0.3	3.9	42	0.4	1.2	37	0.1
2.....	3.7	25	.2	3.5	39	.4	5.1	88	s 1.3
3.....	5.6	25	.4	3.0	39	.3	2.7	32	.2
4.....	24	22	1.4	2.7	43	.3	1.5	25	.1
5.....	17	26	1.2	2.5	34	.2	1.1	20	.1
6.....	11	25	.7	2.3	42	.3	1.1	20	.1
7.....	7.9	19	.4	2.0	52	.3	1.0	20	.1
8.....	6.4	41	.7	1.7	43	.2	.9	20	(t)
9.....	5.7	48	.7	1.5	40	.2	.9	20	
10.....	4.8	50	.6	1.4	35	.1	.8	20	
11.....	4.2	44	.5	1.2	35	.1	.7	20	(t)
12.....	3.5	41	.4	1.0	45	.1	.6	15	
13.....	3.4	40	.4	1.2	35	.1	.6	67	
14.....	5.1	48	.7	4.0	58	.6	.5	69	.1
15.....	3.8	42	.4	3.0	36	.3	.9	62	.2
16.....	3.0	54	.4	1.8	63	.3	1.1	54	.2
17.....	2.7	63	.4	1.4	50	.2	.8	51	.1
18.....	2.5	55	.4	1.3	27	.1	.6	56	.1
19.....	2.1	51	.3	1.5	17	.1	.5	52	.1
20.....	19	--	e 10	1.5	15	.1	.4	58	.1
21.....	20	84	4.5	1.2	39	.1	.4	48	.1
22.....	9.2	66	1.6	1.0	35	.1	.4	49	.1
23.....	6.8	55	1.0	.9	43	.1	.4	48	.1
24.....	5.4	63	.9	.9	39	.1	.4	41	(t)
25.....	4.6	65	.8	.9	32	.1	.4	48	.1
26.....	3.9	62	.6	.8	24	.1	.4	45	(t)
27.....	3.4	66	.6	.8	35	.1	.3	40	
28.....	7.2	62	s 1.1	.7	60	.1	.3	38	
29.....	11	52	1.5	.6	49	.1	.3	51	(t)
30.....	6.8	60	1.1	.8	33	.1	.3	53	
31.....	4.3	48	.6	.8	40	.1	--	--	
Total.	221.9	--	34.8	51.8	--	5.8	26.6	--	3.8
Total discharge for year (cfs-days)									
Total load for year (tons)									
7,237.9									
2,283.3									

e Estimated.

t Less than 0.05 ton.

s Computed by subdividing day.

a Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued
SOUTH FORK MASSIE CREEK NEAR CEDARVILLE, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment												Methods of analysis
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Nov. 16, 1955..	7:05 a. m.	24		1,110	1,030	59	69	88	95	100	--	--				BWCM
Nov. 16	12:30 p. m.	270		894	2,020	61	75	84	91	96	99	100				BSWCM
Nov. 16	12:30 p. m.	270		894	1,990	37	47	64	84	99	99	100				BSNM
Feb. 18	1:25 p. m.	261		147	378	56	59	68	79	95	99	100				BSWCM
Feb. 25	3:35 p. m.	236		1,120	1,280	69	78	88	94	98	100	--				BSWCM
Apr. 2	11:50 p. m.	228		656	916	73	80	85	91	97	99	100				BSWCM
Apr. 2	11:50 p. m.	252		656	928	60	71	84	91	98	99	100				BSNM
Apr. 3	6:30 a. m.	508		2,040	1,750	50	60	71	82	95	99	100				BSWCM
June 19	6:00 a. m.	66		339	603	79	90	96	97	98	99	100				BSWCM

LITTLE MIAMI RIVER BASIN--Continued

MASSIE CREEK AT WILBERFORCE, OHIO

LOCATION.--At gaging station at bridge on Wilberforce-Clifton Road, 0.5 mile northwest of Wilberforce, Greene County, 1.7 miles upstream from Clark Run, and 3.5 miles northwest of Xenia.

DRAINAGE AREA.--64.3 square miles.

RECORDS AVAILABLE.--Chemical analyses: September 1952 to September 1954.

Water temperatures: September 1952 to September 1956.

Sediment records: September 1952 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 75°F June 30, July 2; minimum, freezing point on several days during November to January.

Sediment concentrations: Maximum daily, 892 ppm July 3; minimum daily, 1 ppm Apr. 24.

Sediment loads: Maximum daily, 1,930 tons Apr. 3; minimum daily, 0.1 ton on many days during October, January, April, and September.

EXTREMES, 1952-56.--Water temperatures: Maximum, 79°F Aug. 15, 1953; minimum, freezing point on many days during winter months.

Sediment concentrations: Minimum daily, 1 ppm on many days during October 1952, April, November, December 1953, March, November to December 1954, April 1955, and April 1956.

Sediment loads: Maximum daily, 1,930 tons Apr. 3, 1956; minimum daily, less than 0.05 ton on many days during October 1952, July to December 1953, January, February, July to September, November, December 1954, and September 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at varying hours/

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

LITTLE MIAMI RIVER BASIN--Continued

MASSIE CREEK AT WILBERFORCE, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis- charge (cfs)	Suspended sediment		Mean dis- charge (cfs)	Suspended sediment		Mean dis- charge (cfs)	Suspended sediment	
		Mean con- centration (ppm)	Tons per day		Mean con- centration (ppm)	Tons per day		Mean con- centration (ppm)	Tons per day
1.....	9.5	19	0.5	8.5	16	0.4	33	85	sb 9
2.....	6.8	17	.3	14	--	e 3	41	35	a 4
3.....	5.4	13	a 2	47	--	e 12	73	25	s 5.3
4.....	4.6	8	.1	48	30	3.9	102	117	32
5.....	5.4	13	.2	34	16	a 1	77	136	28
6.....	6.8	35	.6	28	11	a 8	56	153	23
7.....	31	138	s 15	24	10	.6	48	159	21
8.....	66	--	e 25	19	12	.6	42	160	16
9.....	38	--	e 4	17	20	.9	37	164	16
10.....	24	--	e 1	16	33	1.4	32	160	a 14
11.....	18	17	.8	16	34	1.5	29	149	12
12.....	15	13	.5	15	--	e 1	27	145	a 10
13.....	15	13	a 5	13	--	e 8	26	145	a 10
14.....	12	13	a 4	15	--	e 6	26	130	9.1
15.....	9.9	12	.3	22	8	.5	23	--	e 6
16.....	9.5	10	a 2	497	s 1,250	20	--	--	e 4
17.....	13	6	a 2	364	sa 120	23	--	--	e 3
18.....	15	3	.1	156	29	12	22	24	1.4
19.....	13	2	.1	120	25	a 8	19	18	.9
20.....	11	19	.6	92	25	a 6	18	--	e 8
21.....	9.9	56	1.5	87	20	a 5	18	--	e 7
22.....	8.8	45	a 1	110	21	6.2	19	--	e 7
23.....	8.5	27	.6	144	85	sb 40	21	15	.8
24.....	9.9	15	.4	142	51	s 21	21	13	.7
25.....	11	9	.3	101	15	a 4	20	13	a 7
26.....	9.9	12	.3	79	9	1.9	17	13	a 6
27.....	9.5	41	1.0	65	13	2.3	15	13	.5
28.....	8.8	44	1.0	52	13	a 2	14	13	.5
29.....	8.8	95	a 2	39	10	1.0	17	12	.6
30.....	9.2	94	2.3	37	8	.8	16	10	.4
31.....	8.8	27	.6	--	--	--	14	8	a 3
Total.	432.0	--	61.6	2,421.5	--	1,509.2	966	--	234.0
Day	January			February			March		
	Mean dis- charge (cfs)	Suspended sediment		Mean dis- charge (cfs)	Suspended sediment		Mean dis- charge (cfs)	Suspended sediment	
		Mean con- centration (ppm)	Tons per day		Mean con- centration (ppm)	Tons per day		Mean con- centration (ppm)	Tons per day
1.....	16	12	0.5	108	18	a 5	116	26	8.1
2.....	16	6	.2	261	154	s 140	110	41	12
3.....	15	7	.3	263	68	s 53	95	30	7.7
4.....	14	8	.3	175	27	13	78	34	7.2
5.....	13	8	.3	162	23	10	72	43	8.4
6.....	14	9	.3	258	71	s 54	66	45	8.0
7.....	13	7	.2	298	65	52	82	110	sb 30
8.....	9.2	9	.2	189	40	20	235	--	e 200
9.....	11	7	.2	228	37	23	145	60	23
10.....	12	6	.2	195	25	13	113	30	9.2
11.....	13	5	.2	224	41	25	96	22	5.7
12.....	12	5	.2	203	39	21	75	23	4.6
13.....	10	4	.1	142	20	7.7	67	19	3.4
14.....	10	3	.1	122	15	4.9	140	44	s 19
15.....	11	3	a 1	227	80	sb 50	157	32	14
16.....	12	5	.2	182	28	14	125	11	3.7
17.....	11	49	1.4	179	21	s 12	102	12	3.3
18.....	10	59	1.6	595	270	434	93	7	1.8
19.....	11	55	1.6	329	86	s 82	81	14	3.1
20.....	12	55	a 2	199	27	14	78	15	3.2
21.....	12	62	2.0	150	17	6.9	98	24	6.3
22.....	11	65	1.9	115	11	3.4	148	16	6.4
23.....	9.2	40	1.0	93	13	3.3	151	18	7.3
24.....	10	56	s 1.6	89	13	3.1	199	53	28
25.....	9.7	76	2.0	309	320	sb 360	144	29	11
26.....	9.7	55	a 1	281	149	s 128	118	17	5.4
27.....	9.7	25	a 6	179	80	a 40	104	16	4.5
28.....	10	5	.1	179	52	25	227	101	s 84
29.....	54	25	s 5.2	136	31	11	268	92	s 76
30.....	254	143	97	--	--	--	157	26	11
31.....	206	80	s 36	--	--	--	118	16	5.1
Total.	840.5	--	158.6	6,070	--	1,628.3	3,858	--	620.4

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

MASSIE CREEK AT WILBERFORCE, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956--Continued

Day	April			May			June		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	97	11	2.9	45	2	0.2	102	15	4.1
2.....	246	776	a 881	137	120	sb 50	79	15	3.2
3.....	964	742	1,930	160	55	a 25	63	9	1.5
4.....	638	270	s 489	110	16	a 5	50	7	.9
5.....	258	100	70	83	8	1.8	44	9	1.1
6.....	175	30	a 14	69	11	2.0	39	8	a .8
7.....	152	20	8.2	55	8	1.2	35	5	a .5
8.....	135	17	6.2	45	4	.5	33	10	.9
9.....	110	13	3.9	42	2	.2	30	32	2.6
10.....	99	11	2.9	63	--	e 5	27	24	1.7
11.....	89	9	2.2	66	--	e 4	25	25	1.7
12.....	74	7	1.4	50	32	4.3	22	26	1.5
13.....	65	7	1.2	44	17	a 2	21	22	1.2
14.....	61	7	1.2	39	5	.5	22	26	1.5
15.....	61	4	a .6	38	6	.6	19	25	1.3
16.....	56	3	.4	38	8	a .8	18	30	1.4
17.....	48	5	.6	35	5	a .5	34	--	e 25
18.....	44	5	a .6	33	5	a .4	65	230	sb 45
19.....	40	3	.3	30	2	.2	110	248	74
20.....	38	2	.2	27	3	.2	55	80	12
21.....	36	2	.2	26	3	.2	42	64	7.2
22.....	37	2	.2	29	3	.2	34	51	4.7
23.....	35	2	.2	30	3	.2	29	44	3.4
24.....	33	1	.1	28	4	.3	26	38	2.7
25.....	32	2	.2	24	5	.3	22	32	1.9
26.....	69	3	.6	25	5	.3	20	25	1.4
27.....	60	3	.5	139	84	s 39	19	23	1.2
28.....	51	2	a .3	213	48	28	18	72	3.5
29.....	60	2	a .3	152	26	11	16	100	4.3
30.....	52	2	.3	113	26	7.9	14	48	1.8
31.....	--	--	--	93	14	3.5	--	--	--
Total.	3,915	--	3,419.7	2,081	--	195.3	1,133	--	214.0

	July			August			September		
	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day	Mean dis-charge (cfs)	Mean concentration (ppm)	Tons per day
1.....	13	48	1.7	35	290	sb 35	10	30	0.8
2.....	12	38	1.2	18	64	3.1	17	35	1.6
3.....	142	892	a 1,180	13	38	1.3	16	23	1.0
4.....	113	358	s 121	12	65	2.1	10	23	.6
5.....	57	130	20	10	103	2.8	9.7	31	.8
6.....	38	108	11	9.4	24	.6	6.9	34	.6
7.....	29	95	7.4	8.7	17	.4	6.1	15	.2
8.....	24	83	5.4	7.7	16	.3	5.6	12	.2
9.....	21	67	3.8	7.4	12	.2	5.4	11	.2
10.....	18	61	3.0	7.4	20	.4	5.2	4	.1
11.....	15	61	2.5	6.6	20	.4	5.0	8	.1
12.....	14	62	2.3	6.4	20	.3	4.7	6	.1
13.....	27	--	e 85	6.4	19	.3	4.3	8	.1
14.....	28	440	sb 45	12	50	sb 2	4.1	7	.1
15.....	17	93	4.3	18	31	1.5	8.0	14	.3
16.....	14	73	2.8	10	17	.4	8.7	10	a .2
17.....	13	55	1.9	8.0	17	a .4	7.4	10	.2
18.....	11	50	1.5	6.9	16	.3	5.9	10	.2
19.....	10	46	1.2	8.0	16	.3	5.4	6	.1
20.....	34	187	s 18	9.4	16	.4	5.2	4	.1
21.....	52	108	15	8.0	15	.3	5.0	4	.1
22.....	25	56	3.8	6.9	22	.4	4.7	10	.1
23.....	18	48	2.3	6.4	25	.4	4.5	9	.1
24.....	15	43	1.7	6.6	33	.6	4.7	11	.1
25.....	13	37	1.3	7.2	28	.5	4.5	10	.1
26.....	12	30	1.0	6.4	26	.4	4.3	6	.1
27.....	10	22	.6	5.4	23	.3	4.3	5	.1
28.....	36	320	sb 40	5.2	28	.4	4.3	8	.1
29.....	41	87	9.6	5.0	54	.7	4.3	8	.1
30.....	25	50	3.4	6.4	29	.5	4.1	8	.1
31.....	18	36	1.7	7.2	12	.2	--	--	--
Total.	917	--	1,599.4	291.0	--	57.2	195.2	--	8.6

Total discharge for year (cfs-days) 23,120.3

Total load for year (tons) 9,708.3

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued
MASSIE CREEK AT WILBERFORCE, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment											Methods of analysis		
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters											
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350		0.500	1.000
Nov. 16, 1955	11:20 a.m.	950		1,070	1,290	51	63	70	81	92	95	96	98		99		BSWCM
Nov. 16	11:20 a.m.	950		1,070	1,410	37	52	66	81	93	95	96	98		99		BSNM
Nov. 16	4:15 p.m.	548		394	1,040	59	78	82	91	96	99	100	--		--		BSWCM
Feb. 18, 1956	3:30 p.m.	676		279	498	52	62	63	75	83	91	94	97		99		BSWCM
Feb. 25	4:05 p.m.	398		436	520	60	64	76	87	94	98	99	100		--		BSWCM
Apr. 2	5:00 p.m.	611		2,370	2,050	35	45	55	69	87	95	96	98		100		BSWCM
Apr. 3	7:00 a.m.	1,050		1,010	1,380	47	56	64	73	83	95	97	98		100		BSNM
Apr. 3	7:00 a.m.	1,050		1,010	1,260	32	46	64	78	90	94	97	98		100		BSWCM
June 13	8:45 a.m.	41		200	414	61	78	86	94	98	99	100	--		--		BSWCM
July 3	6:00 p.m.	970		3,960	2,840	37	48	66	82	95	98	100	--		--		BSWCM
Aug. 1	8:45 a.m.	44		401	715	66	77	83	93	96	97	100	--		--		BSWCM

LITTLE MIAMI RIVER BASIN--Continued

TODD FORK NEAR ROACHESTER, OHIO

LOCATION.--At gaging station at bridge on State Highway 123, 0.3 mile downstream from Lick Run, 1.6 miles southeast of Roacheater, Warren County, 2½ miles southwest of Morrow, and 4 miles upstream from mouth.

DRAINAGE AREA (revised).--219 square miles.

RECORDS AVAILABLE.--Chemical analyses: September 1952 to September 1954.

Water temperatures: September 1952 to September 1956.

Sediment records: September 1952 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 87°F July 27; minimum, freezing point several days during December and January.

Sediment concentrations: Maximum daily, 1,800 ppm Apr. 2; minimum daily, 1 ppm May 7, 9, 15.

Sediment loads: Maximum daily, 33,000 tons Apr. 2; minimum daily, 0.1 ton on many days during November, January, May, June, and September.

EXTREMES, 1952-56.--Water temperatures: Maximum, 92°F July 31, 1953, July 27, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 3,100 ppm June 10, 1953; minimum daily, 1 ppm on many days during October, December 1952, January, February, April, May, November, December 1953, January, February, November, December 1954, and May 1956.

Sediment loads: Maximum daily, 53,000 tons (estimated) July 21, 1954; minimum daily, less than 0.05 ton on many days during September to December 1952, January, August to December 1953, January, November, December 1954, and September 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Some regulation by Cowan Lake on Cowan Creek.

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at varying hours/

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

LITTLE MIAMI RIVER BASIN--Continued

TODD FORK NEAR ROACHESTER, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	99	158	42	19	2	0.1	87	6	1.4
2.....	30	113	9.2	87	--	e 19	145	13	s 8.0
3.....	18	70	3.4	301	140	sb 140	420	51	58
4.....	15	50	a 2	139	47	18	369	38	40
5.....	14	42	1.6	94	26	6.6	237	21	13
6.....	183	242	s 159	71	13	2.5	171	10	4.6
7.....	494	300	400	54	8	1.2	142	5	1.9
8.....	246	193	128	35	5	5	154	11	s 6.2
9.....	115	101	31	30	4	.3	339	28	26
10.....	71	61	12	27	3	.2	269	20	14
11.....	36	50	4.9	24	2	.1	139	13	4.9
12.....	27	38	2.8	23	3	.2	140	11	4.2
13.....	23	33	2.0	21	3	.2	130	10	3.5
14.....	21	23	1.3	268	1,300	sb 2,000	131	9	3.2
15.....	20	18	1.0	548	776	s 1,910	128	8	2.8
16.....	20	6	.3	1,520	773	s 3,550	130	11	3.9
17.....	23	11	.7	644	199	s 418	120	12	3.9
18.....	42	15	1.7	273	42	31	123	10	3.3
19.....	32	9	.8	207	28	16	120	9	2.9
20.....	24	6	.4	177	16	7.6	123	7	2.3
21.....	20	6	.3	186	10	5.0	120	7	2.3
22.....	18	7	.3	223	17	a 10	120	5	1.6
23.....	17	8	.4	873	501	s 1,910	115	7	2.2
24.....	17	13	.6	431	138	160	120	10	a 3
25.....	18	9	a .4	251	50	34	123	10	3.3
26.....	18	4	.2	186	13	6.5	115	9	2.8
27.....	17	5	.2	154	10	4.2	108	7	2.0
28.....	17	5	.2	131	11	a 4	106	7	2.0
29.....	17	6	.3	104	10	a 3	106	8	2.3
30.....	20	5	.3	92	8	2.0	110	7	2.1
31.....	21	3	a .2	--	--	--	104	7	2.0
Total.	1,753	--	807.5	7,173	--	10,260.2	4,886	--	233.6
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	110	6	1.8	447	65	a 80	376	57	58
2.....	104	6	a 2	2,700	512	s 4,510	372	56	56
3.....	104	6	1.7	1,260	198	s 787	347	58	54
4.....	104	5	1.4	780	43	90	347	50	a 45
5.....	99	3	.8	718	37	72	319	38	33
6.....	101	2	.5	1,380	247	s 1,200	307	47	39
7.....	101	2	.5	1,220	189	s 718	709	280	sb 1,000
8.....	97	3	.8	718	42	81	1,980	--	e 5,300
9.....	104	4	1.1	754	37	75	561	81	s 131
10.....	22	5	.3	524	45	64	393	45	a 50
11.....	16	4	.2	801	132	s 347	201	40	a 20
12.....	16	3	.1	447	70	84	159	20	8.6
13.....	15	3	.1	284	25	19	137	7	2.6
14.....	15	7	.3	284	17	13	1,180	429	s 1,790
15.....	14	5	a .2	1,280	828	s 3,400	489	140	s 215
16.....	15	4	.2	545	163	s 270	335	26	24
17.....	15	4	.2	1,140	238	s 1,160	319	14	12
18.....	13	7	.2	3,220	813	s 8,210	463	52	s 87
19.....	15	7	a .3	818	108	s 268	438	80	95
20.....	15	3	.1	514	45	a 80	319	39	34
21.....	15	3	.1	402	35	a 40	493	65	sb 110
22.....	14	6	.2	347	35	33	724	110	sb 240
23.....	14	10	a .4	315	33	28	519	38	53
24.....	12	7	.2	360	30	29	1,010	240	sb 750
25.....	13	7	a .2	2,670	1,700	sb 18,000	494	63	s 92
26.....	11	20	.6	858	342	s 932	347	28	21
27.....	12	7	.2	514	107	148	277	18	13
28.....	12	5	.2	640	130	225	1,940	800	s 6,880
29.....	232	75	sb 90	433	77	90	1,290	290	s 1,260
30.....	2,070	750	sb 8,800	--	--	--	509	40	a 50
31.....	594	178	s 314	--	--	--	315	29	25
Total.	4,084	--	5,218.9	26,373	--	41,033	17,689	--	18,548.2

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued

TODD FORK NEAR ROACHESTER, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	237	24	15	110	6	1.8	99	9	a 2
2.....	3,290	1,800	s 33,000	159	17	7.3	76	8	1.6
3.....	4,920	--	e 25,000	223	28	17	57	3	.5
4.....	1,840	570	s 3,210	162	17	7.4	39	3	.3
5.....	658	144	s 279	128	12	4.1	31	3	a .2
6.....	376	63	64	110	2	.6	25	2	.1
7.....	323	54	47	101	1	.3	23	2	a .1
8.....	315	42	36	84	2	.4	20	3	.2
9.....	288	31	24	71	1	.2	18	5	.2
10.....	240	24	16	66	2	.4	16	8	.3
11.....	217	25	a 15	74	2	.4	15	12	.5
12.....	183	26	13	74	3	a .6	13	9	.3
13.....	159	28	12	94	3	.8	12	5	.2
14.....	142	16	6.1	66	2	.4	24	--	e 30
15.....	154	12	5.0	57	1	.2	188	--	e 280
16.....	180	11	5.3	82	2	.4	92	261	65
17.....	162	10	4.4	66	2	a .4	60	--	e 70
18.....	137	8	3.0	54	2	.3	383	--	e 1,400
19.....	123	8	2.6	39	3	.3	251	--	e 320
20.....	110	8	2.4	31	3	a .2	271	803	s 731
21.....	99	8	a 2	30	3	.2	381	768	s 846
22.....	97	8	2.1	27	3	.2	255	200	138
23.....	104	7	2.0	32	3	a .2	207	130	73
24.....	97	5	1.3	42	3	.3	139	102	38
25.....	89	5	1.2	30	2	.2	92	87	22
26.....	168	9	4.1	24	2	.1	85	265	s 94
27.....	165	12	5.3	100	--	e 12	195	382	201
28.....	137	7	2.6	204	27	15	110	133	40
29.....	162	21	9.2	159	13	5.6	60	113	18
30.....	137	12	a 4	165	12	5.3	28	81	6.1
31.....	--	--	--	120	10	3.2	--	--	--
Total.	15,309	--	61,793.6	2,784	--	85.8	3,265	--	4,378.6
	July			August			September		
1.....	20	70	a 4	142	82	31	188	--	e 190
2.....	16	72	3.1	110	70	21	480	--	e 650
3.....	15	70	2.8	76	54	11	177	--	e 80
4.....	196	--	e 250	36	40	3.9	89	100	24
5.....	134	430	b 160	28	30	2.3	45	79	9.6
6.....	106	223	64	23	17	1.0	30	70	5.7
7.....	42	127	14	18	14	.7	20	62	3.3
8.....	21	83	4.7	14	19	.7	11	50	a 1
9.....	17	60	a 3	11	21	.6	7.9	45	1.0
10.....	14	46	1.7	39	23	2.4	7.3	32	.6
11.....	13	36	1.3	55	25	3.7	6.3	21	.4
12.....	11	30	a .9	15	22	.9	4.8	17	.2
13.....	8.9	33	.8	11	18	a .5	4.2	13	.1
14.....	7.3	35	a .7	78	--	e 280	4.6	12	.1
15.....	7.0	32	.6	267	--	e 440	25	65	sb 11
16.....	12	85	sb 17	101	88	24	415	--	e 280
17.....	366	--	e 1,600	34	52	4.8	207	75	42
18.....	156	180	76	20	40	2.2	106	70	20
19.....	69	100	19	18	39	1.9	57	65	10
20.....	370	--	e 2,600	23	44	2.7	27	47	3.4
21.....	344	450	sb 450	23	45	2.8	18	38	1.8
22.....	151	169	69	14	32	1.2	15	27	1.1
23.....	74	122	24	9.6	28	.7	13	21	.7
24.....	34	95	8.7	8.3	31	.7	9.3	16	.4
25.....	24	70	a 5	10	38	1.0	7.6	5	.1
26.....	19	57	2.9	8.3	36	.8	5.6	5	a .1
27.....	16	39	1.7	4.4	31	.4	4.4	6	.1
28.....	1,080	860	s 4,450	4.2	34	.4	3.7	7	.1
29.....	786	598	s 1,580	3.5	41	.4	3.7	8	.1
30.....	351	117	111	9.6	50	a 1	3.5	8	.1
31.....	177	90	43	132	122	s 58	--	--	--
Total.	4,687.2	--	11,568.6	1,345.9	--	902.7	1,995.9	--	1,337.0

Total discharge for year (cfs-days)..... 91,305.0

Total load for year (tons)..... 156,168.0

e Estimated.

a Computed from estimated concentration graph.

s Computed by subdividing day.

b Computed from partly estimated concentration graph.

LITTLE MIAMI RIVER BASIN--Continued
TODD FORK NEAR ROACHESTER, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; F, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment												Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters											
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Nov. 14, 1955	5:00 p.m.	339		1,340	987	63	81	95	98	100	--	--	--	--	--	--	BWCM
Nov. 16	11:00 a.m.	1,820		1,120	955	48	60	78	88	97	99	100	--	--	--	--	BSWCM
Nov. 16	6:15 p.m.	2,140		940	1,170	59	72	84	94	98	100	--	--	--	--	--	BSWCM
Nov. 16	6:15 p.m.	2,140		940	1,180	35	53	74	93	99	100	--	--	--	--	--	BSNM
Nov. 23	3:45 p.m.	1,740		1,120	1,050	58	71	83	93	97	99	99	99	100	100	100	BSWCM
Jan. 30, 1956	2:40 p.m.	2,140		664	1,910	38	46	65	80	93	96	97	99	100	100	100	BSWCM
Feb. 2	2:45 p.m.	3,850		845	4,830	31	44	56	70	90	94	97	98	100	100	100	BSWCM
Feb. 6	7:30 p.m.	2,100		390	691	56	52	66	81	92	95	96	97	99	99	99	BSWCM
Feb. 15	1:15 p.m.	1,900		1,170	1,750	55	62	74	87	96	99	99	99	100	100	100	BSWCM
Feb. 18	12:30 p.m.	3,650		659	1,870	33	45	58	77	91	96	97	98	99	99	99	BSWCM
Feb. 25	4:50 p.m.	3,950		2,570	1,500	47	57	70	84	93	97	98	98	99	99	99	BSWCM
Mar. 28	5:45 p.m.	3,950		1,710	2,460	40	48	59	76	89	94	96	98	99	99	99	BSWCM
Mar. 28	5:45 p.m.	3,950		1,710	2,600	31	30	43	62	85	94	96	98	99	99	99	BSNM
Apr. 2	2:40 p.m.	4,720		6,040	5,580	31	41	54	70	84	96	96	99	100	100	100	BSWCM
Apr. 2	8:30 p.m.	8,860		3,360	2,030	40	49	60	75	85	94	96	98	99	100	100	BSWCM
June 18	11:30 a.m.	385		624	800	60	75	92	97	98	99	100	--	--	--	--	BSWCM
June 20	6:00 p.m.	489		2,280	1,610	46	64	84	97	100	--	--	--	--	--	--	FWCM
July 20	1:15 p.m.	151		508	780	66	81	92	98	99	100	--	--	--	--	--	BSWCM
July 28	5:40 p.m.	2,950		1,640	1,230	43	56	76	93	98	99	100	--	--	--	--	BSWCM
July 28	10:15 p.m.	1,830		1,870	2,020	49	61	80	95	99	99	99	100	100	100	100	BSWCM
July 28	10:15 p.m.	1,630		1,870	2,280	29	38	63	94	99	99	99	99	99	99	99	BSNM

LICKING RIVER BASIN

LICKING RIVER AT FARMERS, KY.

LOCATION.--Temperature recorder at gaging station near right bank on downstream side of bridge on U. S. Highway 60, 300 feet upstream from Chesapeake and Ohio Railway bridge, three-quarters of a mile west of Farmers, Rowan County, and 1.1 miles upstream from Triplett Creek.
DRAINAGE AREA.--826 square miles.

RECORDS AVAILABLE.--Chemical analyses: September 1949 to August 1950.

Water temperatures: October 1949 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 79°F June 17, 18; minimum, 33°F on several days during January.

EXTREMES, 1949-56.--Water temperatures: Maximum, 92°F July 19, 1951; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in NSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

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

LUCKING RIVER BASIN--Continued

LUCKING RIVER AT MCKINNEYSBURG, KY.

LOCATION.--At gaging station at highway bridge at McKinneysburg, Pendleton County, 6.5 miles southeast of Falmouth, 9.0 miles upstream from Blanket Creek, and 12.8 miles upstream from South Fork.

DRAINAGE AREA.--2,280 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses: October 1952 to September 1956.

Water temperatures: October 1952 to September 1956.

Sediment records: October 1952 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 218 ppm Dec. 21-31; minimum, 73 ppm Feb. 20-24.

Hardness: Maximum, 170 ppm Nov. 17-30; minimum, 45 ppm Feb. 20-24.

Specific conductance: Maximum daily, 377 micromhos Nov. 25; minimum daily, 93 micromhos Apr. 20-21.

Water temperatures: Maximum, 80° F Aug. 13; minimum, freezing point on several days during December and January.

Sediment concentrations: Maximum daily, 4,230 ppm Feb. 25; minimum daily, 1 ppm Jan. 9-11, 13-14.

Sediment loads: Maximum daily, 223,000 tons Feb. 25; minimum daily, less than 0.5 ton Jan. 9-11, 13-14.

EXTREMES, 1952-56.--Dissolved solids: Maximum, 218 ppm Dec. 21-31, 1955; minimum, 57 ppm Apr. 16-17, 1953.

Hardness: Maximum, 170 ppm Nov. 17-30, 1955; minimum, 42 ppm Mar. 8-12, 1955.

Specific conductance: Maximum daily, 377 micromhos Nov. 25, 1955; minimum daily, 90 micromhos Mar. 9, 1953.

Water temperatures: Maximum, 87° F July 31 to Aug. 1, 1953; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 4,230 ppm Feb. 25, 1956; minimum daily, 1 ppm on many days during November 1952, December 1953, January 1954, September 1955, and January 1956.

Sediment loads: Maximum daily, 223,000 tons Feb. 25, 1956; minimum daily, less than 0.5 ton on many days during October and November 1952, September to December 1953, January 1954, September 1955, and January 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Columbus, Ohio. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micromhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-6, 1955	335	7.9	0.07	38	5.9	2.4	3.7	124	16	3.8	0.3	2.6	150	119	17	246	7.2	16
Oct. 7-18	801	7.2	0.09	38	5.4	2.4	3.9	119	20	3.2	.4	5.1	184	117	20	245	7.2	25
Oct. 19-31	115	7.7	.05	43	7.6	3.2	3.4	143	22	4.5	.2	2.5	170	139	21	285	7.4	15
Nov. 1-16	454	9.6	.14	48	6.0	2.8	4.2	149	24	4.4	.1	2.2	194	144	22	305	7.2	20
Nov. 17-30	995	7.3	.06	55	7.9	3.4	3.7	173	29	4.4	.1	4.5	210	170	28	349	7.5	13
Dec. 1-10	1,750	7.4	.04	49	8.4	3.1	2.9	151	30	5.0	.2	5.2	196	157	33	325	7.2	15
Dec. 11-20	361	12	.02	52	8.7	4.7	2.5	162	33	5.5	.3	4.9	212	166	33	344	7.9	6
Dec. 21-31	255	16	.04	52	9.6	5.5	2.2	169	33	7.0	.2	3.1	218	169	31	345	8.0	3
Jan. 1-13, 1956	162	6.2	.01	48	11	4.2	1.5	154	32	6.0	.2	2.0	195	165	39	333	6.5	1
Jan. 14-23, 27-28	704	6.4	.02	49	11	4.7	1.6	154	35	5.5	.2	2.8	197	168	41	341	6.6	5
Jan. 30-31	14,700	8.3	.07	67	6.3	2.8	2.5	109	22	2.3	.1	9.6	160	118	28	240	7.1	22
Feb. 1-10	16,350	8.7	.04	19	4.4	2.9	1.9	58	17	3.4	.1	5.9	101	96	18	151	7.1	9
Feb. 11-19	16,980	5.8	.08	25	4.0	3.3	1.8	70	21	3.4	.1	4.4	116	79	22	165	7.2	24
Feb. 20-24	22,080	5.4	.09	13	3.1	2.7	2.0	37	14	2.6	.1	2.9	73	45	15	100	6.9	26
Feb. 25-Mar. 5	6,727	9.3	.02	25	4.8	3.3	1.7	77	18	3.2	.1	4.0	108	82	19	181	7.7	2

Mar. 6-9, 1956.....	15,570	6.8	0.02	27	4.2	2.0	1.8	82	14	2.1	0.1	3.5	107	85	17	178	7.7	10
Mar. 10-13	11,120	6.8	.03	19	4.0	3.5	1.5	58	18	2.2	.1	3.2	93	64	16	152	7.6	10
Mar. 14-18	17,370	2.9	--	25	3.3	1.9	1.2	74	13	1.2	.2	3.9	110	76	15	170	6.9	15
Mar. 17-23	13,710	9.2	.05	19	4.0	2.0	1.3	58	17	2.0	.3	2.8	91	64	16	140	7.1	--
Mar. 24-Apr. 8	4,885	9.6	.04	26	5.4	2.7	1.6	80	21	3.2	.2	2.6	117	87	22	185	7.1	15
Apr. 9-12	7,468	11	.04	18	4.6	3.1	1.2	61	16	2.9	.2	1.3	96	63	13	146	7.4	15
Apr. 13-17	6,260	25	.05	25	5.9	5.5	1.4	90	18	3.5	.2	2.0	138	87	13	195	7.5	15
Apr. 18-22	11,700	9.1	.06	13	3.3	1.9	1.4	41	13	2.4	.2	1.5	74	46	12	107	7.0	5
Apr. 23-May 5	2,909	10	.03	29	6.2	3.1	1.5	93	21	4.0	.2	1.6	128	98	22	206	7.2	16
May 6-15	1,844	11	.04	23	5.5	3.2	1.4	72	20	4.5	.2	1.0	108	80	21	174	7.1	9
May 16-28	1,132	8.7	.03	30	4.7	3.9	1.3	93	20	4.0	.1	1.2	126	94	18	211	7.2	0
May 29-June 2	5,040	10	.10	30	3.2	2.4	1.6	88	16	2.5	.2	7.4	123	88	16	193	7.1	1
June 3-15	811	10	.01	29	5.4	3.0	1.7	94	16	3.8	.1	2.3	126	95	18	208	7.1	0
June 16-24	4,590	8.8	.05	30	4.0	2.8	2.5	96	16	4.1	.2	2.6	118	91	13	203	7.1	16
June 25-30	5,373	9.6	.10	19	3.0	2.5	2.3	60	12	3.2	.2	2.8	93	60	11	147	7.1	25
July 1-16	1,449	9.7	.04	27	3.9	3.1	2.4	85	16	4.2	.3	3.2	112	83	14	190	7.2	16
July 17-26	2,148	11	.06	29	5.0	2.9	2.8	98	17	3.6	.3	2.8	123	93	13	208	7.4	20
July 27-30	3,980	14	.04	20	4.4	2.6	2.0	67	15	3.0	.5	3.3	106	68	13	153	7.0	14
Aug. 1-Aug. 18	1,371	11	.04	28	5.1	4.3	1.7	94	16	6.5	.3	2.2	123	91	14	206	7.3	12
Aug. 20-Sept. 13	6,380	9.6	.03	36	6.1	4.5	2.4	121	17	7.2	.2	1.6	146	113	16	247	7.4	8
Sept. 15-17	6,160	9.3	.10	27	4.0	2.6	2.6	87	12	4.0	.7	.9	111	84	12	174	7.1	43
Sept. 18-30	5,586	9.5	.05	35	5.5	3.5	1.9	118	16	4.4	.3	2.9	139	110	13	232	7.3	24
Time-weighted average	3,772	9.4	0.05	34	5.9	3.4	2.2	108	21	4.4	0.2	3.0	142	109	20	232	--	12

LICKING RIVER BASIN--Continued

LICKING RIVER AT MCKINNEYSBURG, KY.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at varying hours/

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

LICKING RIVER BASIN--Continued

LICKING RIVER AT MCKINNEYSBURG, KY.--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	630	389	662	65	6	1	337	64	1
2.....	230	214	133	565	--	e 1,100	858	126	s 413
3.....	134	85	31	1,420	390	sa 1,700	1,790	188	s 956
4.....	99	57	15	469	114	144	4,460	838	10,100
5.....	72	48	9	210	78	44	3,260	715	6,290
6.....	854	--	e 2,800	147	44	17	2,400	312	2,020
7.....	2,690	1,100	sa 8,000	125	28	9	1,540	202	840
8.....	2,070	470	2,630	110	25	7	1,160	166	520
9.....	1,540	230	956	101	20	5	942	93	236
10.....	1,090	122	359	91	21	5	768	53	110
11.....	612	112	185	83	23	5	624	46	78
12.....	392	68	72	78	21	4	510	35	48
13.....	310	43	36	76	18	4	425	32	37
14.....	260	33	23	527	--	e 1,400	398	34	36
15.....	220	39	23	1,560	1,320	5,560	354	19	18
16.....	134	38	14	1,640	963	sa 4,660	310	11	b 9
17.....	150	28	11	1,650	516	2,300	282	12	9
18.....	144	23	9	1,360	204	749	245	7	5
19.....	141	22	8	1,040	172	483	230	5	3
20.....	150	22	9	1,060	73	209	230	5	3
21.....	157	20	8	1,080	51	149	230	2	1
22.....	150	17	7	978	50	132	230	3	2
23.....	134	18	6	908	52	127	245	3	2
24.....	125	13	4	1,300	83	291	260	3	2
25.....	122	13	4	1,250	100	338	293	8	6
26.....	110	15	4	990	82	219	304	5	4
27.....	96	15	4	774	81	169	282	5	4
28.....	88	16	4	630	90	153	260	4	3
29.....	81	8	2	510	66	91	245	3	2
30.....	76	5	b 1	414	56	62	235	2	2
31.....	74	5	1	--	--	--	225	3	1
Total.	13,135	--	16,030	21,209	--	20,137	23,932	--	21,818
Day	January			February			March		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	201	2	1	15,400	969	40,300	4,990	163	2,200
2.....	184	2	1	23,000	1,080	65,800	3,850	108	1,120
3.....	180	2	1	24,900	1,070	71,900	3,290	72	640
4.....	180	2	1	22,300	570	34,300	3,180	62	532
5.....	176	2	1	19,400	326	17,100	3,430	75	694
6.....	167	2	1	19,800	256	13,700	4,190	77	871
7.....	160	2	1	19,700	255	13,600	11,300	1,630	sa 55,800
8.....	150	2	1	17,100	170	7,850	24,000	1,640	108,000
9.....	157	1	(t)	13,200	117	4,170	22,800	1,000	61,600
10.....	141	1	(t)	8,740	109	2,570	18,500	335	16,700
11.....	134	1	(t)	6,510	170	2,990	12,500	121	4,080
12.....	134	2	1	5,520	176	2,620	7,480	123	2,480
13.....	137	1	(t)	5,500	152	2,260	5,980	114	1,840
14.....	137	1	(t)	5,910	272	4,340	14,100	1,100	sa 48,000
15.....	134	2	1	18,100	1,450	sa 69,800	17,200	875	40,600
16.....	128	--	e 1	21,300	744	42,800	20,800	570	32,000
17.....	131	--	e 1	25,000	468	29,100	20,400	334	18,400
18.....	134	--	e 1	30,900	605	50,500	19,200	194	10,000
19.....	147	--	e 1	30,700	442	36,600	17,200	129	5,990
20.....	642	17	sa 34	28,600	306	23,600	14,800	78	3,120
21.....	624	24	40	25,500	248	17,100	11,500	46	1,430
22.....	690	31	58	22,700	178	10,900	7,510	57	1,160
23.....	696	22	41	19,300	174	9,070	5,360	56	810
24.....	740	--	e 40	14,300	111	4,280	4,350	82	963
25.....	624	--	e 30	15,400	4,230	sa 223,000	3,780	83	847
26.....	660	--	e 20	11,000	2,120	63,000	3,630	64	627
27.....	640	7	12	9,020	527	12,800	3,200	55	475
28.....	564	10	b 15	7,130	192	3,700	3,360	210	sa 1,900
29.....	4,490	777	sa 12,200	5,980	129	2,080	3,650	216	2,130
30.....	14,200	1,490	57,100	--	--	--	4,460	143	1,720
31.....	15,200	1,420	58,300	--	--	--	4,730	100	b 1,300
Total.	42,862	--	127,906	489,910	--	881,830	304,720	--	426,029

e Estimated.

s Computed by subdividing day.

t Less than 0.5 ton.

a Computed from partly estimated concentration graph.

b Computed from estimated concentration graph.

LICKING RIVER BASIN--Continued

LICKING RIVER AT MCKINNEYSBURG, KY.--Continued

Suspended sediment, water year October 1955 to September 1956--Continued

Day	Mean discharge (cfs)	April		Mean discharge (cfs)	May		Mean discharge (cfs)	June	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	4,080	76	837	1,640	24	106	3,520	423	4,030
2.....	4,060	390	sa 4,800	3,570	644	sa 8,400	2,530	248	1,680
3.....	4,280	564	sa 6,820	4,320	526	6,140	2,440	170	1,120
4.....	4,640	197	2,470	3,630	379	3,710	1,780	130	625
5.....	6,060	222	3,630	4,830	367	4,790	1,300	72	253
6.....	6,730	212	3,850	3,850	211	2,190	1,030	55	153
7.....	7,760	219	4,590	2,920	102	804	846	38	87
8.....	9,390	224	5,680	2,320	63	395	690	30	56
9.....	9,860	177	4,710	1,920	57	295	564	25	38
10.....	8,520	116	2,670	1,650	39	174	458	22	27
11.....	6,720	96	1,740	1,430	32	124	386	18	19
12.....	4,770	54	695	1,270	26	89	320	17	15
13.....	3,470	38	356	1,130	22	67	266	15	11
14.....	2,790	38	286	1,030	20	56	235	15	10
15.....	3,220	90	sa 928	924	18	45	225	13	8
16.....	8,720	420	9,890	876	15	35	225	16	10
17.....	13,100	404	14,300	804	14	30	206	18	10
18.....	14,000	224	8,470	756	13	26	201	21	11
19.....	13,200	139	4,950	672	12	22	193	18	9
20.....	12,300	144	4,780	808	13	21	372	19	19
21.....	11,200	91	2,750	546	12	18	10,100	2,500	sa 71,000
22.....	7,810	52	1,100	486	10	13	10,600	3,200	sa 105,000
23.....	3,660	45	445	430	9	10	11,000	2,450	72,800
24.....	2,630	45	320	376	8	8	8,410	985	22,400
25.....	2,320	42	263	326	7	6	8,080	695	15,200
26.....	2,640	42	299	293	10	8	8,270	745	16,600
27.....	2,360	52	331	1,020	--	e 1,900	7,610	420	8,630
28.....	2,220	34	204	7,530	1,200	sa 26,000	3,770	343	3,490
29.....	2,120	34	195	8,330	1,240	27,900	2,640	222	1,580
30.....	1,880	26	132	6,830	1,030	sa 21,100	1,870	163	823
31.....	--	--	--	3,990	354	3,810	--	--	--
Total.	186,510	--	92,291	70,305	--	108,292	90,137	--	325,704
Day	Mean discharge (cfs)	July		Mean discharge (cfs)	August		Mean discharge (cfs)	September	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	1,480	338	1,350	3,140	323	2,740	359	84	sa 91
2.....	1,080	130	379	4,750	--	e 17,000	167	55	b 25
3.....	804	62	134	2,960	984	7,860	210	53	30
4.....	2,330	--	e 7,100	2,130	361	2,080	403	47	51
5.....	2,260	1,180	7,200	1,710	191	882	293	30	24
6.....	2,340	550	3,470	1,370	105	388	215	26	15
7.....	2,330	520	3,270	1,040	83	233	180	17	8
8.....	2,140	700	sa 5,100	786	70	148	144	22	8
9.....	3,160	2,540	21,700	624	62	104	125	14	5
10.....	1,160	887	2,780	498	42	56	116	18	6
11.....	900	264	642	414	36	40	101	23	6
12.....	708	171	327	348	41	38	91	25	6
13.....	540	104	152	288	30	23	81	23	5
14.....	442	70	84	420	43	49	72	25	b 5
15.....	492	79	105	398	55	59	5,170	--	e 59,000
16.....	1,020	273	752	288	37	29	8,560	1,600	sa 39,000
17.....	1,060	258	738	235	42	27	4,810	550	7,140
18.....	960	118	306	230	32	20	2,790	252	1,900
19.....	768	100	207	245	30	b 20	1,190	141	453
20.....	1,190	--	e 2,800	579	--	e 330	738	100	199
21.....	1,400	1,380	5,220	1,310	--	e 1,000	528	88	125
22.....	930	367	sa 966	900	84	204	414	59	66
23.....	1,100	150	a 450	840	90	204	326	50	44
24.....	2,000	360	sa 2,700	540	50	b 75	266	38	27
25.....	5,010	1,110	15,000	398	27	29	442	43	51
26.....	7,060	802	15,300	315	36	31	310	27	22
27.....	6,030	445	7,240	240	19	12	240	20	13
28.....	3,920	550	a 5,800	188	13	6	197	17	9
29.....	2,560	527	sa 4,070	160	5	2	164	23	10
30.....	3,410	325	2,990	141	12	4	137	22	8
31.....	4,420	728	8,690	160	--	e 16	--	--	--
Total.	65,004	--	127,022	27,645	--	33,709	28,839	--	108,352

Total discharge for year (cfs-days) 1,364,028

Total load for year (tons) 2,289,120

e Estimated.

a Computed from partly estimated concentration graph.

s Computed subdividing day.

b Computed from estimated concentration graph.

LICKING RIVER BASIN--Continued

LICKING RIVER AT MCKINNEYSBURG, KY.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment												Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters											
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Oct. 7, 1955.....	4:30 p.m.	3,010		1,010	1,810	55	71	80	96	100	--	--				BSWCM	
Nov. 16.....	3:30 p.m.	2,320		1,520	1,480	47	61	76	90	99	100	--	--			BSWCM	
Jan. 30, 1956.....	5:20 p.m.	15,000		1,390	4,990	37	50	63	79	96	100	--	--			BSWCM	
Jan. 30.....	5:20 p.m.	15,000		1,390	5,180	28	34	49	66	98	100	--	--			BSNM	
Feb. 2.....	6:20 p.m.	26,800		1,080	2,160	37	53	67	83	96	99	100				BSWCM	
Feb. 15.....	6:40 a.m.	17,000		2,120	1,740	39	50	59	75	92	99	100				BSWCM	
Feb. 15.....	7:00 p.m.	21,400		1,080	2,590	36	51	63	76	95	100	--	--			BSWCM	
Feb. 18.....	9:45 a.m.	31,300		700	2,190	48	61	73	86	96	99	100				BSWCM	
Feb. 25.....	12:30 p.m.	20,100		8,080	5,710	36	46	57	74	94	99	100				BSWCM	
Feb. 27.....	7:00 a.m.	9,970		570	1,060	50	65	78	89	97	99	100				BSWCM	
Mar. 7.....	4:30 a.m.	13,600		1,820	1,550	48	61	68	81	96	99	100				BSWCM	
Mar. 8.....	7:00 a.m.	23,800		1,540	1,270	51	55	67	83	96	99	100				BSWCM	
Mar. 8.....	7:20 p.m.	24,900		1,940	--	48	59	71	87	98	100	100				BSWCM	
Mar. 9.....	8:30 a.m.	23,400		1,140	1,000	55	71	78	93	97	99	100				BSWCM	
Mar. 15.....	7:00 a.m.	17,300		924	881	49	64	80	90	98	99	100				BSWCM	
Apr. 3.....	7:00 a.m.	4,560		828	770	55	68	79	91	97	99	100				BSWCM	
May 2.....	5:00 p.m.	5,460		1,230	2,400	51	64	73	87	97	100	--	--			BSWCM	
May 28.....	5:45 p.m.	10,400		1,270	2,280	45	53	64	85	96	99	100				BSWCM	
May 28.....	5:45 p.m.	10,400		1,270	2,040	28	34	52	70	97	99	100				BSNM	
May 30.....	7:00 a.m.	6,660		1,440	2,040	41	52	65	83	96	99	100				BSWCM	
June 22.....	5:00 p.m.	13,500		5,120	3,550	34	43	56	75	93	100	--	--			BSWCM	
July 5.....	7:30 a.m.	2,210		1,280	965	68	79	93	99	100	--	--	--			BSWCM	
July 9.....	4:20 p.m.	2,560		2,480	6,570	52	63	83	96	100	--	--	--			BSWCM	
July 29.....	7:30 a.m.	2,660		694	1,200	54	65	79	92	98	99	100				BSWCM	
Aug. 3.....	7:45 a.m.	3,030		1,160	1,030	48	64	79	93	98	99	100				BSWCM	
Sept. 15.....	9:30 a.m.	3,330		2,310	2,340	40	55	67	82	95	98	100				BSWCM	

a. Average of individual analyses of samples from 4 verticals in stream cross section.

LICKING RIVER BASIN--Continued

SOUTH FORK LICKING RIVER AT CYNTHIANA, KY.

LOCATION.--At gaging station at bridge on State Highways 356 and 36, at Cynthiana, Harrison County, 0.4 mile downstream from Grays Run, and in pool formed by old mill dam, 2.6 miles downstream.

DRAINAGE AREA.--615 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1950 to August 1951.

Water temperatures: October 1949 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 79°F on several days during June; minimum, 33°F Dec. 16, Jan. 24, 26, 27, 31.

EXTREMES, 1949-56.--Water temperatures: Maximum, 87°F June 30, 1952, July 14, 1954; minimum, freezing point on several days during December 1953.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956
/Twice-daily measurements at approximately 4:30 a.m. and 6 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.....	67	67	52	53	34	35	34	36	34	34	44	46	48	51	63	64	70	69	73	74	73	73	74	73
2.....	65	66	52	53	35	37	36	36	34	35	45	46	51	52	64	64	67	67	74	74	72	73	71	71
3.....	65	66	53	53	37	39	38	38	34	34	46	46	52	57	63	64	66	65	76	76	74	74	70	70
4.....	66	68	52	48	37	39	36	36	34	35	45	46	56	56	63	63	63	64	76	75	74	74	70	71
5.....	66	68	46	47	36	36	35	37	35	35	46	47	54	55	63	66	63	65	74	74	73	74	70	72
6.....	68	68	45	48	36	37	37	38	35	35	47	49	54	53	66	69	65	67	74	74	74	72	72	72
7.....	68	67	47	46	37	37	37	38	34	35	47	49	53	50	68	67	66	68	74	75	73	73	69	68
8.....	65	63	45	45	37	37	34	34	35	35	49	45	50	50	65	65	68	70	75	75	73	73	64	64
9.....	62	62	43	43	36	36	34	34	35	36	46	46	49	50	65	66	70	70	74	74	74	74	62	62
10.....	59	59	43	44	35	35	34	34	36	37	45	48	49	49	66	67	70	72	73	74	74	74	61	62
11.....	58	58	44	46	35	35	34	35	37	37	46	47	48	49	67	70	72	75	73	75	75	75	62	64
12.....	58	59	46	51	34	34	34	35	35	38	46	46	48	51	70	72	75	77	75	75	75	75	63	64
13.....	58	58	51	54	34	34	34	35	38	39	45	45	50	53	72	75	77	77	74	75	75	75	63	65
14.....	57	57	54	54	34	35	34	35	34	39	41	45	52	52	74	75	77	77	74	--	--	--	65	65
15.....	57	58	53	54	34	34	34	34	41	40	44	45	52	52	75	74	77	77	--	--	--	--	64	66
16.....	58	58	54	49	33	34	34	34	40	40	44	43	51	50	73	73	77	79	--	--	--	--	64	66
17.....	57	56	43	34	34	34	34	34	42	42	43	43	48	48	72	73	79	79	--	--	--	--	74	65
18.....	55	55	41	38	34	34	34	34	42	42	43	43	48	48	72	70	78	79	--	--	--	--	74	63
19.....	54	54	38	34	34	34	34	34	41	43	41	41	47	48	67	67	79	79	73	73	73	73	61	61
20.....	54	56	37	37	34	34	34	35	43	43	40	40	48	51	65	65	79	79	73	74	71	70	59	59
21.....	56	56	37	38	34	34	35	35	42	42	40	42	50	50	64	66	79	79	73	75	69	69	58	61
22.....	55	56	38	41	34	36	35	35	40	41	42	45	50	52	66	71	78	79	74	75	66	61	63	63
23.....	56	58	41	42	36	38	34	34	40	41	44	46	50	49	70	72	79	78	74	74	64	64	63	63
24.....	57	56	42	44	38	40	33	34	41	43	45	45	48	49	70	70	78	78	74	74	64	67	61	61
25.....	54	55	43	43	40	40	34	34	43	43	44	45	48	51	68	70	76	77	74	75	67	69	59	60
26.....	55	55	40	40	40	39	33	33	43	43	45	46	51	54	70	72	76	76	75	77	69	71	59	59
27.....	53	53	40	39	38	38	34	34	45	46	48	48	54	58	77	74	76	76	76	77	70	72	58	58
28.....	53	53	35	35	37	38	34	34	44	44	48	47	56	66	74	75	74	75	77	76	72	74	58	59
29.....	53	53	34	34	48	38	34	34	43	45	48	48	66	67	75	74	74	75	75	75	74	75	59	61
30.....	53	53	34	34	34	34	34	34	--	--	46	47	64	64	74	74	77	74	74	74	74	74	61	62
31.....	53	53	--	--	34	34	34	34	--	--	43	43	--	--	73	73	--	--	74	74	72	72	--	--
Average.....	59	59	44	44	36	36	34	35	39	39	45	45	52	53	69	70	74	74	74	75	72	73	64	64

OHIO RIVER MAIN STEM

OHIO RIVER AT LOCK AND DAM 39, NEAR FLORENCE, IND.

LOCATION -- About 1,100 feet upstream from dam, lock and dam 39 (mile 531.7) near Florence, Switzerland County, 1,350 feet upstream from Stevens Creek, and 8,100 feet downstream from Craig Creek.

DRAINAGE AREA -- 82,910 square miles.

RECORDS AVAILABLE -- Chemical analyses: October 1954 to September 1956.

EXTREMES -- Temperatures: October 1954 to September 1956.

Headwaters: Maximum, 228 ppm Nov. 1-10; minimum, 84 ppm Mar. 11-20.

Specific conductance: Maximum, 837 Aug. 18; minimum, 33 Feb. 2, 1955.

Water temperature: Maximum, 83° F. Mar. 19, Apr. 20.

EXTREMES -- 1954-56 -- Dissolved solids: Maximum, 411 ppm Nov. 1-10, 1955; minimum, 121 ppm Mar. 11-20, 1956.

Headwaters: Maximum, 228 ppm Nov. 1-10, 1955; minimum, 84 ppm Mar. 11-20, 1956.

Specific conductance: Maximum, 837 Aug. 18, 1955; minimum, 33 Feb. 2, 1955.

Water temperature: Maximum, 83° F. Mar. 19, Apr. 20, 1955.

REMARKS -- Records of specific conductance of daily samples available in district office at Columbus, Ohio. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- gan- ese (Mn)	Cal- cium (Ca)	Mag- nesium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180° C)		Hardness as CaCO ₃		Total acid- ity as H ₂ SO ₄	Specific conduct- ance (micro- mhos at 25° C)	pH	Color
																Calcium	Non- carbon- ate				
Oct. 1-10, 1955....	6.2	--	0.05	0.07	49	14	22	3.5	92	107	24	0.5	6.3	288	180	104			463	7.3	6
Oct. 11-20.....	6.1	--	.00	.00	50	14	24	3.2	86	108	30	.4	8.1	293	182	112			452	7.3	8
Oct. 21-31.....	2.5	--	.00	.00	55	18	42	4.6	55	170	50	.6	8.2	402	211	179			636	6.6	5
Nov. 1-10.....	4.3	--	.00	.05	70	13	39	4.8	67	181	40	.5	9.6	411	228	105			638	6.9	6
Nov. 11-20.....	5.5	0.1	.02	.04	82	12	27	3.9	90	109	38	.4	6.0	312	179	109			508	7.0	7
Nov. 21-30.....	7.0	.0	.02	.07	51	12	23	3.2	82	102	38	.3	5.3	290	177	109			485	7.0	5
Dec. 1-10.....	7.6	.0	.01	.00	43	11	17	2.8	75	88	22	.3	6.4	238	153	91			399	7.0	5
Dec. 11-13, 15-20..	7.9	--	.01	.00	42	10	13	2.4	69	94	27	.2	7.1	244	146	91			399	7.0	1
Dec. 21-31.....	9.4	--	.02	.00	43	9	3	2.4	69	94	27	.2	8.2	252	146	89			413	7.0	4
Jan. 1-10, 1956....	8.4	--	.05	.03	43	11	22	1.6	64	88	36	.2	6.6	248	153	100			422	6.8	4
Jan. 11-20.....	7.6	--	.05	.20	46	11	27	2.0	61	100	38	.3	8.5	279	160	110			464	6.7	6
Jan. 21-24, 26-31..	8.2	--	.06	.16	49	12	29	2.7	68	109	37	.3	10	295	172	116			493	6.6	7
Feb. 1, 3-10.....	7.3	--	.12	.11	31	7	13	2.8	40	62	19	.3	7.0	179	108	67			300	6.6	16
Feb. 11-20.....	5.2	--	.02	.07	27	7	8	2.0	49	53	11	.3	5.5	146	99	58			241	6.8	8
Feb. 21-29.....	5.8	--	.13	.05	26	7	5	1.8	44	53	9.5	.2	4.9	144	96	60			227	6.7	16
Mar. 1-10.....	6.7	--	.02	.00	30	8.4	7.2	1.8	51	61	9.5	.1	4.8	157	109	68			256	6.9	7
Mar. 11-20.....	6.2	--	.02	.00	23	6.4	5.9	1.6	39	49	7.0	.2	4.0	121	84	52			202	7.0	7
Mar. 21-31.....	7.3	.0	.04	.00	31	9.5	8.0	1.9	56	64	11	.2	4.9	168	116	70			271	6.9	4

OHIO RIVER MAIN STEM--Continued
OHIO RIVER AT LOCK AND DAM 39, NEAR FLORENCE, IND.--Continued
Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Silica (SiO ₂)	Alum- inum (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 on evap- oration at 180°C)	Hardness as CaCO ₃ Calcium, magnesium	Total acidity as H ₂ SO ₄	Specific conductance (micro- mhos at 25°C)	pH	Color
Apr. 1-10, 1956 ..	7.9	0.1	0.05	0.03	30	8.3	7.8	1.6	56	58	11	0.3	3.8	160	109	63	256	7.1	6
Apr. 11-20	9.5	.0	.04	.00	26	6.1	7.7	1.9	46	54	9.8	.2	3.1	145	90	52	235	7.2	6
Apr. 21-30	12	--	.01	.00	30	8.5	12	2.0	57	66	14	.2	3.2	179	110	63	290	7.1	0
May 1-10	9.6	--	.00	.00	43	12	13	1.7	92	84	17	.2	3.2	232	157	81	370	7.2	1
May 11-15, 17, 19- 20	8.6	--	.01	.00	32	9.1	11	1.4	51	74	14	.2	3.4	187	117	75	300	7.1	1
May 21-31	9.0	--	.02	.00	34	8.3	10	1.7	67	66	12	.2	3.0	181	119	64	301	7.1	5
June 1-10	8.7	--	.01	.00	29	8.0	9.3	1.7	52	65	10	.2	3.5	166	105	63	272	7.0	6
June 11-15, 17-20 ..	9.7	--	.01	.00	37	9.5	12	2.2	74	74	14	.2	4.3	201	131	74	332	6.9	5
June 21-30	10	--	.01	.02	38	11	14	2.6	74	80	20	.2	3.3	221	140	73	362	6.9	4
July 1-10	11	--	.01	.05	40	11	13	2.6	72	85	16	.2	3.5	221	145	86	357	6.9	5
July 11-20	12	--	.01	.08	38	11	16	2.2	64	90	17	.2	4.4	226	140	88	364	6.9	3
July 21-31	9.0	--	.01	.09	34	9.4	14	2.3	53	81	18	.2	4.4	204	124	80	333	6.8	4
Aug. 1-10	9.7	.1	.04	.05	33	8.0	13	2.2	53	73	16	.2	3.4	193	115	72	310	7.3	5
Aug. 11-19	8.4	--	.00	.03	30	7.2	10	2.1	37	76	12	.1	2.7	172	104	74	273	6.8	2
Aug. 21-31	11	--	.00	.00	33	8.6	15	2.5	45	83	18	.2	3.2	207	118	81	326	7.0	2
Sept. 1-10	9.4	--	.00	.00	37	9.0	18	2.8	44	97	22	.2	3.4	231	129	93	364	6.9	3
Sept. 11-20	7.9	--	.02	.00	42	8.7	23	3.1	54	93	34	.2	3.3	250	141	96	405	6.9	4
Sept. 21-29	10	--	.00	.09	36	8.8	21	2.6	50	86	27	.2	4.2	230	126	85	371	6.9	3
Time-weighted average	8.1	--	0.02	0.04	38	9.9	17	2.4	61	86	22	0.2	5.3	255	136	86	366	--	5

OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT LOCK AND DAM 39, NEAR FLORENCE, IND.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Chromium (Cr)		Nickel (Ni)	Copper (Cu)	Lead (Pb)	Zinc (Zn)	Cobalt (Co)	Arsenic (As)	Cadmium (Cd)
	Hexa-valent	Total							
Oct. 1-10, 1955.....	0.00	0.00	0.00	0.00	0.01	0.00	0.00	0.06	0.0
Oct. 11-20.....	.00	.00	.00	.00	.00	.01	.00	.03	.0
Oct. 21-31.....	.00	.00	.05	.00	.02	.00	.00	.00	.0
Nov. 1-10.....	.00	.00	.00	.00	.00	.14	.00	.00	.0
Nov. 11-19.....	.00	.00	.00	.00	.00	.02	.01	.00	.0
Nov. 21-30.....	.00	.00	.00	.00	.00	.00	.02	.00	.0
Dec. 1-10.....	.00	.00	.00	.00	.00	.04	.00	.00	.0
Dec. 11-19, 15-20.....	.00	.00	.00	.00	.00	.00	.01	.00	.0
Dec. 21-31.....	.00	.00	.00	.00	.00	.06	.01	.00	.0
Jan. 1-10, 1956.....	--	--	--	--	--	--	--	.00	--
Jan. 11-20.....	--	--	--	--	--	--	--	.00	--
Jan. 21-24, 26-31.....	--	--	--	--	--	--	--	.00	--
Feb. 1, 3-10.....	--	--	--	--	--	--	--	.00	--
Feb. 11-20.....	--	--	--	--	--	--	--	.00	--
Feb. 21-29.....	--	--	--	--	--	--	--	.00	--
Mar. 1-10.....	--	--	--	--	--	--	--	.00	--
Mar. 11-20.....	--	--	--	--	--	--	--	.01	--
Mar. 21-31.....	--	--	--	--	--	--	--	.00	--
Apr. 1-10.....	--	--	--	--	--	--	--	.00	--
Apr. 11-20.....	--	--	--	--	--	--	--	.00	--
Apr. 21-30.....	--	--	--	--	--	--	--	.00	--
May 1-10.....	--	--	--	--	--	--	--	.00	--
May 11, 13-15, 17, 19-20.....	--	--	--	--	--	--	--	.01	--
May 21-31.....	--	--	--	--	--	--	--	.00	--
June 1-10.....	--	--	--	--	--	--	--	.00	--
June 11-15, 17-20.....	--	--	--	--	--	--	--	.00	--
June 21-30.....	--	--	--	--	--	--	--	.00	--
July 1-10.....	--	--	--	--	--	--	--	.00	--
July 11-20.....	--	--	--	--	--	--	--	.00	--
July 21-31.....	--	--	--	--	--	--	--	.00	--
Aug. 1-10.....	--	--	--	--	--	--	--	.00	--
Aug. 11-19.....	--	--	--	--	--	--	--	.00	--
Aug. 21-31.....	--	--	--	--	--	--	--	.00	--
Sept. 1-10.....	--	--	--	--	--	--	--	.00	--
Sept. 11-20.....	--	--	--	--	--	--	--	.00	--
Sept. 21-29.....	--	--	--	--	--	--	--	.00	--

Date of collection	Phenols as C ₆ H ₅ OH	Cyanides as CN
Oct. 5, 1955.....	0.001	0.01
Oct. 15.....	.000	.01
Oct. 25.....	.002	.01
Nov. 5.....	.000	.00
Nov. 15.....	.000	.00
Nov. 25.....	.001	.01
Dec. 5.....	.002	.03
Dec. 15.....	.002	.01
Dec. 25.....	.021	.02
Jan. 5, 1956.....	.000	--
Jan. 15.....	.005	--
Feb. 5.....	.001	--
Feb. 15.....	.003	--
Feb. 25.....	.004	--

OHIO RIVER BASIN EXCEPT CUMBERLAND AND TENNESSEE RIVER BASINS

OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT LOCK AND DAM 39, NEAR FLORENCE, IND.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 1 p. m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	72	59	--	40	37	43	48	54	69	79	79	81
2	72	59	42	40	33	46	50	54	69	80	81	80
3	74	58	44	40	38	44	52	60	66	80	81	81
4	74	57	44	41	39	44	52	61	69	81	80	81
5	74	53	44	39	39	45	55	--	68	81	79	82
6	74	55	41	40	39	44	56	62	69	82	82	82
7	74	--	43	39	39	46	51	--	69	81	81	78
8	72	--	42	40	39	42	50	56	70	81	80	78
9	72	--	42	39	39	46	50	56	70	81	81	78
10	70	--	40	38	39	50	50	56	72	80	81	78
11	69	--	44	39	39	39	51	56	71	80	78	78
12	69	--	42	39	41	46	51	--	71	--	80	78
13	68	--	38	38	41	47	53	68	72	79	78	78
14	68	55	--	37	41	45	52	65	73	78	78	78
15	67	56	39	37	42	45	53	65	74	79	82	78
16	66	59	37	38	43	43	52	56	--	80	82	76
17	63	54	42	38	44	43	51	56	--	80	82	75
18	63	51	42	38	44	43	51	56	76	80	83	74
19	63	48	38	37	43	44	51	62	75	80	79	74
20	62	--	38	37	43	44	52	66	78	80	--	74
21	62	48	37	37	43	44	52	66	77	81	81	73
22	62	50	37	37	43	43	54	68	78	80	82	74
23	62	51	39	37	44	44	55	66	79	80	81	74
24	61	50	40	34	44	42	56	67	79	81	81	74
25	61	48	39	--	44	42	54	66	78	80	81	74
26	61	48	40	34	46	46	58	68	77	80	81	73
27	61	50	41	34	46	42	62	68	80	80	--	73
28	61	42	42	37	44	46	54	67	78	81	81	73
29	59	42	42	36	44	47	58	67	78	81	81	73
30	59	41	42	35	--	47	57	69	79	80	81	--
31	59	--	40	37	--	46	--	70	--	81	81	--
Average	66	--	41	38	41	45	53	63	74	80	81	74

KENTUCKY RIVER BASIN

NORTH FORK KENTUCKY RIVER AT HAZARD, KY.

LOCATION.--At gaging station at Woodland Park bridge at eastern limits of Hazard, Perry County, 150 feet upstream from city waterworks dam. and 4.0 miles downstream from Lots Creek.

DRAINAGE AREA.--466 square miles.

RECORDS AVAILABLE.--Chemical analyses: November 1949 to August 1950.

Water temperatures: October 1949 to September 1950, July 5; minimum, 33°F Dec. 16.

EXTREMES, 1953-56.--Water temperatures: Maximum, 87°F Aug. 1, 1953; minimum, freezing point Dec. 17, 1953, Jan. 29, 1955.

EXTREMES, 1949-56.--Water temperatures: Maximum, 93°F Aug. 1, 1953; minimum, freezing point Dec. 17, 1953, Jan. 29, 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956

Temperature (°F) of water, water year October 1955 to September 1956

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

KENTUCKY RIVER BASIN--Continued

KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.

LOCATION.--At gaging station at Broadway Street Bridge, at Frankfort, Franklin County, 300 feet upstream from Benson Creek, and 0.9 mile upstream from lock 4, and at mile 65.9.

DRAINAGE AREA.--5,412 square miles, including that of Benson Creek.

RECORDS AVAILABLE.--Chemical analyses: October 1949 to September 1956.

Water temperatures: October 1952 to September 1956.

Sediment records: October 1952 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 200 ppm Jan. 16-25, 27-30; minimum, 75 ppm Apr. 18-20.

Hardness: Maximum, 154 ppm Jan. 16-25, 27-30; minimum, 44 ppm Apr. 18-20.

Specific conductance: Maximum daily, 394 micromhos Jan. 30; minimum daily, 98 micromhos Apr. 18.

Water temperatures: Maximum, 79 F on several days during July, minimum, 37 F Jan. 29.

Sediment concentrations: Maximum daily, 2,420 ppm Jan. 31; minimum daily, 1 ppm Oct. 19.

Sediment loads: Maximum daily, 220,000 tons Jan. 31; minimum daily, 1 ton Oct. 19.

EXTREMES, 1949-56.--Dissolved solids: Maximum, 228 ppm Nov. 21-32, 1949; minimum, 67 ppm Mar. 25-26, 1955.

Hardness: Maximum, 154 ppm Jan. 16-25, 27-30, 1956; minimum, 32 ppm May 10-13, 1955.

Specific conductance: Maximum daily, 392 micromhos Dec. 7, 1952; minimum daily, 80 micromhos Feb. 4, 1951.

Water temperatures: Maximum, 86 F Aug. 3, 4, 1953; minimum, 34 F Feb. 8, 1951.

Sediment concentrations: (1952-56): Maximum daily, 2,420 ppm Jan. 31, 1956; minimum daily, 1 ppm on several days during November 1952, November, December 1953, August 1954, October 1955, and August 1956.

Sediment loads: (1952-56): Maximum daily, 220,000 tons Jan. 31, 1956; minimum daily, 1 ton on many days during November 1952, November 1953, August, September 1954, September, October 1955, and January 1956.

REMARKS.--Flow regulated by Harrison Lake and by hydroelectric plant at lock 7. Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Flow regulated by Harrison Lake and by hydroelectric plant at lock 7. Records of discharge include flow of Benson Creek.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-magnesium			
Oct. 1-12, 1955	386	--	--	35	6.0	4.6	4.6	111	19	7.0	--	1.6	140	112	21	244	7.4	5
Oct. 14-26	290	--	--	35	6.7	4.3	4.3	113	16	7.8	--	2.4	142	115	22	247	7.5	6
Oct. 27-Nov. 7, 1955	267	5.4	0.03	38	6.6	4.3	2.0	120	19	6.2	0.1	3.1	150	120	22	260	7.1	5
Nov. 12-15, 17-21, 23, 25, 27-30, 1955	608	--	--	39	5.5	5.4	--	126	16	4.8	--	3.5	147	120	17	261	7.3	5
Nov. 26-Dec. 4, 6, 10, 1955	1,150	--	--	44	5.7	6.0	--	140	16	6.2	--	3.5	151	133	19	264	7.6	5
Dec. 11, 14-22, 1955	646	--	--	48	6.3	8.1	--	146	24	9.8	--	4.0	174	146	24	318	7.6	4
Dec. 23-31, 1955	568	--	--	48	6.1	8.3	--	145	25	11	--	3.1	184	145	26	318	7.7	4
Jan. 1-5, 7-15, 1956	438	2.1	.01	46	8.4	7.8	1.6	144	23	13	--	3.0	181	149	31	337	7.4	2
Jan. 16-25, 27-30	3,115	--	--	46	9.5	9.8	--	140	26	22	--	2.8	200	154	39	349	7.5	4
Jan. 31-Feb. 5	37,320	--	--	31	6.6	9.0	--	82	28	16	--	6.3	158	104	37	255	7.1	15
Feb. 6-9, 11-12	33,270	--	--	17	4.5	2.5	1.5	48	20	3.5	--	4.3	89	61	22	143	6.9	13
Feb. 13, 15-18, 1956	39,620	--	--	27	4.8	2.4	--	78	18	4.1	--	4.8	113	87	23	181	7.1	7

Feb. 20-21, 23, 1956 ...	59,630	5.8	0.00	14	3.6	2.4	1.5	40	16	2.5	0.1	2.8	76	50	17	110	7.2	8
Feb. 24, 27-Mar. 9 ...	18,280	--	--	21	4.8	1.9	--	55	22	3.9	--	3.5	98	72	27	163	7.1	3
Mar. 10, 12, 14-16 ...	37,680	--	--	17	3.9	2.6	--	46	19	3.2	--	2.6	83	58	21	133	7.1	5
Mar. 17-20 ...	47,480	--	--	16	3.5	3.2	--	46	17	2.4	--	2.9	82	54	17	128	7.2	20
Mar. 21-26, 28-Apr. 6 ...	10,960	--	--	21	5.5	4.8	--	56	29	5.0	--	2.8	106	75	29	176	7.4	8
Apr. 7-13 ...	22,640	--	--	17	4.0	4.2	--	50	19	3.8	--	2.3	90	59	18	139	7.2	20
Apr. 14-17 ...	29,860	--	--	24	5.3	4.2	--	76	19	4.2	--	3.5	114	82	19	174	7.3	25
Apr. 18-20 ...	53,700	--	--	12	3.5	3.4	--	36	17	2.2	--	1.9	75	44	15	106	7.2	30
Apr. 21-May 10 ...	8,534	--	--	21	5.7	5.3	--	60	28	5.1	--	2.2	109	76	27	179	7.1	7
May 11-25 ...	2,079	9.9	.01	20	4.5	4.3	--	57	24	4.4	--	2.4	102	68	22	167	7.1	0
May 27-June 14 ...	12,520	8.1	.00	24	4.8	4.4	--	72	23	5.5	--	.8	111	80	21	189	7.3	0
June 15-22 ...	1,052	6.7	.02	24	5.7	6.1	--	74	26	8.2	--	1.2	119	83	23	212	7.4	5
June 23-July 6, 10-13 ...	2,981	7.5	.07	28	7.0	11	--	68	51	13	--	1.8	154	99	43	270	7.3	6
July 14-16 ...	2,193	8.3	.02	24	4.8	5.7	--	68	25	6.5	--	2.5	122	80	24	192	7.2	12
July 18-19 ...	6,060	10	.01	24	6.4	7.8	--	70	31	10	--	2.5	130	86	29	217	7.1	10
July 20-Aug. 5 ...	6,666	10	.02	24	5.8	5.5	--	77	21	10	--	2.8	117	84	21	196	7.2	7
Aug. 6-15 ...	1,001	14	.00	30	5.7	6.0	--	87	20	8.0	--	3.0	137	98	19	224	7.5	5
Aug. 16-22, 24-25 ...	667	13	.00	31	5.1	4.8	--	98	19	6.6	--	3.0	136	98	16	222	7.3	2
Aug. 26-Sept. 6 ...	560	8.2	.00	31	5.8	4.3	--	100	20	6.0	--	2.6	132	101	19	221	7.3	2
Sept. 12-25, 27-30 ...	514	4.9	.00	29	5.8	4.5	--	98	18	6.2	--	2.0	115	96	16	215	7.5	3
Time-weighted average a ...	7,513	--	--	30	5.8	--	6.1	91	24	7.5	--	2.7	132	99	24	226	--	6

a Represents 91 percent of days and 87 percent of runoff.

KENTUCKY RIVER BASIN--Continued
 KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, 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
1.....	70	69	62	61	46	45	42	41	47	46	50	49	59	74
2.....	70	69	62	61	46	45	41	40	47	47	50	50	61	75
3.....	70	68	61	60	45	44	41	42	40	47	52	50	61	74
4.....	69	69	61	60	46	45	41	41	42	42	47	54	61	74
5.....	70	69	60	59	48	46	41	40	42	42	47	55	61	75
6.....	70	70	59	58	47	45	41	40	42	42	48	47	55	74
7.....	70	69	58	56	45	45	41	41	43	42	48	46	57	75
8.....	69	69	58	56	45	45	41	41	44	43	50	49	56	74
9.....	69	69	57	56	45	45	41	40	44	44	49	49	54	73
10.....	69	69	56	55	45	45	40	39	44	44	48	48	53	74
11.....	69	68	55	55	45	43	39	39	45	44	51	48	52	73
12.....	68	68	57	55	43	42	39	39	45	45	51	49	52	74
13.....	68	68	58	57	42	41	39	39	45	45	49	48	52	74
14.....	68	68	58	57	41	41	39	39	45	45	48	47	53	74
15.....	68	67	59	57	41	41	39	39	46	45	47	47	52	74
16.....	67	65	57	56	42	41	39	39	46	46	47	47	52	74
17.....	66	65	54	55	41	40	39	39	47	46	47	47	52	74
18.....	65	64	55	55	41	40	39	39	47	47	47	47	52	73
19.....	64	64	55	55	41	40	39	39	47	47	47	47	52	72
20.....	64	63	55	55	41	41	39	39	48	47	46	51	51	71
21.....	64	63	55	55	41	41	39	38	48	48	46	45	52	70
22.....	63	63	55	55	41	40	39	39	48	47	46	45	53	70
23.....	63	63	55	55	40	40	39	39	47	47	46	46	53	71
24.....	63	63	55	54	40	40	39	39	47	46	47	46	53	70
25.....	63	63	54	54	42	40	39	39	46	46	47	47	54	70
26.....	63	63	52	51	42	42	40	39	46	46	47	47	55	70
27.....	63	63	51	51	42	42	39	39	46	46	48	47	55	70
28.....	63	62	51	50	42	42	39	38	46	46	48	48	57	69
29.....	63	63	50	48	42	42	39	37	46	46	49	48	58	68
30.....	63	62	48	48	43	41	38	--	--	--	49	49	59	--
31.....	62	62	--	--	43	43	44	41	--	--	49	49	58	--
Average.....	66	66	56	55	43	42	40	39	45	45	48	47	54	73

KENTUCKY RIVER BASIN--Continued

KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	366	6	6	268	7	5	542	7	10
2.....	431	4	5	353	8	8	802	4	9
3.....	324	3	3	506	111	s 143	1,180	12	38
4.....	418	4	4	284	88	67	2,830	14	107
5.....	292	4	3	260	63	44	2,230	7	42
6.....	276	5	4	246	40	26	1,550	14	58
7.....	366	6	6	246	63	42	1,360	14	51
8.....	578	13	20	260	57	40	1,250	5	17
9.....	324	16	14	284	20	15	1,150	4	12
10.....	524	11	16	260	18	13	1,080	13	38
11.....	392	12	13	268	18	13	987	11	29
12.....	340	12	11	239	18	12	861	10	a 25
13.....	332	12	11	239	16	10	783	10	a 20
14.....	379	6	6	204	16	9	745	20	40
15.....	332	6	5	300	14	11	669	13	23
16.....	308	3	2	582	41	64	632	10	17
17.....	300	2	2	764	159	328	578	8	12
18.....	340	2	2	524	82	116	614	8	13
19.....	308	1	1	745	42	84	578	8	12
20.....	276	2	1	987	31	83	542	9	13
21.....	253	7	5	802	30	65	560	8	12
22.....	204	6	3	707	28	53	560	4	6
23.....	268	5	4	707	27	52	560	3	4
24.....	292	8	6	840	20	45	524	5	a 7
25.....	268	18	13	882	11	26	488	8	10
26.....	246	19	13	903	9	a 20	614	16	26
27.....	154	7	3	903	9	22	596	8	13
28.....	178	15	7	745	9	18	560	5	8
29.....	225	14	8	745	5	10	578	7	11
30.....	204	14	8	560	3	4	596	5	8
31.....	276	12	9	--	--	--	596	3	5
Total..	9,774	--	214	15,613	--	1,448	27,195	--	696
Day	January			February			March		
	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.....	506	3	4	26,900	1,200	87,200	14,100	186	7,080
2.....	488	3	4	35,800	910	88,000	11,200	160	a 4,800
3.....	431	3	3	47,300	1,030	132,000	9,360	85	a 2,200
4.....	470	2	2	40,700	645	70,900	10,500	73	2,070
5.....	524	5	7	42,900	530	61,400	11,400	80	2,460
6.....	405	3	3	45,000	570	69,200	14,100	108	4,110
7.....	405	3	3	49,000	730	96,600	20,400	127	7,000
8.....	444	2	2	41,800	580	65,400	29,700	276	22,100
9.....	431	1	1	32,300	380	33,100	28,100	379	28,800
10.....	405	2	2	22,600	144	8,790	32,800	372	32,900
11.....	431	2	2	13,900	130	4,880	35,900	271	26,300
12.....	444	1	1	11,600	112	3,510	26,000	196	13,800
13.....	392	2	2	11,600	97	3,040	18,300	160	a 7,900
14.....	366	2	2	12,600	110	a 3,700	31,400	260	22,000
15.....	366	3	3	37,600	364	s 38,200	45,300	402	49,200
16.....	392	2	a 2	43,500	496	58,200	52,900	492	70,300
17.....	392	1	1	37,500	345	34,900	60,900	612	101,000
18.....	405	}	2	65,800	1,180	210,000	58,300	494	77,800
19.....	506		2	71,700	798	154,000	43,000	256	29,700
20.....	542		e 2	67,100	714	129,000	27,700	136	10,200
21.....	726			66,780	866	156,000	22,500	82	4,980
22.....	726	2	4	63,900	838	144,000	17,500	58	2,740
23.....	821	20	44	45,100	498	60,600	13,600	51	1,670
24.....	1,100	29	86	18,000	374	18,200	11,100	49	1,470
25.....	945	18	46	19,700	370	a 20,000	9,860	43	1,140
26.....									
28.....	1,080	17	50	25,600	380	a 26,000	9,020	33	804
27.....	987	23	61	27,600	316	23,500	8,450	33	753
28.....	945	18	46	24,600	200	13,300	8,030	30	650
29.....	5,220	466	s 9,150	18,600	179	8,990	7,760	24	508
30.....	29,900	1,400	118,000	--	--	--	6,600	20	356
31.....	33,700	2,420	220,000	--	--	--	7,220	17	331
Total..	84,895	--	342,539	1,067,000	--	1,822,610	703,000	--	537,317

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.

KENTUCKY RIVER BASIN--Continued

KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	9,660	14	365	4,100	27	299	1,700	7	32
2.....	8,830	13	310	4,590	82	1,020	2,010	8	43
3.....	7,620	21	432	8,260	70	1,560	1,610	9	39
4.....	8,930	24	579	14,800	71	2,840	1,560	5	21
5.....	12,800	36	1,240	14,200	85	3,260	2,010	9	49
6.....	14,400	70	2,720	12,100	122	3,980	1,580	10	43
7.....	24,400	218	14,400	10,300	128	3,580	1,330	10	36
8.....	31,800	268	23,000	8,260	73	1,630	1,150	18	56
9.....	36,200	265	a 26,000	6,340	31	531	861	18	42
10.....	28,700	244	18,900	5,080	34	467	776	13	27
11.....	16,700	323	14,600	4,380	24	284	745	13	26
12.....	11,500	408	12,700	3,550	21	201	802	9	19
13.....	9,220	580	14,400	2,680	29	210	802	9	19
14.....	8,220	580	12,900	2,470	20	133	431	6	7
15.....	20,100	524	28,400	2,440	18	118	632	4	7
16.....	41,300	486	54,200	2,270	21	129	614	12	20
17.....	49,800	530	71,300	1,940	18	94	650	14	24
18.....	55,200	580	86,400	1,610	19	82	669	15	27
19.....	57,600	566	88,000	1,580	20	85	764	28	58
20.....	48,300	335	43,700	1,330	13	47	987	45	a 120
21.....	19,800	116	s 6,610	1,380	12	45	1,120	50	a 150
22.....	11,700	90	2,840	1,640	9	40	2,980	52	418
23.....	9,660	70	1,820	1,360	2	7	6,290	45	764
24.....	8,450	51	1,160	1,150	5	16	8,740	45	1,060
25.....	7,660	45	931	1,410	7	27	8,400	92	2,090
26.....	7,170	36	697	802	5	a 11	6,470	98	1,710
27.....	5,640	25	381	614	3	5	4,750	96	1,230
28.....	4,800	24	311	840	11	25	3,940	93	988
29.....	3,860	28	293	1,300	17	60	2,980	37	298
30.....	3,900	21	211	1,880	10	51	2,170	21	123
31.....	--	--	--	1,790	4	19	--	--	--
Total.	583,920	--	529,810	126,456	--	20,636	69,513	--	9,547
July			August			September			
1.....	1,360	27	99	4,340	38	445	470	7	9
2.....	1,150	21	65	4,220	24	273	366	12	12
3.....	1,940	18	94	3,200	24	207	340	24	22
4.....	1,520	21	86	2,470	11	73	470	23	29
5.....	987	27	72	1,640	20	88	506	20	27
6.....	802	45	97	1,500	18	73	506	18	24
7.....	861	46	107	1,670	15	68	418		
8.....	802	22	48	1,410	8	30	316	--	e 20
9.....	1,330	21	75	1,200	5	16	292		
10.....	1,620	18	88	861	5	12	300		
11.....	1,180	20	64	688	3	6	418	34	38
12.....	650	19	33	578	4	6	783	26	55
13.....	688	18	a 35	614	4	7	650	23	40
14.....	1,220	99	326	802	25	54	524	23	32
15.....	1,470	115	456	688	117	217	506	20	27
16.....									
18.....	3,890	258	s 2,960	707	114	218	650	64	112
17.....	5,220	287	4,040	614	123	204	1,080	75	219
18.....	7,620	140	2,680	506	112	153	945	72	184
19.....	8,500	88	2,020	542	132	193	688	47	87
20.....	5,940	98	1,570	632	124	212	542	25	36
21.....	3,470	102	956	745	65	131	444	20	a 25
22.....	2,370	128	619	632	52	89	366	29	29
23.....	3,820	172	1,770	802	48	104	308	29	24
24.....	13,600	492	s 20,300	987	26	69	379	44	45
25.....	22,600	953	58,200	821	14	31	379	50	51
26.....	11,200	608	18,400	745	5	10	324	40	35
27.....	8,980	90	2,180	614	2	3	284	35	27
28.....	7,440	73	1,470	726	1	2	246	46	30
29.....	7,000	70	1,320	650	4	7	260	27	19
30.....	5,980	65	1,050	707	4	8	225	14	8
31.....	5,050	44	600	614	8	13	--	--	--
Total.	140,460	--	122,280	36,925	--	3,022	13,985	--	1,326

Total discharge for year (cfs-days)..... 2,878,736

Total load for year (tons)..... 3,391,645

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.

KENTUCKY RIVER BASIN--Continued
KENTUCKY RIVER AT LOCK 4, AT FRANKFORT, KY.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956

(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (° F)	Suspended sediment											Methods of analysis
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters									
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.500		1.000
Jan. 29, 1956	10:00 p. m.	9,270		1,120	1,680	33	41	56	70	87	94	96	97	100	BSWCM
Jan. 31	8:55 a. m.	34,900		3,630	4,640	42	46	61	80	88	99	100	--		BSWCM
Feb. 2	8:00 p. m.	45,900		3,774	1,130	38	52	67	79	93	99	99	100		BSWCM
Feb. 3	8:00 a. m.	48,700		1,010	840	42	50	62	78	89	99	100	--		BSWCM
Feb. 16	11:00 a. m.	44,500		570	861	31	48	61	76	91	96	97	100		BSWCM
Feb. 17 a	12:15 p. m.	34,600		293	960	37	54	70	83	93	98	99	100		BSWCM
Feb. 17 b	12:10 p. m.	34,600		297	1,010	45	59	71	87	97	99	100	--		BSWCM
Feb. 17 c	11:55 a. m.	34,600		304	949	45	52	69	84	94	99	100	--		BSWCM
Feb. 21	2:00 p. m.	87,600		883	1,520	38	55	69	84	95	98	99	100		BSWCM
Feb. 22	1:30 p. m.	64,300		868	1,130	45	62	71	85	95	98	100	--		BSWCM
Mar. 17	11:00 a. m.	61,100		646	1,040	31	47	61	77	90	97	99	100		BSWCM
July 25	12:00 m.	22,500		1,090	1,710	49	61	72	85	96	99	100	--		BSWCM
July 25	8:45 p. m.	17,400		1,170	910	48	59	73	87	97	99	100	--		BSWCM

a Point integrated sample at 0.2 depth.

b Point integrated sample at 0.6 depth.

c Point integrated sample at 0.8 depth.

KENTUCKY RIVER BASIN--Continued

EAGLE CREEK AT GLENCOE, KY.

LOCATION.--At gaging station at bridge on State Highway 16, at Gallatin-Owen County line, half a mile south of Glencoe, Gallatin County, 5.9 miles downstream on 1438 square miles.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

EXTREMES 1949-56.--Water temperatures: Maximum, 85° F July 2; minimum, freezing point on many days during November to February.

EXTREMES 1949-56.--Water temperatures: Maximum, 93° F Sept 1-2, 1953; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

Twice-daily measurements at approximately 7 a.m. and 5 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.....	65	67	50	56	32	33	--	32	34	38	41	51	55	62	70	69	76	81	79	81	--	--		
2.....	64	67	54	56	33	39	35	39	34	34	39	45	50	59	60	63	70	71	77	85	76	79	--	
3.....	63	70	39	40	40	43	36	40	33	36	40	45	58	64	59	65	--	82	82	78	80	--		
4.....	62	71	38	37	45	48	37	39	36	36	37	62	58	65	60	65	--	78	81	78	83	74		
5.....	65	--	36	49	40	45	37	42	40	41	59	63	59	65	62	67	--	74	81	80	83	74		
6.....	--	68	39	47	41	47	39	45	40	41	60	63	54	55	64	67	--	78	81	80	82	71		
7.....	66	68	35	41	42	48	34	33	40	41	59	62	49	50	63	64	--	77	81	79	82	70		
8.....	66	65	33	35	43	48	33	35	40	44	35	36	44	46	59	63	--	79	79	80	81	65		
9.....	68	75	33	37	--	--	34	34	43	43	34	39	46	48	59	65	--	75	75	79	81	64		
10.....	65	79	35	45	--	--	32	34	41	41	39	40	44	45	60	69	--	73	75	79	82	66		
11.....	56	78	40	46	--	--	34	34	37	34	40	41	45	48	66	74	--	72	78	80	82	63		
12.....	55	65	46	57	--	--	34	34	34	35	40	42	50	57	74	77	--	74	77	80	81	68		
13.....	63	71	54	61	--	--	34	36	34	40	39	44	55	57	76	79	--	72	77	78	81	73		
14.....	55	60	56	58	--	--	34	35	38	39	41	45	52	53	76	79	--	76	79	78	81	78		
15.....	44	59	56	66	--	--	35	37	36	35	42	44	50	53	70	61	--	78	81	80	82	78		
16.....	48	53	64	47	--	--	32	32	34	40	40	42	49	51	62	67	--	79	79	82	78	70		
17.....	45	50	35	39	--	--	32	32	34	41	43	41	47	48	49	64	69	--	79	81	79	81		
18.....	46	53	33	35	34	34	32	32	40	42	41	43	48	47	68	72	--	79	81	78	79	62		
19.....	50	58	33	34	33	33	32	33	45	47	40	41	48	48	68	71	75	80	73	78	76	58		
20.....	55	62	33	35	32	33	34	36	40	45	40	42	49	50	69	73	79	75	78	76	76	58		
21.....	57	62	40	45	33	34	33	34	35	35	40	43	50	49	68	72	73	80	78	81	74	56		
22.....	62	64	40	50	34	35	32	32	34	35	39	40	57	63	70	75	72	73	76	81	73	61		
23.....	64	70	44	48	34	35	32	32	33	35	41	43	59	64	71	74	72	75	75	73	74	61		
24.....	55	61	39	43	35	36	32	32	34	40	40	43	60	64	70	73	76	79	72	78	70	60		
25.....	51	62	38	45	--	--	32	32	35	37	42	47	60	65	68	74	74	79	74	79	71	59		
26.....	57	64	40	45	34	36	32	32	39	43	45	51	60	65	71	73	74	75	78	83	71	60		
27.....	55	60	37	45	36	37	32	32	41	41	47	51	62	67	70	74	75	79	82	84	74	80		
28.....	55	60	34	33	38	41	32	32	34	--	45	50	62	68	70	76	74	82	79	83	77	52		
29.....	50	58	33	33	39	39	34	34	37	40	42	51	60	65	75	76	75	81	72	79	74	80		
30.....	47	55	33	32	38	40	34	34	--	--	48	54	50	55	74	77	75	79	70	81	75	59		
31.....	45	57	--	--	36	39	33	34	--	--	50	55	--	--	73	75	--	80	82	74	--	--		
Average.....	57	64	41	45	--	--	34	35	37	39	43	47	53	56	67	71	--	76	80	77	80	64	69	

PLUM CREEK AT WATERFORD, KY.

LOCATION.--At gaging station 0.7 mile downstream from Little Plum Creek, 1.0 mile north of Waterford, Spencer County, and 3.2 miles upstream from Salt River.
DRAINAGE AREA.--31.9 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1954 to September 1956.

Sediment records: October 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 89°F Aug. 5; minimum, 33°F Nov. 29-30, Jan. 31.

Sediment concentrations: Maximum daily, 1,330 ppm Feb. 2; minimum daily, no flow on many days during October to November, June to September.

Sediment loads: Maximum daily, 6,450 tons Feb. 2; minimum daily, 0 tons on many days during October to November, June to September.

EXTREMES, 1954-55.--Water temperatures: Maximum, 90°F July 15, 16, 1955; minimum, freezing point on several days during January to February 1955.

Sediment concentrations: Maximum daily, 2,290 ppm July 16, 1955; minimum daily, no flow on many days during August to November 1955, June to September 1956.

Sediment loads: Maximum daily, 6,450 tons Feb. 2, 1956; minimum daily, 0 tons on many days during August to November 1955, June to September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Revisions made in WSP 1505.

Temperature (°F) of water, water year October 1955 to September 1956

(Once-daily measurement at varying hours)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	69	60	--	41	39	41	49	69	72	84	--	--
2	70	60	43	41	--	41	49	68	64	--	82	73
3	--	50	50	40	--	40	--	68	70	87	84	75
4	68	39	48	40	34	41	58	70	67	88	78	79
5	68	37	40	41	39	42	67	70	72	86	89	73
6	69	52	40	41	39	42	67	68	78	86	85	74
7	68	50	36	39	39	41	65	67	80	78	84	76
8	68	51	36	40	39	40	65	67	80	88	84	72
9	68	51	37	40	40	40	67	68	79	86	82	72
10	64	51	36	37	--	39	65	68	81	84	82	73
11	66	55	34	39	39	40	65	70	81	85	82	73
12	66	55	34	39	38	44	67	70	81	85	84	80
13	60	58	37	39	39	45	67	72	80	80	84	78
14	56	55	37	39	40	44	67	74	80	76	82	80
15	50	55	36	38	38	45	69	74	81	83	82	--
16	56	48	36	36	40	45	69	72	79	83	84	82
17	56	46	34	37	40	45	69	73	82	83	83	--
18	58	45	37	37	40	44	60	73	80	84	80	--
19	59	48	37	40	39	44	61	69	80	83	82	--
20	64	48	37	40	39	45	61	72	81	83	74	--
21	64	49	37	39	39	46	60	72	81	78	72	69
22	65	50	37	36	38	46	61	73	82	82	72	--
23	66	46	39	36	39	46	61	73	79	78	73	68
24	54	44	39	37	40	45	62	74	--	76	73	68
25	54	39	38	37	42	46	62	74	82	80	70	67
26	62	40	38	37	41	46	66	70	83	84	77	65
27	62	40	40	38	40	48	69	73	--	87	80	65
28	60	34	43	39	40	48	69	75	83	82	81	67
29	59	33	40	40	40	48	69	76	83	79	82	66
30	59	33	40	39	--	47	69	79	--	80	82	70
31	59	--	40	33	--	47	--	80	--	81	83	--
Average	62	47	39	38	39	44	64	72	79	83	80	--

SALT RIVER BASIN--Continued

PLUM CREEK AT WATERFORD, KY.--Continued

Suspended sediment, water year October 1955 to September 1956									
Day	October			November			December		
	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.....	2.9	132	s 1.1	0	--	0	1.7	12	a 0.1
2.....	.8	81	.2	152	891	s 948	46	103	s 16
3.....	.5	60	a .1	37	146	s 22	125	415	s 336
4.....	.3	50	(t)	7.8	68	1.4	52	83	s 12
5.....	.1	50	(t)	4.4	58	.7	20	15	.8
6.....	.1	30	(t)	3.0	55	.4	13	3	.1
7.....	3.4	28	.2	2.2	25	.1	11	2	.1
8.....	2.4	42	.3	1.7	16	.1	8.4	2	(t)
9.....	.9	19		1.3	13		6.5	2	(t)
10.....	.5	15	(t)	1.0	10		4.8	16	.2
11.....	.3	16		.8	10	(t)	3.3	21	.2
12.....	.2	19		.7	10		3.0	22	.2
13.....	1.2	21	.1	.6	7		2.7	23	.2
14.....	.7	12		.8	11		3.3	28	.2
15.....	.4	14		4.2	13	.1	3.0	21	.2
16.....	.3	15		68	550	sb 180	2.4	19	.1
17.....	.3	14		14	155	5.8	2.2	21	.1
18.....	.3	7		7.0	140	2.6	4.0	19	.2
19.....	.3	5		39	125	sb 15	3.3	6	.1
20.....	.2	5		13	26	.9	2.2	9	.1
21.....	.1	9	(t)	8.4	22	.5	1.7	12	.1
22.....	.1	5		6.5	18	.3	1.7	4	
23.....	.1	5		23	130	sb 10	2.4	4	(t)
24.....	.1	4		11	71	2.1	3.3	3	
25.....	.1	3		8.0	34	.7	3.3	5	
26.....	.1	16		6.0	26	.4	2.7	9	.1
27.....	0	--	0	4.8	28	.4	1.7	7	
28.....	0	--	0	3.3	26	.2	1.5	3	
29.....	.1	34	(t)	2.4	11	.1	1.5	3	(t)
30.....	0	--	0	1.9	8	(t)	1.9	4	
31.....	0	--	0	--	--	--	1.5	5	
Total.	16.8	--	2.2	433.8	--	1,190.0	341.0	--	367.4
Day	January			February			March		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	1.2	11		215	--	e 1,100	27	24	1.7
2.....	1.3	7		1,230	1,330	s 6,450	30	24	1.9
3.....	1.7	9		113	118	36	28	13	1.0
4.....	1.2	7		66	67	12	28	19	1.4
5.....	1.0	4		49	51	6.7	23	12	.7
6.....	1.0	7		57	48	7.4	21	7	.4
7.....	.9	8		38	38	3.9	837	1,310	s 5,540
8.....	.8	8		31	36	3.0	196	170	s 119
9.....	.6	9		30	36	2.9	74	47	9.4
10.....	.6	8	(t)	24	35	a 2	51	56	7.7
11.....	.8	5		86	106	s 29	41	46	5.1
12.....	1.0	6		44	40	4.8	52	43	6.0
13.....	.9	6		33	34	3.0	43	40	s 6.0
14.....	.8	7		350	360	sb 550	595	500	sb 1,500
15.....	.8	4		861	529	s 2,140	83	58	13
16.....	.7	4		91	90	22	421	268	s 474
17.....	.8	5		826	528	s 2,360	100	57	15
18.....	.7	8		461	310	sb 700	180	170	sb 95
19.....	7.0	8	0.2	87	66	16	72	37	7.2
20.....	13	9	.3	51	54	7.4	49	23	3.0
21.....	10	6	.2	38	34	3.5	40	16	1.7
22.....	11	12	.4	30	23	1.9	34	7	.6
23.....	8.0	10	.2	28	24	1.8	26	10	.7
24.....	8.0	5	.1	289	400	s 602	36	22	2.1
25.....	7.4	4	.1	296	407	s 516	23	14	.9
26.....	5.6	3	(t)	72	80	16	21	13	.7
27.....	6.0	3	(t)	51	48	6.6	17	8	.4
28.....	15	18	.7	41	42	4.6	23	7	.4
29.....	390	530	s 922	30	24	1.9	16	13	.6
30.....	485	500	sb 1,500	--	--	--	13	14	.5
31.....	54	36	5.2	--	--	--	12	4	.1
Total.	1,036.8	--	2,429.8	5,618	--	14,610.4	3,212	--	7,816.2

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

SALT RIVER BASIN--Continued

PLUM CREEK AT WATERFORD, KY.--Continued

Suspended sediment, water year October 1955 to September 1956--Continued

Day	April			May			June		
	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.....	11	5	0.1	5.6	13	0.2	3.6	21	0.2
2.....	23	176	s 23	35	100	s 12	1.7	11	.1
3.....	20	20	s 1.6	17	41	s 2.2	1.2	14	
4.....	28	27	2.0	11	7	.2	.7	13	
5.....	15	28	1.1	8.0	7	.2	.6	14	
6.....	46	77	s 12	7.4	10	.2	.4	13	
7.....	52	62	8.7	32	78	s 7.3	.4	13	
8.....	24	14	.9	13	9	.3	.3	15	
9.....	19	6	.3	9.6	5	.1	.2	14	(t)
10.....	16	3	.1	7.4	10	.2	.2	16	
11.....	14	3	.1	6.0	7	.1	.1	22	
12.....	11	7	.2	4.8	8	.1	.1	17	
13.....	10	8	.2	4.0	12	.1	.1	22	
14.....	23	11	.7	2.7	8	.1	.1	24	
15.....	80	170	s 64	12	22	.7	.1	32	
16.....	34	28	2.6	9.6	5	.1	0	--	0
17.....	22	9	.5	5.6	4	.1	0	--	0
18.....	17	6	.3	8.8	8	.2	.2	29	(t)
19.....	15	5	.2	5.6	5	.1	.8	--	e 4
20.....	13	8	.3	3.0	4		8.0	750	sb 20
21.....	11	9	.3	1.9	3		2.4	330	2.1
22.....	10	6	.2	1.5	3		7.2	357	s 14
23.....	10	8	.2	1.3	6	(t)	3.0	85	.7
24.....	9.0	6	.1	1.0	8		1.2	35	.1
25.....	8.0	3	.1	.7	7		195	1,240	s 1,320
26.....	20	--	e 3	1.3	9		13	436	15
27.....	12	12	.4	21	261	s 63	5.2	106	s 1.9
28.....	8.4	9	.2	6.8	94	s 2.1	1.5	28	.1
29.....	8.0	6	.1	2.5	12	.1	.6	28	(t)
30.....	6.5	9	.2	1.5	12	(t)	.5	33	(t)
31.....	--	--	--	3.6	18	.2	--	--	--
Total.	595.9	--	123.7	251.2	--	90.3	248.4	--	1,378.5
	July			August			September		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	0.4	19		0.7	55	a 0.1	0	--	0
2.....	.3	18		22	483	s 36	.1	52	(t)
3.....	.2	23		5.6	306	4.6	0	--	0
4.....	.1	19		2.2	198	1.2	0	--	0
5.....	.1	23		1.0	148	.4	4.3	502	s 17
6.....	.6	18	(t)	.6	83	.1	1.7	508	s 3.1
7.....	.7	13		.4	43		.3	90	.1
8.....	.3	12		.2	30		.1	80	(t)
9.....	.1	18		.1	33	(t)	0	--	0
10.....	0	--	0	.1	27		0	--	0
11.....	0	--	0	0	--	0	0	--	0
12.....	0	--	0	0	--	0	0	--	0
13.....	.4	--	e 2	0	--	0	0	--	0
14.....	11	550	sb 20	2.1	72	.4	0	--	0
15.....	1.2	290	.9	1.9	23	.1	.6	44	.1
16.....	.6	134	.2	.6	24	(t)	26	360	sb 35
17.....	.4	54	.1	.5	32	(t)	50	369	s 66
18.....	.2	48	(t)	2.4	49	.3	4.3	121	s 1.6
19.....	.1	47	(t)	1.3	41	.1	1.3	74	.2
20.....	0	--	0	3.3	40	.4	.8	58	.1
21.....	0	--	0	3.0	36	.3	.4	62	.1
22.....	.4	27	(t)	1.3	29	.1	.3	58	
23.....	8.9	370	sb 18	.6	46	.1	.2	34	
24.....	25	201	s 19	.4	58	.1	.2	28	
25.....	5.2	74	1.0	.2	59	(t)	.1	25	
26.....	1.5	28	.1	.1	54	(t)	.1	24	(t)
27.....	.6	24	(t)	.1	43	(t)	.1	21	
28.....	1.5	51	.2	0	--	0	.1	22	
29.....	13	593	s 24	0	--	0	.1	22	
30.....	3.3	251	s 2.4	0	--	0	0	--	0
31.....	1.3	114	.4	0	--	0	--	--	--
Total.	77.4	--	88.5	50.7	--	44.5	91.1	--	123.5
Total discharge for year (cfs-days).....									11,973.1
Total load for year (tons).....									28,265.0

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

SALT RIVER BASIN--Continued

PLUM CREEK AT WATERFORD, KY.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Suspended sediment										Methods of analysis		
			Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
					0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250		0.350	0.500	1.000
Nov. 2, 1955	1:00 p. m.	587	3,560	2,720	38	52	62	76	94	99	100	--	--	--	BSWCM
Nov. 2,	1:00 p. m.	587	3,560	2,590	30	38	52	69	94	99	100	--	--	--	BSNIM
Nov. 16	4:30 p. m.	74	881	1,450	76	90	97	99	100	--	--	--	--	--	BWCM
Nov. 16	2:45 p. m.	126	1,300	1,060	51	67	72	89	96	100	--	--	--	--	BSWCM
Dec. 3	5:30 p. m.	479	1,300	2,340	51	64	76	91	97	100	--	--	--	--	BSWCM
Jan. 29, 1956	5:00 a. m.	788	1,430	2,260	52	65	77	90	99	100	--	--	--	--	BSWCM
Jan. 29	6:30 a. m.	455	1,290	2,290	50	65	76	90	99	100	--	--	--	--	BSWCM
Feb. 2	7:15 a. m.	2,520	2,400	2,190	34	46	55	73	92	98	99	98	--	--	BSWCM
Feb. 2	8:30 a. m.	4,020	2,700	2,100	38	50	60	72	94	99	100	--	--	--	BSWCM
Feb. 3	12:45 a. m.	192	208	544	69	78	85	95	100	--	--	--	--	--	BWCM
Feb. 15	4:00 a. m.	2,500	1,400	1,330	45	53	64	79	95	99	100	--	--	--	BSWCM
Feb. 15	8:40 a. m.	1,560	817	1,200	52	61	69	83	92	99	100	--	--	--	BSWCM
Feb. 17	6:15 a. m.	4,260	2,000	1,850	46	51	63	75	93	98	99	100	--	--	BSWCM
Feb. 24	11:00 a. m.	901	1,860	1,710	49	57	67	78	90	99	100	--	--	--	BSWCM
Feb. 25	9:00 a. m.	1,280	1,120	1,860	50	61	71	85	93	99	100	--	--	--	BSWCM
Mar. 14	6:00 a. m.	1,280	1,140	1,040	42	58	68	80	94	99	100	--	--	--	BSWCM
Mar. 16	6:00 a. m.	1,130	670	1,190	51	64	71	82	96	99	100	--	--	--	BSWCM
Apr. 2	1:00 p. m.	98	896	741	65	81	91	97	98	99	100	--	--	--	BSWCM
Apr. 15	5:00 a. m.	211	594	1,020	59	67	79	91	98	99	100	--	--	--	BSWCM
May 27	6:30 p. m.	146	3,190	5,700	43	55	68	84	97	99	100	--	--	--	BSWCM
May 27	7:15 p. m.	83	1,970	3,370	46	57	71	85	97	99	100	--	--	--	BSWCM
June 20	5:00 a. m.	12	914	1,320	53	94	98	99	99	100	--	--	--	--	BSWCM
June 21	2:45 p. m.	1.9	318	452	76	83	91	94	98	98	99	100	--	--	BSWCM
June 21	2:45 p. m.	1.9	343	457	63	79	88	94	97	98	99	100	--	--	BSNIM
June 26	4:30 a. m.	964	2,280	1,960	64	79	92	97	99	100	--	--	--	--	BSWCM
June 26	10:00 a. m.	52	1,500	1,270	73	89	97	99	99	100	--	--	--	--	BSWCM
July 29	3:00 a. m.	27	714	1,250	84	97	98	99	99	100	--	--	--	--	BSWCM
Aug. 29	9:30 a. m.	12	713	52	93	97	97	98	98	100	--	--	--	--	BSWCM
Sept. 16	9:30 a. m.	68	443	778	76	94	98	99	99	99	100	--	--	--	BSWCM

SALT RIVER BASIN--Continued

SALT RIVER AT SHEPHERDSVILLE, KY.

LOCATION.--At gaging station at bridge on State Highway 61 at Shepherdsville, Bullitt County, 500 feet downstream from Louisville and Nashville Railroad bridge, and 2.5 miles downstream from Floyd's Fork.

DRAINAGE AREA.--1,230 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses: October 1949 to September 1956.

Water temperatures: October 1952 to September 1956.

Sediment records: October 1952 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 304 ppm Dec. 17-31; minimum, 129 ppm July 25-31.

Hardness: Maximum, 269 ppm Dec. 17-31; minimum, 98 ppm July 25-31.

Specific conductance: Maximum daily, 516 microhos Dec. 23; minimum daily, 174 microhos Feb. 4, July 27.

Water temperatures: Maximum, 89°F Aug. 12, 13; minimum, 33°F on several days during December and January.

Sediment concentrations: Maximum daily, 2,420 ppm June 25; minimum daily, 2 ppm Dec. 24, 31 Jan. 1, 4-9, 14-16.

Sediment loads: Maximum daily, 76,200 tons Feb. 3; minimum daily, less than 0.5 ton Jan. 4-9, 14-16.

EXTREMES, 1952-56.--Dissolved solids: Maximum, 304 ppm Dec. 17-31, 1955; minimum, 95 ppm Sept. 20-21, 1954.

Hardness: Maximum, 269 ppm Dec. 17-31, 1955; minimum, 87 ppm Sept. 20, 21, 1954.

Specific conductance: Maximum daily, 529 microhos Dec. 23, 1952; minimum daily, 146 microhos Mar. 5, 1953.

Water temperatures: Maximum, 92°F June 27, 1954; minimum, 33°F on several days during December 1955, and January 1956.

Sediment concentrations: Maximum daily, 2,860 ppm May 14, 1955; minimum daily, no flow on many days during September to November 1953, and September 1954.

Sediment loads: Maximum daily, 103,000 tons Mar. 4, 1953; minimum daily, 0 tons on many days during September to November 1953, and September 1954.

REMARKS.--Records of specific conductance of daily samples available in district office at Columbus, Ohio. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
Oct. 1-8, 1955	490	7.0	0.11	33	5.3	2.3	4.3	107	15	3.0	0.3	3.5	146	104	16	221	7.2	28
Oct. 9-21	113	6.5	.02	49	8.0	3.3	4.4	160	24	5.0	.3	.8	194	155	24	315	7.3	13
Oct. 22-Nov. 9	502	7.8	.04	51	9.3	3.8	4.1	171	26	5.1	.1	3.4	202	166	26	342	7.2	13
Nov. 10-27	514	7.9	.05	57	10	3.8	4.2	192	29	5.4	.1	3.9	228	183	26	382	7.3	15
Nov. 28-Dec. 4	1,733	13	.03	65	13	4.4	3.3	221	34	6.0	.4	4.6	263	216	35	436	7.5	5
Dec. 5-8	1,143	10	.04	57	9.3	2.9	3.0	178	29	5.0	.4	6.9	223	180	35	366	7.3	10
Dec. 9-16	292	8.7	.56	73	13	3.1	2.5	239	35	6.5	.2	9.0	275	236	40	485	7.7	5
Dec. 17-31	143	7.0	.01	83	15	4.3	2.3	212	40	7.5	.2	6.2	304	269	46	529	7.6	2
Jan. 1-15, 1956	73.5	4.0	.02	79	14	5.2	2.0	264	43	6.1	.2	3.6	287	261	51	489	7.9	2
Jan. 16-29	571	5.5	.04	74	16	5.2	2.3	241	39	6.3	.2	3.4	260	230	53	472	7.7	3
Jan. 30-Feb. 5	1,290	5.5	.04	56	6.6	1.9	2.3	106	20	2.5	.5	8.2	143	117	30	326	6.9	10
Feb. 6-14	2,593	8.8	.07	59	11	3.2	1.5	182	29	4.2	.4	8.8	221	192	43	368	7.4	10
Feb. 15-20	15,760	7.9	.17	34	5.8	1.8	1.5	102	16	4.2	.4	5.3	132	109	25	217	7.1	10
Feb. 21-24	3,008	7.7	.06	54	11	2.0	1.6	170	24	5.8	.4	9.8	200	180	41	339	7.5	10
Feb. 25-27	8,443	5.6	.03	41	7.4	1.5	1.3	124	18	2.5	.5	6.6	153	130	29	258	7.5	10
Feb. 28-Mar. 7	2,463	6.7	.02	63	12	2.4	1.9	200	28	4.5	.3	8.0	228	207	43	387	7.7	13
Mar. 8-10	9,335	11	.04	37	6.3	2.6	2.6	116	14	6.0	.3	6.8	161	118	23	250	7.2	3
Mar. 11-14	4,195	8.7	.01	58	11	2.6	2.2	186	24	7.2	.2	9.1	210	190	38	364	7.4	3

SALT RIVER BASIN--Continued
SALT RIVER AT SHEPHERDSVILLE, KY.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956.--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
Mar. 15-18, 1956.....	9,832	7.6	0.06	37	6.6	2.1	1.2	116	17	3.0	0.3	5.7	142	119	24	238	7.2	10
Mar. 19-25.....	1,958	8.9	.02	59	11	2.8	1.0	190	25	3.8	.2	8.6	215	192	37	371	7.4	4
Mar. 26-Apr. 7.....	1,141	7.9	.01	62	13	4.3	1.0	204	31	4.9	.2	5.2	237	208	41	398	7.6	5
Apr. 8-15.....	1,478	13	.01	60	12	4.5	1.0	200	28	4.1	.2	3.9	229	199	35	382	7.7	6
Apr. 16-19.....	2,988	11	.05	48	8.3	3.3	1.4	154	21	3.0	.3	4.9	186	154	28	304	7.5	10
Apr. 20-May 2.....	696	6.5	.01	65	13	4.1	1.2	216	31	4.8	.2	2.8	241	216	39	411	7.5	6
May 3-10.....	1,154	7.4	.03	54	12	3.1	1.8	178	31	4.0	.2	2.5	210	184	34	357	7.1	7
May 12-27.....	210	7.8	.02	68	13	4.7	1.7	238	31	5.8	.2	2.2	263	223	28	444	7.5	1
May 28-June 15.....	97.6	6.4	.02	64	12	4.9	2.5	216	29	6.0	.2	1.3	242	209	32	413	7.4	1
June 16-22.....	123	6.2	.01	63	13	5.4	3.3	228	30	3.4	.2	2.5	247	211	24	426	7.5	5
June 23-28.....	1,269	7.3	.03	35	5.8	3.2	3.4	120	18	3.9	.3	4.8	142	111	13	248	7.4	10
June 29-July 16.....	65.1	8.3	.02	50	8.6	3.0	3.5	176	19	4.0	.2	4.2	189	160	16	327	7.6	6
July 17-24.....	270	9.4	.02	52	7.8	4.1	3.7	181	20	4.7	.2	2.9	196	162	14	341	7.7	10
July 25-31.....	1,128	8.2	.05	35	2.6	1.2	3.1	98	14	2.4	.4	5.5	129	98	18	205	7.2	22
Aug. 1-4, 6-14.....	334	9.0	.01	44	5.3	3.3	4.3	141	16	3.0	.3	4.4	166	132	16	275	7.4	8
Aug. 15-31.....	150	8.3	.00	49	7.2	4.2	3.8	164	17	4.0	.2	2.7	186	152	17	312	7.5	5
Sept. 1-17.....	177.2	6.8	.01	48	8.7	3.0	4.3	166	20	4.4	.2	2.5	187	156	20	314	7.5	4
Sept. 18-30.....	175	6.8	.03	42	5.0	2.6	4.3	134	16	3.7	.4	2.4	160	125	16	263	7.4	20
Time-weighted average ^a	1,360	7.6	0.04	56	10	3.6	2.8	196	26	4.8	0.2	4.2	215	181	28	362		8

^a Represents 99 percent of days and 97 percent of runoff.

SALT RIVER BASIN--Continued
SALT RIVER AT SHEPHERDSVILLE, KY.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, continuous ethyl alcohol-actuated thermometer/

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

SALT RIVER BASIN--Continued

SALT RIVER AT SHEPHERDSVILLE, KY.--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	682	382	s 741	22	46	3	162	27	12
2.....	268	310	224	885	410	s 1,900	500	110	sa 190
3.....	207	152	85	2,610	1,010	7,120	1,090	201	s 735
4.....	154	110	46	1,360	421	s 1,640	2,790	1,100	8,290
5.....	94	84	21	608	193	317	1,960	725	s 4,010
6.....	63	97	16	355	112	107	1,170	168	531
7.....	1,120	550	sa 2,100	247	82	55	824	95	211
8.....	1,330	506	s 1,990	184	66	33	617	62	103
9.....	456	180	222	151	50	20	493	37	49
10.....	251	133	90	124	44	15	405	32	35
11.....	154	116	48	105	42	12	325	27	24
12.....	118	106	34	68	41	10	273	22	16
13.....	164	120	60	76	42	9	231	15	9
14.....	165	92	41	70	39	7	207	13	7
15.....	127	89	30	72	38	7	203	10	5
16.....	94	71	18	322	--	e 280	196	9	5
17.....	83	67	15	1,350	370	a 1,300	180	6	3
18.....	74	58	12	914	210	s 557	162	5	2
19.....	63	53	9	930	154	387	180	7	3
20.....	70	54	10	946	110	281	165	5	2
21.....	67	48	9	690	80	149	147	7	3
22.....	54	44	6	545	61	90	144	8	3
23.....	47	36	4	708	140	sa 290	137	5	2
24.....	42	57	6	866	130	304	137	2	1
25.....	38	49	5	587	87	138	147	3	1
26.....	32	47	4	468	97	122	144	3	1
27.....	29	59	5	385	77	80	134	3	1
28.....	25	55	4	296	73	58	127	6	2
29.....	28	50	4	239	60	39	118	6	2
30.....	27	49	4	192	40	21	118	4	1
31.....	25	45	b 3	--	--	--	108	2	1
Total.	6,171	--	5,866	16,395	--	15,351	13,594	--	14,260
Day	January			February			March		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	100	2	1	7,270	375	s 7,960	1,570	87	369
2.....	94	3	1	15,700	1,140	s 53,800	1,370	66	244
3.....	88	3	1	21,000	1,380	76,200	1,290	50	174
4.....	86	2		15,100	560	22,800	1,170	50	115
5.....	80	2		5,240	205	2,900	1,180	36	115
6.....	78	2	(t)	3,040	115	944	1,120	45	136
7.....	74	2		4,170	124	1,400	8,710	1,300	sa 43,000
8.....	72	2		3,520	108	1,030	16,400	1,760	77,900
9.....	65	2		2,590	70	490	13,300	675	24,200
10.....	61	5	1	984	62	165	5,370	220	s 3,400
11.....	59	5	1	2,220	76	456	3,000	104	642
12.....	63	6	1	2,530	120	820	1,960	54	286
13.....	63	4	1	1,780	76	365	1,940	48	251
14.....	61	2	(t)	2,500	397	s 3,500	9,880	682	s 20,900
15.....	59	2	(t)	14,700	1,140	45,200	9,470	760	s 19,400
16.....	59	2	(t)	19,500	975	51,300	8,930	340	8,200
17.....	58	4	1	13,400	330	11,900	9,530	400	10,300
18.....	58	6	1	19,100	645	33,300	11,406	195	6,000
19.....	84	8	2	18,900	370	18,900	4,310	96	1,140
20.....	235	7	4	8,960	192	4,640	2,070	57	318
21.....	296	6	5	4,060	72	793	1,830	30	148
22.....	340	9	8	2,180	42	247	1,690	14	64
23.....	400	10	11	1,260	23	78	1,420	14	54
24.....	410	11	12	4,510	82	s 1,290	1,400	30	113
25.....	410	10	11	9,370	625	15,800	983	44	117
26.....	405	12	13	10,800	1,080	31,500	1,020	26	72
27.....	395	12	13	5,160	420	5,850	910	25	61
28.....	345	40	sa 40	3,510	210	1,990	848	21	48
29.....	4,500	1,820	s 26,700	2,250	129	784	824	30	67
30.....	13,400	1,760	63,700	--	--	--	706	20	38
31.....	12,600	1,160	39,500	--	--	--	594	17	27
Total.	35,098	--	130,031	225,324	--	398,402	128,197	--	218,142

e Estimated.

s Computed by subdividing day.

t Less than 0.5 ton.

a Computed from partly estimated concentration graph.

b Computed from estimated concentration graph.

SALT RIVER BASIN--Continued

SALT RIVER AT SHEPHERDSVILLE, KY.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	524	12	17	415	29	32	235	65	41
2.....	782	--	e 300	1,040	394	s 1,880	203	72	39
3.....	1,120	157	475	2,620	1,040	s 7,760	130	63	22
4.....	1,240	104	348	1,260	174	582	100	56	15
5.....	1,310	134	474	858	68	158	80	30	6
6.....	1,350	150	547	658	50	89	70	23	4
7.....	3,600	--	e 6,400	1,210	125	408	53	18	2
8.....	4,080	998	s 11,800	1,220	75	247	47	16	2
9.....	1,420	198	s 807	818	70	155	41	15	2
10.....	1,010	95	259	587	80	127	34	--	e 2
11.....	953	45	116	468	56	71	32	--	e 2
12.....	925	32	80	395	42	45	35	--	e 2
13.....	720	35	68	320	36	31	50	29	4
14.....	572	48	74	260	30	21	41	25	3
15.....	2,140	239	s 2,140	286	35	27	40	15	2
16.....	5,920	944	15,100	390	49	52	40	20	b 2
17.....	3,080	378	n 3,380	355	48	46	48	31	4
18.....	1,670	145	654	305	46	38	46	31	4
19.....	1,300	57	200	239	48	31	52	35	5
20.....	1,120	28	85	172	50	23	40	24	2
21.....	911	26	64	144	30	12	92	55	sa 9
22.....	722	22	43	114	19	6	541	--	e 550
23.....	663	21	38	97	21	5	1,160	--	e 1,400
24.....	616	22	36	80	24	5	1,200	--	e 800
25.....	535	23	33	70	29	5	3,420	2,420	s 26,100
26.....	510	23	32	63	26	4	1,040	650	1,820
27.....	762	27	56	92	31	8	489	410	541
28.....	730	30	59	169	46	21	305	200	165
29.....	552	26	39	169	31	14	184	151	75
30.....	474	26	36	172	29	13	127	106	36
31.....	--	--	--	154	45	19	--	--	--
Total.	41,291	--	43,740	15,200	--	11,955	9,975	--	31,661
	July			August			September		
1.....	111	80	24	375	137	139	27	34	2
2.....	83	47	10	875	--	e 250	92	44	11
3.....	63	39	7	1,580	402	1,710	86	46	11
4.....	58	32	5	714	204	393	58	45	7
5.....	72	35	sn 8	380	150	b 150	47	27	3
6.....	88	38	9	235	124	79	76	41	8
7.....	54	26	4	151	105	43	67	50	9
8.....	44	26	3	102	86	24	65	56	10
9.....	47	60	8	74	64	13	46	58	7
10.....	35	54	5	58	48	8	32	46	4
11.....	29	37	3	46	25	3	22	30	2
12.....	23	34	2	38	24	2	20	24	1
13.....	27	35	2	30	53	4	15	25	1
14.....	32	36	3	65	50	9	13	20	1
15.....	32	50	4	80	38	8	15	15	1
16.....	63	44	7	67	35	6	38	32	3
17.....	72	35	7	63	27	4	595	--	e 320
18.....	82	29	6	61	37	6	994	130	349
19.....	227	54	33	76	40	8	524	134	190
20.....	184	54	27	117	40	13	286	140	108
21.....	114	58	18	622	86	144	147	138	55
22.....	70	45	8	492	100	133	91	107	26
23.....	222	59	s 39	330	110	98	59	74	12
24.....	1,190	320	sa 1,200	188	114	58	46	69	8
25.....	1,230	420	1,390	137	98	36	35	75	7
26.....	2,050	550	3,040	97	73	19	29	67	5
27.....	753	201	s 432	67	55	10	22	70	4
28.....	340	126	116	52	42	6	20	60	b 3
29.....	1,530	490	sa 2,900	42	27	3	15	48	2
30.....	1,410	621	s 2,540	34	34	3	12	35	1
31.....	580	220	344	30	21	2	--	--	--
Total.	10,915	--	12,104	7,278	--	3,384	3,594	--	1,171
Total discharge for year (cfs-days).....									511,032
Total load for year (tons).....									886,087

e Estimated.

s Computed by subdividing day.

a Computed from partly estimated concentration graph.

b Computed from estimated concentration graph.

SALT RIVER BASIN--Continued

SALT RIVER AT SHEPHERDSVILLE, KY--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature per- ature (° F)	Suspended sediment												Methods of analysis
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Dec. 5, 1955	7:00 a. m.	2,230		910	1,790	56	71	84	94	98	100	--				BSWCM
Jan. 31, 1956	1:00 p. m.	12,200		1,170	3,480	50	62	76	89	98	100	--				BSWCM
Jan. 31, 1956	1:00 p. m.	12,200		1,170	3,250	31	43	59	80	99	100	--				BSNM
Feb. 3, 1956	9:00 a. m.	95,800		1,620		51	63	74	88	97	100	--				BSWCM
Feb. 3, 1956	6:35 p. m.	19,000		1,230	959	56	71	84	94	99	100	--				BSWCM
Feb. 16, 1956	1:00 a. m.	21,800		1,220	821	48	67	79	90	100		--				BSWCM
Feb. 16, 1956	1:45 p. m.	19,500		857	2,420	56	69	83	93	99	99	100				BSWCM
Feb. 18, 1956	8:15 p. m.	20,300		570	870	50	62	77	90	98	100	--				BSWCM
Feb. 26, 1956	8:00 a. m.	12,400		1,300	1,910	56	64	80	98	100	---	--				BSWCM
Mar. 8, 1956	7:00 a. m.	16,600		1,990	3,580	44	58	70	87	98	100	--				BSWCM
Mar. 15, 1956	7:00 a. m.	12,100		978	793	51	63	73	86	97	100	--				BSWCM
Apr. 8, 1956	11:00 a. m.	4,700		1,170	1,790	61	69	82	93	99	100	--				BSWCM
May 3, 1956	6:00 a. m.	3,250		1,620	2,420	40	53	67	82	97	99	100				BSWCM
July 26, 1956	6:00 a. m.	2,120		683	1,360	60	77	88	97	99	99	100				BSWCM

a Average of individual analyses of samples from 5 verticals.

SALT RIVER BASIN--Continued

ROLLING FORK NEAR BOSTON, KY.

LOCATION --At gaging station at bridge on U. S. Highway 62 and State Highway 61, 0.4 mile downstream from Beech Fork, and 2.3 miles southwest of Rolling Fork, Madison County.

DRAINAGE AREA, 1,290 square miles, approximately.

RECORDS AVAILABLE, 1900 to September 1956.

RECORDS AVAILABLE, 1900 to September 1956.

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RECORDS AVAILABLE, 1900 to September 1956.

RECORDS AVAILABLE, 1900 to September 1956.

Temperature (°F) of water, water year October 1955 to September 1956

Twice-daily measurements at approximately 7 a.m. and 5 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.
1.....	66	65	46	51	--	32	33	35	34	37	47	48	50	53
2.....	77	75	53	42	36	34	36	34	35	36	47	49	52	64
3.....	66	69	51	49	41	45	35	38	47	50	53	66	65	68
4.....	76	71	42	44	37	39	36	35	36	47	49	52	65	67
5.....	70	69	41	42	36	37	33	36	38	47	50	63	66	69
6.....	70	68	42	43	35	36	34	35	37	52	55	50	49	61
7.....	70	69	41	41	37	36	33	34	33	43	51	47	48	62
8.....	64	66	40	46	37	36	32	35	37	42	48	50	46	65
9.....	62	64	40	45	36	36	--	37	43	47	51	47	48	65
10.....	60	66	42	45	37	36	--	36	45	48	50	46	50	64
11.....	61	62	44	45	34	35	--	44	45	47	50	46	51	69
12.....	60	63	44	46	33	34	--	43	45	47	47	48	51	69
13.....	61	62	45	47	32	35	--	42	45	46	47	50	52	74
14.....	60	63	45	47	36	37	32	--	43	46	46	47	50	74
15.....	60	58	48	65	35	36	--	31	45	44	45	47	48	50
16.....	58	59	63	58	34	36	--	32	48	45	46	45	49	69
17.....	59	56	53	55	35	36	--	31	47	46	46	47	50	65
18.....	55	56	49	53	37	36	32	33	45	44	45	44	49	51
19.....	54	55	47	49	37	36	31	--	46	47	45	43	49	52
20.....	52	55	47	48	35	37	--	45	47	44	45	50	52	68
21.....	57	54	45	46	36	36	--	32	45	48	44	45	52	53
22.....	52	53	45	47	35	37	33	--	45	47	45	46	49	52
23.....	58	59	49	47	36	36	34	31	38	43	45	47	50	51
24.....	52	56	45	46	37	36	33	32	39	41	44	45	53	55
25.....	52	54	45	47	36	37	--	31	42	46	45	46	54	54
26.....	52	55	45	47	35	35	--	32	46	47	45	47	57	59
27.....	51	54	44	46	34	36	--	33	47	48	46	48	56	59
28.....	52	55	32	35	35	36	--	37	46	47	46	49	63	58
29.....	51	52	--	34	34	36	33	39	46	48	47	51	60	59
30.....	48	45	31	33	35	34	34	31	--	51	58	59	70	71
31.....	42	45	--	34	34	35	--	40	50	52	--	--	--	69
Average.....	59	60	44	47	35	36	32	33	41	44	47	48	51	52

a Includes estimated temperature, 31°F, on missing days.

GREEN RIVER BASIN

GREEN RIVER AT GREENSBURG, KY.

LOCATION.--At gaging station at bridge on U.S. Highway 68, 300 feet upstream from Clover Lick Creek, a quarter of a mile south of Greensburg, Green County, and 2.6 miles upstream from Russell Creek.

DRAINAGE AREA.--742 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1949 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 84°F Aug. 5-6; minimum, freezing point on many days during November to January.

EXTREMES, 1949-56.--Water temperatures: Maximum, 89°F July 1-2, 23, Aug. 4, 1952; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956

Temperature (°F) of water, water year October 1955 to September 1956

Twice-daily measurements at approximately 8 a.m. and 5 p.m.

Day	Twice-daily measurements at approximately 9 a.m. and 3 p.m.																							
	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.....	67	71	54	57	--	33	--	32	40	40	45	46	56	56	63	64	70	72	79	82	77	79	76	79
2.....	65	71	51	55	31	34	--	31	42	43	48	48	57	57	63	64	66	70	80	82	78	79	76	76
3.....	64	69	49	53	32	35	--	33	43	43	48	48	59	61	63	63	66	66	80	82	78	81	74	76
4.....	65	70	52	54	31	34	31	34	43	43	49	49	61	61	62	64	66	68	--	--	79	82	74	76
5.....	62	67	51	52	--	32	--	32	43	43	49	49	61	61	63	66	65	70	79	83	80	84	74	76
6.....	61	68	53	56	--	31	--	33	47	46	50	56	60	59	65	67	68	71	80	83	80	84	72	75
7.....	63	66	50	52	--	31	--	31	45	45	56	56	56	52	67	65	69	74	80	82	81	82	72	73
8.....	62	67	48	51	--	33	--	33	46	47	44	44	50	50	62	64	71	74	81	84	79	81	68	70
9.....	61	64	49	54	31	31	--	--	46	47	45	47	49	49	63	67	71	75	81	81	78	82	66	69
10.....	59	62	47	50	32	34	--	--	47	47	49	50	48	48	65	68	73	76	77	79	79	82	66	68
11.....	60	64	48	52	--	31	--	--	46	45	50	50	50	51	67	72	74	77	76	79	80	82	67	70
12.....	62	65	48	55	--	32	--	--	44	45	48	47	53	54	70	74	75	80	76	77	81	83	69	72
13.....	61	63	46	52	--	31	--	--	47	47	47	47	55	55	72	75	78	81	76	77	81	83	70	74
14.....	58	61	48	53	--	--	--	--	47	48	46	46	55	56	74	76	79	81	76	79	79	81	71	76
15.....	59	63	45	52	--	--	--	31	48	49	47	46	54	54	72	72	79	81	75	76	79	82	73	76
16.....	58	61	41	46	--	--	--	32	49	49	46	46	53	53	67	66	78	82	75	76	78	81	73	76
17.....	59	63	39	44	--	--	--	31	50	52	45	45	51	51	65	67	78	81	74	76	77	81	73	76
18.....	57	60	37	42	--	--	--	31	52	51	46	46	51	56	66	68	78	81	74	76	78	82	70	72
19.....	58	62	38	41	--	--	--	--	50	50	43	44	49	50	66	68	78	82	74	77	80	82	67	68
20.....	60	65	39	43	--	32	--	31	48	47	43	44	50	54	66	69	79	81	76	78	78	70	66	67
21.....	59	62	41	46	--	31	--	--	47	46	43	44	52	56	67	71	80	81	75	77	70	70	61	67
22.....	61	63	40	44	--	33	--	--	44	43	44	46	54	55	69	73	79	82	77	80	68	71	64	68
23.....	58	63	38	42	31	33	--	--	43	42	45	47	55	55	72	73	80	82	78	80	88	72	67	69
24.....	59	61	37	40	--	32	--	31	45	46	45	45	56	56	69	71	79	82	78	76	68	71	65	67
25.....	57	60	39	44	--	31	--	32	50	50	47	48	56	61	65	70	79	79	74	76	69	72	62	67
26.....	55	58	41	43	--	33	--	33	50	51	50	53	60	64	68	68	79	80	76	76	71	75	62	67
27.....	56	56	41	44	--	32	--	31	48	49	53	56	61	64	68	70	79	81	76	79	72	76	62	66
28.....	54	58	37	41	31	34	32	32	46	47	56	55	65	66	68	73	79	80	77	81	73	76	62	66
29.....	56	59	--	32	33	35	31	35	44	45	57	58	69	71	76	77	80	77	78	74	77	62	67	67
30.....	57	60	--	31	31	32	33	33	--	53	54	65	64	71	78	77	80	78	77	76	78	64	67	67
31.....	56	58	--	--	--	32	42	41	--	--	54	56	--	--	73	75	--	--	76	78	75	79	--	--
Average.....	60	63	a44	47	a31	a32	a31	a32	46	46	48	49	56	57	67	70	75	75	77	79	76	79	68	71

a Includes estimated temperature, 31°F on missing days.

GREEN RIVER BASIN--Continued

GREEN RIVER AT MUMFORDVILLE, KY.

LOCATION.--At gaging station at bridge on U. S. Highway 31W, at Mumfordsville, Hart County.

DRAINAGE AREA.--1,780 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses: October 1949 to September 1956.

Water temperatures: October 1950 to September 1956.

Sediment records: April 1951 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 176 ppm Sept. 18-30; minimum, 73 ppm Feb. 19-21.

Hardness: Maximum, 140 ppm Sept. 18-30; minimum, 50 ppm Feb. 19-21.

Specific conductance: Maximum, 353 micromhos Sept. 22; minimum daily, 92 micromhos Feb. 20.

Water temperatures: Maximum, 78°F Aug. 6; minimum, 33°F Dec. 16-17, Jan. 8.

Sediment concentrations: Maximum daily, 353 micromhos Sept. 22; minimum daily, 1 ppm on many days during October to January.

Sediment loads: Maximum daily, 58,300 tons Jan. 30; minimum daily, less than 0.5 ton Oct. 27, Nov. 1-2.

EXTREMES, 1950-56.--Dissolved solids: Maximum, 200 ppm Nov. 1-10, 1952; minimum, 73 ppm Feb. 19-21, 1956.

Hardness: Maximum, 163 ppm Oct. 14-26, 1953; minimum, 45 ppm Mar. 23-25, 1955.

Specific conductance: Maximum daily, 363 micromhos Nov. 16, 1953; minimum daily, 59 micromhos Mar. 25, 1952.

Water temperatures: Maximum, 80°F June 28-29, 1952; Aug. 7, 1955; minimum, 33°F Jan. 28-31, Dec. 16-17, 1955, Jan. 8, 1956.

Sediment concentrations (1951-56): Maximum daily, 3,180 ppm June 24, 1955; minimum daily, 1 ppm on many days during 1952 to 1956.

Sediment loads (1951-56): Maximum daily, 153,000 tons Mar. 23-24, 1952; minimum daily, less than 0.5 ton on many days during October to December 1953, January 1954, September to November of 1955.

REMARKS.--Records of specific conductance of daily samples available in district office at Columbus, Ohio. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-4, 1955.....	1,848	--	--	26	4.3	3.8		85	12	4.4	--	3.0	114	83	13	177	7.0	23
Oct. 5-17.....	445	--	--	34	5.2	2.8		113	11	4.5	--	2.3	129	106	14	218	7.3	7
Oct. 18-28.....	211	--	--	40	7.0	3.2		136	12	7.2	--	1.8	155	129	17	263	7.5	4
Oct. 29-Nov. 15.....	223	10	0.03	44	7.2	5.1	1.9	153	15	8.4	0.1	1.0	163	139	14	287	7.4	5
Nov. 16-27.....	520	--	--	40	6.8	5.6		138	16	6.6	--	1.0	157	128	15	274	7.4	7
Nov. 28-Dec. 7.....	674	--	--	38	6.9	6.9		131	20	6.4	--	1.2	158	123	16	287	7.6	5
Dec. 8-18.....	527	--	--	38	6.3	5.8		127	19	5.8	--	1.6	153	121	17	257	7.8	3
Dec. 19-31.....	314	--	--	42	6.9	5.2		140	18	7.1	--	1.2	156	133	18	279	7.8	2
Jan. 1-15, 1956.....	256	--	--	41	7.7	4.6		139	17	8.2	--	.9	158	134	20	278	7.8	3
Jan. 16-29.....	472	--	--	41	8.3	5.4		140	19	9.1	--	1.0	161	136	22	286	7.7	3
Jan. 30-Feb. 6.....	27,710	--	--	19	3.8	2.0		60	10	3.2	-0	4.1	99	63	14	137	7.1	30
Feb. 7-18.....	9,848	--	--	26	5.2	.9		82	12	3.2	.1	4.8	114	86	19	181	7.3	7
Feb. 19-21.....	33,470	7.3	.07	15	3.1	1.8	.6	58	7.2	2.0	.2	2.5	73	50	3	106	7.2	30
Feb. 22-28.....	11,430	--	--	24	4.9	.9		78	9.6	3.0	.2	4.2	100	60	16	162	7.3	9
Feb. 29-Mar. 9.....	4,130	--	--	27	5.4	3.0		93	11	3.0	.1	4.9	112	80	13	188	7.4	6
Mar. 10-14.....	6,628	--	--	25	5.6	1.4		64	11	2.5	--	3.2	105	53	14	170	7.6	2
Mar. 15-21.....	13,130	--	--	22	3.9	.8		72	8.0	1.9	--	3.2	94	71	12	146	6.9	3
Mar. 22-Apr. 5.....	2,161	--	--	32	5.8	3.3		111	12	3.6	--	3.5	128	104	13	215	7.5	3

GREEN RIVER BASIN--Continued

GREEN RIVER AT MURFORDVILLE, KY.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, mg-nesium	Non-carbonate			
Apr. 6-15, 1956	6,350	--	--	25	5.2	3.5		90	11	2.8	--	2.7	105	84	10	178	7.4	3
Apr. 16-20	13,510	--	--	21	4.2	1.7		72	8.8	2.0	--	3.1	93	70	11	146	7.4	23
Apr. 21-May 2	1,981	--	--	32	3.9	2.8		110	12	3.6	--	2.9	125	104	14	216	7.6	3
May 3-7	5,246	--	--	23	4.9	1.9		83	11	2.9	--	1.9	105	83	13	170	7.4	23
May 8-22	1,176	10	0.00	36	5.8	3.7	1.1	123	11	4.9	0.0	2.2	134	110	9	232	7.7	2
May 23-June 1	613	9.2	.00	39	5.8	4.8	.8	136	11	6.6	.0	2.2	160	121	10	260	7.5	1
June 2-15	570	10	.00	36	5.2	4.8	1.2	125	11	5.9	.1	3.1	144	111	9	243	7.4	1
June 16-26	465	--	--	38	6.0	7.0		135	12	7.0	--	2.2	151	119	9	257	7.4	1
June 27-July 3	367	--	--	33	5.2	7.3		117	12	6.2	--	3.2	139	104	8	231	7.6	5
July 4-13	282	--	--	41	5.8	8.0		144	12	7.8	--	2.5	167	126	8	278	7.7	2
July 14-21	2,162	9.0	.10	26	3.6	4.9	2.2	90	9.0	5.0	.2	2.8	117	80	6	184	7.3	24
July 22-27, 29-Aug. 8	1,108	--	--	32	5.2	4.6		112	9.9	5.0	--	2.7	135	101	9	221	7.4	8
Aug. 9-20	398	--	--	41	6.2	7.1		146	10	8.2	--	2.1	163	128	8	281	7.6	5
Aug. 21-23	2,377	--	--	28	3.9	12		100	17	7.0	--	2.6	129	86	4	198	7.5	22
Aug. 24-28	533	--	--	39	5.3	7.2		136	11	7.0	--	2.5	154	119	8	265	7.7	4
Aug. 30-Sept. 4	379	--	--	36	5.3	3.4		124	9.0	4.1	--	2.7	136	112	10	231	7.4	6
Sept. 5-17	214	--	--	44	7.0	5.1		154	8.8	8.8	--	2.3	165	139	12	290	7.6	4
Sept. 18-30	146	--	--	45	6.8	8.3		160	9.8	11	--	1.9	176	140	9	308	7.5	5
Time-weighted average	2,901	--	--	35	5.7	4.7		120	12	5.9	--	2.4	140	111	12	237	--	6

a Represents 99 percent of days and 100 percent of runoff.

GREEN RIVER BASIN--Continued

GREEN RIVER AT MUNFORDVILLE, KY.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 7 a.m./

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

GREEN RIVER BASIN--Continued

GREEN RIVER AT MUNFORDVILLE, KY.

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	4,660	1,160	s 16,300	141	1	(t)	378	3	3
2.....	1,410	284	s 1,210	156	1	(t)	372	3	3
3.....	762	80	164	285	5	4	384	2	a 2
4.....	563	52	79	334	8	7	782	46	s 109
5.....	422	30	34	285	7	5	1,260	117	398
6.....	334	30	27	274	8	6	1,020	93	256
7.....	450	55	67	264	8	6	1,130	33	101
8.....	444	72	86	258	7	5	937	18	46
9.....	416	62	70	253	4	3	755	11	22
10.....	878	70	166	242	4	3	647	11	19
11.....	713	40	77	227	3	2	575	7	11
12.....	491	22	29	217	3	2	522	5	7
13.....	406	25	27	212	5	3	467	5	6
14.....	350	22	21	201	4	2	422	4	4
15.....	306	17	14	212	5	3	411	3	3
16.....	296	15	12	290	10	8	378	4	4
17.....	285	14	11	384	33	34	345	4	4
18.....	279	10	8	328	52	46	340	4	4
19.....	258	14	10	306	13	11	340	2	2
20.....	248	14	9	487	11	14	334	3	3
21.....	237	10	6	629	23	39	334	2	2
22.....	227	8	5	689	11	20	328	2	2
23.....	212	9	5	737	12	24	323	2	a 2
24.....	201	6	3	701	11	21	323	2	a 2
25.....	186	5	2	671	12	22	318	2	2
26.....	171	4	2	605	13	21	312	4	3
27.....	156	1	(t)	593	7	11	306	4	3
28.....	151	2	1	545	5	7	301	6	5
29.....	156	4	2	473	5	6	290	1	1
30.....	151	2	1	416	4	4	290	1	1
31.....	146	2	1	--	--	--	290	1	a 1
Total.	15,965	--	18,449	11,395	--	340	15,194	--	1,031
January			February			March			
1.....	285		28,300	570	43,600	4,300	52	604	
2.....	279		30,600	440	36,400	3,430	47	435	
3.....	279		31,800	234	20,100	3,070	34	282	
4.....	274		30,100	220	17,900	3,110	34	285	
5.....	269		30,900	195	16,300	3,050	52	428	
6.....	269		28,300	100	7,640	3,000	37	300	
7.....	264		21,600	77	4,490	2,670	43	310	
8.....	264		13,800	82	3,060	4,690	173	s 2,560	
9.....	258		8,160	78	1,720	8,340	235	5,290	
10.....	242		4,810	68	883	8,230	100	2,220	
11.....	237	--	e 1	3,750	54	547	5,420	50	732
12.....	232			3,550	38	364	4,080	37	408
13.....	232			3,340	33	298	4,810	48	623
14.....	227			3,110	44	369	10,600	315	s 10,200
15.....	222			6,860	325	s 6,020	18,000	362	17,600
16.....	222			11,500	260	8,070	19,900	286	15,400
17.....	217			14,700	330	13,100	20,400	148	8,150
18.....	217			23,000	420	26,100	15,000	48	1,940
19.....	227			32,600	322	28,300	8,880	43	1,030
20.....	290			35,900	286	27,700	5,630	40	608
21.....	318	1	1	31,900	143	12,300	4,130	27	301
22.....	350	3	3	19,300	48	2,500	3,350	21	190
23.....	372	2	2	7,050	63	1,200	2,870	18	139
24.....	389	2	2	4,770	86	s 1,310	2,540	16	110
25.....	384	7	7	10,500	496	14,100	2,300	19	118
26.....	389	11	12	13,800	407	15,200	2,150	18	104
27.....	372	8	8	14,400	195	7,580	1,960	15	79
28.....	372	8	8	10,200	60	1,650	1,780	17	82
29.....	2,490	1,000	sb 10,000	5,620	71	1,080	1,640	19	84
30.....	16,600	1,300	58,300	--	--	--	1,520	20	82
31.....	25,100	800	54,200	--	--	--	1,420	16	61
Total.	52,142	--	122,563	484,220	--	319,881	182,270	--	70,755 ^a

e Estimated.

s Computed by subdividing day.

t Less than 0.5 ton.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

GREEN RIVER BASIN--Continued

GREEN RIVER AT MUNFORDVILLE, KY.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	1,300	13	a 45	1,250	10	34	1,270	185	sb 710
2.....	1,220	15	49	1,680	39	s 229	1,310	387	1,370
3.....	1,330	29	104	6,370	509	8,750	1,000	187	505
4.....	2,410	80	sb 600	7,570	178	3,640	820	108	239
5.....	4,630	177	2,210	6,380	92	1,580	665	72	129
6.....	5,800	227	s 3,750	3,290	43	382	563	45	68
7.....	10,800	412	12,000	2,630	39	277	485	34	44
8.....	12,500	220	7,420	2,560	37	256	438	24	28
9.....	11,100	148	4,440	2,260	27	165	485	37	48
10.....	5,680	52	797	1,840	20	99	406	61	87
11.....	3,680	32	318	1,520	15	62	362	25	24
12.....	3,000	23	186	1,300	13	46	362	20	20
13.....	2,500	30	202	1,120	14	42	387	21	21
14.....	2,130	32	184	996	13	35	340	16	15
15.....	6,310	851	s 17,200	898	12	29	384	18	19
16.....	15,600	991	41,700	956	13	34	411	17	19
17.....	18,100	340	16,600	885	14	33	350	13	12
18.....	18,000	175	8,500	807	12	26	334	40	sb 40
19.....	11,100	67	2,010	689	11	20	387	117	116
20.....	4,770	66	850	659	11	20	389	38	40
21.....	3,430	50	463	593	11	18	473	40	51
22.....	2,830	32	244	557	9	14	599	96	155
23.....	2,440	22	145	527	10	14	455	143	176
24.....	2,240	18	109	491	9	12	394	47	50
25.....	2,080	16	90	455	6	7	533	62	89
26.....	1,890	13	66	433	7	8	807	108	235
27.....	1,700	13	60	428	16	18	641	165	268
28.....	1,540	12	50	521	45	a 65	461	80	100
29.....	1,400	10	38	581	41	64	367	93	92
30.....	1,290	11	38	659	31	55	328	36	32
31.....	--	--	--	768	42	87	--	--	--
Total.	162,800	--	120,468	51,673	--	16,121	16,166	--	4,800
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.....	285	31	24	1,310	105	371	372	49	49
2.....	253	29	20	930	63	158	301	39	32
3.....	232	22	14	774	57	119	264	30	21
4.....	264	26	18	629	47	80	237	25	16
5.....	378	31	32	521	33	46	222	29	17
6.....	372	25	25	515	26	36	248	45	30
7.....	306	19	16	416	21	24	285	28	22
8.....	269	18	13	350	18	17	253	23	16
9.....	227	23	14	306	12	10	217	21	12
10.....	201	16	9	279	10	8	212	17	10
11.....	186	11	6	253	10	7	201	18	10
12.....	171	13	6	237	10	6	171	13	6
13.....	450	219	s 545	217	10	6	161	13	6
14.....	3,290	1,560	13,800	212	11	6	151	17	7
15.....	2,180	540	3,180	206	8	4	146	17	7
16.....	2,380	900	sb 6,300	201	8	4	181	14	7
17.....	3,650	830	8,180	232	10	6	328	18	16
18.....	2,180	262	1,540	258	20	14	196	13	7
19.....	1,520	129	529	264	39	s 32	151	10	4
20.....	1,070	80	231	2,110	699	s 4,490	151	--	e 4
21.....	1,030	83	231	4,160	596	6,690	136	--	--
22.....	768	187	346	1,950	272	s 1,540	126	--	--
23.....	569	85	137	1,020	92	253	121	13	4
24.....	937	146	s 452	683	41	76	146	16	6
25.....	2,110	410	2,340	521	32	45	212	20	11
26.....	1,940	308	1,610	422	24	27	176	17	8
27.....	2,250	345	2,100	362	21	20	136	12	4
28.....	1,370	140	518	677	300	sb 950	121	10	3
29.....	1,330	130	sb 500	1,160	528	1,650	116	11	3
30.....	1,810	176	860	647	152	266	111	11	3
31.....	1,650	146	650	455	136	167	--	--	--
Total.	35,658	--	44,246	22,277	--	17,128	5,849	--	349

Total discharge for year (cfs-days) 1,055,609

Total load for year (tons) 736,131

e Estimated.

a Computed from estimated concentration graph.

s Computed by subdividing day.

b Computed from partly estimated concentration graph.

GREEN RIVER BASIN--Continued

GREEN RIVER AT MUMFORDVILLE, KY.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956

(Methods of analysis: B, bottom withdrawal tube; D, decantation; F, pipet; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment										Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters									
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250		0.350	0.500	1.000
Oct. 1, 1955	7:00 a.m.	5,880		1,400	1,090	37	62	74	92	97	100	--		BSWCM	
Jan. 30, 1956	7:00 a.m.	14,400		1,510	2,370	39	50	63	84	95	99	100		BSWCM	
Feb. 3	11:40 a.m.	32,000		235	384	46	64	85	94	98	100	--		BSWCM	
Feb. 3	11:40 a.m.	32,000		235	440	47	60	78	96	100	--	--		BSNM	
Feb. 18	7:00 a.m.	21,400		492	782	34	48	67	85	97	99	100		BSWCM	
Feb. 20	2:20 p.m.	36,300		337	584	57	73	90	96	98	100	--		BSWCM	
Feb. 21	1:10 p.m.	31,800		128	590	62	75	86	95	99	100	--		BSWCM	
Feb. 26	2:30 p.m.	14,200		435	729	47	56	74	90	97	98	100		BSWCM	
Mar. 15	7:00 a.m.	17,600		417	679	54	56	71	86	96	98	100		BSWCM	
June 2	7:00 a.m.	1,480		446	747	50	72	86	96	99	100	--		BSWCM	
July 14	7:00 a.m.	3,620		2,010	3,110	44	58	73	89	98	99	100		BSWCM	
July 17	7:00 a.m.	4,080		1,010	1,640	47	57	72	91	99	99	100		BSWCM	
Aug. 20	7:00 a.m.	888		530	881	42	57	72	88	98	99	100		BSWCM	

GREEN RIVER BASIN--Continued
BARREN RIVER AT BOWLING GREEN, KY.

LOCATION.--At bridge on U. S. Highways 31W and 68, 600 feet upstream from gage and old bridge, at Bowling Green, Warren County, 6 miles downstream from Drakes Creek, and 9.0 miles upstream from Jennings Creek.

DRAINAGE AREA.--1,680 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses, October 1949 to September 1950.

Water temperatures: October 1949 to September 1950.

Sediment records: November 1952 to September 1956.

EXTREMES, 1953-56.--Water temperatures: Maximum, 83°F Aug. 15-16, 19-20; minimum, 36°F on several days during January.

Sediment concentrations: Maximum daily, 1,100 ppm Jan. 30; minimum daily, 1 ppm Jan. 22-23, Sept. 30.

Sediment loads: Maximum daily, 67,600 tons Jan. 31; minimum less than 0.5 ton Sept. 27-30.

EXTREMES, 1949-56.--Water temperatures: Maximum, 87°F July 1-2, 22, 29, 1952; minimum, freezing point Feb. 2-3, 1951.

Sediment concentrations (1952-56): Maximum daily, 1,880 ppm June 17, 1953; minimum daily, 1 ppm on several days during November, December 1952, October, November 1953, January, September 1956.

Sediment loads (1952-56): Maximum daily, 91,300 tons Mar. 23, 1955; minimum daily, less than 0.5 ton on several days during October, November 1953, September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Continuous ethyl alcohol-acutated thermometer/

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

GREEN RIVER BASIN--Continued
 BARREN RIVER AT BOWLING GREEN, KY.--Continued

Temperature (°F) of water, water year October 1955 to September 1956--Continued
 /Continuous ethyl alcohol-actuated thermometer/

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
25.....	59	59	51	48	41	40	37	36	50	50	50	50	60	60	67	67	77	77	76	76	75	75	87	87
26.....	60	59	48	48	41	41	37	37	51	50	50	50	60	60	68	68	78	77	76	76	75	74	87	86
27.....	60	60	48	46	41	41	37	37	51	51	52	50	60	60	68	68	78	77	76	76	75	74	86	86
28.....	60	60	49	44	41	41	43	43	51	51	52	50	60	60	68	68	78	77	78	78	75	75	85	85
29.....	60	60	44	42	41	41	43	43	--	--	54	50	60	60	70	68	78	77	78	78	75	75	85	85
30.....	59	59	--	--	42	41	49	47	--	--	56	55	--	--	70	70	--	--	78	78	77	77	--	--
31.....	59	59	53	53	40	40	39	38	50	49	51	51	60	60	64	64	75	74	78	78	78	78	71	71
Average.....	64	63	54	53	40	40	39	38	50	49	51	51	60	60	64	64	75	74	78	78	78	78	71	71

GREEN RIVER BASIN--Continued

BARREN RIVER AT BOWLING GREEN, KY.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	2,890	322	s 2,910	199	5	2	283	4	3
2.....	2,760	406	s 3,220	179	6	3	277	7	5
3.....	940	192	487	211	5	3	283	15	11
4.....	544	137	201	304	5	4	307	22	18
5.....	406	93	102	292	4	3	372	31	31
6.....	330	68	60	260	2	1	557	54	81
7.....	378	65	66	238	7	4	566	46	70
8.....	474	47	60	222	12	7	490	37	49
9.....	396	38	41	208	7	4	434	28	33
10.....	324	26	23	198	6	3	389	20	21
11.....	274	19	a 14	190	7	4	361	12	12
12.....	249	27	18	182	7	3	333	6	5
13.....	246	27	18	177	5	2	310	4	3
14.....	244	25	16	179	4	2	289	4	3
15.....	249	25	17	187	5	2	277	3	2
16.....	280	17	13	192	7	4	269	9	6
17.....	286	12	9	198	5	3	260	8	6
18.....	263	11	8	222	6	4	260	8	a 6
19.....	246	12	8	271	8	6	255	8	a 6
20.....	233	8	5	333	8	7	252	8	5
21.....	225	5	3	557	5	8	255	9	6
22.....	214	7	4	566	11	17	252		
23.....	206	4	2	458	17	21	244		
24.....	195	11	6	392	23	24	241	--	e 12
25.....	187	12	6	386	26	27	238		
26.....	177	5	2	482	26	34	238		
27.....	166	2	1	426	21	24	236	23	15
28.....	162	3	1	372	7	7	230	30	a 19
29.....	159	7	3	333	3	3	222	33	20
30.....	162	4	2	301	3	2	219	36	21
31.....	164	4	2	--	--	--	219	35	a 20
Total.	14,029	--	7,328	8,685	--	238	9,418	--	537
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	222	36	22	31,900	754	64,900	3,630	26	255
2.....	225	35	a 20	23,300	186	11,700	3,160	25	a 210
3.....	230	30	a 19	20,000	297	16,000	2,880	16	140
4.....	227	24	15	22,300	236	14,200	2,630	10	71
5.....	225	30	a 18	24,500	112	7,410	2,410	8	52
6.....	219	30	a 18	21,000	76	4,310	2,210	6	36
7.....	217	18	10	15,000	64	2,590	2,120	7	40
8.....	211	20	a 11	7,850	80	1,700	6,990	436	s 10,300
9.....	208	6	3	5,390	61	888	11,600	604	18,900
10.....	203	18	10	4,300	48	557	8,720	128	s 3,270
11.....	200	31	17	3,670	43	426	4,860	46	604
12.....	195	16	8	3,520	32	304	3,940	36	383
13.....	192	3	2	3,100	28	234	4,110	26	288
14.....	192	3	2	2,920	31	244	8,080	208	s 5,260
15.....	192	2	1	4,750	87	s 1,180	15,700	266	11,300
16.....	192	2	1	8,170	185	4,080	16,300	151	6,640
17.....	187	2	1	10,900	330	s 11,200	13,100	43	1,520
18.....	185	2	1	25,300	577	39,400	8,860	37	885
19.....	198	11	6	35,800	354	34,200	6,470	27	472
20.....	200	10	5	31,800	188	16,100	4,800	19	246
21.....	211	2	1	22,000	66	3,920	3,820	15	155
22.....	238	1	1	12,000	63	2,040	3,260	8	70
23.....	249	1	1	6,000	59	956	2,850	6	46
24.....	244	2	1	4,770	48	618	2,520	4	27
25.....	236	2	1	6,430	124	2,150	2,300	4	25
26.....	227	4	2	7,880	157	3,340	2,080	5	28
27.....	225	9	5	6,540	118	2,080	1,930	5	26
28.....	230	11	7	5,280	53	756	1,810	6	29
29.....	1,240	757	s 4,210	4,590	33	409	1,670	11	50
30.....	16,200	1,100	s 45,000	--	--	--	1,560	10	42
31.....	29,400	851	67,600	--	--	--	1,440	--	39
Total.	52,820	--	117,019	380,960	--	247,892	157,810	--	61,409

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.

OHIO RIVER BASIN EXCEPT CUMBERLAND AND TENNESSEE RIVER BASINS

GREEN RIVER BASIN--Continued

BARREN RIVER AT BOWLING GREEN, KY.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	1,330	8	29	1,250	5	17	539	17	25
2.....	1,300	10	35	1,890	47	s 346	580	21	33
3.....	3,540	184	s 1,950	8,280	426	9,520	606	17	28
4.....	6,210	570	9,560	7,760	256	s 5,610	570	14	22
5.....	8,870	593	14,200	4,540	62	760	510	12	16
6.....	6,800	254	4,660	3,190	33	284	482	12	16
7.....	13,900	521	19,600	2,870	26	201	456	12	15
8.....	14,600	266	10,500	3,900	62	683	434	11	13
9.....	10,000	67	1,810	3,360	76	694	418	11	12
10.....	4,960	46	616	2,580	38	265	403	14	15
11.....	3,860	32	334	2,150	23	134	396	11	12
12.....	3,320	28	251	1,840	18	89	386	11	a 11
13.....	2,810	29	220	1,590	16	69	382	10	10
14.....	2,400	25	162	1,410	14	53	375	12	12
15.....	2,530	36	246	1,300	14	49	403	13	14
16.....	4,710	230	b 2,900	1,610	17	74	458	19	23
17.....	4,860	196	2,570	1,260	20	68	410	18	20
18.....	4,060	52	570	1,040	20	56	368	15	15
19.....	3,270	31	274	946	18	46	347	14	13
20.....	2,700	23	168	850	15	34	330	16	14
21.....	2,320	18	113	755	11	22	314	13	11
22.....	2,060	14	78	770	7	14	320	17	15
23.....	1,900	11	56	826	10	22	494	19	25
24.....	1,800	9	44	740	12	24	486	19	25
25.....	1,680	7	32	675	14	26	530	16	23
26.....	1,550	6	25	650	10	18	635	18	31
27.....	1,450	6	23	620	13	22	478	29	37
28.....	1,350	8	29	580	17	27	386	21	22
29.....	1,270	7	24	526	10	14	340	16	15
30.....	1,220	6	20	539	10	14	304	14	11
31.....	--	--	--	539	27	39	--	--	--
Total.	122,630	--	71,099	60,856	--	19,474	13,142	--	554
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.....	280	15	11	414	43	48	289	32	25
2.....	263	15	11	403	38	41	266	30	22
3.....	246	16	11	358	43	42	255	32	22
4.....	241	16	10	442	37	44	222	23	14
5.....	244	14	9	426	31	36	198	15	8
6.....	271	16	12	358	24	23	208	21	12
7.....	289	14	11	295	17	14	438	20	24
8.....	414	13	14	249	24	16	368	21	21
9.....	372	14	14	222	19	11	274	29	21
10.....	314	13	11	203	19	10	227	38	23
11.....	269	11	8	187	19	10	198	31	16
12.....	241	14	9	174	20	9	177	29	14
13.....	233	13	8	162	13	6	162	19	8
14.....	238	18	12	154	6	2	149	16	6
15.....	298	18	14	144	17	7	134	17	6
16.....	1,070	43	s 138	132	19	7	124	13	4
17.....	3,210	470	sb 4,500	122	- 19	6	117	10	3
18.....	2,160	438	2,550	119	25	8	102	8	2
19.....	1,260	223	759	136	18	7	95	14	4
20.....	790	123	262	609	27	44	91	18	4
21.....	570	94	145	2,110	--	e 1,300	85	22	5
22.....	580	88	138	1,450	192	s 787	79	10	2
23.....	575	63	98	705	243	462	75	8	2
24.....	494	53	71	470	160	203	74	6	1
25.....	844	58	132	354	110	105	69	12	2
26.....	765	49	101	289	68	53	72	8	2
27.....	630	69	117	249	66	44	89	2	(t)
28.....	458	81	100	257	48	33	93	2	(t)
29.....	372	52	52	320	45	39	93	2	(t)
30.....	330	44	39	430	39	43	91	1	(t)
31.....	344	39	36	361	33	32	--	--	--
Total.	18,665	--	9,403	12,304	--	3,492	4,914	--	275

Total discharge for year (cfs-days)..... 856,233

Total load for year (tons)..... 538,720

e Estimated.

a Computed from estimated concentration graph.

s Computed by subdividing day.

b Computed from partly estimated concentration graph.

t Less than 0.5 ton.

GREEN RIVER BASIN--Continued
BARREN RIVER AT BOWLING GREEN, KY.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment											Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters								1.000		
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350		0.500
Jan. 30, 1956	6:30 a.m.	11,900		1,290	1,990	37	51	66	86	97	100	--			BSWCM	
Feb. 1	6:30 a.m.	33,600		1,040	921	55	67	86	96	99	100	--			BSWCM	
Feb. 3	3:15 p.m.	19,900		365	1,040	48	58	78	94	99	100	--			BSWCM	
Feb. 3	3:15 p.m.	19,900		365	1,150	38	57	73	94	99	100	--			BSNM	
Feb. 16	8:30 a.m.	8,220		208	798	--	54	68	85	97	99	99	100		BSWCM	
Feb. 18	3:00 p.m.	27,200		441	842	46	65	80	94	100	--	--			BWCM	
Mar. 9	12:30 p.m.	11,800		612	440	43	58	81	92	95	100	--			BSWCM	
Apr. 4	1:15 p.m.	5,980		641	1,420	55	73	89	96	98	99	100			BSWCM	
Aug. 23	6:30 a.m.	780		264	560	81	94	97	98	99	100	--			BSWCM	

GREEN RIVER BASIN--Continued

ROUGH RIVER AT FALLS OF ROUGH, KY.

LOCATION.--At bridge on State Highway 110 at Falls of Rough, Grayson County, 150 feet upstream from gage, 50 feet upstream from Mill Dam, and 3.0 miles downstream from Rock Lick Creek.

DRAINAGE AREA.--500 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1952 to September 1956 (discontinued). Sediment records: October 1952 to September 1956 (discontinued).

EXTREMES, 1952-56.--Water temperatures: Maximum, 75°F on several days during July and August; minimum, 33°F on several days during December and January.

Sediment concentrations: Maximum daily, 1,560 ppm July 17; minimum daily, 1 ppm Nov. 11-14, Jan. 6, 11-17, 21-22.

Sediment loads: Maximum daily, 21,900 tons Feb. 15; minimum daily, less than 0.5 ton on many days during November, December, January, and September.

EXTREMES, 1952-56.--Water temperatures: Maximum, 79°F June 17, 1954, Aug. 6, 1955; minimum, freezing point Jan. 29-31, Feb. 3, 1955.

Sediment concentrations: Maximum daily, 2,460 ppm Mar. 16, 1955; minimum daily, 1 ppm Nov. 11-14, 1955, Jan. 6, 11-17, 21-22, 1956.

Sediment loads: Maximum daily, 24,100 tons Mar. 21, 1955; minimum daily, less than 0.5 ton on many days during October to December 1952, August to December 1953, January, July to September, November, December 1954, November, December 1955, January, September 1956.

REMARKS.--Construction of flood control dam above station was started during spring of 1956. Low flow regulated by small grist mill 50 feet downstream from station. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956
(Once-daily measurement at approximately 5 a.m.)

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	64	51	34	35	39	46	51	60	65	74	89	70
2	64	54	35	38	39	45	--	62	61	74	71	68
3	64	49	38	35	40	--	59	59	59	75	72	66
4	65	46	42	35	40	44	59	59	58	75	72	58
5	66	45	41	35	40	48	55	60	60	75	71	68
6	67	48	42	36	43	50	58	63	60	75	74	68
7	67	44	41	36	42	50	54	65	60	74	73	66
8	62	43	38	35	43	48	51	58	59	75	73	63
9	60	42	38	33	45	47	48	59	59	75	74	87
10	58	42	37	34	44	42	48	61	64	71	72	64
11	58	43	35	35	44	48	49	63	64	71	74	65
12	58	47	34	36	42	46	50	65	66	72	73	65
13	59	49	34	34	41	44	50	67	67	74	73	66
14	58	48	35	33	45	45	52	68	69	73	73	67
15	56	51	33	34	49	43	56	67	70	74	73	68
16	55	50	33	33	46	45	53	61	70	73	73	68
17	54	49	33	33	49	42	49	59	70	71	74	67
18	55	47	35	33	49	45	49	58	71	70	74	63
19	54	48	33	34	47	39	47	59	71	70	75	64
20	50	43	33	34	47	41	48	59	72	70	73	62
21	53	44	33	33	43	42	48	60	73	69	68	59
22	54	44	33	33	42	45	53	59	73	70	67	63
23	54	47	34	33	42	44	--	64	72	71	67	64
24	55	41	35	33	45	46	52	62	73	70	68	63
25	51	42	35	33	51	43	53	59	74	70	65	--
26	51	40	35	33	46	49	56	64	74	70	65	60
27	52	40	--	33	48	50	59	65	74	70	67	60
28	52	37	34	34	44	55	61	64	74	71	68	60
29	53	36	37	36	42	51	65	65	70	70	69	59
30	50	34	--	38	--	49	60	67	73	70	70	60
31	50	--	34	38	--	--	--	69	--	69	70	--
Average	57	45	36	34	44	46	53	62	68	72	71	64

GREEN RIVER BASIN--Continued

ROUGH RIVER AT FALLS OF ROUGH, KY.--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	683	584	s 1,160	23	16	1	50	43	6
2.....	231	282	s 187	27	10	1	124	36	12
3.....	87	138	25	135	15	5	275	48	s 43
4.....	44	115	14	110	44	13	678	160	293
5.....	34	90	8	124	78	26	639	214	369
6.....	29	70	5	84	72	16	347	201	188
7.....	42	52	6	55	34	5	223	104	63
8.....	161	43	19	43	15	2	169	65	30
9.....	203	38	21	38	15	2	134	40	14
10.....	83	35	8	34	8	1	106	35	10
11.....	51	30	4	33	1	(t)	89	26	6
12.....	40	38	4	30	1		75	22	4
13.....	42	44	5	29	1		68	18	3
14.....	69	37	7	37	1		63	15	2
15.....	77	39	8	25	2		60	14	2
16.....	55	30	4	347	36	s 70	54	13	2
17.....	42	32	4	850	614	1,410	55	6	1
18.....	34	20	2	444	551	s 698	56	7	1
19.....	31	22	2	270	306	223	58	11	2
20.....	28	25	2	254	181	124	56	3	(t)
21.....	27	24	2	209	112	63	58	7	1
22.....	25	19	1	138	90	34	55	7	1
23.....	23	20	1	139	80	30	53	4	1
24.....	22	23	1	149	63	25	52	8	1
25.....	20	15	1	158	94	40	51	7	1
26.....	19	12	1	120	113	37	50	7	1
27.....	18	15	1	85	56	13	51	5	1
28.....	18	15	1	69	53	10	50	4	1
29.....	18	11	1	61	45	7	47	2	(t)
30.....	20	10	1	54	42	6	45	3	(t)
31.....	21	14	1	--	--	--	43	3	(t)
Total.	2,277	--	1,507	4,174	--	2,862	3,936	--	1,060
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.....	42	3		5,290	408	5,830	627	37	63
2.....	45	3		6,880	635	11,800	553	25	37
3.....	44	3		8,370	772	17,400	497	11	15
4.....	42	2		8,520	444	10,200	442	15	18
5.....	27	2		6,870	163	3,020	400	11	12
6.....	24	1		4,500	68	826	361	15	15
7.....	32	2		1,810	68	332	2,530	1,540	s 12,600
8.....	36	3		808	55	120	3,980	1,460	15,700
9.....	38	3		677	36	66	4,580	1,110	13,700
10.....	28	2	(t)	604	27	44	3,650	205	2,020
11.....	30	1		972	109	286	1,310	102	361
12.....	38	1		1,020	112	308	1,030	50	139
13.....	32	1		805	87	189	1,020	58	160
14.....	31	1		1,770	278	s 1,800	3,610	505	4,920
15.....	36	1		5,890	1,380	21,900	3,960	392	4,190
16.....	34	1		7,160	800	15,500	4,030	164	1,780
17.....	32	1		7,230	365	7,120	3,770	152	1,550
18.....	33	9	1	7,660	218	4,510	2,720	42	308
19.....	45	17	2	7,380	244	4,860	1,360	47	172
20.....	87	3	1	6,480	104	1,820	875	65	154
21.....	125	1	(t)	4,260	52	598	707	22	42
22.....	154	1	(t)	1,600	56	250	594	12	19
23.....	170	2	1	808	46	100	521	6	11
24.....	154	7	3	2,070	561	s 4,290	462	6	7
25.....	142	6	2	3,060	458	3,620	423	5	6
26.....	113	2	1	3,130	386	3,260	380	6	6
27.....	92	5	1	2,120	226	1,290	359	7	7
28.....	139	18	7	1,070	108	312	337	8	7
29.....	2,120	945	s 6,920	802	51	110	318	7	6
30.....	4,580	1,320	16,300	--	--	--	286	6	5
31.....	5,270	896	12,700	--	--	--	265	4	3
Total.	13,815	--	35,943	109,644	--	121,961	45,957	--	58,033

s Computed by subdividing day.

t Less than 0.5 ton.

GREEN RIVER BASIN--Continued

ROUGH RIVER AT FALLS OF ROUGH, KY.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	248	2	1	216	7	4	1,290	1,040	3,620
2.....	548	190	s 457	669	202	s 460	807	400	872
3.....	717	492	952	543	95	139	453	133	163
4.....	647	190	332	407	77	85	253	93	64
5.....	482	46	60	318	28	24	195	67	35
6.....	797	104	s 284	266	19	14	156	52	22
7.....	1,760	482	2,290	2,090	437	s 3,050	130	45	16
8.....	1,180	288	918	1,360	239	s 983	112	31	9
9.....	779	103	217	714	50	96	99	25	7
10.....	590	52	79	464	28	35	84	20	4
11.....	474	23	29	352	22	21	83	15	3
12.....	404	17	18	290	27	21	77	12	2
13.....	345	12	11	243	16	10	73	10	2
14.....	334	13	12	203	18	10	69	11	2
15.....	2,180	374	s 2,740	432	28	s 41	69	14	3
16.....	2,720	488	3,580	794	89	191	76	15	3
17.....	1,740	148	s 763	492	60	80	67	17	3
18.....	810	42	92	286	32	25	60	19	3
19.....	613	19	31	222	23	14	61	20	3
20.....	496	15	20	181	28	14	154	25	10
21.....	415	18	20	157	22	9	306	62	51
22.....	365	12	12	142	18	7	671	419	759
23.....	338	11	10	130	16	6	331	510	456
24.....	319	11	9	116	17	5	158	226	96
25.....	288	14	11	100	14	4	98	122	32
26.....	267	10	7	143	27	s 12	82	100	22
27.....	252	7	5	252	23	16	70	92	17
28.....	234	7	4	195	27	14	60	74	12
29.....	225	8	5	192	21	11	54	55	8
30.....	227	5	3	125	17	6	55	52	8
31.....	--	--	--	837	296	s 1,330	--	--	--
Total.	20,764	--	12,972	12,931	--	6,737	6,253	--	6,307
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.....	47	50	6	196	70	37	27	5	(t)
2.....	46	39	5	432	162	s 462	27	8	1
3.....	44	38	4	868	532	s 1,550	30	14	1
4.....	44	42	5	407	180	s 218	22	10	1
5.....	42	34	4	162	78	34	22	7	(t)
6.....	43	18	2	105	110	31	25	13	1
7.....	42	16	2	89	88	21	25	13	1
8.....	34	10	1	81	52	11	24	7	(t)
9.....	34	12	1	68	30	6	22	7	(t)
10.....	33	16	1	68	20	4	22	9	1
11.....	32	18	2	59	16	2	21	5	(t)
12.....	36	21	2	57	13	2	21	7	(t)
13.....	28	17	1	56	10	2	22	18	1
14.....	78	20	4	53	9	1	19	16	1
15.....	139	20	8	50	8	1	40	17	2
16.....	1,510	1,160	s 5,550	48	9	1	133	18	6
17.....	1,360	1,560	s 6,600	52	7	1	180	25	12
18.....	278	329	s 278	41	7	1	85	27	6
19.....	103	208	58	42	7	1	42	26	3
20.....	105	142	40	46	11	1	33	30	3
21.....	66	102	18	77	14	3	31	27	2
22.....	121	98	32	94	22	6	37	22	2
23.....	244	79	s 59	67	34	6	18	15	1
24.....	2,460	1,340	s 10,000	48	34	4	18	14	1
25.....	2,900	890	6,970	39	31	3	18	18	1
26.....	1,970	540	2,870	36	27	3	18	14	1
27.....	1,080	525	1,530	36	24	2	22	15	1
28.....	570	310	s 512	36	18	2	18	17	1
29.....	1,220	978	s 3,640	26	22	2	18	14	1
30.....	691	322	s 567	27	20	1	18	12	1
31.....	332	90	81	27	10	1	--	--	--
Total.	15,732	--	38,853	3,493	--	2,420	1,058	--	54
Total discharge for year (cfs-days)									240,034
Total load for year (tons)									288,709

s Computed by subdividing day.

t Less than 0.5 ton.

GREEN RIVER BASIN--Continued

ROUGH RIVER AT FALLS OF ROUGH, KY.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
 (Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
 W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment												Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters											
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Oct. 1, 1955	5:10 a.m.	782		829	1,270	62	80	92	94	98	100						BSWCM
Nov. 17	11:45 a.m.	850		1,000	1,500	67	83	94	98	100	--						BWCM
Jan. 29, 1956	4:05 p.m.	2,700		1,580	2,180	41	51	66	84	97	100						BSWCM
Jan. 31	4:15 p.m.	5,370		858	4,160	43	58	72	85	98	100						BSWCM
Feb. 2	2:30 p.m.	7,250		798	1,260	44	58	70	86	99	100						BSWCM
Feb. 3	7:30 a.m.	8,170		831	2,620	45	59	73	86	96	100						BSWCM
Feb. 3	7:30 a.m.	8,170		831	2,860	45	56	73	87	97	100						BSNM
Feb. 3	5:20 p.m.	8,780		727	1,070	52	62	79	91	99	100						BSWCM
Feb. 15	9:30 a.m.	6,120		1,720	2,420	42	52	65	84	97	100						BSWCM
Feb. 15	8:10 p.m.	6,530		1,200	2,650	46	56	72	88	97	100						BSWCM
Feb. 17	5:30 a.m.	7,210		496	773	63	78	90	97	99	100						BSWCM
Feb. 26	11:30 a.m.	3,180		362	572	55	78	85	95	100	--						BWCM
Mar. 7	5:45 p.m.	3,010		1,680	2,010	43	52	70	87	99	100						BSWCM
Mar. 9	5:10 a.m.	4,560		1,870	1,480	50	55	71	87	100	--						BWCM
Apr. 3	4:45 p.m.	629		904	987	65	80	92	99	100	--						BWCM
May 7	11:30 a.m.	2,690		887	1,290	38	44	55	75	92	99	100					BSWCM
June 1	4:40 a.m.	1,380		1,440	1,590	59	63	80	94	99	100						BSWCM
July 16	11:50 a.m.	1,500		1,450	2,030	47	63	79	96	100	--						BWCM
July 24	9:25 a.m.	3,070		1,970	1,410	38	45	59	78	97	100						BSWCM
July 24	9:25 a.m.	3,070		1,970	1,590	26	33	54	73	97	100						BSNM
July 29	9:30 a.m.	2,280		1,780	2,180	42	52	65	81	94	100						BSWCM
Aug. 3	4:55 a.m.	1,650		933	1,340	46	57	71	85	96	100						BSWCM

GREEN RIVER BASIN--Continued

ROUGH RIVER AT DUNDEE, KY.

LOCATION.--At auxiliary gaging station at bridge on State Highway 59 at Dundee, Ohio County, and 7.1 miles downstream from Caney Creek. DRAINAGE AREA.--775 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1949 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 80° F. July 1-3, 5, 8; minimum, freezing point on many days during November to January.

REMARKS.--Discharge records for gaging station near Dundee, for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

Twice-daily measurements at approximately 7 a. m. and 5 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.....	65	68	50	53	--	32	38	42	39	39	46	46	54	55	60	63	65	67	76	80	73	74	75	75
2.....	65	68	52	59	36	38	37	39	40	39	45	49	54	59	63	62	66	66	78	80	73	75	72	74
3.....	64	69	46	49	42	45	34	38	39	40	47	48	59	61	62	64	65	66	79	80	75	74	71	73
4.....	65	69	38	45	42	43	35	32	39	39	46	48	60	61	61	65	64	64	79	79	74	75	71	74
5.....	67	69	40	48	40	43	34	39	40	43	47	51	59	62	62	63	63	65	79	80	76	78	71	73
6.....	66	71	48	48	39	41	35	40	42	43	51	51	61	63	65	65	64	66	79	79	76	77	71	71
7.....	67	68	40	48	40	43	33	37	42	45	55	54	57	58	62	63	62	64	76	79	75	77	68	70
8.....	64	65	33	39	39	41	33	34	45	45	54	52	54	52	52	53	57	68	76	80	75	77	68	68
9.....	59	65	40	44	38	38	--	--	31	43	46	51	52	51	52	61	66	67	71	77	78	75	69	68
10.....	58	64	42	41	34	34	--	32	46	48	49	50	52	50	52	67	67	68	73	72	76	75	68	66
11.....	50	66	44	48	--	32	35	33	44	44	49	49	50	51	64	68	68	70	74	77	75	77	65	61
12.....	60	74	46	50	--	34	35	34	43	42	47	47	52	54	65	67	70	73	74	75	75	78	66	68
13.....	68	71	52	55	--	36	32	35	41	45	47	47	52	55	68	68	72	74	74	75	76	79	67	70
14.....	68	72	53	54	34	31	32	34	44	47	46	46	54	56	69	68	73	74	74	76	77	78	68	72
15.....	55	61	55	58	--	32	33	31	46	47	40	45	55	56	67	65	73	75	75	77	76	78	70	73
16.....	55	58	60	50	--	31	--	32	45	47	45	43	55	52	67	64	73	75	75	75	74	76	70	72
17.....	53	54	48	46	--	33	32	32	50	50	44	46	52	54	63	65	74	75	73	74	75	77	71	71
18.....	52	54	40	46	35	36	32	31	47	46	46	46	52	53	60	60	75	77	72	74	76	78	69	68
19.....	53	56	44	42	40	42	33	32	45	44	45	45	50	53	63	64	76	78	73	75	78	79	66	67
20.....	50	55	37	43	31	32	32	33	46	45	45	46	50	52	62	63	75	78	72	75	75	76	65	65
21.....	54	57	43	46	32	32	32	32	45	47	45	47	51	52	64	65	75	78	73	76	71	70	62	64
22.....	54	59	45	48	--	37	32	32	44	43	47	48	54	52	64	66	76	77	74	77	88	70	63	65
23.....	57	65	46	48	38	40	32	31	42	44	48	49	53	56	67	68	75	76	73	72	87	70	64	63
24.....	55	55	40	44	38	40	--	31	45	47	49	49	55	57	65	65	75	78	72	71	68	71	63	64
25.....	45	55	39	42	39	41	32	32	46	45	48	50	55	58	63	66	75	78	71	72	69	71	62	63
26.....	54	51	35	37	38	40	33	32	44	42	49	55	57	63	64	64	77	78	70	73	69	71	62	63
27.....	50	53	37	42	36	40	32	32	46	49	52	56	60	66	65	68	76	78	72	74	70	73	61	61
28.....	53	51	38	33	35	40	34	38	48	47	55	66	65	66	76	76	78	78	71	74	71	73	60	63
29.....	53	54	33	32	40	40	36	37	45	47	54	55	65	64	67	72	75	79	73	74	72	73	61	62
30.....	50	50	--	--	--	38	36	40	--	--	53	54	63	60	68	74	76	78	72	74	73	76	60	62
31.....	49	53	--	--	--	34	36	39	40	--	53	54	63	55	74	72	--	--	72	74	73	75	--	--
Average.....	57	61	43	46	43	37	43	34	44	45	48	49	55	57	64	66	71	73	74	76	73	75	66	68

a Includes estimated temperature, 31° F., on missing days.

GREEN RIVER BASIN--Continued
POND RIVER NEAR SACRAMENTO, KY.

LOCATION.--At bridge on State Highway 85, 12 miles upstream from mouth, 3.0 miles southwest of Sacramento, McLean County, and 3.9 miles downstream from Log Creek, and 45.5 miles downstream from gaging station near Apex, Christian County.

DRAINAGE AREA.--523 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1955 to August 1956.

REMARKS.--Stream receives drainage from strip mine area. No discharge records are available for this station.

Chemical analyses, in parts per million, October 1955 to August 1956

Date of collection	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- gan- ese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Acidity (H ⁺)		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
															Calcium, mag- nesium	Non- carbon- ate	Imme- diate	Poten- tial free			
Sept. 29, 1955.....	10	0.9	0.31	9.1	90	42	82	5.8	0	534	14	0.6	0.8	830	400	400	0.9	1.0	1,090	4.5	1
Oct. 31.....	15	23	13	13	151	85	75	4.4	0	1,051	14	1.9	0.6	1,452	726	726	5.0	5.4	1,970	3.10	3
Dec. 7.....	14	9.4	12	12	140	75	64	4.6	0	758	42	1.4	0.9	1,275	658	658	2.8	3.2	1,630	3.40	3
Jan. 9, 1956.....	15	16	4.3	13	155	72	82	4.9	0	900	27	1.2	0.5	1,317	663	663	2.9	3.4	1,590	3.45	1
Feb. 16.....	4.7	.0	.76	.31	14	3.6	2.5	1.8	14	40	2.6	.1	.9	101	50	38	.2	.2	129	6.2	8
Mar. 28.....	5.8	.2	.53	.23	21	6.1	4.9	1.2	21	67	3.0	.2	.4	120	78	60	.1	.0	198	6.6	6
Apr. 25.....	7.9	.1	.28	.49	28	8.5	5.5	1.7	28	84	4.5	.3	.5	157	105	82	.1	.0	246	6.5	8
May 21.....	9.4	.1	.84	.69	29	8.8	5.7	1.5	24	89	3.8	.3	.7	175	109	89	.1	.0	259	6.6	5
July 16.....	19	25	3.5	16	156	72	72	5.4	0	1,010	19	2.4	.4	1,460	685	685	3.4	4.0	1,910	3.10	2
Aug. 13.....	6.5	1.3	.24	2.9	42	14	16	3.8	0	202	4.5	.4	.5	317	162	162	.3	.4	489	4.00	1

WABASH RIVER BASIN

WABASH RIVER AT LAFAYETTE, IND.

LOCATION.--Temperature recorder at gaging station on right bank 20 feet downstream from Brown Street Bridge in Lafayette, Tippecanoe County, 5.1 miles downstream from Wildcat Creek, and at mile 311.9.

DRAINAGE AREA, 247 square miles.

RECORDS AVAILABLE: July 1954 to September 1956.

REMARKS.--Water temperatures: Maximum, 76° F. June 20-21, 22-20; minimum, freezing point on several days during December.

EXTREMES, 1955-56.--Water temperatures: Maximum, 90° F. July 30-31, 1954; minimum, freezing point on many days during winter months.

EXTREMES, 1954-55.--Water temperatures: Maximum, 90° F. July 30-31, 1954; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Some regulation caused by power dams above station.

Temperature (°F) of water, December 1955 to September 1956

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

WABASH RIVER BASIN
VERMILION RIVER NEAR CATLIN, ILL.

LOCATION.--Temperature recorder at gaging station on right bank, 75 feet upstream from Butler Branch bridge, 150 feet upstream from Butler Branch, 0.1 mile downstream from Salt Fork, 2 1/2 miles northwest of Catlin, Vermilion County.

DRAINAGE AREA--969 square miles.

RECORDS AVAILABLE--Water temperatures: December 1952 to September 1956.

EXTREMES, 1952-56.--Water temperatures: Maximum, 82°F June 13, 18, July 2, 27-28; minimum, 33°F on many days during winter months, February 14, 1954; minimum, freezing point Jan. 13, 1953, Feb. 6-10, 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, 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.....	67	63	48	47	34	34	34	33	34	34	40	38	52	47	55	51	68	62	81	74	75	71	78	71
2.....	65	61	50	48	34	34	33	33	34	34	42	40	56	52	57	55	62	60	80	75	72	71	75	68
3.....	66	61	50	48	34	34	33	33	34	34	44	42	64	56	61	56	62	60	80	75	72	70	75	68
4.....	68	65	48	47	35	34	34	33	34	34	43	41	63	57	64	60	65	60	78	74	70	69	77	70
5.....	68	67	48	48	35	34	34	33	34	34	43	43	62	55	64	61	69	64	75	72	73	75	77	70
6.....	70	68	48	48	34	34	34	33	33	33	52	47	64	56	70	63	70	66	74	70	78	76	76	70
7.....	69	67	48	46	34	34	34	33	34	34	52	46	62	52	68	65	70	68	76	71	78	74	70	64
8.....	67	64	46	44	34	34	34	34	34	34	46	40	52	48	65	60	72	68	77	73	76	74	69	62
9.....	64	62	44	44	34	34	34	34	34	34	40	38	50	48	64	62	74	68	74	69	73	70	62	60
10.....	63	62	45	44	34	34	34	34	34	34	43	40	50	49	66	64	77	70	73	68	78	73	69	65
11.....	64	62	47	45	34	34	34	34	34	34	44	43	55	49	72	68	80	73	76	70	79	73	69	64
12.....	65	64	48	47	34	34	34	34	34	34	43	41	56	52	78	70	81	75	74	70	81	75	73	65
13.....	64	61	54	48	34	34	34	34	34	34	41	39	59	53	81	74	82	76	74	70	78	75	76	68
14.....	61	59	54	52	34	34	34	34	34	34	40	39	61	55	78	72	80	76	73	70	80	74	74	70
15.....	59	58	56	52	34	34	34	34	37	33	41	39	60	57	72	65	81	76	72	70	80	75	72	67
16.....	58	56	56	48	34	34	34	34	38	37	40	39	57	53	86	82	80	76	70	69	77	74	74	68
17.....	56	48	43	34	34	34	34	34	37	37	41	39	53	50	90	82	80	78	69	69	79	72	72	66
18.....	54	43	41	40	34	34	34	34	38	38	42	41	50	48	90	82	82	78	69	68	81	75	67	62
19.....	52	41	40	34	34	34	34	34	38	38	42	41	50	48	91	85	78	76	69	69	78	72	66	62
20.....	55	52	40	39	34	34	34	34	38	38	44	42	59	53	86	83	74	71	73	70	74	69	63	58
21.....	57	55	40	39	34	34	34	34	38	38	45	43	61	53	69	64	74	69	73	70	74	67	63	56
22.....	57	54	47	40	34	34	34	34	38	37	46	45	58	55	74	67	71	69	74	70	73	66	69	61
23.....	60	56	48	46	34	34	34	34	38	37	46	46	55	53	72	66	72	70	72	71	75	67	68	62
24.....	58	53	46	42	34	34	34	34	42	38	46	45	59	51	69	63	74	71	74	70	75	68	66	59
25.....	54	51	42	42	33	33	34	34	44	42	48	45	56	54	68	62	75	73	76	71	75	67	66	59
26.....	55	52	42	40	33	33	34	34	42	41	52	47	56	53	65	64	75	73	79	73	76	67	67	60
27.....	54	51	40	38	33	33	34	34	42	40	50	45	52	50	65	63	75	72	79	70	73	70	66	61
28.....	52	49	38	36	33	33	34	34	39	38	52	48	61	57	68	65	76	72	80	79	79	72	65	58
29.....	54	50	38	36	33	33	34	34	38	37	52	48	62	61	68	65	75	70	80	77	78	74	66	60
30.....	50	48	36	34	34	34	34	34	--	--	47	47	57	52	70	68	76	72	79	72	79	74	66	61
31.....	48	47	--	--	34	34	34	34	--	--	48	44	--	--	69	68	--	--	78	73	80	73	--	--
Average.....	60	56	46	44	34	34	34	34	37	36	45	43	58	53	68	64	74	70	76	72	77	72	70	64

WABASH RIVER BASIN--Continued

WABASH RIVER AT RIVERTON, IND.

LOCATION.--Temperature recorder at gaging station on left bank at downstream side of Illinois Central Railroad bridge at Riverton, Sullivan County, 0.6 mile downstream from Turtle Creek and at mile 162.0.

DRAINAGE AREA--13,100 square miles, approximately.

RECORDS AVAILABLE--Water temperatures: July 1954, to September 1956.

EXTREMES, 1955-56.--Water temperatures: July 1954, to September 1956.

EXTREMES, 1954-56.--Water temperatures: Maximum, 84°F Aug. 15-17; minimum, 35°F on several days during December, January, and February.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, continuous ethyl alcohol-actuated thermometer/

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	56	55	39	38	39	39	37	36	43	42	50	49	60	60	71	71	81	80	82	82	82	82
2.....	69	68	55	54	38	38	38	38	36	35	43	42	49	49	59	59	70	70	81	80	82	81	82	81
3.....	68	67	55	54	38	37	38	38	35	35	42	42	52	52	59	58	70	69	81	81	81	81	81	80
4.....	67	67	55	54	38	37	38	38	36	35	43	42	53	52	58	58	69	69	82	81	81	81	81	80
5.....	67	67	54	50	39	38	38	38	36	36	43	43	56	55	58	58	69	69	82	81	82	81	81	81
6.....	68	67	50	50	39	39	38	38	36	36	46	45	56	56	60	59	70	69	81	80	82	82	81	81
7.....	68	67	50	49	39	39	38	38	36	36	47	46	56	56	61	60	72	71	80	80	82	82	81	79
8.....	67	66	49	48	39	39	38	38	37	36	47	47	56	54	62	61	73	72	80	79	82	82	78	77
9.....	66	65	48	47	39	38	38	38	37	37	47	47	54	53	62	62	74	73	79	79	82	82	78	77
10.....	65	64	47	46	38	37	38	37	39	39	47	47	53	51	64	62	74	74	79	78	83	82	77	77
11.....	64	63	46	46	37	36	37	37	39	39	47	46	51	50	66	64	75	74	78	78	82	82	77	76
12.....	63	63	47	46	36	36	37	36	39	38	46	46	50	50	68	66	76	75	78	78	83	82	--	--
13.....	63	63	49	47	36	36	37	36	38	37	46	46	51	50	70	68	77	76	78	78	83	82	--	--
14.....	63	62	50	49	36	36	37	37	37	37	47	47	53	51	70	70	78	77	78	77	83	83	--	--
15.....	62	61	53	50	36	36	37	37	38	37	47	47	54	53	70	70	79	79	78	78	84	83	--	--
16.....	61	61	55	53	36	35	37	37	38	38	47	47	54	54	69	68	79	78	78	78	84	84	--	--
17.....	61	60	55	52	35	35	37	36	38	38	47	47	54	54	68	68	79	79	78	78	84	83	--	--
18.....	60	60	52	50	35	35	36	36	39	38	47	47	54	54	68	67	79	79	78	78	83	83	--	--
19.....	60	60	50	46	35	35	36	36	39	39	47	47	54	53	68	68	80	79	78	77	83	83	--	--
20.....	60	60	46	45	35	35	37	36	39	39	47	46	54	53	68	67	80	79	77	77	83	81	--	--
21.....	60	60	45	44	35	35	37	37	39	39	46	46	54	53	68	67	79	78	78	78	81	80	--	--
22.....	60	60	44	43	35	35	37	36	39	39	46	46	54	54	69	68	80	79	78	78	80	80	--	--
23.....	61	60	44	43	36	35	36	36	39	38	47	46	54	54	70	69	80	79	78	78	80	79	--	--
24.....	61	61	44	44	38	38	36	35	39	39	47	47	55	54	70	70	79	79	78	78	80	80	--	--
25.....	61	60	44	44	40	38	35	35	43	39	47	47	56	55	70	69	79	79	79	79	80	80	--	--
26.....	60	59	44	44	40	40	35	35	44	43	49	47	55	55	69	68	80	79	80	79	81	80	--	--
27.....	60	59	44	44	40	39	38	35	44	44	50	48	58	58	67	66	80	80	80	80	81	81	--	--
28.....	60	60	44	44	40	39	38	35	44	44	50	48	58	58	67	67	81	81	82	82	82	81	--	--
29.....	60	58	42	40	40	39	37	36	44	43	50	50	60	60	68	67	81	81	82	82	82	82	--	--
30.....	58	56	40	39	39	39	37	37	--	--	50	50	61	60	70	68	81	81	82	82	82	82	--	--
31.....	56	56	--	--	39	39	37	37	--	--	50	50	--	--	70	70	--	--	80	79	82	82	--	--
Average.....	63	62	48	47	38	37	37	37	39	38	47	46	54	53	66	65	76	76	80	79	82	82	--	--

WABASH RIVER BASIN--Continued
WHITE RIVER NEAR NOBLESVILLE, IND.

LOCATION.--Temperature recorder at gaging station near center of span on downstream side of highway bridge, 1 mile west of Strawtown, 7 miles northeast of Noblesville, Hamilton County, and 9.5 miles upstream from Cicero Creek.

DRAINAGE AREA.--814 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1953 to September 1956. 5; minimum, 33°F Jan. 31, Feb. 2.

EXTREMES, 1953-56.--Water temperatures: Maximum, 83°F July 27, 28 Aug.; minimum, 33°F Jan. 31, Feb. 2.

EXTREMES, 1953-56.--Water temperatures: Maximum, 88°F July 14, 1954; minimum, 33°F Jan. 31, Feb. 2.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in NSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, 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	61	49	48	34	34	36	35	34	34	42	40	50	45	56	52	64	60	79	72	74	73	77	72
2.....	62	59	52	50	36	34	37	36	35	33	45	42	54	50	58	54	60	58	81	76	76	74	77	69
3.....	61	58	51	49	42	38	38	37	36	34	45	45	58	54	62	58	59	58	80	78	76	73	74	70
4.....	63	61	49	46	43	42	38	36	36	34	45	43	58	55	63	59	62	58	76	74	80	74	74	70
5.....	63	63	46	44	42	38	38	37	36	34	48	44	55	52	63	59	66	61	75	72	83	78	75	72
6.....	65	63	47	46	38	37	39	38	36	36	53	48	54	52	66	60	68	66	74	71	82	77	74	71
7.....	65	62	47	45	39	38	39	38	36	36	53	49	54	49	65	62	70	65	76	70	78	74	71	67
8.....	62	60	49	45	44	39	38	38	36	36	49	42	49	45	63	59	70	67	76	73	78	74	68	64
9.....	60	58	44	43	39	38	38	36	34	37	44	40	46	44	63	60	72	67	74	72	77	73	66	64
10.....	58	57	44	42	38	35	38	37	36	37	47	42	46	46	66	63	74	68	74	70	78	74	67	66
11.....	60	57	46	44	38	33	37	35	38	38	47	45	52	47	70	65	76	70	74	70	78	74	68	65
12.....	60	58	50	46	35	34	38	37	38	38	46	45	54	50	74	68	76	72	74	71	80	75	70	66
13.....	60	57	54	50	35	34	38	36	39	38	46	43	56	52	78	71	78	74	73	70	80	75	72	69
14.....	58	57	54	53	38	35	36	35	41	39	45	42	57	53	74	70	76	74	76	70	78	74	73	72
15.....	58	56	54	53	38	35	36	36	41	40	46	43	58	55	70	64	77	74	74	72	79	74	72	69
16.....	56	54	55	50	35	34	37	36	40	38	44	42	56	52	64	61	78	74	74	72	78	74	72	69
17.....	54	53	50	44	34	34	37	35	38	38	43	41	52	50	64	60	79	76	73	71	79	74	72	69
18.....	54	52	44	40	36	34	36	36	40	38	42	41	50	47	66	60	76	74	74	70	81	77	69	65
19.....	54	52	41	40	36	34	36	35	40	38	42	39	51	45	68	63	73	72	74	72	80	74	66	61
20.....	54	52	42	41	34	34	36	36	39	38	44	40	53	47	67	62	76	73	73	70	74	71	64	61
21.....	55	53	43	42	34	34	37	36	40	38	46	42	56	49	87	64	78	74	73	70	72	69	62	58
22.....	54	52	46	43	34	34	37	37	39	38	46	44	55	52	70	66	78	75	76	70	72	69	65	62
23.....	56	53	48	47	37	34	37	34	39	38	47	45	52	49	87	64	76	73	74	72	72	68	66	65
24.....	56	51	47	43	40	37	34	34	42	38	48	45	54	49	64	62	78	74	75	71	72	68	63	61
25.....	51	49	43	42	41	40	34	34	44	42	47	45	53	50	85	61	76	74	77	72	72	69	64	61
26.....	52	50	42	41	41	40	34	34	44	43	50	46	54	50	63	61	76	74	80	74	73	69	64	62
27.....	54	52	42	41	40	38	34	34	43	41	49	48	60	53	83	62	75	72	83	77	76	71	64	62
28.....	54	52	41	35	38	37	34	34	41	39	48	46	62	59	64	63	75	72	83	80	78	74	63	60
29.....	54	51	35	34	40	38	36	34	40	38	46	46	62	59	85	64	75	70	81	77	76	74	64	61
30.....	51	50	34	34	40	38	36	34	--	--	45	44	59	54	68	66	74	70	78	74	77	74	64	63
31.....	50	48	--	--	38	36	34	33	--	--	47	43	--	--	87	65	--	--	77	73	73	75	--	--
Average.....	57	55	46	44	38	36	36	35	39	38	46	44	54	50	66	62	73	70	76	72	77	73	69	66

WABASH RIVER BASIN--Continued

WHITE RIVER AT NOBLESVILLE, IND.

LOCATION.--Temperature recorder at gaging station on right bank at downstream side of Logan Street Bridge in Noblesville, Hamilton County, 1½ miles up-stream from Cicero Creek, and 3½ miles below dam at Clare.

DRAINAGE AREA.--837 square miles.

RECORDS AVAILABLE.--Water temperatures: November 1952 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 89°F July 27; minimum, freezing point on several days during January to February.

EXTREMES, 1952-56.--Water temperatures: Maximum, 94°F Aug. 1, 1953; minimum, freezing point on several days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Flow regulated by power plant above station.

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

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WABASH RIVER BASIN--Continued

WHITE RIVER NEAR NORA, IND.

LOCATION.--Temperature recorder at gaging station on downstream side of center pier of bridge on State Highway 100, 2 miles east of Nora, Marion County, and 14 miles upstream from Fall Creek.

DRAINAGE AREA.--1,200 square miles.

RECORDS AVAILABLE.--Water temperatures: June 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 84°F July 28; minimum, 34°F on several days during December and January.

EXTREMES, 1954-56.--Water temperatures: Maximum, 89°F July 14, 1954; minimum, freezing point Feb. 2, 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, 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	68	54	53	38	38	38	38	34	34	41	39	47	46	56	54	66	62	78	75	78	76	76	73
2.....	68	67	54	53	39	38	38	38	34	34	42	41	50	47	56	55	62	61	81	77	80	76	73	72
3.....	67	66	54	51	41	39	38	38	35	34	43	42	55	50	60	55	61	61	80	78	78	73	72	72
4.....	67	66	51	50	43	41	38	38	36	35	43	42	56	54	61	59	63	60	78	78	80	78	74	72
5.....	67	67	60	48	41	39	38	38	36	35	48	43	54	53	62	60	66	62	78	76	82	80	76	72
6.....	69	67	49	48	39	38	39	38	36	36	48	45	53	52	65	60	69	66	76	75	82	80	76	72
7.....	69	68	49	48	38	38	39	39	37	36	50	48	53	49	63	62	70	68	78	74	80	78	72	68
8.....	68	65	49	48	38	38	39	39	37	37	49	43	49	46	64	60	70	67	78	76	79	77	71	65
9.....	65	64	48	47	38	38	38	37	37	36	45	42	46	45	63	61	73	69	74	73	78	73	71	65
10.....	64	63	47	46	38	38	37	37	36	36	44	43	46	46	66	62	74	71	73	72	79	77	70	66
11.....	64	63	48	47	38	38	37	37	36	36	45	44	49	46	68	66	75	73	76	73	79	77	69	67
12.....	64	64	50	48	38	36	38	37	36	36	45	44	51	49	72	68	79	74	76	74	78	77	72	67
13.....	64	63	53	50	36	38	38	37	36	36	44	44	54	50	73	70	79	75	74	73	78	76	74	70
14.....	64	63	54	53	36	36	38	38	37	37	44	43	54	53	72	70	78	74	76	73	76	76	75	71
15.....	63	62	56	54	36	36	38	38	40	39	45	44	56	54	70	65	77	75	78	74	78	76	73	70
16.....	62	60	57	54	36	35	38	38	39	37	45	43	55	52	65	62	78	75	74	73	78	76	74	70
17.....	60	59	54	46	38	35	39	37	37	37	43	42	52	50	64	61	77	77	75	73	76	76	74	70
18.....	59	58	49	44	38	35	37	37	36	36	41	40	50	47	65	61	77	74	76	73	76	76	72	67
19.....	58	57	44	43	38	33	37	36	37	37	41	38	50	47	63	60	74	74	76	74	78	76	68	64
20.....	58	57	44	43	35	34	36	36	37	37	42	40	51	48	66	63	76	75	76	74	76	74	66	61
21.....	59	58	44	43	35	34	37	36	38	37	43	42	53	49	65	64	78	75	76	75	--	--	66	60
22.....	58	58	46	44	35	35	37	37	38	38	43	43	53	51	69	65	77	76	74	--	--	--	87	83
23.....	60	58	48	47	36	35	37	37	38	38	45	43	51	50	68	66	76	74	76	75	--	--	87	85
24.....	60	57	48	46	38	36	37	36	40	38	46	45	53	49	66	64	79	75	76	74	--	--	88	82
25.....	56	56	46	45	39	38	36	35	44	40	45	45	53	51	65	63	78	76	76	76	--	--	88	81
26.....	57	56	45	44	40	39	35	35	43	41	47	45	53	50	65	63	75	77	79	76	--	--	88	81
27.....	58	56	44	44	40	40	35	35	41	41	47	47	57	53	63	62	77	75	83	79	--	--	88	81
28.....	58	58	44	40	40	38	35	35	41	38	47	46	60	57	64	63	77	75	84	82	--	--	87	83
29.....	58	56	40	38	39	38	36	35	39	38	47	46	60	59	66	64	77	74	83	80	75	75	66	61
30.....	56	54	38	38	39	39	36	36	--	--	46	45	59	55	67	66	76	73	80	77	75	74	67	63
31.....	55	54	--	--	39	38	36	34	--	--	46	44	--	--	67	66	--	--	78	76	75	75	--	--
Average.....	61	61	49	47	38	37	37	37	38	37	45	43	53	50	65	63	74	72	77	75	--	--	71	66

WABASH RIVER BASIN--Continued

EAST FORK WHITE RIVER AT SEYMOUR, IND.

LOCATION.--Temperature recorder at gaging station on left bank, 1,700 feet downstream from highway bridge, 1 mile north of Seymour, Jackson County, 9.6 miles downstream from Sand Creek, and at mile 219.2.

DRAINAGE AREA.--2,333 square miles.

RECORDS AVAILABLE.--Water temperatures:

EXTREMES, 1955-56.--Water temperatures: Maximum, 79°F on several days during July and August; minimum, freezing point Jan. 30-31, Feb. 2, 3.

EXTREMES, 1954-56.--Water temperatures: Maximum, 84°F Aug. 2-7, 1955; minimum, freezing point on several days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Regulation at low flow by pumping plant 1,200 feet upstream from recorder.

Temperature (°F) of water, water year October 1955 to September 1956

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

TRADEWATER RIVER BASIN

TRADEWATER RIVER AT OLNEY, KY.

LOCATION.--At gaging station at highway bridge at Olney, Hopkins County, 1.1 miles upstream from Cave Creek, 5.1 miles downstream from Flynn Creek, half a mile northeast of Princeton.

DRAINAGE AREA.--255 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1949 to August 1950, October 1951 to September 1956.

Water temperatures: October 1951 to September 1956.

Sediment records: October 1951 to September 1956.

EXTREMES, 1935-56.--Dissolved solids: Maximum, 1,278 ppm Dec. 23-26; minimum, 89 ppm Feb. 19-21.

Hardness: Maximum, 746 ppm Dec. 23-26; minimum, 34 ppm Mar. 9.

Specific conductance: Maximum, 1,380 micromhos Dec. 23, 25, 26; minimum daily, 83 micromhos Mar. 9.

Water temperatures: Maximum, 82 F Aug. 13; minimum, 54 F Dec. 12, 13, 16, 19, Jan. 26.

Sediment concentrations: Maximum daily, 350 ppm Mar. 9; minimum daily, no flow Oct. 1-3.

EXTREMES, 1951-56.--Dissolved solids: Maximum daily, 1,278 ppm Dec. 23-26, 1955 Oct. 1-3.

Hardness: Maximum daily, 746 ppm Dec. 23-26, 1955 Oct. 1-3.

Specific conductance: Maximum daily, 1,380 micromhos Dec. 23, 25, 26, 1955; minimum daily, 51.4 micromhos Mar. 23, 1952.

Water temperatures: Maximum, 87 F June 26, 29, 1952; minimum, freezing point on several days during December 1951, December 1952, January 1954, January and February 1955.

Sediment concentrations (1952-56): Maximum daily, 764 ppm June 5, 1954; minimum daily, no flow on many days during October, November 1952, August to December 1953, August, September and October 1955.

Sediment loads (1952-56): Maximum daily, 1,370 tons Mar. 6, 1953; minimum daily, 0 tons October, November 1952, August to December 1953, August, September 1954, September and October 1955.

REMARKS.--Acidity determined to pH 7.0. Records of specific conductance of daily samples from October 1952 to September 1956 available in district office at Columbus, Ohio. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Immediate acidity (H ⁺)	Potential acidity (H ⁺)	Specific conductance (micro-mhos at 25°C)	pH	Col or
																Calcium	Non-carbonate					
Oct. 1-24, 1955	4.61	3.9	--	0.78	0.13	18	6.4	3.6	2.2	50	32	4.5	0.2	0.5	103	74	30	0.0	0.0	175	7.4	18
Oct. 25-Nov. 14	.86	3.8	--	.43	.51	18	7.6	6.5	4.0	60	38	5.2	.4	.1	120	76	27	--	--	202	7.4	14
Nov. 15-25	3.14	6.0	--	.42	1.4	21	7.7	6.8	3.9	56	54	5.4	.3	.2	142	84	38	0	0	233	7.2	28
Nov. 26-Dec. 5	2.48	5.3	--	.41	1.9	24	8.4	6.3	4.2	60	59	4.8	.3	.2	155	94	45	0	0	244	7.2	30
Dec. 6-12	23.0	13	1.8	1.1	6.6	91	44	14	5.0	2	416	7.0	.7	1.0	627	408	406	.5	.6	784	4.8	3
Dec. 13-22	3.44	19	11	.54	13	140	75	17	4.8	0	705	5.0	1.1	.1	1,066	658	658	2.0	2.4	1,180	4.45	3
Dec. 23-26	2.80	24	14	.64	15	159	85	22	4.8	0	847	6.0	1.0	.5	1,278	746	746	2.6	3.0	1,360	4.45	3
Dec. 27-Jan. 9, 1956	1.88	20	11	.48	--	140	81	18	4.5	0	714	10	.9	.3	1,087	682	682	2.3	3.0	1,260	4.40	2
Jan. 10-24	2.77	18	12	.86	11	130	63	16	4.8	2	613	12	.9	.3	928	558	557	2.3	1.6	1,080	4.6	4
Jan. 25-30	228	16	9.7	1.5	11	113	62	18	4.4	0	575	7.5	1.0	.6	878	537	537	1.2	1.5	1,050	4.30	3
Jan. 31-Feb. 4	2,484	6.3	--	1.9	.12	11	4.2	3.3	2.7	7	40	4.0	.1	1.6	92	45	39	0	0	119	6.5	24
Feb. 5-7	2,747	6.4	--	.58	.04	15	7.1	2.7	1.9	3	68	2.3	--	1.3	118	67	64	0	0	174	6.1	14
Feb. 8-15	893	8.6	--	.48	.05	23	12	4.5	1.5	3	107	2.4	--	2.0	174	107	104	0	0	261	5.8	7
Feb. 16-18	1,497	7.8	.1	.61	.83	17	6.2	3.8	1.5	10	62	2.8	.2	1.2	120	68	60	0	0	166	6.7	7

Feb. 19-21, 1956.	2,510	6.2	0.2	0.83	0.30	11	4.6	2.3	1.7	12	42	1.8	0.2	0.8	89	46	36	0.0	0.0	135	6.7	9
Feb. 22-26.....	1,134	10.6	.2	.56	2.1	31	9.5	5.6	1.6	6	91	2.2	.2	1.2	157	91	87	.0	.0	223	6.2	3
Mar. 9.....	1,020	7.8	---	1.37	2.5	31	16	5.4	1.4	3	147	3.0	.4	1.1	237	143	141	.0	.0	336	6.2	3
Mar. 9-14.....	8.3	8.3	---	1.37	2.5	31	16	5.4	1.4	3	147	3.0	.4	1.1	237	143	141	.0	.0	336	6.2	3
Mar. 10-14.....	1,770	7.8	---	1.37	2.5	31	16	5.4	1.4	3	147	3.0	.4	1.1	237	143	141	.0	.0	336	6.2	3
Mar. 15-17.....	1,443	6.4	---	.33	1.1	13	3.5	4.3	3.2	13	37	5.5	.2	.7	164	103	97	.0	.0	246	6.5	5
Mar. 18-22.....	1,110	8.5	---	.33	1.1	13	3.5	4.3	3.2	13	37	5.5	.2	.7	164	103	97	.0	.0	246	6.5	5
Mar. 23-29.....	133	11	.2	.35	2.6	32	14	5.3	1.1	10	142	3.8	.2	.6	148	67	83	.0	.1	242	6.4	3
Mar. 30-Apr. 4.....	113	11	.2	.28	4.3	40	21	6.3	1.4	6	185	3.2	.3	.5	288	186	181	.0	.0	405	6.2	2
Apr. 5-10.....	458	9.5	.0	.30	1.9	24	11	4.0	1.4	16	94	2.4	.3	.5	183	105	92	.0	.0	241	6.7	4
Apr. 11-15.....	972	11	.1	.26	1.4	18	9.0	3.6	1.4	12	77	2.5	.3	.6	129	82	72	.0	.0	199	6.7	4
Apr. 17-18.....	1,560	8.3	.0	.54	8.3	14	4.9	2.4	1.5	9	50	2.0	.2	.5	90	55	48	.0	.0	137	6.5	1
Apr. 19-23.....	788	11	.1	.37	1.3	22	11	3.8	1.4	7	98	1.9	.3	.7	156	100	94	.0	.0	242	6.5	1
Apr. 24-May 3.....	166	11	.2	.20	2.9	36	18	5.8	1.4	5	163	2.5	.4	.6	258	164	160	.0	.1	370	6.3	1
May 4-10.....	470	11	.3	.07	1.7	28	14	4.4	1.5	8	125	2.6	.3	.5	207	127	121	.0	.0	295	6.5	1
May 11-15.....	165	12	.3	.23	2.2	30	15	5.0	1.6	6	138	2.3	.3	.3	226	137	132	.0	.0	319	6.4	1
May 16-22.....	509	11	.2	.11	1.6	23	11	3.0	1.3	10	99	2.3	.2	.8	170	103	94	.0	.0	247	6.7	1
May 23-June 1.....	48.4	14	.1	.21	3.2	33	17	6.1	1.5	10	151	3.2	.3	.3	238	152	144	.0	.0	387	6.9	2
June 2-4.....	28.0	14	.4	.26	5.3	47	27	8.9	1.8	3	236	4.8	.5	.8	360	228	226	.1	.1	511	5.7	2
June 5-20.....	10.2	12	1.6	.09	6.8	55	33	8.4	1.7	1	292	3.8	.5	.6	436	273	272	.2	.3	597	4.7	1
June 21-23.....	17.0	7.9	.3	.49	4.9	46	21	7.7	2.2	20	203	3.5	---	1.8	330	201	185	.0	.0	473	6.9	---
June 24-26.....	4.57	6.0	.1	1.7	1.5	30	8.8	4.8	2.4	58	74	3.0	.3	1.4	174	111	64	.0	.0	270	7.6	16
June 27-July 10.....	1.41	4.3	.2	.58	1.1	22	5.6	3.5	2.4	44	51	2.6	.3	1.3	135	78	42	.0	.0	196	7.2	7
July 12-20.....	21.3	8.2	.1	.83	1.0	23	8.4	4.4	2.5	33	74	2.6	.2	2.3	151	92	65	.0	.0	228	7.2	3
July 21-25.....	22.0	11	.8	.08	7.7	65	30	11	2.9	1	318	4.6	.5	3.2	479	286	285	.1	.3	648	4.7	1
July 26-Aug. 4.....	52.6	8.9	.2	.46	2.0	37	14	6.8	2.5	14	151	3.7	.2	2.9	247	150	138	.0	.0	362	6.7	1
Aug. 5.....	104	18	.17	.90	9.6	94	46	15	3.2	0	492	2.1	---	1.0	784	424	424	.0	.0	997	3.80	---
Aug. 6-22.....	9.15	11	7.6	1.4	8.5	55	29	6.8	3.1	0	322	2.6	.6	2.6	479	256	256	.9	.9	641	4.10	1
Aug. 23-Sept. 10.....	7.64	11	1.2	.07	---	68	45	8.3	3.0	0	370	2.8	.5	.0	573	355	355	.7	.7	727	4.4	1
Sept. 11-30.....	1.04	15	10	.34	11	82	50	11	3.8	0	479	5.0	.5	.3	718	410	410	1.1	1.1	877	4.35	0
Time-weighted average.....	260	10	---	0.45	4.0	49	26	7.6	2.8	16	235	4.4	0.4	0.9	377	229	216	0.5	0.5	487	---	6

a Represents 99 percent of days and 98 percent of runoff.

TRADEWATER RIVER BASIN--Continued

TRADEWATER RIVER AT OLNEY, KY.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	0	--	0	0.2	2		1.2	2	
2.....	0	--	0	.2	2		1.2	5	
3.....	0	--	0	.2	3		1.2	3	(t)
4.....	1.6	8	(t)	.3	3		1.7	2	
5.....	11	2	.1	1.2	2		7.0	2	
6.....	8.8	1	(t)	1.4	4		26	2	0.1
7.....	6.6	2	(t)	1.6	4		32	7	.6
8.....	4.6	3	(t)	1.4	3	(t)	30	8	.8
9.....	2.7	7	.1	1.4	4		26	9	.6
10.....	2.0	5		1.3	2		20	10	.5
11.....	1.3	5		1.3	1		16	10	.4
12.....	1.3	4		1.3	1		11	5	.1
13.....	1.7	4	(t)	1.3	1		7.0	2	(t)
14.....	1.6	3		1.3	6		5.2	4	.1
15.....	2.2	5		1.4	7		3.9	5	.1
16.....	4.6	4		2.4	19	0.1	3.1	5	
17.....	10	2	.1	2.4	7		2.7	1	
18.....	14	3	.1	1.9	2		2.7	4	
19.....	12	4	.1	2.0	2	(t)	2.6	3	
20.....	8.6	2		1.7	5		2.4	2	
21.....	6.6	2		3.1	2		2.4	2	
22.....	4.2	2		6.2	5	.1	2.4	2	
23.....	2.7	2		6.0	4	.1	2.2	2	
24.....	1.6	2		3.9	4		2.4	6	(t)
25.....	.9	2	(t)	3.6	2		2.4	2	
26.....	.6	2		3.6	2	(t)	2.2	2	
27.....	.5	5		3.1	1		2.2	5	
28.....	.5	1		2.5	1		2.2	3	
29.....	.5	1		1.9	1		2.0	1	
30.....	.4	2		1.4	1		2.2	2	
31.....	.3	2		--	--	--	2.2	2	
Total.	114.4	--	1.0	61.5	--	0.6	227.7	--	3.5
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.....	2.0	5		1,410	175	666	480	16	21
2.....	1.9	5		2,140	154	890	361	19	18
3.....	1.7	2		3,910	110	1,160	264	12	8.6
4.....	1.7	2		3,730	68	685	195	10	5.3
5.....	1.7	5		3,280	36	319	159	9	3.9
6.....	1.7	4		2,800	21	159	135	6	2.2
7.....	1.7	4		2,160	16	93	134	7	2.5
8.....	1.6	7		1,560	16	63	680	99	s 233
9.....	1.6	6		936	12	30	1,020	330	909
10.....	1.6	1		726	8	16	960	74	192
11.....	1.6	1		638	7	12	689	29	54
12.....	1.6	2	(t)	683	15	28	486	10	13
13.....	1.4	1		625	13	22	474	12	15
14.....	1.3	1		646	31	s 60	1,240	89	s 317
15.....	1.3	3		1,330	142	510	1,410	102	388
16.....	1.3	4		1,270	65	223	1,420	65	249
17.....	1.2	2		1,450	42	164	1,500	25	101
18.....	1.2	2		1,770	59	282	1,550	13	54
19.....	1.7	6		2,510	55	373	1,260	11	37
20.....	1.9	2		2,550	35	241	819	8	18
21.....	2.0	2		2,470	15	100	598	5	8.1
22.....	2.9	5		2,030	5	27	365	3	3.0
23.....	7.5	10	0.2	1,450	8	31	212	3	1.7
24.....	13	5	.2	868	6	14	163	2	.9
25.....	18	15	.7	985	29	s 80	136	3	1.1
26.....	18	17	.8	1,080	110	321	118	7	2.2
27.....	18	10	.5	1,030	215	598	108	2	.6
28.....	19	14	.7	948	64	164	101	1	.3
29.....	142	38	s 20	684	30	55	94	1	.2
30.....	1,150	168	s 541	--	--	--	85	1	.2
31.....	1,230	268	890	--	--	--	75	1	.2
Total.	2,652.1	--	1,454.4	47,669	--	7,386	17,291	--	2,660.0

s Computed by subdividing day.

t Less than 0.05 ton.

TRADEWATER RIVER BASIN--Continued

TRADEWATER RIVER AT OLNEY, KY.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	69	2	0.4	85	1	0.2	33	4	0.4
2.....	64	5	.9	132	18	s 8.5	27	5	.4
3.....	75	7	1.4	680	72	132	28	6	.6
4.....	308	28	s 30	696	38	71	29	8	.6
5.....	507	122	187	484	6	7.8	23	3	.2
6.....	403	22	24	290	2	1.6	18	4	.2
7.....	450	15	18	192	3	1.6	17	2	.1
8.....	572	29	45	529	51	s 77	15	2	.1
9.....	420	12	14	646	37	64	13	3	.1
10.....	398	29	s 39	454	8	9.8	9.8	4	.1
11.....	1,080	95	277	129	5	3.6	8.0	3	.1
12.....	988	47	125	138	3	1.1	6.6	1	
13.....	761	26	53	93	2	.5	6.0	1	
14.....	571	17	26	69	1	.2	4.9	2	
15.....	1,460	311	s 1,240	255	174	s 175	4.2	2	(t)
16.....	1,430	236	911	1,120	150	454	4.2	2	
17.....	1,500	135	547	999	95	256	4.2	2	
18.....	1,620	59	258	696	18	34	5.6	2	
19.....	1,570	23	97	418	3	3.4	7.5	10	.2
20.....	1,040	16	45	164	8	3.5	17	12	.6
21.....	669	11	20	97	2	.5	31	5	.4
22.....	439	2	2.4	72	1	.2	13	3	.1
23.....	214	2	1.2	57	1	.2	7.0	12	.2
24.....	147	2	.8	47	1	.1	5.6	25	.4
25.....	132	2	.7	40	1	.1	4.2	35	.4
26.....	120	2	.6	41	14	s 1.8	3.9	48	.5
27.....	109	2	.6	54	28	4.1	3.4	60	.6
28.....	93	1	.2	63	10	1.7	2.5	57	.4
29.....	81	1	.2	59	5	.8	2.2	49	.3
30.....	81	1	.2	49	7	.9	2.2	50	.3
31.....	--	--	--	41	5	.6	--	--	--
Total..	17,371	--	3,945.6	9,029	--	1,315.8	356.0	--	7.3
Day	July			August			September		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	1.7	44	0.2	5.2	5	0.1	0.6	8	
2.....	1.3	50	.2	15	18	.7	.5	1	
3.....	1.2	31	.1	140	103	39	.4	1	
4.....	.8	33	.1	193	14	s 8.4	.3	1	
5.....	.8	30	.1	104	2	.6	.3	2	(t)
6.....	.9	24	.1	54	1	.1	.3	2	
7.....	.8	21		33	1	.1	6.0	1	
8.....	.8	14		20	1	.1	31	1	0.1
9.....	.6	15		13	1		21	1	.1
10.....	.5	6		7.5	1		13	2	.1
11.....	.5	7	(t)	6.0	1		7.0	3	.1
12.....	.6	12		3.9	1		4.2	3	
13.....	1.3	13		2.7	1		2.6	5	
14.....	2.2	8		2.2	1		1.7	2	
15.....	3.6	6	.1	1.6	1		1.2	3	
16.....	66	129	s 25	1.2	1		.8	3	
17.....	54	249	36	.9	1		.7	3	
18.....	24	155	10	.7	1		.5	1	
19.....	21	88	5.0	.5	1		.4	2	
20.....	19	38	1.9	1.7	3		.3	2	
21.....	20	25	1.4	2.7	1		.3	1	(t)
22.....	16	16	.7	3.9	3		.2	2	
23.....	9.2	6	.1	19	3	.2	.2	3	
24.....	12	8	.2	19	3	.2	.2	4	
25.....	53	33	s 6.2	13	4	.1	.1	2	
26.....	62	69	12	7.5	5	.1	.1	2	
27.....	41	33	3.6	4.9	5	.1	.1	2	
28.....	29	21	1.6	3.1	4	(t)	.1	2	
29.....	19	20	1.0	2.4	5	(t)	.1	1	
30.....	14	19	.7	1.6	2	(t)	.1	1	
31.....	8.0	8	.2	1.2	4	(t)	--	--	--
Total..	484.8	--	106.7	684.4	--	50.0	94.3	--	0.6

Total discharge for year (cfs-days)..... 96,035

Total load for year (tons)..... 16,931.5

s Computed by subdividing day.

t Less than 0.05 ton.

TRADEWATER RIVER BASIN--Continued
TRADEWATER RIVER AT OLNEY, KY.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; F, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (° F)	Suspended sediment												Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters											
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Jan. 31, 1956	7:00 a.m.	1.270		282	548	52	72	81	92	95	98	99	99				BSWCM
Mar. 9	7:50 a.m.	1.010		383	539	79	81	89	97	99	100	--	--			100	BSWCM
Apr. 5	7:55 a.m.	538		175	368	76	85	91	94	95	99	100	--	--			BSWCM
Apr. 15	2:20 p.m.	1.410		533	888	61	70	80	93	99	100	--	--				BSWCM
July 16	11:15 p.m.	54		159	390	77	89	94	95	96	97	99	100				BSWCM
Aug. 3	3:05 p.m.	168		153	236	74	92	96	98	98	99	100	--				BSWCM

OHIO RIVER MAIN STEM

OHIO RIVER AT LOCK AND DAM 51, AT GOLCONDA, ILL.

LOCATION.--About 950 feet upstream from dam, lock and dam 51 (mile 903.1) at Golconda, Pope County, 3,150 feet upstream from Long Branch, and 6,000 feet downstream from Loves Branch.

DRAINAGE AREA.--143,900 square miles, approximately (above gaging station).

RECORDS AVAILABLE.--Chemical analyses: October 1954 to September 1956.

Water temperatures: October 1954 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 343 ppm Oct. 1-10; minimum, 144 ppm Mar. 21-31.

Hardness: Maximum, 210 ppm Oct. 1-10, Nov. 11-20; minimum, 102 ppm Feb. 21-29.

Specific conductance: Maximum daily, 615 micromhos Nov. 19; minimum daily, 195 micromhos Mar. 23.

Water temperatures: Maximum, 84°F July 29, Aug. 6, 7; minimum, 34°F Jan. 19, 25.

EXTREMES, 1954-55.--Dissolved solids: Maximum, 343 ppm Oct. 1-10, 1955; minimum, 144 ppm Mar. 1-10, 12, 15-17, 19, 20, 1955.

Hardness: Maximum, 210 ppm Oct. 1-10, Nov. 11-20, 1955; minimum, 93 ppm Mar. 12, 15-17, 19, 20, 1955.

Specific conductance: Maximum daily, 615 micromhos Nov. 19, 1955; minimum daily, 195 micromhos Mar. 23, 1955.

Water temperatures: Maximum, 89°F July 31 to Aug. 3, 5, 1955; minimum, freezing point Jan. 28, 1955.

REMARKS. Adequacy of specific conductance of daily samples available in district office at Columbus, Ohio. Records of discharge for water year October 1955 to September 1956 given in WSP 1435.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Temperature (°F)	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 on evaporation at 180°C)	Hardness as CaCO ₃		Total acidity as H ₂ SO ₄	Specific conductance (micro-mhos at 25°C)	pH	Color
																	Calcium, mg./medium	Non-carbonate				
Oct. 1-10, 1955...	--		4.1		0.02	.01	61	14	31	3.5	98	126	45	0.5	2.9	343	210	120		580	7.5	5
Oct. 11-20	--		10		.02	.01	51	14	21	3.9	108	101	24	.4	6.4	294	183	96		474	7.2	6
Oct. 21-31	--		5.6		.02	.01	54	14	17	3.5	123	87	21	.4	6.9	283	192	82		460	7.2	6
Nov. 1-10	--		6.3		.03	.00	54	14	22	3.5	117	98	29	.4	6.4	300	192	86		481	7.4	6
Nov. 11-20	--		5.0		.02	.00	58	16	24	3.3	119	113	31	.4	8.3	325	210	113		528	7.2	7
Nov. 21-30	161,700		6.2		.06	.07	52	12	20	3.6	198	90	27	.4	6.5	280	178	90		459	7.3	18
Dec. 1-10	--		9.3		.01	.00	37	13	18	2.8	125	91	30	.3	7.1	301	196	93		489	7.3	4
Dec. 11-20	--		8.7		.01	.00	54	12	14	2.5	137	79	19	.2	7.2	272	184	74		447	7.4	5
Dec. 21-31	--		8.8		.01	.00	56	14	16	2.2	135	84	21	.2	6.7	294	197	85		468	7.4	4
Jan. 1-10, 1956	--		9.5		.02	.00	55	16	19	2.5	126	84	30	.2	7.4	294	203	100		485	7.2	4
Jan. 11-20	--		9.1		.02	.00	57	16	19	2.4	138	87	38	.2	6.5	299	208	95		480	7.1	3
Jan. 21-31	--		9.1		.03	.00	54	16	20	3.0	121	87	28	.3	6.5	283	201	96		480	7.2	3
Feb. 1-10	347,700		6.5		.14	.00	39	10	16	2.7	83	62	23	.3	6.7	215	138	70		357	7.0	7
Feb. 11-20	500,300		7.0		.08	.03	29	7	8.8	2.0	40	50	12	.3	5.7	165	105	56		251	7.0	10
Feb. 21-29	616,700		7.0		.30	.03	29	7	6.3	2.0	69	42	9.0	.3	5.3	148	102	47		237	7.1	10
Mar. 1-10	561,700		6.2		.01	.00	32	9	5.9	1.8	78	45	9.0	.2	5.7	149	114	52		258	7.3	7
Mar. 11-20	525,600		6.3		.02	.00	32	7	6.7	1.7	69	48	9.0	.2	4.9	150	112	55		254	7.2	7
Mar. 21-31	541,400		7.0		.02	.00	30	8.4	6.3	1.4	70	46	8.0	.1	4.0	144	109	52		246	7.5	6

Apr. 1-10, 1956..	351,600	8.6	0.05	0.03	37	11	8.6	2.5	87	62	12	0.2	5.3	195	138	66	316	7.3	5
Apr. 11-20	428,300	12	.07	.01	32	9.6	8.1	1.9	81	52	10	.2	4.1	176	119	53	279	7.6	6
Apr. 21-30	328,400	8.9	.05	.00	30	8.7	7.4	1.4	73	48	9.0	.2	3.3	155	111	51	255	7.3	3
May 1-10	207,700	9.7	.00	.01	39	13	12	1.8	94	69	16	.2	3.7	217	151	74	357	7.1	4
May 11-20	215,000	7.9	.02	.00	39	11	11	1.5	82	73	14	.3	3.3	207	143	75	337	7.1	5
May 21-31	184,100	8.0	.01	.00	37	11	10	2.0	75	72	14	.3	3.1	201	138	76	334	7.0	4
June 1-10	266,200	11	.03	.00	38	9.9	9.6	1.9	94	59	12	.3	5.2	201	136	58	329	7.3	6
June 11-20	141,700	12	.03	.00	41	11	9.8	2.1	102	66	12	.2	4.5	207	148	64	343	7.4	5
June 21-30	141,700	9.6	.03	.00	42	11	11	2.0	101	68	15	.2	4.1	216	150	77	359	7.5	6
July 1-10	127,900	12.	.01	.08	43	10	13	2.5	101	72	16	.2	6.4	233	183	71	378	7.1	5
July 11-20	117,400	13	.02	.05	46	12	13	2.7	107	76	16	.2	1.5	241	184	76	386	7.1	5
July 21-31	117,400	13	.03	.00	43	12	16	2.7	106	79	16	.3	3.3	243	182	75	392	7.6	3
Aug. 1-10	131,700	11	.00	.00	38	10	13	2.2	85	64	16	.2	3.3	205	136	66	334	7.5	4
Aug. 11-20	143,400	11	.03	.00	37	9.3	15	2.2	76	72	14	.2	2.9	204	130	68	329	7.4	2
Aug. 21-31	--	9.0	.00	.00	35	9.1	11	2.5	68	87	14	.2	2.3	192	125	69	310	7.4	7
Sept. 1-10	--	6.0	.00	.00	37	10	12	2.1	79	69	16	.2	2.6	227	133	69	334	7.4	3
Sept. 11-20	--	6.1	.00	.00	40	9.3	17	2.5	75	73	19	.2	2.5	227	138	77	371	7.3	6
Sept. 21-30	--	7.9	.00	.00	47	11	23	3.1	77	95	32	.2	3.1	275	162	99	447	4.3	4
Time-weighted average	--	8.6	0.03	0.01	43	11	14	2.4	96	74	19	0.2	4.9	229	152	74	376	--	--

OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT LOCK AND DAM 51, AT GOLCONDA, ILL.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

(Once-daily measurement at approximately 7 a.m.)

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

OHIO RIVER MAIN STEM

OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, ILL.

LOCATION.--About 1,500 feet upstream from dam, lock and dam 53 (mile 962.6) near Grand Chain, Pulaski County, 7,300 feet downstream from Bledso Creek, and 29.7 miles downstream from the Tennessee River.

RECORDS AVAILABLE.--203,100 square miles.

Water temperatures: October 1954 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 250 ppm Nov. 21-30; minimum, 140 ppm Feb. 21-29.

Hardness: Maximum, 158 ppm Nov. 21-30; minimum, 100 ppm Feb. 11-29.

Specific conductance: Maximum daily, 555 micromhos Nov. 22; minimum, 34°F Jan. 24, 26.

Water temperatures: Maximum, 85°F Aug. 5, 6; minimum, 34°F Jan. 24, 26.

EXTREMES, 1954-56.--Dissolved solids: Maximum, 250 ppm Nov. 21-30, 1955; minimum, 128 ppm Mar. 11-20, 1955.

Hardness: Maximum, 158 ppm Nov. 21-30, 1955; minimum, 84 ppm Mar. 11-20, 1955.

Specific conductance: Maximum daily, 555 micromhos Nov. 22, 1955; minimum daily, 182 micromhos Mar. 17, 1955.

Water temperatures: Maximum, 87°F Aug. 5, 1955; minimum, 34°F Feb. 11, 13, 18, 1955, Jan. 24, 26, 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Columbus, Ohio. No discharge records available for this station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- gan- ese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Total acid- ity as H ₂ SO ₄	Specific conduct- ance (micro- mhos at 25°C)	pH	Color
															Non- carbon- ate					
Oct. 1-10, 1955 ...	3.5		0.00	0.00	44	8.6	20	2.5	84	76	30	0.4	2.3	231	145	76	397	7.5	3	
Oct. 11-20, Oct. 21, 23-26, 28-31	4.7		.00	.00	40	9.7	15	2.8	88	72	19	.3	4.0	219	140	68	363	7.3	4	
Nov. 1-10, Nov. 11-20, Nov. 21-30,	4.8 6.9 7.3 7.2		.00 .01 .01 .02	.00 .05 .01 .02	40 38 41 45	8.9 8.9 11 11	13 14 16 19	2.9 2.1 2.2 2.9	98 95 98 98	60 57 67 79	14 18 21 25	.3 .3 .3 .3	4.5 3.9 4.3 5.8	203 200 225 250	136 131 148 158	56 54 67 77	340 337 375 411	7.3 7.3 7.3 7.2	6 4 6 7	
Dec. 1-10, Dec. 11-20, Dec. 21-31	7.4 6.1 7.7		.01 .02 .02	.00 .00 .00	45 39 42	9.7 8.1 9.4	15 12 12	2.2 1.6 1.4	103 100 110	65 47 53	24 18 19	.2 .2 .2	4.3 3.8 4.2	230 190 209	152 131 143	68 49 53	389 327 354	7.3 7.3 7.5	5 4 5	
Jan. 1-10, 1956 ... Jan. 11-20, Jan. 22-31,	7.6 6.7 8.0		.04 .02 .04	.05 .04 .00	44 38 38	11 10 10	14 13 13	1.4 2.0 1.7	101 100 100	61 47 50	21 19 21	.2 .2 .2	4.5 4.5 4.0	215 195 217	155 136 136	72 54 54	368 335 340	7.4 7.1 7.0	5 4 6	
Feb. 1-10, Feb. 11-20, Feb. 21-29	4.9 6.8 7.0		.02 .25 .17	.01 .00 .00	35 28 29	7.3 7.3 6.8	12 7.8 5.9	1.6 1.8 1.4	79 60 63	44 46 41	20 10 8.5	.2 .2 .2	5.9 5.5 4.9	175 150 140	117 100 100	53 51 49	297 246 227	7.3 7.0 7.1	5 8 8	
Mar. 1-10, Mar. 11-20, Mar. 21-31,	7.6 6.6 7.9		.01 .01 .02	.00 .00 .01	32 31 28	8.1 8.1 8.1	6.3 6.6 5.8	2.2 1.8 1.6	74 68 66	46 49 46	8.2 8.8 9.0	.1 .2 .2	5.3 4.6 4.2	148 147 147	113 111 103	52 55 49	254 251 237	7.2 7.3 7.2	7 7 4	

OHIO RIVER MAIN STEM--Continued
OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, ILL.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--Continued

Date of collection	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- ga- nese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Total acid- ity as H ₂ SO ₄	Specific conduct- ance (micro- mhos at 25°C)	pH	Color
															Calcium, mg- nesium	Non- carbon- ate				
Apr. 1-10, 1956...	7.9		0.02	0.03	36	10	8.6	1.7	80	62	13	0.2	5.2	192	131	65		309	7.3	3
Apr. 11-20.....	6.5		.06	.03	31	8.8	7.5	1.4	73	52	10	.2	4.0	164	114	54		266	7.4	3
Apr. 21-30.....	6.7		.05	.03	29	8.2	6.8	1.0	69	47	9.1	.2	3.2	150	106	50		247	7.4	4
May 1-10.....	7.3		.01	.00	38	11	10	1.7	87	66	13	.2	3.3	202	140	69		335	7.1	3
May 11-20.....	7.9		.01	.04	37	11	11	1.9	81	67	14	.2	3.5	201	138	71		328	6.9	5
May 21-31.....	7.4		.01	.02	34	10	9.4	1.6	72	66	12	.2	2.4	188	126	67		308	7.1	4
June 1-10.....	9.1		.03	.00	36	10	9.4	2.1	86	59	12	.3	4.1	195	136	65		318	6.9	7
June 11-20.....	8.6		.03	.00	34	8.5	8.0	1.9	84	53	9.3	.2	3.8	173	120	51		313	7.9	6
June 21-30.....	8.3		.03	.03	36	8.0	12.2	1.4	84	52	11	.2	3.7	182	127	50		307	7.4	7
July 1-10.....	12		.01	.06	38	16	12	2.4	83	54	12	.2	3.2	174	128	48		324	7.6	4
July 11-20.....	14		.03	.00	36	8.0	12	2.7	87	54	12	.2	3.2	206	135	58		329	7.6	3
July 21-31.....	9.4		.01	.03	39	9.2	12	2.2	84	62	16	.2	2.1	207	135	58		331	7.4	4
Aug. 1-10.....	10		.01	.01	33	7.6	10	2.7	79	52	14	.3	2.9	161	114	49		290	7.4	4
Aug. 11-20.....	9.9		.08	.01	33	8.2	11	2.5	73	60	13	.3	2.3	187	116	56		296	7.4	3
Aug. 21-31.....	8.3		.04	.00	30	7.1	8.0	2.5	71	48	11	.3	1.6	181	104	46		257	7.4	3
Sept. 1-10.....	8.7		.02	.00	33	7.9	8.8	2.5	77	52	13	.3	1.9	173	115	52		270	7.4	4
Sept. 11-20.....	5.7		.01	.00	34	8.4	13	2.5	77	59	17	.3	1.4	187	119	56		308	7.4	3
Sept. 21-30.....	5.4		.01	.00	37	8.9	15	2.2	73	70	22	.2	1.8	208	129	69		346	7.3	4
Time-weighted average.....	7.6		0.03	0.01	36	9.0	11	1.9	85	57	15	0.2	3.8	190	127	58		314	--	5

OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT LOCK AND DAM 53, NEAR GRAND CHAIN, ILL.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 8 a. m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	74	67	43	40	39	46	50	57	69	82	82	78
2	74	58	43	41	42	46	50	59	70	80	82	78
3	73	55	43	41	41	46	49	59	70	81	81	78
4	73	54	44	41	39	49	51	60	70	81	82	78
5	74	54	44	41	40	48	51	61	70	82	85	78
6	74	55	43	42	40	50	52	--	70	82	85	78
7	73	50	45	41	41	48	51	--	71	83	84	75
8	69	51	45	38	41	48	51	--	70	82	83	75
9	70	50	42	37	41	50	50	--	70	81	83	74
10	67	50	41	38	41	49	52	--	72	80	82	74
11	68	54	42	38	39	47	54	65	73	80	82	74
12	70	54	40	38	40	48	50	65	74	80	83	74
13	67	52	41	47	40	47	53	67	74	83	83	74
14	68	53	42	38	41	48	56	68	74	81	83	75
15	67	54	37	40	42	47	55	67	75	83	83	75
16	66	55	37	37	43	46	54	66	74	80	81	75
17	65	54	38	36	43	46	54	66	76	81	84	74
18	64	52	40	36	43	47	54	70	79	80	83	74
19	64	53	40	36	43	46	54	68	79	80	82	74
20	64	50	39	36	44	47	55	68	80	80	80	73
21	62	50	38	--	43	45	54	68	80	81	76	71
22	--	50	37	36	44	46	55	69	80	81	76	71
23	63	50	40	36	44	46	54	70	80	81	76	72
24	62	48	40	34	45	46	55	68	80	80	78	70
25	60	48	40	35	45	48	54	66	81	80	77	70
26	60	48	40	34	46	48	55	67	81	80	77	69
27	60	48	40	35	45	48	57	68	80	81	78	70
28	62	44	40	35	45	48	58	68	80	80	78	69
29	60	43	42	37	45	48	59	70	79	82	77	--
30	58	42	40	37	--	48	58	68	80	82	78	70
31	56	--	38	36	--	48	--	72	--	82	79	--
Average	66	52	41	38	42	47	54	66	75	81	81	74

OHIO RIVER MAIN STEM--Continued

OHIO RIVER AT METROPOLIS, ILL.

LOCATION.--Temperature recorder at gaging station at Paducah and Illinois Railroad bridge at Metropolis, Massac County, 9½ miles downstream from Tennessee River, and 37 miles upstream from mouth.

DRAINAGE AREA.--203,000 square miles, approximately.

RECORDS AVAILABLE.--Chemical analyses: October 1952 to September 1953.

Water temperatures: March 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 85°F July 7-11; minimum, 33°F on several days during December.

EXTREMES, 1954-55.--Water temperatures: Maximum, 88°F Aug. 3-6, 1955; minimum, 33°F on several days during December 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1435. Flow regulated by many dams and reservoirs.

Temperature (°F) of water, water year October 1955 to September 1956

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

PART 3B. CUMBERLAND AND TENNESSEE RIVER BASINS

CUMBERLAND RIVER BASIN

CUMBERLAND RIVER AT BARBOURVILLE, KY.

LOCATION.--At gaging station at bridge on State Highway 11, at Barbourville, Knox County, 0.4 mile upstream from Richland Creek.

DRAINAGE AREA.--960 square miles (revised).

RECORDS AVAILABLE.--Chemical analyses: October 1949 to August 1950.

Water temperatures: October 1949 to September 1956.

Water temperatures: 1955-56.--Water temperatures: Maximum, 86°F June 13, July 6; minimum, freezing point on Jan. 9.

EXTREMES, 1949-56.--Water temperatures: Maximum, 91°F June 28, 1952; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1436.

Temperature (°F) of water, water year October 1955 to September 1956

Twice-daily measurements at approximately 8 a. m. and 5 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.....	72	73	52	54	34	39	37	39	41	44	47	50	51	54	65	69	75	76	78	84	78	81	78	80
2.....	71	72	55	54	38	40	37	40	42	44	45	48	52	48	66	70	67	65	78	80	77	80	72	80
3.....	71	73	55	52	43	45	39	42	45	46	48	52	59	66	64	65	61	61	78	80	77	79	71	79
4.....	72	73	51	52	49	49	49	49	49	49	49	50	56	60	61	60	60	64	80	81	78	81	76	80
5.....	72	74	52	53	40	45	36	39	48	48	47	46	50	60	61	63	62	67	80	82	78	83	76	78
6.....	71	74	49	52	42	46	37	46	46	50	52	55	57	56	65	67	64	68	80	86	82	83	77	76
7.....	72	71	50	52	42	45	40	37	48	49	53	59	52	53	64	66	65	71	81	84	80	82	73	70
8.....	70	69	48	49	43	45	36	42	45	53	51	52	50	48	61	65	70	76	81	82	79	82	68	69
9.....	63	70	45	48	45	44	32	39	48	52	45	46	48	48	63	66	74	75	79	80	80	84	67	69
10.....	65	67	46	45	42	40	37	35	47	49	45	51	48	52	63	68	75	82	79	78	80	79	65	68
11.....	63	67	44	48	34	34	35	37	51	49	50	52	49	51	65	72	70	80	76	80	81	84	66	68
12.....	62	64	46	50	35	36	36	37	48	--	50	49	48	55	68	75	73	81	76	79	81	83	69	72
13.....	65	65	49	50	34	37	36	38	47	49	50	49	52	56	70	72	78	86	76	77	81	83	69	71
14.....	61	62	52	53	35	37	35	37	46	49	--	--	52	53	72	75	81	83	75	76	81	82	70	73
15.....	59	60	52	57	34	35	34	36	47	49	--	--	53	56	72	75	79	83	75	74	80	82	72	75
16.....	57	58	59	57	33	34	36	35	47	50	--	--	54	55	68	72	79	83	76	70	80	82	72	71
17.....	56	58	53	55	35	40	34	36	44	47	--	--	59	51	67	70	81	85	68	74	79	81	73	72
18.....	55	54	48	50	40	39	34	36	46	52	--	--	48	49	66	70	80	82	79	73	78	82	71	72
19.....	56	57	47	45	37	38	37	38	51	52	--	--	50	52	67	70	81	85	71	74	79	80	69	70
20.....	54	56	47	50	35	39	37	39	49	48	--	--	50	54	68	72	80	81	73	75	73	72	76	68
21.....	55	56	45	46	36	40	38	39	45	49	--	--	50	56	67	79	79	82	73	75	69	69	65	69
22.....	57	61	45	52	35	39	37	36	44	46	--	--	54	55	71	75	76	79	72	77	67	70	65	70
23.....	59	62	54	51	38	40	37	35	45	48	--	--	48	52	56	71	73	76	78	79	75	68	73	77
24.....	61	60	52	53	40	--	--	34	37	46	48	50	48	55	56	70	72	75	80	72	68	73	68	69
25.....	55	59	48	47	45	47	36	38	52	50	45	48	52	58	67	70	72	76	75	77	71	73	66	67
26.....	55	58	45	46	40	46	35	38	46	49	48	51	55	60	69	70	75	79	79	78	72	75	65	64
27.....	55	56	44	46	41	43	36	37	45	47	50	54	58	61	68	70	75	79	75	80	73	75	63	65
28.....	54	57	44	38	38	44	36	38	46	47	51	58	60	66	68	74	75	79	78	81	76	75	--	--
29.....	56	54	35	37	40	43	41	42	44	46	54	56	62	66	70	73	76	78	79	80	72	76	--	--
30.....	55	56	35	37	43	42	41	42	--	--	52	56	65	66	74	76	75	77	78	80	75	77	--	--
31.....	53	52	--	--	39	40	42	45	--	--	49	51	--	--	75	78	--	--	79	80	76	79	--	--
Average.....	61	63	48	49	39	41	37	38	46	47	--	--	53	56	67	71	74	77	77	78	76	79	70	72

CUMBERLAND RIVER BASIN--Continued
CUMBERLAND RIVER AT WILLIAMSBURG, KY.

LOCATION --At gaging station at bridge on U. S. Highway 25W and State Highway 92 at Williamsburg, Whitley County, and 2.1 miles downstream from Clear Fork. DRAINAGE AREA (square miles) 1,607 square miles. RECORDS AVAILABLE --Chemical analyses: October 1951 to September 1956.

Water temperatures: October 1951 to September 1956.

Sediment records: October 1953 to September 1956.

EXTREMES 1955-56 --Dissolved solids: Maximum, 274 ppm Nov. 11-24; minimum, 59 ppm Feb. 2-10.

Hardness: Maximum, 98 ppm Nov. 11-24; minimum, 28 ppm Feb. 2-10; Apr. 16-20.

Specific conductance: Maximum daily, 475 microhos Nov. 20; minimum daily, 72 microhos Apr. 18.

Water temperatures: Maximum, 86°F Aug. 12; minimum, 33°F Dec. 16, Jan. 14-15, 17-18.

Sediment concentrations: Maximum daily, 811 ppm Jan. 30; minimum daily, 1 ppm on many days during October to January, May to June, and August to September.

Sediment loads: Maximum daily, 42,900 tons Feb. 19; minimum daily, less than 0.5 ton Oct. 7, Aug. 14, 16-19, Sept. 28.

EXTREMES 1951-56 --Dissolved solids: Maximum, 409 ppm Dec. 9-14, 1953; minimum, 55 ppm Jan. 1-2, 1955.

Hardness: Maximum, 126 ppm Dec. 9-14, 1953; minimum, 28 ppm Feb. 7-10, 1955, Feb. 2-10, Apr. 16-20, 1956.

Specific conductance: Maximum daily, 754 microhos Dec. 11, 1953; minimum daily, 60 microhos Mar. 24-25, 1952.

Water temperatures: Maximum, 91°F on several days during June and July 1952; minimum, 33°F on several days during winter months.

Sediment concentrations (1953-56): Maximum daily, 855 ppm Mar. 23, 1955; minimum daily, 1 ppm on many days during October, November 1954, May, June, August to December 1955, January, May to June, and August to September 1956.

Sediment loads (1953-56): Maximum daily, 68,100 tons Mar. 23, 1955; minimum daily, less than 0.5 ton on many days during October to December 1953, January, July to November 1954, June, August to October 1955, August to September 1956.

REMARKS --Records of specific conductance of daily samples available in district office at Columbus, Ohio. Records of discharge for water year October 1955 to September 1956 given in WSP 1436.

Chemical analyses, in parts per million, water year October 1955 to September 1956.

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-9, 1955	147	--	--	21	10	43		87	100	8.2	--	--	237	94	22	373	7.1	4
Oct. 10-14	193	--	--	19	9.0	40		90	76	13	--	0.3	210	84	11	343	7.2	4
Oct. 15-25	111	--	--	20	9.5	49		109	84	13	--	.3	241	89	0	390	7.4	5
Oct. 26-Nov. 10	53.9	--	--	22	9.2	57		128	91	12	--	.4	265	93	0	445	7.6	7
Nov. 11-24	269	--	--	23	10	58		122	102	13	--	.5	274	98	0	456	7.5	7
Nov. 25-Dec. 4	1,122	--	--	20	8.4	39		96	73	9.5	--	.9	208	84	6	351	7.5	8
Dec. 5-20	553	--	--	13	5.7	14		39	44	5.0	--	2.2	111	56	24	184	7.1	12
Dec. 21-31	553	4.8	0.13	13	6.9	18	1.7	48	50	5.5	0.2	2.2	125	61	21	214	7.3	8
Jan. 1-14, 1956	316	--	--	15	6.4	20		54	51	6.0	--	1.6	132	64	20	226	7.4	8
Jan. 15-26	552	--	--	14	6.4	22		54	51	7.2	--	1.4	137	61	17	229	7.2	3
Jan. 30-Feb. 1	15,230	--	--	7.1	3.6	7.8	1.7	18	27	3.0	--	2.9	78	32	18	110	6.6	3
Feb. 2-10	15,440	6.0	.05	6.1	4.2	9.1		14	22	2.2	.1	2.0	59	28	16	87	6.4	2
Feb. 11-17	5,229	--	--	9.5	4.7	24		24	36	2.8	--	2.1	92	43	23	139	6.8	8
Feb. 18-23	24,350	--	--	6.4	3.4	3.7		16	21	1.7	--	.9	63	30	17	85	6.6	4

Feb. 24-29, 1956	9,372	--	--	10	4.5	6.3	23	32	2.7	--	2.1	61	44	25	124	6.8	6
Mar. 1-4	5,715	--	--	9.9	5.4	11	28	40	3.1	--	1.7	98	47	24	145	7.1	3
Mar. 5-14	10,010	--	--	8.0	3.9	6.1	20	28	1.9	--	1.3	72	36	20	110	7.1	5
Mar. 15-19	15,980	7.0	--	9.0	5.2	--	19	31	--	--	.8	--	--	--	97	6.5	7
Mar. 20-31	3,862	--	--	11	6.0	--	33	43	--	--	1.0	--	--	--	163	6.7	4
Apr. 1-6	4,432	6.9	0.05	6.5	4.5	9.1	28	33	2.3	.1	1.0	85	40	17	132	6.7	3
Apr. 7-11	11,190	--	--	7.1	3.4	5.5	20	23	1.7	--	1.0	69	32	15	99	6.6	6
Apr. 12-15	3,082	--	--	10	5.0	11	33	38	2.2	--	.9	98	48	18	154	6.8	3
Apr. 16-20	1,728	--	--	6.4	3.0	5.3	18	21	1.6	--	1.1	61	28	14	89	6.6	3
Apr. 21-May 4	2,650	--	--	12	6.2	16	43	48	2.8	--	1.1	117	55	20	191	6.9	3
May 5-11	3,870	--	--	9.2	4.1	8.7	31	30	2.5	--	.8	83	40	14	132	6.7	3
May 12-16	1,105	--	--	13	7.1	20	54	51	4.5	--	.5	128	52	17	217	6.9	2
May 18-June 3	928	--	--	17	8.0	30	74	68	5.5	--	.4	171	75	15	287	7.1	4
June 4-12	786	7.8	.03	11	5.8	15	48	46	3.4	.1	.4	109	51	12	161	7.1	6
June 13-16, 18-19	280	--	--	14	8.6	25	68	54	4.3	--	.1	142	62	8	238	7.2	4
June 20-25	1,082	--	--	17	9.2	34	86	72	6.1	--	.2	189	70	8	316	7.3	4
June 26-July 10	700	--	--	15	4.9	17	58	46	3.6	--	.4	121	58	10	196	7.1	6
July 11-17	2,274	--	--	16	6.8	24	70	50	4.9	--	.4	146	65	7	246	7.1	7
July 18-20	6,880	--	--	10	2.7	6.4	29	22	2.2	--	.4	77	38	12	115	6.6	25
July 21-28	1,474	--	--	11	4.8	12	43	33	2.4	--	.3	95	47	12	152	7.1	8
July 29-Aug. 15	460	--	--	17	4.9	21	67	45	4.8	--	.2	136	62	8	225	7.2	5
Aug. 16-22	1,287	4.5	.01	21	5.1	26	79	58	6.0	2	.1	164	73	9	273	7.2	5
Aug. 23-Sept. 2	603	--	--	12	5.5	12	47	32	3.4	--	1.4	104	53	14	173	7.1	6
Sept. 3-14	812	--	--	14	5.8	20	65	40	4.6	--	1.1	132	58	5	215	7.4	7
Sept. 15-30	212	--	--	14	5.1	16	59	35	4.4	--	.5	119	56	2	199	7.4	6
Time-weighted average	3,013	--	--	14	6.2	23	58	50	5.4	--	0.9	140	60	13	215	--	6

CUMBERLAND RIVER BASIN--Continued
CUMBERLAND RIVER AT WILLIAMSBURG, KY.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
/Twice-daily measurements at approximately 1:30 a. m. and 5:30 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.....	72	76	52	56	35	38	37	40	42	43	45	47	52	57	65	68	74	76	79	81	78	82	77	80
2.....	70	74	55	59	38	41	38	42	42	42	46	49	53	54	67	68	71	71	78	79	78	82	77	80
3.....	71	74	55	54	43	46	39	43	43	45	46	48	54	56	67	68	67	67	76	82	79	82	75	80
4.....	71	73	50	53	47	48	39	41	45	46	46	--	56	59	64	65	63	67	78	82	79	83	77	80
5.....	71	73	48	53	46	48	38	41	46	47	46	49	57	59	61	--	64	68	79	81	80	85	78	79
6.....	72	74	48	52	44	46	38	42	47	48	50	52	57	57	62	64	65	70	79	83	82	84	76	77
7.....	72	71	49	52	44	45	39	42	47	49	53	55	55	56	64	65	66	72	79	82	81	83	74	76
8.....	68	70	47	49	42	45	35	36	47	48	50	52	52	52	63	66	69	74	79	80	78	85	72	74
9.....	65	69	45	50	42	42	34	36	47	48	50	51	50	51	64	67	71	76	78	81	79	85	68	71
10.....	64	68	46	47	40	41	34	36	46	48	47	49	48	49	65	69	73	77	77	--	81	85	67	70
11.....	64	68	44	49	38	40	35	37	47	48	48	50	48	50	66	71	74	80	75	82	81	85	67	72
12.....	64	68	48	52	36	39	36	37	46	--	49	50	49	53	68	73	76	81	76	80	81	86	69	72
13.....	66	66	52	55	35	37	35	36	46	--	49	50	53	55	70	75	77	82	76	78	82	85	69	72
14.....	62	62	55	58	35	37	33	--	46	--	50	51	53	--	73	76	78	81	76	80	81	84	70	75
15.....	59	60	57	59	35	37	33	--	47	--	51	51	55	55	75	75	78	81	77	78	80	85	72	76
16.....	58	59	59	60	33	36	34	--	47	--	51	50	53	54	70	73	78	83	75	76	81	85	73	77
17.....	55	57	54	54	34	37	33	--	50	--	48	48	51	53	67	72	80	84	73	71	80	82	73	76
18.....	56	56	48	50	36	37	33	--	52	--	46	47	50	51	67	73	80	84	69	71	79	83	71	74
19.....	55	57	48	47	36	36	35	--	51	--	45	47	50	52	68	71	80	--	71	73	80	82	68	70
20.....	54	57	45	47	35	37	35	37	50	--	45	47	51	53	68	73	80	82	73	75	79	79	68	70
21.....	56	61	44	48	35	37	35	38	49	--	43	47	51	55	68	73	78	82	73	77	74	74	65	69
22.....	58	63	45	49	35	37	35	37	48	--	43	48	53	56	70	75	79	82	75	78	70	73	67	72
23.....	60	64	50	51	37	39	36	37	46	--	45	49	53	57	73	74	79	82	75	78	68	72	69	71
24.....	61	61	48	49	39	43	35	37	44	46	46	49	55	56	71	72	78	79	74	77	69	74	70	71
25.....	56	59	46	48	43	44	36	38	47	48	48	50	53	58	63	73	76	79	75	78	70	74	68	68
26.....	54	59	45	47	41	43	38	37	46	48	48	51	57	59	69	71	76	78	75	78	72	75	65	67
27.....	59	60	43	45	40	42	36	38	47	48	49	54	57	63	70	73	78	79	76	81	72	76	64	66
28.....	55	59	43	44	39	42	36	38	47	48	51	55	60	66	69	73	75	80	77	82	73	75	64	67
29.....	57	58	38	39	41	43	41	41	46	48	53	56	64	68	70	73	75	81	78	81	73	75	65	68
30.....	55	57	37	39	43	42	44	44	--	--	54	56	65	66	72	77	81	77	81	78	81	73	66	71
31.....	54	57	--	--	37	41	43	45	--	--	54	54	--	--	74	79	--	--	77	82	76	80	--	--
Average.....	62	64	48	50	39	41	36	39	47	--	48	50	54	56	68	72	74	78	76	79	77	80	70	73

CUMBERLAND RIVER BASIN--Continued

CUMBERLAND RIVER AT WILLIAMSBURG, KY.--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	184	18	9	54	--		226		
2.....	169	10	4	52	--		208	6	3
3.....	130	2	1	48	--		205		
4.....	120	2	1	48	--		517	34	s 40
5.....	118	2	1	48	--		2,510	355	2,400
6.....	109	2	1	46	--		3,020	137	1,120
7.....	96	1	(t)	45	--		2,120	84	481
8.....	128	5	2	42	--		1,330	36	129
9.....	268	7	5	42	1		1,110	24	72
10.....	247	6	4	44	--	e 1	1,240	53	177
11.....	216	5	3	48	--		1,160	50	157
12.....	175	5	2	48	--		979	17	45
13.....	175	2	1	51	--		810		
14.....	151	3	1	60	--		675		
15.....	142	10	4	65	--		600	9	16
16.....	140	3	1	82	--		535		
17.....	130	3	1	125	1		480		
18.....	120	6	2	151	--		382	6	7
19.....	113	5	2	226	4		470		
20.....	109	5	1	565	24	s 39	525	3	4
21.....	105	5	1	655	28	50	640	2	3
22.....	102	5	1	630	17	29	714	1	2
23.....	94	5	1	520	6	8	696	2	4
24.....	90	5	1	545	4	6	655	2	4
25.....	80	5	1	515	8	11	615	1	2
26.....	74	6	1	470	8	10	560	1	2
27.....	73	9	2	404	6	6	500	2	3
28.....	69	10	2	350	5	5	460	2	2
29.....	62	7	1	300	5	4	422	2	2
30.....	60	6	1	258	7	5	413	3	3
31.....	56	6	1	--	--	--	413	3	3
Total.	3,905	--	59	6,537	--	193	24,990	--	4,749
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	418	4	4	15,100	240	9,780	4,140	31	346
2.....	400	2	2	9,450	76	1,940	3,540	27	258
3.....	382	1	1	11,200	173	5,230	4,280	67	s 884
4.....	359	1	1	17,900	186	8,990	10,900	214	6,300
5.....	342	1	1	20,700	222	12,400	13,000	138	4,840
6.....	334	2	2	20,000	134	7,240	9,640	64	1,660
7.....	322	2	2	19,800	117	6,250	6,360	35	601
8.....	300	2	2	17,700	222	10,600	5,730	250	s 6,250
9.....	282	2	2	14,600	93	3,670	14,800	334	13,300
10.....	254	2	1	7,600	38	780	15,300	256	10,600
11.....	254	2	1	4,060	36	395	10,900	50	1,470
12.....	244	2	1	3,820	37	382	5,720	34	525
13.....	258	1	1	3,740	33	333	4,710	44	560
14.....	268	1	1	3,560	34	327	10,900	402	s 12,300
15.....	244	2	1	5,360	65	941	21,000	488	27,700
16.....	236	2	1	7,120	90	1,730	20,900	418	23,600
17.....	226	2	1	8,940	208	s 5,520	18,100	109	5,330
18.....	219	2	1	22,400	466	28,200	12,400	103	3,450
19.....	236	2	1	28,600	556	42,900	7,530	34	691
20.....	286			29,300	386	30,500	5,680	27	414
21.....	431	--	e 4	27,300	159	11,700	4,600	23	286
22.....	560			22,700	101	6,190	3,770	20	204
23.....	620			15,800	57	2,430	3,170	17	146
24.....	665	2	4	7,020	31	588	2,820	23	175
25.....	680	1	2	7,150	132	s 2,720	2,940	10	79
26.....	675	1	2	12,300	221	7,340	2,950	14	112
27.....	650	2	4	13,500	170	6,200	2,950	14	112
28.....	615	8	13	10,200	60	1,650	2,770	10	75
29.....	1,930	364	s 2,950	6,060	38	622	2,810	36	273
30.....	12,200	811	26,700	--	--	--	5,650	130	sa 2,200
31.....	18,400	485	24,100	--	--	--	6,240	200	3,370
Total.	43,290	--	53,818	392,980	--	217,548	249,200	--	128,111

e Estimated.

s Computed by subdividing day.

t Less than 0.5 ton.

a Computed from partly estimated concentration graph.

CUMBERLAND RIVER BASIN--Continued

CUMBERLAND RIVER AT WILLIAMSBURG, KY.--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	4,300	42	488	1,340	6	22	918	19	s 60
2.....	3,260	23	202	1,310	6	21	2,900	170	sa 1,500
3.....	3,160	20	171	2,670	14	s 126	3,340	--	e 2,500
4.....	3,650	28	276	8,160	180	s 4,100	1,890	152	776
5.....	5,070	72	986	8,920	184	4,430	1,270	54	185
6.....	7,150	132	s 3,050	5,720	44	680	951	35	90
7.....	15,000	403	16,300	3,720	18	181	750	8	16
8.....	16,400	292	12,900	2,890	11	86	615	3	5
9.....	13,000	73	2,560	2,330	7	44	520	2	3
10.....	7,040	22	418	1,900	4	20	445	2	2
11.....	4,500	18	219	1,610	3	13	386	1	1
12.....	3,600	17	165	1,400	2	8	338	1	1
13.....	2,930	12	95	1,220	2	6	303	1	1
14.....	2,490	13	87	1,080	1	3	282	2	2
15.....	3,350	38	s 432	1,010	1	3	258	2	1
16.....	15,200	600	sa 29,000	1,040			250	2	1
17.....	21,000	632	35,800	1,050	--	e 4	230	1	b 1
18.....	20,900	244	13,800	937			240	1	1
19.....	18,300	100	4,940	804	2	4	226	1	1
20.....	10,900	46	1,350	702	2	4	334	1	1
21.....	4,540	38	466	640	2	3	575	3	5
22.....	3,260	25	220	585	2	3	645	5	9
23.....	2,840	16	123	540	2	3	702	22	s 63
24.....	2,580	15	104	510	2	3	2,480	156	1,050
25.....	2,230	11	66	515	2	3	1,750	106	501
26.....	1,940	10	52	495	2	3	1,960	150	800
27.....	1,750	7	33	445	1	1	1,590	190	816
28.....	1,620	6	26	455	3	4	993	66	177
29.....	1,480	6	24	625	18	30	696	31	58
30.....	1,380	5	22	650	33	58	525	16	23
31.....	--	--	--	726	32	63	--	--	--
Total..	204,820	--	124,375	55,999	--	9,937	28,372	--	8,740
Day	July			August			September		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	465	11	14	810	13	28	272	7	5
2.....	413	11	12	630	10	17	244	4	3
3.....	680	40	73	690	8	15	233	3	2
4.....	545	52	76	615	5	8	233	3	2
5.....	535	48	69	505	3	4	395	9	10
6.....	480	32	41	400	4	4	680	38	70
7.....	418	29	33	326	5	4	900	68	s 190
8.....	426	28	32	282	4	3	2,190	205	1,210
9.....	413	27	30	250	4	3	1,680	124	629
10.....	359	20	19	226	4	2	1,120	38	115
11.....	470	13	16	199	4	2	744	24	48
12.....	436	8	9	190	4	2	555	22	33
13.....	346	11	10	175	3	1	445	21	25
14.....	436	42	49	175	1	(t)	372	17	17
15.....	1,820	--	e 700	190	1	1	322	9	8
16.....	3,590	250	a 2,400	181	1		278	7	5
17.....	8,820	791	s 19,800	172	1		244	10	6
18.....	11,200	560	16,900	160	1	(t)	216	10	6
19.....	6,760	128	2,340	145	1		196	7	4
20.....	2,680	84	608	1,010	24	s 138	178	4	2
21.....	1,850	36	189	3,580	281	2,720	166	3	1
22.....	1,920	42	218	3,620	225	2,200	178	4	2
23.....	1,390	34	128	1,960	158	836	160	2	1
24.....	1,080	34	99	1,100	72	214	175	2	1
25.....	1,380	40	149	744	43	86	289	2	2
26.....	1,740	96	451	555	27	40	289	2	2
27.....	1,310	106	375	436	18	21	208	1	1
28.....	1,120	28	85	382	16	16	187	1	(t)
29.....	858	17	39	342	13	12	166	2	1
30.....	834	12	27	310	11	9	148	2	1
31.....	918	18	45	292	9	7	--	--	--
Total..	55,692	--	45,027	20,652	--	6,395	13,663	--	2,402

Total discharge for years (cfs-days) 1,100,100
 Total load for year (tons) 601,354

e Estimated.

s Computed by subdividing day.

t Less than 0.5 ton.

a Computed from partly estimated concentration graph.

b Computed from estimated concentration graph.

CUMBERLAND RIVER BASIN--Continued
CUMBERLAND RIVER AT WILLIAMSBURG, KY.--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1958
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment											Methods of analysis		
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters											
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350		0.500	1.000
Jan. 30, 1956	7:30 a. m.	10,100	44	872	626	38	60	78	95	98	98	100	--				BSWCM
Feb. 7	2:10 p. m.	19,800	--	111	422	49	59	81	93	96	98	100	--				BSWCM
Feb. 19	7:30 a. m.	28,200	51	580	904	37	58	72	89	97	99	100	--				BSWCM
Feb. 26	7:30 a. m.	11,800	46	226	351	42	52	66	89	99	99	100	--				BSWCM
Mar. 16	7:30 a. m.	21,200	51	482	766	31	48	69	86	94	98	100	--				BSWCM
July 17	7:30 a. m.	7,760	73	768	1,190	45	64	78	91	97	98	99	100				BSWCM
July 18	7:30 a. m.	11,700	69	710	1,130	52	87	82	94	98	99	99	100				BSWCM

CUMBERLAND RIVER BASIN--Continued
CANE BRANCH NEAR PARKERS LAKE, KY.

LOCATION.--At gaging station, 2,100 feet upstream from confluence with West Fork, 2.5 miles northeast of Parkers Lake, and 2.6 miles east of Greenwood, McCreary County, DRAINAGE AREA.--0.67 square miles.
RECORDS AVAILABLE.--Chemical analyses: January to September 1956.
Sediment records: January to September 1956.
REMARKS.--Records of discharge for February to September 1956 given in WSP 1506.

Chemical analyses, in parts per million, January to September 1956

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- gan- ese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)		Hardness as CaCO ₃		Imme- diate acidity (H ⁺)	Poten- tial free acidity (H ⁺)	Specific conduct- ance (micro- mhos at 25°C)	pH	Color
																	Calcium, mg-	Non- carbon- ate					
Jan. 18, 1956	--	6.3	0.3	0.24	0.05	3.7	1.6	0.8	1.1	17	5.6	1.0	0.1	0.2	31	16	16	2	0.0	0.0	44	6.8	12
Jan. 24	0.06	--	--	--	--	--	--	--	--	12	14	--	--	--	--	17	--	--	--	--	44	6.8	--
Jan. 31	--	--	--	--	--	--	--	--	--	2	12	--	--	--	--	15	--	--	--	--	46	5.3	--
Feb. 1	3.5	--	--	--	--	--	--	--	--	2	13	--	--	--	--	12	--	--	--	--	39	5.5	--
Feb. 12	1.35	5.2	.3	.06	.08	3.0	2.2	.6	1.0	1	19	1.1	.1	.1	36	17	16	--	.1	.1	54	4.8	2
Feb. 14	1.00	--	--	--	--	--	--	--	--	3	18	--	--	--	--	18	--	--	--	--	52	6.1	--
Feb. 21	2.9	--	--	--	--	--	--	--	--	1	38	--	--	--	--	35	--	--	--	--	101	4.7	--
Feb. 28	2.04	--	--	--	--	--	--	--	--	2	33	--	--	--	--	32	--	--	--	--	91	5.4	--
Mar. 4	1.12	5.6	1.0	.07	.56	6.9	3.3	.6	.6	2	32	1.6	.1	.1	57	31	29	--	.0	.0	85	5.7	1
Mar. 13	2.5	--	--	--	--	--	--	--	--	0	33	--	--	--	--	29	29	--	.2	.2	116	4.40	--
Mar. 20	1.53	--	--	--	--	--	--	--	--	0	65	--	--	--	--	56	56	--	.4	.5	188	4.20	--
Mar. 24	1.25	6.1	.0	.33	2.3	11	6.2	.9	1.4	0	65	1.1	.2	.1	99	53	53	--	.4	.4	178	3.90	0
Mar. 27 .....	.78	--	--	--	--	--	--	--	--	0	58	--	--	--	--	38	38	--	.3	.3	167	4.5	--
Apr. 3 .....	.83	--	--	--	--	--	--	--	--	0	44	--	--	--	--	55	55	--	.2	.3	125	4.5	--
Apr. 10	1.39	--	--	--	--	--	--	--	--	1	35	--	--	--	--	30	29	--	.2	.2	103	4.6	--
Apr. 14 .....	.60	6.4	1.5	.20	1.2	8.9	4.3	.6	.6	0	54	1.6	.1	.0	84	40	40	--	.3	.3	153	4.10	0
Apr. 17	2.8	--	--	--	--	--	--	--	--	0	34	--	--	--	--	27	27	--	.2	.2	104	4.30	--
Apr. 19	1.46	--	--	--	--	--	--	--	--	0	45	--	--	--	--	32	32	--	.2	.2	114	4.35	--
Apr. 24 .....	.73	--	--	--	--	--	--	--	--	0	39	--	--	--	--	37	37	--	.2	.2	126	4.20	--
May 1 .....	.60	--	--	--	--	--	--	--	--	0	45	--	--	--	--	40	40	--	.2	.3	136	4.20	--
May 5 .....	.49	8.8	.8	.15	2.3	7.0	3.4	.7	1.1	0	44	1.4	.1	.2	73	31	31	--	.2	.3	131	4.10	2
May 9 .....	.28	--	--	--	--	--	--	--	--	0	46	--	--	--	--	38	38	--	.3	.3	121	4.5	--
May 15 .....	.15	--	--	--	--	--	--	--	--	2	51	--	--	--	--	44	44	--	.1	.1	130	4.9	--
May 16 .....	.15	--	--	--	--	--	--	--	--	0	66	--	--	--	--	54	54	--	.3	.3	170	4.30	--
May 22 .....	.050	--	--	--	--	--	--	--	--	4	43	--	--	--	--	43	40	--	.1	.1	122	5.7	--
May 28 .....	.09	9.7	5.4	1.8	5.3	17	11	1.1	2.2	0	123	1.6	.3	.0	195	88	88	--	1.3	1.0	299	3.95	1
May 31 .....	.065	--	--	--	--	--	--	--	--	0	89	--	--	--	--	78	78	--	.4	.4	226	4.20	--

CUMBERLAND RIVER BASIN--Continued
CANE BRANCH NEAR PARKERS LAKE, KY.--Continued

Chemical analyses, in parts per million, January to September 1956--Continued

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- gan- ese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Imme- diate acidity (H ⁺)	Poten- tial free acidity (H ⁺)	Specific conduct- ance (micro- mhos at 25°C)	pH	Color
																Calcium, mg- neq/l	Non- carbon- ate					
June 5, 1956	0.057	--	--	--	--	--	--	--	--	0	102	--	--	--	--	84	84	0.6	0.6	258	4.00	--
June 12	.050	--	--	--	--	--	--	--	--	0	71	--	--	--	--	63	63	.3	.3	179	4.25	--
June 19	.28	--	17	2.5	23	66	46	3.7	6.2	0	503	1.0	--	0.3	--	354	354	3.1	4.1	1,160	2.95	--
June 21	.12	--	--	--	--	--	--	--	--	0	407	--	--	--	--	268	268	2.5	2.8	974	3.00	--
June 28	.06	--	--	--	--	--	--	--	--	0	598	--	--	--	--	300	300	6.4	6.9	1,390	2.70	--
July 3	.10	--	--	--	--	--	--	--	--	0	819	--	--	--	--	325	325	10	11	1,680	2.60	--
July 6	.077	--	--	--	--	--	--	--	--	0	659	--	--	--	--	295	295	7.2	8.2	1,420	2.70	--
July 10	.050	14	33	1.1	14	37	23	1.4	2.2	0	451	1.5	--	.4	602	187	187	4.4	4.6	1,040	2.95	2
July 17	.28	--	--	--	--	--	--	--	--	0	314	--	--	--	--	138	--	2.7	3.0	876	2.90	--
July 19	.050	19	18	11	16	41	24	1.9	3.0	0	398	1.0	0.9	.0	584	201	201	3.6	3.9	1,060	2.90	3
July 20	.12	--	--	--	--	--	--	--	--	0	365	--	--	--	--	211	--	2.7	3.0	1,000	2.90	--
July 24	.31	--	--	--	--	--	--	--	--	0	292	--	--	--	--	171	--	2.4	2.5	822	3.00	--
July 31	.22	18	21	16	18	43	26	2.0	3.1	0	432	1.0	1.0	.0	650	214	214	3.6	4.5	1,150	2.80	2
Aug. 7	.09	--	--	--	--	--	--	--	--	0	343	--	--	--	--	230	230	2.8	3.2	920	3.00	--
Aug. 14	.56	--	--	--	--	--	--	--	--	0	1,220	--	--	--	--	440	440	15	17	2,220	2.60	--
Aug. 21	.22	15	34	28	23	44	26	1.8	2.2	0	533	1.4	--	.3	757	217	217	6.0	6.2	1,290	2.75	3
Aug. 24	.077	--	--	--	--	--	--	--	--	0	412	--	--	--	--	177	177	3.6	3.6	1,100	2.85	--
Aug. 28	.24	--	--	--	--	--	--	--	--	0	588	--	--	--	--	172	172	4.8	4.9	1,380	2.70	--
Sept. 4	.050	--	--	--	--	--	--	--	--	0	351	--	--	--	--	200	200	2.7	3.0	936	3.00	--
Sept. 11	.043	15	10	2.3	18	43	17	1.5	2.5	0	318	2.1	.7	.7	448	177	177	2.2	2.6	843	2.00	1
Sept. 17	.026	--	--	--	--	--	--	--	--	0	263	--	--	--	--	185	185	1.8	1.9	715	3.15	--
Sept. 18	.026	--	--	--	--	--	--	--	--	0	268	--	--	--	--	173	173	1.8	1.8	721	3.15	--
Sept. 25	.050	14	4.1	3.1	14	34	18	1.5	2.3	0	233	1.8	.3	.8	335	146	146	1.4	1.6	606	3.25	1

CUMBERLAND RIVER BASIN--Continued

CANE BRANCH NEAR PARKERS LAKE, KY.--Continued

Suspended sediment, February to September 1956.

Day	February			March			April		
	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.....	--	--	--	1.32	--	e 0.04	0.49	--	(t)
2.....	3.0	125	s 1.32	1.96	--	e .3	.94	34	0.09
3.....	11.4	--	b 17	2.8	--	b .7	.90	10	.02
4.....	15.1	--	b 14	2.7	5	.04	3.5	--	e 2
5.....	3.8	--	e .6	1.89	--	a .02	2.04	--	a .3
6.....	6.6	--	e 4	1.46	7	.03	21.3	588	a 51.6
7.....	3.7	22	s .25	5.4	242	s 6.57	5.3	--	a 3
8.....	2.13	--	e .2	5.4	--	a .8	2.6	--	a .3
9.....	1.25	--	a .04	2.8	20	.15	1.74	--	a .04
10.....	.88	8	.02	1.89	--	a .10	1.32	11	.04
11.....	1.66	--	e .4	1.46	--	a .1	1.62	--	e .4
12.....	1.39	26	.10	1.74	--	e .5	.88	--	a .1
13.....	1.19	23	.07	3.2	140	s 2.74	.68	10	.02
14.....	2.6	--	e .6	23.8	--	b 65	.64	5	.01
15.....	6.0	59	s 1.4	4.8	--	a 1.6	2.8	--	b 4
16.....	3.5	--	a .1	5.9	--	b 4	5.5	116	s 2.26
17.....	25.3	--	b 42	4.0	--	a .5	2.7	11	.01
18.....	25.3	--	e 45	2.8	--	a .1	1.96	--	a .04
19.....	7.4	227	s 5.20	2.8	--	e 2	1.46	14	.06
20.....	6.4	--	e 2	2.5	--	e 2	1.06	--	a .02
21.....	2.6	47	.33	1.53	--	e .8	.83	--	a .01
22.....	1.74	--	e .1	1.43	--	e .9	.78	--	a .04
23.....	1.12	--	e .1	.88	25	.06	1.00	--	e .2
24.....	2.7	124	s 1.08	1.28	--	e .2	.88	3	--
25.....	5.0	--	b 3	.88	--	--	.60	--	--
26.....	3.1	--	e .4	.88	--	--	.56	--	(t)
27.....	2.4	--	e .6	.78	4	--	.56	3	--
28.....	2.12	16	.09	.73	--	a .01	.49	--	--
29.....	1.67	--	e .04	.78	--	--	.45	--	--
30.....	--	--	--	.60	3	--	.45	--	--
31.....	--	--	--	.52	--	--	--	--	--
Total.	151.05	--	140.04	90.91	--	89.32	65.83	--	64.80
Day	May			June			July		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	0.56	3	(t)	0.41	--	b 1.6	0.21	--	e 0.2
2.....	.67	--	e 0.1	.09	--	--	.30	536	s 1.44
3.....	.73	--	--	.077	--	--	.09	85	.02
4.....	.60	--	--	.085	--	--	.057	--	(t)
5.....	.52	2	--	.057	3	--	.13	66	.02
6.....	.45	--	(t)	.050	--	--	.077	7	(t)
7.....	.45	--	--	.050	--	(t)	.050	--	(t)
8.....	.36	3	--	.050	3	--	.13	52	.02
9.....	.31	3	--	.057	--	--	.065	--	--
10.....	.26	--	--	.057	--	--	.050	3	(t)
11.....	.22	3	--	.050	--	--	.043	--	--
12.....	.18	--	--	.043	3	--	.078	--	e .02
13.....	.16	--	--	.053	--	e .01	.69	--	e 6
14.....	.15	--	--	.14	--	e .01	.48	--	e 1
15.....	.15	7	--	.065	18	--	.13	--	a .02
16.....	.15	3	--	.057	--	(t)	.74	--	b 2
17.....	.12	--	--	.050	--	--	.56	30	.04
18.....	.10	2	(t)	1.07	--	e 25	.15	--	a .01
19.....	.10	--	--	.31	176	s .20	.10	31	.01
20.....	.09	--	--	.16	--	a .02	.077	20	--
21.....	.077	--	--	.12	19	.01	.065	--	(t)
22.....	.077	3	--	.09	5	--	.057	--	--
23.....	.065	--	--	.077	--	(t)	.82	2,800	s 18.8
24.....	.065	--	--	.077	--	--	.82	1,500	s 7.73
25.....	.057	10	--	.32	--	e 1	.39	--	a .18
26.....	.18	--	e .03	.09	2	--	.20	--	a .08
27.....	.13	--	--	.057	--	--	.13	50	.02
28.....	.10	--	--	.050	--	(t)	.33	834	a 3.39
29.....	.09	8	(t)	.050	2	--	.64	--	e 10
30.....	.065	--	--	.056	--	--	.32	--	e .1
31.....	.062	37	--	--	--	--	.16	20	.01
Total.	7.318	--	0.20	3.948	--	27.88	8.139	--	51.12

e Estimated.

a Computed by subdividing day.

t Less than 0.005 ton.

a Computed from estimated concentration graph.

b Partly estimated.

CUMBERLAND AND TENNESSEE RIVER BASINS

CUMBERLAND RIVER BASIN--Continued

CANE BRANCH NEAR PARKERS LAKE, KY.--Continued

Suspended sediment, February to September 1956--Continued

Day	August			September			Suspended sediment		
	Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment		Mean discharge (cfs)	Suspended sediment	
		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day		Mean concentration (ppm)	Tons per day
1.....	0.12	--	(t)	0.065	--				
2.....	.30	401	s 1.28	.065	--				
3.....	.19	124	.06	.050	--	(t)			
4.....	.12	--		.050	3				
5.....	.09	--		.071	--				
6.....	.077	--		.12	--	e 0.01			
7.....	.077	3		.077	2				
8.....	.065	--	(t)	.057	--				
9.....	.057	--		.050	--				
10.....	.065	3		.043	--				
11.....	.083	--		.043	2				
12.....	.057	--		.037	--				
13.....	.057	--		.037	--				
14.....	.53	--	e 8	.031	2				
15.....	.09	--		.031	--				
16.....	.077	--	(t)	.031	--				
17.....	.065	5		.031	2				
18.....	.065	--		.031	2				
19.....	.69	--	e 10	.037	--	(t)			
20.....	.46	270	s .68	.037	--				
21.....	.21	15	.01	.031	2				
22.....	.12	--		.037	--				
23.....	.09	13		.037	--				
24.....	.065	3		.050	--				
25.....	.065	--	(t)	.050	4				
26.....	.065	--		.043	--				
27.....	.057	--		.043	4				
28.....	.19	--	e .4	.043	--				
29.....	.09	--		.043	--				
30.....	.077	--	(t)	.037	--				
31.....	.065	4		--	--				
Total.	4.429	--	20.46	1.408	--	0.02			

Total discharge, February to September 1956 (cfs-days)..... 333.032

Total load, February to September 1956 (tons) 393.64

e Estimated.

s Computed by subdividing day.

t Less than 0.005 ton.

CUMBERLAND RIVER BASIN--Continued
CANE BRANCH NEAR PARKERS LAKE, KY.--Continued

Particle-size analyses of suspended sediment, January to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, Pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (° F)	Suspended sediment											Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350		0.500	1.000
Jan. 29, 1956...	10:30 a.m.	7.0		408	613	58	75	88	95	99	100	--				BSWCM
Feb. 17.....	10:30 a.m.	41		947	1,840	58	69	82	94	99	100	--				BSWCM
Feb. 19.....	2:30 p.m.	8.5		1,200	2,320	61	77	91	98	100	--	--				BSWCM
Feb. 25.....	2:15 p.m.	7.4		273	547	53	74	88	98	100	--	--				BSWCM
Mar. 7.....	11:30 a.m.	12.7		1,560	1,550	58	71	86	95	99	100	--				BSWCM
Mar. 7.....	11:30 a.m.	12.7		1,560	1,640	3	9	23	58	100	--	--				BSNM
Apr. 6.....	10:00 a.m.	81		1,610	3,200	31	42	52	66	81	95	98	100			BSWCM
Apr. 15.....	10:00 a.m.	3.0		519	1,060	74	80	87	97	99	99	100				BSWCM
July 2.....	3:00 p.m.	2.12		2,870	3,020	62	73	89	98	100	--	--				BSWCM
July 13.....	11:15 a.m.	1.12		1,040	1,130	66	81	97	99	100	--	--				BSWCM
July 23.....	4:30 p.m.	2.9		11,800	4,810	65	74	95	96	98	100	--				BSWCM
July 24.....	3:00 p.m.	4.4		8,060	6,560	58	71	90	99	100	--	--				BWCM
July 28.....	7:30 p.m.	3.2		7,040	6,680	53	65	82	95	100	--	--				BWCM
Aug. 2.....	8:00 p.m.	2.7		3,020	2,540	54	64	81	96	99	100	--				BSWCM

CUMBERLAND RIVER BASIN--Continued

HELTON BRANCH AT GREENWOOD, KY.

LOCATION.--At gaging station, 250 feet upstream from Little Hurricane Fork, and 1 mile northeast of Greenwood, McCreary County, DRAINAGE AREA.--0.85 square miles (approximately).

RECORDS AVAILABLE.--Chemical analyses: January to September 1956.

REMARKS.--Records of discharge for January to September 1956 given in WSP 1506.

Chemical analyses, in parts per million, January to September 1956

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Alum- inum (Al)	Iron (Fe)	Man- ga- nese (Mn)	Cal- cium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Imme- diate acidity (H ⁺)	Poten- tial free acidity (H ⁺)	Specific conduct- ance (micro- mhos at 25°C)	pH	Color
																Calcium, mg-	Non- carbon- ate					
Jan. 17, 1956	0.10	6.3	0.1	0.16	0.00	3.1	0.5	0.6	0.7	12	2.8	0.9	0.1	0.1	22	10	0	0.0		28	6.9	7
Jan. 24	.15	--	--	--	--	--	--	--	--	15	8.0	--	--	--	--	19	--	--	0.0	48	6.7	--
Jan. 31	--	--	--	--	--	--	--	--	--	10	13	--	--	--	--	22	--	--	0.0	58	6.4	--
Feb. 6	12.4	--	--	--	--	--	--	--	--	6	9.2	--	--	--	--	12	--	--	0.0	36	6.3	--
Feb. 12	1.13	4.8	.0	.11	.00	4.6	1.0	.9	.8	8	9.0	1.6	.1	.5	30	16	9	0.0	45	6.6	0	
Feb. 15	6.3	--	--	--	--	--	--	--	--	8	9.2	--	--	--	--	12	--	--	0.0	37	6.5	--
Feb. 20	8.5	--	--	--	--	--	--	--	--	6	9.2	--	--	--	--	16	--	--	0.0	44	6.4	--
Feb. 26	5.1	--	--	--	--	--	--	--	--	7	9.6	--	--	--	--	13	--	--	0.0	35	6.6	--
Mar. 4	3.2	4.6	.4	.18	.05	3.2	1.1	1.1	1.0	8	9.4	1.2	.1	.3	27	12	6	0.0	38	6.6	2	
Mar. 12	1.30	--	--	--	--	--	--	--	--	10	8.6	--	--	--	--	15	7	0.0	39	6.5	--	
Mar. 19	2.20	--	--	--	--	--	--	--	--	8	8.0	--	--	--	--	13	6	0.0	36	6.4	--	
Mar. 24	1.08	4.6	.0	.19	.98	3.1	1.1	.8	.5	7	7.7	1.2	.2	.2	25	12	6	0.0	38	6.6	0	
Mar. 27	.81	--	--	--	--	--	--	--	--	8	6.6	--	--	--	--	13	6	0.0	38	6.3	--	
Apr. 4	4.5	--	--	--	--	--	--	--	--	9	5.4	--	--	--	--	13	6	0.0	36	6.3	--	
Apr. 10	1.45	--	--	--	--	--	--	--	--	8	5.4	--	--	--	--	13	6	0.0	35	6.4	--	
Apr. 14	.81	4.3	.0	.15	1.6	3.2	1.0	.5	.5	9	7.2	.8	.1	.2	22	12	5	0.0	35	6.7	0	
Apr. 16	5.5	--	--	--	--	--	--	--	--	20	14	--	--	--	--	23	7	0.0	98	6.2	--	
Apr. 24	.81	--	--	--	--	--	--	--	--	10	8.2	--	--	--	--	14	6	0.0	35	6.5	--	
May 1	.57	--	--	--	--	--	--	--	--	13	14	--	--	--	--	14	3	0.0	35	6.5	--	
May 6	.69	5.3	.0	.08	.80	3.3	.6	.7	.5	10	6.0	1.1	.1	.1	25	11	2	0.0	32	6.7	3	
May 9	.44	--	--	--	--	--	--	--	--	9	6.3	--	--	--	--	13	6	0.0	36	6.7	--	
May 15	.29	--	--	--	--	--	--	--	--	11	4.0	--	--	--	--	11	2	0.0	29	6.8	--	
May 16	.29	--	--	--	--	--	--	--	--	14	4.4	--	--	--	--	13	2	0.0	35	6.5	--	
May 19	.21	--	--	--	--	--	--	--	--	14	4.1	--	--	--	--	10	0	0.0	29	7.0	--	
May 26	.15	--	--	--	--	--	--	--	--	11	3.8	--	--	--	--	8	0	0.0	23	6.7	--	
May 29	.17	7.0	.0	.25	1.5	2.4	.7	.5	.6	10	2.3	3.0	.1	.1	21	9	0	0.0	25	6.9	5	
June 5	.17	--	--	--	--	--	--	--	--	12	8.8	--	--	--	--	14	4	0.0	36	6.8	--	
June 8	.14	--	--	--	--	--	--	--	--	14	2.0	--	--	--	--	10	0	0.0	26	6.8	--	
June 12	.14	--	--	--	--	--	--	--	--	11	2.0	--	--	--	--	9	0	0.0	24	6.8	--	
June 19	.14	--	--	--	--	--	--	--	--	12	3.3	--	--	--	--	8	0	0.0	22	6.9	--	

CUMBERLAND RIVER BASIN

517

June 21, 1956	0.14	--	--	--	--	10	1.4	--	--	--	--	--	--	8	0	0.0	0.1	27	6.5	--
June 24	e-14	--	--	--	--	--	1.9	--	--	--	--	--	--	7	0	.1	.1	23	6.6	--
June 26	e-2	--	--	--	--	12	2.3	--	--	--	--	--	--	9	0	.1	.1	28	6.6	--
July 3	e-25	--	--	--	--	24	14	--	--	--	--	--	--	33	13	.0	.0	85	6.6	--
July 8	e-2	--	--	--	--	25	10	--	--	--	--	--	--	32	12	.1	.1	80	6.7	--
July 10	e-14	6.7	0.1	0.13	0.23	11	1.2	0.5	0.1	0.3	14	8	0	--	--	--	--	24	7.0	12
July 13	e-7	--	--	--	--	16	7.8	--	--	--	--	19	--	.1	.0	.0	.0	53	6.5	--
July 15	e-25	--	--	--	--	32	12	--	--	--	--	36	--	.0	.0	.0	.0	94	6.6	--
July 18	e-25	--	--	--	--	45	16	--	--	--	--	53	--	.0	.0	.0	.0	131	7.1	--
July 19	e-23	8.7	.1	.10	.02	34	11	3.8	.1	.8	61	39	11	.0	.0	.0	.0	96	6.9	7
July 24	.65	--	--	--	--	44	21	--	--	--	--	56	--	.0	.0	.0	.0	145	6.7	--
July 26	.44	--	--	--	--	45	14	--	--	--	--	46	--	.0	.0	.0	.0	121	7.3	--
Aug. 1	.21	7.8	.0	2.6	.32	20	4.7	1.5	.1	.4	35	18	2	.0	.0	.0	.0	46	6.6	8
Aug. 4	.23	--	--	--	--	20	6.8	--	--	--	--	22	6	.0	.0	.0	.0	59	7.1	--
Aug. 11	.13	--	--	--	--	13	4.3	--	--	--	--	13	2	.1	.0	.0	.0	36	5.7	--
Aug. 14	.25	--	--	--	--	13	3.5	--	--	--	--	9	0	.0	.0	.0	.0	25	6.8	--
Aug. 20	.34	--	--	--	--	13	4.0	--	--	--	--	18	2	.0	.0	.0	.0	45	6.7	--
Aug. 21	.33	8.2	.0	.11	.18	17	1.9	2.4	4.1	.2	75	50	14	.0	.0	.0	.0	121	7.1	6
Aug. 24	.14	--	--	--	--	25	4.1	--	--	--	--	21	3	.0	.0	.0	.0	53	6.8	--
Aug. 28	.14	--	--	--	--	10	4.1	--	--	--	--	17	1	.0	.0	.0	.0	42	7.1	--
Aug. 28	.17	--	--	--	--	12	2.0	--	--	--	--	10	0	.0	.0	.0	.0	30	6.8	--
Aug. 31	.12	--	--	--	--	15	2.5	--	--	--	--	13	1	.0	.0	.0	.0	27	7.1	--
Sept. 2	.13	--	--	--	--	13	4.3	--	--	--	--	10	0	.0	.0	.0	.0	27	7.0	--
Sept. 4	.11	--	--	--	--	10	3.8	--	--	--	--	9	1	.0	.0	.0	.0	27	6.4	--
Sept. 7	.12	--	--	--	--	12	2.0	--	--	--	--	12	2	.0	.0	.0	.0	39	6.9	--
Sept. 9	.11	--	--	--	--	14	4	--	--	--	--	8	--	.0	.0	.0	.0	35	7.1	--
Sept. 11	.11	7.0	.0	.14	.62	5	1.9	1.1	.1	.1	20	9	1	.0	.0	.0	.0	21	6.7	4
Sept. 14	.09	--	--	--	--	11	2.3	--	--	--	--	8	0	.0	.0	.0	.0	22	6.7	--
Sept. 17	.09	--	--	--	--	13	1.8	--	--	--	--	10	0	.0	.0	.0	.0	24	6.8	--
Sept. 18	.09	--	--	--	--	11	1.8	--	--	--	--	11	2	.0	.0	.0	.0	22	6.8	--
Sept. 21	.09	--	--	--	--	11	2.3	--	--	--	--	8	0	.0	.0	.0	.0	20	6.8	--
Sept. 24	.08	8.5	.0	.15	.03	10	1.4	.9	.1	.0	25	8	0	.0	.0	.0	.0	19	6.7	6
Sept. 26	.11	--	--	--	--	10	4	--	--	--	--	8	--	.0	.0	.0	.0	33	6.9	--

e Estimated.

CUMBERLAND RIVER BASIN--Continued
CUMBERLAND RIVER AT SMITHLAND, KY.

LOCATION --At gaging station at bridge on U. S. Highway 60 at Smithland, Livingston County, 1 mile downstream from McCormick Creek, and 2.8 miles upstream from mouth of Cumberland River.

DRAINAGE AREA 18,080 square miles, approximately.

RECORDS AVAILABLE --Chemical analyses, October 1949 to September 1950.

Water temperatures: October 1949 to September 1950.

EXTREMES 1955-56 --Water temperatures: Minimum, 36°F on several days during August; maximum, 86°F on several days during January.

EXTREMES 1949-56 --Water temperatures: Maximum, 90°F Aug. 3, 1955; minimum, 34°F Feb. 3-5, 7, 1951.

REMARKS --Records of discharge for water year October 1955 to September 1956.

Temperature (°F) of water, water year October 1955 to September 1956
Twice-daily measurements at approximately 8 a.m. and 5 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.....	73	73	57	58	44	45	43	44	45	45	49	49	53	55	57	60	70	71	79	82	82	84	77	78
2.....	70	72	58	46	47	43	45	46	46	46	49	49	54	56	59	60	69	71	80	82	82	83	75	78
3.....	69	72	55	48	48	43	45	45	45	45	49	49	55	56	59	61	70	72	80	81	82	84	75	77
4.....	70	71	53	56	47	48	43	45	44	45	48	50	55	56	59	61	70	73	80	82	83	86	75	78
5.....	70	71	54	56	46	47	43	46	45	46	49	50	54	56	60	64	71	73	80	81	84	86	75	78
6.....	71	73	54	55	44	46	44	46	46	47	50	51	56	58	62	64	71	73	80	82	84	86	76	77
7.....	72	71	53	54	46	48	42	44	46	48	51	51	54	55	60	62	71	74	80	83	83	86	74	75
8.....	68	70	52	52	45	47	40	43	47	48	47	50	55	56	60	62	72	74	80	82	83	86	73	74
9.....	68	71	50	53	44	44	38	40	47	48	50	51	54	55	60	63	73	75	79	80	84	86	72	74
10.....	68	71	52	53	44	46	39	41	47	47	51	52	54	54	62	64	74	76	79	81	83	84	71	74
11.....	68	70	52	54	44	45	41	43	47	47	51	51	53	55	63	65	74	77	79	81	82	85	73	74
12.....	68	69	54	55	43	45	40	42	47	47	50	50	53	55	59	64	75	77	78	79	83	85	73	75
13.....	67	68	55	57	42	45	39	42	46	48	48	48	53	55	64	66	76	77	79	79	83	85	73	75
14.....	66	67	55	56	43	43	39	41	48	48	48	48	54	56	65	65	76	77	78	80	83	85	73	75
15.....	65	66	57	58	41	42	41	40	47	46	47	48	55	54	63	63	76	78	78	80	83	85	73	76
16.....	64	65	57	55	40	42	36	37	46	47	47	47	53	54	61	63	76	77	78	79	83	85	74	76
17.....	63	63	53	54	41	44	36	38	47	48	47	49	53	55	63	65	76	77	79	80	84	85	73	74
18.....	62	63	52	53	43	44	37	39	48	49	48	48	53	55	63	66	77	79	80	83	86	71	74	74
19.....	61	63	52	52	42	42	37	39	49	51	48	49	53	56	64	67	77	80	78	78	84	84	71	72
20.....	61	64	50	52	40	41	37	40	49	51	47	49	54	55	65	68	78	80	78	82	82	82	70	72
21.....	62	64	51	53	40	42	37	40	50	52	47	49	53	56	66	69	79	81	78	80	80	82	69	73
22.....	62	65	52	54	40	42	38	39	49	51	48	49	54	55	67	69	79	82	79	82	79	81	70	73
23.....	63	65	52	53	42	44	36	37	49	50	48	50	53	55	68	68	80	82	80	80	79	81	71	71
24.....	62	63	50	51	45	46	36	37	50	51	48	49	53	55	66	68	80	82	79	81	78	80	69	71
25.....	60	62	50	51	44	46	36	37	50	51	48	50	54	56	66	68	79	80	79	82	78	80	68	71
26.....	61	64	49	52	44	44	36	37	50	50	50	52	56	58	68	69	79	79	80	83	78	80	69	72
27.....	61	63	50	51	42	44	37	39	49	50	51	52	57	59	68	70	80	81	83	83	78	80	69	71
28.....	62	62	45	47	42	44	39	40	47	48	51	53	58	60	68	70	78	79	81	84	78	81	68	71
29.....	60	60	45	47	44	44	39	39	47	49	51	53	58	60	69	72	78	80	82	83	79	81	68	72
30.....	58	58	43	47	42	43	40	41	--	--	51	52	57	58	71	73	80	81	84	78	80	69	71	71
31.....	56	58	--	--	41	43	43	43	--	--	51	52	57	58	71	72	--	--	82	83	78	80	--	--
Average.....	65	66	52	53	43	45	39	41	47	48	49	50	54	56	64	66	75	77	79	81	81	83	72	74

TENNESSEE RIVER BASIN

SWANNAHOA RIVER AT BILTMORE, N. C.

LOCATION.--At gaging station on left bank at Biltmore, Buncombe County, 100 feet downstream from Biltmore Avenue Bridge, 200 feet upstream from Southern Railway bridge, and 1.6 miles upstream from mouth.

DRAINAGE AREA.--130 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1436.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
Oct. 20, 1955	25	11	0.12	3.8	0.7	28	2.2	56	17	5.8	0.0	0.3	99	13	0	147	7.1	8
Nov. 16	36	12	.09	4.0	.9	10	1.9	30	9.9	4.5	.1	.0	61	14	0	90.8	6.6	10
Dec. 8	47	9.7	.01	2.9	.7	7.1	1.2	24	6.3	2.2	.1	.6	43	10	0	61.0	7.0	5
Jan. 4, 1956	35	10	.10	3.5	.6	4.5	1.2	22	2.4	3.0	.1	.5	38	11	0	51.3	7.2	12
Feb. 7	515	7.5	.01	2.4	.3	2.0	.9	11	3.3	2.0	.1	1.0	24	7	0	37.8	6.3	20
Mar. 6	116	8.5	.02	2.8	.4	2.8	.8	15	2.5	2.0	.1	.7	29	9	0	41.8	6.5	15
Apr. 4	130	8.9	.05	2.6	1.0	2.9	.9	15	3.5	2.0	.0	.3	33	11	0	42.1	6.6	8
May 3	250	9.1	.01	3.2	.9	2.9	1.2	16	3.4	2.2	.0	.6	35	12	0	50.7	6.3	8
June 7	47	11	.02	3.1	.3	5.2	1.4	18	5.9	2.2	.0	.9	41	9	0	55.8	6.4	3
July 13	51	11	.02	4.2	.8	9.6	2.2	27	27	3.5	.1	1.1	86	13	0	102	6.2	3
Aug. 2	28	12	.01	5.2	1.0	13	2.0	6	37	3.5	.1	1.1	72	17	0	122	5.9	5
Sept. 10	19	13	.01	5.2	.7	14	2.8	52	5.3	5.2	.1	.2	73	16	0	113	6.4	4

TENNESSEE RIVER BASIN--Continued

EAST FORK PIGEON RIVER NEAR CANTON, N. C.

LOCATION.--Temperature recorder at gaging station on right bank, 800 feet upstream from U. S. Highway 276, 0.4 mile downstream from Dix Creek, 1.7 miles upstream from confluence with West Fork Pigeon River, and 5.2 miles southwest of Canton, Haywood County.

DRAINAGE AREA.--51.5 square miles.

RECORDS AVAILABLE.--July 1954 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum: 82°F July 27, 28; minimum, freezing point Dec. 14.

EXTREMES, 1954-56.--Water temperatures: Maximum, 84°F July 15, 20, 30, Aug. 16, 1954; minimum, freezing point Dec. 14, 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1436.

Temperature (°F) of water, water year October 1955 to September 1956

Recorder with temperature attachment, 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	65	52	43	34	33	34	33	40	37	47	39	56	44	64	54	70	64	72	65	78	68	78	67
2.....	66	63	54	46	40	34	37	35	42	37	50	44	54	49	65	56	64	58	73	64	79	70	77	68
3.....	69	60	51	47	46	40	41	36	46	43	49	44	58	50	63	57	67	55	76	64	81	70	77	68
4.....	67	61	47	41	48	46	39	36	46	43	51	43	63	54	66	57	65	56	72	68	79	70	78	67
5.....	68	61	47	40	47	43	39	34	46	40	53	43	57	51	65	55	69	58	73	66	81	70	73	66
6.....	65	64	48	41	43	40	40	34	47	41	59	49	57	52	62	57	70	58	72	65	80	70	72	67
7.....	70	64	53	48	41	39	39	35	45	42	60	54	57	49	62	57	70	59	71	65	79	69	87	65
8.....	67	58	49	43	41	37	35	34	46	41	59	47	53	42	63	57	66	60	70	67	80	66	89	64
9.....	62	53	47	40	41	35	34	34	47	44	52	42	55	42	62	52	68	60	72	65	81	67	89	58
10.....	61	50	45	40	42	35	34	34	48	45	49	43	52	46	54	51	68	60	75	65	79	59	68	57
11.....	62	51	49	41	36	33	34	34	49	46	51	48	49	39	67	55	70	60	76	63	77	68	69	58
12.....	63	52	51	43	34	34	34	34	46	40	53	47	53	41	60	57	72	63	75	63	78	67	72	60
13.....	59	54	53	48	34	33	34	34	45	39	52	50	54	42	70	58	72	64	71	67	81	67	73	61
14.....	58	53	55	52	34	32	34	34	48	39	57	52	53	43	71	65	70	65	72	66	77	70	74	61
15.....	53	49	56	52	35	33	34	34	48	45	53	49	52	50	69	61	69	64	75	66	76	68	74	63
16.....	52	47	59	54	34	33	34	34	50	45	50	45	50	46	67	59	70	65	74	67	79	67	75	63
17.....	54	46	58	46	33	33	34	34	50	48	45	41	51	44	66	53	76	64	77	68	77	67	73	64
18.....	52	50	48	41	38	33	34	34	54	50	47	43	52	44	68	66	76	66	77	68	77	68	73	64
19.....	53	49	50	45	40	35	37	34	52	46	45	41	53	44	67	55	72	67	76	68	76	68	69	60
20.....	56	46	45	39	38	35	37	36	52	45	44	38	53	45	70	57	72	64	71	67	75	68	69	59
21.....	57	48	47	39	37	33	38	35	46	40	48	33	54	42	70	57	74	65	74	64	72	68	67	55
22.....	59	50	49	41	38	33	38	35	45	40	46	40	51	45	71	60	76	67	75	66	75	63	69	57
23.....	61	53	50	45	39	34	39	37	43	39	52	40	56	46	72	62	78	66	75	66	75	62	67	60
24.....	58	54	49	46	46	38	41	37	49	43	49	42	55	48	67	61	77	67	79	67	75	73	67	63
25.....	54	45	46	45	50	44	41	39	50	46	49	36	56	47	62	58	77	68	74	69	72	64	65	57
26.....	54	45	46	41	48	42	40	36	46	41	54	43	59	48	61	57	78	67	80	67	74	65	57	54
27.....	57	47	45	38	46	41	42	35	47	42	56	43	60	49	68	58	77	68	82	68	76	65	55	54
28.....	57	46	43	36	41	38	47	42	50	47	57	50	61	49	70	60	79	65	82	70	72	68	62	54
29.....	60	53	38	34	41	35	45	41	46	38	56	54	61	48	67	60	76	67	75	69	76	65	63	56
30.....	55	50	34	34	42	35	50	44	46	41	54	45	63	52	72	61	75	66	70	69	76	67	66	57
31.....	53	46	44	44	35	33	44	38	44	44	54	43	64	53	74	63	72	66	75	70	77	67	67	61
Average.....	60	53	49	43	40	36	39	35	47	42	52	44	55	46	67	58	72	63	75	66	77	67	70	61

a Estimated on basis of air temperature fluctuation.

TENNESSEE RIVER BASIN--Continued
PIGEON RIVER NEAR HEPCO, N. C.

LOCATION --At gaging station on left bank, 0.8 mile downstream from Jonathan Creek, 2.4 miles upstream from Fines Creek and from Hepco, Haywood County, and at mile 45.0.
DRAINAGE AREA --350 square miles.
RECORDS AVAILABLE --Chemical analyses: October 1955 to September 1956.
REMARKS --Records of discharge for water year October 1955 to September 1956 given in WSP 1436.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH
													Calcium, magnesium	Non-carbonate		
Oct. 10, 1955.....	251	9.8	0.41	34	0.6	49	1.9	72	7.9	96		0.5	86	27	420	6.6
Nov. 8.....	178	10	.53	67	1.6	85	3.5	97	46	180		1.0	173	94	778	6.7
Dec. 5.....	686	10	.38	61	1.0	25	2.0	173	4.6	40		.3	156	14	427	6.8
Jan. 6, 1956.....	184	11	.30	61	1.5	80	3.2	101	39	148		.7	158	75	751	6.4
Feb. 1.....	335	11	.18	38	1.3	65	2.6	141	16	100		.2	101	0	555	6.9
Mar. 21.....	971	8.3	.11	25	.5	22	1.4	77	15	28		.1	65	2	253	6.8
Apr. 16.....	6,460	11	.18	19	.8	21	1.2	40	8.1	40		.4	158	18	231	6.4
May 7.....	902	7.2	.02	9.1	.5	4.8	1.2	25	4.5	5.2		1.6	25	4	84.9	7.3
June 18.....	328	11	.51	49	1.1	54	2.2	101	11	120		.5	126	44	568	6.7
July 17.....	575	11	.61	29	1.5	58	2.6	76	23	80		.7	79	17	447	6.7
Aug. 8.....	199	13	.45	61	2.4	75	2.4	143	12	136		.7	161	44	686	6.8
Sept. 17.....	130	15	.80	83	1.5	165	5.2	193	52	230		1.9	212	54	1,150	6.7

TENNESSEE RIVER BASIN--Continued

DOE RIVER AT ELIZABETHTON, TENN.

LOCATION.--Temperature recorder at gaging station on left bank 1,500 feet upstream from bridge on State Highway 91 at Elizabethton, Carter County, and 1 mi. upstream from mouth.

DRAINAGE AREA 137 square miles.

RECORDS AVAILABLE February 1954 to September 1956.

Water temperatures: Maximum, 77° F June 25; minimum, 33° F Dec. 12, Jan. 8, 9.

EXTREMES, 1955-56.--Water temperatures: Maximum, 82° F July 14, 1954; minimum, 32° F Dec. 8, 1954.

EXTREMES, 1954-56.--Water temperatures: Maximum, 82° F July 14, 1954; minimum, 32° F Dec. 8, 1954.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1436.

Temperature (° F) of water, water year October 1955 to September 1956

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

TENNESSEE RIVER BASIN--Continued

NORTH FORK HOLSTON RIVER NEAR SALTVILLE, VA.

LOCATION.--At gaging station 0.5 mile upstream from Cedar Branch bridge, 1.5 miles northeast of Saltville, Sayth County, and 7.8 miles downstream from Laurel Creek.

DRAINAGE AREA.--222 square miles.

RECORDS AVAILABLE.--Chemical analyses: June 1930 to March 1931, October 1949 to September 1950, October 1954 to September 1956 (discontinued).

EXTREMES, 1930-31.--Dissolved solids: Maximum, 170 ppm Oct. 11-20, 1930; minimum, 68 ppm Mar. 21-31, 1931.

Hardness: Maximum, 164 ppm Oct. 11-20, 1930; minimum, 58 ppm Mar. 21-31, 1931.

REMARKS.--Records of water discharge for water year October 1955 to September 1956 given in WSP 1436.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium, magnesium	Non-carbonate			
Oct. 28, 1955	25	4.3	0.02	37	17	1.5	1.7	178	17	2.0	0.0	1.4	168	182	16	299	8.2	3
Nov. 30	25	6.1	.00	38	14	2.0	1.5	182	17	2.1	.0	4.4	182	152	20	282	8.0	5
Jan. 30, 1956	534	3.7	.00	28	7.6	1.8	1.5	94	20	2.4	.0	4.6	144	101	24	203	7.5	5
Feb. 28	644	4.9	.02	17	4.0	0.9	1.0	61	8.1	1.4	.0	3.4	70	59	9	122	7.7	5
Apr. 28	210	4.3	.00	24	7.8	1.1	.9	102	9.0	1.4	.0	3.2	115	92	8	182	7.6	2
May 28	153	3.7	.00	26	9.2	1.1	1.0	113	9.2	1.3	.0	2.0	111	103	10	193	7.7	5
July 2	67	5.8	.00	29	13	1.4	1.2	137	8.0	1.4	.0	3.4	127	126	14	231	7.7	7
July 30	170	6.1	.05	26	8.5	1.3	2.2	108	8.1	3.0	.0	.2	118	100	11	201	7.7	10
Aug. 29	41	3.4	.00	29	12	1.0	1.3	135	6.7	1.7	.0	1.0	132	122	11	228	8.2	2
Sept. 28	371	4.3	.02	33	12	1.5	1.8	140	14	2.6	.0	2.6	160	132	17	258	7.6	15

TENNESSEE RIVER BASIN--Continued
NORTH FORK HOLSTON RIVER AT HOLSTON, VA.

LOCATION.--At gaging station at bridge on U. S. Highway 19, 100 feet downstream from Greendale Creek, 0.4 mile upstream from Garrett Creek, 0.5 mile east of Holston, Washington County, and 0.6 mile upstream from Little Moccasin Creek.

DRAINAGE AREA.--402 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1951 to September 1956 (discontinued).

Water temperatures: October 1951 to September 1956 (discontinued).

EXTREMES, 1955-56.--Dissolved solids: Maximum, 8,050 ppm Oct. 1-10; minimum, 151 ppm Apr. 15, 16.

Hardness: Maximum, 4,600 ppm Oct. 1-10; minimum, 108 ppm Apr. 15, 16.

Specific conductance: Maximum daily, 14,700 microhos Oct. 7; minimum daily, 287 microhos Apr. 16.

Water temperatures: Maximum, 87°F July 1; minimum, 33°F Dec. 16, 17, Jan. 13.

EXTREMES, 1951-56.--Dissolved solids (1951-53, 1955-56): Maximum, 8,780 ppm Oct. 11-15, 17-20, 1952; minimum, 151 ppm Apr. 15, 16, 1956.

Hardness: Maximum, 4,870 ppm Oct. 11-15, 17-20, 1952; minimum, 109 ppm Jan. 27, 1953.

Specific conductance: Maximum daily, 15,400 microhos Sept. 14, 1951, Oct. 11, 12, 1952; minimum daily, 287 microhos Apr. 16, 1956.

Water temperatures: Maximum daily, 15,400 microhos Sept. 14, 1951, Oct. 11, 12, 1952; minimum daily, 287 microhos Apr. 16, 1956.

REMARKS.--Records of specific conductance of daily samples available in district office at Raleigh, N. C. Records of discharge for water year October 1955 to September 1956 given in WSP 1436.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color
														Calcium	Non-carbonate			
Oct. 1-10, 1955.....	67	3.9	0.00	1,780	38	1,150	8.5	54	91	4,950			8,050	4,600	4,550	13,800	7.2	5
Oct. 11-20.....	56	--	--	1,660	36	1,080	5.0	64	92	4,720				4,270	4,240	13,000	7.2	--
Oct. 21-31.....	49	--	--	1,630	22	1,120	4.9	57	99	4,180			--	4,180	4,110	12,600	7.1	--
Nov. 1-10.....	47	--	--	1,500	24	1,020	6.6	80	103	4,180			--	3,840	3,780	12,000	7.5	--
Nov. 11-20.....	87	--	--	1,220	19	1,040	6.8	61	84	4,600			--	3,400	3,350	13,000	7.4	--
Nov. 21-30.....	73	3.5	0.00	1,410	15	775	4.6	59	80	3,700			6,020	3,580	3,530	10,600	7.2	0
Dec. 1-10.....	115	5.4	0.00	1,170	15	788	4.6	70	79	3,180			5,280	2,980	2,920	9,350	7.4	3
Dec. 11-20.....	78	8.0	0.00	1,330	15	825	4.8	56	79	3,600			5,890	3,380	3,330	10,500	7.4	5
Dec. 21-31.....	93	3.9	0.00	985	13	675	4.1	62	68	2,850			4,630	2,510	2,460	8,230	7.4	--
Jan. 1-10, 1956.....	77	4.6	0.03	1,260	15	800	5.0	69	74	3,420			5,610	3,200	3,150	10,000	7.7	5
Jan. 11-20.....	69	4.4	0.00	1,570	17	950	4.9	69	80	4,080			6,940	3,990	3,930	12,000	7.4	4
Jan. 21-31.....	361	2.9	0.00	1,480	16	900	4.5	59	80	4,080			6,590	3,780	3,710	11,300	7.4	5
Feb. 1-10.....	1,580	6.6	0.04	187	5.5	99	1.7	48	24	452			800	489	450	1,570	7.5	2
Feb. 11-20.....	1,150	7.1	0.03	191	5.9	112	1.7	47	26	488			855	501	462	1,650	7.4	1
Feb. 21-29.....	1,855	8.0	0.03	165	6.0	98	1.6	45	22	418			742	486	400	1,480	7.4	2
Mar. 1-10.....	1,040	8.0	0.03	132	6.3	103	1.7	52	24	408			729	405	363	1,440	7.3	2
Mar. 11-20.....	1,890	8.0	0.02	105	5.1	62	1.5	61	18	282			482	283	233	947	7.4	2
Mar. 21-31.....	919	9.3	0.03	146	6.6	84	1.7	70	18	382			662	391	334	1,280	7.3	5

Apr. 1-10, 1956.....	1,020	9.6	0.02	174	5.9	102	1.8	58	22	448		792	458	411	1,540	7.5	3
Apr. 11-20.....	1,700	8.2	.02	131	5.9	81	1.6	59	22	330		609	351	303	1,580	7.7	2
Apr. 21-30.....	6,840	5.9	.03	38	3.2	12	1.0	76	11	42		151	108	46	1,590	7.7	25
Apr. 1-10.....	516	6.8	.03	222	9.0	145	1.4	73	28	595		1,040	590	531	2,070	7.5	0
May 1-10.....	1,130	6.2	.02	198	6.2	108	1.8	78	24	475		1,658	520	456	1,550	7.7	2
May 11-19.....	580	4.6	.02	302	14	168	2.0	61	27	770		1,320	811	761	2,490	7.4	2
May 20-30.....	325	4.0	.02	461	23	291	2.2	60	32	1,280		2,120	1,245	1,196	4,040	7.3	2
May 31-June 5.....	445	5.2	.02	266	15	162	1.8	68	20	715		1,320	1,225	670	2,350	7.4	2
June 6-20.....	183	4.4	.00	719	18	442	2.9	52	52	2,000		3,260	1,868	1,825	5,900	7.2	2
June 21-30.....	212	3.9	.01	659	23	408	2.7	49	42	1,750		2,910	1,739	1,599	5,430	7.1	2
July 1-7.....	175	3.3	.01	782	28	510	3.3	48	51	2,900		3,600	2,066	2,027	6,550	7.1	2
July 9, 14-17, 19, 20	320	4.6	.01	274	16	188	2.2	77	29	745		1,300	2,749	686	2,460	7.4	2
July 8, 11-13, 18, Aug. 1, 2.....	265	4.6	.03	461	9.0	298	2.5	59	33	1,250		2,090	1,187	1,139	3,950	7.4	5
July 22-23.....	179	3.2	.01	738	21	485	2.6	51	38	2,020		3,330	1,928	1,886	6,240	7.2	5
July 21, 29, 30, 31..	261	3.8	.00	266	15	192	2.3	70	25	750		1,290	725	668	2,480	7.5	5
Aug. 3-10.....	131	4.0	.00	965	21	642	3.1	49	59	2,700		4,420	2,480	2,450	8,040	7.4	5
Aug. 11-20.....	85	3.0	.00	1,290	35	800	4.8	39	77	3,600		5,830	3,210	3,180	10,300	7.0	5
Aug. 21-31.....	132	2.8	.00	1,100	16	650	4.2	49	60	2,940		4,800	2,810	2,770	8,600	6.9	7
Sept. 1-6.....	89	3.3	.00	1,520	40	920	5.2	44	82	4,200		6,790	3,960	3,920	11,700	7.0	5
Sept. 7-14.....	93	2.6	.01	905	23	612	4.4	56	60	2,590		4,220	2,350	2,310	7,530	7.3	10
Sept. 15-27.....	77	2.1	.00	1,310	37	910	5.4	59	95	3,790		6,180	3,420	3,370	10,700	7.4	7
Sept. 28-30.....	372	6.0	.00	312	10	218	2.9	84	36	820		1,450	820	751	2,720	7.9	10
Average	490	5.2	0.01	779	17	501	3.4	60	52	2,160		3,140	2,010	1,860	6,330	--	4

TENNESSEE RIVER BASIN--Continued

NORTH FORK HOLSTON RIVER AT HOLSTON, VA.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	71	54	36	37	--	46	53	70	72	87	80	81
2	72	55	38	38	42	48	54	62	61	85	80	80
3	72	51	40	40	--	46	55	62	63	84	80	75
4	72	50	45	41	45	49	56	61	65	85	80	80
5	72	46	--	39	48	50	59	67	66	84	78	76
6	73	48	46	40	48	49	57	69	70	84	79	76
7	70	49	45	36	47	56	52	65	74	82	78	72
8	70	47	44	--	--	49	48	63	76	80	76	72
9	68	46	--	36	46	48	52	63	78	78	--	70
10	66	42	39	34	48	49	50	64	78	--	83	69
11	66	41	37	35	50	50	50	70	82	79	80	78
12	66	43	--	34	--	49	55	73	81	80	81	74
13	64	50	--	33	47	51	56	74	79	75	82	75
14	63	54	34	35	45	50	50	75	81	75	80	74
15	59	57	35	35	48	--	50	--	82	73	82	74
16	57	60	33	35	51	48	51	67	81	75	81	76
17	55	52	33	--	--	45	49	63	78	75	82	76
18	54	49	34	36	50	44	50	65	76	76	79	74
19	54	46	--	37	50	43	53	70	68	78	80	70
20	57	47	--	--	49	41	55	72	70	76	77	69
21	58	45	35	--	--	48	52	72	74	80	72	70
22	60	47	37	37	--	48	54	74	76	80	72	68
23	62	49	37	36	43	48	56	74	--	83	71	70
24	59	48	42	40	46	47	55	70	82	76	75	70
25	56	47	48	--	--	47	58	68	83	80	72	61
26	55	45	46	38	46	48	59	67	85	80	80	61
27	57	44	43	39	--	49	62	67	83	82	80	61
28	57	41	42	36	48	48	68	69	79	84	78	64
29	59	35	41	38	45	54	68	72	79	75	80	64
30	57	35	39	43	--	51	70	74	83	78	78	67
31	55	--	39	40	--	48	--	76	--	80	80	--
Average	62	47	40	37	47	48	55	69	76	80	79	72

TENNESSEE RIVER BASIN--Continued
CULLASAJA RIVER AT CULLASAJA, N. C.

LOCATION --At gaging station at Cullasaja, Macon County, 1.4 miles downstream from Ellijay Creek, and 4.1 miles upstream from mouth.
DRAINAGE AREA --86 square miles.
RECORDS AVAILABLE --Chemical analyses: October 1954 to September 1956.
REMARKS --Records of discharge for water year October 1955 to September 1956 given in WSP 1436.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180° C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25° C)	pH	Color
														Calcium, magnesium	Non-carbonate			
Nov. 17, 1955	81	9.1	0.03	1.8	0.4	1.7	0.8	12	2.3	1.2	0.0	0.0	26	6	0	26.4	6.6	8
Jan. 9, 1956	60	9.1	.04	1.6	.5	1.3	.4	9	1.4	1.2	.0	.1	21	6	0	22.5	6.6	10
Feb. 7	568	5.5	.01	1.4	.1	.9	.4	6	1.8	1.5	.0	.3	15	4	0	20.8	6.2	10
Mar. 7	244	7.4	.01	1.3	.1	1.0	.3	8	1.4	1.0	.0	.3	18	4	0	21.0	6.5	20
Apr. 13	365	6.2	.01	1.6	.2	1.1	.6	8	.5	.8	.0	.3	19	5	0	17.6	6.4	7
May 21	152	8.1	.02	1.4	.3	1.3	.6	8	.4	.8	.0	.3	20	5	0	18.9	6.3	7
June 13	142	8.3	.02	1.2	.2	1.7	.6	9	.4	.8	.0	.2	23	4	0	21.1	6.5	8
July 13	131	7.5	.02	1.2	.2	1.7	.4	8	1.6	.8	.0	.4	22	4	0	19.1	6.4	15
Aug. 7	74	8.3	.10	1.2	.2	2.1	1.4	10	1.1	.8	.0	.3	24	4	0	20.9	6.5	20
Sept. 13	47	9.1	.01	2.4	.2	2.2	.5	14	1.5	1.0	.2	.1	25	7	0	27.4	6.6	4

PART 4. ST. LAWRENCE RIVER BASIN
STREAMS TRIBUTARY TO LAKE SUPERIOR
SECOND CREEK NEAR AURORA, MINN.

LOCATION --At bridge at mouth 0.4 mile downstream from gaging station, 0.5 mile downstream from First Creek, and 2.1 miles east of Aurora, St. Louis County.

DRAINAGE AREA --26.3 square miles

RECORDS AVAILABLE --Chemical analyses: April to September 1956.

Water temperatures: April to September 1956.

EXTREMES: April to September 1956. --Dissolved solids: Maximum, 135 ppm Aug. 25 to Sept. 17; minimum, 78 ppm May 2-20.

Hardness: April to September 1956. --Dissolved solids: Maximum, 135 ppm Aug. 25 to Sept. 17; minimum, 78 ppm May 2-20.

Specific conductance: Maximum daily, 212 micromhos Aug. 2; minimum daily, 80.8 micromhos May 6.

Water temperatures: Maximum, 80.7° June 10.

REMARKS --Records of specific conductance of daily samples available in district office at Lincoln, Nebr. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Chemical analyses, in parts per million, September 1955 to September 1956

Date of collection	Mean discharge (cfs)	Silica (SiO ₂)	Iron (Fe) ^a	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃) (B)	Parts per million	Dissolved solids (residue at 180°C)		Hardness as CaCO ₃		Percent adsorption ratio	Specific conductance (micro-mhos at 25°C)	pH or Col.		
														Tons per acre-foot	Tons per acre-day	Calcium, mg./l.	Non-carbonate					
Sept. 27, 1955	b17	16	0.33	17	6.7	3.5		70	17	1.0	--	1.4	0.10	144	0.20	--	70	13	10	0.2	158	7.1
Apr. 16-19, 1956	87.8	11	.15	9.0	4.3	3.0	1.3	28	17	5.5	0.1	1.7	.08	98	13	23.2	40	17	14	--	99.6	6.8
Apr. 20-May 1	74.1	10	11	8.5	4.1	2.4	1.8	30	13	3.0	0.1	1.0	0.07	81	11	16.2	38	13	11	--	81.0	7.1
May 2-8	73.3	8.1	13	8.0	3.7	2.7	1.0	30	11	1.0	0.1	0.9	0.07	78	11	15.4	35	10	14	--	85.8	7.1
May 9-20	46.1	6.8	15	9.5	4.5	2.7	1.8	37	11	1.5	0.1	0.7	0.09	78	11	9.71	42	12	12	--	95.2	7.2
May 21-28	13.8	8.3	.04	11	6.0	3.7	1.1	54	14	1.0	0.4	0.2	.11	85	12	3.17	52	8	13	--	120	7.2
May 29-June 7	16.7	10	.04	13	6.2	3.7	1.6	60	12	2.5	0.3	0.6	.10	94	13	4.24	58	9	12	--	134	7.3
June 8-23	5.42	15	.02	17	8.7	5.4	1.6	90	11	2.5	0.4	0.0	.10	117	16	1.71	78	4	13	--	175	7.3
June 24-July 24	7.05	13	11	18	9.0	4.8	1.2	97	11	2.0	0.0	0.4	.13	123	17	2.34	82	2	11	--	182	7.4
July 25-Aug. 24	7.92	14	.03	20	9.5	4.3	1.0	98	14	3.0	0.1	0.5	.09	127	17	2.72	89	9	9	--	193	7.6
Aug. 25-Sept. 17	7.55	15	.10	19	9.1	5.9	1.5	94	17	4.5	0.4	1.7	.09	135	18	2.75	85	8	13	--	192	7.4
Sept. 18-30	9.48	15	.13	16	9.0	6.0	1.7	83	13	4.5	0.4	1.4	.10	131	18	3.35	77	9	14	--	178	7.4

^a In solution when analyzed.

b Discharge at time of sampling.

Temperature (°F) of water, April to September 1956

/Once-daily measurement between 4 p. m. and 8 p. m./

Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.	Day	Apr.	May	June	July	Aug.	Sept.
1	--	49	63	72	74	b63	9	--	49	67	70	70	a56	25	37	60	b60	70	68	a53
2	--	43	b59	73	70	b66	10	--	48	80	a68	70	a59	18	--	58	72	66	64	73
3	--	41	69	b63	63	b64	11	--	54	b73	73	71	a60	19	--	53	72	66	64	73
4	--	a49	69	b64	--	62	12	--	b52	67	74	70	62	20	a43	63	74	65	50	68
5	--	a52	71	b64	74	61	13	--	56	78	b65	72	61	21	b37	66	76	66	65	68
6	--	a48	70	a67	74	48	14	--	58	74	74	70	b55	22	a40	63	73	64	49	70
7	--	b48	75	63	70	49	15	--	53	a69	72	72	b53	23	38	62	66	73	65	52
8	--	53	75	62	70	a58	16	--	45	b65	65	72	a54	24	43	62	66	73	65	51
Average

a Reading obtained between 12 m. and 3 p. m.

b Reading obtained between 8 a. m. and 11 a. m.

STREAMS TRIBUTARY TO LAKE SUPERIOR--Continued

PARTRIDGE RIVER NEAR AURORA, MINN.

LOCATION.--At gaging station at highway bridge, 1,000 feet downstream from Second Creek, 2½ miles east of Aurora, St. Louis County, and 2½ miles upstream from mouth.

DRAINAGE AREA.--156 square miles.

RECORDS AVAILABLE.--Chemical analyses: April to September 1956.

Water temperatures: April to September 1956.

EXTREMES, April to September 1956.--Dissolved solids: Maximum, 74 ppm May 25 to June 9.

Hardness: Maximum, 52 ppm Aug. 4-29; minimum, 21 ppm May 7-24.

Specific conductance: Maximum daily, 133 micromhos Aug. 9, 10; minimum daily, 43.9 micromhos May 16.

Water temperatures: Maximum, 82°F June 10.

REMARKS.--Records of specific conductance of daily samples available in district office at Lincoln, Nebr. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Chemical analyses, in parts per million, September 1955 to September 1956

Date of collection	Mean discharge (cfs)	Silica (SiO ₂)	Iron ^a (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Boron (B)	Dissolved solids			Hardness as CaCO ₃	Percent adsorption ratio	Specific conductance (micro-mhos at 25°C)	pH	Color		
														Parts per million		Tons per acre-foot							
														Residue at 180°C	Sum								
																						Tons per day	
Sept. 27, 1955 ^b	61	14	1.3	8.2	6.4	2.1		42	15	0.0	--	2.1	0.04	130	0.18	22.8	47	13	9	0.1	96.5	6.9	170
Apr. 9-23, 1956	145	11	.23	8.0	3.9	2.2	1.8	26	14	2.0	0.1	1.7	.07	84	.11	32.9	36	15	11	.2	86.0	7.1	100
Apr. 19 ^b	141	11	.26	8.5	4.3	3.1	1.3	28	16	5.0	.1	2.1	.09	102	.14	--	39	16	14	.2	96.5	6.9	55
Apr. 24-May 6	633	9.6	.25	5.0	2.8	1.8	.7	17	14	.0	.0	2.3	.07	82	.11	140	24	10	14	.2	56.0	6.7	170
May 7-24	535	6.2	.26	5.0	2.1	1.5	.8	16	8.8	1.0	--	1.9	.09	76	.10	110	21	8	13	.1	47.9	6.7	160
May 25-June 9	139	4.3	.22	5.5	3.2	1.6	1.3	24	11	.0	.4	1.4	.10	74	.10	27.8	27	7	11	.1	58.2	6.8	--
June 10-19	46.1	5.1	.28	7.5	3.5	1.8	1.0	31	10	.0	.4	1.1	.11	80	.11	9.96	33	8	10	.1	69.2	6.8	--
June 20-28	19.8	7.3	.27	9.0	4.8	3.0	1.4	44	10	.0	.4	1.2	.12	90	.12	4.81	42	6	13	.2	90.0	7.0	--
June 29-July 17	24.3	7.5	.25	9.0	5.5	3.0	1.0	51	13	.0	.0	1.1	.09	88	.12	5.77	45	3	12	.2	116	7.2	92
July 18-Aug. 3	29.6	6.3	.24	12	3.4	2.3	.9	43	14	.0	.2	1.2	.08	84	.11	6.71	44	9	10	.2	89.4	7.1	120
Aug. 4-29	29.5	8.9	.21	14	4.1	2.8	.8	54	14	.0	.1	1.1	.10	96	.13	7.65	52	8	10	.2	112	7.1	90
Aug. 30-Sept. 30	45.2	8.3	.86	8.0	4.9	2.3	.7	40	11	.0	.1	1.6	.09	94	.13	11.5	40	7	11	.2	85.2	7.0	150
Weighted average ^c	149	7.7	0.28	6.0	2.9	1.8	0.9	22	12	0.5	0.1	1.9	0.08	81	0.11	32.6	27	9	12	0.2	61.1	--	--
Weighted average ^d	85.8	8.9	0.38	7.0	3.5	2.0	1.0	27	12	0.9	0.1	1.9	0.08	89	0.12	20.6	32	10	12	0.2	71.7	--	--

^a In solution when analyzed.

^b Not included in weighted average.

^c Represents 83 percent of runoff for water year October 1955 to September 1956

^d Includes estimated data for missing period. Represents 100 percent of runoff for water year October 1955 to September 1956.

ST. LAWRENCE RIVER BASIN
STREAMS TRIBUTARY TO LAKE SUPERIOR--Continued
PARTRIDGE RIVER NEAR AURORA, MINN.--Continued

Temperature (°F) of water, April to September 1956
Once-daily measurement between 4 p.m. and 7 p.m.⁷

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

a Reading obtained between 11 a.m. and 3 p.m.

b Reading obtained between 8 a.m. and 10 a.m.

STREAMS TRIBUTARY TO LAKE SUPERIOR--Continued

EMBARRASS RIVER AT EMBARRASS, MINN.

LOCATION.--At gaging station at highway bridge at Embarrass, St. Louis County, 70 feet upstream from railway bridge.

DRAINAGE AREA.--93.8 square miles.

RECORDS AVAILABLE.--Chemical analyses: April to September 1956.

Water temperatures: April to September 1956.

EXTREMES, April to September 1956.--Dissolved solids: Maximum, 110 ppm Aug. 9 to Sept. 30; minimum, 71 ppm May 1-12.

Hardness: Maximum, 53 ppm July 26 to Aug. 8; minimum, 18 ppm May 1-12.

Specific conductance: Maximum daily, 117 micromhos July 1; minimum daily, 38.3 micromhos May 7.

Water temperatures: Maximum, 79 F June 12.

REMARKS.--Records of specific conductance of daily samples available in district office at Lincoln, Nebr. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Chemical analyses, in parts per million, September 1955 to September 1956

Date of collection	Mean discharge (cfs)	Silica (SiO ₂)	Iron (Fe) ^a	Calcium (Ca)	Mag- ne- sium (Mg)	So- dium (Na)	Po- tas- sium (K)	Bicar- bonate (HCO ₃)	Sul- fate (SO ₄)	Chlo- ride (Cl)	Flu- oride (F)	Ni- trate (NO ₃)	Dissolved solids				Hardness as CaCO ₃		So- dium ad- sor- p- tion ratio	Specific conduct- ance (micro- mhos at 25°C)	pH	Color		
													Parts per million	Tons per acre-foot	Tons per day	Calcium, Non- mag- nesium	Percent sodium							
																		Residue at 180°C					Sum	Bo- iron (B)
Sept. 27, 1955 ^b	30	15	0.98	9.0	4.0	1.2	3.5	34	16	0.0	--	2.3	0.03	0.18	--	39	11	16	0.2	77.8	6.8	180		
Apr. 6-30, 1956	277	9.4	.27	3.0	1.8	1.2	1.4	15	9.0	0.0	0.0	2.2	.07	.10	56.8	29	7	11	.1	48.3	6.8	140		
May 1-12, 1956	276	5.7	.29	4.5	1.6	1.6	.6	14	7.5	0.0	0.0	1.7	.09	.11	72.1	22	7	16	.2	40.3	6.8	150		
May 13-24, 1956	202	3.6	.41	6.5	2.0	1.7	.6	18	6.0	0.0	0.0	2.0	.08	.11	42.5	32	9	11	.1	46.6	6.8	180		
May 25-June 7, 1956	58.2	5.4	.36	6.5	3.4	1.7	.9	26	11	0.0	0.6	1.8	.12	.10	12.1	30	9	11	.1	55.1	6.8	--		
June 8-13, 1956	23.5	7.5	.58	9.0	3.3	1.5	.6	36	8.0	0.0	0.6	1.9	.09	.12	5.65	36	6	8	.1	70.9	6.8	--		
June 14-29, 1956	8.64	11	1.0	13	3.8	2.7	.4	54	7.0	0.0	.5	1.4	.07	.14	2.38	48	4	11	.2	97.7	7.0	--		
June 30-July 10, 1956	11.0	12	1.6	14	3.9	2.3	.8	61	5.0	0.0	0.0	1.0	.07	.13	2.85	51	1	9	.1	107	7.3	90		
July 11-25, 1956	19.3	12	2.8	11	3.1	1.9	.5	42	7.5	0.0	0.0	1.9	.11	.103	4.0	6	9	1	.1	79.5	6.8	190		
July 26-Aug. 8, 1956	5.51	13	.78	14	4.4	2.2	.5	59	10	0.0	1.1	1.2	.08	.13	1.44	53	5	8	.1	104	7.5	110		
Aug. 9-Sept. 30, 1956	17.8	14	1.3	11	4.3	2.5	.5	46	10	0.0	.4	2.2	.11	.15	5.29	45	7	11	.2	112	7.1	200		
Weighted average ^c	92.0	7.7	0.43	5.7	2.1	1.5	0.9	19	8.2	0.1	0.1	2.0	0.08	0.11	19.4	23	7	12	0.1	51.8	--	--		
* Weighted average ^d	51.9	8.9	0.50	6.5	2.4	1.7	1.0	23	8.9	0.1	0.1	2.0	0.08	0.12	11.9	26	7	12	0.1	58.1	--	--		

a In solution when analyzed.

b Not included in weighted average.

c Represents 86 percent of runoff for water year October 1955 to September 1956.

d Includes estimated data for missing periods. Represents 100 percent of runoff for water year October 1955 to September 1956.

ST. LAWRENCE RIVER BASIN

STREAMS TRIBUTARY TO LAKE SUPERIOR--Continued

EMBARRASS RIVER AT EMBARRASS, MINN.--Continued

Temperature (°F) of water, April to September 1956
 /Once-daily measurement between 5 p.m. and 8 p.m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1							--	49	--	69	73	63
2							--	43	a 61	a 68	73	64
3							--	44	65	66	65	b 64
4							--	48	66	a 68	65	60
5							--	52	69	67	67	59
6							--	52	a 68	a 67	69	57
7							--	52	a 70	64	70	56
8							--	50	72	62	b 68	b 55
9							--	47	a 73	66	69	56
10							--	49	a 76	a 67	67	56
11							--	52	78	71	b 66	60
12							--	a 58	79	69	--	61
13							--	56	78	70	67	59
14							--	57	b 77	69	69	56
15							--	54	74	68	69	49
16							--	47	a 68	64	b 70	54
17							--	49	69	67	67	52
18							--	54	a 68	85	63	52
19							--	55	69	85	62	50
20							39	58	71	66	62	49
21							35	59	74	67	b 62	49
22							39	a 59	74	69	62	48
23							37	57	70	73	61	48
24							41	b 58	65	73	62	49
25							36	58	65	70	61	52
26							42	58	63	71	63	49
27							38	61	69	70	62	56
28							41	59	66	68	65	52
29							43	61	66	70	66	54
30							44	60	67	69	66	52
31							--	58	--	72	65	--
Average							--	54	70	68	64	55

a Reading obtained between 9 p.m. and 10 p.m.

b Reading obtained between 3 p.m. and 4 p.m.

STREAMS TRIBUTARY TO LAKE SUPERIOR--Continued

WEST TWO RIVER NEAR IRON JUNCTION, MINN.

LOCATION.--At gaging station at bridge on State Highway 216, 5 miles southwest of Iron Junction, St. Louis County, and 9½ miles upstream from St. Louis River.

RECORDS AVAILABLE.--Chemical analyses: April to September 1956.

Water temperatures: April to September 1956.

EXTREMES, April to September 1956.--Dissolved solids: Maximum, 171 ppm Aug. 24 to Sept. 30; minimum, 74 ppm Apr. 19-24.

Hardness: Maximum, 130 ppm Aug. 24 to Sept. 30; minimum, 36 ppm Apr. 19-24.

Specific conductance: Maximum daily, 297 micromhos Sept. 30; minimum daily, 82.0 micromhos Apr. 19.

Water temperatures: Maximum, 85°F June 11, 12.

REMARKS.--Records of specific conductance of daily samples available in district office at Lincoln, Nebr. Records of discharge for water year October 1955 to September 1956 given in WS-1437.

Chemical analyses, in parts per million, September 1955 to September 1956

Date of collection	Mean discharge (cfs)	Silica (SiO ₂)	Iron ^a (Fe)	Calcium (Ca)	Mag- ne- sium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chlo- ride (Cl)	Fluo- ride (F)	Ni- trate (NO ₃)	Bo- ron (B)	Dissolved solids (residue at 180°C)		Hardness as CaCO ₃		Per- cent so- dium ad- sorption ratio	Specific conductance (micro- mhos at 25°C)	pH	Col- or		
														Parts per million	Tons per acre-foot	Calcium	Non-carbonate magnesium						
Sept. 17, 1955	b45	10	0.09	24	10	6.2		116	15	3.0	--	1.2	0.03	136	0.18	102	7	12	0.3	205	7.5	27	
Sept. 27	b47	14	.51	20	9.5		6.4	94	21	2.0	--	1.5	.03	158	.21	89	12	14	.3	195	7.2	70	
Apr. 19-24, 1956	288	8.7	.11	8.0	3.9	2.3	1.0	34	10	.5	0.0	.9	.04	74	10	37.5	36	8	12	.2	87.2	7.1	90
Apr. 25-May 7	127	7.5	.13	11	5.0	2.6	1.1	49	13	.5	.1	.8	.05	84	11	28.8	48	8	10	.2	112	7.3	70
May 8-15	69.0	5.8	.14	14	6.3	3.3	.9	58	17	.5	.1	.6	.05	98	.13	61	13	10	.2	137	7.4	65	
May 16-23	41.0	6.3	.06	18	8.5	4.0	1.3	86	16	1.0	.3	.2	.05	111	.15	80	9	10	.2	174	7.4	--	
May 24-June 12	26.5	7.5	.02	23	10	4.6	1.8	112	15	1.5	.2	.0	.06	132	.18	9.44	100	8	.9	216	7.6	--	
June 13-22	15.9	5.7	.06	27	12	5.1	1.7	136	16	2.0	.2	.2	.05	149	.20	6.40	118	6	8	.2	250	7.8	18
June 23-July 23	13.6	6.3	.06	28	13	5.8	1.7	140	18	2.5	.2	.2	.03	154	.21	5.65	124	9	.9	265	7.6	15	
July 24-Aug. 23	16.2	7.5	.01	28	12	6.0	1.6	132	21	4.0	.3	.2	.04	154	.21	6.74	119	11	10	.2	259	7.8	15
Aug. 24-Sept. 30	14.9	7.3	.04	29	14	6.7	1.8	143	20	3.0	.2	.2	.07	171	.23	6.88	130	9	10	.3	279	7.8	9

a. In solution when analyzed.

b. Discharge at time of sampling.

ST. LAWRENCE RIVER BASIN

STREAMS TRIBUTARY TO LAKE SUPERIOR--Continued

WEST TWO RIVER NEAR IRON JUNCTION, MINN.--Continued

Temperature (°F) of water, April to September 1956
 /Once-daily measurement between 4 p. m. and 7 p. m./

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

a Reading obtained between 1 p. m. and 3 p. m.

STREAMS TRIBUTARY TO LAKE SUPERIOR--Continued
BLACK RIVER NEAR BESEMER, MICH.

LOCATION.--Temperature recorder at gaging station on right bank 450 feet downstream from bridge on county highway, 500 feet downstream from powder Mill Creek, and 2 1/2 miles north of Besemer, Gogebic County.

DRAINAGE AREA.--202 square miles.

RECORDS AVAILABLE.--October 1954 to September 1956.

Water temperatures: Maximum, 79° F. (June 12); minimum, freezing point on many days during November to April.

EXTREMES, 1955-56.--Water temperatures: Maximum, 79° F. (July 26, 1955, June 12, 1956); minimum, freezing point on many days during winter months.

EXTREMES, 1954-56.--Water temperatures: Maximum, 79° F. (July 26, 1955, June 12, 1956); minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956.

Temperature (°F) of water, water year October 1955 to September 1956

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

STREAMS TRIBUTARY TO LAKE SUPERIOR
MISCELLANEOUS ANALYSES OF STREAMS TRIBUTARY TO LAKE SUPERIOR IN MINNESOTA

Chemical analyses, in parts per million, September 1955 to September 1956

Chemical analyses, in parts per million, September 1950 to September 1950																										
Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron ^a (Fe)	Calcium (Ca)	Magnesium (Mg)	Sodium (Na)	Potassium (K)	Bicarbonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Boron (B)	Dissolved solids			Hardness as CaCO ₃		Per cent sodium	Sodium-sulfate ratio	Specific conductance (micro-mhos at 25°C)	pH	Color			
														Parts per million		Tons per acre-foot	Tons per day	Calcium, magnesium						Non-carbonate		
														Residue at 180°C	Sum											
ST. LOUIS RIVER NEAR AURORA																										
Sept. 27, 1955, 10:25 a.m.	194	11	0.93	7.0	5.5	0.5		32	13	0.0	--	1.8	0.03				90			2	0.0	80.0	6.9	140		
Sept. 27, 11:25 a.m.																										
Sept. 27, 11:25 a.m.	194	11	1.0	7.2	5.6	2.1		36	14	0	--	1.9	.03				90			11	10	.1	82.1	6.9	170	
Apr. 19, 1956	578	10	.32	4.0	3.9	1.5	0.8	20	10	1.5	0.1	1.7	.10				83			11	11	.1	58.7	6.7	90	
June 5, 1956	305	8.5	.85	5.0	2.8	1.6		22	10	0	0	1.9	.12				78			12	6	14	1.1	56.5	6.6	--
July 7, 1956	52	8.4	.62	9.0	5.2	3.4	.7	49	10	0	0	1.6	.07				91			12	44	4	1.4	104	7.2	--
Aug. 10, 1956	71	8.4	.46	11	4.8	4.0	.6	54	7.5	0	0	1.1	.07				86			12	47	3	15	106	7.1	--
Sept. 8, 1956	50	8.8	.64	11	4.0	2.3	1.0	46	8.0	1.5	0	1.1	.07				79			6	10	.2	97.1	7.1	110	
EMBARRASS RIVER NEAR MCKINLEY																										
Sept. 27, 1955, 10:25 a.m.	79	11	0.27	13	5.2		1.4	58	8.8	0.0	--	0.9	0.03				108			5	0.1	117	7.2	42		
Apr. 19, 1956	b486	11	.23	15	6.0	3.0		62	16	1.5	0.1	1.4	.05				110			6	5	0.1	117	7.2	42	
June 5, 1956	124	8.4	.22	9.0	2.3	1.6	.9	30	11	0	0	1.8	.10				84			11	9	.2	134	7.2	55	
July 7, 1956	34	8.5	.21	9.5	3.2	2.1	.8	36	10	0	0	1.6	.08				82			7	10	.1	75.9	6.9	--	
Aug. 21, 1956	47	7.3	.12	11	4.3	2.2	1.0	47	11	0	0	1.2	.06				82			6	9	.1	83.9	7.0	--	
Sept. 8, 1956	31	7.1	.11	13	3.8	2.6	.7	48	13	1.5	0	1.0	.05				77			9	10	.2	103	7.1	60	

a In solution when analyzed.

b Daily mean discharge.

STREAMS TRIBUTARY TO LAKE MICHIGAN

BLACK RIVER NEAR GARNET, MICH.

LOCATION.--Temperature recorder at gaging station on right bank, 10 feet upstream from highway bridge, 15 feet downstream from unnamed tributary entering from right, 3½ miles upstream from Lake Michigan, and 4 miles southwest of Garnet, Mackinac County.

DRAINAGE AREA.--28 square miles, approximately.

RECORDS AVAILABLE.--Water temperatures: October 1951 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Minimum, freezing point on many days during January.

EXTREMES, 1951-56.--Water temperatures: Maximum, 68°F July 21, 22, 1952; minimum, freezing point on many days during winter months.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1437. River does not freeze over.

Temperature (°F) of water, water year October 1955 to September 1956

Recorder with temperature attachment, continuous ethyl alcohol-actuated thermometer⁷

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	
1.....	48	46	45	34	34	33	33	33	36	36	45	41	--	--	53	53	55	52	55	52	55	54		
2.....	47	47	45	44	34	34	33	33	36	36	45	44	--	--	57	52	55	51	55	53	55	53		
3.....	47	45	44	34	34	33	33	33	36	36	44	42	--	--	56	54	53	51	55	52	55	52		
4.....	49	46	43	42	34	34	33	33	36	35	42	41	--	--	56	54	53	52	55	52	51	51		
5.....	49	49	42	42	34	34	33	33	35	35	45	41	--	--	56	54	52	52	52	52	51	51		
6.....	49	49	42	42	34	34	33	33	36	35	45	44	--	--	56	54	54	52	51	51	51	51		
7.....	49	49	42	41	34	34	33	33	36	35	45	42	--	--	54	51	58	54	51	49	48			
8.....	49	49	41	41	34	34	33	33	35	34	45	42	--	--	52	52	59	55	49	48	46	46		
9.....	51	49	41	41	34	34	33	33	34	34	45	44	--	--	53	52	58	57	48	46	46	46		
10.....	51	50	41	41	34	34	33	32	34	34	46	44	--	--	55	53	58	56	47	46	46	46		
11.....	51	49	41	41	34	34	32	32	35	34	46	45	--	--	58	55	58	56	49	47	47	47		
12.....	51	50	41	41	34	34	32	32	35	35	46	45	--	--	58	56	56	54	49	49	49	49		
13.....	51	50	41	40	34	34	32	32	35	35	47	46	60	58	58	57	58	55	49	49	49	49		
14.....	50	49	40	40	34	34	32	32	35	35	48	47	59	57	58	56	57	54	49	49	49	49		
15.....	49	48	40	39	34	34	32	32	35	35	48	47	58	57	58	56	57	53	49	47	47	47		
16.....	48	48	39	36	34	34	32	32	35	35	47	44	57	55	58	55	58	54	47	47	47	47		
17.....	48	48	36	35	34	34	32	32	36	36	45	44	55	53	56	53	57	54	47	47	47	47		
18.....	48	48	35	35	34	34	32	32	36	36	44	43	55	51	56	53	56	54	47	46	46	46		
19.....	48	47	35	35	34	34	32	32	36	36	44	42	54	51	56	54	52	46	46	46	46	46		
20.....	47	47	35	35	34	34	32	32	36	36	44	43	56	51	56	54	52	49	46	45	45	45		
21.....	47	47	35	34	34	34	--	--	36	36	39	39	47	41	59	53	56	54	51	49	45	44		
22.....	47	45	34	34	34	34	--	--	36	36	39	39	50	46	57	54	55	50	50	44	44	44		
23.....	46	46	34	34	34	34	--	--	36	36	39	37	50	46	55	55	54	50	49	45	44	44		
24.....	46	45	34	34	34	34	--	--	36	36	38	37	--	--	55	54	55	50	49	46	45	45		
25.....	45	45	34	34	34	34	--	--	36	35	39	38	--	--	55	51	57	54	51	48	46	46		
26.....	45	45	34	34	34	34	--	--	35	35	43	39	--	--	55	52	59	55	53	51	46	46		
27.....	45	45	34	34	34	34	--	--	35	35	43	42	--	--	52	52	59	57	55	51	46	46		
28.....	45	45	34	34	34	33	--	--	35	35	42	40	--	--	52	51	57	54	53	52	47	46		
29.....	46	45	34	34	33	33	--	--	35	35	40	40	--	--	54	49	54	51	52	52	47	47		
30.....	45	45	34	34	33	33	--	--	35	35	41	39	--	--	54	52	52	50	53	52	47	45		
31.....	45	45	--	--	33	33	--	--	36	35	--	--	--	--	56	51	55	53	51	55	--	--		
Average.....	48	47	38	38	34	34	a 32	a 32	37	37	--	--	--	--	56	54	55	52	48	48	48	48		

a Includes estimated temperature, 32°F on missing days.

STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued

EAST BRANCH ESCANABA RIVER AT GWINN, MICH.

LOCATION --Temperature recorder at gaging station on right bank in county park at Gwin, Marquette County, 1 mile upstream from mouth.
 DRAINAGE AREA--125 square miles.
 RECORDS AVAILABLE--Water temperatures: November 1954 to September 1956.
 RECORDS AVAILABLE--Water temperatures: Maximum, 76° F June 13; minimum, freezing point on many days in November, December, January, February and March, 1955-56.--Water temperatures: Maximum, 79° F July 4, 1955; minimum, freezing point on many days during winter months.
 EXTREMES, 1954-56 --Water temperatures: Maximum, 79° F July 4, 1955; minimum, freezing point on many days during winter months.
 REMARKS. Records of discharge for water year October 1955 to September 1956 given in WSP 1437. Stream frozen Nov. 17 to Mar. 31.

Temperature (°F) of water, water year October 1955 to September 1956
 /Recorder with temperature attachment, continuous ethy 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.....	50	47	43	42	32	32	32	32	32	32	32	32	33	33	43	38	54	51	62	60	68	60	56	63
2.....	50	47	42	39	32	32	32	32	32	32	32	32	33	33	42	38	50	50	62	59	67	61	64	59
3.....	48	47	40	36	32	32	32	32	32	32	32	32	33	33	39	38	52	52	66	60	66	62	65	61
4.....	48	47	39	36	32	32	32	32	32	32	32	32	33	33	40	38	60	55	68	60	62	60	64	61
5.....	51	49	37	36	32	32	32	32	32	32	32	32	33	33	44	40	63	56	68	61	60	60	61	58
6.....	55	51	37	37	32	32	32	32	32	32	32	32	34	33	46	44	66	58	68	64	64	60	60	58
7.....	55	54	37	37	32	32	32	32	32	32	32	32	33	33	45	43	65	62	66	62	67	62	55	53
8.....	54	52	37	37	32	32	32	32	32	32	32	32	34	33	45	42	68	61	62	57	68	64	52	49
9.....	53	51	37	37	32	32	32	32	32	32	32	32	34	33	48	44	69	62	57	57	66	65	53	48
10.....	55	52	37	37	32	32	32	32	32	32	32	32	35	33	46	44	70	63	60	57	67	62	56	52
11.....	56	53	38	37	32	32	32	32	32	32	32	32	35	33	47	43	73	66	63	60	66	63	56	54
12.....	55	55	37	37	32	32	32	32	32	32	32	32	34	34	50	47	75	68	66	62	65	61	59	54
13.....	55	53	37	36	32	32	32	32	32	32	32	32	36	34	49	46	76	69	65	62	68	63	57	57
14.....	52	50	36	36	32	32	32	32	32	32	32	32	36	36	48	46	71	69	65	60	68	63	57	54
15.....	50	47	36	34	32	32	32	32	32	32	32	32	36	36	49	48	70	65	65	63	67	62	54	52
16.....	48	47	34	33	32	32	32	32	32	32	32	32	35	35	48	46	66	63	64	58	65	64	53	51
17.....	49	48	33	33	32	32	32	32	32	32	32	32	35	35	46	43	64	61	62	56	67	60	52	50
18.....	48	48	33	33	32	32	32	32	32	32	32	32	36	36	44	42	66	60	64	57	65	62	50	48
19.....	48	46	33	33	32	32	32	32	32	32	32	32	36	36	48	43	64	61	63	61	62	58	50	47
20.....	47	47	33	32	32	32	32	32	32	32	32	32	39	38	48	46	68	61	63	60	59	55	48	45
21.....	47	46	33	33	32	32	32	32	32	32	32	32	39	38	52	46	70	62	60	60	60	54	47	43
22.....	46	43	33	33	32	32	32	32	32	32	32	32	38	38	57	50	68	65	61	60	59	56	45	43
23.....	44	44	33	33	32	32	32	32	32	32	32	32	38	37	54	51	68	65	66	60	57	54	47	45
24.....	44	43	33	33	32	32	32	32	32	32	32	32	38	37	52	47	67	64	61	61	58	54	48	45
25.....	43	42	33	33	32	32	32	32	32	32	32	32	38	37	51	47	67	65	61	62	54	50	46	44
26.....	43	41	33	33	32	32	32	32	32	32	32	32	40	38	52	49	65	61	68	64	64	58	52	47
27.....	45	42	33	33	32	32	32	32	32	32	32	32	40	38	53	51	61	57	68	66	67	63	53	49
28.....	45	43	33	33	32	32	32	32	32	32	32	32	38	37	56	50	58	56	66	62	65	63	54	50
29.....	46	45	33	32	32	32	32	32	32	32	32	32	37	36	57	54	58	56	63	59	65	64	53	48
30.....	45	45	32	32	32	32	32	32	32	32	32	32	38	35	56	50	61	56	62	57	63	64	50	46
31.....	45	43	--	--	32	32	32	32	--	--	33	32	--	--	58	54	--	--	64	59	68	64	--	--
Average.....	49	47	35	35	32	32	32	32	32	32	32	32	36	35	49	46	66	60	64	60	64	60	54	51

STREMAS TRIBUTARY TO LAKE MICHIGAN--Continued
PAINT RIVER NEAR ALPHA, MICH.

LOCATION --Temperature recorder at gaging station on right bank. 0.6 mile downstream from Paint River Diversion Dam, 5½ miles upstream from confluence with Brule River, and 6 miles southeast of Alpha, Iron County.
DRAINAGE AREA --644 square miles.

RECORDS AVAILABLE --Water temperatures: October 1952 to September 1954, October 1955 to September 1956.

EXTREMES, 1955-56 --Water temperatures: Minimum, freezing point on many days during November to April.

EXTREMES, 1952-54, 1955-56 --Water temperatures: Maximum, 81°F Sept. 2, 1953; minimum, freezing point on many days during winter months.

REMARKS --Stream frozen Nov. 16-18, Nov. 20 to Apr. 5, Apr. 9.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, 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.....	53	49	46	43	32	32	32	32	32	32	32	32	32	32	52	43	--	--	71	69	--	--	--	--
2.....	56	49	44	41	32	32	32	32	32	32	32	32	32	32	46	44	--	--	73	68	--	--	--	--
3.....	52	49	41	40	32	32	32	32	32	32	32	32	32	32	45	44	--	--	74	70	67	65	--	--
4.....	53	50	40	38	32	32	32	32	32	32	32	32	32	32	51	42	69	63	74	70	87	84	70	66
5.....	53	50	39	37	32	32	32	32	32	32	32	32	35	32	54	44	70	63	74	71	87	85	66	65
6.....	57	50	38	37	32	32	32	32	32	32	32	32	35	32	55	47	71	66	76	72	69	64	65	61
7.....	54	52	38	37	32	32	32	32	32	32	32	32	34	34	57	47	71	69	74	73	70	65	64	59
8.....	58	51	38	36	32	32	32	32	32	32	32	32	35	33	57	48	75	70	75	70	70	66	64	57
9.....	58	52	37	36	32	32	32	32	32	32	32	32	36	33	57	51	75	71	70	66	69	67	63	57
10.....	59	52	37	37	32	32	32	32	32	32	32	32	36	34	57	52	76	71	72	66	71	66	64	59
11.....	59	53	39	36	32	32	32	32	32	32	32	32	41	34	60	52	77	73	75	72	--	--	63	60
12.....	55	53	38	36	32	32	32	32	32	32	32	32	41	37	60	54	79	75	75	73	--	--	63	59
13.....	54	52	37	36	32	32	32	32	32	32	32	32	43	38	59	55	81	77	75	74	--	--	63	61
14.....	53	51	37	35	32	32	32	32	32	32	32	32	43	39	62	55	77	68	75	73	--	--	64	60
15.....	49	48	36	35	32	32	32	32	32	32	32	32	40	39	61	53	70	68	76	75	--	--	62	60
16.....	49	48	35	34	32	32	32	32	32	32	32	32	40	38	61	53	70	69	--	--	--	--	63	59
17.....	48	47	34	33	32	32	32	32	32	32	32	32	41	37	55	53	69	69	--	--	--	--	61	56
18.....	47	45	33	33	32	32	32	32	32	32	32	32	44	36	53	52	70	68	--	--	--	--	60	54
19.....	50	43	33	33	32	32	32	32	32	32	32	32	46	37	53	50	69	68	--	--	--	--	56	52
20.....	47	45	33	32	32	32	32	32	32	32	32	32	48	38	--	--	--	68	--	--	--	--	57	50
21.....	48	43	33	32	32	32	32	32	32	32	32	32	46	41	--	--	72	68	--	--	--	--	56	49
22.....	45	43	32	32	32	32	32	32	32	32	32	32	47	40	--	--	73	71	--	--	--	--	54	50
23.....	45	44	32	32	32	32	32	32	32	32	32	32	47	40	--	--	75	72	--	--	--	--	57	52
24.....	44	41	32	32	32	32	32	32	32	32	32	32	49	40	--	--	76	73	--	--	--	--	57	50
25.....	46	41	32	32	32	32	32	32	32	32	32	32	44	41	--	--	75	72	--	--	--	--	58	52
26.....	46	40	32	32	32	32	32	32	32	32	32	32	51	42	--	--	73	72	--	--	--	--	59	53
27.....	47	41	32	32	32	32	32	32	32	32	32	32	46	45	--	--	72	70	--	--	--	--	60	54
28.....	47	42	32	32	32	32	32	32	32	32	32	32	49	42	--	--	76	70	--	--	--	--	60	55
29.....	45	45	32	32	32	32	32	32	32	32	32	32	44	41	--	--	74	69	--	--	--	--	57	55
30.....	46	44	32	32	32	32	32	32	32	32	32	32	50	40	--	--	74	71	--	--	--	--	59	54
31.....	46	44	--	--	32	32	32	32	--	--	32	32	--	--	--	--	--	--	--	--	--	--	--	--
Average.....	51	47	36	35	32	32	32	32	32	32	32	32	41	37	--	--	73	70	--	--	--	--	61	56

STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued
EAST BRANCH PINE RIVER NEAR TUSTIN, MICH.--Continued

LOCATION.--Temperature recorder at gaging station, 75 feet downstream from highway bridge, half a mile upstream from North Branch, 2½ miles west of Tustin, Osceola County, and 5½ miles northwest of Le Roy.

DRAINAGE AREA.--63 square miles.

RECORDS AVAILABLE.--Water temperatures: July 1952 to September 1956.

EXTREMES, 1952-56.--Water temperatures: Maximum, 73°F July 4, 1955; minimum, 32°F on many days during winter months.

REMARKS.--Stream frozen Jan. 12-14, 20, 22-24, 26, 28-30, Feb. 3, 16-23, 26, 27, Mar. 7-31. Temperatures given for these periods are for the underflow.

Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Temperatures (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, continuous ethyl alcohol-actuated thermometer/7

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	
1.....	51	50	47	46	36	36	--	--	34	34	36	36	--	--	60	58	62	60	--	--	60	58	62	60
2.....	51	50	46	45	36	36	--	--	34	34	36	36	--	--	62	58	62	60	--	--	61	58	62	59
3.....	50	48	45	43	36	36	--	--	34	34	36	36	--	--	60	58	62	64	--	--	61	58	64	59
4.....	54	49	43	42	36	35	--	--	34	34	36	36	--	--	--	--	60	58	--	--	60	58	62	62
5.....	54	54	42	42	--	--	--	--	34	34	36	34	--	--	--	--	62	60	--	--	62	60	62	61
6.....	56	54	42	42	--	--	--	--	34	34	35	33	--	--	--	--	62	62	--	--	62	62	62	59
7.....	56	55	42	42	--	--	--	--	34	34	33	33	--	--	61	60	62	62	60	60	62	62	59	56
8.....	55	52	42	42	--	--	--	--	34	34	33	33	--	--	61	61	62	62	61	61	62	62	59	55
9.....	55	51	42	42	--	--	--	--	35	34	33	33	--	--	61	58	62	62	61	61	58	62	59	52
10.....	57	52	42	42	--	--	--	34	34	35	33	33	--	--	61	58	62	60	61	58	62	60	54	54
11.....	57	53	42	42	--	--	--	34	34	35	33	33	--	--	61	60	60	56	61	60	60	56	54	56
12.....	56	55	42	42	--	--	--	34	34	35	33	33	--	--	61	59	62	60	61	59	62	60	59	54
13.....	55	52	42	42	--	--	--	34	34	36	33	33	--	--	60	58	61	59	61	58	61	61	59	58
14.....	52	49	43	42	--	--	--	34	34	36	36	33	--	--	61	58	62	60	61	58	62	60	59	58
15.....	50	48	43	43	--	--	--	34	34	36	36	33	--	--	60	58	62	60	60	58	62	60	58	54
16.....	49	49	43	38	--	--	--	34	34	36	36	34	--	--	59	59	61	60	59	59	61	60	54	54
17.....	51	49	38	38	--	--	--	34	34	36	36	33	--	--	61	58	62	61	61	58	62	61	54	54
18.....	51	51	38	38	--	--	--	34	34	36	36	34	--	--	61	58	62	62	61	58	62	62	54	53
19.....	51	50	38	38	--	--	--	34	34	36	36	33	--	--	61	58	61	60	61	58	61	60	53	53
20.....	50	49	38	38	--	--	--	34	34	36	36	34	--	--	61	58	61	58	61	58	61	58	53	51
21.....	50	48	38	38	--	--	--	34	34	36	36	34	--	--	61	59	59	57	61	59	59	57	51	48
22.....	48	47	38	37	--	--	--	34	34	36	36	35	--	--	59	59	58	58	59	59	58	58	49	48
23.....	50	47	37	37	--	--	--	34	34	36	36	33	--	--	62	59	58	58	62	59	58	58	52	49
24.....	50	47	37	36	--	--	--	34	34	36	36	33	--	--	62	60	59	59	62	59	59	57	52	51
25.....	47	47	36	36	--	--	--	34	34	36	36	33	--	--	62	60	58	55	62	60	58	55	52	51
26.....	47	46	36	36	--	--	--	34	34	36	36	35	--	--	62	58	58	58	62	58	58	57	53	52
27.....	49	48	36	36	--	--	--	34	34	36	36	33	--	--	62	58	61	56	62	58	61	56	53	52
28.....	50	47	36	36	--	--	--	34	34	36	36	33	--	--	61	58	62	61	58	62	61	53	52	51
29.....	50	50	36	36	--	--	--	34	34	36	36	33	--	--	61	58	62	62	61	58	62	62	54	53
30.....	50	48	36	36	--	--	--	34	34	--	--	33	--	--	60	58	62	60	61	58	62	62	54	53
31.....	48	47	--	--	--	--	--	34	34	--	--	33	--	--	60	58	62	62	58	62	62	62	--	--
Average.....	52	50	40	40	--	--	--	--	35	35	34	33	--	--	61	60	58	54	61	60	61	60	56	54

STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued
PINE RIVER NEAR LE ROY, MICH.

LOCATION.--Temperature recorder at gaging station, 15 feet downstream from highway bridge, 3½ miles downstream from East Branch, 5 miles northwest of Le Roy, Osceola County, and 5½ miles southwest of Tustin.

DRAINAGE AREA.--118 square miles.

RECORDS AVAILABLE.--Water temperatures: January 1953 to September 1956.

EXTREMES, 1953-56.--Water temperatures: Maximum, 67°F June 14; minimum, 32°F Dec. 27, 28, Jan. 7-10, 14.

EXTREMES, 1953-56.--Water temperatures: Maximum, 69°F July 22, 1953, Aug. 1, 2, 5, 6, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Stream frozen Dec. 11-13, Dec. 16 to Jan. 6, Jan. 8, 9, 11-15, Jan. 19 to Feb. 4, Feb. 16-23, Feb. 25 to Mar. 3, Mar. 7-21, 23, Mar. 25 to Apr. 3.

Temperatures given for these periods are for the underflow. Records of discharge for the water year October 1955 to September 1956 given in WSP 1437.

Day	Temperature (°F) of water, water year October 1955 to September 1956 Recorder with temperature attachment, continuous ethyl alcohol-actuated thermometer/7																							
	October		November		December		January		February		March		April		May		June		July		August		September	
1.....	max	55	54	min	49	max	34	min	35	max	37	min	34	max	45	min	60	min	62	max	59	min	55	max
2.....	55	54	49	48	--	34	33	35	35	37	36	34	39	37	45	45	60	54	62	60	59	60	55	63
3.....	54	53	48	47	--	34	34	35	35	37	36	35	38	37	45	46	54	54	62	63	59	57	60	58
4.....	54	53	47	46	--	34	34	35	34	36	35	34	38	37	45	47	56	54	63	62	59	57	60	57
5.....	55	55	46	46	--	34	34	36	34	36	35	34	38	37	49	48	54	53	64	62	60	57	60	59
6.....	56	55	46	46	--	34	34	36	34	36	35	34	38	37	49	48	56	53	65	63	60	57	60	58
7.....	57	56	46	46	34	34	34	36	35	38	36	34	42	40	47	47	61	55	61	56	63	60	58	57
8.....	57	56	46	45	34	34	32	32	36	36	35	34	41	37	48	44	62	58	61	59	64	63	57	54
9.....	56	55	45	45	34	33	32	32	36	36	35	34	42	41	50	49	63	58	61	59	64	64	53	51
10.....	56	55	45	45	33	33	32	32	36	36	35	34	42	41	49	49	64	58	61	56	64	61	53	52
11.....	56	55	46	45	34	33	34	36	36	36	36	34	44	42	52	48	63	60	62	58	63	60	54	52
12.....	56	56	46	46	34	34	34	36	36	36	36	34	44	42	54	52	66	60	62	60	60	60	58	56
13.....	56	57	46	46	34	34	34	36	36	36	36	34	43	41	55	54	66	61	61	59	61	59	56	55
14.....	56	56	46	46	34	34	32	32	37	36	36	34	45	43	58	55	67	62	63	58	62	59	56	55
15.....	52	51	46	46	34	33	34	36	35	36	36	34	45	44	58	53	66	62	62	59	62	59	55	53
16.....	51	51	46	46	33	33	34	35	34	35	34	37	44	42	54	50	63	61	59	59	62	60	53	52
17.....	52	51	46	43	33	33	34	33	35	34	36	35	42	41	51	48	61	60	62	59	63	61	53	52
18.....	52	52	43	43	33	33	34	36	35	38	34	42	40	48	46	62	60	62	59	62	59	62	53	51
19.....	52	52	43	43	33	33	34	36	35	38	34	44	41	52	47	61	58	61	59	62	59	62	52	52
20.....	52	52	43	43	33	33	34	36	34	36	34	44	41	51	48	64	59	63	58	59	56	52	50	48
21.....	52	52	43	43	33	33	34	34	34	34	35	46	44	54	46	66	62	61	59	57	55	50	48	48
22.....	52	50	43	43	33	33	35	34	34	34	38	47	46	63	60	63	61	60	59	57	56	50	48	48
23.....	51	50	--	--	34	33	35	34	34	34	38	47	43	40	59	55	66	62	62	58	57	52	50	48
24.....	51	50	--	--	35	34	35	35	35	34	38	46	41	55	50	65	62	62	59	57	55	52	50	48
25.....	51	50	--	--	35	33	35	36	35	38	35	45	43	53	50	64	60	63	61	57	54	52	50	48
26.....	50	49	--	--	33	33	35	34	36	35	39	48	43	53	50	62	59	64	61	56	55	53	52	52
27.....	50	49	--	--	33	32	35	35	36	34	39	48	47	60	53	62	60	65	61	59	56	53	51	51
28.....	50	50	--	--	33	32	35	35	36	34	37	48	44	61	56	60	57	63	60	61	58	52	51	51
29.....	52	50	--	--	34	33	35	35	36	34	36	44	41	60	56	58	58	60	57	61	60	54	52	52
30.....	52	50	--	--	34	33	35	35	--	--	38	45	39	62	59	62	56	59	55	62	60	54	52	52
31.....	50	50	--	--	33	33	35	35	--	--	39	35	--	--	62	60	--	--	58	57	64	61	--	--
Average.....	53	52	--	--	34	33	34	34	35	35	37	35	43	40	53	50	62	58	62	59	61	59	55	53

STREAMS TRIBUTARY TO LAKE MICHIGAN--Continued
PINE RIVER NEAR HOXEYVILLE, MICH.

LOCATION.--Temperature recorder at gaging station, 500 feet upstream from bridge on State Highway 37, 4½ miles northwest of Hoxeyville, Wexford County, drainage east of Wellston, and 9 miles upstream from mouth.
DRAINAGE AREA, 251 square miles.
RECORDS AVAILABLE.--Water temperatures: July 1952 to September 1956.
EXTREMES, 1952-56.--Water temperatures: Maximum, 64° F June 13, 14, 21, July 27; minimum, 34° F Jan. 9, 10, 13-15.
EXTREMES, 1952-56.--Water temperatures: Maximum, 68° F Aug. 1, 1955; minimum, freezing point Jan. 21, 1955.
REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Temperature (° F) of water, water year October 1955 to September 1956

Recorder with temperature attachment, continuous ethyl alcohol-actuated thermograph⁷

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.....	52	51	47	46	37	36	36	37	37	37	38	35	40	40	47	44	--	--	59	58	58	55	62	60
2.....	51	51	46	46	38	37	36	36	37	37	38	38	42	40	47	47	--	--	60	56	59	57	60	58
3.....	51	50	46	45	37	37	38	36	37	35	39	38	42	38	47	47	--	--	61	58	59	56	60	58
4.....	53	50	45	45	37	37	38	38	35	35	39	38	38	37	49	46	--	--	60	57	59	56	60	59
5.....	54	53	45	45	37	37	38	37	37	35	40	38	38	36	49	48	--	--	57	56	58	56	59	58
6.....	54	54	45	45	37	37	37	37	37	36	40	40	43	38	49	47	--	--	58	55	62	56	58	57
7.....	54	54	45	44	37	37	36	38	36	36	40	37	43	43	48	45	--	--	58	56	63	61	57	55
8.....	54	52	44	44	38	37	36	35	39	38	37	36	43	42	48	46	62	58	59	57	63	62	55	54
9.....	53	51	44	44	38	38	35	34	39	39	36	36	43	42	49	48	61	58	58	55	62	62	54	53
10.....	54	53	44	44	36	35	35	34	39	38	36	36	44	42	49	49	62	58	58	54	63	61	54	53
11.....	54	53	44	43	36	36	36	35	38	38	38	36	45	43	50	48	60	58	59	56	62	60	54	53
12.....	54	54	45	44	37	36	36	36	38	38	38	37	45	44	51	50	62	58	59	58	60	58	56	54
13.....	54	52	45	45	37	37	36	34	38	38	37	35	45	43	52	51	64	60	59	57	61	60	56	55
14.....	52	50	45	45	37	37	34	34	40	38	36	36	46	44	53	52	64	61	61	57	62	59	56	55
15.....	50	50	45	45	37	36	35	34	39	38	36	36	46	44	53	52	63	61	60	56	62	60	55	53
16.....	50	50	45	43	36	36	36	35	36	36	38	36	45	44	52	49	61	60	58	57	61	60	53	52
17.....	50	49	43	40	36	36	35	36	36	38	38	38	44	42	50	47	60	59	60	56	62	60	53	52
18.....	50	49	41	40	36	36	36	36	36	39	38	38	44	42	47	46	58	58	60	57	62	61	53	52
19.....	50	49	41	40	36	36	36	36	36	38	37	38	45	43	50	48	59	57	59	58	61	59	52	52
20.....	49	49	42	41	36	36	36	36	37	36	39	37	45	43	50	47	62	57	59	57	59	58	52	51
21.....	49	49	42	42	36	36	36	36	36	36	35	40	48	45	--	--	54	60	59	57	58	56	51	50
22.....	49	49	42	41	36	36	37	35	35	35	41	40	46	44	--	--	63	60	58	57	58	57	51	50
23.....	49	49	41	41	36	36	36	35	35	35	41	40	45	43	--	--	63	59	61	57	58	57	51	50
24.....	49	48	41	39	38	38	36	35	36	35	40	38	46	43	--	--	63	60	61	60	57	56	52	51
25.....	48	47	39	39	38	38	38	36	38	36	39	38	46	44	--	--	62	59	68	60	57	56	52	51
26.....	47	47	39	39	38	38	36	35	38	36	41	39	48	44	--	--	61	59	63	60	57	56	53	52
27.....	47	47	39	39	36	35	36	35	36	35	41	40	48	47	--	--	59	58	64	60	58	56	53	52
28.....	49	47	39	36	36	35	36	36	36	35	40	38	47	45	--	--	58	56	63	59	60	58	53	52
29.....	50	49	36	36	37	36	37	36	36	35	38	38	45	43	--	--	56	54	59	57	60	60	53	52
30.....	50	49	36	36	37	36	37	36	37	--	--	39	44	42	--	--	59	55	58	56	61	60	53	52
31.....	49	47	--	--	36	37	37	37	--	--	--	--	--	--	--	--	--	--	57	56	62	60	--	--
Average.....	51	50	43	42	37	36	36	36	37	36	39	38	44	42	--	--	--	--	60	57	62	60	55	54

STREAMS TRIBUTARY TO LAKE HURON
PIGEON RIVER NEAR VANDERBILT, MICH.

LOCATION.--Temperature recorder at gaging station on right bank at Pigeon River Fisheries Experiment Station, 10 miles east of Vanderbilt, Otsego County, and 10 1/2 miles southeast of Wolverine.

DRAINAGE AREA.--63 square miles, approximately.

RECORDS AVAILABLE.--Water temperatures: October 1950 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 79°F June 13, 14; minimum, freezing point on Apr. 5.

EXTREMES, 1950-56.--Water temperatures: Maximum, 81°F Aug. 1, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Stream frozen Nov. 29 to Dec. 1, Dec. 16, 17, 20-23, 28-30, Jan. 9, 10, Jan. 12 to Feb. 5, Feb. 16 to Mar. 2, Mar. 9-20. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

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

Temperature (°F) of water, water year October 1955 to September 1956
/Recorder with temperature attachment, continuous ety al-acquated thermograph/

STREAMS TRIBUTARY TO LAKE HURON--Continued
AU SABLE RIVER AT GRAYLING, MICH.

LOCATION.--Temperature recorder at gaging station, 65 feet upstream from bridge on U. S. Highway 27 at Grayling, Crawford County, and three-quarters of a mile upstream from East Branch.

DRAINAGE AREA.--110 square miles.

RECORDS AVAILABLE.--Water temperatures:

EXTREMES, 1955-56.--Water temperatures: Maximum, 77°F June 13-15, 21; minimum, freezing point on several days during January and February.

EXTREMES, 1953-56.--Water temperatures: Maximum, 80°F June 20, 21, 1953, July 6, 7, Aug. 1, 4, 5, 6, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Stream frozen Dec. 11-14, Jan. 9-12, Feb. 17-20, 22, 25, Mar. 10. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, continuous ethyl alcohol-actuated thermometer/

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

STREAMS TRIBUTARY TO LAKE HURON--Continued
EAST BRANCH AU GRES RIVER AT McIVOR, MICH.

LOCATION.--Temperature recorder at gaging station, 25 feet downstream from highway bridge at McIvor, Iosco County, 1.1 miles east of National City, and 9 miles southwest of Taras City.

DRAINAGE AREA.--84 square miles, approximately.

RECORDS AVAILABLE.--Water temperatures: October 1951 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 73°F June 12-15; minimum, freezing point on many days during December, January, February, and March.

EXTREMES, 1951-56.--Water temperatures: Maximum, 75°F June 25, 1952, July 9, 10, Aug. 1, 2, 1953; minimum, freezing point on many days during winter months.

REMARKS.--Stream frozen Nov. 28 to Dec. 5, Dec. 9 to Mar. 25. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, continuous ethyl alcohol-actuated thermometer/

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
1.....	54	50	46	45	34	34	32	32	32	40	38	52	64	62
2.....	52	49	46	46	34	34	32	32	32	39	37	50	67	55
3.....	51	48	46	41	34	34	32	32	32	38	36	50	67	63
4.....	55	49	42	41	35	34	32	32	32	38	38	50	62	63
5.....	56	55	42	41	35	35	32	32	32	38	52	47	58	60
6.....	58	56	42	41	35	34	32	32	32	38	52	47	58	62
7.....	58	57	42	42	35	34	32	32	32	40	50	43	64	59
8.....	57	55	42	41	36	35	32	32	32	42	40	50	64	54
9.....	56	53	42	42	36	34	32	32	32	43	41	52	61	50
10.....	56	54	42	41	34	34	32	32	32	45	41	50	68	49
11.....	56	55	42	42	34	33	32	32	32	46	42	53	66	51
12.....	56	55	42	42	33	33	32	32	32	46	44	56	65	58
13.....	56	54	43	42	33	33	32	32	32	47	42	56	65	56
14.....	54	50	44	43	33	33	32	32	32	46	44	58	62	59
15.....	50	49	44	43	33	32	32	32	32	45	43	57	68	51
16.....	50	43	41	32	32	32	32	32	32	45	44	54	62	61
17.....	50	50	41	37	32	32	32	32	32	45	43	53	62	51
18.....	50	38	37	32	32	32	32	32	32	43	41	49	65	54
19.....	50	38	38	32	32	32	32	32	32	44	40	54	60	49
20.....	50	38	37	32	32	32	32	32	32	46	41	54	63	48
21.....	50	49	37	36	32	32	32	32	32	49	44	55	61	44
22.....	50	45	38	36	32	32	32	32	32	48	44	62	64	48
23.....	52	46	40	38	32	32	32	32	34	44	40	62	64	50
24.....	52	49	40	37	32	32	32	32	34	44	40	57	63	48
25.....	49	46	37	35	32	32	32	32	35	34	42	55	60	50
26.....	46	45	36	36	32	32	32	32	38	34	50	43	68	48
27.....	47	45	36	36	32	32	32	32	39	37	50	47	62	50
28.....	50	46	36	35	32	32	32	32	39	36	47	65	65	47
29.....	50	46	35	34	32	32	32	32	36	45	61	70	63	50
30.....	50	48	34	34	32	32	32	32	36	45	61	63	58	53
31.....	48	46	--	--	32	32	32	32	36	48	69	68	62	50
Average.....	52	50	40	39	33	33	32	32	34	33	44	41	65	55

STREAMS TRIBUTARY TO LAKE HURON--Continued

AU GRES RIVER NEAR NATIONAL CITY, MICH.

LOCATION --Temperature recorder at gaging station, 20 feet downstream from highway bridge, 1½ miles upstream from Elm Creek, 4 miles southwest of National City, 169 National City, 12½ miles southwest of Iwas City, and 15½ miles upstream from mouth.

DRAINAGE AREA 1,699 square miles.

RECORDS AVAILABLE --water temperatures: October 1951 to September 1956.

EXTREMES 1955-56 --water temperatures: Minimum, freezing point on many days during December to March.

EXTREMES 1951-56 --water temperatures: Minimum, 84°F, 1, 4, 1955; minimum, freezing point on many days during winter months.

REMARKS --Stream frozen Nov. 24-26; Nov. 28 to Dec. 1, Dec. 4 to April 1, 1955. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Temperature (°F) of water, water year October 1955 to September 1956

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

STREAMS TRIBUTARY TO LAKE HURON--Continued
RIFLE RIVER AT "THE RANCH" NEAR LUPTON, MICH.

LOCATION.--Temperature recorder at gaging station, a quarter of a mile downstream from Houghton Creek, and 3 miles southwest of Lupton, Ogemaw County.
DRAINAGE AREA.--54 square miles, approximately. July 1950 to September 1956.

RECORDS AVAILABLE.--Water temperatures: July 1950 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 69°F June 12-14; minimum, freezing point on many days during December to March.

EXTREMES, 1950-56.--Water temperatures: Maximum, 72°F June 25, 26, 1955; July 5, 6, Aug. 1, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Stream frozen Nov. 29, Dec. 10, 18, 20-22, 27, 28, Jan. 8, 9, 13-15, 17-19, 22-27, Feb. 3, 4, 16, 21, Feb. 23 to Mar. 1. Temperatures given for these periods are for the underflow. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Temperature (°F) of water, water year October 1955 to September 1956

Recorder with temperature attachment, 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.....	52	48	46	46	35	35	34	34	35	33	36	32	40	35	50	43	57	53	62	59	61	52	63	58
2.....	53	47	46	46	36	35	34	34	35	34	36	33	38	35	47	45	58	50	64	59	61	54	59	56
3.....	50	46	42	37	36	35	34	34	34	32	38	36	35	35	47	44	54	52	63	58	60	54	60	55
4.....	56	49	44	42	37	35	35	36	35	32	36	34	35	35	49	44	58	52	60	56	58	55	59	57
5.....	56	55	44	42	35	35	35	34	36	32	40	36	39	35	50	44	60	53	57	55	57	55	57	56
6.....	57	56	44	43	35	35	35	34	35	34	39	35	41	37	49	45	63	54	61	54	60	56	59	56
7.....	57	55	44	43	36	35	35	32	36	34	35	34	40	37	51	43	63	57	61	56	62	56	57	53
8.....	56	54	44	42	37	35	32	38	36	35	34	39	37	50	44	67	59	60	56	64	57	54	51	51
9.....	56	52	44	43	35	33	32	37	34	33	41	37	48	46	66	59	58	56	52	59	54	49	54	49
10.....	58	54	43	43	33	33	34	32	36	32	36	34	43	39	50	47	67	57	63	54	63	57	55	53
11.....	57	54	43	43	35	33	34	34	35	34	37	35	44	39	50	47	66	58	61	56	50	57	56	51
12.....	55	54	44	43	35	34	34	32	36	34	36	34	43	40	52	49	69	58	59	57	60	54	58	54
13.....	55	52	44	43	36	35	33	32	37	36	38	34	44	39	52	52	69	60	61	56	60	57	58	55
14.....	52	50	45	44	35	33	32	32	38	35	34	44	40	54	49	69	61	65	56	63	56	53	51	51
15.....	51	50	44	43	33	32	33	32	36	33	36	34	43	42	52	49	65	60	60	57	63	57	53	51
16.....	51	51	44	40	33	32	34	33	33	33	38	34	42	41	52	46	62	58	59	56	60	56	53	51
17.....	52	50	40	38	32	32	33	32	34	32	37	34	41	40	49	46	58	56	63	54	61	56	56	52
18.....	52	51	40	39	32	32	34	32	37	34	38	34	40	39	48	45	64	55	63	54	60	58	53	50
19.....	52	50	40	40	32	32	34	34	36	34	38	34	44	39	52	46	60	54	61	54	59	56	53	50
20.....	50	48	40	39	32	32	34	34	33	34	39	34	44	39	48	46	61	56	59	56	56	52	50	47
21.....	51	48	39	38	32	32	34	32	34	33	39	34	46	41	55	46	67	57	62	58	56	51	49	46
22.....	48	46	39	38	32	32	32	32	35	33	40	38	44	41	57	51	63	58	62	59	55	52	51	49
23.....	48	46	39	38	34	32	33	32	34	33	38	36	42	39	56	52	63	58	61	57	54	52	51	49
24.....	52	47	38	35	36	34	33	33	34	33	39	34	44	39	56	48	66	58	63	57	50	52	49	49
25.....	47	46	36	35	36	34	33	33	34	33	36	34	43	40	52	48	66	58	63	58	50	53	50	47
26.....	49	46	37	36	34	32	33	33	33	33	41	36	40	42	53	50	64	56	66	58	59	53	52	49
27.....	49	46	37	37	32	32	33	33	33	33	41	36	47	44	52	50	62	58	66	58	51	55	52	48
28.....	50	47	37	33	33	32	33	33	33	33	41	36	47	44	52	50	62	58	66	58	51	55	52	48
29.....	50	49	33	33	35	33	36	34	33	33	38	36	43	41	53	51	58	54	63	56	59	57	52	49
30.....	49	48	35	33	34	32	35	35	33	33	38	36	48	40	53	50	56	50	54	50	53	52	54	51
31.....	48	46	--	--	34	32	35	33	--	--	42	35	--	--	62	57	65	54	56	53	62	57	54	--
Average.....	52	50	41	40	34	33	34	33	35	33	38	35	42	39	53	48	63	56	61	56	60	55	55	52

STREAMS TRIBUTARY TO LAKE HURON--Continued

PRIOR CREEK NEAR SELKIRK, MICH.

LOCATION.--Temperature recorder at gaging station, a quarter of a mile upstream from mouth, half a mile downstream from Ammond Creek, and 1½ miles north of Selkirk, Ogemaw County.

DRAINAGE AREA.--19 square miles, approximately.

RECORDS AVAILABLE.--Water temperatures: October 1950 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 71°F June 14, 21; minimum, freezing point on many days during December to April.

EXTREMES, 1950-56.--Water temperatures: Maximum, 76°F Aug. 1, 1955; minimum, freezing point on many days during winter months.

REMARKS.--Stream frozen Nov. 24, 25, Nov. 28 to Apr. 3. Temperatures given for these periods are for the underflow. Records of discharge for the water year October 1955 to September 1956 given in WSP 1437.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, continuous etyl alcohol-actuated thermometer/

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

STREAMS TRIBUTARY TO LAKE HURON--Continued
RIFLE RIVER AT SELKIRK, MICH.

LOCATION.--Temperature recorder at gaging station at highway bridge at Selkirk, Ogemaw County, and 1½ miles downstream from Prior Creek.
DRAINAGE AREA.--110 square miles.
RECORDS AVAILABLE.--1950 to September 1956.
EXTREMES, 1955-56.--Water temperatures: Maximum, 71°F July 21, minimum, freezing point on many days during December to April.
EXTREMES, 1950-56.--Water temperatures: Maximum, 78°F Aug. 7-10, 12-20, 22-29, Jan. 31 to Feb. 1, Feb. 3-6, Feb. 23 to Mar. 1, Mar. 9, 10, 12-15, 17-20.
REMARKS.--Stream frozen Nov. 28-30, Dec. 15 to Jan. 1.
Temperatures given for these periods are for the underflow. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Temperature (°F) of water, water year October 1955 to September 1956
/Recorder with temperature attachment, 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.....	54	49	44	44	34	32	32	32	32	32	32	32	38	35	52	46	61	56	60	59	63	55	67	63
2.....	53	49	45	44	35	34	32	32	32	32	32	32	36	34	51	48	56	54	62	60	65	58	63	59
3.....	50	47	44	39	36	35	32	32	32	32	32	32	37	32	50	46	56	54	62	61	63	58	63	59
4.....	55	50	41	39	36	36	34	32	32	32	32	34	36	33	52	48	55	54	62	61	61	59	63	62
5.....	56	55	41	39	36	35	34	32	32	32	34	34	37	32	52	48	56	54	61	59	59	59	62	60
6.....	58	48	42	41	35	35	34	34	32	32	35	34	42	35	52	47	58	56	59	58	64	59	61	59
7.....	58	58	42	40	35	35	34	33	32	32	35	34	42	38	52	44	60	58	60	59	67	61	59	55
8.....	57	54	41	40	35	35	35	32	32	33	32	33	41	37	54	46	62	60	60	60	68	62	55	53
9.....	56	52	41	41	--	--	--	32	32	34	33	33	44	38	52	48	63	61	60	60	67	64	55	51
10.....	59	53	41	40	--	--	--	32	32	34	33	33	44	39	51	49	63	62	60	59	67	62	54	53
11.....	58	54	42	41	--	--	32	32	33	33	34	33	46	39	53	48	63	62	61	60	65	61	56	53
12.....	56	54	42	41	--	--	32	32	33	33	34	33	46	42	57	52	64	62	61	61	64	59	60	56
13.....	56	53	42	40	35	35	32	32	34	33	33	33	46	40	56	55	65	64	61	60	63	62	60	58
14.....	53	48	43	42	35	35	32	32	34	33	33	33	46	42	58	54	66	65	62	60	67	60	60	57
15.....	50	48	43	41	35	34	32	32	34	33	33	33	46	44	56	52	66	66	62	62	67	62	57	53
16.....	51	50	42	39	34	34	32	32	--	--	34	33	44	42	54	49	66	64	62	61	65	61	53	53
17.....	52	50	39	36	34	34	--	--	--	--	34	34	44	41	52	47	64	61	62	59	64	61	56	53
18.....	52	51	37	36	34	34	--	--	--	--	34	33	42	40	50	46	62	60	64	59	66	63	55	51
19.....	52	50	38	37	34	34	--	--	--	--	34	33	46	39	55	48	62	60	62	59	62	62	53	51
20.....	50	48	37	36	34	32	32	32	--	--	34	33	47	40	52	48	60	60	62	60	62	59	51	49
21.....	52	46	36	36	32	32	32	32	--	--	34	34	49	43	56	46	61	60	62	61	58	55	49	47
22.....	46	44	36	32	32	32	32	32	--	--	35	34	47	42	53	54	61	61	62	62	58	57	52	49
23.....	52	46	39	36	32	32	32	32	32	32	35	35	43	39	61	54	61	61	62	60	58	57	52	49
24.....	52	46	39	36	32	32	32	32	32	32	36	34	46	41	59	51	62	61	66	61	58	57	52	50
25.....	46	45	36	35	32	32	32	32	32	32	34	34	45	41	55	50	62	62	67	63	61	54	53	50
26.....	49	45	36	35	32	32	32	32	32	32	35	34	51	43	56	52	62	62	69	63	61	58	53	50
27.....	48	44	37	36	32	32	32	32	32	32	36	35	50	46	65	56	62	62	71	65	65	59	52	49
28.....	49	45	36	34	32	32	32	32	32	32	36	35	46	45	64	56	62	60	68	63	65	62	52	49
29.....	49	49	34	34	32	32	32	32	32	32	35	35	45	41	62	56	60	58	63	58	63	62	54	51
30.....	49	46	34	34	32	32	32	32	--	--	36	34	49	40	65	60	59	58	62	57	67	63	54	52
31.....	46	44	--	--	32	32	32	32	--	--	39	34	--	--	63	60	--	--	60	57	67	64	--	--
Average.....	53	49	40	38	34	33	32	32	--	--	34	34	44	39	56	50	61	60	62	60	64	60	56	54

STREAMS TRIBUTARY TO LAKE HURON--Continued
WEST BRANCH RIFLE RIVER NEAR SELKIRK, MICH.

LOCATION.--Temperature recorder at gaging station, half a mile downstream from Campbell Creek, 3½ miles upstream from mouth, 4 miles southwest of Selkirk, Ogemaw County, and 6½ miles southeast of town of West Branch.
DRAINAGE AREA.--52 square miles, approximately.
RECORDS AVAILABLE.--Water temperatures: May 1952 to September 1956.
EXTREMES, 1955-56.--Water temperatures: Maximum, 77° F June 14; minimum, freezing point on many days during November to March.
EXTREMES, 1952-56.--Water temperatures: Maximum, 78° F June 20, 21, 1953, July 4, 6, 9, Aug. 1, 4, 1955; minimum, freezing point on many days during winter months.
REMARKS.--Stream frozen Nov. 28-30, Dec. 7, 10, 11, Dec. 15 to Apr. 2. Temperatures given for these periods are for the underflow. Records of discharge for the water year October 1955 to September 1956 given in WSP 1437.

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
	/Record with temperature attachment, continuous ethyl alcohol-actuated thermometer/																							
1.....	55	50	45	44	32	32	32	32	32	32	32	32	37	34	54	45	62	56	69	65	64	58	69	65
2.....	54	49	45	43	32	32	32	32	32	32	32	32	35	34	52	48	60	52	70	64	65	60	65	61
3.....	53	48	45	38	32	32	32	32	32	32	32	32	35	34	51	46	57	54	70	64	65	60	65	59
4.....	56	50	40	38	34	32	32	32	32	32	32	32	39	34	54	46	58	54	67	63	64	61	66	62
5.....	57	56	40	36	34	32	32	32	32	32	32	32	39	33	55	47	62	54	64	60	62	62	65	63
6.....	60	57	41	40	34	32	32	32	32	32	32	32	43	37	53	47	66	56	66	59	65	62	64	61
7.....	60	58	41	39	34	32	32	32	32	32	32	32	42	39	52	44	69	60	67	63	68	62	61	57
8.....	58	55	40	38	34	32	32	32	32	32	32	32	41	37	55	45	72	64	66	63	70	64	57	53
9.....	56	52	40	40	34	32	32	32	32	32	32	32	43	38	51	48	71	63	65	62	70	67	56	52
10.....	59	53	40	38	32	32	32	32	32	32	32	32	44	38	50	49	73	64	67	60	69	64	56	53
11.....	59	53	41	40	32	32	32	32	32	32	32	32	47	40	55	48	73	64	67	62	68	65	58	53
12.....	58	54	42	40	32	32	32	32	32	32	32	32	45	42	57	54	76	67	66	64	67	62	60	56
13.....	57	53	43	40	32	32	32	32	32	32	32	32	46	40	57	55	76	69	67	64	66	64	62	58
14.....	53	48	43	42	32	32	32	32	32	32	32	32	46	42	56	54	77	70	69	64	69	63	62	58
15.....	51	46	42	41	32	32	32	32	32	32	32	32	46	43	58	53	75	70	69	63	68	64	58	54
16.....	50	50	42	37	32	32	32	32	32	32	32	32	44	42	55	48	71	66	66	64	67	63	54	53
17.....	52	50	37	34	32	32	32	32	32	32	32	32	42	39	52	47	66	64	67	62	67	64	56	53
18.....	52	50	35	34	32	32	32	32	32	32	32	32	41	38	49	45	67	62	68	61	67	65	55	51
19.....	52	50	36	34	32	32	32	32	32	32	32	32	45	37	55	47	65	60	66	61	65	62	54	51
20.....	51	46	36	33	32	32	32	32	32	32	32	32	47	38	50	47	68	62	66	63	62	60	51	47
21.....	51	46	36	34	32	32	32	32	32	32	32	32	50	41	57	46	72	66	67	63	61	57	50	45
22.....	48	44	37	35	32	32	32	32	32	32	32	32	47	42	64	52	72	66	66	64	61	56	50	46
23.....	53	46	36	35	32	32	32	32	32	32	32	32	44	38	52	50	73	67	66	63	60	53	52	48
24.....	53	47	37	33	32	32	32	32	32	32	32	32	47	38	59	50	76	68	63	60	56	54	49	46
25.....	47	44	33	33	32	32	32	32	32	32	32	32	46	40	57	50	70	64	62	58	52	55	54	50
26.....	47	44	35	33	32	32	32	32	32	32	32	32	51	43	58	52	70	62	71	64	63	59	54	49
27.....	44	44	36	34	32	32	32	32	32	32	32	32	50	44	66	57	69	64	72	66	66	61	54	49
28.....	52	45	35	33	32	32	32	32	32	32	32	32	47	45	65	57	65	60	71	65	68	64	54	48
29.....	52	50	33	32	32	32	32	32	32	32	32	32	45	40	64	56	62	56	66	61	67	65	56	51
30.....	50	47	32	32	32	32	32	32	32	32	32	32	48	39	66	62	69	60	64	59	67	64	56	53
31.....	47	44	--	--	32	32	32	32	32	32	32	32	--	--	66	62	--	--	63	59	70	66	--	--
Average.....	53	49	39	37	32	32	32	32	32	32	32	32	44	39	57	50	68	62	67	63	66	62	58	54

STREAMS TRIBUTARY TO LAKE ERIE

MADEIRA RIVER AT WATERVILLE, OHIO

LOCATION.--At gaging station at bridge on State Highway 64, at Waterville, Lucas County, 3 miles downstream from Tontogany Creek. DRAINAGE AREA.--6,314 square miles.

RECORDS AVAILABLE.--Chemical analyses: March 1950 to February 1952.

Water temperatures: March 1950 to September 1956.

Sediment records: April 1950 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 83°F July 27, 28; minimum, freezing point on many days during January to March.

Sediment concentrations: Maximum daily, 1,610 ppm Feb. 27; minimum daily, 2 ppm Nov. 1, 2, Jan. 12.

Sediment loads: Maximum daily, 161,000 tons Feb. 27; minimum daily, 1 ton Oct. 2, 3.

EXTREMES, 1950-56.--Water temperatures: Maximum, 90°F July 22, 1952, July 27, Aug. 3-5, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 2,240 ppm Mar. 26, 1954; minimum daily, 1 ppm on many days during October to December 1953, September to November 1955, and January 1956.

Sediment loads: Maximum daily, 161,000 tons Feb. 27, 1956; minimum daily, less than 0.5 ton on several days during October to December 1953, and September 1955.

REMARKS.--Temperature recorder on downstream side of second pier from left end of bridge. Records of discharge for water year October 1955 to September 1956 given in WSP 1457. Flow affected by ice Dec. 16-27, 30, Jan. 8, 9, 24-31. Low flow slightly affected by powerplants above station.

Temperature (°F) of water, water year October 1955 to September 1956

(Record with temperature attachment, continuous ethyl alcohol-actuated thermometer)

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.....	66	60	48	46	35	35	34	34	32	32	33	32	41	39	50	49	68	65	78	76	77	77	80	78
2.....	62	59	48	48	35	34	34	34	32	35	35	33	43	40	50	49	65	64	81	78	77	75	78	76
3.....	62	60	48	46	34	34	34	34	32	32	35	35	47	43	51	49	64	62	84	82	75	76	73	74
4.....	65	62	46	46	34	34	34	34	32	32	35	35	47	47	53	51	62	61	75	73	77	74	78	74
5.....	65	65	46	44	34	34	34	34	32	32	35	35	48	46	53	53	62	61	73	71	80	76	79	76
6.....	66	65	45	44	34	34	34	34	32	32	36	35	49	47	54	53	64	62	72	70	78	77	78	74
7.....	66	64	44	43	34	34	34	34	32	32	39	36	49	48	55	53	67	64	74	70	79	76	74	70
8.....	64	62	43	41	34	34	34	34	32	32	39	39	48	47	56	54	69	67	76	73	80	77	72	68
9.....	62	61	41	40	34	34	34	34	32	32	39	38	47	45	56	55	71	69	75	73	79	76	71	68
10.....	61	61	40	40	34	34	33	33	32	32	38	37	47	46	55	55	72	70	75	71	79	74	69	67
11.....	62	61	40	39	34	34	33	33	32	32	37	36	46	45	57	55	76	72	75	69	78	75	72	67
12.....	62	62	41	39	34	34	33	33	32	32	37	36	47	45	60	57	77	74	74	72	80	75	75	69
13.....	62	61	43	41	34	34	33	33	32	32	37	36	48	47	65	60	79	75	74	72	79	76	75	72
14.....	61	60	44	43	34	34	33	33	32	32	37	36	49	48	66	65	81	76	76	71	77	76	75	72
15.....	60	58	44	43	34	34	33	33	32	32	37	37	50	49	66	65	80	78	76	71	78	77	74	68
16.....	59	56	47	44	34	34	33	33	32	32	37	36	50	49	65	63	80	77	77	74	78	77	71	67
17.....	56	55	46	42	34	34	33	33	32	32	36	35	49	47	63	61	79	77	76	74	79	77	71	68
18.....	55	55	44	44	34	34	33	33	32	32	35	35	47	45	61	60	78	73	74	73	79	78	69	64
19.....	55	55	44	42	34	34	33	33	32	32	35	34	45	44	62	60	74	72	73	72	78	76	69	63
20.....	55	53	42	41	34	34	33	33	32	32	36	35	46	45	62	60	75	73	73	72	76	74	64	58
21.....	53	53	41	40	34	34	33	33	32	32	37	36	46	46	64	61	78	75	74	72	74	73	63	58
22.....	53	52	40	34	34	34	33	33	32	32	37	37	46	46	66	63	78	78	74	73	74	73	63	60
23.....	53	51	41	40	34	34	32	32	32	32	37	37	47	46	66	65	79	78	75	74	73	72	64	60
24.....	54	52	41	40	34	34	32	32	32	32	38	37	48	46	65	63	79	78	76	75	72	71	65	60
25.....	52	49	40	39	34	33	32	32	32	32	38	37	48	47	64	64	76	76	78	78	76	75	65	60

STREAMS TRIBUTARY TO LAKE ERIE--Continued

MAUMEE RIVER AT WATERVILLE, OHIO--Continued

Temperature (°F) of water, water year October 1955 to September 1956--Continued
 /Recorder with temperature attachment, 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
26.....	50	48	39	39	34	34	32	32	34	32	40	38	48	48	64	64	76	74	79	77	74	72	65	60
27.....	51	49	39	39	34	34	32	32	34	34	40	39	51	48	66	64	76	75	83	79	76	73	65	59
28.....	52	50	38	38	34	34	32	32	34	34	40	39	53	51	67	66	76	74	83	80	79	74	64	58
29.....	52	50	38	38	34	34	32	32	34	33	39	39	52	50	67	66	75	74	80	79	79	76	65	61
30.....	51	49	35	35	34	34	32	32	--	--	--	39	39	52	50	70	67	78	74	79	77	77	65	62
31.....	49	47	--	--	34	34	32	32	--	--	40	38	--	--	70	69	--	--	77	77	80	78	--	--
Average.....	58	56	42	41	34	34	33	33	32	32	37	36	48	46	61	59	74	72	76	74	77	75	70	66

STREAMS TRIBUTARY TO LAKE ERIE--Continued

MAUMEE RIVER AT WATERVILLE, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	140	4	2	448	2	2	1,880	52	264
2.....	110	3	1	493	2	3	1,130	49	149
3.....	136	4	1	5,740	54	s 1,110	1,520	45	185
4.....	150	5	2	12,900	170	5,920	1,980	41	219
5.....	196	12	6	12,900	263	9,160	2,340	45	284
6.....	413	13	14	10,800	215	6,270	3,140	34	288
7.....	618	41	s 80	6,640	162	2,900	3,560	32	308
8.....	3,290	56	497	5,200	121	1,700	2,790	32	241
9.....	3,780	40	408	4,150	92	1,030	2,260	20	128
10.....	2,700	36	262	3,200	79	682	2,260	20	122
11.....	2,000	35	189	2,820	57	434	1,870	20	90
12.....	1,560	35	147	1,810	54	264	1,330	12	43
13.....	1,360	42	154	2,020	47	258	1,350	13	47
14.....	994	45	121	4,910	66	s 1,020	930	16	40
15.....	712	40	77	9,750	134	3,530	904	28	68
16.....	698	30	56	16,700	511	23,000	1,000	21	57
17.....	541	25	36	21,300	816	46,900	650	13	23
18.....	920	36	94	22,700	720	44,100	800	10	a 20
19.....	592	24	39	18,000	510	24,800	750	10	20
20.....	698	31	58	11,700	345	10,900	900	21	51
21.....	554	25	37	8,950	242	5,850	750	15	30
22.....	780	40	84	6,820	143	2,630	650	6	10
23.....	795	36	77	6,820	140	2,580	600	9	14
24.....	946	46	117	7,200	133	2,580	600	5	8
25.....	930	18	45	6,270	108	1,830	550	4	6
26.....	657	15	27	5,030	116	1,580	500	3	4
27.....	541	15	22	3,990	108	1,160	550	10	15
28.....	541	15	22	3,680	102	1,010	932	12	30
29.....	516	8	11	2,370	92	589	592	9	14
30.....	493	3	4	1,810	64	313	600	10	16
31.....	459	6	7	--	--	--	804	11	24
Total.	28,820	--	2,696	227,121	--	204,103	40,382	--	2,818
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.....	580	7	11	2,820	35	266	16,800	360	16,300
2.....	541	15	22	3,140	15	127	17,400	230	10,600
3.....	592	12	19	2,620	6	42	22,000	220	13,100
4.....	482	15	20	1,950	9	47	26,200	270	19,100
5.....	657	12	21	1,610	15	65	24,100	254	16,400
6.....	592	9	14	1,110	15	45	24,800	240	16,100
7.....	505	5	7	1,250	15	51	35,500	595	57,000
8.....	450	16	19	978	11	29	42,700	1,080	124,000
9.....	390	6	6	1,260	10	34	37,100	666	66,700
10.....	425	5	7	3,990	6	65	31,100	437	36,700
11.....	448	3	4	5,910	30	479	25,500	340	s 23,000
12.....	436	2	2	8,950	65	1,570	18,000	258	12,500
13.....	578	6	9	8,950	70	a 1,700	13,400	187	6,760
14.....	583	6	9	9,150	77	1,900	10,600	140	4,010
15.....	413	5	6	13,400	112	4,050	7,770	115	2,410
16.....	425	8	9	17,400	240	s 11,000	6,270	102	1,730
17.....	626	25	42	14,400	237	9,210	5,550	95	1,420
18.....	352	13	12	12,600	147	5,000	5,380	75	1,090
19.....	482	9	12	19,900	258	13,900	5,030	64	869
20.....	529	10	14	23,400	375	23,700	4,530	48	587
21.....	372	10	10	18,000	258	12,500	4,700	37	470
22.....	362	13	a 13	12,400	132	4,420	5,550	28	420
23.....	343	21	19	8,950	82	1,980	6,820	35	644
24.....	470	15	19	6,090	59	970	8,950	42	1,010
25.....	430	8	9	11,500	100	s 3,720	13,400	86	3,110
26.....	470	7	9	32,500	775	68,000	13,400	217	7,850
27.....	390	12	13	37,100	1,610	161,000	10,200	182	5,010
28.....	380	10	10	33,900	1,040	95,200	8,950	180	a 4,300
29.....	390	12	13	24,100	600	39,000	12,600	178	6,060
30.....	600	12	19	--	--	--	15,000	164	6,840
31.....	1,500	22	89	--	--	--	11,900	220	7,070
Total.	15,793	--	488	339,328	--	460,070	491,200	--	473,260

s Computed by subdividing day.

a Computed from estimated concentration graph.

STREAMS TRIBUTARY TO LAKE ERIE--Continued

MAUMEE RIVER AT WATERVILLE, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	8,950	167	4,040	32,500	990	86,900	7,200	103	1,980
2.....	7,960	136	2,920	23,400	650	41,100	10,800	174	5,070
3.....	5,730	110	1,700	21,300	490	28,200	8,950	262	6,330
4.....	5,550	108	1,620	19,200	418	21,700	6,820	289	5,320
5.....	6,090	108	1,780	16,200	330	14,400	4,860	218	2,860
6.....	7,390	94	1,880	12,600	263	8,950	2,530	162	1,110
7.....	7,580	104	2,130	13,900	240	9,910	1,900	120	616
8.....	7,010	120	2,270	12,900	486	16,900	1,650	97	432
9.....	6,640	111	1,990	10,200	376	10,400	1,560	80	337
10.....	6,460	107	1,870	12,900	177	6,160	1,270	75	257
11.....	5,730	112	1,730	22,000	452	26,800	1,330	52	187
12.....	5,030	166	2,250	39,500	836	89,200	1,010	37	101
13.....	3,680	104	1,030	42,700	797	91,900	712	36	69
14.....	3,440	85	789	29,700	485	38,900	870	22	52
15.....	3,410	62	571	22,700	442	27,100	657	12	21
16.....	2,500	45	304	18,000	330	16,000	643	27	47
17.....	2,200	48	285	15,600	260	11,000	698	28	s 58
18.....	1,920	46	238	12,200	215	7,080	900	86	209
19.....	1,720	35	162	9,150	147	3,630	1,420	61	234
20.....	1,520	30	123	7,010	105	1,990	4,060	64	921
21.....	1,400	38	144	5,550	74	1,110	4,860	110	1,440
22.....	1,290	40	139	4,530	63	770	4,530	122	1,490
23.....	978	74	195	4,150	54	605	3,560	68	654
24.....	1,060	52	149	4,700	55	698	3,840	78	809
25.....	1,090	40	118	3,650	49	483	4,700	120	1,520
26.....	1,110	43	129	3,170	43	368	4,700	115	1,460
27.....	1,160	38	119	2,590	43	301	5,910	130	2,070
28.....	1,040	42	118	2,000	40	216	4,370	179	2,110
29.....	17,400	339	s 28,400	4,700	30	381	3,410	155	1,430
30.....	36,700	1,530	160,000	6,820	33	608	2,130	132	759
31.....	--	--	--	5,550	57	854	--	--	--
Total.	165,738	--	219,193	441,070	--	563,714	101,850	--	39,953
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.....	1,520	95	390	2,020	69	376	994	53	142
2.....	994	68	182	1,130	80	244	1,090	48	141
3.....	541	62	90	684	67	124	580	30	47
4.....	753	67	136	739	60	120	482	28	36
5.....	605	75	122	516	48	67	516	28	39
6.....	810	86	188	459	43	53	448	26	31
7.....	753	85	173	630	57	97	352	52	30
8.....	618	85	142	413	31	34	303	37	30
9.....	698	95	179	333	30	27	287	40	31
10.....	516	70	98	482	30	39	313	25	21
11.....	323	62	54	392	23	24	295	16	13
12.....	262	57	40	352	23	22	229	17	10
13.....	425	68	78	751	48	97	229	17	10
14.....	482	78	102	1,520	70	287	237	32	20
15.....	278	54	40	1,900	65	333	178	28	13
16.....	303	50	41	1,920	74	384	262	32	23
17.....	780	68	143	3,840	270	2,800	295	28	22
18.....	879	65	154	2,620	124	677	216	27	16
19.....	643	44	76	2,500	117	790	196	23	12
20.....	810	57	125	2,180	161	948	202	20	11
21.....	1,400	60	227	2,120	130	744	196	17	9
22.....	1,610	65	282	1,670	85	383	196	21	11
23.....	1,540	60	249	1,500	73	296	248	25	17
24.....	1,330	72	258	978	50	132	202	14	8
25.....	1,200	69	191	900	52	126	215	15	9
26.....	855	37	85	670	38	69	178	12	6
27.....	962	53	138	605	32	52	190	14	7
28.....	1,220	40	132	436	30	35	202	20	11
29.....	2,100	43	244	382	31	32	202	15	8
30.....	2,700	44	321	493	39	52	229	15	9
31.....	2,620	56	396	657	40	71	--	--	--
Total.	30,530	--	5,076	35,792	--	9,735	9,760	--	793

Total discharge for year (cfs-days)..... 1,927,384

Total load for year (tons)..... 1,981,899

s Computed by subdividing day.

STREAMS TRIBUTARY TO LAKE ERIE--Continued
MAUMEE RIVER AT WATERVILLE, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956

(Methods of analysis: B, bottom withdrawal tube; D, decantation; F, pipet; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (° F)	Suspended sediment												Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters											
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Nov. 17, 1955	4:40 p. m.	22,700		1,010	951	74	87	95	98	99	99	100	--		--		BSWCM
Nov. 17, 1955	10:30 a. m.	32,500		741	--	63	77	85	92	96	99	99	100		--		BSWCM
Feb. 26, 1956	9:20 a. m.	37,900		1,750	1,770	75	83	94	96	98	99	100	--		--		BSWCM
Feb. 27	8:50 a. m.	44,300		936	2,400	71	82	90	94	97	98	98	99	100	100		BSWCM
Mar. 7	8:50 a. m.	44,300		936	2,120	44	65	88	93	96	98	98	99	100	100		BSNM
Mar. 8																	
Mar. 9	2:00 p. m.	37,100		574	2,310	--	82	92	96	97	98	99	99	100	100		BSWCM
Apr. 30	12:30 p. m.	39,500		1,500	1,450	71	82	90	94	98	99	99	100	--	--		BSWCM
May 12	8:10 p. m.	48,600		986	2,180	67	76	85	91	95	97	98	99	100	100		BSWCM
May 12	8:10 p. m.	48,600		986	2,000	43	54	72	93	97	98	99	100	--	--		BSNM
June 3	11:15 a. m.	8,950		262	276	85	89	95	97	99	99	100	--		--		BSWCM

a Average of individual analyses of samples from 5 verticals.

ST. LAWRENCE RIVER BASIN

STREAMS TRIBUTARY TO LAKE ERIE--Continued

PORTAGE RIVER AT WOODVILLE, OHIO

LOCATION.--At gaging station at bridge on U. S. Highway 20 in Woodville, Sandusky County.
DRAINAGE AREA.--433 square miles.

RECORDS AVAILABLE.--Water temperatures: September 1952 to September 1956.

Sediment records: October 1950 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 88°F July 27; minimum, 33°F on many days during November, December, and January.

Sediment concentrations: Maximum daily, 941 ppm Feb. 25; minimum daily, 1 ppm on many days during December and January.

Sediment loads: Maximum daily, 11,400 tons May 13; minimum daily, less than 0.05 ton Jan. 21, 24, 25.

EXTREMES, 1950-56.--Water temperatures (1952-56): Maximum, 94°F Aug. 3, 1955; minimum, freezing point on several days during December 1952, January and February 1955.

Sediment concentrations: Maximum daily, 1,210 ppm Mar. 12, 1952; minimum daily, 1 ppm on many days during 1950, 1952 to 1956.

Sediment loads: Maximum daily, 27,900 tons Mar. 12, 1952; minimum daily, less than 0.05 ton on many days during 1950 to 1954, and 1956.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1437. Flow affected by ice Nov. 30, Dec. 1, Feb. 1-15.

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 4 p.m./

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	70	51	33	35	--	41	--	47	60	--	74	73
2	68	52	33	--	--	41	52	50	59	86	79	78
3	68	45	34	36	--	41	--	60	--	82	77	--
4	72	--	--	34	--	39	57	61	61	74	73	80
5	68	45	35	34	--	41	53	--	68	71	78	81
6	71	45	33	35	--	45	--	--	74	74	76	78
7	67	42	34	36	--	46	--	54	75	81	82	70
8	--	38	--	--	--	40	--	55	74	--	82	69
9	64	38	--	33	--	40	49	55	80	75	--	--
10	--	41	33	34	--	42	47	57	--	78	84	66
11	66	42	--	34	--	43	52	50	83	81	81	76
12	66	51	33	34	--	42	56	61	80	--	--	78
13	65	--	33	34	36	42	57	67	87	78	80	80
14	64	51	34	34	--	40	59	70	--	83	73	--
15	60	48	33	33	--	40	--	61	86	80	81	--
16	--	49	43	33	34	36	52	53	--	80	82	71
17	54	38	33	--	34	34	47	56	73	74	--	71
18	--	38	33	34	36	36	44	58	80	--	70	67
19	54	38	33	34	36	39	45	64	74	70	73	62
20	59	--	33	34	35	--	53	--	75	74	73	62
21	--	--	33	34	35	41	54	70	83	73	74	60
22	56	42	--	34	34	41	51	76	81	74	72	63
23	--	47	34	33	34	39	50	67	80	77	72	--
24	50	--	36	33	36	38	53	66	--	76	74	69
25	50	38	--	33	39	--	51	68	71	81	74	63
26	57	38	--	--	38	44	52	67	72	83	--	68
27	59	45	34	33	35	34	60	--	73	88	81	67
28	59	--	35	--	36	--	57	73	74	83	85	68
29	53	34	36	34	37	--	55	74	74	--	83	--
30	--	33	34	36	--	--	50	--	79	79	--	62
31	42	--	33	33	--	42	--	72	--	76	83	--
Average	--	--	--	34	--	40	52	62	72	78	78	70

STREAMS TRIBUTARY TO LAKE ERIE--Continued

PORTAGE RIVER AT WOODVILLE, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

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.....	9.0	33	0.8	12	12	0.4	80	11	2.4
2.....	8.1	34	.7	34	20	s 2.0	74	9	1.8
3.....	6.0	39	.6	148	44	18	87	9	2.1
4.....	4.8	28	.4	326	95	84	306	--	e 30
5.....	7.1	34	.6	198	58	31	541	45	66
6.....	15	54	2.2	108	55	16	304	30	25
7.....	74	47	9.4	71	36	6.9	172	18	8.4
8.....	93	42	10	52	19	2.7	163	13	a 6
9.....	74	30	6.0	40	15	1.6	117	10	a 3
10.....	45	30	a 4	34	14	1.3	80	7	1.5
11.....	30	35	2.8	30	14	1.1	82	5	a 1
12.....	19	43	2.2	27	32	2.3	65	4	.7
13.....	14	38	1.4	26	30	a 2	50	4	.5
14.....	10	19	.5	128	60	sb 30	48	3	.4
15.....	9.0	29	.7	618	--	e 230	43	3	.3
16.....	10	30	a 8	2,060	364	s 2,220	39	3	.3
17.....	14	22	.8	2,770	276	s 2,150	37	3	.3
18.....	15	19	a 8	1,230	109	362	31	1	.1
19.....	19	18	.9	554	63	94	31	1	.1
20.....	20	20	1.1	428	45	a 50	28	1	.1
21.....	19	17	a 9	379	37	38	27	1	.1
22.....	14	13	.5	446	32	38	26	1	a 1
23.....	12	25	a 8	564	38	58	27	1	.1
24.....	12	43	1.4	481	35	a 45	36	1	.1
25.....	11	14	.4	339	28	26	53	1	a 1
26.....	11	8	.2	244	24	16	59	1	a 2
27.....	11	30	.9	196	18	9.5	46	1	.1
28.....	11	28	.8	148	16	a 6	40	1	.1
29.....	11	23	.7	108	15	4.4	40	2	.2
30.....	11	15	a 4	90	15	3.6	31	2	.2
31.....	10	8	.2	--	--	--	28	2	.2
Total.	629.0	--	53.9	11,689	--	5,549.8	2,791	--	151.5
Day	January			February			March		
	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day	Mean discharge (cfs)	Mean concentration (ppm)	Tons per day
1.....	31	1	a 0.1	264		e 18	536	58	84
2.....	27	1	.1	150			2,030	196	s 1,170
3.....	26	2	.1	110			1,920	132	684
4.....	27	1	.1	80			2,680	236	1,710
5.....	26	6	.4	65			1,650	124	s 658
6.....	28	3	.2	60		e 3	2,130	184	s 1,230
7.....	26	1	.1	65			4,470	475	5,730
8.....	19	1	a 1	90			5,890	465	7,710
9.....	21	1	.1	500		e 140	4,360	244	s 3,020
10.....	19	1	.1	1,300		e 710	1,680	130	590
11.....	19	1	.1	1,200		e 450	1,110	78	234
12.....	21	1	.1	1,000		e 330	636	54	93
13.....	21	1	.1	950	34	87	428	41	47
14.....	20	1	.1	1,000	--	e 120	349	31	29
15.....	19	1	.1	1,500	--	e 260	333	22	20
16.....	18	2	.1	1,020	57	157	349	19	18
17.....	17	2	a 1	546	34	50	386	24	25
18.....	15	2	.1	1,010	48	s 191	336	16	14
19.....	15	3	.1	2,360	168	1,070	276	10	7.4
20.....	15	2	.1	1,290	76	265	267	7	5.0
21.....	17	1	(t)	715	39	75	400	13	s 16
22.....	19	1	a 1	362	25	24	870	62	146
23.....	18	1	.1	267	20	14	1,020	58	160
24.....	15	1	(t)	226	16	9.8	1,710	159	s 775
25.....	13	1	(t)	1,740	941	sb, 060	1,640	118	522
26.....	13	3	.1	4,360	926	10,900	870	60	141
27.....	14	4	.2	2,770	324	s 2,780	636	37	64
28.....	15	6	a 2	1,200	111	360	493	20	a 25
29.....	45	21	s 2.6	690	78	145	1,260	74	252
30.....	108	25	7.3	--	--	--	990	49	131
31.....	324	24	21	--	--	--	514	26	36
Total.	1,031	--	34.3	26,890	--	24,235.8	42,469	--	25,346.4

e Estimated.

s Computed by subdividing day.

t Less than 0.05 ton.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

ST. LAWRENCE RIVER BASIN
STREAMS TRIBUTARY TO LAKE ERIE--Continued
PORTAGE RIVER AT WOODVILLE, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	342	25	a25	1,290	110	383	448	65	79
2.....	288	21	16	836	52	89	314	45	38
3.....	383	30	31	469	33	42	185	35	a17
4.....	787	100	sb250	359	22	21	137	23	8.5
5.....	960	252	653	287	18	13	110	19	5.6
6.....	473	130	a170	213	13	a7	91	20	4.9
7.....	349	50	47	1,860	326	s1,810	80	20	4.3
8.....	404	25	a25	1,380	236	s925	71	20	3.8
9.....	393	19	20	715	92	179	64	20	3.4
10.....	288	20	16	1,910	263	s1,720	58	17	a3
11.....	239	21	14	3,920	280	2,960	50	14	1.9
12.....	198	23	12	5,650	523	s8,580	43	13	1.5
13.....	161	20	8.7	8,180	516	11,400	38	10	1.0
14.....	141	15	5.7	4,190	211	s2,560	35	12	a1
15.....	148	12	a5	1,350	100	364	30	15	1.2
16.....	288	15	12	870	63	148	75	--	e4
17.....	191	8	4.1	740	50	100	234	100	sb70
18.....	139	6	2.2	740	75	150	618	164	274
19.....	117	5	1.6	477	55	71	395	88	94
20.....	97	6	1.6	314	40	a35	296	78	62
21.....	84	10	2.3	229	26	16	256	96	66
22.....	78	12	2.5	192	17	8.8	162	52	23
23.....	76	10	2.0	177	13	6.2	120	45	14
24.....	75	10	2.0	160	12	5.2	383	--	e220
25.....	71	7	1.3	122	10	3.3	1,990	650	b3,500
26.....	69	4	.7	101	14	3.8	1,470	267	1,060
27.....	78	2	.4	98	11	a3	1,640	364	1,610
28.....	87	5	1.2	103	5	1.4	971	248	650
29.....	1,360	255	s1,270	98	8	2.1	368	141	148
30.....	2,520	250	1,700	93	7	1.8	211	89	51
31.....	--	--	--	204	16	s10	--	--	--
Total.	10,864	--	4,302.3	37,107	--	31,617.6	10,963	--	8,020.1
	July			August			September		
1.....	140	55	a20	36	39	3.8	172	63	29
2.....	99	35	9.4	29	60	4.7	94	51	13
3.....	76	40	8.2	24	37	2.4	58	50	a8
4.....	64	32	5.5	21	32	1.8	37	41	4.1
5.....	55	31	4.6	21	16	.9	27	75	5.5
6.....	48	20	2.6	19	15	.8	22	48	2.8
7.....	44	45	5.3	17	13	.6	20	35	1.9
8.....	38	50	a5	16	11	.5	19	29	1.5
9.....	31	39	3.3	15	14	a.6	16	30	a1
10.....	25	30	2.0	14	16	.6	15	34	1.4
11.....	21	17	1.0	13	18	.6	14	27	1.0
12.....	19	13	a.7	15	18	a.7	13	27	.9
13.....	17	12	.6	53	36	5.2	13	24	.8
14.....	17	10	.4	126	30	10	14	25	a.9
15.....	21	10	.6	70	18	a3	14	25	a.9
16.....	27	14	s1.1	44	30	s3.8	17	26	1.2
17.....	371	210	sb290	160	--	e70	51	28	3.8
18.....	401	--	e140	159	142	61	36	27	2.6
19.....	174	55	28	454	186	228	23	23	1.4
20.....	136	61	s24	340	138	127	18	16	.8
21.....	890	382	918	168	97	44	16	11	.5
22.....	723	177	s380	96	70	18	15	16	.6
23.....	276	86	64	61	51	8.4	14	14	a.5
24.....	144	48	19	42	38	4.3	14	10	.4
25.....	93	52	13	32	33	2.8	12	23	.7
26.....	68	68	12	24	35	a2	11	18	.5
27.....	51	60	8.3	20	50	2.7	9.2	17	.4
28.....	41	61	6.8	16	37	1.6	9.2	13	.3
29.....	69	75	a14	15	34	1.4	9.2	13	a.3
30.....	71	65	12	19	30	a2	9.7	24	.6
31.....	51	41	5.6	108	37	s14	--	--	--
Total.	4,301	--	2,003.0	2,247	--	627.2	812.3	--	87.3

Total discharge for year (cfs-days) 151,993.3

Total load for year (tons) 102,030.2

e Estimated.

s Computed by subdividing day.

a Computed from estimated concentration graph.

b Computed from partly estimated concentration graph.

STREAMS TRIBUTARY TO LAKE ERIE--Continued
PORTAGE RIVER AT WOODVILLE, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: B, bottom withdrawal tube; D, decantation; F, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment												Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters											
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Feb. 26, 1956 ^a	3:00 a.m.	3,810		1,080	--	75	85	91	95	97	98	99	100		--		BSWCM
Feb. 26	3:00 p.m.	4,580		855	920	82	85	91	92	93	96	98	99		100		BSWCM
Feb. 27	4:45 p.m.	2,200		208	422	85	88	93	96	98	98	99	100		--		BSWCM
Mar. 7	7:40 p.m.	5,050		607	951	84	94	97	97	98	98	99	100		--		BSWCM
Mar. 7	7:40 p.m.	5,050		607	954	68	90	91	95	97	98	99	100		--		BSNM
Mar. 8	4:00 p.m.	6,020	40	420	721	86	95	97	97	98	99	99	100		--		BSWCM
Apr. 30	7:30 a.m.	2,860		299	467	83	87	92	97	98	99	99	100		--		BSWCM
May 12	5:35 p.m.	6,540		698	1,200	88	92	95	97	97	99	100	--		--		BSWCM
May 12	5:35 p.m.	6,540		698	1,020	79	85	92	96	98	100	--	--		--		BSNM
May 13	1:45 a.m.	8,460		740	605	81	87	95	96	97	98	98	99		100		BSWCM
June 25	8:00 p.m.	2,060		429	855	86	93	96	97	97	99	99	99		100		BSWCM
June 27	10:45 a.m.	1,780		373	612	71	82	95	98	99	99	99	99		100		BSWCM
June 27	7:00 p.m.	1,740		365	715	82	88	93	94	95	96	99	100		--		BSWCM

^a Average of individual analyses of samples from 4 verticals.

ST. LAWRENCE RIVER BASIN

STREAMS TRIBUTARY TO LAKE ERIE--Continued

SANDUSKY RIVER NEAR FREMONT, OHIO

LOCATION.--At gaging station at highway bridge, 2.3 miles upstream from Ballville power dam, 2½ miles downstream from Wolf Creek, and 3¼ miles southwest of Fremont, Sandusky County.

DRAINAGE AREA.--1,248 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1950 to February 1952.

Water temperatures: October 1950 to September 1956.

Sediment records: October 1950 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 84°F Aug. 29; minimum, freezing point on many days during November to February.

Sediment concentrations: Maximum daily, 1,450 ppm Feb. 26; minimum daily, .1 ppm on many days during October to January.

Sediment loads: Maximum daily, 47,000 tons Feb. 26; minimum daily, less than 0.5 ton on many days during October to January, and September.

EXTREMES, 1950-56. --Water temperatures: Maximum, 91°F July 31, 1955; minimum, freezing point on many days during winter months.

Sediment concentrations: Maximum daily, 1,450 ppm Feb. 26, 1956; minimum daily, 1 ppm on many days during February, October to December 1952, February, October to December 1953, January, September to October, and December 1954, October to December 1955, and January 1956.

Sediment loads: Maximum daily, 47,000 tons Feb. 26, 1956; minimum daily, less than 0.05 ton on several days during October 1952 and September 1954.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1437. Flow affected by ice Nov. 30 to Dec. 1, Dec. 10 to Feb. 10.

Temperature (°F) of water, water year October 1955 to September 1956

7/Once-daily measurement at approximately 7 p.m.

[illegible]

STREAMS TRIBUTARY TO LAKE ERIE--Continued

SANDUSKY RIVER NEAR FREMONT, OHIO--Continued

Suspended sediment, water year October 1956 to September 1956

Day	October			November			December			
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		
		Mean con-centration (ppm)	Tons per day		Mean con-centration (ppm)	Tons per day		Mean con-centration (ppm)	Tons per day	
1.....	21	2	(t)	40	1	(t)	160	17	7	
2.....	19	2		43	2	(t)	149	11	a 4	
3.....	19	2		64	3	a 1	159	8	3	
4.....	19	3		76	4	1	230	7	4	
5.....	26	4		80	5	a 1	254	10	7	
6.....	52	5	1	87	5	a 1	207	10	6	
7.....	68	7	a 1	72	5	a 1	175	10	a 5	
8.....	95	7	2	64	4	a 1	185	10	a 5	
9.....	80	7	2	61	4	1	175	10	5	
10.....	72	--	(e 1)	58	5	1	130	8	3	
11.....	64	--		61	5	a 1	100	7	2	
12.....	55	--		61	5	a 1	90	7	a 2	
13.....	52	--		61	5	1	80	7	a 2	
14.....	49	--		442	230	sb 350	75	6	1	
15.....	46	3	(et)	364	140	a 140	70	6	a 1	
16.....	43	--		1,310	199	a 759	70	4	1	
17.....	49	--		3,040	450	b 3,700	70	8	2	
18.....	52	2		2,310	300	a 1,900	65	3	1	
19.....	49	--		1,410	236	898	65	2	(t)	
20.....	52	--	(t)	710	190	a 360	65	1	(t)	
21.....	49	--		492	150	a 200	65	1	(t)	
22.....	49	--		442	110	a 130	65	3	1	
23.....	37	1		417	80	90	65	2	(t)	
24.....	43	--		401	60	a 65	65	1		
25.....	49	--	379	35	a 35	65	1			
26.....	40	--	(t)	349	28	26	80	1	(t)	
27.....	34	--		357	28	27	90	1		
28.....	37	--		273	26	19	80	1		
29.....	37	1		(t)	196	17	9	80		1
30.....	37	2		(t)	170	20	9	75		1
31.....	40	2	(t)	--	--	--	70	1		
Total.	1,434	--	15	13,890	--	8,728	3,374	--	65	
January				February			March			
1.....	65	1	(t)	1,900	35	180	2,140	200	a 1,200	
2.....	60	1		850	14	32	2,720	171	1,260	
3.....	55	1		550	15	22	2,460	120	a 800	
4.....	55	1		400	17	a 18	2,920	80	631	
5.....	50	1		360	18	a 17	2,120	67	384	
6.....	50	1	(t)	390	19	a 20	3,520	264	s 3,420	
7.....	50	1		430	20	23	10,500	934	26,500	
8.....	50	1		1,300	34	s 143	13,600	650	a 24,000	
9.....	50	2		4,500	169	2,050	14,200	352	13,500	
10.....	55	2		5,500	180	2,670	8,540	230	a 5,300	
11.....	55	2	(t)	5,540	160	a 2,400	5,410	180	a 2,600	
12.....	55	2		5,020	140	a 1,900	2,410	135	878	
13.....	50	2		3,750	123	1,240	1,570	92	390	
14.....	50	6		3,040	113	928	1,190	60	a 190	
15.....	45	4		(t)	2,920	92	725	949	50	128
16.....	45	2	(t)	2,460	83	551	1,040	40	112	
17.....	45	3		(t)	2,140	90	a 500	1,190	40	a 130
18.....	45	5		2,610	108	761	1,160	45	141	
19.....	45	3		4,120	210	a 2,300	992	30	80	
20.....	45	3		3,510	198	1,880	920	18	45	
21.....	45	2	(t)	2,060	153	851	1,040	27	76	
22.....	45	2		1,130	94	287	1,530	35	144	
23.....	45	2		767	53	110	2,160	40	a 230	
24.....	45	1		624	38	64	4,250	117	s 1,510	
25.....	40	3		5,270	871	s 21,400	5,020	185	2,510	
26.....	40	5	1	12,000	1,450	47,000	4,000	190	2,050	
27.....	45	8	a 1	9,100	580	14,200	2,500	97	655	
28.....	45	12	1	7,700	485	10,100	1,760	65	309	
29.....	300	12	10	4,120	325	3,620	2,480	92	616	
30.....	1,600	--	e 280	--	--	--	2,520	84	572	
31.....	1,800	--	e 350	--	--	--	1,880	91	462	
Total.	5,070	--	650	94,061	--	115,962	108,691	--	90,823	

e Estimated.

s Computed by subdividing day.

t Less than 0.5 ton.

a Computed from estimated concentration graph.

b Computed partly from water-sediment discharge curve.

STREAMS TRIBUTARY TO LAKE ERIE--Continued

SANDUSKY RIVER NEAR FREMONT, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	1,220	77	254	1,160	78	244	1,330	--	e 350
2.....	920	63	156	829	60	134	2,160	201	1,170
3.....	934	68	171	778	51	107	2,200	285	1,690
4.....	1,960	--	e 1,200	778	55	a 120	1,190	160	a 500
5.....	2,100	252	1,430	698	62	117	790	149	318
6.....	1,650	200	a 900	624	63	106	645	120	209
7.....	1,140	85	a 260	2,330	385	s 3,380	528	85	121
8.....	920	67	166	3,750	707	7,160	409	76	84
9.....	829	63	141	2,480	400	2,680	342	60	55
10.....	732	53	105	2,290	253	1,560	294	47	37
11.....	645	44	77	5,280	387	5,520	242	38	25
12.....	565	43	66	13,200	806	28,700	207	30	17
13.....	492	40	53	7,980	498	10,700	180	32	16
14.....	442	35	a 40	4,000	320	a 3,500	159	30	a 13
15.....	434	33	39	2,100	182	1,030	140	33	12
16.....	442	25	a 30	1,370	117	433	126	35	a 12
17.....	409	14	15	1,060	70	a 200	170	40	a 18
18.....	379	10	10	934	53	134	385	85	sb 95
19.....	357	8	8	767	45	a 90	1,240	--	e 650
20.....	320	14	12	675	45	82	1,200	104	340
21.....	294	18	14	547	42	62	964	--	e 240
22.....	273	17	12	475	38	49	790	--	e 190
23.....	260	18	a 13	1,240	--	e 700	698	--	e 170
24.....	248	14	9	934	--	e 500	1,340	--	e 1,300
25.....	242	15	10	584	144	227	4,760	1,280	16,400
26.....	254	17	12	442	113	135	3,630	840	8,230
27.....	260	20	a 14	371	67	67	2,660	660	4,740
28.....	365	30	a 30	349	55	a 50	1,370	345	1,280
29.....	1,080	150	sb 490	417	55	62	732	240	a 470
30.....	1,550	107	448	881	57	136	492	181	240
31.....	--	--	--	744	49	88	--	--	--
Total.	21,716	--	6,185	60,067	--	68,083	31,373	--	38,992
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.....	357	129	124	349	136	128	43	--	--
2.....	280	100	76	225	113	69	52	--	--
3.....	225	90	55	165	73	32	43	--	--
4.....	185	100	a 50	126	55	19	37	10	--
5.....	175	100	47	117	55	17	34	--	--
6.....	175	95	a 45	103	53	15	37	--	--
7.....	165	90	a 40	91	55	a 14	34	--	--
8.....	159	90	a 40	95	58	15	34	--	--
9.....	165	84	37	180	58	28	37	--	--
10.....	144	75	a 30	135	58	21	32	--	--
11.....	121	70	a 25	103	58	16	30	--	--
12.....	103	65	a 18	87	60	a 14	28	--	--
13.....	91	55	14	159	78	33	26	--	--
14.....	131	52	18	185	74	37	24	--	--
15.....	140	50	a 19	121	64	21	28	--	--
16.....	149	55	a 20	165	78	35	34	--	--
17.....	165	83	37	185	85	a 40	34	12	--
18.....	248	102	68	135	85	a 30	28	11	--
19.....	180	--	e 50	196	90	a 50	24	--	--
20.....	180	--	e 45	175	93	44	23	--	--
21.....	213	--	e 55	121	80	a 25	23	--	--
22.....	175	--	e 40	87	60	a 14	24	--	--
23.....	140	83	31	64	45	8	23	4	--
24.....	159	60	26	61	37	6	19	5	--
25.....	144	58	22	55	31	5	21	6	--
26.....	131	65	23	49	25	a 3	19	3	(t)
27.....	112	65	a 20	43	20	a 2	21	3	--
28.....	161	75	a 35	40	18	2	21	3	--
29.....	387	146	s 167	40	20	2	19	10	1
30.....	907	284	695	40	20	a 2	17	7	(t)
31.....	624	220	a 370	46	20	a 2	--	--	--
Total.	6,691	--	2,342	3,743	--	749	869	--	25

Total discharge for year (cfs-days).....

350,979

Total load for year (tons).....

332,649

e Estimated.

a Computed from estimated concentration graph.

s Computed by subdividing day.

b Computed partly from water-sediment discharge curve.

† Less than 0.5 ton.

STREAMS TRIBUTARY TO LAKE ERIE--Continued
SANDUSKY RIVER NEAR FREMONT, OHIO--Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956
(Methods of analysis: P, pipet; S, sieve; N, in native water;
W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (°F)	Suspended sediment										Methods of analysis	
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters									
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250		0.350	0.500	1.000
Feb. 26, 1956 ^a	1:50 a.m.	12,600		2,430	--	58	74	87	95	98	99	99	100	BSWCM	
	1:30 p.m.	12,000		1,250	2,310	63	79	87	92	95	97	99	100	BSWCM	
	3:40 p.m.	11,400		969	1,350	68	80	88	94	98	99	100	--	BSWCM	
	3:40 p.m.	11,400		969	1,310	55	62	82	96	98	99	100	--	BSNM	
	6:00 p.m.	3,760		716	1,330	65	81	91	96	99	100	--	--	BSWCM	
	May 7														
	May 7														
	May 12	1:25 p.m.	14,500		808	1,480	68	78	86	95	97	98	99	100	BSWCM
	May 12	1:25 p.m.	14,500		808	1,430	54	62	78	95	97	98	99	100	BSNM
	May 12	4:00 p.m.	14,500		752	1,270	68	76	88	93	97	98	98	99	BSWCM
June 3	6:00 p.m.	1,920		183	283	58	70	87	95	97	98	99	--	BSWCM	
June 26	8:00 p.m.	3,160		787	1,560	66	80	91	97	99	100	--	--	BSWCM	
June 27	12:05 p.m.	2,770		667	900	66	79	91	97	99	100	--	--	BSWCM	
June 28	5:45 a.m.	1,610		388	702	68	86	94	97	98	99	100	--	BSWCM	
Average of individual samples from 4 verticals.															

^a Average of individual analyses of samples from 4 verticals.

STREAMS TRIBUTARY TO LAKE ERIE--Continued

HURON RIVER AT MILAN, OHIO

LOCATION.--Temperature recorder at gaging station 500 feet (revised) downstream from bridge on U. S. Highway 250, a quarter of a mile northwest of Milan, Erie County, and 2 miles downstream from confluence of East and West Branches.

DATA AVAILABLE.--Adequate gages and adequate gages.

RECORDS AVAILABLE.--March 1950 to February 1952.

Water temperature.--March to August 1950, July 1953 to September 1956.

Water temperature.--March to August 1950, July 1953 to September 1956.

Water temperature.--March to August 1950, July 1953 to September 1956.

Water temperature.--March to August 1950, July 1953 to September 1956.

Water temperature.--March to August 1950, July 1953 to September 1956.

Water temperature.--March to August 1950, July 1953 to September 1956.

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Water temperature.--March to August 1950, July 1953 to September 1956.

Water temperature.--March to August 1950, July 1953 to September 1956.

Water temperature.--March to August 1950, July 1953 to September 1956.

Water temperature.--March to August 1950, July 1953 to September 1956.

Temperature (°F) of water, water year October 1955 to September 1956

/Recorder with temperature attachment, 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
1.....	69	65	49	45	37	36	32	34	32	35	31	42	73	81
2.....	68	61	51	49	36	36	32	32	32	37	34	46	76	75
3.....	65	59	52	48	36	35	32	34	32	37	35	51	76	66
4.....	67	61	48	44	40	35	34	32	34	38	36	33	75	77
5.....	66	65	46	43	38	36	35	32	37	36	52	73	71	70
6.....	71	66	46	43	36	32	33	32	35	47	56	72	69	72
7.....	71	66	46	42	36	32	33	32	35	44	58	82	79	72
8.....	66	61	45	42	37	33	35	32	32	44	57	82	75	61
9.....	61	56	45	42	37	33	35	32	31	40	55	73	79	66
10.....	62	57	45	42	37	35	32	31	38	45	60	66	81	64
11.....	63	58	45	40	36	35	34	32	31	40	65	78	79	61
12.....	64	60	47	45	36	36	32	32	31	39	82	72	79	73
13.....	64	61	53	47	36	36	32	32	33	38	85	74	77	75
14.....	61	56	55	50	36	36	34	32	33	38	85	76	78	72
15.....	58	53	50	48	36	34	33	32	31	37	82	76	80	73
16.....	58	54	53	48	36	34	32	32	31	37	82	76	83	62
17.....	54	54	48	39	36	34	33	32	31	33	82	78	83	65
18.....	56	54	42	39	36	34	33	32	31	33	82	78	83	65
19.....	56	54	42	37	36	32	32	31	36	40	82	78	83	65
20.....	54	51	40	37	36	34	33	32	34	44	82	78	83	65
21.....	54	54	41	38	36	36	33	32	36	43	73	79	72	67
22.....	54	48	42	37	36	34	34	32	33	58	82	69	71	52
23.....	56	50	45	42	36	34	35	32	34	64	71	80	68	56
24.....	57	52	42	39	35	32	34	32	34	73	71	79	69	63
25.....	52	48	40	36	33	32	35	32	36	56	71	82	73	64
26.....	51	49	42	38	36	32	34	33	35	66	71	80	72	63
27.....	53	50	41	39	35	32	34	33	34	58	82	75	73	59
28.....	54	52	41	39	35	32	34	33	36	62	78	82	75	63
29.....	54	54	37	35	35	32	34	33	37	67	78	74	81	72
30.....	51	48	35	32	32	32	32	32	36	75	69	75	80	66
31.....	51	48	35	32	32	32	32	32	36	82	69	74	66	61
Average.....	59	56	45	41	36	34	32	33	32	45	57	75	77	68

STREAMS TRIBUTARY TO LAKE ERIE--Continued

CUYAHOGA RIVER AT INDEPENDENCE, OHIO

LOCATION.--At gaging station at highway bridge on Rockside Road, 1 mile northeast of Independence, Cuyahoga County, and 3 miles downstream from Tinkers Creek.

DRAINAGE AREA.--709 square miles.

RECORDS AVAILABLE.--Chemical analyses: October 1948 to September 1949.

Water temperatures: October 1948 to September 1949, August 1952 to September 1956.

Sediment records: October 1950 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 82°F June 22; minimum, freezing point Dec. 20, Jan. 25, 28, Feb. 29.

Sediment concentrations: Maximum daily, 1,630 ppm May 31; minimum daily, 2 ppm Nov. 6.

Sediment loads: Maximum daily, 25,400 tons May 12; minimum daily, 1 ton Nov. 6, 7.

EXTREMES, 1948-49, 1950-56.--Water temperatures (1948-49, 1952-56): Maximum, 88°F

Aug. 18, 1949; minimum, freezing point on several days during winter months.

Sediment concentrations (1950-56): Maximum daily, 1,740 ppm May 24, 1955; minimum

daily, 1 ppm Sept. 4, 10, 1955.

Sediment loads (1950-56): Maximum daily, 34,000 tons Mar. 25, 1954; minimum daily,

less than 0.5 ton on several days during August, September 1954, and September 1955.

REMARKS.--Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Temperature (°F) of water, water year October 1955 to September 1956
/Once-daily measurement at approximately 12 m./

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

STREAMS TRIBUTARY TO LAKE ERIE--Continued

CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956

Day	October			November			December		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day
1.....	94	7	2	276	11	8	448	36	44
2.....	88	12	3	248	5	3	427	39	45
3.....	76	12	2	290	12	9	495	37	49
4.....	83	10	2	241	5	3	678	53	97
5.....	109	20	s 12	209	5	3	549	15	22
6.....	604	750	sa 1,400	193	2	1	477	26	33
7.....	288	169	s 137	172	3	1	437	28	33
8.....	286	24	18	169	4	2	455	25	31
9.....	202	18	10	152	8	3	470	25	b 30
10.....	172	10	5	155	8	3	455	22	27
11.....	184	10	5	163	10	4	419	18	20
12.....	172	7	3	158	10	4	384	13	13
13.....	304	71	s 66	147	7	3	356	15	14
14.....	225	32	s 22	329	--	e 320	324	15	13
15.....	338	56	s 58	300	164	133	296	20	16
16.....	293	33	s 29	2,800	776	s 8,170	268	21	15
17.....	307	28	23	3,080	569	s 5,270	245	18	12
18.....	255	17	12	1,580	224	956	231	12	7
19.....	448	72	87	1,180	154	491	234	11	7
20.....	360	32	s 35	1,070	113	326	241	14	9
21.....	258	10	7	993	83	222	231	16	10
22.....	238	8	5	1,030	97	270	231	18	11
23.....	199	8	4	1,620	142	621	225	12	7
24.....	296	--	e 60	1,380	100	373	596	--	e 340
25.....	659	174	s 325	1,070	49	142	826	127	s 309
26.....	409	44	s 52	844	59	134	587	32	49
27.....	304	10	8	733	57	113	455	22	27
28.....	279	7	5	659	35	62	437	35	41
29.....	272	7	5	531	40	57	473	36	46
30.....	262	5	4	477	40	52	513	39	54
31.....	258	8	6	--	--	--	427	30	34
Total.	8,302	--	2,412	22,249	--	17,759	12,870	--	1,465
Day	January			February			March		
	Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment		Mean dis-charge (cfs)	Suspended sediment	
		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day		Mean concen-tration (ppm)	Tons per day
1.....	360	19	18	384	61	63	2,490	310	2,080
2.....	328	11	10	441	54	64	2,780	226	1,700
3.....	310	7	6	604	83	135	2,270	158	968
4.....	304	15	12	531	45	64	2,270	126	772
5.....	282	15	11	455	27	33	1,760	100	475
6.....	196	15	8	513	34	s 51	3,830	726	s 8,540
7.....	221	20	12	2,600	326	2,290	4,250	420	4,820
8.....	184	15	7	2,160	217	1,260	7,250	559	10,900
9.....	205	11	6	2,780	250	1,880	5,500	312	4,630
10.....	218	13	7	2,720	180	1,320	4,250	246	2,820
11.....	423	12	14	2,840	200	sa 1,700	3,500	243	2,300
12.....	427	13	15	3,920	358	3,790	2,780	254	1,910
13.....	332	24	22	2,900	230	1,800	2,100	193	1,090
14.....	304	18	15	2,490	145	975	1,710	169	780
15.....	276	11	8	2,720	145	1,080	1,540	162	674
16.....	258	9	6	2,050	121	670	1,420	103	395
17.....	262	11	8	2,000	182	s 1,100	1,300	89	312
18.....	228	15	9	3,500	420	3,970	1,260	71	242
19.....	215	16	9	2,960	215	1,720	1,260	76	258
20.....	225	18	11	2,320	102	639	1,220	78	257
21.....	212	28	16	1,800	88	428	1,220	111	366
22.....	202	24	13	1,420	88	337	1,220	97	320
23.....	184	20	10	1,260	73	248	1,220	80	sa 300
24.....	193	17	9	1,110	87	261	2,540	300	a 2,100
25.....	178	27	13	5,260	1,170	s 21,100	1,760	120	570
26.....	178	27	13	6,040	580	s 10,100	1,540	105	436
27.....	161	52	23	3,740	302	3,050	1,480	81	310
28.....	155	22	9	3,200	231	2,000	1,500	100	405
29.....	384	79	s 106	2,900	248	1,940	1,710	118	545
30.....	659	120	214	--	--	--	1,420	58	222
31.....	531	58	83	--	--	--	1,300	48	168
Total.	8,595	--	723	67,618	--	64,048	71,630	--	51,674

e Estimated.

s Computed by subdividing day.

a Computed from partly estimated concentration graph.

b Computed from estimated concentration graph.

STREAMS TRIBUTARY TO LAKE ERIE--Continued

CUYAHOGA RIVER AT INDEPENDENCE, OHIO--Continued

Suspended sediment, water year October 1955 to September 1956--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.....	1,220	46	152	1,220	52	171	2,980	900	sa 7,700
2.....	1,960	220	s 1,320	1,380	98	s 428	2,000	216	1,170
3.....	4,290	874	s 12,100	1,540	116	482	1,710	159	734
4.....	3,560	525	5,050	1,260	75	255	2,000	260	1,400
5.....	2,960	240	1,920	1,070	35	101	1,540	119	495
6.....	2,440	181	1,190	993	24	64	1,220	71	234
7.....	2,490	148	995	1,070	56	162	993	61	164
8.....	2,540	117	802	881	35	83	844	54	123
9.....	2,050	82	454	955	59	s 173	733	37	73
10.....	1,860	85	381	3,240	550	sa 4,900	604	34	55
11.....	1,460	100	b 390	3,260	316	2,780	513	27	37
12.....	1,300	108	379	7,850	1,200	25,400	495	25	b 35
13.....	1,110	95	285	6,410	400	6,920	437	33	39
14.....	936	64	162	4,740	316	4,040	398	31	33
15.....	993	60	161	3,740	282	2,850	495	124	s 193
16.....	1,070	39	113	3,320	273	2,450	1,350	--	e 5,100
17.....	1,180	65	207	2,540	222	1,520	2,100	--	e 4,100
18.....	1,140	53	163	2,440	192	1,260	2,820	662	s 6,030
19.....	1,140	70	215	1,850	99	494	2,130	321	s 2,020
20.....	1,070	45	130	1,540	75	312	1,420	140	b 550
21.....	993	32	86	1,300	83	291	1,110	100	300
22.....	993	30	80	1,500	208	s 974	881	39	93
23.....	993	35	94	1,460	150	591	807	222	s 675
24.....	993	42	113	1,220	86	283	1,420	--	e 8,000
25.....	955	45	116	1,070	60	173	2,050	--	e 3,800
26.....	1,070	46	133	993	57	153	1,180	178	567
27.....	1,420	266	s 1,190	993	45	121	1,140	122	376
28.....	1,380	129	481	918	40	99	826	98	218
29.....	1,540	123	511	714	43	83	622	73	122
30.....	1,420	78	299	513	40	55	531	54	77
31.....	--	--	--	1,950	1,630	8,580	--	--	--
Total.	48,326	--	29,672	63,930	--	66,248	37,329	--	39,413
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.....	466	35	44	585	34	54	531	39	56
2.....	416	35	39	531	32	46	993	--	e 800
3.....	388	33	34	463	36	45	531	68	97
4.....	342	26	24	445	104	s 133	430	50	58
5.....	300	22	18	4,140	1,200	s 14,400	363	50	49
6.....	321	18	16	3,740	644	7,220	427	45	52
7.....	300	18	14	2,540	271	1,880	495	58	78
8.....	384	--	e 130	1,800	148	719	398	31	33
9.....	752	--	e 500	1,340	155	561	346	16	17
10.....	412	53	59	1,140	168	517	342	15	14
11.....	321	21	18	1,140	200	sa 850	380	20	20
12.....	335	21	19	1,260	--	e 950	318	42	36
13.....	363	22	22	2,170	494	s 3,510	290	25	20
14.....	342	21	19	1,420	212	813	268	20	14
15.....	293	19	15	1,180	80	255	248	18	12
16.....	549	214	317	918	93	230	862	398	s 1,330
17.....	1,450	787	s 4,840	714	80	154	696	134	252
18.....	1,220	229	s 822	752	80	sa 190	585	52	82
19.....	881	76	181	1,240	--	e 850	430	33	38
20.....	807	54	118	770	52	108	452	58	71
21.....	733	54	107	696	35	66	346	30	28
22.....	955	142	366	640	38	68	338	24	22
23.....	1,070	165	477	678	40	73	328	17	15
24.....	900	78	190	807	51	111	318	15	13
25.....	678	39	72	678	28	51	300	16	13
26.....	659	--	e 220	604	21	34	272	11	8
27.....	696	--	e 440	1,010	329	s 1,200	258	10	7
28.....	604	84	137	955	184	s 527	225	10	6
29.....	696	53	100	622	57	96	202	10	5
30.....	696	34	64	549	34	50	196	8	4
31.....	640	35	60	513	34	47	--	--	--
Total.	18,969	--	9,364	36,040	--	35,586	12,168	--	3,250

Total discharge for year (cfs-days)..... 408,366

Total load for year (tons)..... 321,614

e Estimated.

a Computed from partly estimated concentration graph.

s Computed by subdividing day.

b Computed from estimated concentration graph.

STREAMS TRIBUTARY TO LAKE ERIE—Continued

CUYAHOGA RIVER AT INDEPENDENCE, OHIO—Continued

Particle-size analyses of suspended sediment, water year October 1955 to September 1956

(Methods of analysis: B, bottom withdrawal tube; D, decantation; P, pipet; S, sieve; N, in native water; W, in distilled water; C, chemically dispersed; M, mechanically dispersed)

Date of Collection	Time	Discharge (cfs)	Water temperature (° F)	Suspended sediment												Methods of analysis
				Concentration of sample (ppm)	Concentration of suspension analyzed (ppm)	Percent finer than indicated size, in millimeters										
						0.002	0.004	0.008	0.016	0.031	0.062	0.125	0.250	0.350	0.500		1.000
Feb. 18, 1956.....	4:00 p.m.	4,180	--	497	931	32	48	54	72	88	96	98	99		100	BSWCM
Feb. 25.....	10:15 p.m.	8,830	--	1,160	2,060	47	58	72	84	92	96	98	99		100	BSWCM
Feb. 25.....	10:15 p.m.	8,830	--	1,160	1,960	29	43	52	71	84	92	96	97		100	BSWCM
Apr. 3.....	12:00 m.	5,420	49	1,510	1,330	36	45	56	71	84	92	96	97		100	BSWCM
May 12.....	9:30 a.m.	8,060	--	1,440	--	41	52	66	80	91	94	96	97		100	BSWCM
May 12.....	8:00 p.m.	8,830	--	850	1,240	40	54	71	85	92	94	96	98		100	BSWCM
May 31.....	8:20 a.m.	2,660	--	2,500	3,090	22	38	56	73	87	97	99	99		100	BSWCM
June 18.....	4:45 p.m.	4,110	--	1,240	1,010	30	40	52	67	78	88	93	96		100	BSWCM
July 17.....	6:00 p.m.	3,020	--	1,690	2,920	42	52	65	76	81	87	90	93		98	BSWCM
Aug. 5.....	12:05 p.m.	4,810	70	1,460	1,440	53	66	76	89	95	96	97	100		--	BSWCM
Aug. 5.....	4:45 p.m.	3,440	--	1,140	1,090	43	54	64	77	80	95	97	98		100	BSWCM
Aug. 6.....	1:30 p.m.	3,360	--	490	901	37	45	55	71	85	93	97	99		100	BSWCM
Aug. 13.....	1:30 p.m.	3,320	--	789	1,460	38	48	58	75	88	93	97	99		100	BSWCM
Aug. 13.....	4:30 p.m.	3,260	--	783	2,530	33	46	57	70	82	96	98	99		100	BSWCM

a Average of individual analyses of samples from 4 verticals in the cross-section.

STREAMS TRIBUTARY TO LAKE ERIE
MISCELLANEOUS ANALYSES OF STREAMS TRIBUTARY TO LAKE ERIE IN NEW YORK

Chemical analyses, in parts per million, water year October 1955 to September 1956

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Calcium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Total ^a	Non- carbon- ate			
CATTARAUGUS CREEK AT GOWANDA																		
Aug. 13, 1956	223	6.0	0.07	70	8.8	18	1.9	173	54	25	0.0	2.5	307	211	69	503	6.9	5
BUFFALO CREEK AT GARDENVILLE																		
Aug. 13, 1956	36	4.9	0.24	47	11	5.0	2.6	147	42	10	0.4	0.4	210	162	42	347	8.0	9
CAYUGA CREEK NEAR LANCASTER																		
Aug. 13, 1956	57	4.4	0.14	43	7.2	3.3	2.6	119	38	7.7	0.0	0.2	175	137	39	287	7.1	8
CAZENOVIA CREEK AT EBENEZER																		
Aug. 13, 1956	31	3.6	0.15	51	11	13	3.1	135	58	20	0.1	1.3	235	173	62	395	8.2	4

^a Includes hardness of all polyvalent cations reported.

STREAMS TRIBUTARY TO NIAGARA RIVER
MISCELLANEOUS ANALYSES OF STREAMS TRIBUTARY TO NIAGARA RIVER IN NEW YORK

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 (residue on evaporation at 180° C)	Hardness as CaCO ₃		Specific conductance (micro- mhos at 25° C)	pH	Color
														Total ^a	Non-carbonate			
TONAWANDA CREEK AT BATAVIA																		
Aug. 13, 1956	86	6.5	0.21	61	13	5.0	2.6	206	34	9.9	0.2	1.9	244	206	37	410	7.4	12
NIAGARA RIVER OFF GRAND ISLAND NEAR NIAGARA FALLS																		
Aug. 13, 1956		0.8	0.16	36	9.4	9.0	1.2	117	20	21	0.0	0.5	174	128	33	299	7.6	2
BARGE CANAL AT MACEDON																		
Aug. 14, 1956	354	2.3	0.15	61	15	22	2.1	143	85	42	0.1	1.4	315	214	97	535	7.5	2

Includes hardness of all polyvalent cations reported.

^a Includes hardness of all polyvalent cations reported.

STREAMS TRIBUTARY TO LAKE ONTARIO

GENESEE RIVER NEAR MOUNT MORRIS, N. Y.

LOCATION.--At bridge on U.S. Highway 20A about 1 mile downstream from gaging station at Jones Bridge and about 4½ miles northeast of Mount Morris, Livingston County.

DRAINAGE AREA.--1,419 square miles (above gaging station).

RECORDS AVAILABLE.--Chemical Analyses: October 1954 to September 1956.

Water temperatures: October 1954 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 417 ppm Oct. 3-9; minimum, 119 ppm Apr. 5-6, 8-10.

Hardness: Maximum, 369 ppm July 9; minimum, 67 ppm Apr. 11-13.

Specific conductance: Maximum, 995 micromhos Oct. 10; minimum, 177 micromhos Apr. 5-6, 8-10.

Water temperatures: Maximum, 85°F July 21; minimum, freezing point on many days during December, January, and February.

EXTREMES, 1954-56.--Dissolved solids: Maximum, 479 ppm July 18-20, 1955; minimum, 119 ppm Apr. 5-6, 8-10, 1956.

Hardness: Maximum, 369 ppm July 9, 1956; minimum, 67 ppm Apr. 11-13, 1956.

Specific conductance: Maximum, 1,450 micromhos Aug. 15, 1955; minimum, 177 micromhos Apr. 5-6, 8-10, 1956.

Water temperatures: Maximum, 85°F July 21, 1956; minimum, freezing point on many days during December, January, and February.

REMARKS.--Records of specific conductance and pH of daily samples available in district office at Albany, N. Y. No appreciable inflow between sampling location and gaging station. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Silica (SiO ₂) (Fe)	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 on evaporation at 180°C)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Total	Non-carbonate			Unfiltered	Filtered
Oct. 3-9, 1955	205	4.3	--	60	11	70	3.4	157	39	125	0.1	2.4	417	192	64	7.47	4	5.1	2.8
Oct. 10	468	--	--	62	12	--	--	140	--	210	--	1.2	--	204	89	995	7.9	--	--
Oct. 3-10	--	--	0.24	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oct. 11	288	--	--	--	--	--	--	140	--	210	0	5	--	140	25	889	7.5	--	--
Oct. 12-15	1,800	8.3	--	53	8.5	48	2.9	138	--	85	0	9	--	167	54	608	7.8	7	--
Oct. 16-20	9,110	--	--	28	3.6	--	--	65	--	25	0	3.0	--	85	31	264	7.8	--	--
Oct. 11-20	--	--	95	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oct. 21-31	1,710	10	--	33	7.3	22	2.3	86	38	37	1	2.6	211	112	42	360	7.4	7	4.2
Nov. 1-10	1,060	7.7	36	37	7.4	24	2.0	95	36	42	1	1.9	217	123	43	379	7.6	9	4.6
Nov. 11-15	857	5.6	--	41	7.3	34	1.9	108	--	82	0	1.1	--	132	54	467	7.9	7	2.7
Nov. 16	3,510	--	--	--	--	--	--	80	--	--	--	--	--	120	54	379	8.3	--	--
Nov. 17-20	6,030	--	--	26	4.3	--	--	67	--	24	0	1.3	--	83	28	287	--	--	--
Nov. 11-20	--	--	29	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Nov. 21-30	2,260	8.2	23	29	5.8	15	1.7	74	29	27	1	1.9	160	96	38	298	7.3	6	2.8
Dec. 1-7, 9-10	2,800	6.2	35	22	6.3	18	3.2	75	--	27	0	1.0	--	81	20	278	7.4	3	--
Dec. 11-20	1,510	4.9	23	30	6.1	15	1.6	81	--	26	0	2.8	--	100	34	261	7.6	6	--
Dec. 28-31	1,060	7.2	24	25	7.8	24	2.0	95	--	38	0	2.7	--	94	17	364	7.6	3	--
Jan. 1-10, 1956	710	12	20	42	10	28	2.0	120	44	49	0	2.9	261	146	48	450	7.7	2	2.8
Jan. 11-20	707	5.2	10	44	9.1	33	2.0	118	--	64	0	2.8	--	147	51	477	7.5	3	--

a includes hardness of all polyvalent cations reported.

STREAMS TRIBUTARY TO LAKE ONTARIO--Continued
 GENESEE RIVER NEAR MOUNT MORRIS, N. Y.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Total ^a	Non-carbonate				Unfiltered	Filtered
Jan. 21-31, 1956	513	6.7	0.68	48	11	39	2.0	132	44	70	0.1	1.2	327	165	57	539	7.7	2	2.1	2.1
Feb. 1-8	687	5.9	--	44	11	36	2.1	122	41	65	.1	2.6	284	155	6	508	7.7	5	2.8	2.2
Feb. 9-10	1,950	--	--	--	--	--	--	89	--	40	--	2.5	--	116	43	359	7.5	--	--	--
Feb. 1-10	--	6.3	.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Feb. 11-15, 17-20	1,710	--	--	37	9.2	21	1.8	92	--	42	.1	2.2	--	130	55	372	7.7	5	--	--
Feb. 16	1,800	--	--	--	--	--	--	123	--	65	--	1.3	--	152	51	502	7.6	--	--	--
Feb. 11-20	--	--	.51	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Feb. 21-26	2,660	7.0	--	36	9.3	21	2.4	97	41	38	.1	4.1	218	128	49	362	7.8	5	4.8	2.2
Feb. 27-29	5,650	--	--	--	--	--	--	72	--	22	--	3.2	--	90	31	264	7.5	--	--	--
Feb. 21-29	--	--	3.9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar. 1-6, 8	5,430	7.9	--	29	6.2	12	2.6	90	30	21	.0	.2	180	106	32	269	7.4	2	8.1	4.5
Mar. 7-9-10	8,460	--	--	--	--	--	--	98	78	15	--	.47	--	158	78	439	7.3	--	--	--
Mar. 1-10	--	--	.31	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar. 11, 13, 15, 17, 19, 20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar. 12, 14, 16, 18	11,600	5.3	--	22	5.3	5.5	4.3	58	--	10	.1	6.2	--	77	29	200	7.4	4	--	--
Mar. 11-20	11,700	--	3.8	--	--	--	--	87	--	20	--	.29	--	148	77	423	7.5	--	--	--
Mar. 21-23	9,470	--	--	--	--	--	--	68	--	18	--	4.3	--	83	27	230	7.0	--	--	--
Mar. 24-31	2,960	9.0	--	36	9.2	18	1.7	105	31	31	.0	2.7	208	128	42	358	7.4	2	7.7	2.1
Mar. 21-31	--	.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr. 1-4, 8-10	5,670	7.7	--	37	8.4	11	3.7	104	37	20	.1	5.9	199	127	42	321	7.6	3	14	2.2
Apr. 5-6, 8-10	5,640	15	--	22	5.1	5.3	1.4	70	16	7.2	.1	1.3	119	76	19	177	7.4	2	--	--
Apr. 1-7, 9-10	--	--	.40	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr. 11-13	11,500	--	--	--	--	--	--	56	--	10	--	3.4	--	67	21	178	7.0	--	--	--
Apr. 14-20	6,230	6.4	--	28	6.4	11	1.6	86	--	19	.1	1.3	--	96	26	260	7.2	3	--	--
Apr. 11-15, 17-20	--	.03	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr. 21-30	3,360	8.3	24	30	6.2	14	1.5	85	26	24	.2	2.7	186	100	31	282	7.6	5	5.6	2.3
May 1-10	3,070	5.7	.16	32	6.8	15	1.5	94	31	24	.2	2.6	175	108	31	300	7.7	5	5.1	2.6
May 11, 13-20	5,080	5.9	.29	27	6.0	13	1.5	118	--	22	.2	1.8	--	92	26	254	7.8	5	--	--
May 12	7,450	--	.40	--	--	--	--	81	--	50	--	1.9	--	138	41	427	7.9	--	--	--
May 21-31	1,340	4.8	.28	35	8.0	23	1.7	109	30	38	.2	2.2	207	120	31	366	7.9	5	6.1	2.8
June 1-10	1,500	4.9	.12	33	8.6	21	1.6	104	27	36	.1	1.5	196	118	33	342	7.4	7	5.4	3.3
June 11-16, 20	713	4.3	.21	41	8.8	27	2.1	125	30	47	.1	1.7	241	139	36	416	7.6	4	3.6	2.9
June 21-30	459	5.5	.27	44	10	39	2.5	134	31	69	.2	1.7	280	151	41	502	7.5	7	5.3	2.8

^a includes hardness of all polyvalent cations reported.

July 1-8, 10, 1956	490	4.4	--	42	12	42	2.7	141	31	71	0.2	1.7	292	154	39	528	7.7	3	4.9	2.9
July 9	552	--	0.17	--	--	--	--	215	--	24	--	34	--	369	198	735	7.5	--	--	--
July 1-10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July 11	856	--	--	--	--	--	--	128	--	78	--	1.4	--	140	35	529	7.3	--	--	--
July 12-20	1,120	6.4	--	32	6.7	22	2.2	95	24	38	.1	2.0	196	108	30	333	7.3	4	7.3	3.6
July 11-20	--	--	.15	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
July 21-31	440	5.2	.13	39	8.5	30	2.4	121	28	51	.0	2.2	241	132	33	418	7.6	3	5.4	2.9
Aug. 1-2, 4-10	602	4.3	.23	43	10	40	2.6	136	28	68	.1	1.0	273	148	37	500	7.3	3	4.1	2.3
Aug. 11-12	1,120	--	--	--	--	--	--	91	--	31	--	.8	--	109	34	291	7.4	--	--	--
Aug. 13	473	--	--	--	--	--	--	94	--	28	--	2.0	--	109	32	309	7.1	--	--	--
Aug. 14-19	485	6.6	--	38	9.7	32	2.6	122	26	54	.2	1.0	240	135	35	433	7.4	6	7.1	2.6
Aug. 20	384	--	--	--	--	--	--	126	--	63	--	.7	--	146	43	485	7.3	--	--	--
Aug. 11-12, 14, 16-19	--	--	.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Aug. 21-27, 29	638	7.4	--	45	9.6	49	2.9	136	30	83	.2	2.0	312	152	40	556	7.6	9	5.8	2.4
Aug. 28, 31	2,030	--	--	--	--	--	--	140	--	28	--	1.3	--	116	1	301	7.6	--	--	--
Aug. 21-23, 25-29, 31	--	--	.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sept. 1-10	1,530	6.9	.20	33	7.0	19	2.6	98	23	34	.0	1.7	185	111	31	329	7.1	10	6.4	3.4
Sept. 11-20	904	7.2	.09	37	7.2	25	2.6	111	24	43	.0	1.3	208	122	31	375	7.2	10	5.0	3.0
Sept. 21-30	926	4.3	.09	32	6.8	22	2.2	98	22	39	.0	.6	186	108	23	340	7.2	5	5.2	2.6
Time-weighted average	2,500	6.7	0.46	36	8.5	27	2.3	104	32	44	0.1	2.9	230	123	37	385	--	5	5.3	2.8

a Includes hardness of all polyvalent cations reported.

ST. LAWRENCE RIVER BASIN

STREAMS TRIBUTARY TO LAKE ONTARIO--Continued

GENESEE RIVER NEAR MOUNT MORRIS, N. Y.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

Day	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
1	--	50	32	32	33	33	39	42	68	80	70	74
2	--	50	32	33	33	34	40	50	61	72	72	70
3	64	49	34	33	32	33	41	43	59	75	--	68
4	57	47	--	33	33	34	42	52	59	75	72	70
5	60	45	40	33	32	36	41	48	56	70	72	65
6	60	--	40	35	33	36	42	49	57	68	71	71
7	65	45	35	32	33	36	46	50	59	68	71	68
8	64	40	--	32	33	35	43	49	62	75	69	68
9	57	40	45	32	34	33	42	51	62	76	70	68
10	60	40	40	32	33	34	43	53	65	71	72	54
11	57	40	34	33	33	36	43	51	68	70	72	61
12	57	45	34	33	34	35	41	55	69	--	71	61
13	59	40	34	34	34	34	42	60	71	68	72	62
14	57	45	34	32	32	36	45	60	73	69	71	66
15	55	45	34	45	34	35	43	62	74	80	70	64
16	55	45	34	32	32	34	49	58	75	68	69	62
17	--	40	34	33	33	33	48	49	74	75	72	62
18	52	40	34	32	34	34	42	48	63	79	72	55
19	55	40	34	31	33	33	41	52	--	75	72	55
20	60	40	34	32	34	34	42	53	65	70	67	54
21	50	40	--	33	--	36	42	52	68	85	69	--
22	50	45	--	34	32	36	43	53	69	74	69	52
23	45	40	--	33	32	36	43	63	70	72	66	71
24	50	40	--	32	32	35	43	52	75	72	66	57
25	48	40	--	33	34	36	42	58	75	72	63	55
26	45	40	--	33	33	36	46	56	69	70	75	56
27	45	45	--	34	33	39	45	56	76	73	65	55
28	49	40	32	32	32	37	46	58	70	75	69	58
29	50	--	32	33	33	38	50	58	68	69	66	55
30	50	--	32	32	--	39	51	56	73	69	--	59
31	--	--	33	32	--	38	--	65	--	74	69	--
Average	55	43	--	33	33	35	44	54	67	73	70	62

STREAMS TRIBUTARY TO LAKE ONTARIO--Continued

GENESSEE RIVER AT DRIVING PARK AVENUE, ROCHESTER, N. Y.

LOCATION--On right bank at Rochester, Monroe County, at plant 5, Rochester Gas and Electric Corp., and 60 feet upstream from Driving park Bridge.

DRAINAGE AREA--467 square miles.

RECORDS AVAILABLE--Chenango River: October 1954 to September 1955.

Water temperatures--October 1954 to September 1955.

EXTREMES, 1955-56--Water temperatures: Maximum, 78°F June 14, 15; minimum, 36°F Jan. 26, 30.

EXTREMES, 1954-55--Water temperatures: Maximum, 83°F Aug. 4-6; minimum, freezing point, Mar. 29, 1955.

REMARKS--Records of discharge for water year October 1955 to September 1956.

Temperature (°F) of water, water year October 1955 to September 1956

Twice-daily measurements at approximately 10 a.m. and 4 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.
1.....	--	--	51	52	37	37	--	--	37	41	39	40	--	--
2.....	--	--	51	52	37	37	--	--	--	54	54	67	65	71
3.....	--	65	50	51	40	38	--	--	--	54	56	63	65	72
4.....	64	65	50	51	39	37	--	--	--	54	55	65	65	73
5.....	64	67	50	49	40	37	--	--	--	54	54	62	63	73
6.....	64	68	49	48	39	38	--	--	--	53	54	62	65	73
7.....	65	70	48	47	39	38	--	--	--	53	56	65	67	73
8.....	65	64	48	46	39	39	--	--	--	54	56	65	67	73
9.....	62	61	45	45	38	38	39	38	--	55	56	68	69	72
10.....	63	63	44	45	38	37	40	41	38	39	37	37	--	--
11.....	64	63	46	45	38	37	40	40	38	39	41	40	--	--
12.....	64	63	46	45	37	37	40	39	38	38	40	40	--	--
13.....	63	62	46	46	--	--	41	38	39	39	40	--	--	--
14.....	62	61	50	46	--	--	38	38	40	39	42	40	--	--
15.....	62	61	48	47	--	--	38	37	40	39	41	39	50	52
16.....	58	57	49	49	--	--	38	37	39	38	38	38	50	50
17.....	56	56	46	47	--	--	39	38	38	37	38	37	50	49
18.....	56	56	47	47	--	--	39	38	40	38	39	38	49	49
19.....	55	57	44	45	--	--	39	39	41	39	44	41	47	47
20.....	54	55	43	41	--	--	39	39	40	39	39	42	47	47
21.....	56	54	42	41	--	--	39	39	37	38	39	41	48	47
22.....	55	54	40	41	--	--	38	39	37	37	40	41	48	46
23.....	54	54	44	41	--	--	38	39	37	38	40	41	49	47
24.....	52	53	41	41	--	--	40	39	37	41	40	40	49	48
25.....	52	52	44	43	--	--	39	38	43	44	37	42	48	49
26.....	52	53	43	43	--	--	36	37	39	38	41	42	49	50
27.....	50	54	42	41	--	--	37	37	39	39	41	42	50	51
28.....	49	52	41	40	--	--	37	38	38	39	43	42	54	54
29.....	50	50	40	38	--	--	38	41	36	39	--	--	54	54
30.....	52	47	40	38	--	--	37	41	36	39	--	--	54	54
31.....	51	50	40	38	--	--	37	41	36	39	--	--	54	54
Average.....	58	58	46	45	--	--	--	--	38	40	39	40	--	--

STREAMS TRIBUTARY TO LAKE ONTARIO--Continued

OSWEGO RIVER AT LOCK 5, MINETTO, N. Y.

LOCATION.--At lock 5, Minetto, Oswego County, and about 4.5 miles upstream from gaging station at Lock 7, Oswego, N. Y.

DRAINAGE AREA.--5,121 square miles (above gaging station).

RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

Water temperatures: October 1955 to September 1956.

EXTREMES, 1955-56.--Dissolved solids: Maximum, 824 ppm Oct. 1-6, 8-9; minimum, 369 ppm May 1-7, 10.

Hardness: Maximum, 490 ppm Oct. 7; minimum, 84 ppm May 11-20.

Specific conductance: Maximum, 1,980 micromhos Oct. 7; minimum, 589 micromhos Sept. 15-16.

Water temperatures: Maximum, 71°F June 16; minimum, 33°F Dec. 20-23, Jan. 23.

REMARKS.--Records of specific conductance and pH of daily samples available at district office in Albany, N. Y. Records of discharge for gaging station at Lock 7, Oswego, N. Y., for water year October 1955 to September 1956 given in WSP 1437. No appreciable inflow between sampling location and gaging station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Total	Non-carbonate				Unfiltered	Filtered
Oct. 1-6, 8-9, 1955...	2,340	3.5	--	126	15	144	4.2	120	87	350	0.2	2.4	824	376	278	1,519	7.1	5	7.0	2.8
Oct. 7.....	3,340	--	--	--	--	--	--	117	--	493	.2	2.2	--	490	394	1,980	6.9	5	--	--
Oct. 10.....	4,470	--	--	--	--	--	--	114	--	208	.2	1.0	--	275	182	1,020	6.8	5	--	--
Oct. 11-10.....	--	--	0.06	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oct. 11-17.....	6,850	6.3	--	81	9.3	68	2.7	106	--	164	.0	.1	--	240	154	862	7.5	8	--	--
Oct. 18-30.....	14,200	--	--	65	12	39	2.8	114	--	79	.0	.3	--	212	118	606	7.8	8	--	--
Oct. 11-20.....	--	--	.09	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Oct. 21-31.....	11,700	7.6	--	73	12	56	3.1	118	75	131	.0	1.2	439	242	145	764	7.3	12	8.9	4.6
Nov. 1-10.....	12,400	6.2	.09	73	12	54	2.8	124	69	119	.0	2.6	428	232	130	730	7.6	16	8.4	4.6
Nov. 11-20.....	11,100	7.0	.08	74	11	60	2.6	122	--	136	.0	2.1	469	245	139	796	7.8	16	--	--
Nov. 21-30.....	10,500	5.3	.30	80	11	58	2.2	129	71	137	.0	2.3	--	245	139	796	7.7	7	7.5	4.0
Dec. 1-6, 8-10.....	9,140	5.6	--	76	11	61	2.5	122	65	142	.2	3.6	478	235	135	818	7.6	12	6.2	5.0
Dec. 7.....	10,400	--	--	--	--	--	--	128	--	260	.2	3.0	--	350	245	1,230	7.3	--	--	--
Dec. 1-10.....	--	--	.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Dec. 11-20.....	7,750	4.9	.10	84	12	60	2.5	124	--	149	.0	3.0	--	259	157	848	7.8	16	--	--
Dec. 21-24, 27, 28, 30, 31.....	7,830	3.3	--	70	13	70	2.4	129	--	170	.0	2.4	--	228	122	922	7.3	7	--	--
Dec. 25-26.....	8,340	--	--	--	--	--	--	123	--	113	--	1.8	--	196	80	638	7.5	--	--	--
Dec. 29.....	7,480	--	--	--	--	--	--	126	--	353	--	3.4	--	382	270	1,510	7.0	--	--	--
Dec. 31.....	--	--	.04	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Jan. 1-10, 1956.....	6,830	4.7	.03	84	12	67	2.5	134	73	156	.2	1.0	539	259	149	888	7.5	4	4.4	3.4
Jan. 11-20.....	6,480	6.6	.10	80	12	70	2.4	138	--	149	.0	2.9	--	249	136	850	7.5	5	--	--
Jan. 21-31.....	5,220	6.3	.09	86	13	71	2.7	139	79	162	.2	2.8	539	268	184	931	7.6	6	16	4.3
Feb. 1-10.....	4,720	5.5	.07	91	13	83	3.0	138	81	185	.1	3.8	596	281	168	1,000	7.7	10	4.8	3.8
Feb. 11.....	6,650	--	--	--	--	--	--	147	--	229	--	3.0	--	320	200	1,180	7.3	--	--	--
Feb. 12-20.....	7,800	6.0	--	86	14	70	2.5	151	--	156	.0	3.6	--	272	148	906	7.6	10	--	--

a Includes hardness of all polyvalent cations reported.

Time-weighted average	8,900	5.1	0.11	84	72	2.6	130	72	170	0.1	2.2	587	260	153	918	--	10	6.5	4.0
Feb. 11-20, 1956	9,360	8.2	0.12	86	11	--	148	67	182	0.1	4.7	539	260	139	900	--	12	4.6	4.1
Feb. 21-26	16,100	7.5	0.06	84	12	--	132	66	154	1.1	1.8	560	259	151	857	7.7	13	6.9	3.9
Mar. 1-10	23,400	6.3	0.14	65	9.9	--	130	44	109	1.1	5.3	560	203	105	672	7.9	10	--	--
Mar. 11-20	17,400	7.1	0.02	70	9.2	--	139	54	116	1.1	1.8	453	213	107	716	7.6	6	5.2	3.2
Mar. 21-31	23,300	4.6	0.03	63	10	--	122	52	98	1.1	1.5	400	198	98	635	7.8	12	4.6	3.5
Apr. 1-10	21,200	6.3	0.11	59	10	--	122	53	100	1.1	3.6	384	186	88	596	7.7	10	--	--
Apr. 11-20	16,000	5.3	--	63	9.5	--	122	53	100	1.1	2.2	384	196	96	632	7.6	8	5.2	3.7
Apr. 21-26	16,100	--	--	--	--	--	122	--	148	--	2.6	--	246	146	855	7.4	--	--	--
Apr. 27-30	16,400	4.7	0.13	62	9.7	--	125	54	69	1.1	3.0	366	195	92	676	7.6	6	7.2	3.8
May 1-7, 10	10,400	--	--	--	--	--	141	--	208	--	3.2	--	315	199	1,060	7.7	--	--	--
May 8-9	10,400	--	--	--	--	--	141	--	208	--	3.2	--	315	199	1,060	7.7	--	--	--
May 10	12,200	3.5	0.08	60	11	--	136	--	66	2.1	1.3	--	195	84	625	7.8	10	--	--
May 11-20	10,400	3.7	0.12	67	12	--	135	58	110	1.1	2.6	409	217	106	712	7.8	6	5.6	3.8
May 21-31	7,100	3.8	0.09	71	11	--	132	63	118	1.1	2.2	487	222	114	744	7.8	6	5.6	4.2
June 1-10	4,540	--	--	--	--	--	138	--	98	--	1.2	--	216	103	681	8.0	--	--	--
June 11-13, 18	2,530	3.5	--	98	13	--	148	--	212	2.2	1.9	--	238	177	1,090	7.8	10	--	--
June 14-17, 19, 20	--	--	0.02	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
June 21-30	2,240	4.0	--	101	13	--	144	78	230	1.1	1.6	678	306	188	1,160	7.3	10	5.7	3.7
July 1-10	1,920	2.0	0.23	109	13	--	146	85	262	1.1	1.5	746	325	206	1,280	7.5	25	4.5	3.7
July 11-20	2,470	3.4	0.26	102	13	--	135	82	246	0	1.5	750	308	197	1,210	7.5	25	5.2	3.7
July 21-31	2,900	5.3	0.07	97	12	--	134	79	218	2.2	.9	637	291	182	1,080	7.2	5	4.9	4.6
Aug. 1-10	2,500	5.2	0.04	98	12	--	128	81	232	2.2	.6	664	284	189	1,120	7.4	6	6.3	4.4
Aug. 11-20	2,340	2.2	0.16	99	14	--	125	81	244	2.2	1.9	671	305	202	1,140	7.4	7	5.5	4.0
Aug. 21-31	2,500	2.2	0.18	106	14	--	122	85	278	2.2	1.6	725	322	222	1,280	7.2	7	5.5	4.0
Sept. 1-5	7,210	5.9	--	114	12	--	115	81	286	1.1	1.4	747	334	237	1,290	7.2	8	6.4	4.2
Sept. 6-10	5,850	7.2	--	79	12	--	115	69	150	1.1	1.9	500	246	152	831	7.2	10	--	--
Sept. 11-10	--	--	0.22	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sept. 11-14, 17-19	4,170	7.2	--	82	12	--	118	68	159	1.1	1.7	510	254	157	855	7.4	8	6.1	4.9
Sept. 15-16	4,600	--	--	--	--	--	114	--	85	--	1.2	--	188	95	589	7.2	--	--	--
Sept. 20	2,980	--	--	--	--	--	132	--	395	--	2.6	--	437	329	1,660	7.2	--	--	--
Sept. 11-20	--	--	0.20	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Sept. 21-30	2,710	4.1	0.14	126	14	--	143	88	301	2.2	1.0	620	372	255	1,400	7.2	7	7.2	5.4

a includes hardness of all polyvalent cations reported.

ST. LAWRENCE RIVER BASIN

STREAMS TRIBUTARY TO LAKE ONTARIO--Continued

OSWEGO RIVER AT LOCK 5, MINETTO, N. Y.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
 /Once-daily measurement at approximately 12 m./

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

STREAMS TRIBUTARY TO LAKE ONTARIO--Continued

BEAVER RIVER AT MOSHIER FALLS, N. Y.

LOCATION.--At the Niagara Mohawk, Moshier Falls power station which is at the confluence of Beaver River and Sunday Creek near Number Four, N. Y.

DRAINAGE AREA.--184 square miles.

RECORDS AVAILABLE.--Water temperatures: October 1955 to September 1956.

EXTREMES, 1955-56.--Water temperatures: Maximum, 69°F on many days during August; minimum, 34°F on many days during March and April.

RECORDS.--Records taken by employees 5 feet below water surface in the tailrace of the Moshier Falls hydroelectric station.

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 9 a. m./

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

STREAMS TRIBUTARY TO LAKE ONTARIO--Continued
BLACK RIVER AT WATERTOWN, N. Y.

LOCATION --At dam at Watertown Municipal powerplant, Watertown, Jefferson County, and about 1.6 miles upstream from gaging station.

DRAINAGE AREA, 876 square miles above gaging station.

RECORDS AVAILABLE --Chemical analyses: October 1955.

TEMPERATURES --October 1955 to September 1956.

EXTREMES 1955-56 --Dissolved solids: 94 ppm Mar. 1-10; minimum, 48 ppm May 1-10.

Hardness: 18 ppm Mar. 1-10; minimum, 18 ppm Dec. 22.

Specific conductance: Maximum, 137 micromhos during June and August; minimum, 51.6 micromhos Dec. 22.

Water temperatures: Maximum, 75° on several days during November, December, and January.

REMARKS --Records of specific conductance and pH of daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1955 to September 1956 given in WSP 1437. No appreciable inflow between sampling location and gaging station.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Total	Non-carbonate			Unfiltered	Filtered
Oct. 1-10, 1955	2,080	5.7	0.38	10	1.6	3.0	1.0	26	15	2.4	0.0	0.2	66	32	10	6.5	25	17	10
Oct. 11-20	3,280	7.0	0.36	13	1.7	2.8	1.3	24	--	2.0	0.1	0.7	74	40	20	6.5	30	--	--
Oct. 21-30	3,150	7.8	0.36	13	1.8	2.7	1.1	30	17	2.8	0.1	1.0	74	40	16	6.5	35	16	10
Nov. 1-10	3,890	6.9	0.36	12	1.7	2.4	1.0	30	14	2.3	0.2	0.2	68	37	13	6.5	35	17	7.8
Nov. 11-20	3,730	5.9	0.36	12	1.9	2.4	0.9	32	--	2.8	0.0	0.7	69	34	8	6.9	29	--	--
Nov. 21-30	3,580	7.3	0.34	13	1.0	2.1	0.7	28	15	1.9	0.1	0.7	69	37	14	6.8	30	13	9.6
Dec. 1-10	3,430	8.0	0.27	14	1.3	2.8	0.8	35	15	2.5	0.2	0.7	78	40	12	6.9	30	12	9.5
Dec. 11, 16, 17, 19	2,270	6.4	0.25	12	1.5	2.8	0.9	30	--	2.5	0.0	1.2	--	36	12	7.0	24	--	--
Dec. 22	1,900	--	--	--	--	--	--	12	--	--	--	2.4	--	18	8	6.2	--	--	--
Dec. 21, 24-31	1,910	5.6	0.21	14	2.0	2.5	0.8	35	--	4.4	0.1	1.0	--	44	15	6.7	22	--	--
Jan. 1-10, 1956	1,500	8.0	0.23	13	2.6	3.0	0.8	35	17	3.2	0.1	0.2	79	43	15	6.7	17	19	9.8
Jan. 11-20	1,680	8.0	0.30	13	2.1	3.0	0.7	37	--	3.0	0.0	1.1	--	41	11	6.9	18	--	--
Jan. 21-31	1,250	9.0	0.23	13	2.4	3.4	0.8	32	19	3.6	0.1	0.2	84	43	16	6.7	20	19	11
Feb. 1-10	1,360	8.2	0.40	14	1.9	3.6	0.6	32	21	2.9	0.2	0.7	83	43	17	6.9	20	16	10
Feb. 11-20	1,370	8.3	0.30	14	2.4	3.3	0.8	35	--	2.5	0.2	0.6	--	45	16	6.9	20	--	--
Feb. 21-29	1,450	8.0	0.26	14	2.7	3.3	0.7	38	18	3.5	0.2	0.3	86	46	15	6.8	23	19	10
Mar. 1-10	2,690	7.2	0.15	18	3.3	2.9	0.9	50	18	4.4	0.2	0.5	94	59	18	6.8	23	14	9.9
Mar. 11-20	3,720	7.0	0.21	16	2.9	2.9	1.0	47	--	2.5	0.2	0.9	--	52	14	7.0	20	--	--
Mar. 21-31	2,220	7.5	0.16	16	2.7	2.9	0.8	43	18	3.6	0.2	0.3	90	51	16	6.8	27	14	10
Apr. 1-5	4,550	7.0	--	17	3.5	2.8	1.0	48	17	4.5	0.1	2.2	91	57	18	6.8	18	20	8.4
Apr. 6-10	16,000	5.2	--	12	1.2	1.3	1.0	31	9.7	0.6	0.0	3.5	55	35	10	6.8	18	6.7	4.3
Apr. 1-10	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Apr. 11-20	13,700	4.9	0.06	11	2.4	1.7	0.6	31	--	2.2	0.2	2.4	--	37	12	7.2	--	--	--
Apr. 21-30	7,820	5.2	0.20	10	2.1	1.7	0.7	27	9.8	2.3	0.2	2.0	56	34	12	7.5	12	9.4	7.0
May 1-10	11,200	4.3	0.21	8.0	2.0	1.2	0.6	22	9.1	1.9	0.1	2.2	48	28	10	7.3	15	11	7.4

a Includes hardness of all polyvalent cations reported.

May 11-20, 1956.....	6,380	4.3	0.11	10	2.0	2.2	0.6	31	--	1.2	0.2	0.7	--	33	8	76.9	7.0	23	--	--
May 21-31.....	4,320	4.9	.41	12	2.0	1.7	.6	34	10	2.1	.1	1.7	66	38	11	88.9	7.4	27	13	9.2
June 1-10.....	8,030	4.5	.68	12	1.6	1.4	.7	32	10	2.5	.1	1.4	62	37	11	82.0	6.9	32	14	9.0
June 11-20.....	2,400	7.0	.65	13	2.3	2.5	.8	37	12	4.0	.2	.9	72	42	12	96.8	6.8	27	15	10
June 21-30.....	1,480	5.2	.67	14	1.9	2.3	.8	36	14	4.0	.2	.8	79	43	14	104	6.8	23	16	11
July 1-10.....	1,430	6.0	.60	14	1.7	2.5	.7	38	11	3.1	.2	.7	75	42	11	98.4	6.7	24	16	11
July 11-20.....	3,050	6.0	.25	11	1.6	2.4	.7	31	9.3	2.2	.2	.8	66	34	9	81.6	7.0	38	16	10
July 21-31.....	1,520	5.2	.27	11	1.2	2.4	.6	27	12	2.2	.2	.8	68	33	11	80.5	6.9	35	17	11
Aug. 1-10.....	1,260	6.2	.66	13	1.3	3.2	.7	30	17	2.9	.0	1.4	89	38	14	96.3	6.5	35	27	25
Aug. 11-20.....	1,190	5.9	.51	12	2.6	2.8	.8	31	15	4.2	.2	.8	81	41	16	92.9	7.3	20	--	--
Aug. 21-31.....	1,240	6.3	.59	13	2.3	3.0	.8	35	15	4.2	.2	.6	84	42	14	98.3	6.8	25	--	--
Sept. 1-10.....	3,050	6.2	.45	9.9	1.7	2.1	.8	28	11	2.0	.1	.5	59	32	11	73.4	6.8	25	16	9.2
Sept. 11-20.....	1,830	6.1	.52	10	2.3	2.3	.7	25	13	2.9	.1	1.4	69	35	14	80.3	6.8	38	18	16
Sept. 21-30.....	3,500	6.7	.51	9.5	1.9	2.1	.6	25	11	2.4	.1	.6	62	32	11	73.0	6.8	30	17	14
Time-weighted average.....	3,570	6.5	0.36	13	2.0	2.5	0.8	33	14	2.8	0.1	0.9	73	40	13	95.5	--	26	16	11

a includes hardness of all polyvalent cations reported.

ST. LAWRENCE RIVER BASIN
STREAMS TRIBUTARY TO LAKE ONTARIO--Continued
BLACK RIVER AT WATERTOWN, N. Y.--Continued

Temperature (°F) of water, water year October 1955 to September 1956
/Once-daily measurement at approximately 7 a.m./

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

STREAMS TRIBUTARY TO LAKE ONTARIO
MISCELLANEOUS ANALYSES OF STREAMS TRIBUTARY TO LAKE ONTARIO IN NEW YORK

Chemical analyses, in parts per million, water year October 1955 to September 1956

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Discharge (cfs)	Silica (SiO ₂)	Iron (Fe)	Cal- cium (Ca)	Mag- nesium (Mg)	Sodium (Na)	Potas- sium (K)	Bicar- bonate (HCO ₃)	Sulfate (SO ₄)	Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (residue on evap- oration at 180°C)	Hardness as CaCO ₃		Specific conduct- ance (micro- mhos at 25°C)	pH	Color
														Total ^a	Non- carbon- ate			
OATKA CREEK AT GARBUTT																		
Aug. 14, 1956	60	6.2	0.05	178	25	13	2.3	212	355	20	0.2	4.7	764	547	373	1,040	7.9	3
OATKA CREEK AT LEROY																		
Aug. 30, 1956		2.7	0.09	55	10	14	2.6	176	32	23	0.0	2.4	249	178	34	412	7.5	10
CLYDE RIVER AND BARGE CANAL AT CLYDE																		
Aug. 14, 1956		0.5	0.68	71	16	22	2.3	159	106	38	0.2	2.5	354	243	113	576	7.2	7
BLACK CREEK AT CHURCHVILLE																		
Aug. 14, 1956	30	9.4	0.08	97	24	8.0	3.1	187	180	18	0.2	1.8	464	341	188	692	7.6	13
CANANDAIGUA LAKE OUTLET AT CHAPIN																		
Aug. 14, 1956	b38	2.5	0.18	36	8.6	7.0	2.5	121	28	8.4	0.0	8.4	164	125	26	290	7.0	4
OWASCO LAKE OUTLET AT AUBURN																		
Aug. 14, 1956	39	4.2	0.20	42	10	13	2.7	175	9.4	16	0.0	0.1	193	146	3	345	6.7	5

^a Includes hardness of all polyvalent cations reported.
^b Daily mean discharge.

ST. LAWRENCE RIVER MAIN STEM

ST. LAWRENCE RIVER AT ALEXANDRIA BAY, N. Y.

LOCATION.--Off pier behind post office at river stage gage at Alexandria Bay, Jefferson County.
 RECORDS AVAILABLE.--Water temperatures: October 1955 to September 1956.
 EXTREMES, 1955-56.--Water temperatures: Maximum, 72°F Aug. 17-20; minimum, 33°F several days in December.
 REMARKS.--River frozen over Dec. 31 to Apr. 5.

Temperature (°F) of water, water year October 1955 to September 1956
 Twice-daily measurements at approximately 8 a.m. and 4 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.....	60	61	54	54	39	39	--	--	40	41	50	60	62	66	67	69	70	61	63	67	69	70	69	70
2.....	59	61	53	54	40	41	--	--	41	41	50	50	62	64	65	67	69	70	62	64	65	67	69	70
3.....	59	61	53	53	41	40	--	--	41	42	50	52	62	64	65	68	69	71	62	64	65	68	69	71
4.....	60	61	52	52	40	41	--	--	40	40	51	52	62	63	66	69	68	71	62	63	66	69	68	71
5.....	60	62	51	51	40	40	--	--	40	42	52	52	61	62	67	68	69	72	62	61	62	67	68	69
6.....	60	60	51	51	40	40			34	34	41	42	52	54	61	62	68	69	70	61	62	68	69	70
7.....	61	63	50	51	40	39			34	34	41	42	53	54	61	63	68	70	69	61	63	68	70	69
8.....	61	61	50	50	39	38			34	34	41	42	54	55	61	63	68	70	68	69	61	63	68	70
9.....	59	60	50	50	38	40			34	34	42	43	54	55	62	64	68	70	68	69	61	63	68	69
10.....	60	61	49	50	39	39			34	34	43	43	55	56	63	64	68	70	67	68	61	63	68	69
11.....	60	62	49	50	37	37			34	35	42	44	55	57	63	64	69	70	68	68	61	63	68	69
12.....	60	61	49	50	36	36			34	34	44	45	56	58	63	64	69	71	66	67	61	63	68	69
13.....	60	60	48	50	36	36			35	35	45	45	57	60	64	65	69	70	66	68	61	63	68	69
14.....	60	60	49	49	36	38			36	37	44	46	59	61	64	65	69	71	67	68	61	63	68	69
15.....	60	60	48	48	37	37			38	38	45	46	60	62	64	65	70	71	66	66	61	63	68	69
16.....	58	59	47	47	38	37			38	38	45	45	60	61	64	66	70	71	65	66	61	63	68	69
17.....	58	58	47	47	36	36			38	38	44	46	60	61	64	66	70	72	65	66	61	63	68	69
18.....	58	58	45	46	36	36			38	38	45	47	59	59	64	66	71	72	64	65	67	61	63	68
19.....	57	58	45	44	35	35			38	38	46	47	57	59	65	67	71	72	64	65	67	61	63	68
20.....	58	58	44	45	34	34			37	37	46	46	59	60	66	67	70	72	63	64	67	61	63	68
21.....	56	57	44	44	34	34			38	38	45	47	60	61	66	66	70	71	63	63	67	61	63	68
22.....	55	57	43	43	34	35			38	39	46	48	60	62	65	68	70	71	62	64	68	70	61	63
23.....	55	57	44	44	34	34			38	39	46	48	61	61	66	68	70	70	62	62	68	70	61	63
24.....	56	55	44	44	34	34			38	38	48	48	60	62	67	68	69	70	61	62	68	69	60	63
25.....	53	53	43	44	35	34			38	39	47	48	60	62	67	68	68	69	60	63	68	69	60	63
26.....	53	54	41	42	34	34			39	39	47	48	60	62	68	69	68	69	60	62	68	69	60	62
27.....	53	54	40	41	33	33			39	39	48	48	61	62	68	69	67	70	60	62	68	69	60	62
28.....	53	54	43	42	33	33			40	40	48	48	60	61	68	69	68	70	60	62	68	69	60	62
29.....	52	55	40	40	33	33			39	39	47	48	60	61	67	68	68	69	70	60	62	68	69	60
30.....	54	55	40	40	34	33			39	40	49	50	60	62	66	69	68	68	60	62	68	69	60	62
31.....	54	54	--	--	--	--			--	49	50	--	--	66	69	68	70	--	--	66	69	68	70	--
Average.....	57	58	47	47	36	37			37	37	44	45	57	58	64	66	68	70	65	66	68	70	65	66

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER
OSWEGATCHIE RIVER AT HEVELTON, N. Y.

LOCATION --At bridge, about 0.3 mile from powerplant, Hevelton, St. Lawrence County and about 2½ miles downstream from gaging station.
DRAINAGE AREA --973 square miles (above gaging station).
RECORDS AVAILABLE --Chemical analyses, October 1955 to September 1956.

Water temperatures: October 1955 to September 1956: Maximum 93 ppm Oct. 21-31; minimum, 66 ppm Apr. 21-30, May 1-10 and June 1-10.
EXTREMES 1955-56 --Dissolved solids: Maximum 93 ppm Jan. 8; minimum, 35 ppm Mar. 11-20.

Hardness: Maximum 260 ppm Jan. 8; minimum, 496 micromhos Jan. 8; minimum, 89.6 micromhos June 1-10.
Specific conductance: Maximum 496 micromhos Jan. 8; minimum, 89.6 micromhos June 1-10.

Water temperatures: Maximum 78°F Sept. 9; minimum 33°F on many days during December, January, February and March.
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 1955 to September 1956 given in WSP 1437. Inflow from Lisbon Creek and several smaller tributaries contributes to discharge at sampling point.

Chemical analyses, in parts per million, water year October 1955 to September 1956

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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micro-mhos at 25°C)	pH	Color	Oxygen consumed	
														Total	Non-carbonate				Unfiltered	Filtered
Oct. 1-10, 1955	488	4.2	0.28	12	4.2	6.3	1.2	40	22	4.8	0.0	0.6	77	47	15	126	7.5	12	6.2	4.0
Oct. 11-20	800	7.6	.31	14	4.3	5.5	1.4	40	--	4.2	.7	.8	--	53	20	132	7.2	15	--	--
Oct. 21-31	1,310	6.7	.27	15	3.9	3.8	1.5	40	28	3.8	.0	1.0	93	54	21	142	7.3	27	14	6.2
Nov. 1-10	1,400	7.4	.27	15	3.8	3.0	1.0	34	26	3.5	.1	.8	89	53	25	131	7.4	27	11	6.9
Nov. 11-20	1,993	6.1	.31	14	5.8	3.3	.8	34	--	2.8	.0	.9	--	59	31	117	7.2	27	--	--
Nov. 21-30	1,060	6.5	.14	13	2.9	3.2	.8	29	20	3.0	.0	1.0	76	45	18	114	7.4	27	10	5.9
Dec. 1-10	1,030	8.0	.39	12	2.2	3.0	1.0	29	18	3.5	.2	.9	70	39	16	104	6.9	25	8.8	6.1
Dec. 21-31	528	6.1	.14	12	2.6	4.2	1.0	31	--	3.0	.0	1.2	--	42	16	112	6.9	15	--	--
Jan. 1-5, 10, 1956	536	7.6	--	11	2.7	5.0	1.1	33	18	3.0	.2	1.4	72	39	12	147	7.2	17	5.3	5.0
Jan. 6-9	507	--	--	--	--	--	--	37	--	3.4	--	--	--	59	13	147	7.2	--	--	--
Jan. 10-19	528	--	.25	--	--	--	--	246	--	3.1	--	3.7	--	260	58	496	7.6	--	--	--
Jan. 20-29	801	6.8	--	11	4.2	3.6	2.6	36	--	4.6	.0	2.6	--	45	15	118	6.9	20	--	--
Jan. 30-31	514	1.0	.16	11	3.2	4.5	1.3	33	17	4.2	.2	2.0	71	41	14	109	7.0	12	5.1	4.4
Feb. 1-10	518	7.6	.33	11	3.7	4.6	1.0	38	15	4.5	.1	1.2	75	43	12	111	7.0	11	6.8	4.1
Feb. 11-20	565	7.6	.28	11	3.4	4.7	1.0	39	--	4.0	.0	1.6	--	42	10	114	7.1	13	--	--
Feb. 21-29	650	7.8	.42	12	3.2	4.1	1.2	35	18	5.0	.1	1.1	78	43	15	115	6.9	12	6.2	4.3
Mar. 1-10	1,400	6.1	.29	12	4.2	3.5	3.0	38	16	5.0	.1	3.5	82	47	16	122	6.9	19	7.4	5.2
Mar. 11-20	1,820	7.0	.29	9.8	2.5	3.3	1.5	31	--	3.2	.2	2.2	--	35	10	102	7.0	12	--	--
Mar. 21-30	1,190	7.5	.38	11	2.6	2.6	1.1	30	15	3.0	.1	1.2	70	38	14	99.5	6.9	15	6.6	5.4

a. Includes hardness of all polyvalent cations reported.

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER--Continued
 OSWEGATCHIE RIVER AT HEUVELTON, N. Y.--Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956--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 on evaporation at 180°C)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Total	Non-carbonate			Unfiltered	Filtered
Apr. 1-10, 1956.....	7,190	7.2	0.38	10	3.2	2.0	1.7	30	14	3.1	0.1	3.3	68	38	14	6.6	16	8.2	5.0
Apr. 11-20.....	6,160	4.8	1.0	8.8	4.3	1.8	.9	30	--	2.2	.1	1.8	--	40	15	86.0	22	--	--
Apr. 21-30.....	3,240	5.0	.25	11	4.0	2.0	.9	35	13	3.1	.1	2.2	66	44	15	95.0	27	8.9	6.4
May 1-10.....	5,300	4.7	.20	10	3.7	2.0	1.0	31	13	3.0	.1	1.9	66	40	15	92.9	32	8.6	7.1
May 11-20.....	3,160	5.8	.11	11	4.9	2.4	.8	42	--	2.0	.2	1.3	--	48	13	103	33	--	--
May 21-31.....	2,800	5.4	.34	11	3.6	2.5	.8	39	11	3.3	.1	1.6	69	42	10	101	34	8.4	7.4
June 1-10.....	3,840	4.8	.38	10	3.3	2.0	.8	34	11	2.1	.1	1.4	66	39	11	89.6	36	11	9.0
June 11-20.....	1,060	4.4	.55	11	3.3	2.6	.9	40	10	2.7	.2	1.7	69	42	9	97.6	34	12	7.6
June 21-30.....	523	6.0	.43	12	4.0	2.6	1.3	46	10	2.9	.2	1.7	77	47	9	112	35	7.7	6.7
July 1-10.....	533	5.7	.38	13	4.3	3.0	1.3	48	13	3.1	.2	1.5	79	51	11	118	28	7.2	6.0
July 11-20.....	626	7.0	.41	12	3.6	4.0	1.3	41	14	4.1	.2	1.5	76	45	12	113	28	6.5	5.8
July 21-31.....	478	4.4	.16	10	2.8	4.1	.9	34	12	3.1	.2	1.5	64	37	9	95.9	22	7.1	6.6
Aug. 1-10.....	330	5.2	.52	11	2.2	4.1	.9	33	13	3.8	.0	2.4	66	37	10	97.9	25	7.9	6.0
Aug. 11-20.....	393	5.6	.40	12	2.4	4.6	.9	37	15	4.1	.0	2.4	71	40	10	109	20	7.3	5.2
Aug. 21-31.....	348	6.2	.34	12	3.9	5.4	1.0	44	14	4.4	.2	.7	73	46	10	118	7.5	8	--
Sept. 1-10.....	560	3.9	.39	13	3.2	5.3	1.2	39	19	4.5	.2	1.1	70	46	14	118	7.1	9	5.6
Sept. 11-20.....	417	4.4	.56	11	3.4	4.5	1.2	39	13	4.5	.2	1.0	70	42	10	112	17	8.0	6.6
Sept. 21-30.....	601	4.7	.48	10	3.7	4.7	1.2	37	14	4.1	.2	1.0	67	41	10	106	18	7.0	6.8
Time-weighted average.....	1,500	5.9	0.32	12	3.5	3.6	1.2	37	16	3.7	0.1	1.5	73	44	14	111	21	8.1	6.0

a Includes hardness of all polyvalent cations reported.

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER--Continued

OSWEGATCHIE RIVER AT HEUVELTON, N. Y.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 9 a.m./

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

ST. LAWRENCE RIVER MAIN STEM

ST. LAWRENCE RIVER AT ODGENSBURG, N. Y.

LOCATION.--At end of pier, just above U. S. Lighthouse, Odgensburg, N. Y.; St. Lawrence County.
DRAINAGE AREA.--295,200 square miles, approximately, including that of Oswegatchie River.
RECORDS AVAILABLE.--Chemical analyses: October 1955 to September 1956.

Water temperatures: October 1955 to September 1956.
EXTREMES, 1955-56.--Dissolved solids: Maximum, 186 ppm Apr. 21-30; minimum, 141 ppm Mar. 21-23, 25-31.

Hardness: Maximum, 390 ppm Jan. 31; minimum, 59 ppm June 5, 6.

Specific conductance: Maximum, 868 micromhos Jan. 31; minimum, 143 micromhos June 5, 6.

Water temperatures: Maximum, 73°F Aug. 18-20; minimum, freezing point on many days during December, January, February and March.

REMARKS.--Records of specific conductance and pH of daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1955 to September 1956 given in WSP 1437. Discharge records which have been coordinated with counterpart Canadian agencies furnished by U. S. Lake Survey, Corps of Engineers, U. S. Army.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (thousands of 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 on evaporation at 180°C)	Hardness as CaCO ₃		Specific conductance (micromhos at 25°C)	pH	Color	Oxygen consumed	
														Total	Non-carbonate				Unfiltered	Filtered
Oct. 1-10, 1955	251	3.8	0.06	38	8.0	9.8	1.5	114	26	22	0.0	0.8	173	128	34	308	7.5	4	5.5	2.2
Oct. 11-20	252	4.6	0.04	38	9.0	10.0	1.5	111	--	22	--	0.4	--	132	41	315	7.8	5	--	--
Oct. 21-31	259	3.8	0.04	38	7.9	9.7	1.5	115	25	21	0	0.8	174	127	33	304	7.5	5	10	2.4
Nov. 1-10	259	5.9	0.03	34	9.9	11.1	1.4	113	26	22	0	1.9	186	126	33	314	7.6	4	6.0	2.9
Nov. 11-16, 18-20	256	4.8	0.03	38	9.2	9.7	1.4	115	--	22	--	0.2	--	133	38	306	7.9	5	--	--
Nov. 21-30	255	4.1	0.12	38	7.7	10.0	1.4	114	25	21	0	0.8	183	126	33	312	7.5	4	3.4	2.0
Dec. 1-10	249	4.1	0.03	38	8.2	10.0	2.4	117	--	23	0	0.6	--	129	33	310	7.6	3	--	--
Dec. 11-20	252	1.1	--	38	7.9	9.6	1.1	118	--	22	--	--	--	127	31	310	7.8	4	--	--
Dec. 21-31	246	1.6	0.04	34	7.6	15.0	1.6	105	--	21	--	1.1	--	116	30	285	7.2	3	--	--
Jan. 1-10, 1956	238	3.0	0.05	37	8.8	9.6	1.4	108	28	22	0	1.1	175	129	40	305	7.3	2	7.3	2.9
Jan. 11-20	238	3.2	0.08	37	7.3	10.0	1.4	116	--	22	--	0	--	122	27	302	7.5	3	--	--
Jan. 21-30	239	5.2	--	38	10.0	10.0	1.4	112	28	22	0	1.0	180	136	44	309	7.6	2	4.5	2.8
Jan. 31	238	--	--	--	--	--	--	368	--	66	--	2.9	--	390	88	888	7.2	--	--	--
Jan. 21-31	--	--	0.19	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Feb. 1	238	--	--	--	--	--	--	266	--	44	--	2.0	--	280	62	632	7.4	--	--	--
Feb. 2-9, 10	236	3.2	--	36	8.2	9.9	1.5	114	25	22	0	1.1	176	124	30	307	7.6	3	5.0	2.6
Feb. 1-10	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Feb. 11-17, 18-20	235	4.7	--	29	7.6	8.1	1.4	98	--	16	0	1.0	--	104	23	258	7.6	5	--	--
Feb. 18	236	--	--	--	--	--	--	57	--	--	--	1.5	--	62	15	165	7.4	--	--	--
Feb. 11-20	--	--	0.14	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Feb. 21-29	232	5.0	0.12	30	7.0	8.2	1.5	90	25	16	0	2.0	150	104	30	231	7.7	3	3.8	3.0
Mar. 1-10	234	3.5	0.02	34	9.2	9.8	1.5	109	25	21	0	1.3	168	123	33	290	7.7	3	5.4	3.8
Mar. 11-20	238	5.0	0.12	32	7.7	8.0	1.5	101	--	18	0	1.1	--	112	29	273	7.6	5	--	--
Mar. 21-23, 25-31	242	5.2	--	28	6.8	7.0	1.3	89	23	14	0	1.3	141	98	25	238	7.5	3	6.2	4.3
Mar. 24	239	--	--	--	--	--	--	67	--	9.5	--	1.8	--	75	20	188	7.2	--	--	--
Mar. 21-31	--	--	0.07	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--

a Includes hardness of all polyvalent cations reported.

Apr. 1, 1956	246	6.8	--	--	--	37	7.9	9.8	--	1.5	113	85	--	13	--	1.4	--	91	21	225	7.3	--	4.4	2.8
Apr. 2-10	248	0.03	--	--	--	37	7.9	9.7	--	1.2	118	--	--	22	--	1.3	183	125	32	302	7.8	--	4.4	2.8
Apr. 11-20	260	1.2	0.03	--	--	37	7.9	9.7	--	1.2	118	--	--	22	--	1.3	183	125	32	302	7.8	--	4.4	2.8
Apr. 21-30	263	3.9	.07	--	--	37	9.2	10	--	1.3	120	26	21	22	--	.7	166	130	28	307	7.7	--	3	4.2
May 1-8	269	2.4	--	--	--	38	9.1	9.2	--	1.2	118	24	22	22	--	1.4	162	132	36	315	7.6	--	3.7	2.6
May 9-10	272	--	--	--	--	--	--	--	--	--	74	--	--	13	--	1.4	162	84	23	202	7.6	--	3	2.6
May 11-20	278	2.6	.12	--	--	38	7.6	9.7	--	1.2	119	--	--	22	--	.6	177	126	29	309	7.9	--	4.7	3.2
May 21-31	282	3.5	.04	--	--	37	9.0	9.2	--	1.4	116	23	21	21	--	1.3	177	129	34	305	7.9	--	4.7	3.2
June 1-4, 7-10	284	3.0	--	--	--	37	7.5	9.5	--	1.4	114	24	20	20	--	1.3	178	123	30	282	7.6	--	3	7.2
June 5, 6	286	--	--	--	--	--	--	--	--	--	54	--	--	4.0	--	1.6	184	59	15	143	6.9	--	3	7.2
June 11-10	281	3.3	.07	--	--	38	6.7	9.4	--	1.3	112	21	22	22	--	1.4	181	122	31	299	7.6	--	3	5.0
June 11-13, 15-20	284	--	--	--	--	--	--	--	--	--	67	--	--	5.4	--	1.9	181	80	25	165	6.8	--	3	5.0
June 14	284	--	--	--	--	--	--	--	--	--	67	--	--	5.4	--	1.9	181	80	25	165	6.8	--	3	5.0
June 11-20	279	2.2	--	--	--	38	7.9	9.5	--	1.5	113	24	24	24	--	1.4	179	127	35	309	7.8	--	4	3.7
June 21, 23-30	279	--	--	--	--	--	--	--	--	--	80	--	--	9.0	--	2.4	179	84	18	197	7.3	--	4	3.7
June 21-30	279	--	--	--	--	--	--	--	--	--	80	--	--	9.0	--	2.4	179	84	18	197	7.3	--	4	3.7
July 1-10	275	4.7	.08	--	--	38	8.2	11	--	1.5	117	24	23	23	--	1.2	187	128	33	313	7.8	--	4	3.6
July 11-20	274	2.6	.02	--	--	38	8.1	9.5	--	1.4	117	23	24	24	--	1.3	187	128	32	313	7.8	--	4	3.6
July 21-31	273	4.1	.03	--	--	39	8.1	9.6	--	1.3	115	24	24	24	--	1.6	181	131	36	310	7.7	--	4	3.7
Aug. 1-10	269	2.4	--	--	--	39	7.6	10	--	1.5	114	26	23	23	--	1.8	189	129	35	309	7.7	--	4	6.3
Aug. 11-20	266	2.4	.08	--	--	39	7.8	10	--	1.4	114	26	23	23	--	1.8	184	129	36	309	7.7	--	4	6.3
Aug. 21-31	260	1.8	.10	--	--	37	9.9	10	--	1.4	117	24	23	23	--	1.7	179	133	30	303	7.7	--	3	3.9
Sept. 1-10	263	3.4	--	--	--	37	8.3	9.5	--	1.6	111	24	22	22	--	.9	173	127	36	301	7.4	--	2	4.6
Sept. 11-20	261	3.2	.17	--	--	36	9.0	10	--	1.6	112	28	22	22	--	.8	175	127	35	300	7.4	--	3	4.8
Sept. 21-30	255	2.6	.26	--	--	35	8.1	9.5	--	1.7	110	23	22	22	--	.7	189	121	31	297	7.6	--	3	4.2
Time-weighted average	257	3.5	0.09	--	--	36	8.2	9.7	--	1.5	112	25	21	21	--	1.0	179	125	33	299	--	--	3	5.0

a Includes hardness of all polyvalent cations reported.

ST. LAWRENCE RIVER BASIN

ST. LAWRENCE RIVER MAIN STEM--Continued

ST. LAWRENCE RIVER AT ODGENSBURG, N. Y.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

/Once-daily measurement at approximately 4:30 p.m./

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

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER

GRASS RIVER AT PYRITES, N. Y.

LOCATION --At bridge, 1,000 feet upstream from gaging station in Pyrites, St. Lawrence County, and half a mile upstream from Harrison Creek.

RECORDS AVAILABLE --335 square miles.

RECORDS AVAILABLE --Chemical analyses: October 1955 to September 1956.

Water temperatures --October 1955 to September 1956.

EXTREMES --Maximum, 67 ppm Oct. 11-20; minimum, 42 ppm Apr. 21-30, May 1-10.

Hardness --Maximum, 17 ppm Mar. 1-10; minimum, 10 ppm Apr. 11-20.

Specifics --Maximum, 61 ppm Mar. 1-10; minimum, 47.2 microhos Apr. 21-30.

Water temperatures --Maximum, 78° Aug. 8; minimum, 73° Dec. 11, 20, 23 and Mar. 31.

REMARKS --Records of specific conductance and pH of daily samples available in district office at Albany, N. Y. Records of discharge for water year October 1955 to September 1956 given in WSP 1437.

Chemical analyses, in parts per million, water year October 1955 to September 1956

Date of collection	Mean discharge (cfs)	Silica (SiO ₂) (Fe)	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 on ignition at 180°C)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Total ^a	Non-carbonate			Unfiltered	Filtered
Oct. 1-10, 1955,	278	9.7	0.32	6.2	3.7	1.9	0.9	27	9.1	1.5	0.0	0.8	57	31	9	70.2	32	7.9	7.4
Oct. 11-20,	230	10	.32	6.7	2.7	1.8	1.0	22	13	1.9	.0	.7	67	28	10	76.9	45	11	8.7
Oct. 21-31,	424	8.7	.30	7.3	2.7	1.5	1.0	20	13	1.6	.0	.8	63	30	13	71.9	45	11	8.9
Nov. 1-10,	366	8.4	.34	7.0	2.8	1.8	.9	18	13	1.7	.0	.8	60	29	14	69.4	42	10	8.9
Nov. 11-20,	300	9.3	.34	6.2	2.2	1.7	.8	20	11	1.2	.0	1.0	57	25	8	66.6	37	10	7.6
Nov. 21-30,	357	9.4	.33	6.0	2.3	1.6	.8	19	11	1.2	.0	1.2	55	25	9	64.1	37	8.7	7.7
Dec. 1-10,	302	10	.28	5.8	2.1	1.6	.8	18	11	1.2	.0	1.2	57	24	9	65.4	35	8.0	6.6
Dec. 11-20,	241	10	.26	6.8	2.6	1.8	.8	21	--	1.5	.0	2.2	--	28	11	69.2	7.1	30	--
Dec. 21-31,	194	12	.26	7.4	2.5	2.0	.8	24	10	1.9	.0	1.0	56	29	10	73.2	7.0	12	--
Jan. 1-10, 1956,	178	12	.32	7.2	2.4	1.8	.8	24	9.2	1.3	.0	.8	52	28	9	69.5	7.0	18	4.5
Jan. 11-20,	206	11	.26	7.4	2.2	2.0	.9	25	--	2.0	.0	2.6	--	28	7	74.6	7.2	25	--
Jan. 21-31,	164	14	.30	8.0	3.0	2.2	.8	31	9.1	1.0	.2	2.1	59	33	7	76.8	7.3	16	4.0
Feb. 1-10,	146	12	.30	7.8	3.0	2.2	.7	31	8.8	1.4	.2	2.2	57	32	7	78.3	7.5	16	4.2
Feb. 11-20,	170	12	.23	7.7	3.1	2.1	.7	29	--	1.4	.0	3.4	--	32	9	73.7	7.3	10	--
Feb. 21-29,	256	13	.10	8.0	3.3	2.9	.9	32	9.8	2.0	.2	2.6	60	34	8	82.8	7.4	23	3.9
Mar. 1-4, 6-10,	408	10	--	7.9	2.7	1.6	.9	24	11	2.5	.1	2.8	54	31	11	79.5	6.8	18	5.3
Mar. 5,	430	--	--	--	--	--	--	b89	--	.3	--	--	--	61	0	186	9.2	--	--
Mar. 1-10,	--	--	.21	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Mar. 11-20,	412	8.7	.12	7.6	3.2	1.5	.6	20	--	1.2	.2	2.8	--	32	16	66.6	8.2	23	--
Mar. 21-31,	306	9.5	.25	7.6	2.7	1.7	.7	25	10	2.5	.1	1.8	54	30	10	73.0	6.3	22	5.7
Apr. 1-3, 5-10,	2,050	8.3	--	5.6	2.3	1.2	.9	15	9.1	2.5	.0	3.0	43	24	11	56.9	6.4	22	8.9
Apr. 1-10,	1,200	--	--	--	--	--	--	26	--	4.0	--	2.3	--	36	15	39.6	6.4	--	--
Apr. 11-20,	2,600	5.4	--	4.0	1.8	1.2	.6	12	--	1.2	.2	2.0	--	17	8	48.9	6.6	28	--
Apr. 21-30,	1,790	5.6	.14	5.2	1.6	1.2	.6	12	9.2	1.5	.1	2.3	42	20	10	47.2	6.4	28	7.3

^a Includes hardness of all polyvalent cations reported.

^b Includes equivalent of 34 parts per million of carbonate (CO₃).

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER—Continued

GRASS RIVER AT PYRITES, N. Y.—Continued

Chemical analyses, in parts per million, water year October 1955 to September 1956—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 on evaporation at 180°C)	Hardness as CaCO ₃		pH	Color	Oxygen consumed	
														Total	Non-carbonate			Unfiltered	Filtered
May 1-10, 1956.....	2,040	5.2	0.12	4.7	2.0	1.2	0.6	11	9.1	1.5	0.2	2.6	42	20	11	50.2	32	9.7	7.6
May 11-20.....	1,210	4.9	.24	5.2	2.2	1.2	.6	15	--	1.0	.1	1.5	--	22	10	53.9	35	--	--
May 21-31.....	1,310	4.4	.19	5.1	2.0	1.4	.5	15	8.0	1.5	.1	1.1	43	21	9	51.1	42	11	8.8
June 1-10.....	1,100	4.0	.38	5.6	2.2	1.1	.5	17	8.6	1.8	.2	1.4	47	23	10	52.9	55	13	9.2
June 11-20.....	358	6.4	.50	6.2	2.3	1.8	.6	24	--	1.0	.1	1.5	--	25	6	61.8	50	--	--
June 21-30.....	281	7.5	.48	7.2	2.3	1.8	.6	27	5.8	2.1	.2	1.3	53	28	6	68.2	36	8.5	7.3
July 1-10.....	237	7.7	.48	6.9	2.9	1.7	.7	27	6.7	1.7	.2	1.1	50	30	7	65.3	33	9.7	7.3
July 11-20.....	306	8.3	.56	6.1	1.8	1.7	.6	22	5.3	1.2	.2	1.2	52	23	5	56.9	55	13	12
July 21-31.....	153	7.5	.25	6.9	2.2	1.8	.6	26	6.0	1.6	.2	1.0	53	27	5	64.4	45	9.5	8.1
Aug. 1-10.....	116	8.6	.68	8.0	2.6	1.8	.7	30	6.4	2.8	.0	2.0	55	31	6	72.9	35	7.5	6.8
Aug. 11-20.....	126	8.2	.59	7.7	3.2	1.9	.8	31	7.4	1.8	.2	1.0	52	33	8	69.2	33	6.7	6.5
Aug. 21-31.....	126	8.4	.59	8.0	3.0	1.9	.8	32	6.8	1.6	.2	.8	52	33	7	73.1	33	12	6.1
Sept. 1-10.....	258	8.5	.42	8.0	2.3	1.7	.8	27	8.8	1.5	.0	.8	58	30	8	70.4	43	12	9.0
Sept. 11-20.....	158	9.7	.52	8.1	2.3	1.8	.8	29	7.4	1.3	.0	.8	55	30	6	68.2	38	10	8.6
Sept. 21-30.....	227	9.0	.51	7.4	2.0	1.8	.7	24	7.7	1.4	.0	.8	55	27	7	62.4	50	15	9.2
Time-weighted average.....	534	8.8	0.33	6.8	2.5	1.7	0.7	23	9.0	1.6	0.1	1.6	54	28	9	66.5	33	9.2	7.0

a Includes hardness of all polyvalent cations reported.

STREAMS TRIBUTARY TO ST. LAWRENCE RIVER--Continued

GRASS RIVER AT PYRITES, N. Y.--Continued

Temperature (°F) of water, water year October 1955 to September 1956

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

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